



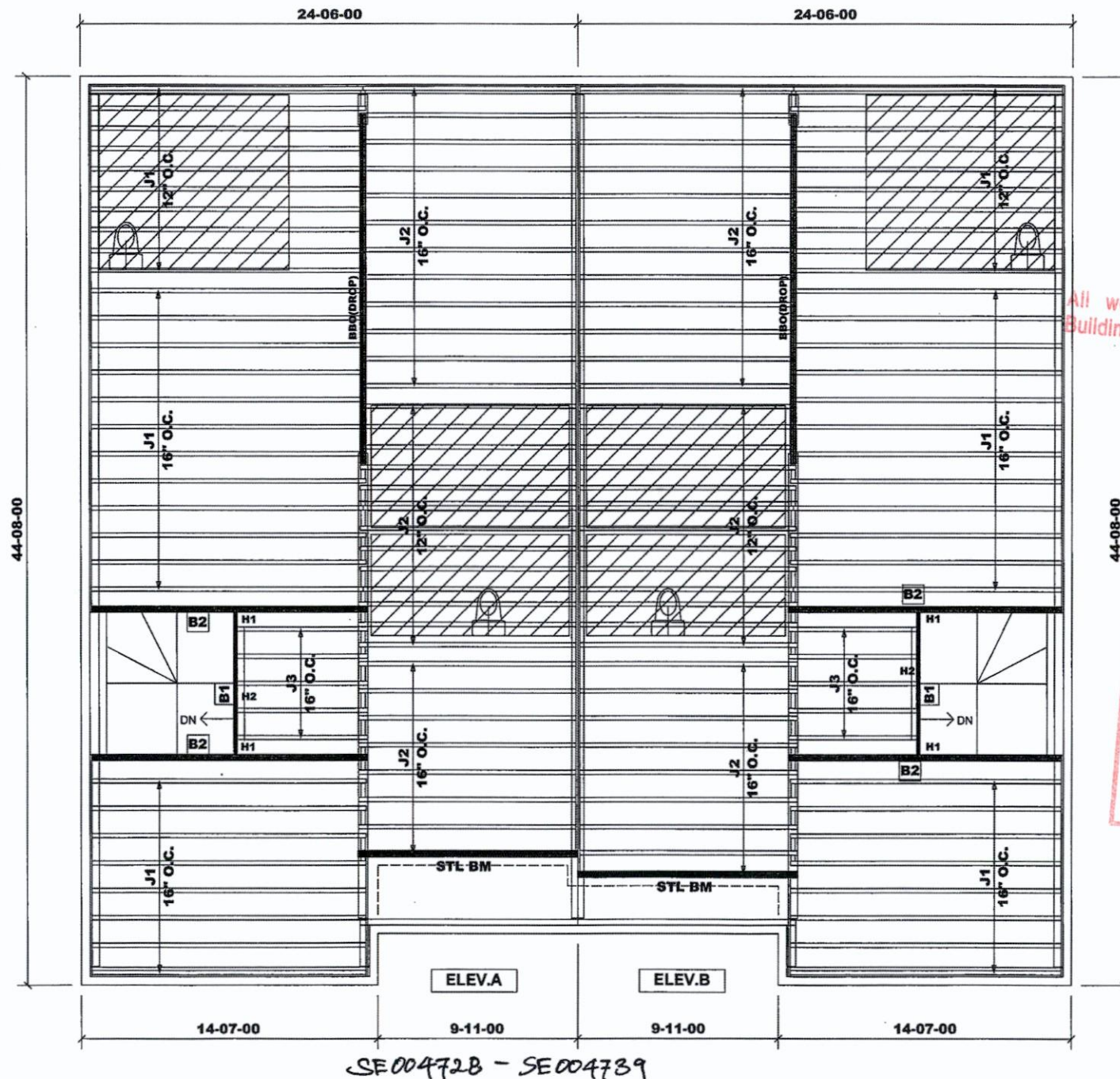
FLOOR TRUSSES

<u>FLOOR TRUSSES</u>			
APPLICATION NO.:	19-567627 000 00 CM	FOLDER TYP.:	CM
DESCRIPTION OF PROJECT:	PLAN M2039	SUB TYP.:	Semi Detached Dwelling
BUILDERS NAME:	GOLD PARK HOMES		
PLAN NUMBER:		MODEL NAME:	2017/SD-09

PAGES:

DESCRIPTION OF DOCUMENTS

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	60
J2	11-00-00	9 1/2" NI-20	1	67
J3	7-00-00	9 1/2" NI-20	1	10
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	8
B1	7-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
Ca1	258-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	48-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	10		LT259

All work shall conform to the Ontario Building Code O. Reg. 332/12 as amended

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

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.

CITY OF BRAMPTON
BUILDING DIVISION
REVIEWED
DEC 10 2019
BY
MARY FRENETTE

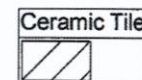
FIRM BCIN 113884
DESIGNER BCIN 25593

XL

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-9(GERSHWIN)



SF00472B - SE004739

JT/PL: 39002/104573

Builder: Gold Park

Location: Brampton

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 314129

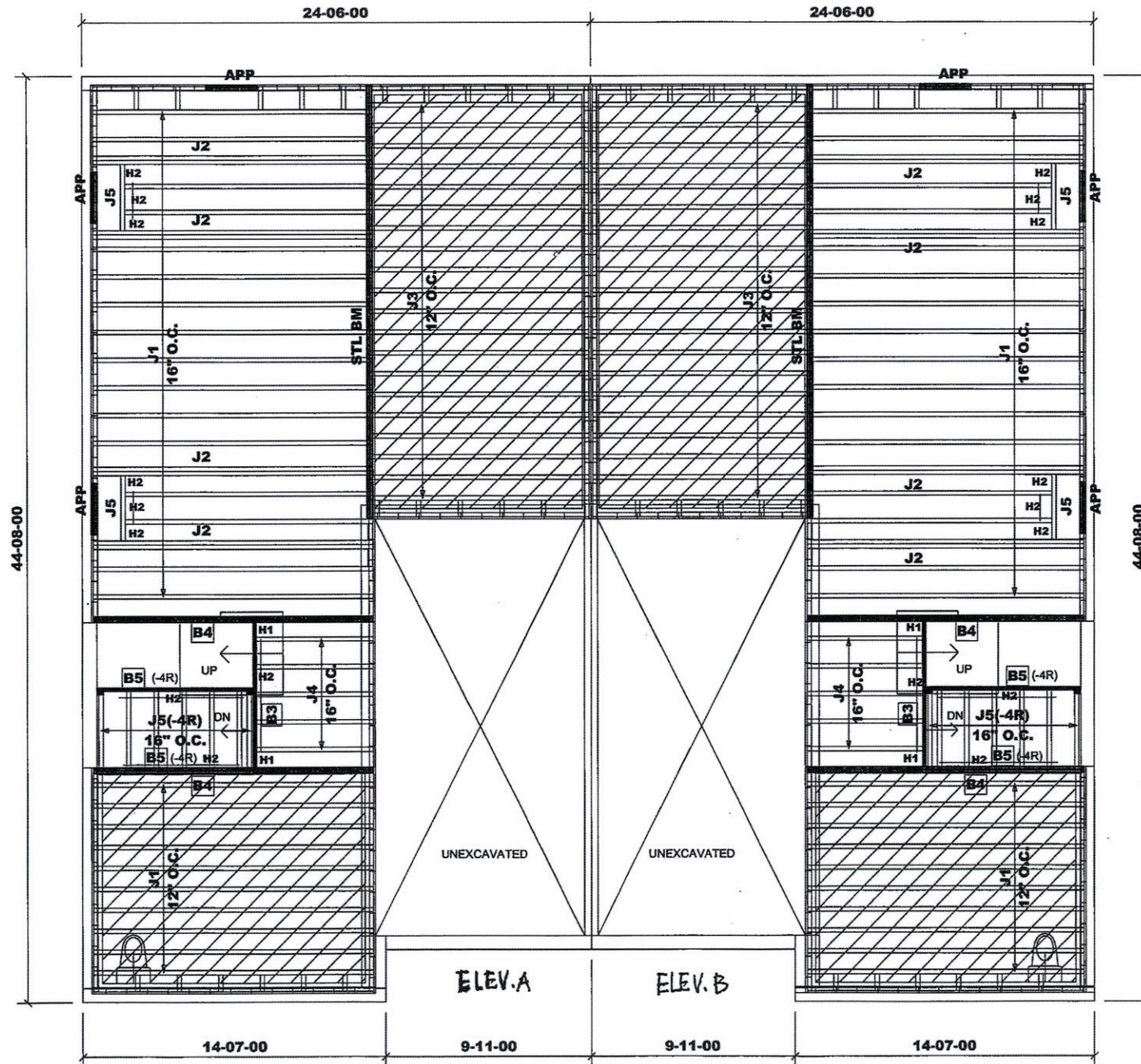
Project: Encore 2

Date: October 27, 2019

Sheet: 1 of 8

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Pieces	Net Qty
J1	14-00-00	9 1/2" NI-20	1	52
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	40
J4	6-00-00	9 1/2" NI-20	1	10
J5	4-00-00	9 1/2" NI-20	1	18
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	8
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B3	7-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
Ca1	274-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	76-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	46		LT259

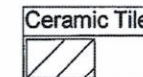
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 Squash blocks are required under concentrated loads.

