

Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	58
J2	11-00-00	9 1/2" NI-20	1	77
J3	9-00-00	9 1/2" NI-20	1	2
J4	5-00-00	9 1/2" NI-20	1	12
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	8
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
Ca1	272-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	52-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	12		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

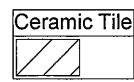
Ceramic tile application as per O.B.C. 9.30.6  
 Blocking panels are required over all interior supports  
 Squash blocks are required under concentrated loads.

FIRM BCIN 113884  
 DESIGNER BCIN 25593

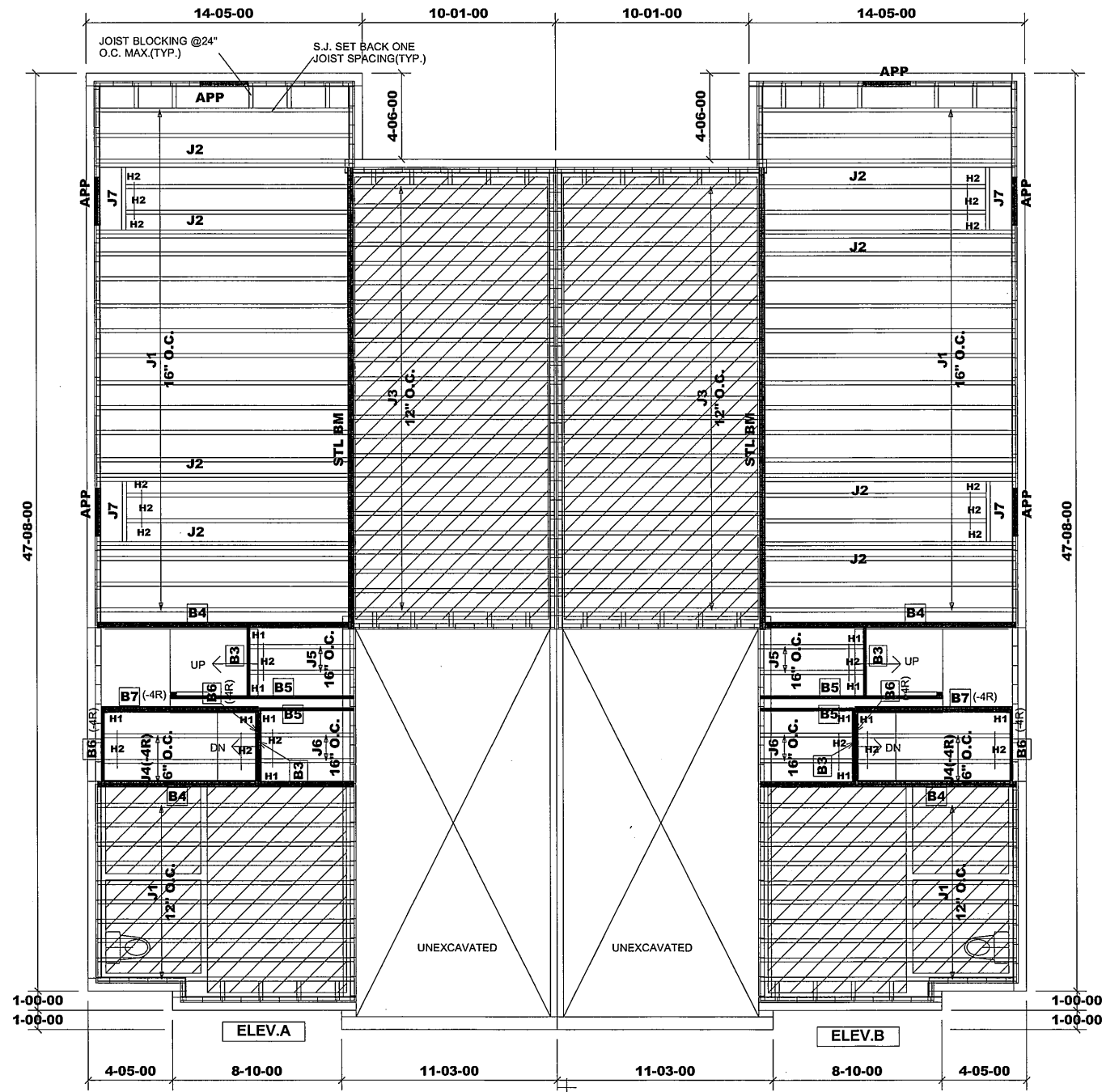
### Second Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-10(STRAVINSKY)



SE004740 - SE004753



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	56
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	46
J4	8-00-00	9 1/2" NI-20	1	6
J5	6-00-00	9 1/2" NI-20	1	4
J6	5-00-00	9 1/2" NI-20	1	4
J7	4-00-00	9 1/2" NI-20	1	4
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	8
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B7	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
Ca1	288-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	80-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	12		HUS1.81/10
H2	32		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

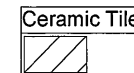
Ceramic tile application as per O.B.C. 9.30.6  
Blocking panels are required over all interior supports  
Squash blocks are required under concentrated loads.

