



CITY OF BRAMPTON – BUILDING DIVISION

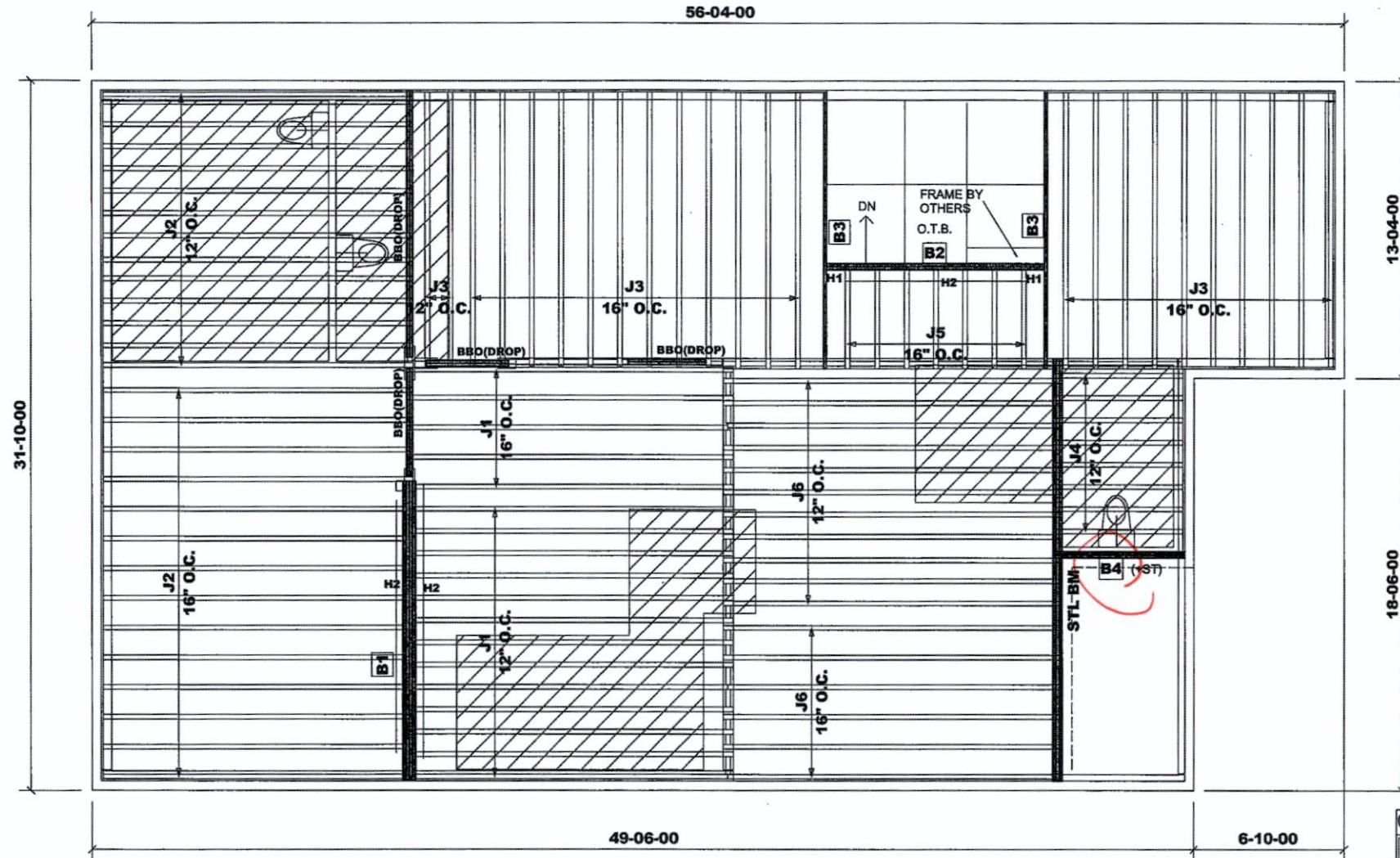
FLOOR TRUSSES

APPLICATION NO.:	19-567619 000 00 CM	FOLDER TYP.:	CM
DESCRIPTION OF PROJECT:	PLAN M2039	SUB TYP.:	Single Family Detached
BUILDERS NAME:	GOLD PARK HOMES		
PLAN NUMBER:		MODEL NAME:	2017/38-10

CERTIFIED MODEL DOCUMENTS

PAGES:	DESCRIPTION OF DOCUMENTS		
C	FLOOR JOISTS, BEAMS & COMPONENTS:		
	ELEVATION	DESCRIPTION:	COMMENTS
2		
3		
		
		
		
		
		
		
		
		
		
		
		
ENTERED BY:	DATE:	yyyy/mm/dd

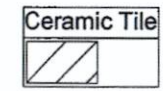
All work shall conform to the
Building Code of Reg 332/17



Products				
PlotID	Length	Product	Plies	Net Qty
J1	15-00-00	9 1/2" NI-20	1	18
J2	14-00-00	9 1/2" NI-20	1	28
J3	13-00-00	9 1/2" NI-20	1	24
J4	6-00-00	9 1/2" NI-20	1	8
J5	5-00-00	9 1/2" NI-20	1	7
J6	16-00-00	9 1/2" NI-40x	1	17
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4
B3	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
Ca1	158-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	58-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	2		HGUS410
H2	29		LT259

RIMBOARD
1- 1/8" X 9 1/2" O.S.B.
SUBFLOOR - 5/8" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS



Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

Second Floor Framing

MODEL: 38-10 - ELEV.A

Do not scale - refer to architectural plans for dimensions

FIRM BCIN 113884
DESIGNER BCIN 25593

Engineered floor joists shall be installed
in accordance with the supplier's layout and
specifications forming part of the permit drawings.

SE004694 - SE004712

JT/PL: 39002/104573

Builder: Gold Park

Location: Brampton

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 314131

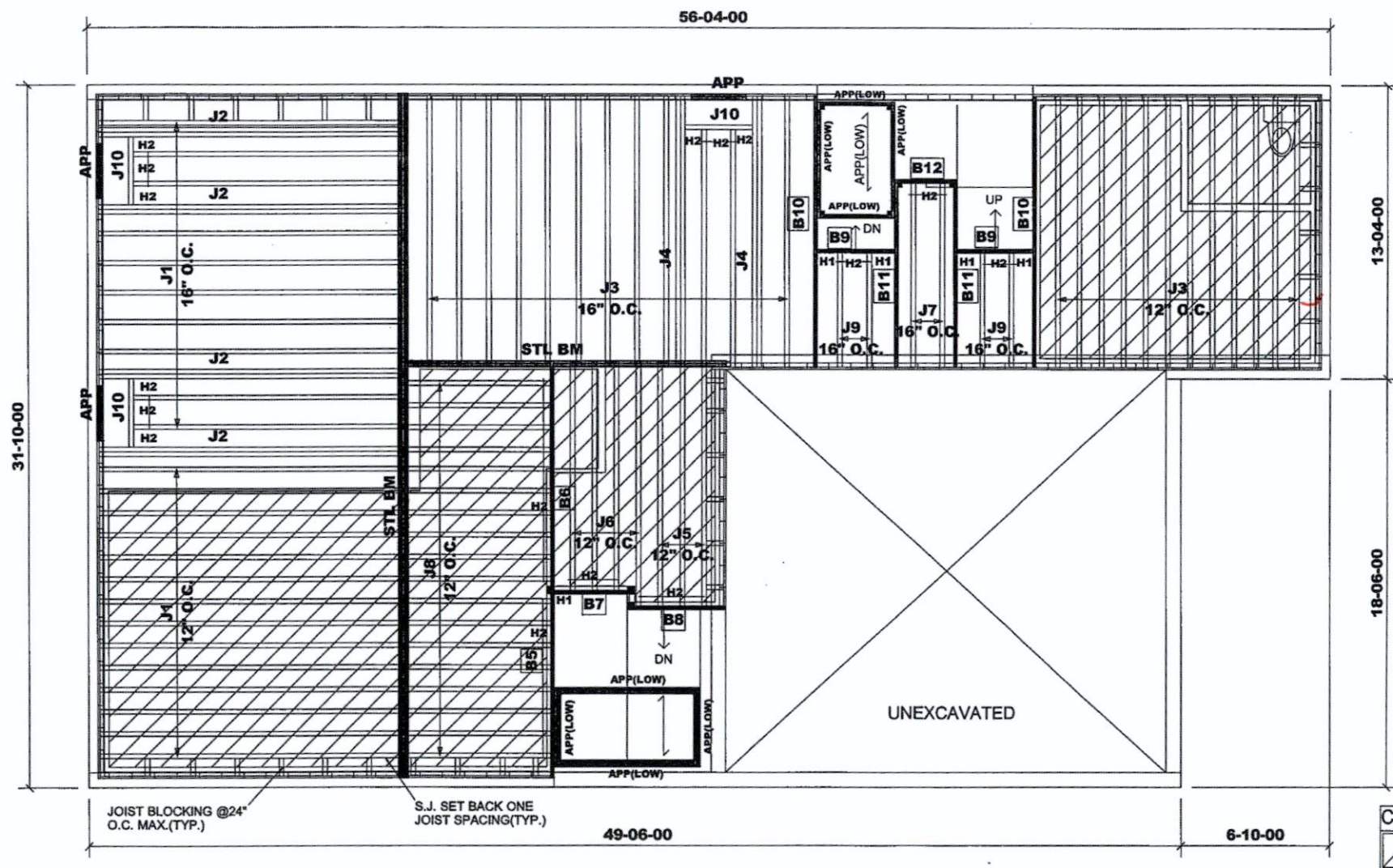
Project: Encore 2

Date: October 29, 2019

Sheet: 1 of 8

Maple, Ontario

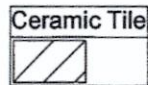
Home Lumber



Products				
PlotID	Length	Product	Piles	Net Qty
J1	14'-00"-00	9 1/2" NI-20	1	24
J2	14'-00"-00	9 1/2" NI-20	2	8
J3	13'-00"-00	9 1/2" NI-20	1	24
J4	13'-00"-00	9 1/2" NI-20	2	4
J5	12'-00"-00	9 1/2" NI-20	1	3
J6	11'-00"-00	9 1/2" NI-20	1	4
J7	9'-00"-00	9 1/2" NI-20	1	2
J8	7'-00"-00	9 1/2" NI-20	1	18
J9	6'-00"-00	9 1/2" NI-20	1	4
J10	4'-00"-00	9 1/2" NI-20	1	3
B10	13'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B6	11'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11	9'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B5	9'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	5'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	4'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	4'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B12	3'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
Ca1	148'-00"-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	62'-00"-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	5		HUS1.81/10
H2	49		LT259

RIMBOARD
1- 1/8" X 9 1/2" O.S.B.
SUBFLOOR - 5/8" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS



Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

MODEL: 38-10 - ELEV.A

Do not scale - refer to architectural plans for dimensions

FIRM BCIN 113884
DESIGNER BCIN 25593

JT/PL: 39002/104573

Builder: Gold Park

Location: Brampton

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 314131

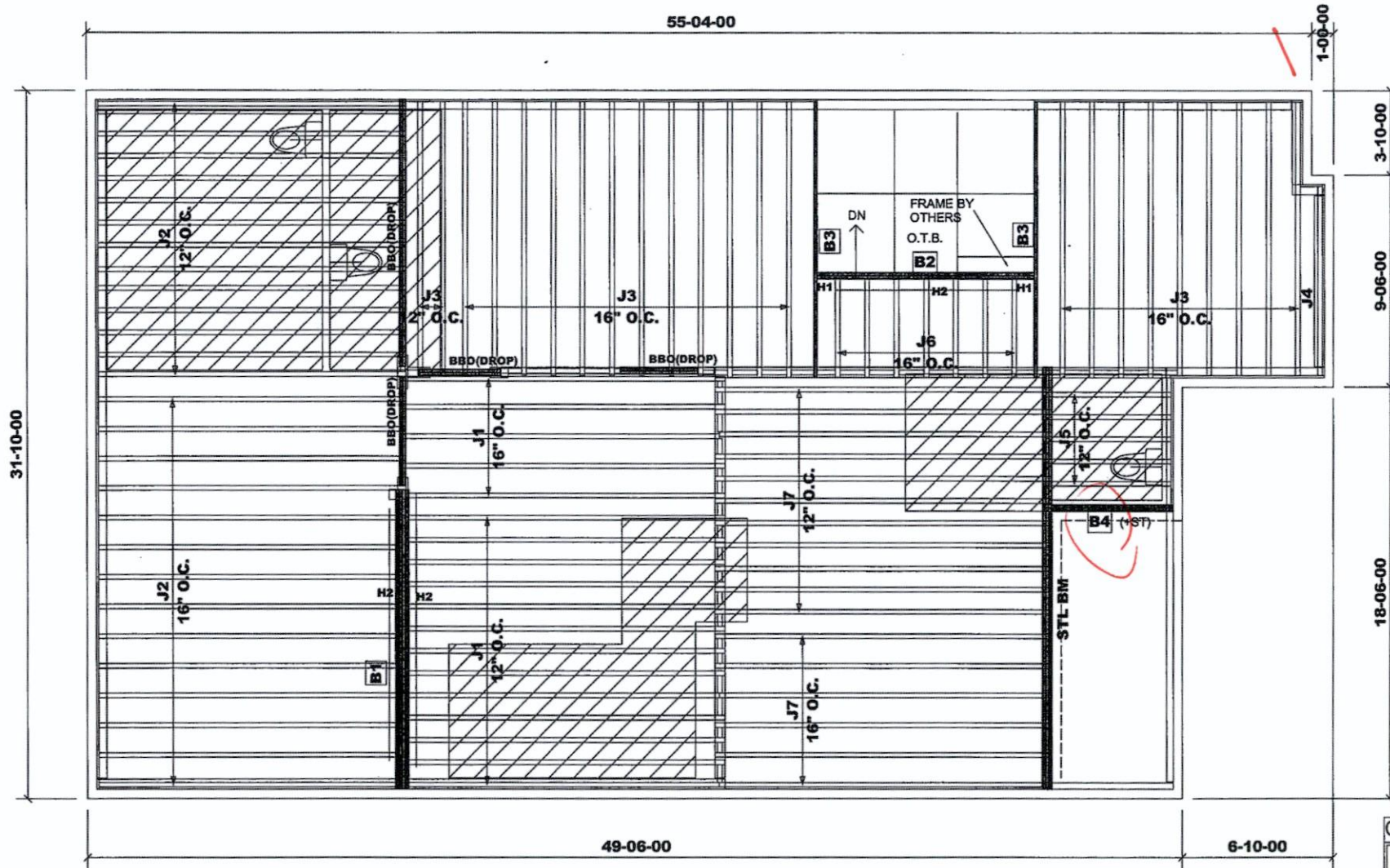
Project: Encore 2

Date: October 29, 2019

Sheet: 2 of 8

Maple, Ontario

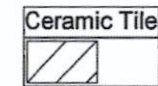
Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	15-00-00	9 1/2" NI-20	1	18
J2	14-00-00	9 1/2" NI-20	1	28
J3	13-00-00	9 1/2" NI-20	1	23
J4	9-00-00	9 1/2" NI-20	1	1
J5	6-00-00	9 1/2" NI-20	1	5
J6	5-00-00	9 1/2" NI-20	1	7
J7	16-00-00	9 1/2" NI-40x	1	17
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	4	4
B3	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
Ca1	158-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	56-00-00	9 1/2" NI-20	1	1

Connector Summary				
PlotID	Qty	Manuf	Product	
H1	2		HGUS410	
H2	29		LT259	

RIMBOARD
 1- 1/8" X 9 1/2" O.S.B.
 SUBFLOOR - 5/8" GLUE & NAILED
 APP - AS PER PLAN
 BBO - BEAM BY OTHERS



Ceramic tile application as per O.B.C. 9.30.6
 Blocking panels are required over all interior supports
 Squash blocks are required under concentrated loads.

Second Floor Framing

MODEL: 38-10 - ELEV.B

Do not scale - refer to architectural plans for dimensions

FIRM BCIN 113884
 DESIGNER BCIN 25593

AL

JT/PL: 39002/104573

Builder: Gold Park

Location: Brampton

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 314131

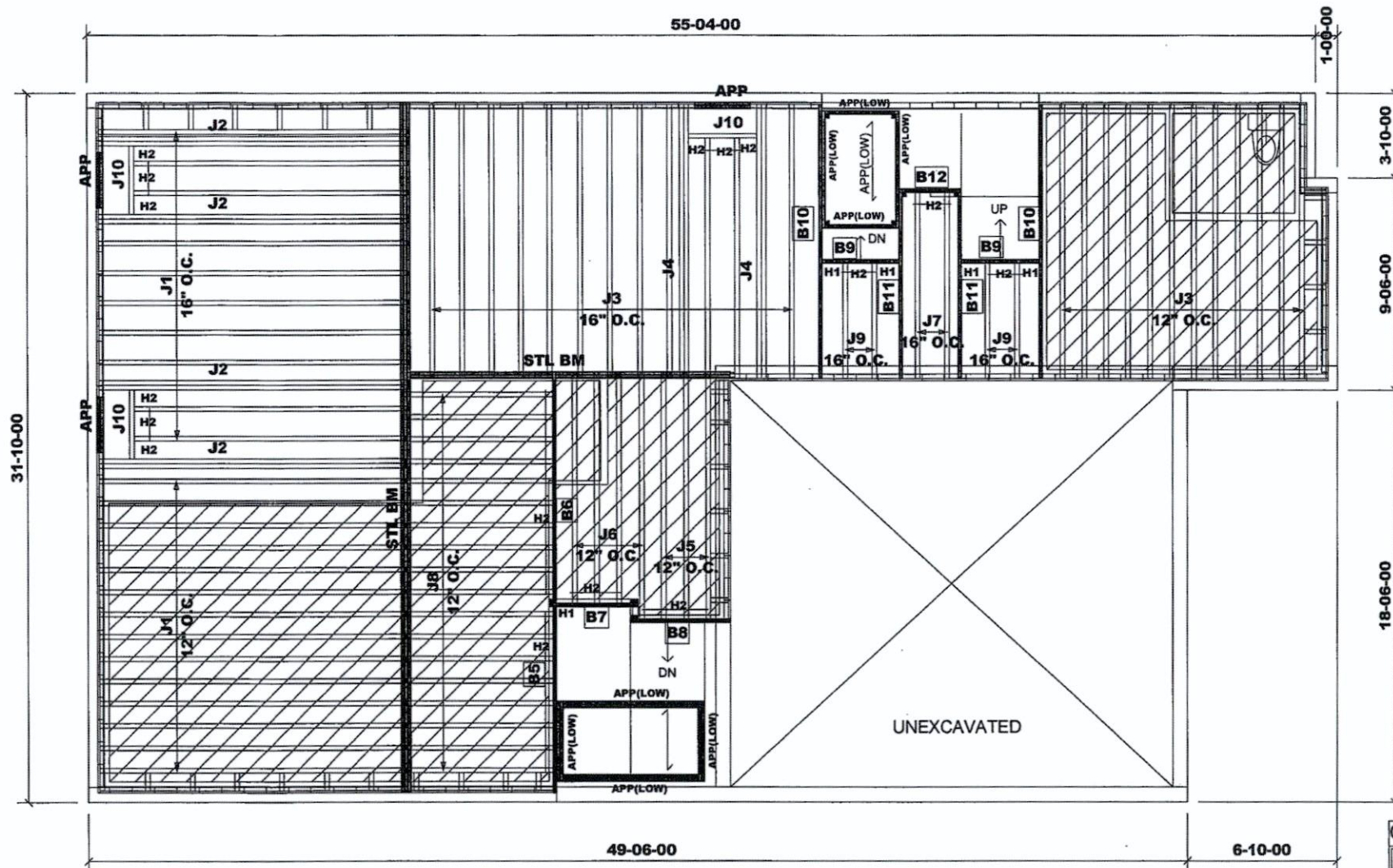
Project: Encore 2

Date: October 29, 2019

Sheet: 3 of 8

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Piles	Net Qty
J1	14-00-00	9 1/2" NI-20	1	24
J2	14-00-00	9 1/2" NI-20	2	8
J3	13-00-00	9 1/2" NI-20	1	24
J4	13-00-00	9 1/2" NI-20	2	4
J5	12-00-00	9 1/2" NI-20	1	3
J6	11-00-00	9 1/2" NI-20	1	4
J7	9-00-00	9 1/2" NI-20	1	2
J8	7-00-00	9 1/2" NI-20	1	18
J9	6-00-00	9 1/2" NI-20	1	4
J10	4-00-00	9 1/2" NI-20	1	3
B10	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B6	11-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B5	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	5-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B12	3-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
Ca1	148-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	62-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	5		HUS1.81/10
H2	49		LT259

RIMBOARD
1- 1/8" X 9 1/2" O.S.B.
SUBFLOOR - 5/8" GLUE & NAILED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
Blocking panels are required over all interior supports
Squash blocks are required under concentrated loads.

First Floor Framing

MODEL: 38-10 - ELEV.B

Do not scale - refer to architectural plans for dimensions

FIRM BCIN 113884
DESIGNER BCIN 25593

JT/PL: 39002/104573

Builder: Gold Park

Location: Brampton

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 314131

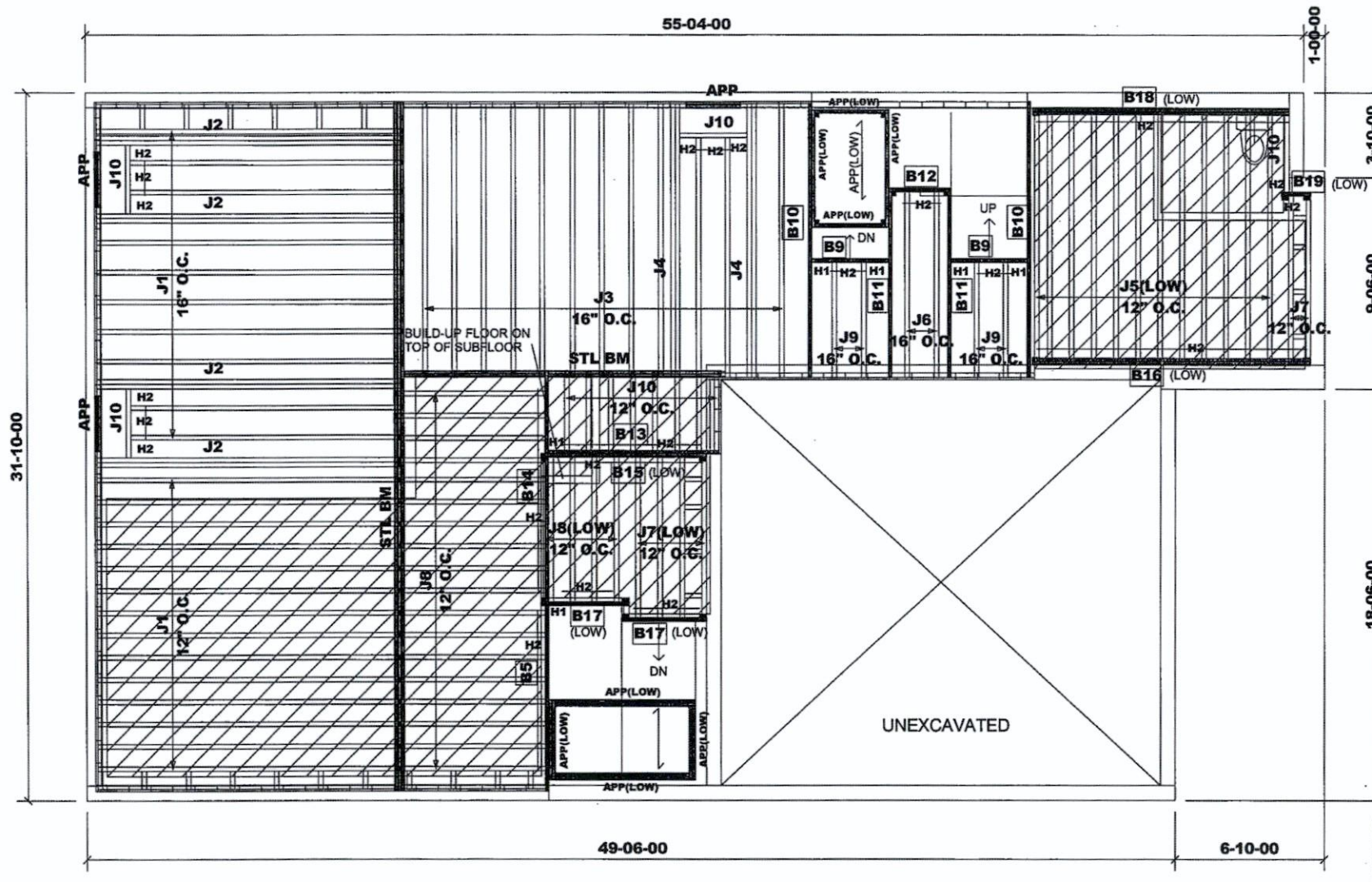
Project: Encore 2

Date: October 29, 2019

Sheet: 4 of 8

Maple, Ontario

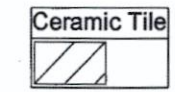
Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	24
J2	14-00-00	9 1/2" NI-20	2	8
J3	13-00-00	9 1/2" NI-20	1	12
J4	13-00-00	9 1/2" NI-20	2	4
J5	11-00-00	9 1/2" NI-20	1	12
J6	9-00-00	9 1/2" NI-20	1	2
J7	8-00-00	9 1/2" NI-20	1	6
J8	7-00-00	9 1/2" NI-20	1	23
J9	6-00-00	9 1/2" NI-20	1	4
J10	4-00-00	9 1/2" NI-20	1	12
B10	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B16	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B18	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	11-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B5	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B9	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B12	3-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B19	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
Ca1	110-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	56-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	5		HUS1.81/10
H2	92		LT259

RIMBOARD
 1- 1/8" X 9 1/2" O.S.B.
 SUBFLOOR - 5/8" GLUE & NAILED
 APP - AS PER PLAN
 BBO - BEAM BY OTHERS



Ceramic tile application as per O.B.C. 9.30.6
 Blocking panels are required over all interior supports
 Squash blocks are required under concentrated loads.