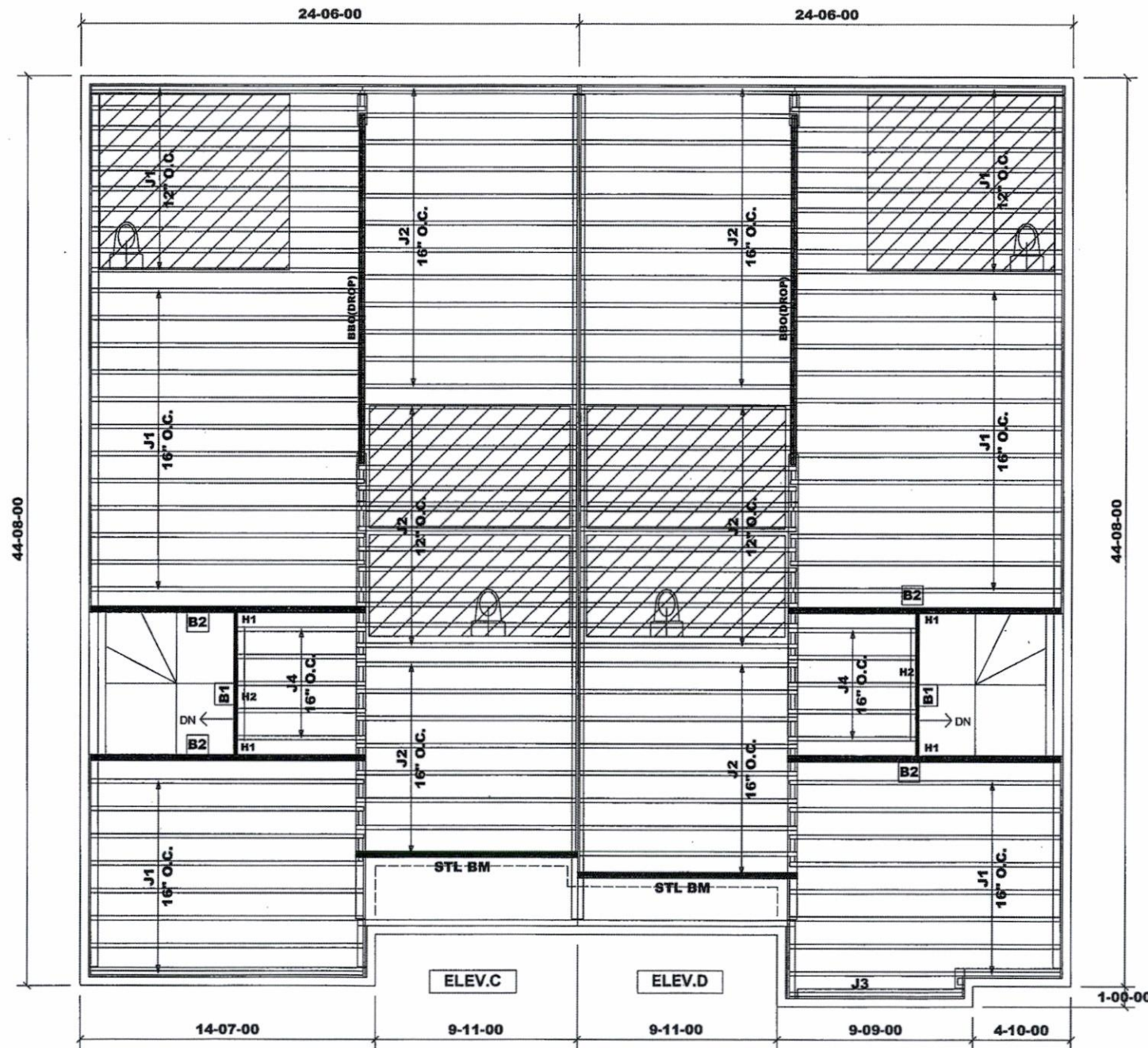
FIRM BCIN 113884
 DESIGNER BCIN 25593

First Floor Framing

Do not scale - refer to architectural plans for dimensions



MODEL: SD-9(GERSHWIN)



Products					
PlotID	Length	Product	Plies	Net Qty	
J1	14-00-00	9 1/2" NI-20	1	60	
J2	11-00-00	9 1/2" NI-20	1	67	
J3	9-00-00	9 1/2" NI-20	1	1	
J4	7-00-00	9 1/2" NI-20	1	10	
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	8	
B1	7-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2	
Ca1	260-00-00	1 1/8" x 9 1/2" Rim Board	1	1	
Bk1	48-00-00	9 1/2" NI-20	1	1	

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	10		LT259

RIMBOARD

1- 1/8" X 9 1/2" O.S.B.

SUBFLOOR - 5/8" GLUE & NAILED

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BBO - BEAM BY OTHERS

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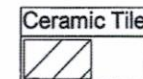
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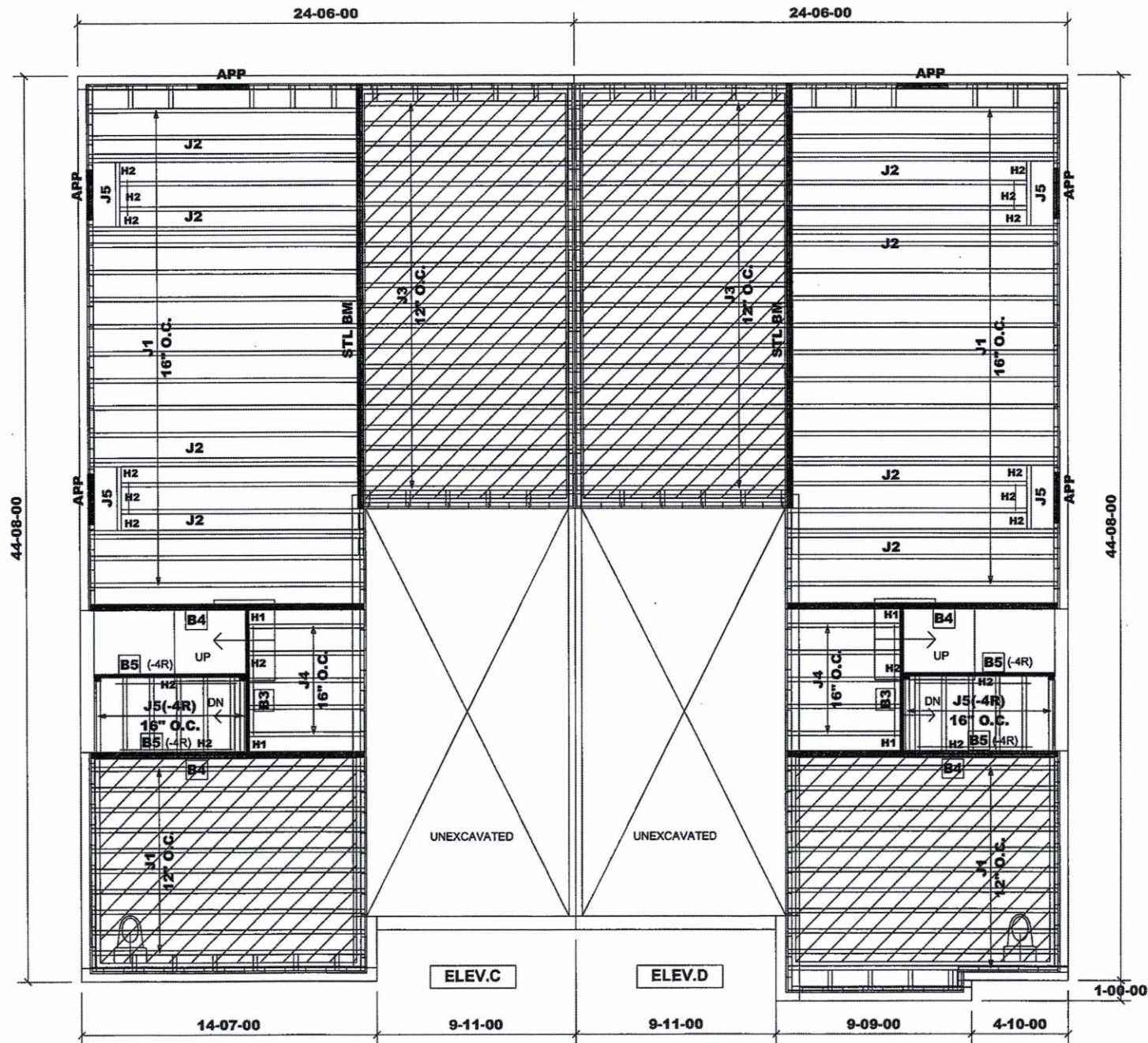
FIRM BCIN 113884
DESIGNER BCIN 25593

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-9(GERSHWIN)





Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	53
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	40
J4	6-00-00	9 1/2" NI-20	1	10
J5	4-00-00	9 1/2" NI-20	1	18
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	8
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B3	7-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
Ca1	276-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	76-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	46		LT259

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SUBFLOOR - 5/8" GLUE & NAILED
 APP - AS PER PLAN
 BBO - BEAM BY OTHERS

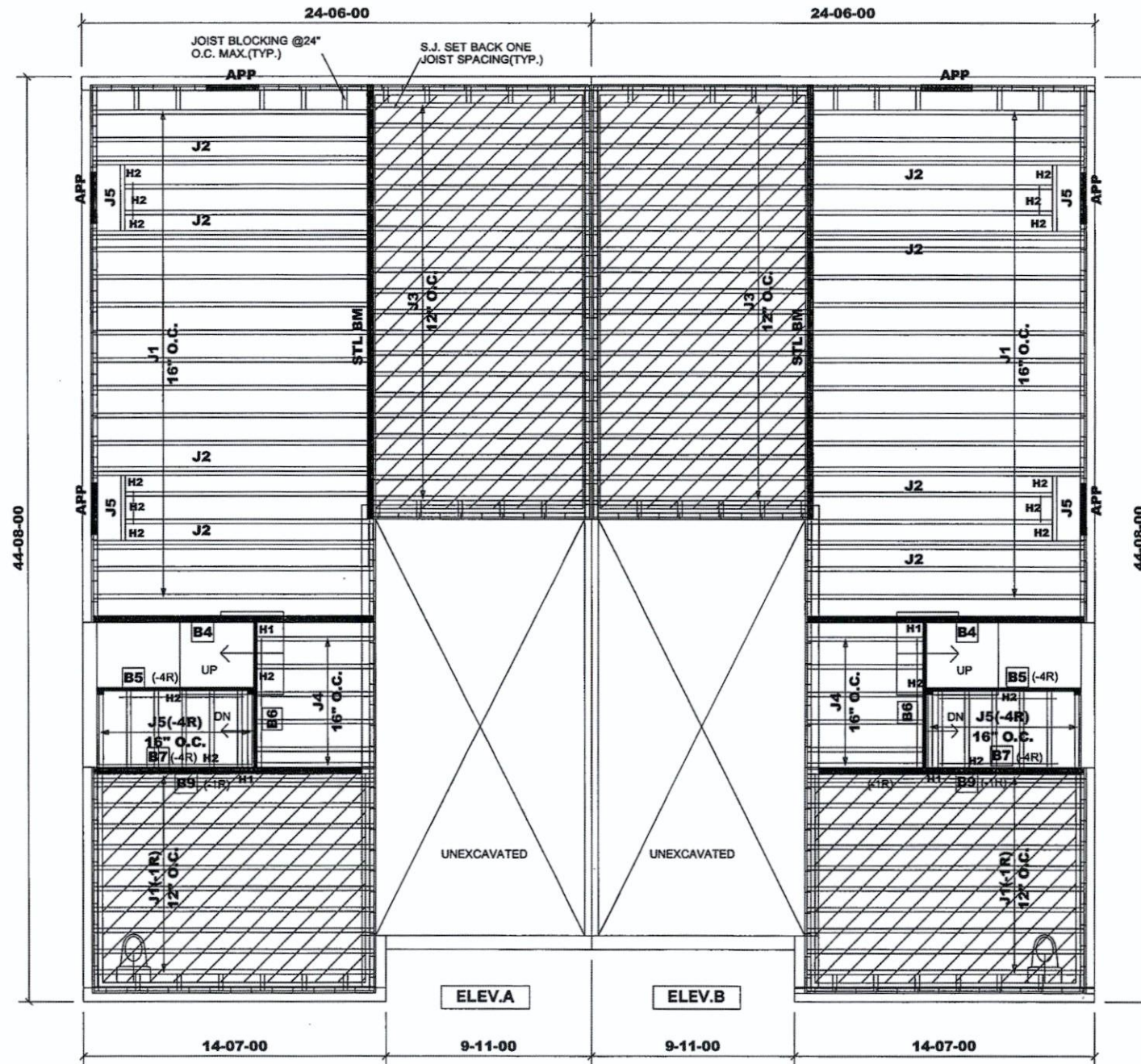
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 Squash blocks are required under concentrated loads.