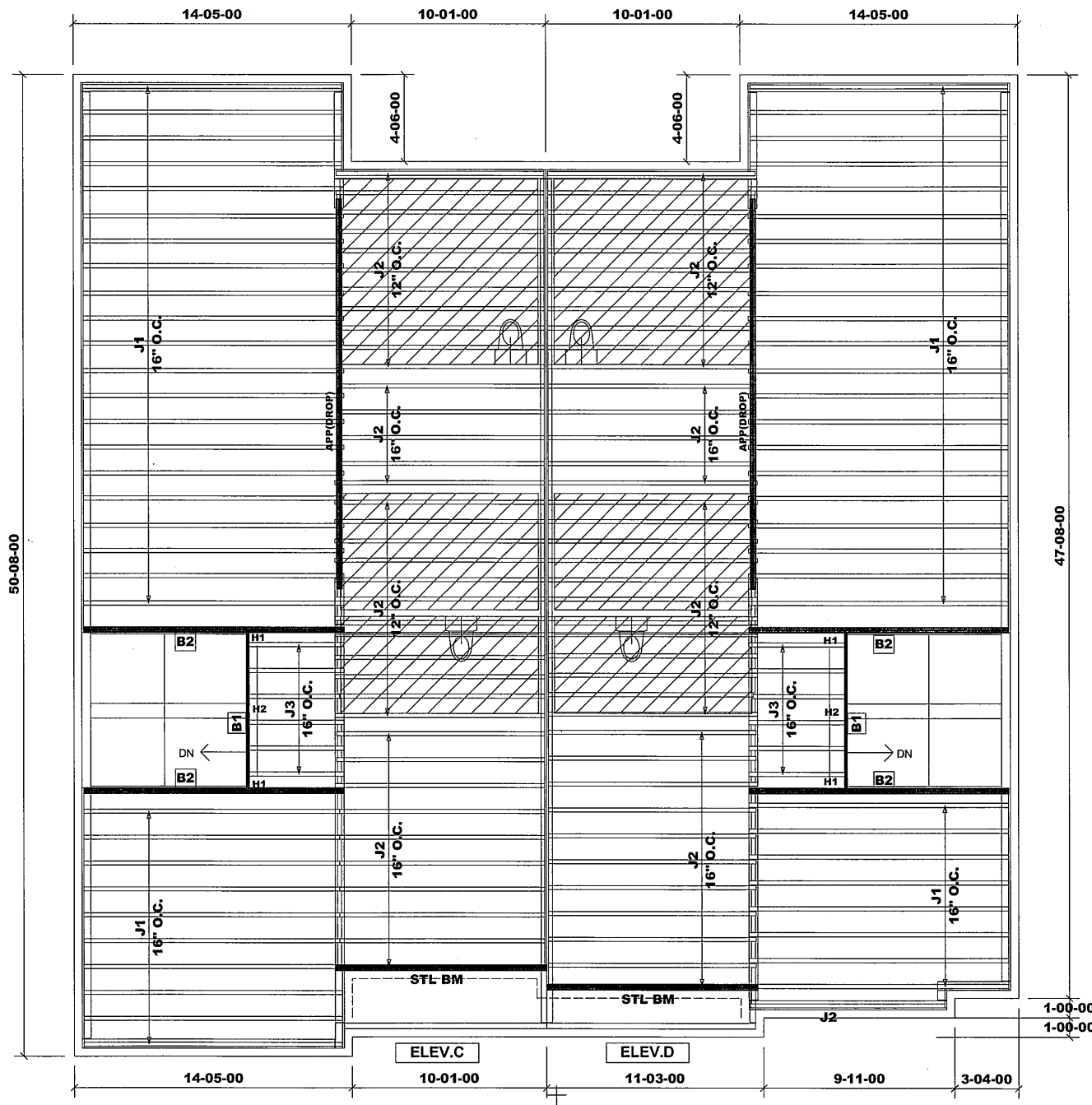
FIRM BCIN 113884  
DESIGNER BCIN 25593

## First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-10(STRAVINSKY)





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	78
J3	5-00-00	9 1/2" NI-20	1	12
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	8
B1	8-00-00	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	56-00-00	9 1/2" NI-20	1	1

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HUS1.81/10
H2	12		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

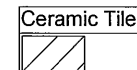
Ceramic tile application as per O.B.C. 9.30.6  
 Blocking panels are required over all interior supports.  
 Squash blocks are required under concentrated loads.

