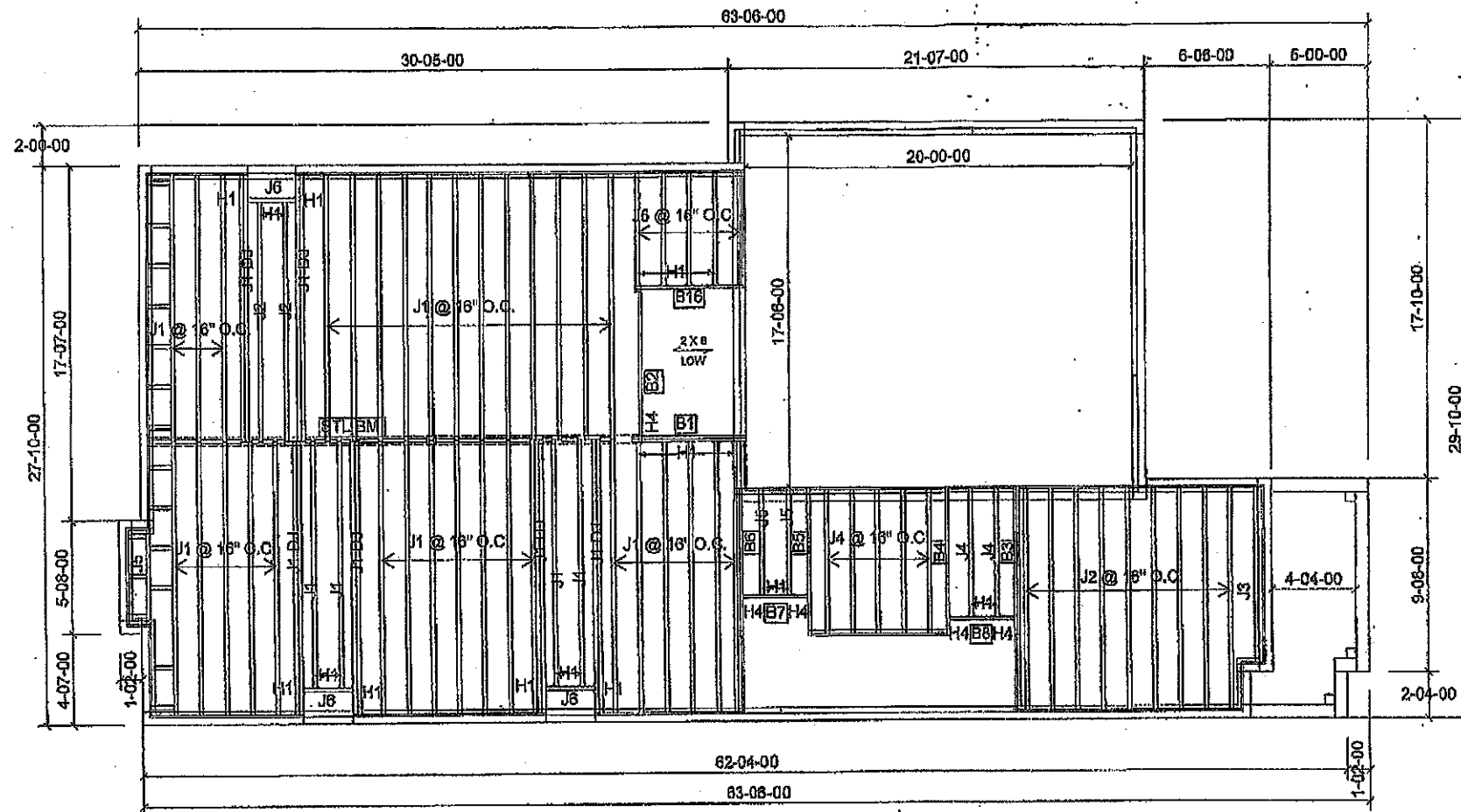
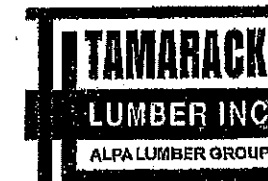




Products				
PlotID	Length	Product	Piles	Net Qty
J1	14'-00-00	9 1/2" NI-40x	1	37
J1 DJ	14'-00-00	9 1/2" NI-40x	2	12
J2	12'-00-00	9 1/2" NI-40x	1	11
J3	10'-00-00	9 1/2" NI-40x	1	1
J4	8'-00-00	9 1/2" NI-40x	1	7
J5	6'-00-00	9 1/2" NI-40x	1	8
J6	4'-00-00	9 1/2" NI-40x	1	3
B2	8'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B4	8'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B5	8'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B3	8'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B6	8'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B16	6'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B1	6'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B7	4'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B8	4'-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.66/9.5
5	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H4	HUS1.81/10
3	H4	HUS1.81/10



FROM PLAN DATED: OCT 15 2018

BUILDER: GREEN PARK HOMES

SITE: LAMBERT LANE

MODEL: BARTON 4

ELEVATION: 2

LOT: 32

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

NOTES:

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

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

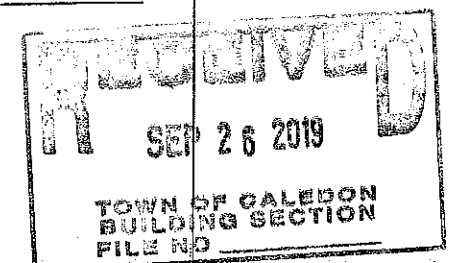
TILED AREAS: 20 lb/ft²

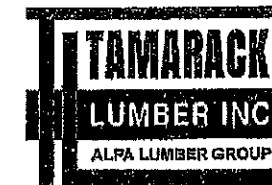
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2019-04-12

1st FLOOR

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





FROM PLAN DATED: OCT 15 2018

BUILDER: GREEN PARK HOMES

SITE: LAMBERT LANE

MODEL: BARTON 4

ELEVATION: 2

LOT: 32

CITY: CALEDON

SALESMAN: M D

DESIGNER: PL

REVISION:

NOTES:

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

LOADING:

DESIGN LOADS: L/480,000

LIVE LOAD: 40.0 lb/ft²

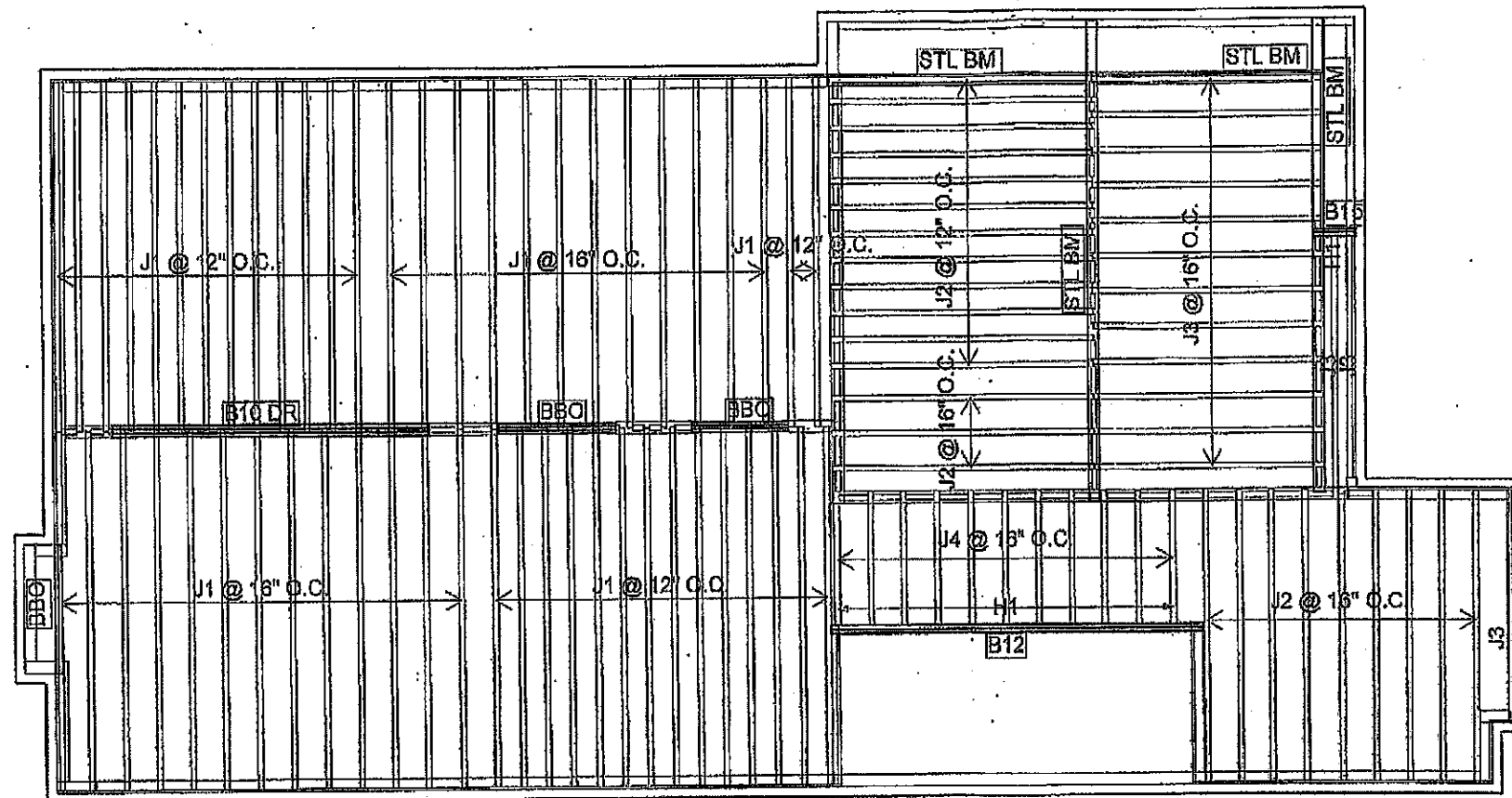
DEAD LOAD: 15.0 lb/ft²

TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/15/2018

2nd FLOOR



Products				
PlotID	Length	Product	Piles	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	54
J2	12-00-00	9 1/2" NI-40x	1	24
J3	10-00-00	9 1/2" NI-40x	1	15
J4	6-00-00	9 1/2" NI-40x	1	11
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B10 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3
B15	2-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B2(16296)

Dry | 1 span | No cant.

November 15, 2018 12:04:59

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

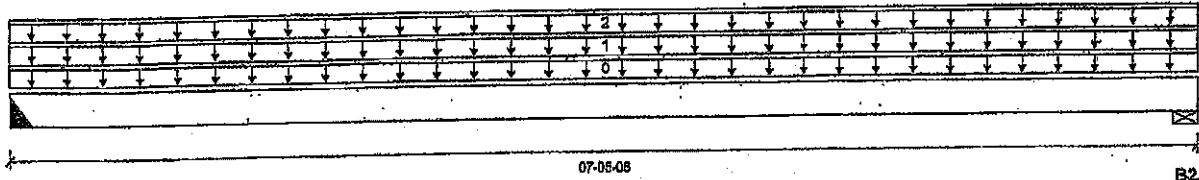
File name: BARTON 4.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B2(16296)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 07-05-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	115 / 0	293 / 0		
B2, 1-3/4"	112 / 0	285 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lln. (lb/ft)	L	00-00-00	07-05-08	Top	5				00-00-00
1	WALL	Unf. Lln. (lb/ft)	L	00-00-00	07-05-08	Top	58				n/a
2	FC1 Floor Material	Unf. Lln. (lb/ft)	L	00-00-00	07-05-08	Top	30	15			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	701 ft-lbs	7,546 ft-lbs	9.3%	0	03-09-08
End Shear	378 lbs	3,781 lbs	10.1%	0	01-00-08
Total Load Deflection	L/999 (0.026")	n/a	n/a	4	03-09-08
Live Load Deflection	L/999 (0.007")	n/a	n/a	5	03-09-08
Max Defl.	0.026"	n/a	n/a	4	03-09-08
Span / Depth	8.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	411 lbs	n/a	9.9%	HUS1.81/10
B2	Wall/Plate 1-3/4" x 1-3/4"	399 lbs	37.5%	16.4%	Unspecified

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9

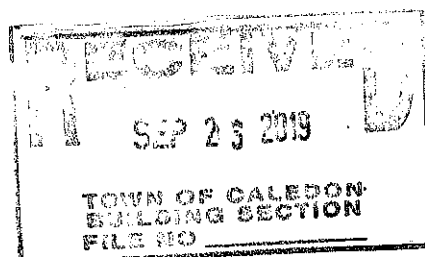


DESIGN CONFORMS TO OBC2012

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



ET0000361



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B4(14478)

Dry | 1 span | No cant.