FIRM BCIN 113884
 DESIGNER BCIN 25593

First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-9(GERSHWIN)



Products				
PlotID	Length	Product	Pieces	Net Qty
J1	14-00-00	9 1/2" NI-20	1	54
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	40
J4	6-00-00	9 1/2" NI-20	1	12
J5	4-00-00	9 1/2" NI-20	1	18
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B7	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B6	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
Ca1	300-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	76-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	52		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

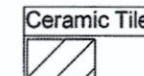
Ceramic tile application as per O.B.C. 9.30.6

Blocking panels are required over all interior supports.
Squash blocks are required under concentrated loads.

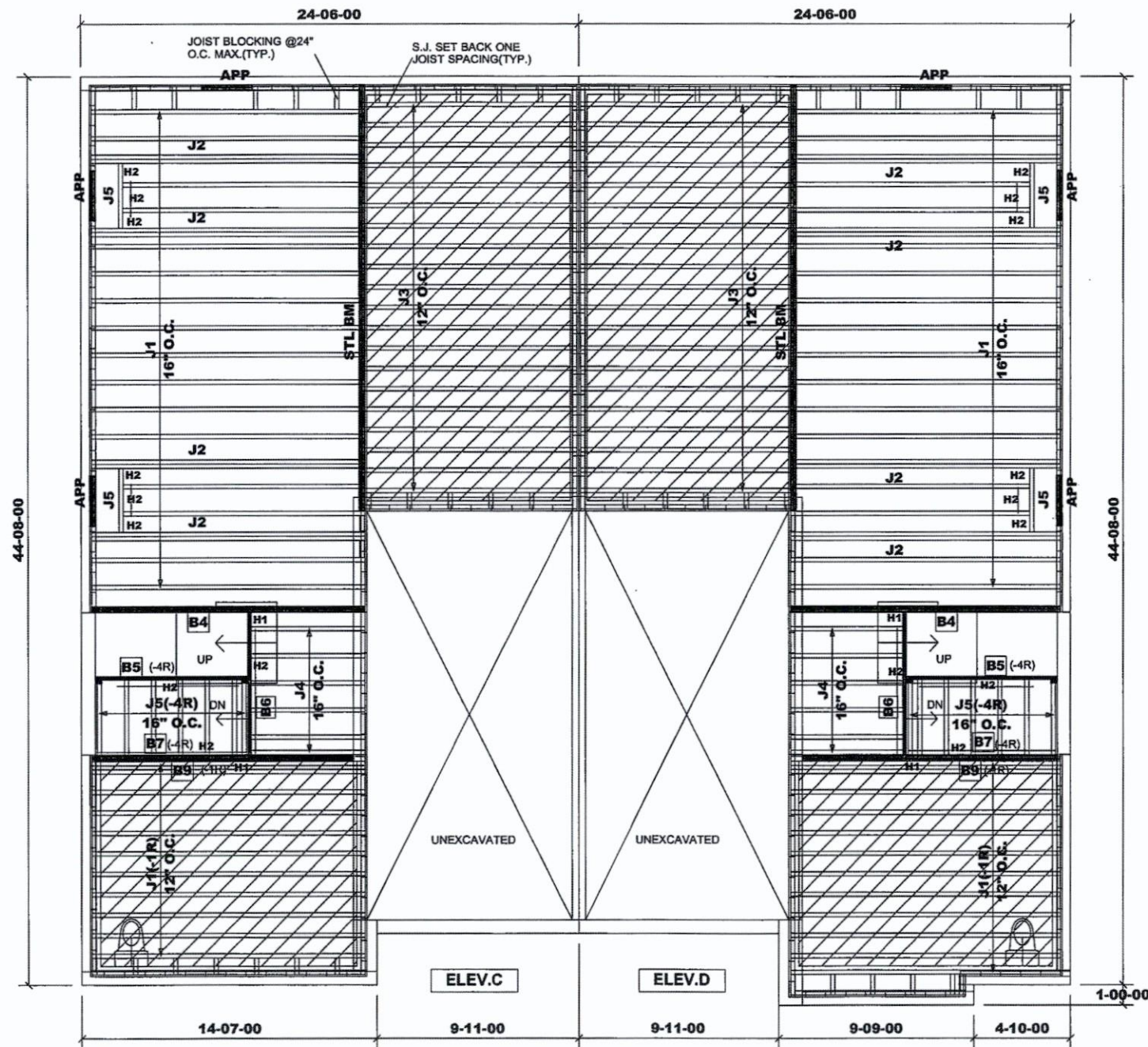
FIRM BCIN 113884
DESIGNER BCIN 25593

First Floor Framing

Do not scale - refer to architectural plans for dimensions



MODEL: SD-9(GERSHWIN)
W/SUNKEN FOYER(-1R)



Products				
PlotID	Length	Product	Piles	Net Qty
J1	14-00-00	9 1/2" NI-20	1	55
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	40
J4	6-00-00	9 1/2" NI-20	1	12
J5	4-00-00	9 1/2" NI-20	1	18
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	4
B7	13-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	4
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	2
B6	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	2
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	2
Ca1	302-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	76-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	52		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

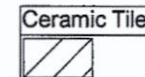
Blocking panels are required over all interior supports.
Squash blocks are required under concentrated loads.

FIRM BCIN 113884
DESIGNER BCIN 25593

First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-9(GERSHWIN)
W/SUNKEN FOYER(-1R)



JT/PL: 39002/104573

Builder: Gold Park

Location: Brampton

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 314129

Project: Encore 2

Date: October 27, 2019

Sheet: 6 of 8

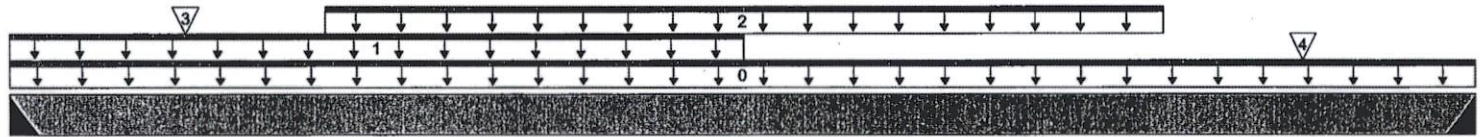
Maple, Ontario

Home Lumber

BC CALC® Member Report

Build 7118

 Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314129.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B1(i27391)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


07-00-00

Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	829 / 0	379 / 0		
B2, 2"	540 / 0	271 / 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	07-00-00	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	160	60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-00	05-06-00	Top	128	64			n/a
3	J3(i27410)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	Top	148	74			n/a
4	J3(i27399)	Conc. Pt. (lbs)	L	06-02-00	06-02-00	Top	148	74			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,552 ft-lbs	11,610 ft-lbs	22.0 %	1	03-03-00
End Shear	1,359 lbs	5,785 lbs	23.5 %	1	00-11-08
Total Load Deflection	L/999 (0.059")	n/a	n/a	4	03-05-00
Live Load Deflection	L/999 (0.04")	n/a	n/a	5	03-05-00
Max Defl.	0.059"	n/a	n/a	4	03-05-00
Span / Depth	8.6				


Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,717 lbs	n/a	40.2 %	Hanger
B2	Hanger 2" x 1-3/4"	1,149 lbs	n/a	26.9 %	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

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®,

SE004728

2nd Floor - Supply/BOM\Flush Beams\B2(i27392)

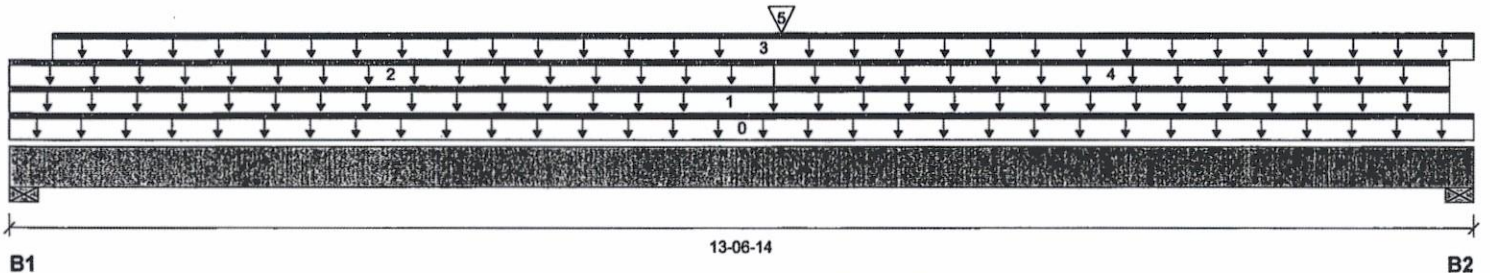
Dry | 1 span | No cant.