FIRM BCIN 113884  
 DESIGNER BCIN 25593

## Second Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-10(STRAVINSKY)



JT/PL: 39002/104573

LI: 314128

Builder: Gold Park

Project: Encore 2

Location: Brampton

Date: October 28, 2019

Designer: NL

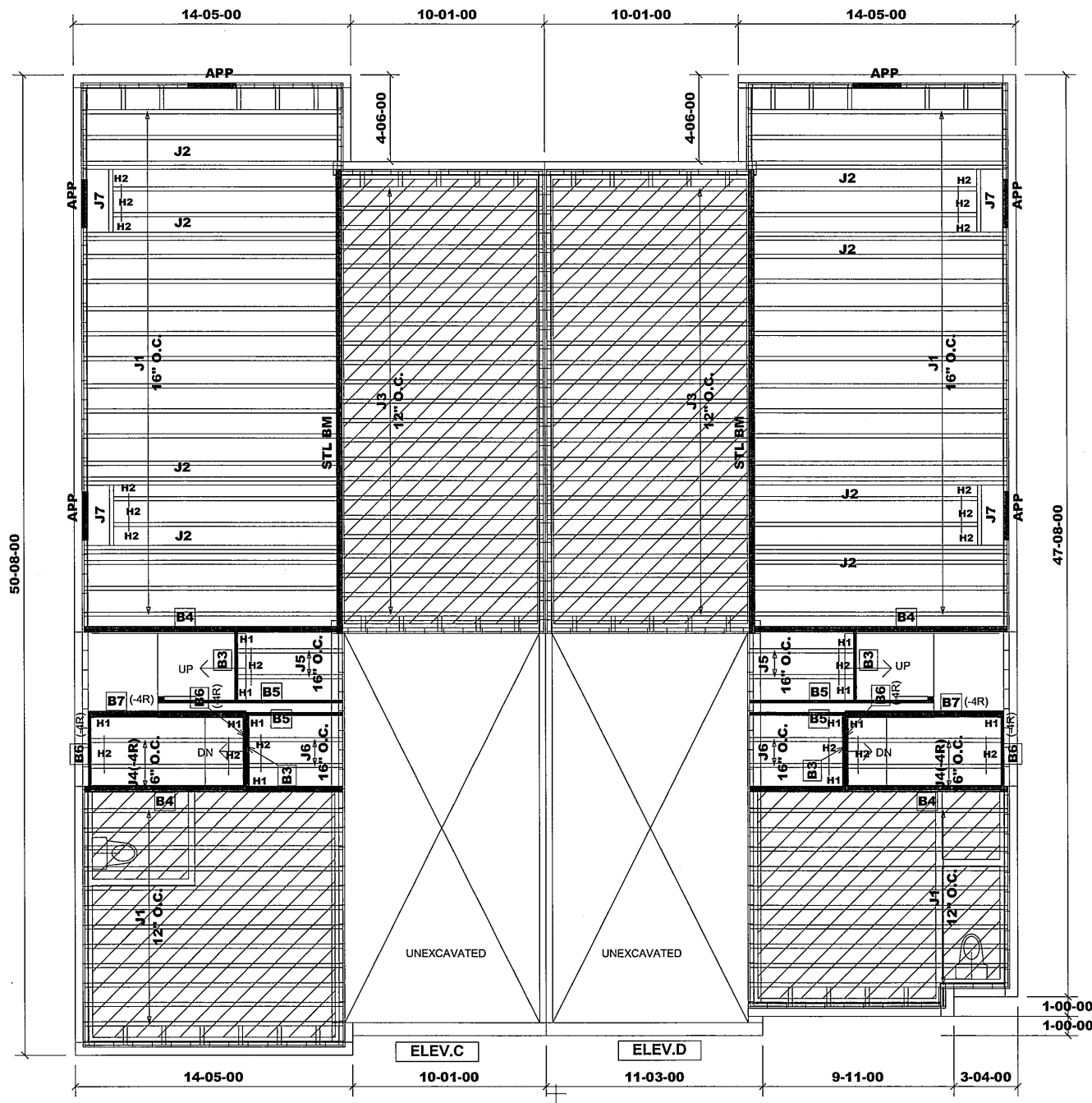
Sheet: 3 of 8

Alpa Roof Trusses Inc.

Maple, Ontario

Salesperson: Derek

Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	58
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	46
J4	8-00-00	9 1/2" NI-20	1	6
J5	6-00-00	9 1/2" NI-20	1	4
J6	5-00-00	9 1/2" NI-20	1	4
J7	4-00-00	9 1/2" NI-20	1	4
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	8
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	4
B7	9-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	4
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	4
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	4
Ca1	292-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	82-00-00	9 1/2" NI-20	1	1

FIRM BCIN 113884  
DESIGNER BCIN 25593

Connector Summary			
PlotID	Qty	Manuf	Product
H1	12		HUS1.81/10
H2	32		LT259

*LL*

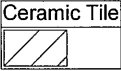
RIMBOARD  
1- 1/8" X 9 1/2" O.S.B.  
SUBFLOOR - 5/8" GLUE & NAILED  
APP - AS PER PLAN  
BBO - BEAM BY OTHERS

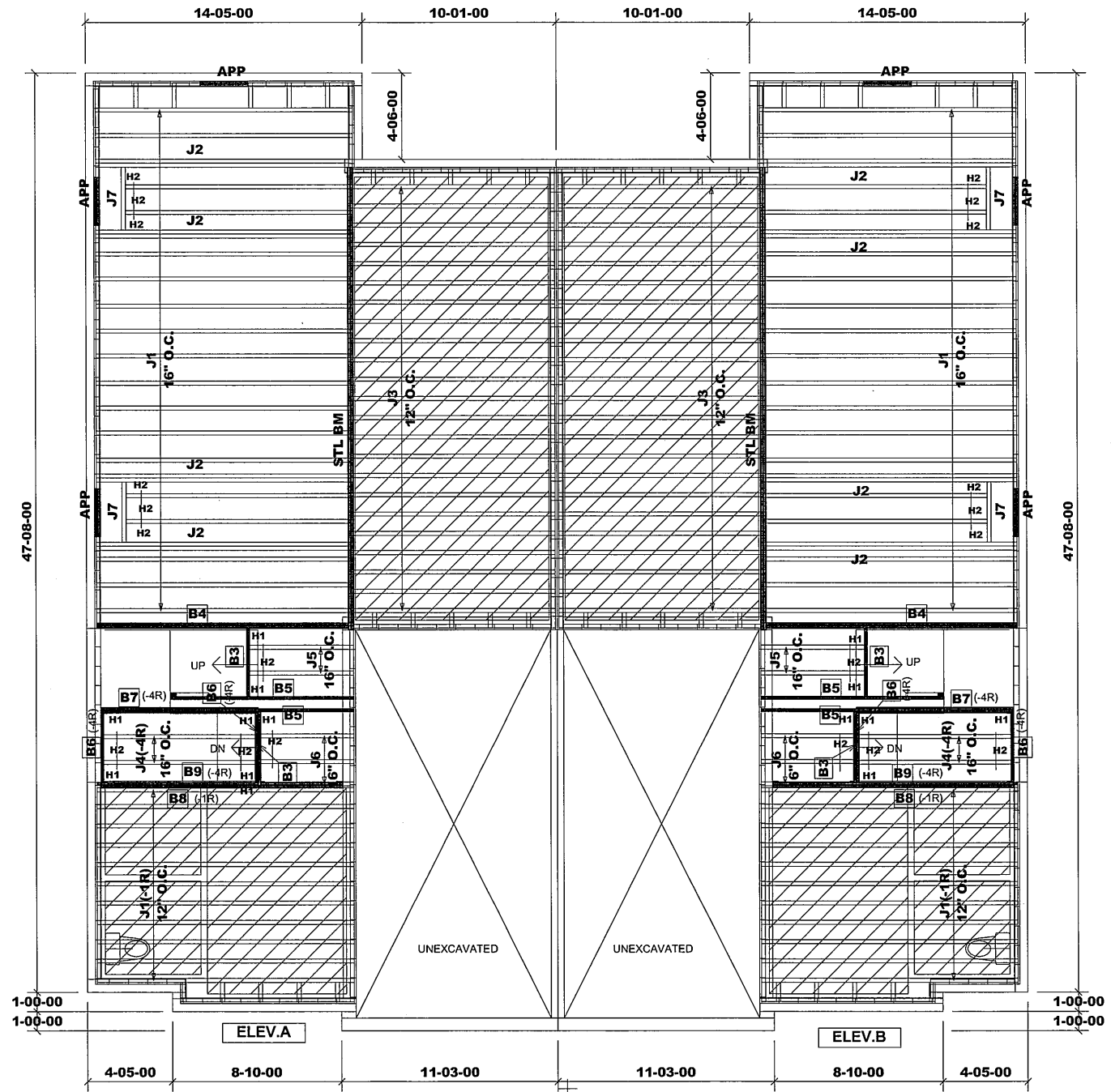
Ceramic tile application as per O.B.C. 9.30.6  
Blocking panels are required over all interior supports  
Squash blocks are required under concentrated loads.