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

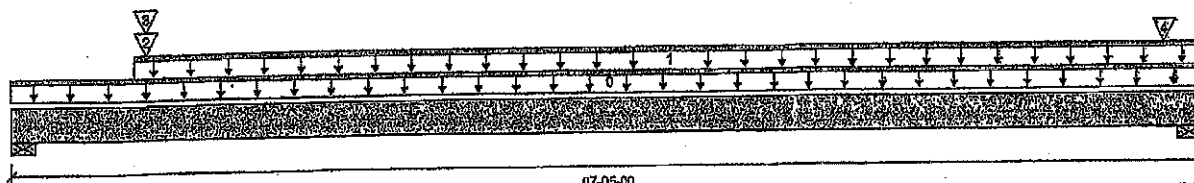
File name: BARTON 4.mmdf

Description: 1ST FLOOR FRAMING\Flush Beams\B4(14478)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 07-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	833 / 0	342 / 0		
B2, 3-1/2"	223 / 0	141 / 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	07-05-00	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-09-02	07-05-00	Top	43	22			n/a
2	B8(14410)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	426	221			n/a
3	STAIRS	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	127				
4	7(1542)	Conc. Pt. (lbs)	L	07-02-04	07-02-04	Top	15				

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	997 ft-lbs	11,610 ft-lbs	8.6%	1	02-07-11
End Shear	997 lbs	5,785 lbs	17.2%	1	01-01-00
Total Load Deflection	L/999 (0.025")	n/a	n/a	4	03-05-09
Live Load Deflection	L/999 (0.016")	n/a	n/a	5	03-05-09
Max Defl.	0.025"	n/a	n/a	4	03-05-09
Span / Depth	8.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	1,378 lbs	42.1%	18.4%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	511 lbs	15.6%	6.8%	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



DESIGN CONFORMS TO OBC2012

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

ET0000362



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B5(14364)

Dry | 1 span | No cant.

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6475

Job name:

File name: BARTON 4.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B5(14364)

City, Province, Postal Code: CALEDON

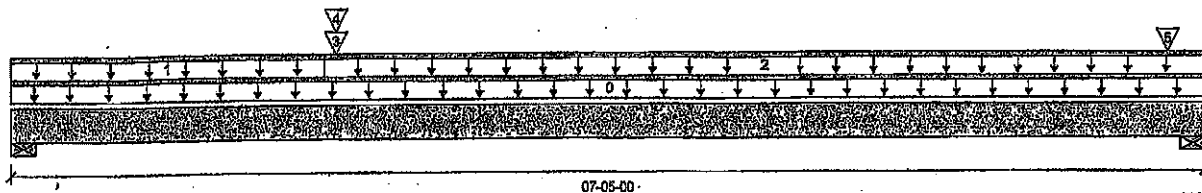
Specifier:

Customer:

Designer: PL

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 07-05-00

Reaction Summary (Down / Uplift) (lbs)

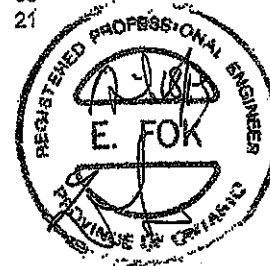
Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	509 / 0	278 / 0		
B2, 3-1/2"	293 / 0	178 / 0		

Load Summary

Tag	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	07-05-00	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-11-02	Top	19	10			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-11-02	07-05-00	Top	38	19			n/a
3	B7(14490)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	429	223			n/a
4	STAIRS	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	107	53			n/a
5	7(1542)	Conc. Pt. (lbs)	L	07-02-04	07-02-04	Top	18	21			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,876 ft-lbs	11,610 ft-lbs	16.2%	1	02-00-00
End Shear	1,060 lbs	5,785 lbs	18.3%	1	01-01-00
Total Load Deflection	L/999 (0.04")	n/a	n/a	4	03-05-01
Live Load Deflection	L/999 (0.026")	n/a	n/a	5	03-05-01
Max Defl.	0.04"	n/a	n/a	4	03-05-01
Span / Depth	8.8				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	1,111 lbs	34.0%	14.9%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	862 lbs	20.2%	8.9%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9



Disclosure

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 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®, AJST®, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

DESIGN CONFORMS TO OBC2012

ET0000363



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B3(14404)

Dry | 1 span | No cant.

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

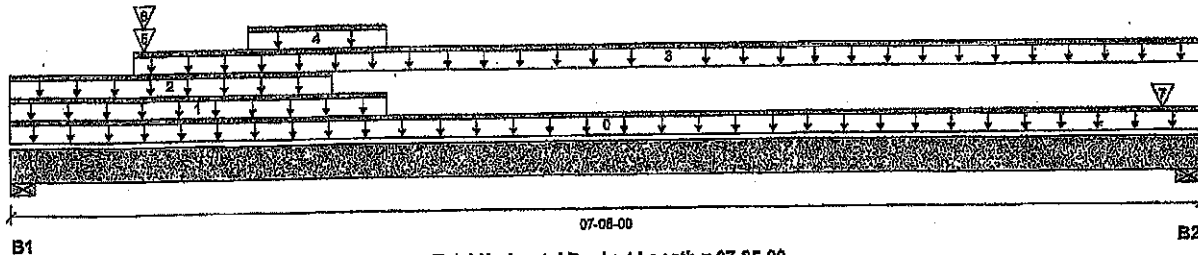
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Description: 1ST FLOOR FRAMING\Flush Beams\B3(14404)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,306 / 0	1,235 / 0		
B2, 3-1/2"	440 / 0	396 / 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	07-05-00	Top		10			00-00-00
1	14(1555)	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	Top		81			n/a
2	14(1555)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Top	12	89			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-09-02	07-05-00	Top	30	15			n/a
4	14(1555)	Unf. Lin. (lb/ft)	L	01-05-12	02-04-00	Top	1,028	866			n/a
5	B8(14410)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	479	248			n/a
6	STAIRS	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	90	45			n/a
7	7(1542)	Conc. Pt. (lbs)	L	07-02-04	07-02-04	Top	66	66			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,878 ft-lbs	23,220 ft-lbs	16.7%	1	02-01-00
End Shear	2,845 lbs	11,571 lbs	24.6%	1	01-01-00
Total Load Deflection	L/999 (0.041")	n/a	n/a	4	03-04-00
Live Load Deflection	L/999 (0.021")	n/a	n/a	5	03-04-00
Max Defl.	0.041"	n/a	n/a	4	03-04-00
Span / Depth	8.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3,502 lbs	53.5%	23.4%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	1,156 lbs	17.7%	7.7%	Unspecified

Notes

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

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

Calculations assume 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.