October 27, 2019 10:03:27

BC CALC® Member Report

Build 7118

 Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314129.mmdl
 Description: 2nd Floor - Supply/BOM\Flush Beams\B2(i27392)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


Total Horizontal Product Length = 13-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	601 / 0	729 / 0		
B2, 5-1/2"	696 / 0	805 / 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	13-06-14	Top		10			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	13-04-02	Top	23	12			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-00-14	Top	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	13-06-14	Top		60			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	07-00-14	13-04-02	Top	20	10			n/a
5	B1(i27391)	Conc. Pt. (lbs)	L	07-01-12	07-01-12	Top	824	377			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,829 ft-lbs	23,220 ft-lbs	38.0 %	1	07-01-12
End Shear	1,848 lbs	11,571 lbs	16.0 %	1	12-03-14
Total Load Deflection	L/461 (0.335")	n/a	52.0 %	4	06-10-10
Live Load Deflection	L/911 (0.17")	n/a	39.5 %	5	06-10-10
Max Defl.	0.335"	n/a	n/a	4	06-10-10
Span / Depth	16.3				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1,813 lbs	19.2 %	9.7 %	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	2,050 lbs	17.3 %	8.7 %	Spruce-Pine-Fir

Notes

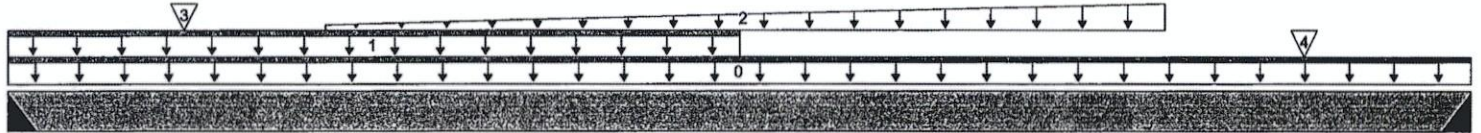
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 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(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314129.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B3(i29392)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


B1

07-00-00

B2

Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

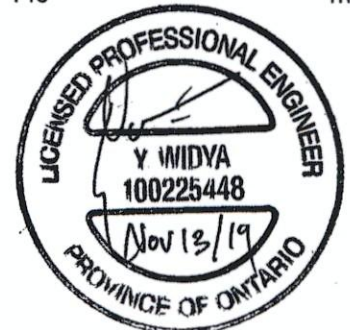
Bearing	Live	Dead	Snow	Wind
B1, 2"	737 / 0	339 / 0		
B2, 2"	860 / 0	385 / 0		

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	07-00-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	80	30			n/a
2	Smoothed Load	Trapezoidal (lb/ft)	L	01-06-04	05-06-04	Top	71	41			n/a
3	J4(i29365)	Conc. Pt. (lbs)	L	00-10-04	00-10-04	Top	136	68			n/a
4	J4(i29378)	Conc. Pt. (lbs)	L	06-02-04	06-02-04	Top	343	145			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,001 ft-lbs	11,610 ft-lbs	25.9 %	1	03-06-04
End Shear	1,637 lbs	5,785 lbs	28.3 %	1	06-00-08
Total Load Deflection	L/999 (0.068")	n/a	n/a	4	03-06-04
Live Load Deflection	L/999 (0.047")	n/a	n/a	5	03-06-04
Max Defl.	0.068"	n/a	n/a	4	03-06-04
Span / Depth	8.6				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,529 lbs	n/a	35.8 %	Hanger
B2	Hanger 2" x 1-3/4"	1,771 lbs	n/a	41.5 %	Hanger

Cautions
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
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 Calculations assume member is fully braced.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA O86.
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 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC1®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

1st Floor - Supply/BOM\Flush Beams\B4(i29373)

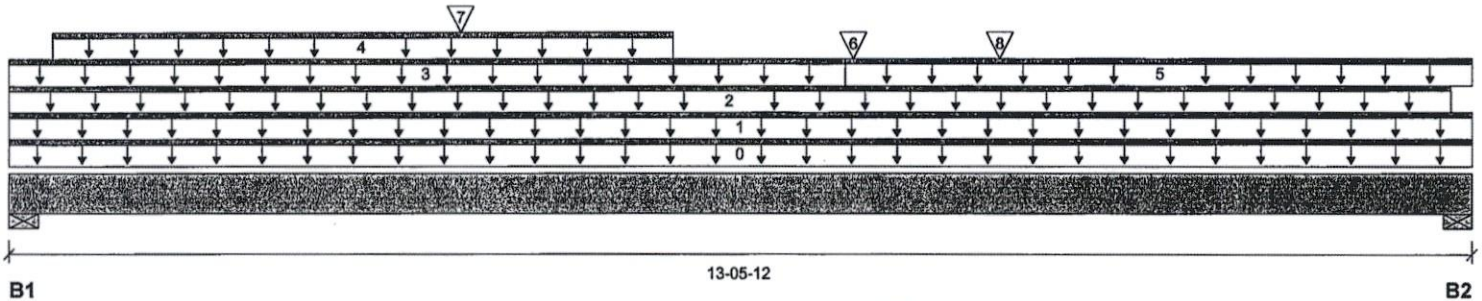
Dry | 1 span | No cant.

October 27, 2019 10:04:23

BC CALC® Member Report

Build 7118

 Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314129.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B4(i29373)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1,061 / 0	793 / 0		
B2, 2-3/8"	1,078 / 0	634 / 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	13-05-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	13-05-12	Top	22	11			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	13-03-06	Top	20	10			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-06	Top	6	3			n/a
4	User Load	Unf. Lin. (lb/ft)	L	00-04-14	06-01-06	Top		60			n/a
5	FC3 Floor Material	Unf. Lin. (lb/ft)	L	07-08-06	13-05-12	Top	19	10			n/a
6	B3(i29392)	Conc. Pt. (lbs)	L	07-09-04	07-09-04	Top	858	384			n/a
7	User Load	Conc. Pt. (lbs)	L	04-01-14	04-01-14	Top	480	180			n/a
8	FC3 Floor Material	Conc. Pt. (lbs)	L	09-01-06	09-01-06	Top	83	31			n/a

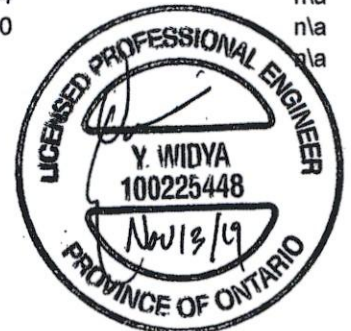
Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10,942 ft-lbs	23,220 ft-lbs	47.1 %	1	07-09-04
End Shear	2,471 lbs	11,571 lbs	21.4 %	1	00-11-14
Total Load Deflection	L/345 (0.459")	n/a	69.5 %	4	06-08-08
Live Load Deflection	L/556 (0.285")	n/a	64.8 %	5	06-08-08
Max Defl.	0.459"	n/a	n/a	4	06-08-08
Span / Depth	16.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	2,583 lbs	50.5 %	25.5 %	Spruce-Pine-Fir
B2	Wall/Plate 2-3/8" x 3-1/2"	2,410 lbs	47.1 %	23.8 %	Spruce-Pine-Fir

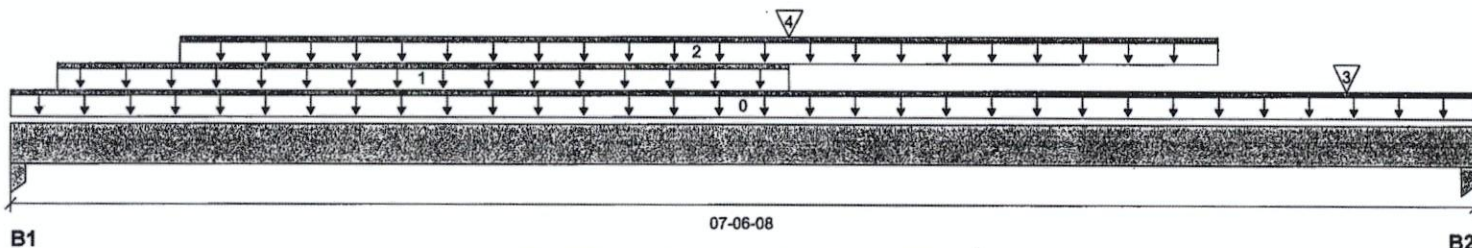
Nail one ply to another with
 3 1/2" spiral nails @ 12"
 o.c, staggered in 2 rows



BC CALC® Member Report

Build 7118

 Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314129.mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B5(i28739)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses


Total Horizontal Product Length = 07-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	837 / 0	529 / 0		
B2, 4"	784 / 0	408 / 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	07-06-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-02-14	04-00-00	Top	80	90			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-06	06-02-06	Top	83	42			n/a
3	J5(i28787)	Conc. Pt. (lbs)	L	06-10-06	06-10-06	Top	76	38			n/a
4	User Load	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top	800	300			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,604 ft-lbs	11,610 ft-lbs	39.7 %	1	04-00-00
End Shear	1,704 lbs	5,785 lbs	29.5 %	1	01-01-08
Total Load Deflection	L/999 (0.102")	n/a	n/a	4	03-09-07
Live Load Deflection	L/999 (0.066")	n/a	n/a	5	03-09-07
Max Defl.	0.102"	n/a	n/a	4	03-09-07
Span / Depth	8.8				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	1,917 lbs	26.2 %	22.4 %	Unspecified
B2	Column 4" x 1-3/4"	1,686 lbs	23.1 %	19.7 %	Unspecified

Notes

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

Disclosure

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 Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods.
 Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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

SE004732

1st Floor - Supply/BOM\Flush Beams\B6(i29423)

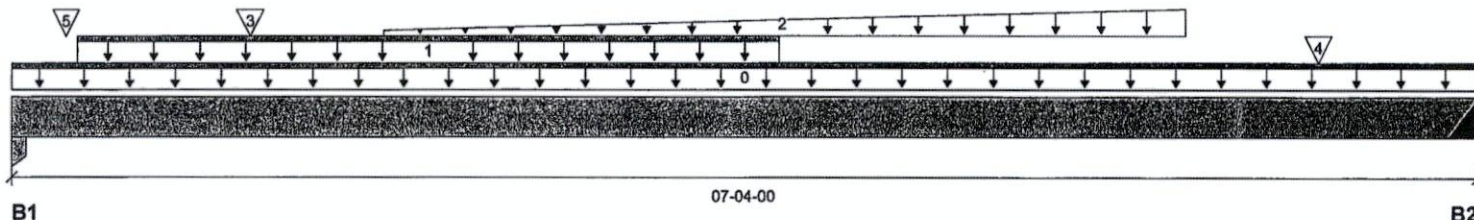
Dry | 1 span | No cant.