### First Floor Framing

Do not scale - refer to architectural plans for dimensions

MODEL: SD-10(STRAVINSKY)





Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-20	1	58
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	46
J4	8-00-00	9 1/2" NI-20	1	4
J5	6-00-00	9 1/2" NI-20	1	4
J6	5-00-00	9 1/2" NI-20	1	6
J7	4-00-00	9 1/2" NI-20	1	4
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	4
B9	13-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	4
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	4
B8	9-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	2
B7	9-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	4
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	4
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	4
Ca1	272-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	80-00-00	9 1/2" NI-20	1	1

FIRM BCIN 113884  
DESIGNER BCIN 25593

Connector Summary			
PlotID	Qty	Manuf	Product
H1	16		HUS1.81/10
H2	32		LT259

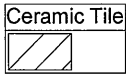
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RIMBOARD  
1- 1/8" X 9 1/2" O.S.B.  
SUBFLOOR - 5/8" GLUE & NAILED  
APP - AS PER PLAN  
BBO - BEAM BY OTHERS

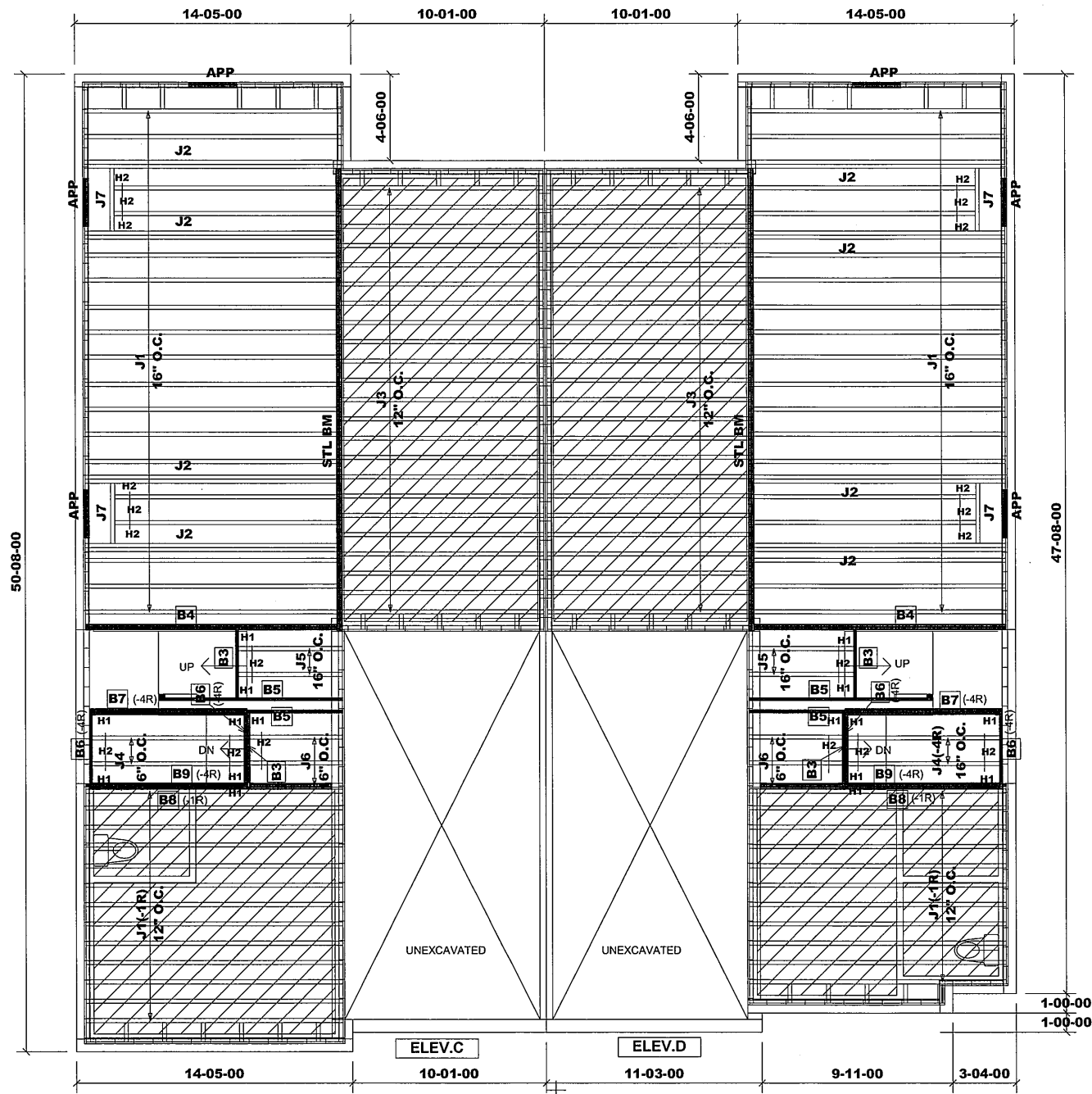
Ceramic tile application as per O.B.C. 9.30.6  
Blocking panels are required over all interior supports  
Squash blocks are required under concentrated loads.