MODEL: 38-10 - ELEV.B
 W/SUNKEN(LOW)

First Floor Framing
 Do not scale - refer to architectural plans for dimensions

FIRM BCIN 113884
 DESIGNER BCIN 25593

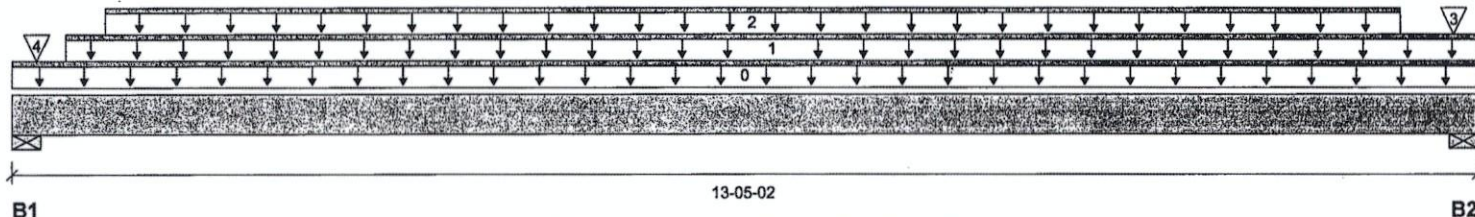
2nd Floor - Supply/BOM\Flush Beams\B1(i33338)

Dry | 1 span | No cant.

October 29, 2019 09:52:33

BC CALC® Member Report

Build 7118		
Job name:	39002(38-10)	File name: 314131-A.mmdl
Address:	Encore 2	Description: 2nd Floor - Supply/BOM\Flush Beams\B1(i33338)
City, Province, Postal Code:	Brampton, ON	Specifier:
Customer:	Gold Park	Designer: NL
Code reports:	CCMC 12472-R	Company: Alpa Roof Trusses



Total Horizontal Product Length = 13-05-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	3,368 / 0	2,244 / 0		
B2, 5-1/8"	3,762 / 0	2,410 / 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	13-05-02	Top		19			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-06-00	13-05-02	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-06	12-08-06	Top	574	286			n/a
3	J1(i33499)	Conc. Pt. (lbs)	L	13-02-06	13-02-06	Top	341	171			n/a
4	E7(i31460)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		59			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	26,139 ft-lbs	48,297 ft-lbs	54.1 %	1	06-10-06
End Shear	7,809 lbs	23,142 lbs	33.7 %	1	12-02-08
Total Load Deflection	L/283 (0.537")	n/a	84.7 %	4	06-10-06
Live Load Deflection	L/464 (0.327")	n/a	77.5 %	5	06-10-06
Max Defl.	0.537"	n/a	n/a	4	06-10-06
Span / Depth	16.0				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 7"	7,856 lbs	33.2 %	16.7 %	Spruce-Pine-Fir
B2	Wall/Plate 5-1/8" x 7"	8,656 lbs	39.2 %	19.8 %	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume 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.
 Beams 7 inches wide will be assumed to be either top-loaded only, or equally loaded from each side.
 Bolts are assumed to be Grade A307 or Grade 2 or higher.

Nail one ply to another with
 3 1/2" spiral nails @ 12"
 o.c, staggered in 2 rows

plus SDW22634 SIMPSON WOOD SCREW
 @ 12" o.c., STAGGERED IN 2 ROWS.



BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-A.mmdl

Address: Encore 2

Description: 2nd Floor - Supply/BOM/Flush Beams\B2(i33663)

City, Province, Postal Code: Brampton, ON

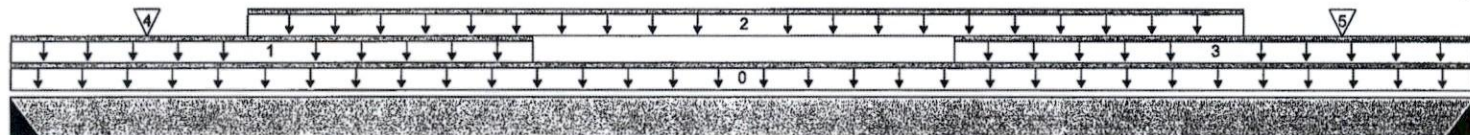
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



B1

09-10-00

B2

Total Horizontal Product Length = 09-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	800 / 0	402 / 0		
B2, 2"	616 / 0	333 / 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	09-10-00	Top		10			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	120	45			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-07-02	08-03-02	Top	95	48			n/a
3	User Load	Unf. Lin. (lb/ft)	L	06-04-00	09-10-00	Top	40	15			n/a
4	J5(i33739)	Conc. Pt. (lbs)	L	00-11-02	00-11-02	Top	111	56			n/a
5	J5(i33711)	Conc. Pt. (lbs)	L	08-11-02	08-11-02	Top	110	55			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,410 ft-lbs	23,220 ft-lbs	14.7 %	1	04-11-02
End Shear	1,455 lbs	11,571 lbs	12.6 %	1	00-11-08
Total Load Deflection	L/999 (0.082")	n/a	n/a	4	04-09-02
Live Load Deflection	L/999 (0.053")	n/a	n/a	5	04-09-02
Max Defl.	0.082"	n/a	n/a	4	04-09-02
Span / Depth	12.2				


Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger 2" x 3-1/2"	1,702 lbs	n/a	19.9 %	Hanger
B2	Hanger 2" x 3-1/2"	1,341 lbs	n/a	15.7 %	Hanger

Cautions
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

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 @ 12"
 o.c, staggered in 2 rows

SE004695

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-A.mmdl

Address: Encore 2

Description: 2nd Floor - Supply/BOM\Flush Beams\B3(i33781)

City, Province, Postal Code: Brampton, ON

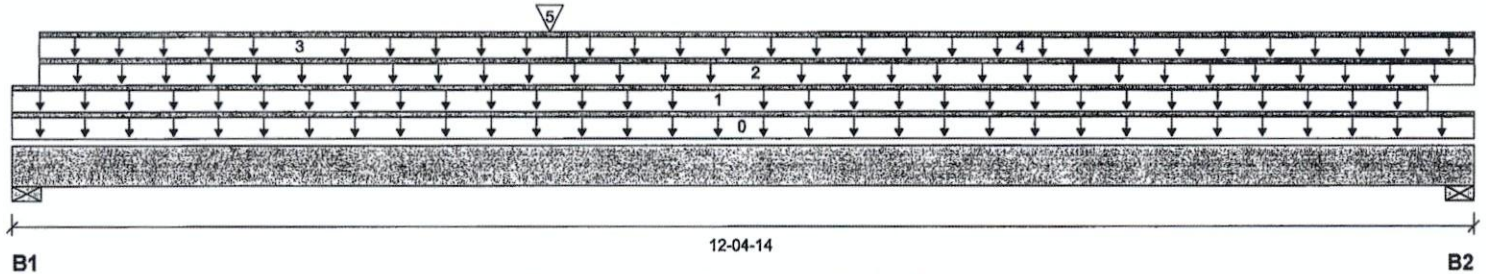
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 12-04-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	864 / 0	870 / 0		
B2, 4-3/8"	579 / 0	694 / 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	12-04-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	12-00-00	Top	20	75			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	12-04-14	Top	24	12			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	04-08-08	Top	20	10			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	04-08-08	12-04-14	Top	3				n/a
5	B2(i33663)	Conc. Pt. (lbs)	L	04-06-12	04-06-12	Top	796	401			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,710 ft-lbs	11,610 ft-lbs	66.4 %	1	04-06-12
End Shear	2,125 lbs	5,785 lbs	36.7 %	1	01-03-00
Total Load Deflection	L/283 (0.497")	n/a	84.9 %	4	05-11-04
Live Load Deflection	L/557 (0.252")	n/a	64.7 %	5	05-11-04
Max Defl.	0.497"	n/a	n/a	4	05-11-04
Span / Depth	14.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	2,383 lbs	40.2 %	20.3 %	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 1-3/4"	1,735 lbs	36.8 %	18.6 %	Spruce-Pine-Fir

Notes

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

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

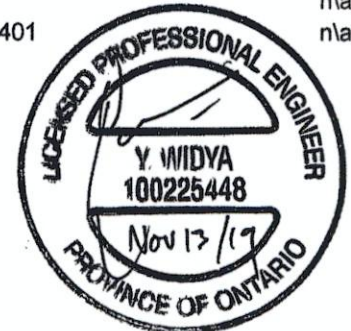
Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9


Disclosure

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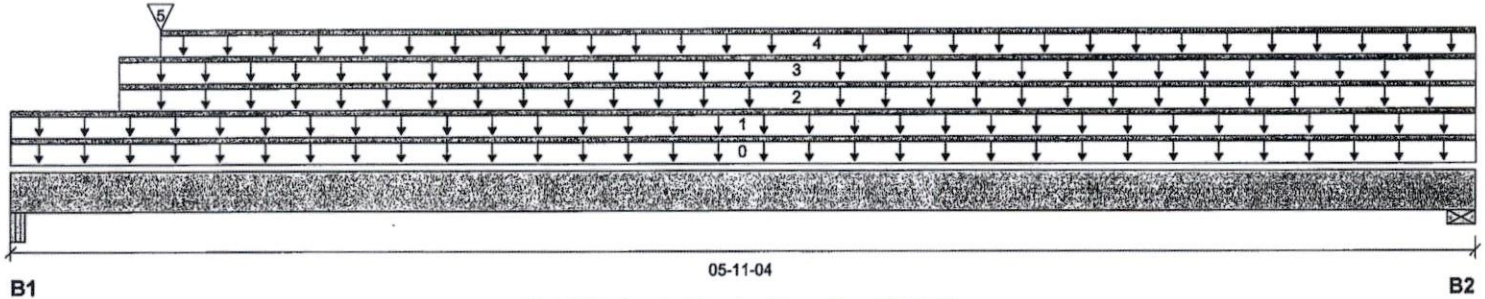
2nd Floor - Supply/BOM\Flush Beams\B4(i33640)

Dry | 1 span | No cant.