Nail one ply to another with
3 1/2" spiral nails @ 6"
o.c, staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET0000364



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B6(14458)

Dry | 1 span | No cant.

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

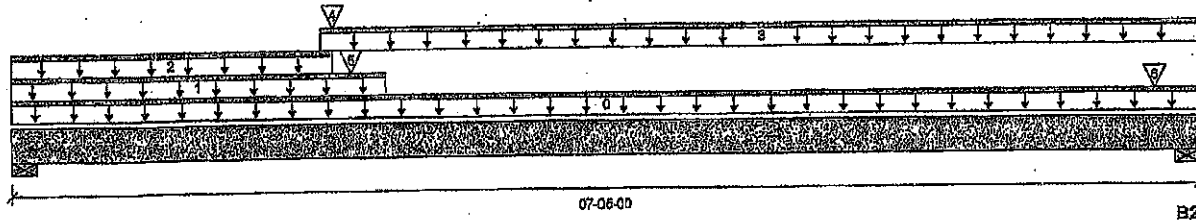
File name: BARTON 4.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B6(14458)

Specifier:

Designer: PL

Company:



B1

07-06-00

B2

Total Horizontal Product Length = 07-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,810 / 0	1,187 / 0		
B2, 3-1/2"	721 / 0	505 / 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	07-05-00	Top		10			00-00-00
1	13(I554)	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	Top		66			n/a
2	13(I554)	Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	Top		71			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-11-02	07-06-00	Top	29	14			n/a
4	STAIRS	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top	110	56			n/a
5	-	Conc. Pt. (lbs)	L	02-01-06	02-01-06	Top	1,978	1,123			n/a
6	6(I541)	Conc. Pt. (lbs)	L	07-01-11	07-01-11	Top	42	50			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,827 ft-lbs	23,220 ft-lbs	29.4%	1	02-01-12
End Shear	3,670 lbs	11,571 lbs	31.7%	1	01-01-00
Total Load Deflection	L/999 (0.067")	n/a	n/a	4	03-04-00
Live Load Deflection	L/999 (0.04")	n/a	n/a	5	03-04-00
Max Defl.	0.067"	n/a	n/a	4	03-04-00
Span / Depth	8.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3,899 lbs	59.6%	26.1%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	1,712 lbs	26.2%	11.5%	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.

Nail one ply to another with
 3 1/2" spiral nails @ 6" o.c., staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET0000365



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B16(15831)

Dry | 1 span | No cant.

April 12, 2019 11:17:36

BC CALC® Member Report

Build 8788

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

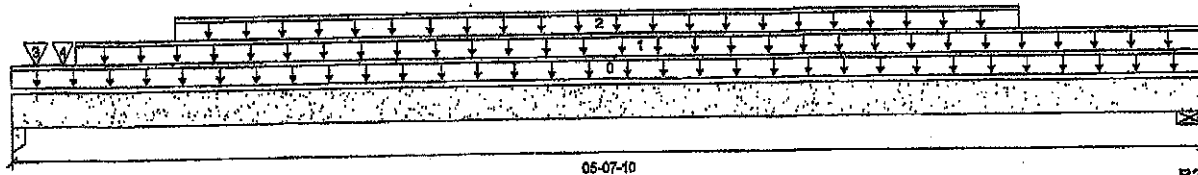
File name: BARTON 4 ELEV 1.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B16(15831)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 05-07-10

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	393 / 0	219 / 0		
B2, 2-3/8"	225 / 0	126 / 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	05-07-10	Top	1.00	0.65	1.00	1.16	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	05-07-10	Top	3	1			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-04	04-09-04	Top	113	56			n/a
3	J5(15685)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	151	80			n/a
4	WALL	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top					n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	876 ft-lbs	11,610 ft-lbs	7.5%	1	02-09-04
End Shear	517 lbs	5,785 lbs	8.9%	1	01-01-00
Total Load Deflection	L/999 (0.012")	n/a	n/a	4	02-10-04
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	02-10-04
Max Defl.	0.012"	n/a	n/a	4	02-10-04
Span / Depth	6.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	863 lbs	17.3%	11.5%	Unspecified
B2	Wall/Plate 2-3/8" x 1-3/4"	495 lbs	22.3%	9.8%	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 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9



DESIGN CONFORMS TO OBC2012

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®.



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

PASSED

1ST FLOOR FRAMING Flush Beams B1 (I5294)

BC CALC® Member Report

Dry | 1 span | No cant.

November 15, 2018 12:04:59

Build 6475

Job name:

File name: BARTON 4.mmdl

Address:

Description: 1ST FLOOR FRAMING Flush Beams B1 (I5294)

City, Province, Postal Code: CALEDON

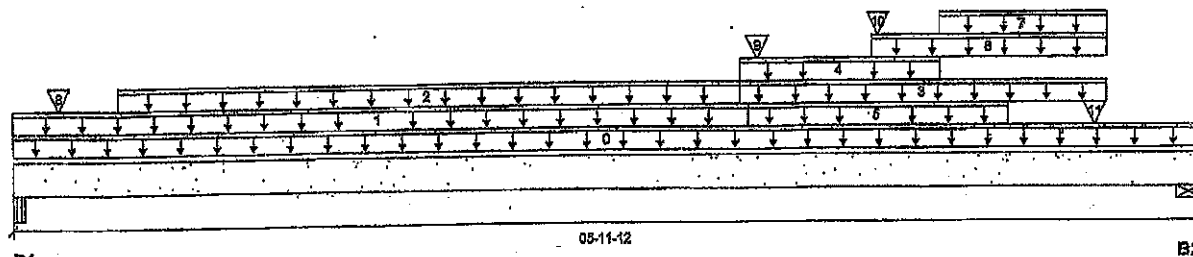
Specifier:

Customer:

Designer: PL

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 05-11-12

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-1/2"	3,102 / 0	1,918 / 0		
B2, 3-1/2"	2,143 / 0	1,280 / 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	05-11-12	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	03-08-04	Top	332	150			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-06-08	03-07-12	Top	120	60			n/a
3	10(I548)	Unf. Lin. (lb/ft)	L	03-07-12	05-08-04	Top		81			n/a
4	10(I548)	Unf. Lin. (lb/ft)	L	03-07-12	04-08-01	Top	261	126			n/a
5	10(I548)	Unf. Lin. (lb/ft)	L	03-08-04	05-00-04	Top	199	100			n/a
6	10(I548)	Unf. Lin. (lb/ft)	L	04-03-14	05-08-04	Top	220	110			n/a
7	10(I548)	Unf. Lin. (lb/ft)	L	04-08-00	05-08-04	Top	218	109			n/a
8	-	Conc. Pt. (lbs)	L	00-02-13	00-02-13	Top	1,250	974			n/a
9	10(I548)	Conc. Pt. (lbs)	L	03-08-12	03-08-12	Top	826	442			n/a
10	J1(I5283)	Conc. Pt. (lbs)	L	04-04-04	04-04-04	Top	324	162			n/a
11	-	Conc. Pt. (lbs)	L	05-05-09	05-05-09	Top	267	155			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,206 ft-lbs	23,220 ft-lbs	26.7%	1	03-08-12
End Shear	4,364 lbs	11,571 lbs	37.7%	1	04-10-12
Total Load Deflection	L/999 (0.041")	n/a	n/a	4	03-03-01
Live Load Deflection	L/999 (0.026")	n/a	n/a	5	03-03-01
Max Defl.	0.041"	n/a	n/a	4	03-03-01
Span / Depth	6.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 6-1/2" x 3-1/2"	7,051 lbs	58.0%	25.4%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	4,789 lbs	73.2%	32.0%	Unspecified

Nail one ply to another with
3 1/2" spiral nails @ 6".
o.c., staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET0000367

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLOOR FRAMING\Flush Beams\B7(14490)**

Dry | 1 span | No cant.

November 14, 2018 18:20:24

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC-12472-R

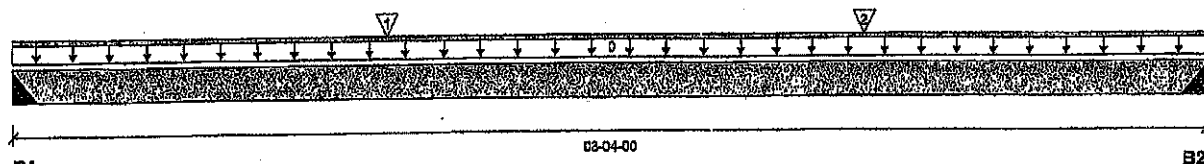
File name: BARTON 4.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B7(14490)

Specifier:

Designer: PL

Company:

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B1, 3"	418 / 0	217 / 0		
B2, 3"	430 / 0	224 / 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	03-04-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	J5(14501)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	Top	437	219			n/a
2	J5(14419)	Conc. Pt. (lbs)	L	02-04-08	02-04-08	Top	411	206			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	764 ft-lbs	11,610 ft-lbs	6.6%	1	01-00-08
End Shear	893 lbs	5,785 lbs	15.4%	1	01-00-08
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	01-08-00
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-08-00
Max Defl.	0.004"	n/a	n/a	4	01-08-00
Span / Depth	3.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	899 lbs	n/a	14.0%	HUS1.81/10
B2	Hanger 3" x 1-3/4"	924 lbs	n/a	14.4%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. }

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

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9



DESIGN CONFORMS TO OBC2012

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™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

ET0000368



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B8(14410)

Dry | 1 span | No cant.

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

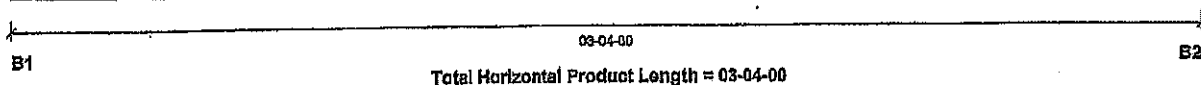
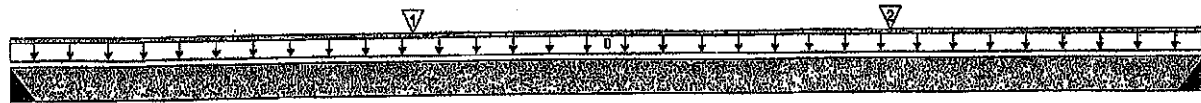
File name: BARTON 4.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B8(14410)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	422 / 0	219 / 0		
B2, 3"	483 / 0	250 / 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	03-04-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	J4(14376)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	Top	470	235			n/a
2	J4(14420)	Conc. Pt. (lbs)	L	02-05-08	02-05-08	Top	435	218			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	847 ft-lbs	11,810 ft-lbs	7.3%	1	01-01-08
End Shear	901 lbs	5,785 lbs	15.6%	1	01-00-08
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	01-08-01
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-08-01
Max Defl.	0.004"	n/a	n/a	4	01-08-01
Span / Depth	3.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 1-3/4"	907 lbs	n/a	14.2%	HUS1.81/10
B2	Hanger 3" x 1-3/4"	1,037 lbs	n/a	16.2%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user.

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

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DESIGN CONFORMS TO OBC2012

Disclosure

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

ET0000369



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B12\14357

Dry | 1 span | No cant.

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

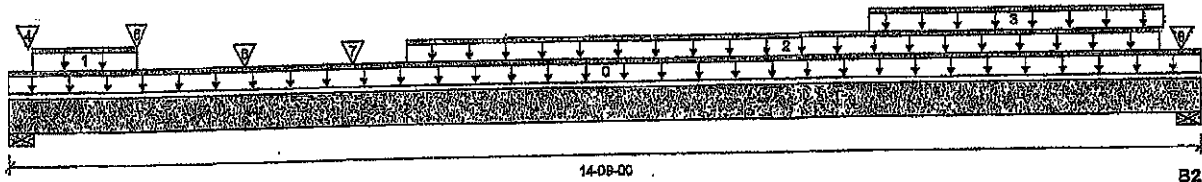
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Description: 2ND FLOOR FRAMING\Flush Beams\B12\14357

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 14-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,565 / 0	902 / 0		
B2, 5-1/2"	882 / 0	743 / 0		

Load Summary

Tag	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	14-09-00	Top		10			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-03-08	01-07-00	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-11-00	14-03-00	Top	109	54			n/a
3	22(1846)	Unf. Lin. (lb/ft)	L	10-07-08	14-03-08	Top		65			n/a
4	-	Conc. Pt. (lbs)	L	00-02-14	00-02-14	Top	88	66			n/a
5	J4(14244)	Conc. Pt. (lbs)	L	01-07-00	01-07-00	Top	302	151			n/a
6	J4(14163)	Conc. Pt. (lbs)	L	02-11-00	02-11-00	Top	458	229			n/a
7	J4(13954)	Conc. Pt. (lbs)	L	04-03-00	04-03-00	Top	244	122			n/a
8	18(1842)	Conc. Pt. (lbs)	L	14-08-04	14-06-04	Top		24			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,243 ft-lbs	23,220 ft-lbs	35.5%	1	06-11-00
End Shear	2,815 lbs	11,671 lbs	24.3%	1	01-01-00
Total Load Deflection	1/383 (0.432")	n/a	61.1%	4	07-01-00
Live Load Deflection	1/842 (0.264")	n/a	56.1%	5	07-01-00
Max Defl.	0.432"	n/a	n/a	4	07-01-00
Span / Depth	17.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3,460 lbs	52.9%	23.2%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	2,252 lbs	21.9%	9.6%	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.