First Floor Framing

Do not scale - refer to architectural plans for dimensions



MODEL: SD-10(STRAVINSKY)  
W/SUNKEN FOYER(-1R)



Products				
PlotID	Length	Product	Piles	Net Qty
J1	14-00-00	9 1/2" NI-20	1	60
J2	14-00-00	9 1/2" NI-20	2	16
J3	11-00-00	9 1/2" NI-20	1	46
J4	8-00-00	9 1/2" NI-20	1	4
J5	6-00-00	9 1/2" NI-20	1	4
J6	5-00-00	9 1/2" NI-20	1	6
J7	4-00-00	9 1/2" NI-20	1	4
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B9	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B8	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	2
B7	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
Ca1	276-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	82-00-00	9 1/2" NI-20	1	1

FIRM BCIN 113884  
DESIGNER BCIN 25593

Connector Summary			
PlotID	Qty	Manuf	Product
H1	16		HUS1.81/10
H2	32		LT259

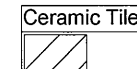
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RIMBOARD  
1- 1/8" X 9 1/2" O.S.B.  
SUBFLOOR - 5/8" GLUE & NAILED  
APP - AS PER PLAN  
BBO - BEAM BY OTHERS

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

Do not scale - refer to architectural plans for dimensions



MODEL: SD-10(STRAVINSKY)  
W/SUNKEN FOYER(-1R)

JT/PL: 39002/104573

LI: 314128

Builder: Gold Park

Project: Encore 2

Location: Brampton

Date: October 28, 2019

Designer: NL

Sheet: 6 of 8

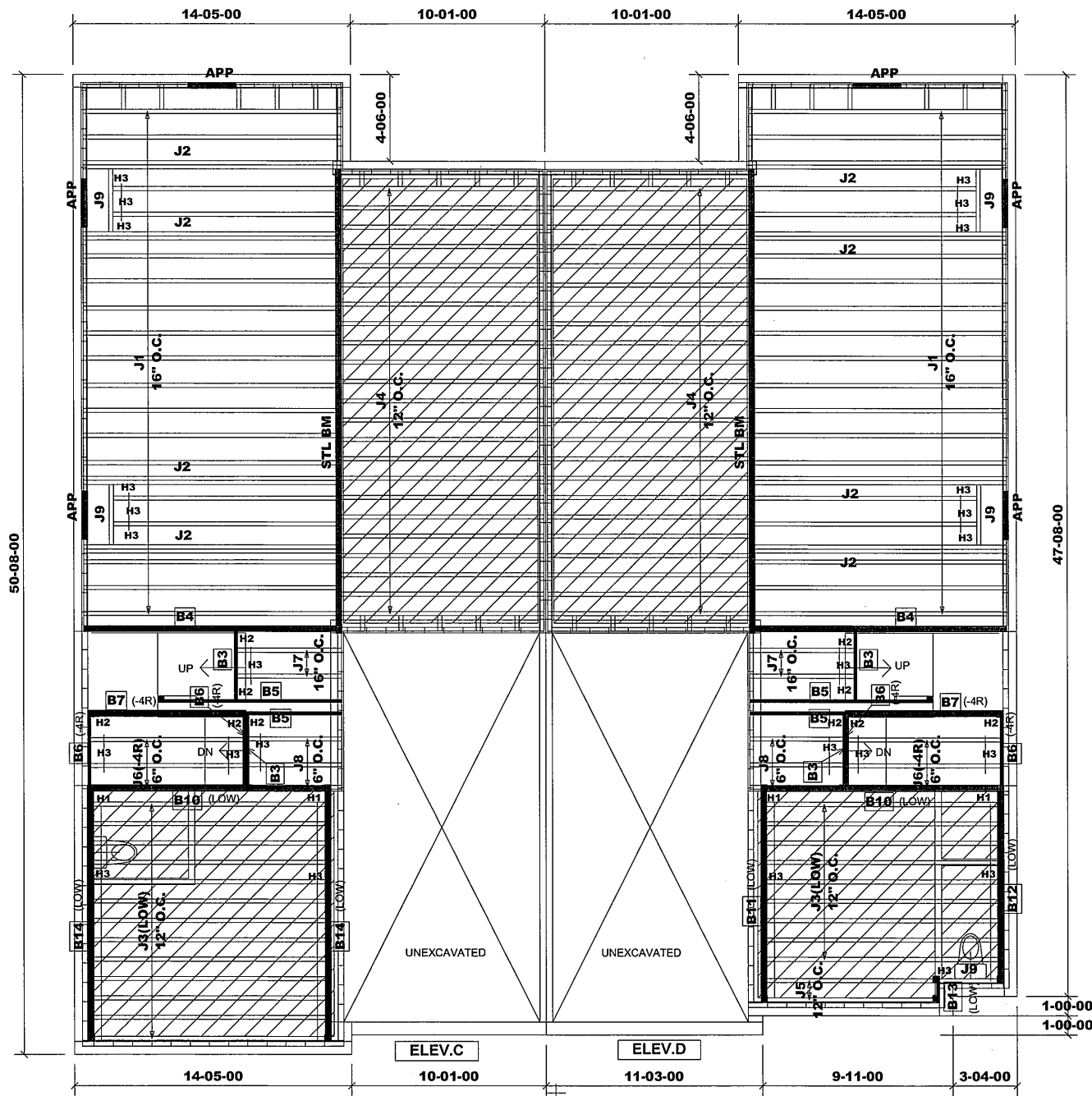
Alpa Roof Trusses Inc.