October 29, 2019 09:52:33

 BC CALC® Member Report
 Build 7118

 Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314131-A.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B4(i33640)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


Total Horizontal Product Length = 05-11-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	64 / 0	1,405 / 0	1,726 / 0	
B2, 3-1/2"	69 / 0	908 / 0	921 / 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	05-11-04	Top		10			00-00-00
1	E13(i31462)	Unf. Lin. (lb/ft)	L	00-00-00	05-11-04	Top		101			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-05-04	05-11-04	Top		14	23		n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	05-11-04	Top	24	12			n/a
4	E13(i31462)	Unf. Lin. (lb/ft)	L	00-07-04	05-11-04	Top		168	280		n/a
5	E13(i31462)	Conc. Pt. (lbs)	L	00-07-04	00-07-04	Top		616	1,026		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,320 ft-lbs	23,220 ft-lbs	14.3 %	13	02-11-02
End Shear	2,342 lbs	11,571 lbs	20.2 %	13	01-02-12
Total Load Deflection	L/999 (0.025")	n/a	n/a	35	02-11-13
Live Load Deflection	L/999 (0.013")	n/a	n/a	51	02-11-13
Max Defl.	0.025"	n/a	n/a	35	02-11-13
Span / Depth	6.7				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	4,409 lbs	39.0 %	19.7 %	Unspecified
B2 Wall/Plate	3-1/2" x 3-1/2"	2,586 lbs	34.3 %	17.3 %	Spruce-Pine-Fir

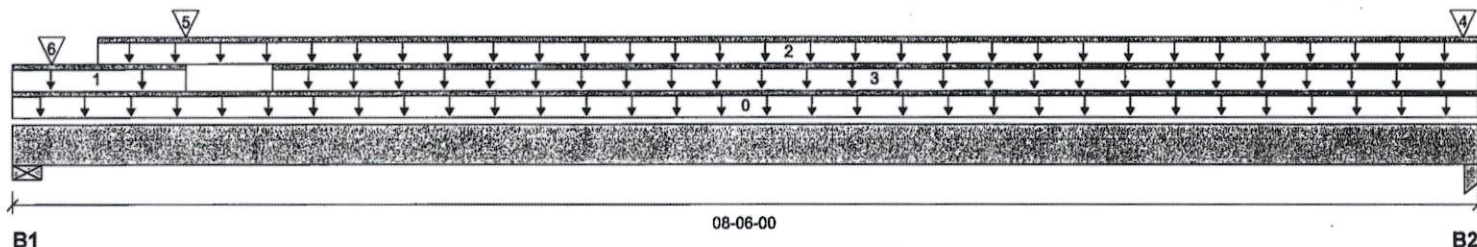
 Nail one ply to another with
 3 1/2" spiral nails @ 6"
 o.c., staggered in 2 rows

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314131-A.mmdl
 Description: 1st Floor - Supply/BOM/Flush Beams/B5(i33851)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 08-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	525 / 0	545 / 0		
B2, 2"	841 / 0	805 / 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	08-06-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	Top	16				n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-06-00	08-06-00	Top		60			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-00	08-06-00	Top	134	68			n/a
4	B7(i33979)	Conc. Pt. (lbs)	L	08-04-14	08-04-14	Top	274	247			n/a
5	J8(i33882)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	Top	127	64			n/a
6	E18(i31747)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		34			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,112 ft-lbs	11,610 ft-lbs	26.8 %	1	04-00-00
End Shear	1,391 lbs	5,785 lbs	24.0 %	1	01-00-08
Total Load Deflection	L/999 (0.109")	n/a	n/a	4	04-03-00
Live Load Deflection	L/999 (0.055")	n/a	n/a	5	04-03-00
Max Defl.	0.109"	n/a	n/a	4	04-03-00
Span / Depth	10.4				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 1-3/4"	1,469 lbs	45.5 %	22.9 %	Spruce-Pine-Fir
B2	Column 2" x 1-3/4"	2,268 lbs	62.1 %	53.1 %	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume 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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SE004698

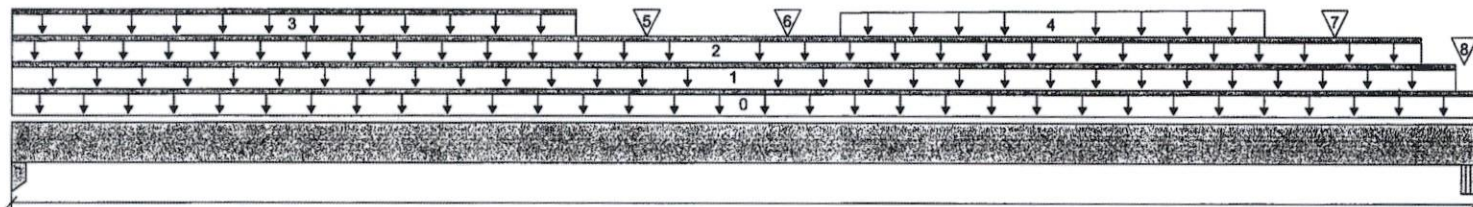
1st Floor - Supply/BOM/Flush Beams/B6(i33905)

Dry | 1 span | No cant.

October 29, 2019 09:52:33

BC CALC® Member Report

Build 7118		
Job name:	39002(38-10)	File name: 314131-A.mmdl
Address:	Encore 2	Description: 1st Floor - Supply/BOM/Flush Beams/B6(i33905)
City, Province, Postal Code:	Brampton, ON	Specifier:
Customer:	Gold Park	Designer: NL
Code reports:	CCMC 12472-R	Company: Alpa Roof Trusses



B1

10-04-12

B2

Total Horizontal Product Length = 10-04-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	744 / 0	702 / 0		
B2, 3-1/2"	682 / 0	665 / 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	10-04-12	Top		5			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-00	Top	18	9			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	10-00-00	Top		60			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	Top	132	66			n/a
4	Smoothed Load	Trapezoidal (lb/ft)	L	05-10-08	08-10-08	Top	122	61			n/a
							139	69			
5	J8(i33849)	Conc. Pt. (lbs)	L	04-06-00	04-06-00	Top	93	41			n/a
6	J8(i33894)	Conc. Pt. (lbs)	L	05-06-00	05-06-00	Top	124	62			n/a
7	J8(i33896)	Conc. Pt. (lbs)	L	09-04-08	09-04-08	Top	67	34			n/a
8	9(i31474)	Conc. Pt. (lbs)	L	10-03-12	10-03-12	Top	37	28			n/a

Controls Summary

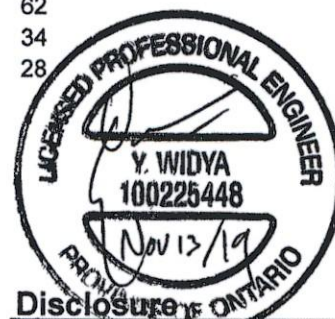
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,830 ft-lbs	11,610 ft-lbs	41.6 %	1	05-06-00
End Shear	1,716 lbs	5,785 lbs	29.7 %	1	00-11-08
Total Load Deflection	L/472 (0.256")	n/a	50.8 %	4	05-01-08
Live Load Deflection	L/920 (0.131")	n/a	39.1 %	5	05-01-08
Max Defl.	0.256"	n/a	n/a	4	05-01-08
Span / Depth	12.7				

Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supports	Dim. (LxW)		Demand			
B1	Column	2" x 1-3/4"	1,993 lbs	54.6 %	46.7 %	Unspecified
B2	Beam	3-1/2" x 1-3/4"	1,854 lbs	49.2 %	24.8 %	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



Disclosure
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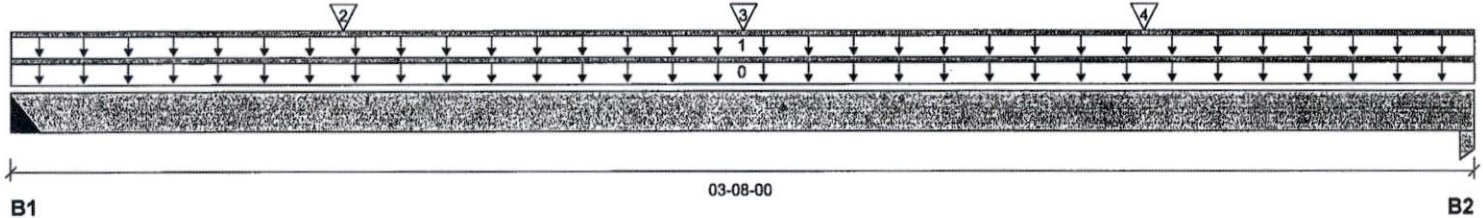
SE004699

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314131-A.mmdl
 Description: 1st Floor - Supply/BOM/Flush Beams\B7(i33979)
 Specifier:
 Designer: NL
 Company: Alpha Roof Trusses


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	297 / 0	262 / 0		
B2, 4"	334 / 0	293 / 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	03-08-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-08-00	Top		60			n/a
2	J6(i33983)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	199	99			n/a
3	J6(i33980)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	Top	211	106			n/a
4	J6(i33982)	Conc. Pt. (lbs)	L	02-10-00	02-10-00	Top	210	105			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	758 ft-lbs	11,610 ft-lbs	6.5 %	1	01-10-00
End Shear	625 lbs	5,785 lbs	10.8 %	1	00-11-08
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	01-09-00
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-09-00
Max Defl.	0.004"	n/a	n/a	4	01-09-00
Span / Depth	4.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	772 lbs	n/a	18.1 %	Hanger
B2	Column 4" x 1-3/4"	867 lbs	11.9 %	10.2 %	Unspecified

Cautions
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


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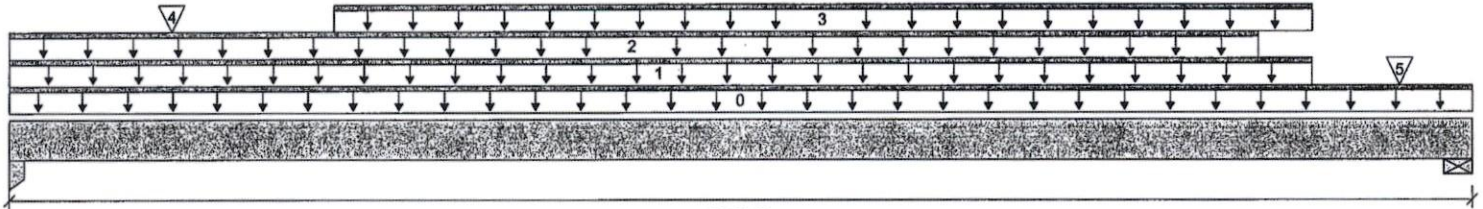
SE004700

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314131-A.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B8(i33964)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 04-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	771 / 0	499 / 0		
B2, 3-1/2"	658 / 0	430 / 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	04-06-00	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	Top		60			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	Top	120	45			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	01-00-00	04-00-00	Top	224	112			n/a
4	J5(i33976)	Conc. Pt. (lbs)	L	00-06-00	00-06-00	Top	216	108			n/a
5	5(i31471)	Conc. Pt. (lbs)	L	04-03-04	04-03-04	Top	82	51			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,592 ft-lbs	11,610 ft-lbs	13.7 %	1	02-06-00
End Shear	1,282 lbs	5,785 lbs	22.2 %	1	03-05-00
Total Load Deflection	L/999 (0.013")	n/a	n/a	4	02-03-00
Live Load Deflection	L/999 (0.008")	n/a	n/a	5	02-03-00
Max Defl.	0.013"	n/a	n/a	4	02-03-00
Span / Depth	5.1				


Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports	Dim. (LxW)	Demand				Material
B1	Column	4" x 1-3/4"	1,780 lbs	24.4 %	20.8 %	Unspecified
B2	Wall/Plate	3-1/2" x 1-3/4"	1,525 lbs	40.5 %	20.4 %	Spruce-Pine-Fir

Notes

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

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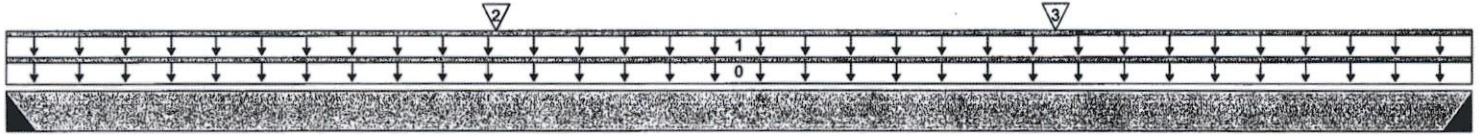
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8E004701

BC CALC® Member Report

Build 7118

 Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314131-A.mimdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B9(i33931)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


B1

03-06-00

B2

Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	339 / 0	151 / 0		
B2, 2"	348 / 0	156 / 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	03-06-00	Top	5				00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	120	45			n/a
2	J9(i33945)	Conc. Pt. (lbs)	L	01-02-00	01-02-00	Top	138	69			n/a
3	J9(i33951)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	Top	129	64			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	607 ft-lbs	11,610 ft-lbs	5.2 %	1	01-08-00
End Shear	485 lbs	5,785 lbs	8.4 %	1	02-06-08
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-09-00
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-09-00
Max Defl.	0.003"	n/a	n/a	4	01-09-00
Span / Depth	4.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	697 lbs	n/a	16.3 %	Hanger
B2	Hanger 2" x 1-3/4"	718 lbs	n/a	16.8 %	Hanger

Cautions
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


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SE009702



1st Floor - Supply/BOM/Flush Beams/B10(i33960)

Dry | 1 span | No cant.