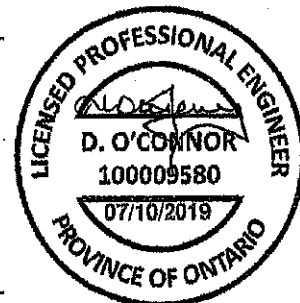
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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.

Nail one ply to another with
3 1/2" spiral nails @ (2x)
o.c., staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET0000370



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

PASSED

2ND FLOOR FRAMING\Dropped Beams\B10 DR(4180)

Dry | 1 span | No cant

November 14, 2018 16:20:24

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

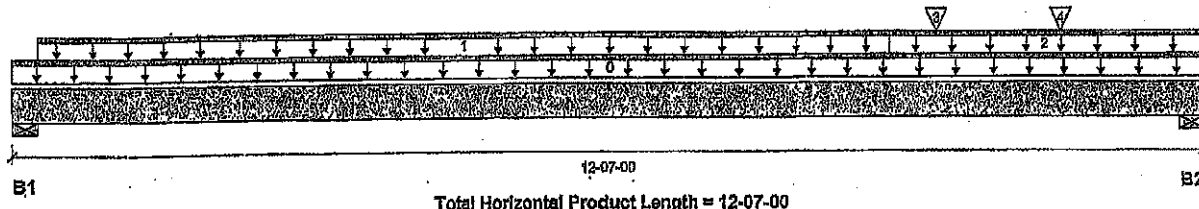
File name: BARTON 4.mmdl

Description: 2ND FLOOR FRAMING\Dro...d Beams\B10 DR(4180)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	3,345 / 0	1,763 / 0		
B2, 3-1/2"	3,614 / 0	1,899 / 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	12-07-00	Top	14				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-00	09-03-00	Top	676	288			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	09-03-00	12-07-00	Top	334	167			n/a
3	J1(13925)	Conc. Pt. (lbs)	L	09-09-00	09-09-00	Top	304	152			n/a
4	J1(14253)	Conc. Pt. (lbs)	L	11-01-00	11-01-00	Top	361	181			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	21,020 ft-lbs	36,222 ft-lbs	58.0%	1	06-08-00
End Shear	6,321 lbs	17,356 lbs	36.4%	1	01-01-00
Total Load Deflection	L/277 (0.525")	n/a	86.6%	4	06-03-00
Live Load Deflection	L/423 (0.344")	n/a	85.0%	5	06-03-00
Max Defl.	0.525"	n/a	n/a	4	06-03-00
Span / Depth	15.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 5-1/4"	7,220 lbs	48.4%	32.2%	Unspecified
B2	Wall/Plate 3-1/2" x 5-1/4"	7,795 lbs	52.2%	34.8%	Unspecified



DESIGN CONFORMS TO OBC2012

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: 00-04-03, Bottom: 00-04-03.
 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.
 Nailing schedule applies to both sides of the member.
 Member has no side loads.

Nail one ply to another with
 3 1/2" spiral nails @ 10"
 o.c., staggered in 2 rows (top loaded)

ET0000371

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING Flush Beams B13(14972)**

Dry | 1 span | No cant.

November 15, 2018 11:42:08

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

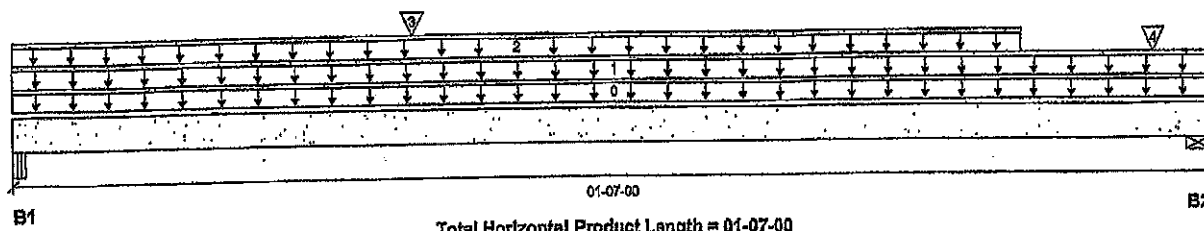
File name: BARTON 4.mmdl

Description: 2ND FLOOR FRAMING Flush Beams B13(14972)

Specifier:

Designer: PL

Company:

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B1, 5"	142 / 0	174 / 0	178 / 0	
B2, 3-1/2"	299 / 0	566 / 0	621 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.90	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-07-00	Top		10			00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-07-00	Top	33	30	102		n/a
2	E25(1003)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top	33	111	102		n/a
3	J4(15180)	Conc. Pt. (lbs)	L	00-08-05	00-08-05	Top	84	42			n/a
4		Conc. Pt. (lbs)	L	01-06-01	01-06-01	Top	261	486	502		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	99 ft-lbs	23,220 ft-lbs	0.4%	13	00-10-08
End Shear	187 lbs	11,571 lbs	1.6%	13	00-06-00
Span / Depth	1.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Beam	5" x 3-1/2"	627 lbs	6.7%	2.9%	Unspecified
B2 Wall/Plate	3-1/2" x 3-1/2"	1,938 lbs	29.6%	13.0%	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.

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.

Nail one ply to another with

3 1/2" spiral nails @ 4'

o.c., staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET0000372

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING(Flush Beams\B14\14973)**

November 15, 2018 11:42:08

BC CALC® Member Report

Dry | 1 span | No cant.