Maple, Ontario

Salesperson: Derek

Home Lumber





Products				
PlotID	Length	Product	Piles	Net Qty
J1	14-00-00	9 1/2" NI-20	1	36
J2	14-00-00	9 1/2" NI-20	2	16
J3	13-00-00	9 1/2" NI-20	1	22
J4	11-00-00	9 1/2" NI-20	1	46
J5	9-00-00	9 1/2" NI-20	1	2
J6	8-00-00	9 1/2" NI-20	1	6
J7	6-00-00	9 1/2" NI-20	1	4
J8	5-00-00	9 1/2" NI-20	1	6
J9	4-00-00	9 1/2" NI-20	1	5
B14	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B4	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B10	13-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	11-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B7	9-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	4
B13	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
Ca1	226-00-00	1 1/8" x 9 1/2" Rim Board	1	1
Bk1	68-00-00	9 1/2" NI-20	1	1

FIRM BCIN 113884  
DESIGNER BCIN 25593

Connector Summary			
PlotID	Qty	Manuf	Product
H1	4		HGUS410
H2	10		HUS1.81/10
H3	80		LT259

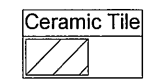
RIMBOARD  
1- 1/8" X 9 1/2" O.S.B.  
SUBFLOOR - 5/8" GLUE & NAILED  
APP - AS PER PLAN  
BBO - BEAM BY OTHERS

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

Do not scale - refer to architectural plans for dimensions

MODEL: SD-10(STRAVINSKY)  
W/SUNKEN FOYER(LOW)



BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 2nd Floor - Supply/BOM\Flush Beams\B1(i29843)

City, Province, Postal Code: Brampton, ON

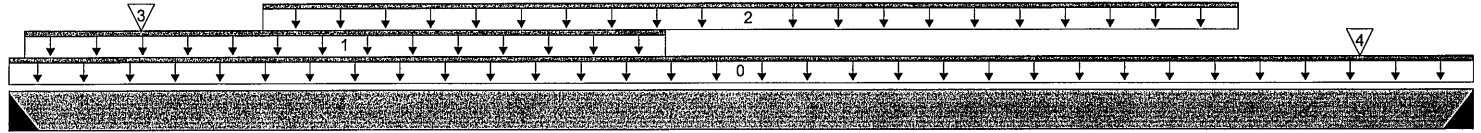
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses


 B1 08-00-00 B2  
 Total Horizontal Product Length = 08-00-00

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

Bearing	Live	Dead	Snow	Wind
B1, 2"	696 / 0	328 / 0		
B2, 2"	466 / 0	242 / 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	08-00-00	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-01-00	03-07-00	Top	120	45			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	06-08-08	Top	99	50			n/a
3	J4(i29862)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	109	55			n/a
4	J4(i29856)	Conc. Pt. (lbs)	L	07-04-08	07-04-08	Top	105	53			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,443 ft-lbs	11,610 ft-lbs	21.0 %	1	03-04-08
End Shear	1,168 lbs	5,785 lbs	20.2 %	1	00-11-08
Total Load Deflection	L/999 (0.073")	n/a	n/a	4	03-10-06
Live Load Deflection	L/999 (0.049")	n/a	n/a	5	03-10-06
Max Defl.	0.073"	n/a	n/a	4	03-10-06
Span / Depth	9.8				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,453 lbs	n/a	34.0 %	Hanger
B2	Hanger 2" x 1-3/4"	1,002 lbs	n/a	23.5 %	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™, BC1®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 2nd Floor - Supply/BOM\Flush Beams\B2(i29844)

City, Province, Postal Code: Brampton, ON

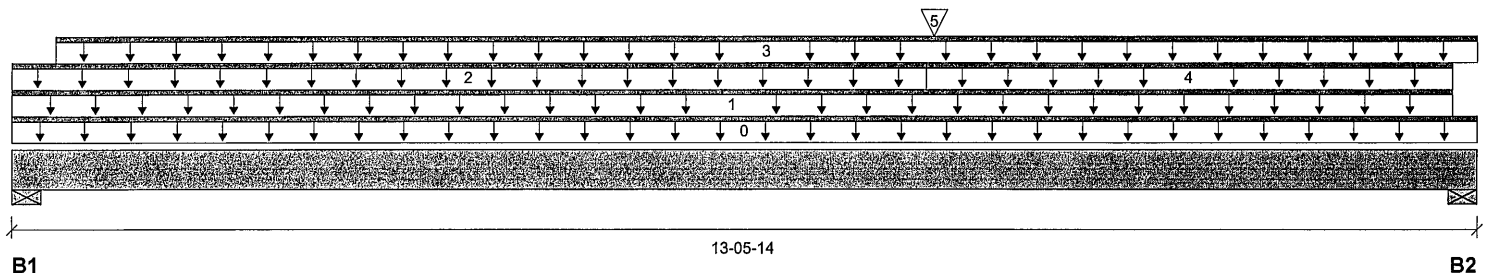
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 13'-05-14"

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

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	525 / 0	697 / 0		
B2, 5-1/2"	761 / 0	841 / 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	13-05-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	13-03-02	Top	15	7			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-04-14	Top	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-14	13-05-14	Top	20	70			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	08-04-14	13-03-02	Top	17	9			n/a
5	B1(i29843)	Conc. Pt. (lbs)	L	08-05-12	08-05-12	Top	696	328			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,728 ft-lbs	23,220 ft-lbs	33.3 %	1	08-05-12
End Shear	1,961 lbs	11,571 lbs	16.9 %	1	12-02-14
Total Load Deflection	L/509 (0.302")	n/a	47.2 %	4	07-00-09
Live Load Deflection	L/1,043 (0.147")	n/a	34.5 %	5	07-00-09
Max Defl.	0.302"	n/a	n/a	4	07-00-09
Span / Depth	16.2				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 3-1/2"	1,659 lbs	17.6 %	8.9 %	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	2,192 lbs	18.5 %	9.3 %	Spruce-Pine-Fir