October 27, 2019 11:26:18

BC CALC® Member Report

Build 7118

 Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

 File name: 314129-A+B(-1R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B6(i29423)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	837 / 0	402 / 0		
B2, 2"	877 / 0	393 / 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	07-04-00	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-04-00	03-10-00	Top	80	30			n/a
2	Smoothed Load	Trapezoidal (lb/ft)	L	01-10-04	05-10-04	Top	71	41			n/a
3	J5(i29585)	Conc. Pt. (lbs)	L	01-02-04	01-02-04	Top	121	61			n/a
4	J5(i29485)	Conc. Pt. (lbs)	L	06-06-04	06-06-04	Top	343	145			n/a
5	-	Conc. Pt. (lbs)	L	00-03-05	00-03-05	Top	116	76			n/a

Controls Summary

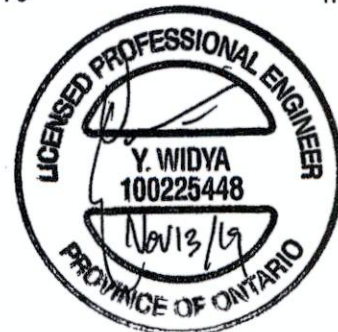
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,119 ft-lbs	11,610 ft-lbs	26.9 %	1	03-10-04
End Shear	1,673 lbs	5,785 lbs	28.9 %	1	06-04-08
Total Load Deflection	L/999 (0.075")	n/a	n/a	4	03-10-00
Live Load Deflection	L/999 (0.051")	n/a	n/a	5	03-10-00
Max Defl.	0.075"	n/a	n/a	4	03-10-00
Span / Depth	8.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	1,758 lbs	24.1 %	20.6 %	Unspecified
B2	Hanger 2" x 1-3/4"	1,807 lbs	n/a	42.3 %	HUS1.81/10

Cautions

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



1st Floor - Supply/BOM\Flush Beams\B7(i29583)

Dry | 1 span | No cant.

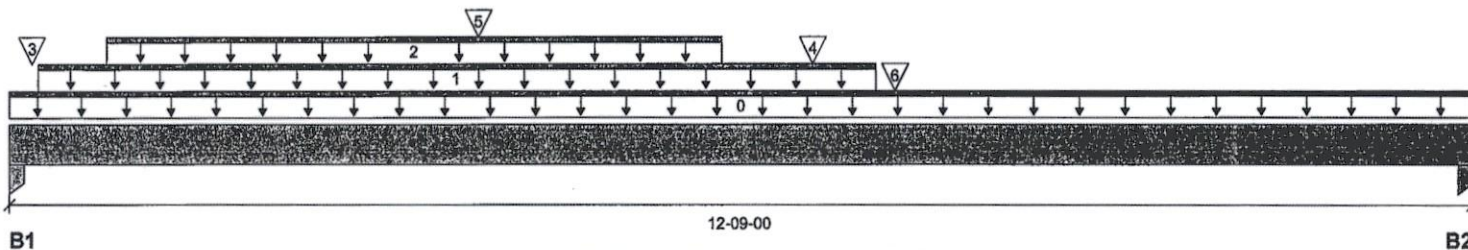
October 27, 2019 11:26:18

BC CALC® Member Report

Build 7118

Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314129-A+B(-1R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B7(i29583)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 12-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,037 / 0	867 / 0		
B2, 4"	843 / 0	604 / 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	12-09-00	Top		10			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-03-00	07-06-08	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-06	06-02-06	Top	86	43			n/a
3	J6(i29630)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	64	32			n/a
4	-	Conc. Pt. (lbs)	L	06-11-14	06-11-14	Top	106	53			n/a
5	User Load	Conc. Pt. (lbs)	L	04-01-00	04-01-00	Top	320	120			n/a
6	PBO9(i29635)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top	914	460			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	9,484 ft-lbs	21,312 ft-lbs	44.5 %	1	07-06-08
End Shear	2,401 lbs	11,571 lbs	20.8 %	1	01-01-08
Total Load Deflection	L/422 (0.347")	n/a	56.9 %	4	06-04-06
Live Load Deflection	L/728 (0.201")	n/a	49.5 %	5	06-04-06
Max Defl.	0.347"	n/a	n/a	4	06-04-06
Span / Depth	15.4				


Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 4" x 3-1/2"	2,639 lbs	18.1 %	15.5 %	Unspecified
B2	Column 4" x 3-1/2"	2,020 lbs	13.8 %	11.8 %	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 05-02-08, Bottom: 05-02-08.
 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



1st Floor - Supply/BOM\Flush Beams\B8(i30404)

BC CALC® Member Report

Dry | 1 span | No cant.

October 27, 2019 14:37:38

Build 7118

Job name: 39002(SD-9)

File name: 314129-C+D(-2R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B8(i30404)

City, Province, Postal Code: Brampton, ON

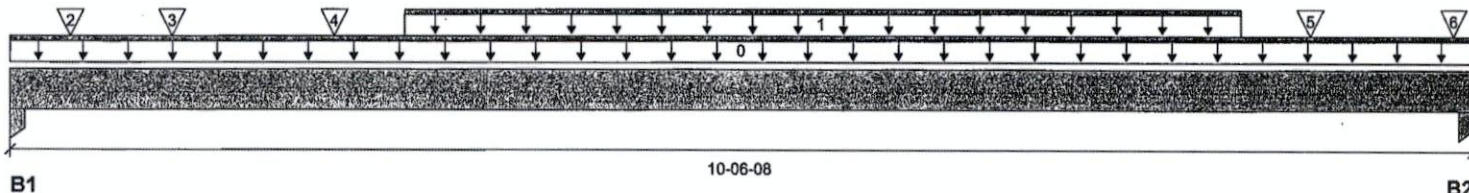
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 10-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,367 / 0	736 / 0		
B2, 3-1/2"	1,640 / 0	924 / 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	10-06-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-10-02	08-10-02	Top	255	128			n/a
2	J3(i30423)	Conc. Pt. (lbs)	L	00-05-04	00-05-04	Top	196	98			n/a
3	J3(i30418)	Conc. Pt. (lbs)	L	01-02-02	01-02-02	Top	243	122			n/a
4	J3(i30419)	Conc. Pt. (lbs)	L	02-04-02	02-04-02	Top	276	138			n/a
5	J3(i30426)	Conc. Pt. (lbs)	L	09-04-02	09-04-02	Top	280	140			n/a
6	B12(i30428)	Conc. Pt. (lbs)	L	10-04-12	10-04-12	Top	459	281			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,997 ft-lbs	23,220 ft-lbs	30.1 %	1	05-04-02
End Shear	2,562 lbs	11,571 lbs	22.1 %	1	09-05-08
Total Load Deflection	L/675 (0.178")	n/a	35.5 %	4	05-04-02
Live Load Deflection	L/999 (0.116")	n/a	n/a	5	05-04-02
Max Defl.	0.178"	n/a	n/a	4	05-04-02
Span / Depth	12.7				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	2,970 lbs	20.3 %	17.4 %	Unspecified
B2	Column 3-1/2" x 3-1/2"	3,615 lbs	28.3 %	24.2 %	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

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



Boise Cascade

**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1st Floor - Supply/BOM/Flush Beams\B9(i29968)**

BC CALC® Member Report

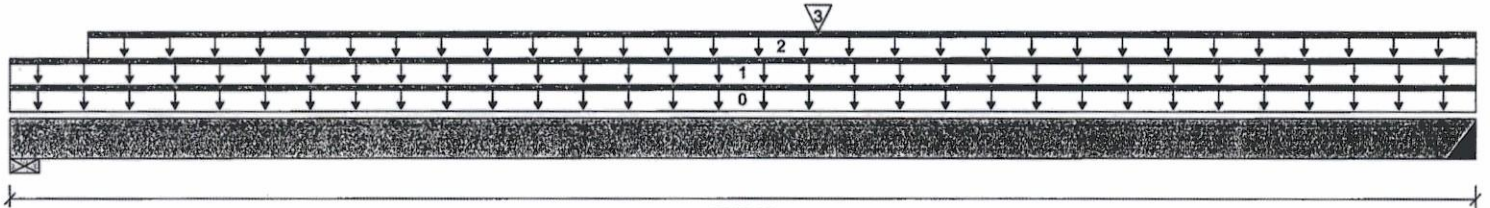
Dry | 1 span | No cant.

October 27, 2019 14:52:36

Build 7118

Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314129-C+D(-1R).mmdl
 Description: 1st Floor - Supply/BOM/Flush Beams\B9(i29968)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 07-08-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-7/8"	207 / 0	311 / 0		
B2, 2"	241 / 0	348 / 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	07-08-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-06	Top	16	9			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-04-14	07-08-06	Top		60			n/a
3	User Load	Conc. Pt. (lbs)	L	04-02-14	04-02-14	Top	320	120			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,976 ft-lbs	11,610 ft-lbs	17.0 %	1	04-02-14
End Shear	685 lbs	5,785 lbs	11.8 %	1	06-08-14
Total Load Deflection	L/999 (0.052")	n/a	n/a	4	03-11-03
Live Load Deflection	L/999 (0.024")	n/a	n/a	5	03-11-03
Max Defl.	0.052"	n/a	n/a	4	03-11-03
Span / Depth	9.5				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 1-7/8" x 1-3/4"	699 lbs	34.6 %	17.5 %	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	797 lbs	n/a	18.7 %	HUS1.81/10

Cautions

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

Notes

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

Disclosure

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

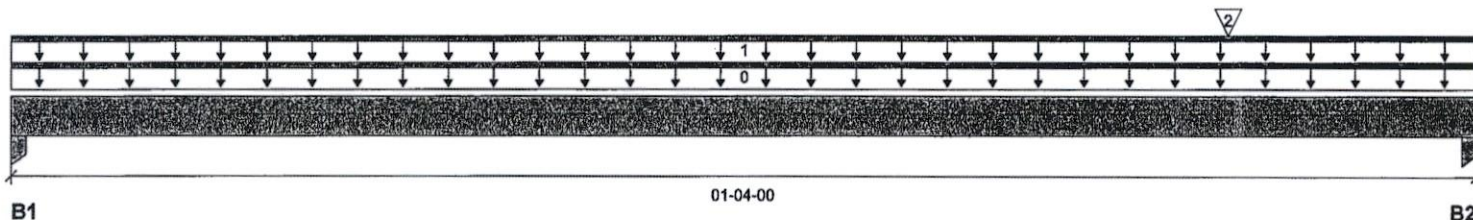
SE009736

BC CALC® Member Report

Build 7118

Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314129-C+D(-2R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B10(i30409)
 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, 4"	2 / 0	4 / 0		
B2, 4"	22 / 0	14 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC7 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00	Top	3	1			n/a
2	J7(i30413)	Conc. Pt. (lbs)	L	01-01-04	01-01-04	Top	20	10			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1 ft-lbs	7,546 ft-lbs	n/a	0	00-08-00
End Shear	3 lbs	3,761 lbs	n/a	0	00-04-00
Span / Depth	1.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	6 lbs	0.1 %	0.1 %	Unspecified
B2	Column 4" x 1-3/4"	51 lbs	0.7 %	0.6 %	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


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

SE004787

1st Floor - Supply/BOM\Flush Beams\B11(i30403)

Dry | 1 span | No cant.