Build 6475

Job name:

File name: BARTON 4.mmdl

Address:

Description: 2ND FLOOR FRAMING(Flush Beams\B14\14973)

City, Province, Postal Code: CALEDON

Specifier:

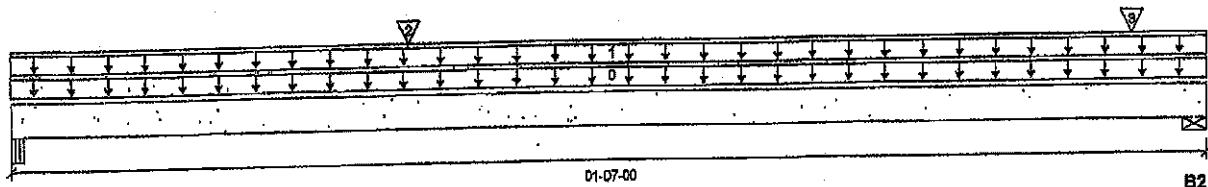
Customer:

Designer: PL

Code reports:

CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 01-07-00

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	129 / 0	163 / 0	141 / 0	
B2, 3-1/2"	292 / 0	566 / 0	606 / 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	01-07-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	E24(1002)	Unf. Lin. (lb/ft)	L	00-00-00	01-07-00	Top	33	111	102		n/a
2	J4(16180)	Conc. Pt. (lbs)	L	00-06-05	00-06-05	Top	99	56	50		n/a
3		Conc. Pt. (lbs)	L	01-05-13	01-05-13	Top	270	482	536		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	90 ft-lbs	23,220 ft-lbs	0.4%	13	00-10-10
End Shear	97 lbs	11,571 lbs	0.8%	13	00-06-00
Span / Depth	1.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 6" x 3-1/2"	546 lbs	5.8%	2.6%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	1,909 lbs	29.2%	12.8%	Unspecified

Notes

Calculations assume member is fully braced.

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

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

Nail one ply to another with
3 1/2" spiral nails @ 4"
o.c., staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET0000373

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLOOR FRAMING\Flush Beams\B15(111744)**

Dry | 1 span | No cant.

November 15, 2018 11:40:21

BC CALCO® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

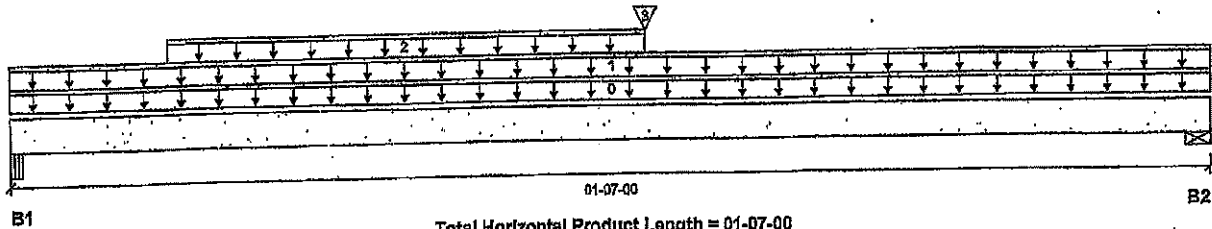
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Description: 2ND FLOOR FRAMING\Flush Beams\B15(111744)

Specifier:

Designer: PL

Company:

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B1, 6"	103 / 0	131 / 0	118 / 0	
B2, 3-1/2"	91 / 0	113 / 0	103 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.66	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-07-00	Top		10			00-00-00
1	31(19271)	Unf. Lin. (lb/ft)	L	00-00-00	01-07-00	Top	33	95	102		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	00-10-00	Top	6				n/a
3	J3(111767)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	138	77	60		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	127 ft-lbs	23,220 ft-lbs	0.5%	1	00-10-00
End Shear	94 lbs	11,571 lbs	0.8%	13	01-02-08
Span / Depth	1.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5" x 3-1/2"	444 lbs	4.8%	2.1%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	387 lbs	5.9%	2.6%	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 Q86.

BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.

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

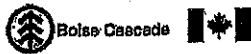
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Nail one ply to another with
3 1/2" spiral nails @ 4"
o.c. staggered in 2 rows



DESIGN CONFORMS TO OBC2012

ET00000374



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B1A\6011

Dry | 1 span | No cant.

April 12, 2019 11:25:40

BC CALC® Member Report

Build 8768

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

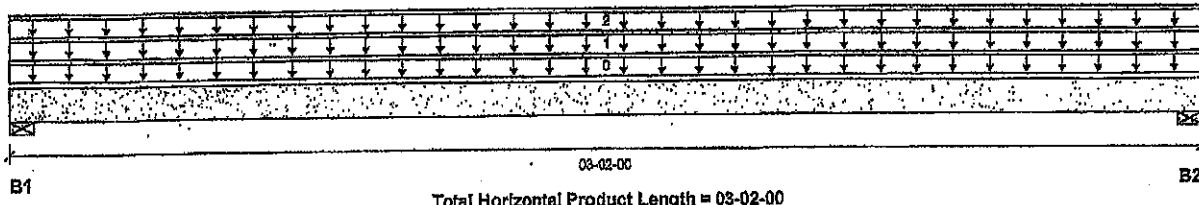
File name: BARTON 4 ELEV 1 DECK.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B1A\6011

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	91 / 0	197 / 0		
B2, 4"	91 / 0	197 / 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	03-02-00	Top	1.00	0.85	1.00	1.16	00-00-00
1	E10 (IS25)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top	31	101			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top	27	13			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	150 ft-lbs	15,093 ft-lbs	1.0%	0	01-07-00
End Shear	80 lbs	7,621 lbs	1.1%	0	01-01-08
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-07-00
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-07-00
Max Defl.	0"	n/a	n/a	4	01-07-00
Span / Depth	3.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	275 lbs	5.7%	2.5%	Unspecified
B2	Wall/Plate 4" x 3-1/2"	275 lbs	5.7%	2.5%	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.

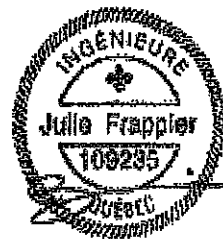
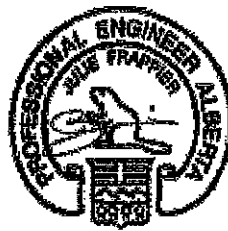
Importance Factor: Normal Part code: Part 9.

Member has no side loads.

Nail one ply to another with
3 1/2" spiral nails @ 4"
o.c, staggered in 2 rows



DESIGN CONFORMS TO OBC2012



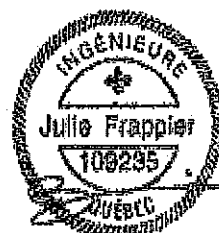
Maximum Floor Spans

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 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-1274C.