**Notes**

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B3(i30981)

City, Province, Postal Code: Brampton, ON

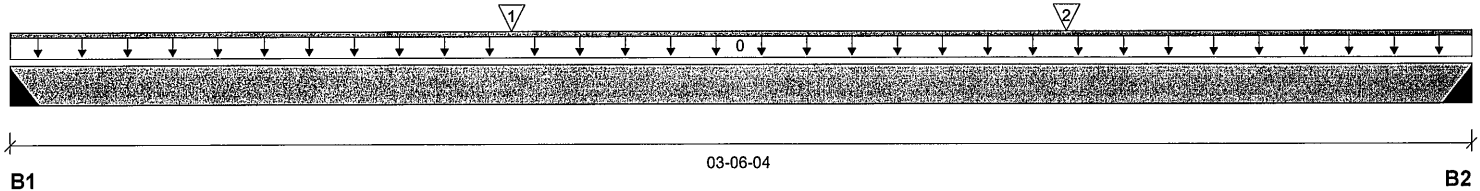
Specifier:

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"	309 / 0	141 / 0		
B2, 2"	347 / 0	157 / 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	03-06-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	J5(i30983)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	Top	338	145			n/a
2	J5(i30967)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	Top	318	136			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	703 ft-lbs	11,610 ft-lbs	6.1 %	1	01-02-08
End Shear	711 lbs	5,785 lbs	12.3 %	1	02-06-12
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	01-09-00
Live Load Deflection	L/999 (0.003")	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"	640 lbs	n/a	15.0 %	Hanger
B2 Hanger	2" x 1-3/4"	716 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

**Disclosure**

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

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B4(i30976)

City, Province, Postal Code: Brampton, ON

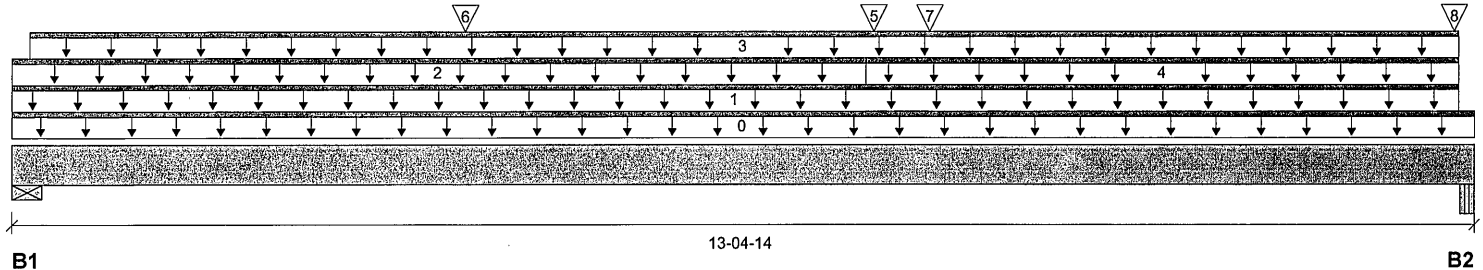
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 13-04-14

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

Bearing	Live	Dead	Snow	Wind
B1, 1-7/8"	765 / 0	786 / 0		
B2, 3-1/2"	1,131 / 0	1,258 / 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	13-04-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	13-03-02	Top	15	8			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-09-14	Top	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-01-14	13-03-02	Top	20	70			n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	07-09-14	13-03-02	Top	22	11			n/a
5	B3(i30981)	Conc. Pt. (lbs)	L	07-10-12	07-10-12	Top	346	156			n/a
6	User Load	Conc. Pt. (lbs)	L	04-01-14	04-01-14	Top	440	165			n/a
7	FC3 Floor Material	Conc. Pt. (lbs)	L	08-04-14	08-04-14	Top	90	34			n/a
8	4(i29839)	Conc. Pt. (lbs)	L	13-02-10	13-02-10	Top	383	456			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,102 ft-lbs	23,220 ft-lbs	34.9 %	1	07-04-06
End Shear	1,982 lbs	11,571 lbs	17.1 %	1	00-11-06
Total Load Deflection	L/437 (0.359")	n/a	54.9 %	4	06-08-02
Live Load Deflection	L/845 (0.186")	n/a	42.6 %	5	06-08-02
Max Defl.	0.359"	n/a	n/a	4	06-08-02
Span / Depth	16.5				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 1-7/8" x 3-1/2"	2,130 lbs	52.8 %	26.6 %	Spruce-Pine-Fir
B2	Beam 3-1/2" x 3-1/2"	3,269 lbs	43.4 %	21.9 %	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

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



SED004743

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B5(i30783)

City, Province, Postal Code: Brampton, ON

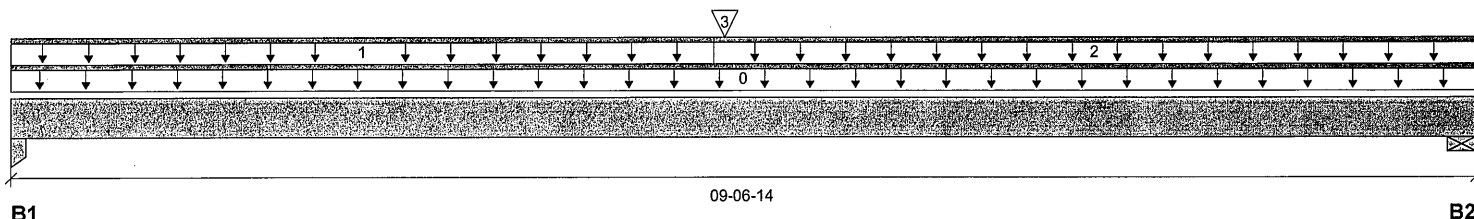
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 09-06-14