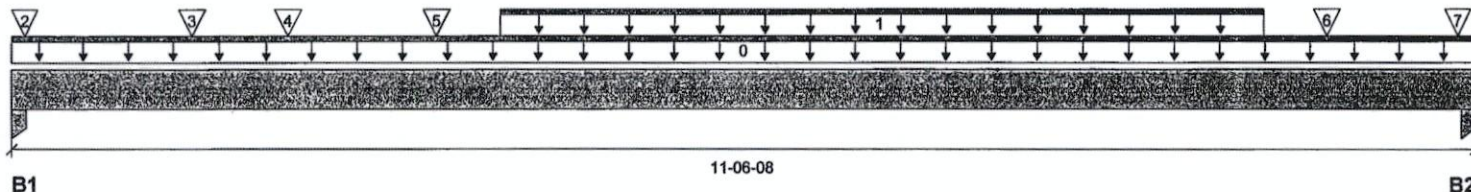
October 27, 2019 14:37:38

BC CALC® Member Report

Build 7118

Job name: 39002(SD-9)
 Address: Encore 2
 City, Province, Postal Code: Brampton, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File name: 314129-C+D(-2R).mmdl
 Description: 1st Floor - Supply/BOM\Flush Beams\B11(i30403)
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses



Total Horizontal Product Length = 11-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,390 / 0	752 / 0		
B2, 3-1/2"	1,943 / 0	1,076 / 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	11-06-08	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	03-10-02	09-10-02	Top	255	128			n/a
2	J5(i30416)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	114	57			n/a
3	J3(i30423)	Conc. Pt. (lbs)	L	01-05-04	01-05-04	Top	259	129			n/a
4	J3(i30418)	Conc. Pt. (lbs)	L	02-02-02	02-02-02	Top	243	122			n/a
5	J3(i30419)	Conc. Pt. (lbs)	L	03-04-02	03-04-02	Top	276	138			n/a
6	J3(i30426)	Conc. Pt. (lbs)	L	10-04-02	10-04-02	Top	280	140			n/a
7	B12(i30428)	Conc. Pt. (lbs)	L	11-04-12	11-04-12	Top	631	363			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8,441 ft-lbs	23,220 ft-lbs	36.4 %	1	05-04-02
End Shear	2,847 lbs	11,571 lbs	24.6 %	1	10-05-08
Total Load Deflection	L/505 (0.263")	n/a	47.6 %	4	05-10-02
Live Load Deflection	L/777 (0.171")	n/a	46.3 %	5	05-10-02
Max Defl.	0.263"	n/a	n/a	4	05-10-02
Span / Depth	13.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column 4" x 3-1/2"	3,024 lbs	20.7 %	17.7 %	Unspecified
B2	Column 3-1/2" x 3-1/2"	4,260 lbs	33.3 %	28.5 %	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 @ 10"
 o.c, staggered in 2 rows



1st Floor - Supply/BOM\Flush Beams\B12(i30552)

Dry | 1 span | No cant.

October 27, 2019 14:39:04

BC CALC® Member Report

Build 7118

Job name: 39002(SD-9)

File name: 314129-C+D(-2R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B12(i30552)

City, Province, Postal Code: Brampton, ON

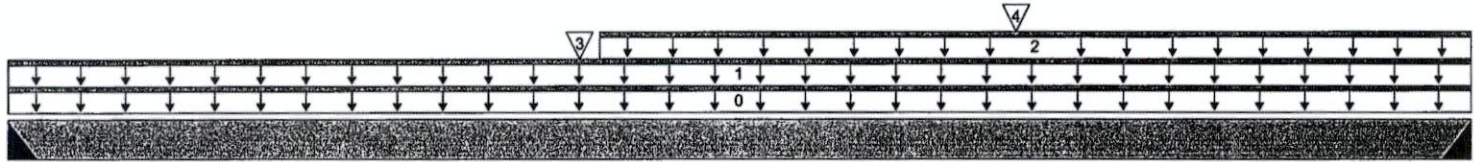
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



B1

12-02-00

B2

Total Horizontal Product Length = 12-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	724 / 0	525 / 0		
B2, 2"	672 / 0	667 / 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	12-02-00	Top		10			00-00-00
1	FC7 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-02-00	Top	24	12			n/a
2	User Load	Unf. Lin. (lb/ft)	L	04-11-00	12-02-00	Top		60			n/a
3	PBO9(i29791)	Conc. Pt. (lbs)	L	04-09-00	04-09-00	Top	784	374			n/a
4	User Load	Conc. Pt. (lbs)	L	08-04-08	08-04-08	Top	320	120			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,385 ft-lbs	23,220 ft-lbs	31.8 %	1	04-09-00
End Shear	1,709 lbs	11,571 lbs	14.8 %	1	11-02-08
Total Load Deflection	L/564 (0.254")	n/a	42.6 %	4	06-00-00
Live Load Deflection	L/998 (0.144")	n/a	36.1 %	5	06-00-00
Max Defl.	0.254"	n/a	n/a	4	06-00-00
Span / Depth	15.1				


Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	1,742 lbs	n/a	20.4 %	HGUS410
B2	Hanger 2" x 3-1/2"	1,841 lbs	n/a	21.6 %	HGUS410

Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

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:



INSTALLING NORDIC I-JOISTS

- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
- Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
- When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
- Leave a 1/16-inch gap between the I-joist end and a header.
- 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.
- Never install I-joists where they will be permanently exposed to moisture, or where they will remain in direct contact with concrete or masonry.
- Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- 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.
- Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
- If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Or, 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.
- Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

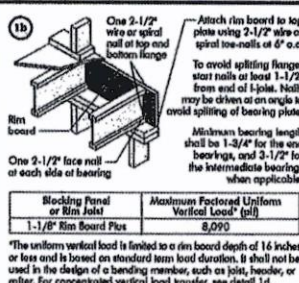
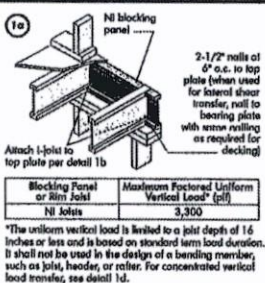
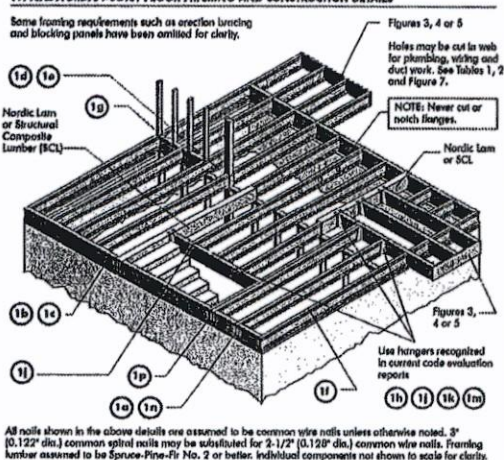


FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unshoofed I-joists. Once sheathed, do not over-stress I-joist ribs 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:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing 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.
- 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 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.
 - 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.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
- 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.
- Never install a damaged I-joist.

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

STORAGE AND HANDLING GUIDELINES

- Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
- Store, stack, and handle I-joists vertically and level only.
- Always stack and handle I-joists in the upright position only.
- Do not store I-joists in direct contact with the ground and/or liquids.
- Protect I-joists from weather, and use spacers to separate bundles.
- Bundled units should be kept intact until time of installation.
- When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joist 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.
- Do not handle I-joists in a horizontal orientation.
- NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.



MAXIMUM FLOOR SPANS

- 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 + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-rolled reinforced steel joist (CJR) 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.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Uplift Static Design per CAN/CSA C86-09 Standard, and NBC 2010.
- Units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

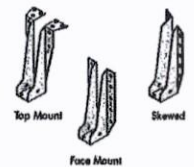
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS
SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On center spacing				On center spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	N-20	19'-1"	14'-2"	13'-9"	13'-5"	16'-3"	13'-4"	14'-10"	14'-3"
	N-40	16'-1"	12'-2"	11'-8"	11'-4"	13'-3"	10'-4"	13'-10"	13'-3"
	N-60	14'-0"	10'-3"	10'-0"	9'-6"	11'-2"	8'-4"	11'-10"	11'-3"
	N-80	12'-0"	8'-6"	8'-3"	7'-9"	9'-2"	6'-6"	10'-0"	9'-3"
11-7/8"	N-20	18'-1"	13'-2"	12'-9"	12'-5"	17'-4"	14'-5"	17'-10"	17'-3"
	N-40	15'-1"	11'-2"	10'-9"	10'-5"	14'-4"	11'-5"	15'-10"	14'-3"
	N-60	13'-0"	9'-6"	9'-3"	8'-9"	12'-2"	9'-4"	13'-10"	12'-3"
	N-80	11'-0"	8'-0"	7'-7"	7'-3"	10'-2"	7'-6"	11'-10"	10'-3"
14"	N-20	20'-2"	15'-3"	15'-0"	14'-6"	22'-2"	17'-3"	22'-9"	22'-3"
	N-40	17'-2"	13'-3"	13'-0"	12'-6"	19'-2"	14'-3"	20'-9"	19'-3"
	N-60	15'-0"	11'-0"	10'-7"	10'-3"	17'-0"	12'-1"	19'-0"	17'-3"
	N-80	13'-0"	9'-0"	8'-7"	8'-3"	15'-0"	10'-0"	17'-0"	15'-3"
18"	N-20	22'-5"	17'-6"	17'-3"	16'-9"	24'-5"	19'-6"	25'-1"	24'-3"
	N-40	19'-5"	14'-6"	14'-3"	13'-9"	21'-5"	16'-6"	22'-1"	21'-3"
	N-60	17'-0"	12'-0"	11'-7"	11'-3"	19'-0"	14'-0"	20'-0"	18'-3"
	N-80	15'-0"	10'-0"	9'-7"	9'-3"	17'-0"	12'-0"	19'-0"	17'-3"

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

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

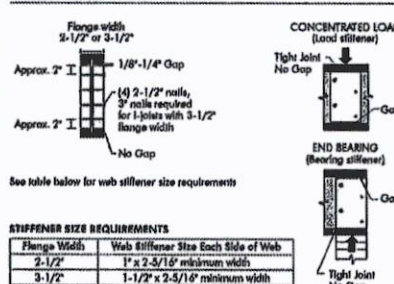


WEB STIFFENERS

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 2,570 lbs is applied to the top flange between supports, or in the case of a continuous beam, anywhere between the center span 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.