October 29, 2019 09:52:33

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-A.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM/Flush Beams/B10(i33960)

City, Province, Postal Code: Brampton, ON

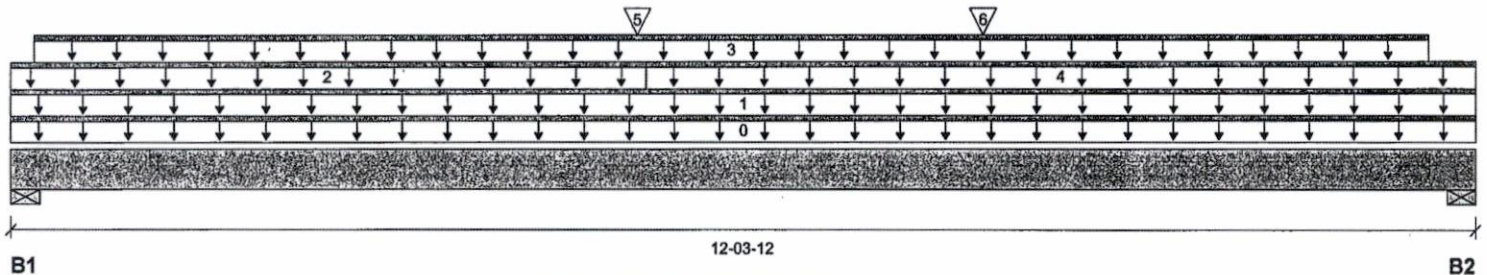
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	686 / 0	734 / 0		
B2, 1-7/8"	700 / 0	712 / 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	12-03-12	Top		5			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-03-12	Top	22	11			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-03-14	Top	21	11			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-02-06	11-10-14	Top	20	75			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-03-14	12-03-12	Top	3				n/a
5	B9(i33931)	Conc. Pt. (lbs)	L	05-03-00	05-03-00	Top	348	156			n/a
6	User Load	Conc. Pt. (lbs)	L	08-01-14	08-01-14	Top	400	150			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,044 ft-lbs	11,610 ft-lbs	60.7 %	1	05-08-02
End Shear	1,884 lbs	5,785 lbs	32.6 %	1	11-04-06
Total Load Deflection	L/275 (0.527")	n/a	87.2 %	4	06-02-08
Live Load Deflection	L/533 (0.272")	n/a	67.6 %	5	06-02-08
Max Defl.	0.527"	n/a	n/a	4	06-02-08
Span / Depth	15.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	1,946 lbs	76.1 %	38.4 %	Spruce-Pine-Fir
B2	Wall/Plate 1-7/8" x 1-3/4"	1,940 lbs	96.1 %	48.5 %	Spruce-Pine-Fir

Notes

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

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

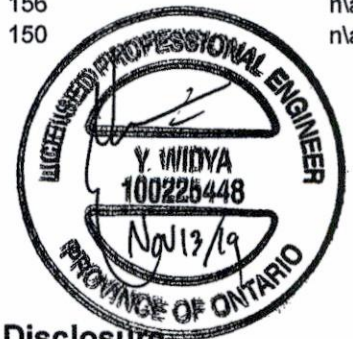
Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9



Disclosure

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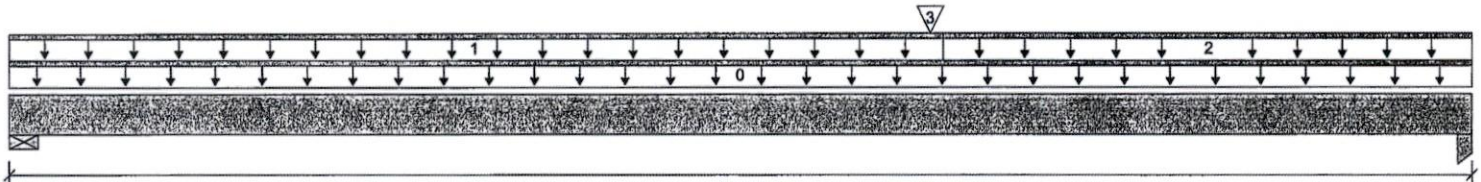
SE 004703

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314131-A.mmdl
 Description: 1st Floor - Supply/BOM/Flush Beams/B11(i33925)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 08-04-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	335 / 0	181 / 0		
B2, 2-1/4"	378 / 0	198 / 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	08-04-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-03-14	Top	53	27			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-03-14	08-04-02	Top	30	15			n/a
3	B9(i33931)	Conc. Pt. (lbs)	L	05-03-00	05-03-00	Top	339	151			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,084 ft-lbs	11,610 ft-lbs	18.0 %	1	05-03-00
End Shear	746 lbs	5,785 lbs	12.9 %	1	07-04-06
Total Load Deflection	L/999 (0.063")	n/a	n/a	4	04-03-13
Live Load Deflection	L/999 (0.041")	n/a	n/a	5	04-03-13
Max Defl.	0.063"	n/a	n/a	4	04-03-13
Span / Depth	10.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	729 lbs	28.5 %	14.4 %	Spruce-Pine-Fir
B2	Column 2-1/4" x 1-3/4"	814 lbs	19.8 %	17.0 %	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: 00-00-00, Bottom: 00-00-00.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9


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SE009704

1st Floor - Supply/BOM\Flush Beams\B12(i34067)

Dry | 1 span | No cant.

October 29, 2019 09:56:05

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-A.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B12(i34067)

City, Province, Postal Code: Brampton, ON

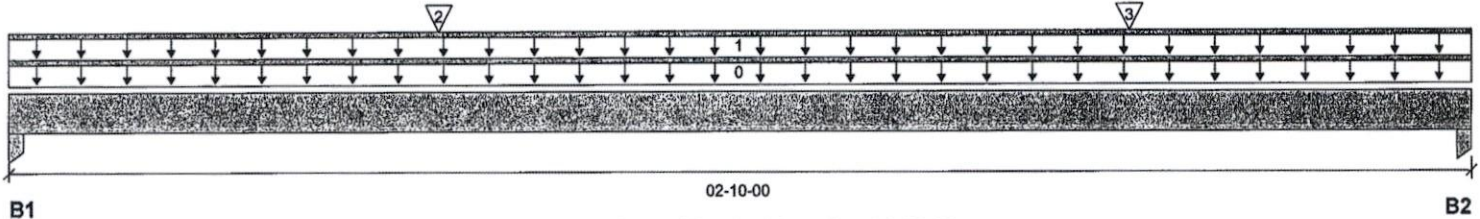
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 02-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	166 / 0	175 / 0		
B2, 4"	184 / 0	184 / 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	02-10-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	02-10-00	Top		60			n/a
2	J7(i34083)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	182	91			n/a
3	J7(i34091)	Conc. Pt. (lbs)	L	02-02-00	02-02-00	Top	168	84			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	239 ft-lbs	11,610 ft-lbs	2.1 %	1	01-00-03
End Shear	235 lbs	5,785 lbs	4.1 %	1	01-01-08
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-04-13
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-04-13
Max Defl.	0.001"	n/a	n/a	4	01-04-13
Span / Depth	2.9				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	468 lbs	6.4 %	5.5 %	Unspecified
B2	Column 4" x 1-3/4"	505 lbs	6.9 %	5.9 %	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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SE004705

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-B(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B13(i34744)

City, Province, Postal Code: Brampton, ON

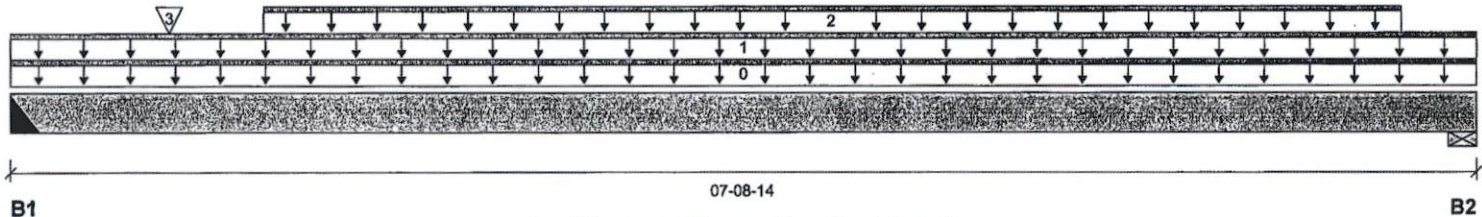
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 07-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	259 / 0	148 / 0		
B2, 2-3/8"	257 / 0	147 / 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	07-08-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-14	Top	3	1			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-00	07-04-00	Top	71	36			n/a
3	J9(i34737)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	68	34			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,160 ft-lbs	11,610 ft-lbs	10.0 %	1	03-10-00
End Shear	542 lbs	5,785 lbs	9.4 %	1	06-09-00
Total Load Deflection	L/999 (0.033")	n/a	n/a	4	03-10-00
Live Load Deflection	L/999 (0.021")	n/a	n/a	5	03-10-00
Max Defl.	0.033"	n/a	n/a	4	03-10-00
Span / Depth	9.5				

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports		Dim. (LxW)	Demand			Material
B1	Hanger	2" x 1-3/4"	574 lbs	n/a	13.5 %	HUS1.81/10
B2	Wall/Plate	2-3/8" x 1-3/4"	570 lbs	22.3 %	11.2 %	Spruce-Pine-Fir

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.

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


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SE004706

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-B(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B14(i34252)

City, Province, Postal Code: Brampton, ON

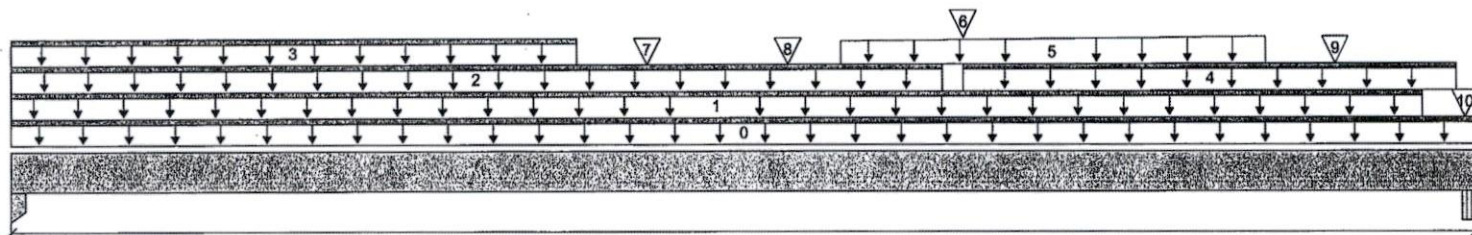
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



B1

10-04-12

B2

Total Horizontal Product Length = 10-04-12

Reaction Summary (Down / Uplift) (lbs)

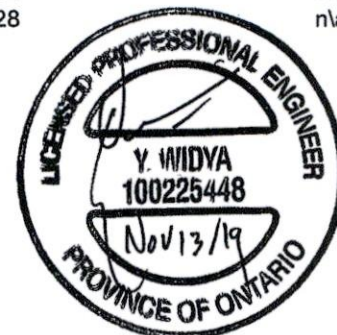
Bearing	Live	Dead	Snow	Wind
B1, 2"	765 / 0	719 / 0		
B2, 3-1/2"	819 / 0	746 / 0		

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	10-04-12	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	10-00-00	Top		60			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-07-02	Top	4				n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	Top	132	66			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-08-14	10-03-00	Top	18	9			n/a
5	Smoothed Load	Trapezoidal (lb/ft)	L	05-10-08		Top	122	61			n/a
					08-10-08		139	69			
6	B13(i34744)	Conc. Pt. (lbs)	L	06-08-14	06-08-14	Top	257	147			n/a
7	J7(i34162)	Conc. Pt. (lbs)	L	04-06-00	04-06-00	Top	93	41			n/a
8	J7(i34152)	Conc. Pt. (lbs)	L	05-06-00	05-06-00	Top	124	62			n/a
9	J7(i34648)	Conc. Pt. (lbs)	L	09-04-08	09-04-08	Top	67	34			n/a
10	9(i31474)	Conc. Pt. (lbs)	L	10-03-12	10-03-12	Top	37	28			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5,583 ft-lbs	11,610 ft-lbs	48.1 %	1	05-06-00
End Shear	2,016 lbs	5,785 lbs	34.9 %	1	09-03-12
Total Load Deflection	L/414 (0.292")	n/a	58.0 %	4	05-03-00
Live Load Deflection	L/785 (0.154")	n/a	45.8 %	5	05-03-00
Max Defl.	0.292"	n/a	n/a	4	05-03-00
Span / Depth	12.7				


Bearing Supports

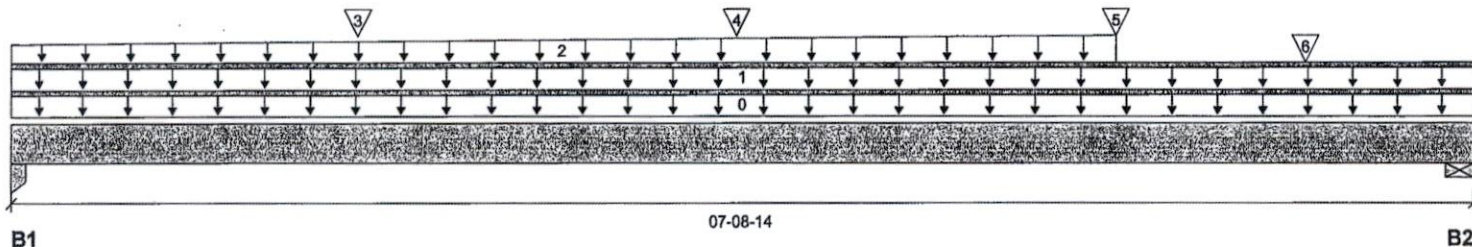
				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports	Dim. (LxW)		Demand			Material
B1	Column	2" x 1-3/4"	2,046 lbs	56.0 %	47.9 %	Unspecified
B2	Beam	3-1/2" x 1-3/4"	2,161 lbs	57.3 %	28.9 %	Unspecified

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314131-B(-1R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B15(i34751)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 07-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	494 / 0	266 / 0		
B2, 2-3/8"	508 / 0	272 / 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	07-08-14	Top		5			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-14	Top	3	1			n/a
2	Smoothed Load	Trapezoidal (lb/ft)	L	00-00-00	05-10-00	Top	57	28			n/a
					05-10-00		80	40			
3	J7(i34284)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	Top	134	67			n/a
4	J6(i34651)	Conc. Pt. (lbs)	L	03-10-00	03-10-00	Top	148	74			n/a
5	J6(i34688)	Conc. Pt. (lbs)	L	05-10-00	05-10-00	Top	148	74			n/a
6	J6(i34300)	Conc. Pt. (lbs)	L	06-10-00	06-10-00	Top	143	71			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,144 ft-lbs	11,610 ft-lbs	18.5 %	1	03-10-00
End Shear	1,053 lbs	5,785 lbs	18.2 %	1	06-09-00
Total Load Deflection	L/999 (0.058")	n/a	n/a	4	03-11-08
Live Load Deflection	L/999 (0.038")	n/a	n/a	5	03-11-08
Max Defl.	0.058"	n/a	n/a	4	03-11-08
Span / Depth	9.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 4" x 1-3/4"	1,074 lbs	14.7 %	12.6 %	Unspecified
B2	Wall/Plate 2-3/8" x 1-3/4"	1,101 lbs	43.1 %	21.7 %	Spruce-Pine-Fir

Notes

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


Disclosure

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

SE 004708

1st Floor - Supply/BOM\Flush Beams\B16(i34519)

Dry | 1 span | No cant.