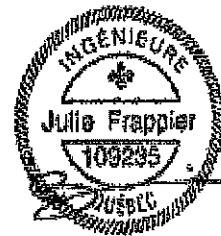
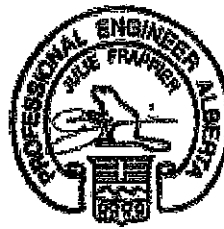
Maximum Floor Spans

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'-4"	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'-5"	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.



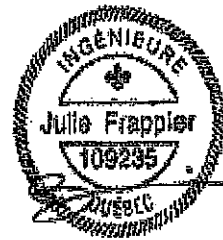
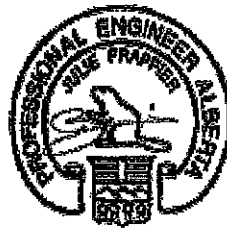
Maximum Floor Spans

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"
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'-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"
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	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"
14"	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	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"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	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 I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

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

Depth	Series	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'-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
	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
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
14"	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
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
16"	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'-8"	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	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
11-7/8"	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
	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

- 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 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-1274C.

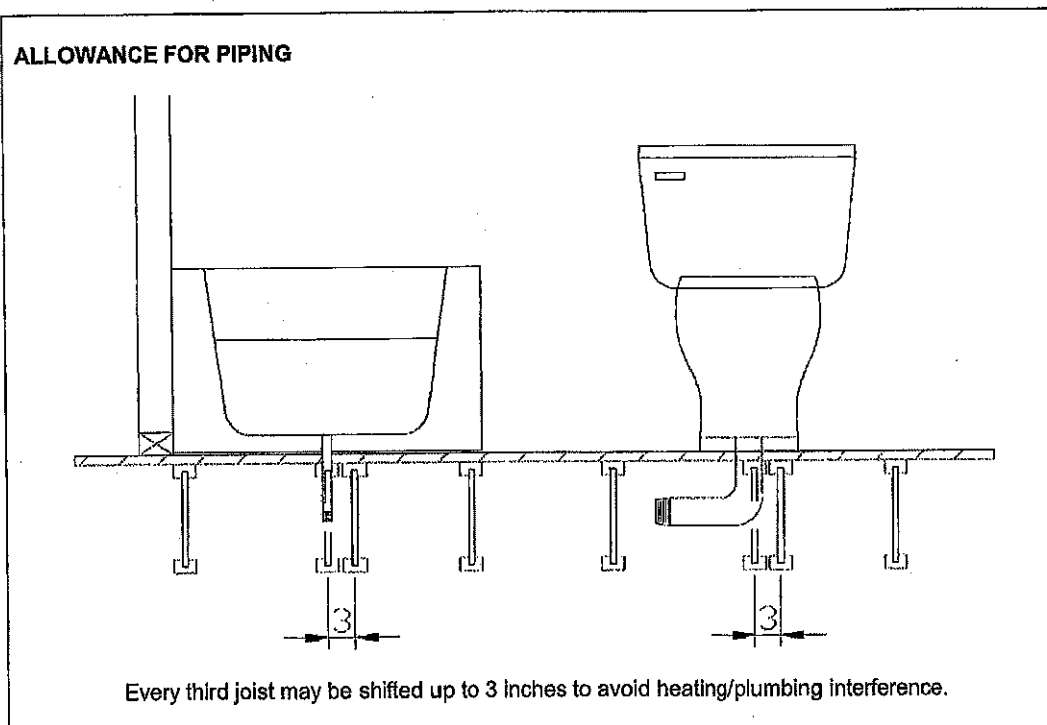


Allowance for Piping (Installation Notes)

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.

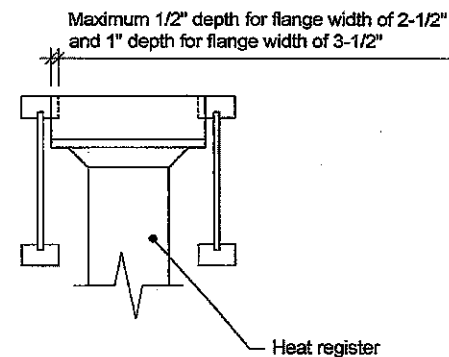
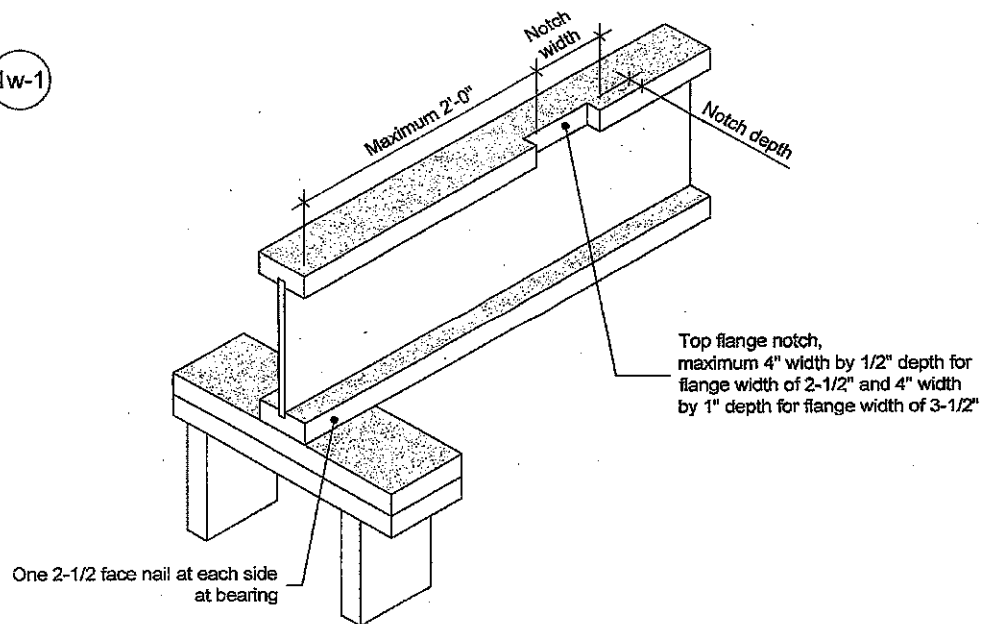
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

1w-1



Notes:

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

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

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

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TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

DATE

2018-04-10

NUMBER

1w-1