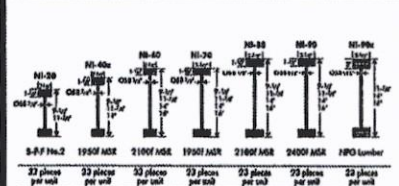
SI units conversion: 1 inch = 25.4 mm

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



Chandler Chitlogommu 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.

(Nordic Request 1810-095)



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

1b Backer block (use if hanger load exceeds 350 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the web and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched where possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

1c Double I-joist hanger. Top- or face-mount hanger. Notes: Unless hanger slides laterally support the top flange, bearing stiffeners shall be used. Filler block per detail 1p. Backer block required both sides for face-mount hangers.

1d For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads.

1e BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting).

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C3085 or CAN/CSA-C3087 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".

1f Filler block. Notes: 1. Support back of I-joist web during nailing to prevent damage to web/flange connection. 2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange. 3. Filler block is required between joists for full length of span. 4. Nail joist together with two rows of 3" nails on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required. 5. The maximum factored load that may be applied to one side of the double joist using this detail is 850 lbs/ft. Verify double I-joist capacity.

1g Filler block requirements for double I-joist construction.

Flange Size	Joist Depth	Filler Block Size
2-1/2" x 3-1/2"	9-1/2"	2-1/8" x 6"
1-1/2" x 3-1/2"	14"	2-1/8" x 8"
1-1/2" x 3-1/2"	16"	2-1/8" x 10"
1-1/2" x 3-1/2"	18"	2-1/8" x 12"
3-1/2" x 3-1/2"	9-1/2"	3" x 6"
3-1/2" x 3-1/2"	11-7/8"	3" x 8"
3-1/2" x 3-1/2"	14"	3" x 10"
3-1/2" x 3-1/2"	16"	3" x 12"
3-1/2" x 3-1/2"	11-7/8"	3" x 7"
3-1/2" x 3-1/2"	14"	3" x 9"
3-1/2" x 3-1/2"	16"	3" x 11"

1h Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side. NI blocking panel. Optional: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joist.

1i One 2-1/2" nails at top and bottom flange. Two 2-1/2" nails from each web to lumber piece. 2x4 min. (1/8" gap minimum). Two 2-1/2" nails from each web to lumber piece. One 2-1/2" nails one side only. Two 2-1/2" nails at 6" o.c.

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

The construction details for residential designs are prone to changes.

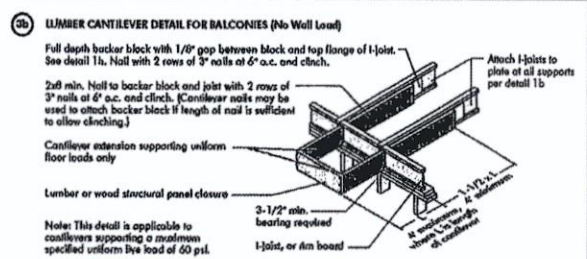
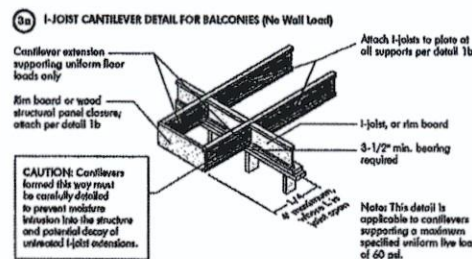
Details released after April 2014 supersedes N-C301

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

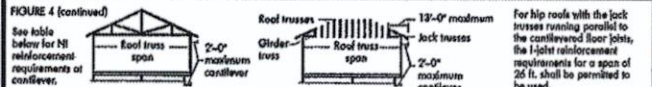
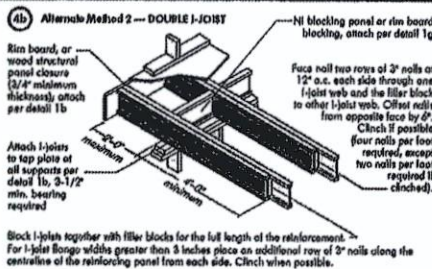
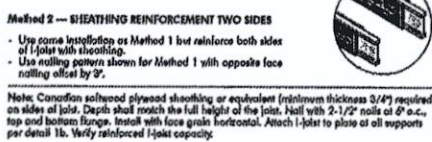
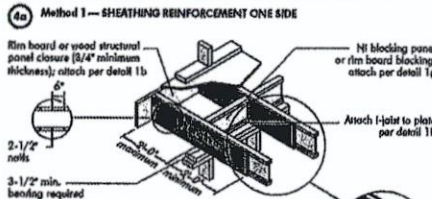
This document does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of its component based on the design criteria and loadings shown on the calculation sheets.

(Nordic Request 1810-095)

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

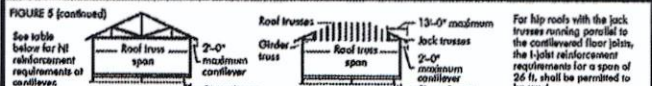
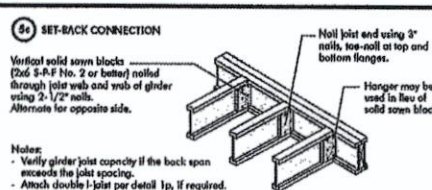
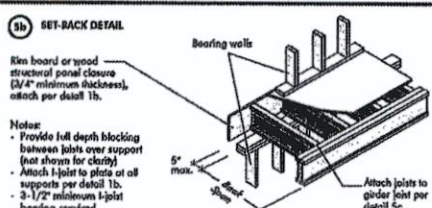
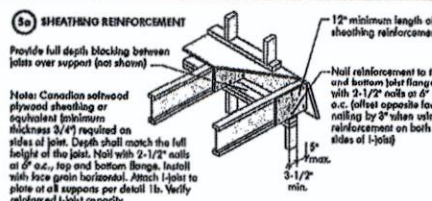


CANTILEVER REINFORCEMENT METHODS ALLOWED

Joint Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		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" wood structural panel on one side only.
- 2 = 16 reinforced with 3/4" wood structural panel on both sides, or double I-joint.
- X = Try a deeper joint or closer spacing.
- Maximum design load shall be 15 psf roof dead load, 55 psf floor dead load, and 60 psf wall load. Wind load is based on 90° maximum with window or door openings.
- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joints beneath the opening's cripple studs may be required.
- Table applies to joints 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Conditioned joints supporting glider trusses or roof beams may require additional reinforcing.

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



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

Joint Depth (in.)	Roof Truss Span (ft)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		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" wood structural panel on one side only.
- 2 = 16 reinforced with 3/4" wood structural panel on both sides, or double I-joint.
- X = Try a deeper joint or closer spacing.
- Maximum design load shall be 15 psf roof dead load, 55 psf floor dead load, and 60 psf wall load. Wind load is based on 90° maximum with window or door openings.
- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joints beneath the opening's cripple studs may be required.
- Table applies to joints 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Conditioned joints supporting glider trusses or roof beams may require additional reinforcing.

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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WEB HOLES

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. Whenever necessary, field-cut holes should be centered on the middle of the web.
3. 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.
4. The sides of square holes or longer sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
5. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole for twice the length of the largest side of the longest 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. Limit three maximum size holes per span, of which one may be a duct chase opening.
11. 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 Factor
		Round hole diameter (in.)												
		2	3	4	5	6	7	8	9	10	11	12		
9-1/2"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-18	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-24	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
11-3/8"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-18	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-24	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
14"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-18	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-24	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
18"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-18	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	
	16-24	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	

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 support to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.