October 29, 2019 11:31:19

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)

File name: 314131-A(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B16(i34519)

City, Province, Postal Code: Brampton, ON

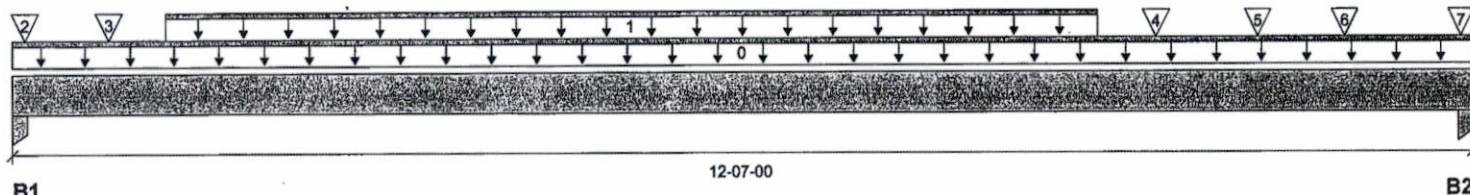
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 12-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,476 / 0	797 / 0		
B2, 4"	1,451 / 0	785 / 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	10				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-00	09-04-00	Top	231	115			n/a
2	J5(i34800)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	129	65			n/a
3	J5(i34803)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	200	100			n/a
4	J5(i34852)	Conc. Pt. (lbs)	L	09-10-00	09-10-00	Top	216	108			n/a
5	J5(i34627)	Conc. Pt. (lbs)	L	10-08-08	10-08-08	Top	188	94			n/a
6	J5(i34854)	Conc. Pt. (lbs)	L	11-05-08	11-05-08	Top	216	108			n/a
7	J5(i34516)	Conc. Pt. (lbs)	L	12-05-12	12-05-12	Top	130	65			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9,090 ft-lbs	23,220 ft-lbs	39.1 %	1	05-10-00
End Shear	2,868 lbs	11,571 lbs	24.8 %	1	11-05-08
Total Load Deflection	L/430 (0.336")	n/a	55.9 %	4	06-04-00
Live Load Deflection	L/662 (0.218")	n/a	54.4 %	5	06-04-00
Max Defl.	0.336"	n/a	n/a	4	06-04-00
Span / Depth	15.2				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	3,209 lbs	22.0 %	18.8 %	Unspecified
B2	Column 4" x 3-1/2"	3,158 lbs	21.6 %	18.5 %	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.

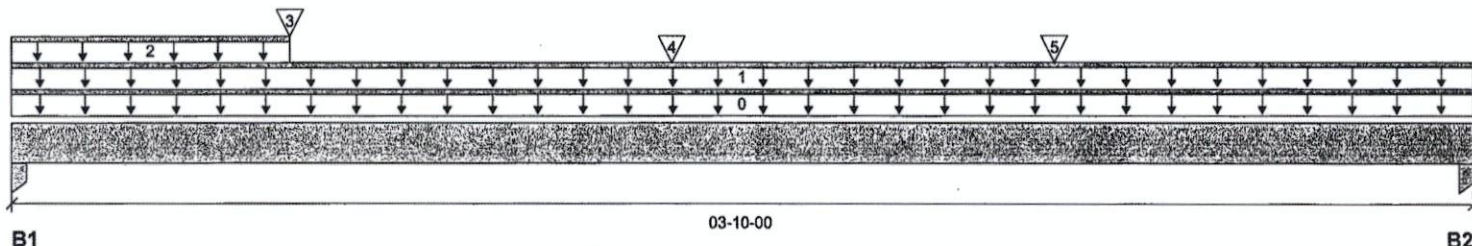
Nail one ply to another with
 3 1/2" spiral nails @ 12"
 o.c, staggered in 2 rows

BC CALC® Member Report

Build 7118

Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314131-A(-1R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B17(i34251)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 03-10-00

Reaction Summary (Down / Uplift) (lbs)

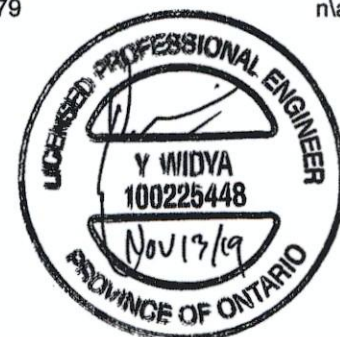
Bearing	Live	Dead	Snow	Wind
B1, 4"	491 / 0	341 / 0		
B2, 4"	436 / 0	313 / 0		

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	03-10-00	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	Top	120	105			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-08-12	Top	28	14			n/a
3	J7(i34442)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	Top	136	68			n/a
4	J7(i34440)	Conc. Pt. (lbs)	L	01-08-12	01-08-12	Top	151	75			n/a
5	J7(i34439)	Conc. Pt. (lbs)	L	02-08-12	02-08-12	Top	159	79			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	886 ft-lbs	11,610 ft-lbs	7.6 %	1	01-08-12
End Shear	678 lbs	5,785 lbs	11.7 %	1	02-08-08
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	01-10-15
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	01-10-15
Max Defl.	0.005"	n/a	n/a	4	01-10-15
Span / Depth	4.2				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	1,162 lbs	15.9 %	13.6 %	Unspecified
B2	Column 4" x 1-3/4"	1,044 lbs	14.3 %	12.2 %	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

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®,

SE004710

1st Floor - Supply/BOM\Flush Beams\B18(i34969)

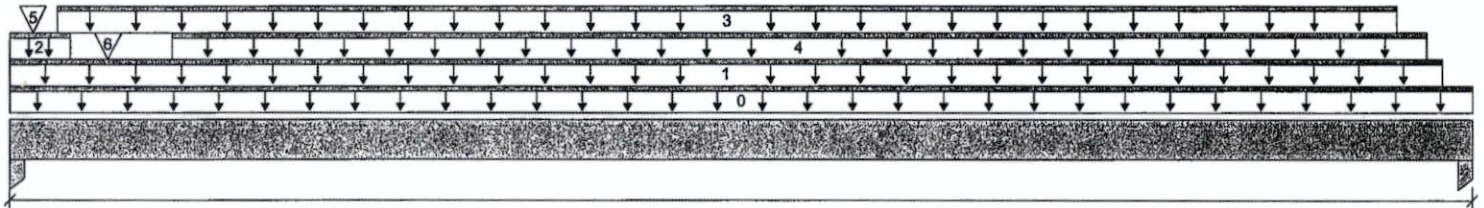
Dry | 1 span | No cant.

October 29, 2019 13:18:04

BC CALC® Member Report

Build 7118

 Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314131-B(-2R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B18(i34969)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


Total Horizontal Product Length = 11-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	2,207 / 0	1,922 / 0		
B2, 4"	1,942 / 0	1,638 / 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	11-08-00	Top		10			00-00-00
1	E16(i31495)	Unf. Lin. (lb/ft)	L	00-00-00	11-05-00	Top		107			n/a
2	E16(i31495)	Unf. Lin. (lb/ft)	L	00-00-00	00-05-14	Top	359	461			n/a
3	E16(i31495)	Unf. Lin. (lb/ft)	L	00-04-10	11-00-10	Top	125	63			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-08	11-03-08	Top	230	114			n/a
5	J5(i34957)	Conc. Pt. (lbs)	L	00-02-04	00-02-04	Top	119	59			n/a
6	J5(i34956)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	Top	185	93			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13,994 ft-lbs	23,220 ft-lbs	60.3 %	1	05-09-08
End Shear	4,759 lbs	11,571 lbs	41.1 %	1	01-01-08
Total Load Deflection	L/298 (0.448")	n/a	80.6 %	4	05-09-08
Live Load Deflection	L/545 (0.245")	n/a	66.1 %	5	05-09-08
Max Defl.	0.448"	n/a	n/a	4	05-09-08
Span / Depth	14.1				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	5,713 lbs	39.1 %	33.5 %	Unspecified
B2	Column 4" x 3-1/2"	4,961 lbs	33.9 %	29.0 %	Unspecified

Notes

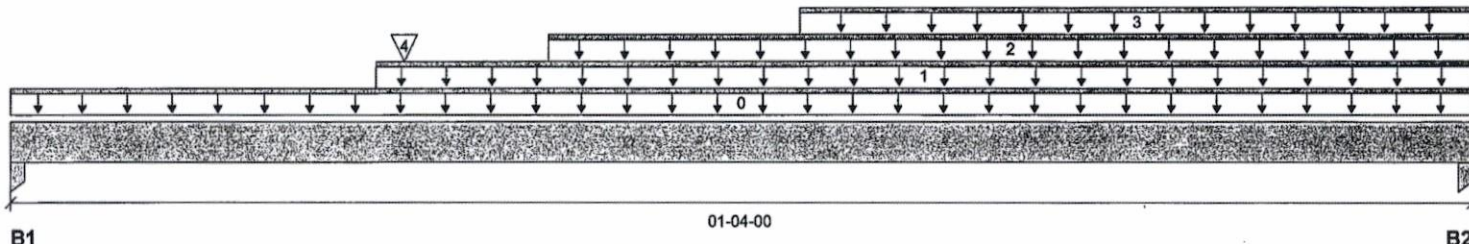
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit 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 @ 12"
 o.c, staggered in 2 rows

BC CALC® Member Report

Build 7118

 Job name: 39002(38-10)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314131-B(-2R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B19(i34970)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


Total Horizontal Product Length = 01-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	287 / 0	293 / 0		
B2, 4"	68 / 0	116 / 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	01-04-00	Top		5			00-00-00
1	E25(i34118)	Unf. Lin. (lb/ft)	L	00-04-00	01-04-00	Top		57			n/a
2	E25(i34118)	Unf. Lin. (lb/ft)	L	00-05-14	01-04-00	Top		52			n/a
3	E25(i34118)	Unf. Lin. (lb/ft)	L	00-08-10	01-04-00	Top	7				n/a
4	-	Conc. Pt. (lbs)	L	00-04-05	00-04-05	Top	350	296			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	98 ft-lbs	11,610 ft-lbs	0.8 %	1	00-05-00
End Shear	45 lbs	3,761 lbs	1.2 %	0	00-02-08
Span / Depth	1.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	797 lbs	12.5 %	10.7 %	Unspecified
B2	Column 4" x 1-3/4"	162 lbs	3.4 %	2.9 %	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.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9


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®,

SE004712

Maximum Floor Spans – M2.1, L/360

Design Criteria

Spans:	Simple span
Loads:	Live load = 40 psf and dead load = 20 psf
Deflection limits:	L/360 under live load and L/240 under total load
Sheathing:	5/8 in. nailed-glued oriented strand board (OSB) sheathing



Maximum Floor Spans

Joist depth	Joist series	Bare				1/2 in. 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'-3"	13'-10"	-	15'-7"	14'-9"	14'-3"	-
	NI-40x	16'-2"	15'-3"	14'-8"	-	16'-7"	15'-8"	15'-1"	-
	NI-60	16'-4"	15'-4"	14'-10"	-	16'-9"	15'-9"	15'-3"	-
	NI-80	17'-3"	16'-3"	15'-8"	-	17'-8"	16'-7"	16'-0"	-
11-7/8"	NI-20	17'-0"	16'-0"	15'-6"	-	17'-6"	16'-7"	16'-0"	-
	NI-40x	18'-2"	17'-1"	16'-6"	-	18'-9"	17'-6"	16'-11"	-
	NI-60	18'-5"	17'-3"	16'-8"	-	19'-0"	17'-8"	17'-1"	-
	NI-80	19'-9"	18'-3"	17'-7"	-	20'-4"	18'-10"	18'-0"	-
14"	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	-
	NI-40x	20'-1"	18'-8"	17'-10"	-	20'-10"	19'-4"	18'-6"	-
	NI-60	20'-6"	18'-11"	18'-2"	-	21'-2"	19'-8"	18'-9"	-
	NI-80	21'-11"	20'-3"	19'-4"	-	22'-7"	20'-11"	20'-0"	-
16"	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
	NI-60	22'-4"	20'-8"	19'-9"	-	23'-1"	21'-5"	20'-6"	-
	NI-80	23'-11"	22'-1"	21'-1"	-	24'-8"	22'-10"	21'-9"	-
	NI-90	24'-5"	22'-6"	21'-6"	-	25'-1"	23'-2"	22'-2"	-

Joist depth	Joist series	Mid-span blocking with 1x4 inch strap				Mid-span blocking and 1/2 in. gypsum ceiling			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-11"	15'-5"	14'-6"	-	17'-1"	15'-5"	14'-6"	-
	NI-40x	17'-11"	17'-0"	16'-5"	-	18'-5"	17'-4"	16'-7"	-
	NI-60	18'-2"	17'-1"	16'-6"	-	18'-8"	17'-6"	16'-10"	-
	NI-80	19'-5"	18'-0"	17'-5"	-	19'-10"	18'-5"	17'-8"	-
11-7/8"	NI-20	19'-7"	18'-2"	17'-6"	-	20'-3"	18'-8"	17'-6"	-
	NI-40x	21'-1"	19'-7"	18'-8"	-	21'-8"	20'-2"	19'-0"	-
	NI-60	21'-4"	19'-9"	18'-11"	-	21'-11"	20'-5"	19'-6"	-
	NI-80	22'-9"	21'-1"	20'-2"	-	23'-3"	21'-8"	20'-8"	-
14"	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	21'-0"	-
	NI-40x	23'-8"	21'-11"	20'-11"	-	24'-4"	22'-8"	20'-11"	-
	NI-60	24'-0"	22'-3"	21'-3"	-	24'-8"	22'-11"	21'-11"	-
	NI-80	25'-7"	23'-9"	22'-7"	-	26'-2"	24'-4"	23'-3"	-
16"	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
	NI-60	26'-5"	24'-6"	23'-5"	-	27'-2"	25'-3"	24'-2"	-
	NI-80	28'-2"	26'-1"	24'-10"	-	28'-10"	26'-9"	25'-6"	-
	NI-90	28'-8"	26'-6"	25'-3"	-	29'-3"	27'-2"	25'-11"	-

Notes:

1. The tabulated clear spans are based on CSA O86-14 and NBC 2015, and are applicable to residential floor construction meeting the above design criteria.
2. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
3. Minimum bearing length shall be 1-3/4 inch for end bearings, and 3-1/2 inches for intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.
5. Nordic I-joists are listed in CCMC Evaluation Report 13032-R and APA Product Report PR-L274C.

The construction details for residential designs are prone to changes.

Details released after April 2014
supersedes N-C301

Installation must comply with latest
documentation on I-Joist and other
Nordic products from the
<http://nordic.ca/>

This document does not constitute a
record of the structural integrity of the
building nor suitability of the design
assumptions made. Nordic Structures is
responsible only for the structural
adequacy of its component based on
the design criteria and loadings shown
on the calculation sheets.

(Nordic Request 1810-095)



Distributed by:



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:



Do not work on I-joists until fully fastened and braced, or serious injuries can result.



Never stack building materials over unbraced I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding 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 8 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-joist 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-briding.

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 or damage 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 liquids.
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.
 - Pick I-joists in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
8. Do not handle I-joists in a horizontal orientation.
9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

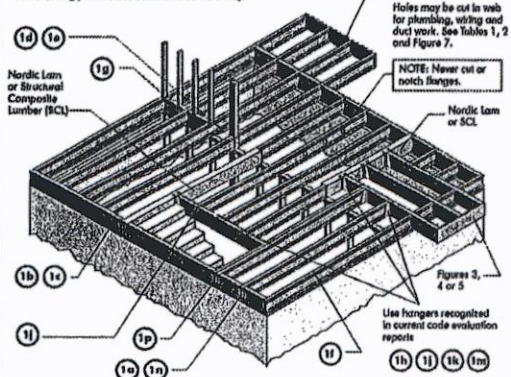


INSTALLING NORDIC I-JOISTS

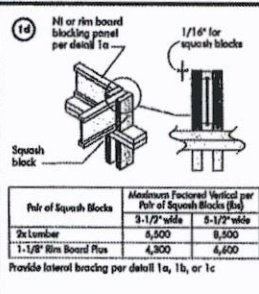
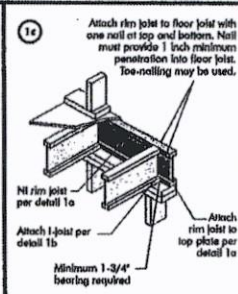
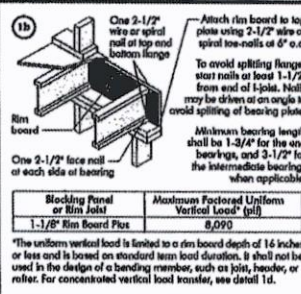
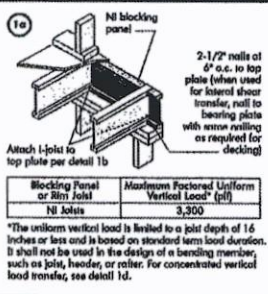
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true 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, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting 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 joist 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 (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
13. Provide permanent lateral support of 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 first 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

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.



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



MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to single-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 1.5L + 1.2SD. 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 oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CBCS-71.2.3 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of 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 loadings.
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 U.S. Steel Design per CAN/CSA C88-09 Standard, and NBC 2010.
7. Units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

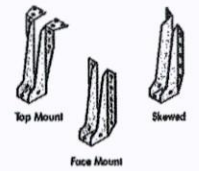
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS
SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NB-20	19-1"	14-2"	13-9"	13-5"	16-3"	13-4"	14-10"	14-2"
	NB-40	16-1"	12-2"	14-8"	14-9"	17-5"	14-5"	15-10"	15-5"
	NB-60	14-0"	10-3"	14-10"	14-11"	17-7"	14-7"	16-2"	16-8"
	NB-70	17-1"	14-1"	16-4"	15-7"	18-7"	17-4"	18-10"	17-2"
11-7/8"	NB-20	17-5"	14-5"	15-8"	15-9"	18-10"	17-6"	18-11"	17-8"
	NB-40	14-1"	10-4"	16-5"	16-6"	20-2"	18-2"	19-7"	17-7"
	NB-60	18-1"	17-0"	19-5"	18-9"	20-3"	18-9"	19-0"	18-9"
	NB-70	19-6"	18-0"	17-4"	17-5"	21-4"	19-11"	19-2"	19-8"
14"	NB-20	19-9"	18-3"	17-4"	17-7"	21-9"	20-2"	19-3"	19-11"
	NB-40	20-2"	18-7"	17-10"	17-11"	22-3"	20-7"	19-8"	19-9"
	NB-60	20-1"	18-5"	17-11"	17-12"	22-5"	20-9"	19-10"	19-8"
	NB-70	20-5"	18-11"	18-1"	18-2"	22-7"	20-11"	20-0"	20-10"
16"	NB-20	21-7"	20-0"	19-1"	19-2"	23-10"	22-1"	21-1"	21-10"
	NB-40	21-7"	20-0"	19-1"	19-2"	23-10"	22-1"	21-1"	21-10"
	NB-60	22-5"	20-8"	19-9"	19-9"	24-9"	22-10"	21-10"	21-10"
	NB-70	22-7"	20-11"	19-1"	19-2"	24-9"	22-1"	21-1"	21-10"
18"	NB-20	22-7"	21-0"	20-9"	20-10"	24-9"	22-1"	21-1"	21-10"
	NB-40	22-7"	21-0"	20-9"	20-10"	24-9"	22-1"	21-1"	21-10"
	NB-60	23-11"	22-1"	21-1"	21-2"	26-1"	23-9"	23-9"	23-9"
	NB-70	24-5"	22-5"	21-5"	21-10"	27-3"	24-9"	24-9"	24-10"

CCMC EVALUATION REPORT 13022-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 flange of the I-joist.



Face Mount

WEB STIFFENERS

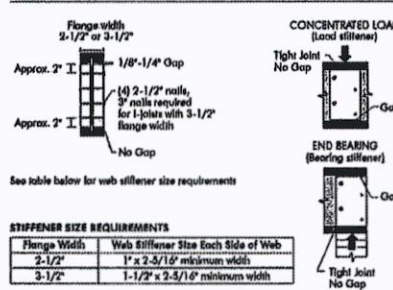
RECOMMENDATIONS:

• 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 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 of a continuous, anywhere between the centerline of the support, or in the case of a cantilever, anywhere between the centerline of the support and the free end. 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.

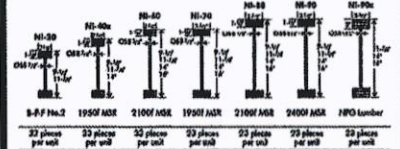
SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

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

NORDIC I-JOIST SERIES



Champion Chibogomus Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from forest to the finished product, reflects our commitment to quality.

Nordic Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

(Nordic Request 1810-095)



1a Transfer load from above to bearing below. Install equal blocks per detail 1b. Match bearing area of blocks below to post above.

1b Use single I-joist for loads up to 3,300 pl, double I-joists for loads up to 6,600 pl (filler block not required). Attach I-joist to top plate using 2-1/2\"/>

1c Load bearing wall above shall align vertically with the bearing below. Other conditions, such as other bearing walls, are not covered by this detail.

1d Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3\"/>

1e Double I-joist header. Top- or face-mount hanger. Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1f Backer block required (both sides for face-mount hangers). For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads.

1g Nordic Lamin or SCL. Top- or face-mount hanger installed per manufacturer's recommendations. Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1h 2x plate flush with inside face of wall or beam. 1/8\"/>

1i Top-mount hanger installed per manufacturer's recommendations. Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1j Multiple I-joist header with full depth filler block shown. Nordic Lamin or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.

1k Do not bevel-cut joint beyond inside face of wall.

1l Attach I-joist per detail 1b. Note: Blocking required on bearing for lateral support, not shown for clarity.

1m Filler block per detail 1p. Install hanger per manufacturer's recommendations. Backer block attached per detail 1b. Nail with nails 3\"/>

1n Maximum support capacity = 1,620 lbs.