OPTIONALS:

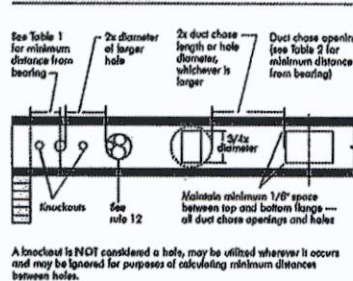
The above table is based on I-Joists used at three maximum spans. If the I-Joists are placed at less than their full maximum span (see Maximum Floor Span), the minimum distance from the centre line of the hole to the face of any support (D) as given above may be reduced as follows:

$$\text{Reduced } D = \frac{\text{Actual span}}{D} \times D$$

Where:

- D_{actual} = Distance from the inside face of any support to centre of hole, reduced for less than maximum span applications (i.e. the reduced distance shall not be less than 6 inches from the face of the support to edge of the hole).
- D_{actual} = The actual measured span distance between the inside face of supports (S).
- D = Span distance given in this table.
- D = The minimum distance from the inside face of any support to centre of hole from this table.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are pre-cut 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 18 inches on center 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 flanges, 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. Drilling 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"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
11-3/8"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
14"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
18"	16-0	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-6	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"
	16-12	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-0"	0'-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 support to centre of opening.
3. The above table is based on simple-span joists only. For other applications, consult 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 deflection level of L/400. For other applications, consult your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-Joist flanges before gluing.
2. Snap a chalk line across the I-Joists four feet from the wall for panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
4. 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.
5. 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 side areas, such as with double I-Joists.
6. Apply two lines of glue on I-Joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue lines may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-Joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger and joints in each succeeding row of panels. A 1/8-inch space between all joints and 1/8 inch at all edges, including T&G edges, is recommended. Use a spacer tool or a 1-1/2" common nail to assure accurate and consistent spacing.
10. 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)	Nail Size and Type			Maximum Spacing of Fasteners (ft)
		Common Wire or Nail Nails	Ring Threaded Nails or Screws	Staples	
16	5/8	2"	1-3/4"	2"	6"
20	5/8	2"	1-3/4"	2"	6"
24	3/4	2"	1-3/4"	2"	12"

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

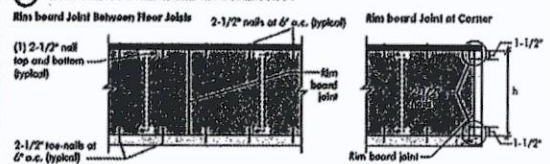
Ref: NBC-CNBC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

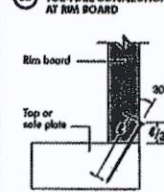
Floor sheathing must be field glued to the I-Joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-Joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

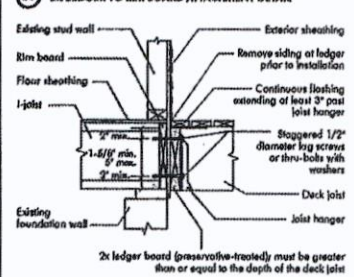
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



8b TOE-NAIL CONNECTION AT RIM BOARD



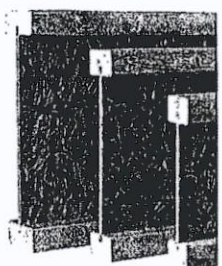
8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



PRODUCT WARRANTY

Champion Chikmagnum guarantees that, in accordance with our specifications, Nordic products are perfect for manufacturing above in material and workmanship.

Furthermore, Champion Chikmagnum warrants that our products, when utilized in accordance with our loading and installation instructions, will meet or exceed our specifications for the lifetime 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 6 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
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 circumscribed 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.)												
9-1/2"	Ni-20	0-7"	1-4"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---
	Ni-40x	0-7"	1-4"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---	---
	Ni-60	1-3"	2-6"	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	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	10-0"	---	---	---	---
	Ni-80	1-3"	2-8"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---	---
14"	Ni-20	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	0-7"	0-8"	0-8"	2-0"	3-9"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---	---
	Ni-40x	0-7"	0-8"	0-8"	1-4"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"	10-2"
	Ni-60	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"
	Ni-80	0-7"	1-2"	2-6"	3-10"	4-3"	5-6"	6-6"	8-0"	9-0"	9-8"	11-0"	12-3"	12-9"

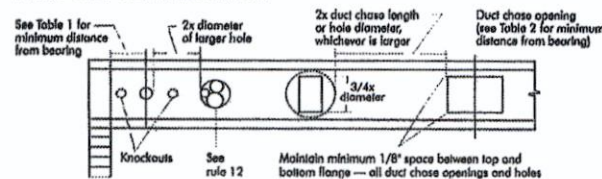
1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Hole location distance is measured from inside face of supports to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.
4. The above table is based on the I-joists being used at their maximum 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.)									
9-1/2"	Ni-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	7-9"
	Ni-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	8-9"
	Ni-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"	9-4"
	Ni-80	5-1"	5-5"	6-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"	8-8"
11-7/8"	Ni-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"	9-8"
	Ni-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-5"	10-9"
	Ni-60	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-5"	10-9"
	Ni-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-6"	11-0"
14"	Ni-20	6-1"	6-7"	7-0"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-5"
	Ni-40x	6-9"	7-3"	7-8"	8-3"	8-8"	9-3"	9-8"	10-3"	10-7"	11-1"
	Ni-60	7-1"	7-5"	7-9"	8-4"	8-9"	9-4"	9-9"	10-4"	10-8"	11-2"
	Ni-80	7-2"	7-6"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-6"	11-0"
16"	Ni-20	10-3"	10-8"	11-2"	11-6"	12-1"	12-5"	13-0"	13-4"	13-8"	14-2"
	Ni-40x	10-1"	10-5"	11-0"	11-4"	11-9"	12-3"	12-7"	13-1"	13-5"	13-9"
	Ni-60	10-4"	10-8"	11-3"	11-7"	12-1"	12-5"	12-9"	13-3"	13-7"	14-1"
	Ni-80	11-1"	11-5"	11-9"	12-4"	12-8"	13-2"	13-6"	14-0"	14-4"	14-8"

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 deflection 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 unshoed 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, end/cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
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 snits, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or snits 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 2x12" snits 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-bridging.
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

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

Furthermore, Charters Chibougamau 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.

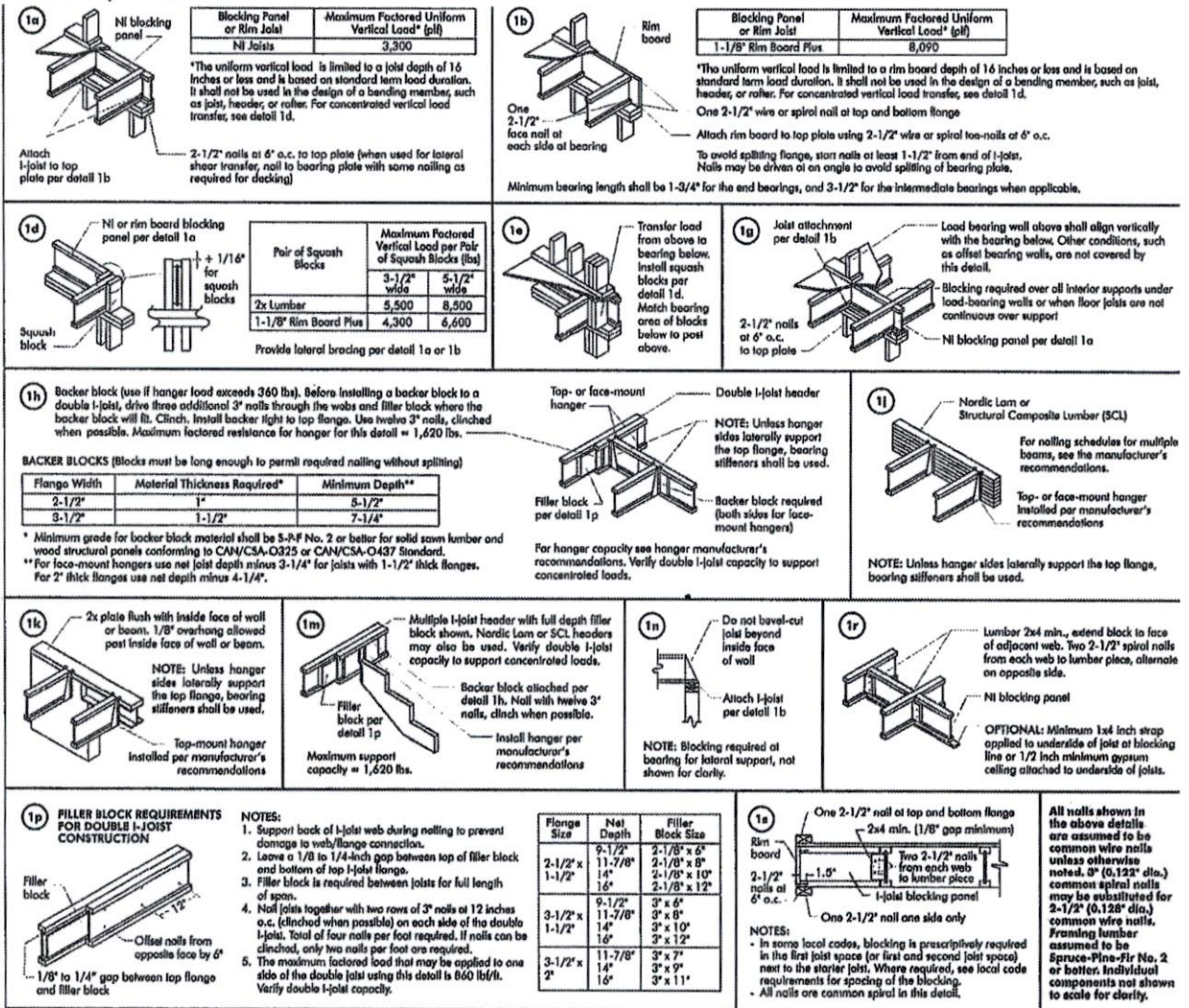
The construction details for residential designs are prone to changes.

Details released after September 2013 supersede 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)



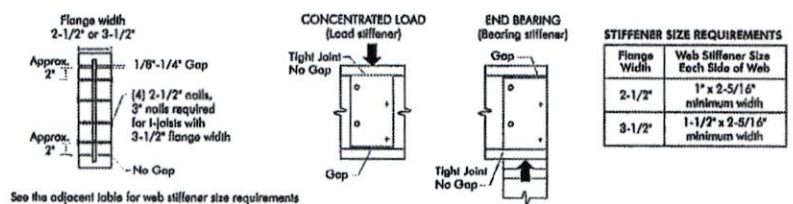
WEB STIFFENERS

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.

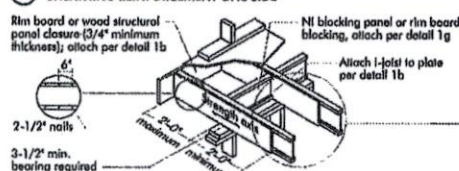
FIGURE 2

WEB STIFFENER INSTALLATION DETAILS



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1—SHEATHING REINFORCEMENT ONE SIDE



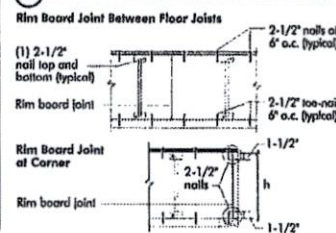
Method 2—SHEATHING REINFORCEMENT TWO SIDES



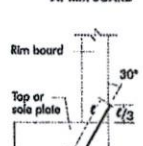
NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



8b TOE-NAIL CONNECTION AT RIM BOARD



The construction details for residential designs are prone to changes.

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(Nordic Request 1810-095)