1o Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8\"/>

1p Filler block. Offset nails from opposite face by 6\"/>

1q 1/8\"/>

1r Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2\"/>

1s One 2-1/2\"/>

1t Notes:
- In some local codes, blocking is prescriptively required in the first joint space (or first and second joint space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

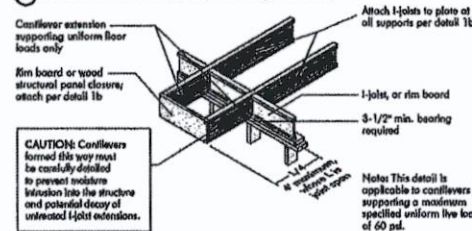
Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

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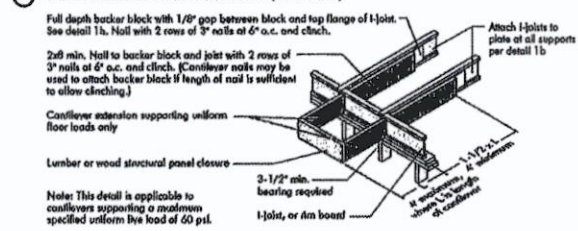
(Nordic Request 1810-095)

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

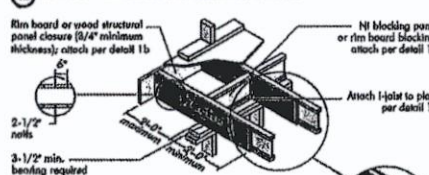


3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

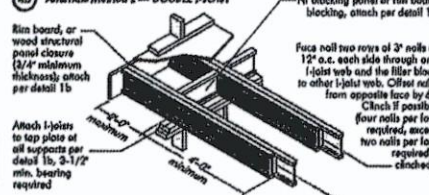


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 9\"/>

Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4\"/>

4b Alternative Method 2 — DOUBLE I-JOIST



Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist bays greater than 3 inches place an additional row of 2\"/>

FIGURE 4 (continued)



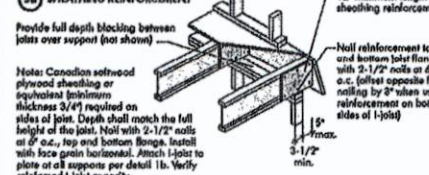
CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in.)	Roof Truss Span (ft)	Roof Loading (UNIFACTOR D)				Roof Loading (UNIFACTOR D)				Roof Loading (UNIFACTOR D)			
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		Joist Spacing (in.)				Joist Spacing (in.)				Joist Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N
11-7/8	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N
14	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N
16	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N

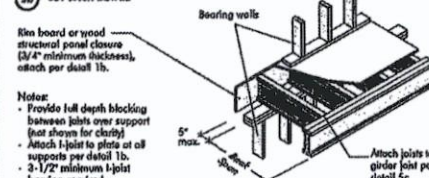
- N = No reinforcement required.
- 1 = 16 reinforced with 3/4\"/>

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

5a SHEATHING REINFORCEMENT



5b SET-BACK DETAIL



5c SET-BACK CONNECTION

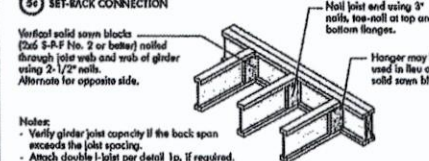


FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in.)	Roof Truss Span (ft)	Roof Loading (UNIFACTOR D)				Roof Loading (UNIFACTOR D)				Roof Loading (UNIFACTOR D)			
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		Joist Spacing (in.)				Joist Spacing (in.)				Joist Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N
11-7/8	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N
14	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N
16	26	N	N	N	N	N	N	N	N	N	N	N	N
	28	N	N	N	N	N	N	N	N	N	N	N	N
	30	N	N	N	N	N	N	N	N	N	N	N	N
	32	N	N	N	N	N	N	N	N	N	N	N	N
	34	N	N	N	N	N	N	N	N	N	N	N	N

- N = No reinforcement required.
- 1 = 16 reinforced with 3/4\"/>

The construction details for residential designs are prone to changes.

Details released after April 2014 supersedes N-C301

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-Joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-Joist web shall equal the clear distance between the flanges of the I-Joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-Joist flange.
- The sides of square holes or largest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the largest side of the largest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of tables 1 and 2, respectively.
- A knothole is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a continuous section of a joist. Holes of greater size may be permitted subject to verification.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole described around them.

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in)												Span (ft-in)
		1	2	3	4	5	6	7	8	9	10	11	12	
9-1/2"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
11-3/4"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
14"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
16"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
18"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
20"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
22"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
24"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
26"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
28"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"
30"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"	12-0"

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

OPTIONAL:

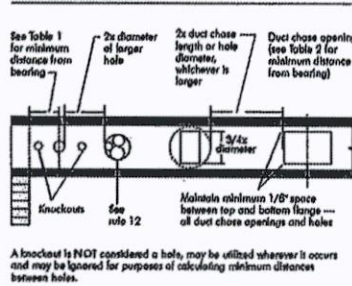
The above table is based on the I-Joist used at its maximum span. If the I-Joist is placed at less than its full maximum span (see Maximum Floor Span), the minimum distance from the inside face of the support to the centre of the hole to the face of any support (S) as given above may be reduced as follows:

Reduced = $\frac{S}{L} \times D$

Where:

- S = Distance from the inside face of any support to centre of hole, reduced for less than maximum span applications (ft).
- L = The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.
- D = The actual measured span distance between the inside faces of supports (ft).
- S = Span Adjustment Factor given in this table.
- The minimum distance from the inside face of any support to centre of hole from this table.
- If S is greater than 1, use 1 in the above calculation for S .

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Holes in webs should be cut with a sharp saw.

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

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in)											
		1	2	3	4	5	6	7	8	9	10	11	12
9-1/2"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
11-3/4"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
14"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
16"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
18"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
20"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
22"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
24"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
26"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
28"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"
30"	1150	0-7"	1-3"	2-1"	2-7"	3-5"	4-3"	5-1"	6-0"	7-0"	8-0"	9-0"	10-0"

- Above table may be used for I-Joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of support to centre of opening.
- The above table is based on simple span joists only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 10 psf, and a live load deflection limit of L/400. For other applications, contact your local distributor.

(Nordic Request 1810-095)



INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING⁽¹⁾

Maximum Joist Spacing (ft)	Minimum Panel Thickness (in.)	Common Wire or Spiral Nails	Nail Size and Type	Ring Thread Nails or Screws	Staples	Maximum Spacing of Fasteners (ft)
16	5/8	2"	1-3/4"	2"	6"	12"
20	5/8	2"	1-3/4"	2"	6"	12"
24	3/4	2"	1-3/4"	2"	6"	12"

- Fasteners of sheathing and subflooring shall conform to the above table.
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to flooring.
- Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
- Use only adhesives conforming to CAN/COSB-71.25 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues check with panel manufacturers.

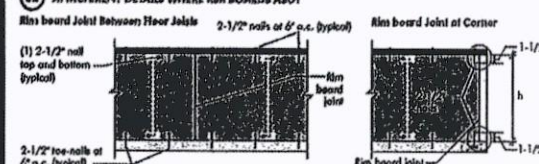
Ref: NBC-CNBC, National Building Code of Canada 2010, Table 9.22.3.5.

IMPORTANT NOTE:

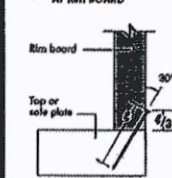
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

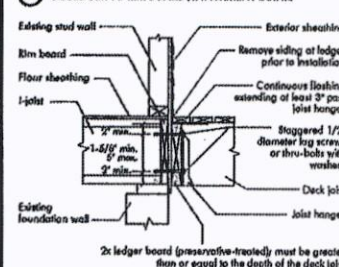
a. ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



b. TOE-NAILED CONNECTION AT RIM BOARD



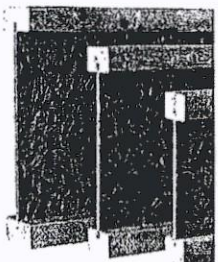
c. 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



ORIENTAL
PRODUCT WARRANTY

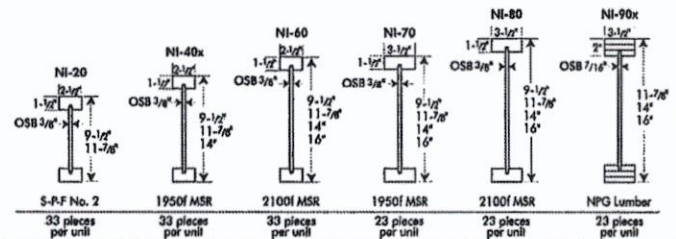
Orion Construction warrants that its products will conform to the specifications, standards and performance criteria set forth in its material and workmanship.

Furthermore, Orion Construction warrants that its products, when installed in accordance with our handling and installation instructions, will meet or exceed our specifications for the life of the structure.





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



WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

1. The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centred on the middle of the web.
4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.

5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the largest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 8 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes of approximately the same location shall be permitted if they meet the requirements for a single round hole described around them.

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)												
		Round Hole Diameter (in.)												
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---
	NI-40x	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---
	NI-60	1-3"	2-5"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---
	NI-80	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---	---
	NI-60	0-7"	1-0"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---	---	---
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-5"	10-3"	11-4"	---	---	---	---
14"	NI-20x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---	---
	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"	---
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-9"	---
	NI-80	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"	---
16"	NI-20	0-10"	2-4"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	10-8"	12-4"	13-9"	---
	NI-40x	0-7"	0-8"	0-8"	2-0"	3-5"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---	---
	NI-60	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"	10-2"
	NI-80	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"	12-4"

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

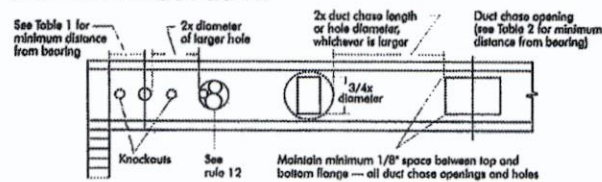
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

Joist Depth	Joist Series	Minimum Distance from Inside Face of Supports to Centre of Opening (ft - in.)												
		Duct Chase Length (in.)												
		8	10	12	14	16	18	20	22	24				
9-1/2"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"				
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"				
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-7"				
	NI-80	5-1"	5-5"	6-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"				
11-7/8"	NI-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"				
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-4"				
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-5"	9-9"	10-3"	11-0"				
	NI-80	7-1"	7-4"	7-9"	8-2"	8-7"	9-1"	9-6"	10-1"	10-4"				
14"	NI-20	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-6"				
	NI-40x	7-7"	8-1"	8-5"	8-10"	9-4"	9-8"	10-2"	10-6"	11-2"				
	NI-60	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	11-6"	12-0"				
	NI-80	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"				
16"	NI-20	9-4"	9-9"	10-3"	10-7"	11-1"	11-7"	12-1"	12-7"	13-1"				
	NI-40x	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-1"	13-6"	14-1"				
	NI-60	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-3"	13-8"				
	NI-80	10-4"	10-9"	11-3"	11-9"	12-1"	12-7"	13-1"	13-6"	14-0"				

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Holes in webs should be cut with a sharp saw.

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

SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unfastened I-joists. Once sheathed, do not over-stress I-joists with concentrated loads from building materials.

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. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding 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.
 - * Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - * 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.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.

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



PRODUCT WARRANTY

Charlton's Charbonneau guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Charlton's Charbonneau warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

The construction details for residential designs are prone to changes.

Details released after September 2013 supersedes N-303

Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

(Nordic Request 1810-095)



1a NI blocking panel

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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

Attach I-joist to top plate per detail 1b

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

1b Rim board

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

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

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

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

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

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

1d NI or rim board blocking panel per detail 1a

Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
1-1/8" Rim Board Plus	4,300

Provide lateral bracing per detail 1a or 1b

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

1f Joist attachment per detail 1b

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support

2-1/2" nails at 6" o.c. to top plate

NI blocking panel per detail 1a

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

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

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

* Minimum grade for backer block material shall be 3-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C325 or CAN/CSA-C437 Standard.

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

Top- or face-mount hanger

Double I-joist header

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

Filler block per detail 1p

Backer block required (both sides for face-mount hangers)

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

1i Nordic Lam or Structural Composite Lumber (SCL)

For nailing schedules for multiple beams, see the manufacturer's recommendations.

Top- or face-mount hanger installed per manufacturer's recommendations

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

1k 2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.

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

Top-mount hanger installed per manufacturer's recommendations

1m Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.

Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible.

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

1n Do not bevel-cut joist beyond inside face of wall

Attach I-joist per detail 1b

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

1p Filler block requirements for double I-joist construction

Filler block

Offset nails from opposite face by 6"

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

NOTES:

- Support back of I-joist web during nailing to prevent damage to web/flange connection.
- Leave a 1/8" to 1/4" gap between top of filler block and bottom of top I-joist flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

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

1s One 2-1/2" nail at top and bottom flange

2x4 min. (1/8" gap minimum)

Two 2-1/2" nails from each web to lumber piece

One 2-1/2" nail one side only

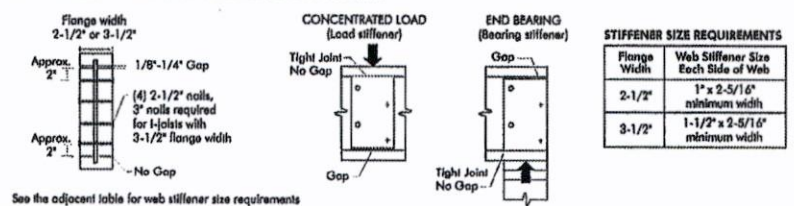
NOTE: In some local codes, blocking is prescriptively required in the first joist space (at first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

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 flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a 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

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

Rim board or wood structural panel closure (3/4" minimum thickness) attach per detail 1b

2-1/2" nails

2-1/2" min. bearing required

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

Attach I-joist to plate per detail 1b

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.

Use nailing patterns shown for Method 1 with opposite face nailing offset by 3".

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

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

(1) 2-1/2" nail top and bottom (typical)

2-1/2" nails at 6" o.c. (typical)

Rim board joint

Rim Board Joint at Corner

2-1/2" nails

1-1/2"

1-1/2"

8b TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

30°

1/2"

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(Nordic Request 1810-095)