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	307 / 0	162 / 0		
B2, 2-3/8"	354 / 0	186 / 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	09-06-14	Top		5			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-07-00	Top	13	6			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	04-07-00	09-06-14	Top	40	20			n/a
3	-	Conc. Pt. (lbs)	L	04-07-14	04-07-14	Top	402	170			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,551 ft-lbs	11,610 ft-lbs	22.0 %	1	04-07-14
End Shear	674 lbs	5,785 lbs	11.7 %	1	08-07-00
Total Load Deflection	L/999 (0.093")	n/a	n/a	4	04-10-13
Live Load Deflection	L/999 (0.062")	n/a	n/a	5	04-10-13
Max Defl.	0.093"	n/a	n/a	4	04-10-13
Span / Depth	11.6				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 1-3/4"	663 lbs	9.1 %	7.8 %	Unspecified
B2	Wall/Plate 2-3/8" x 1-3/4"	765 lbs	29.9 %	15.1 %	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™, BC I®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B6(i30956)

City, Province, Postal Code: Brampton, ON

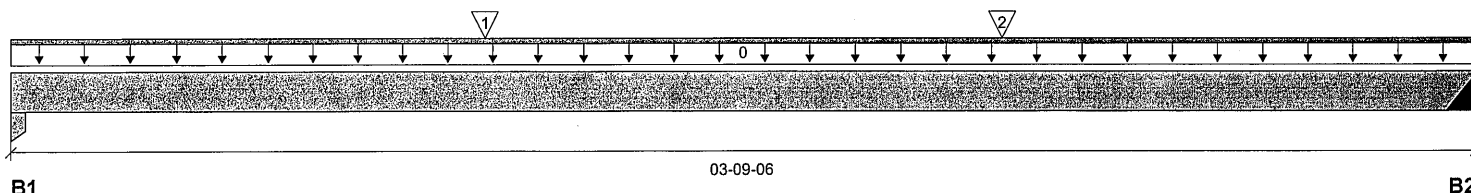
Specifier:

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, 2-7/8"	216 / 0	118 / 0		
B2, 2"	219 / 0	118 / 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	03-09-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	J4(i30953)	Conc. Pt. (lbs)	L	01-02-10	01-02-10	Top	201	101			n/a
2	J4(i30955)	Conc. Pt. (lbs)	L	02-06-10	02-06-10	Top	234	117			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	530 ft-lbs	11,610 ft-lbs	4.6 %	1	02-06-10
End Shear	470 lbs	5,785 lbs	8.1 %	1	02-09-14
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-11-02
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-11-02
Max Defl.	0.003"	n/a	n/a	4	01-11-02
Span / Depth	4.4				

**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Column	2-7/8" x 1-3/4"	472 lbs	9.0 %	7.7 %	Unspecified
B2 Hanger	2" x 1-3/4"	476 lbs	n/a	11.2 %	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 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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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

**1st Floor - Supply/BOM\Flush Beams\B7(i30775)**

Dry | 1 span | No cant.

October 28, 2019 10:05:43

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B.mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B7(i30775)

City, Province, Postal Code: Brampton, ON

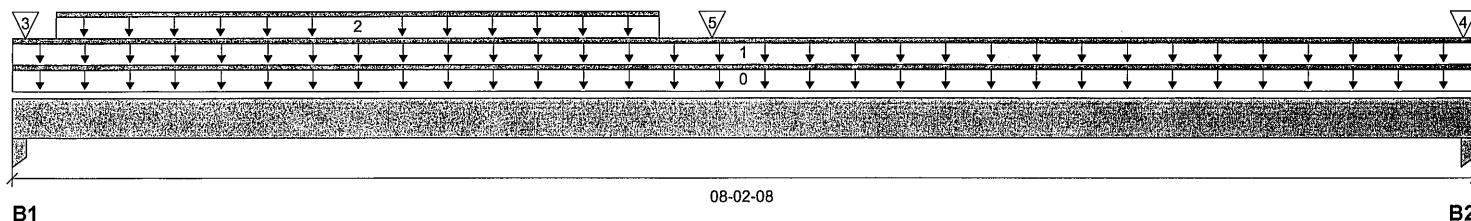
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 08-02-08

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

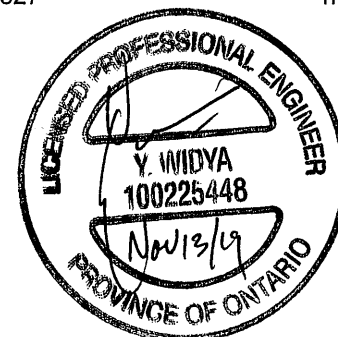
Bearing	Live	Dead	Snow	Wind
B1, 4"	1,086 / 0	695 / 0		
B2, 4"	953 / 0	525 / 0		

**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	08-02-08	Top		10			00-00-00
1	FC6 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-02-08	Top	30	15			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-03-00	03-07-08	Top	40	75			n/a
3	B6(i30778)	Conc. Pt. (lbs)	L	00-00-14	00-00-14	Top	219	118			n/a
4	B6(i30776)	Conc. Pt. (lbs)	L	08-01-10	08-01-10	Top	219	118			n/a
5	-	Conc. Pt. (lbs)	L	03-11-01	03-11-01	Top	1,216	527			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,714 ft-lbs	23,220 ft-lbs	24.6 %	1	03-11-08
End Shear	1,800 lbs	11,571 lbs	15.6 %	1	01-01-08
Total Load Deflection	L/999 (0.072")	n/a	n/a	4	04-00-11
Live Load Deflection	L/999 (0.047")	n/a	n/a	5	04-00-11
Max Defl.	0.072"	n/a	n/a	4	04-00-11
Span / Depth	9.7				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	2,497 lbs	17.1 %	14.6 %	Unspecified
B2	Column 4" x 3-1/2"	2,085 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

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-10)

File name: 314128-C+D(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM/Flush Beams\B8(i32200)

City, Province, Postal Code: Brampton, ON

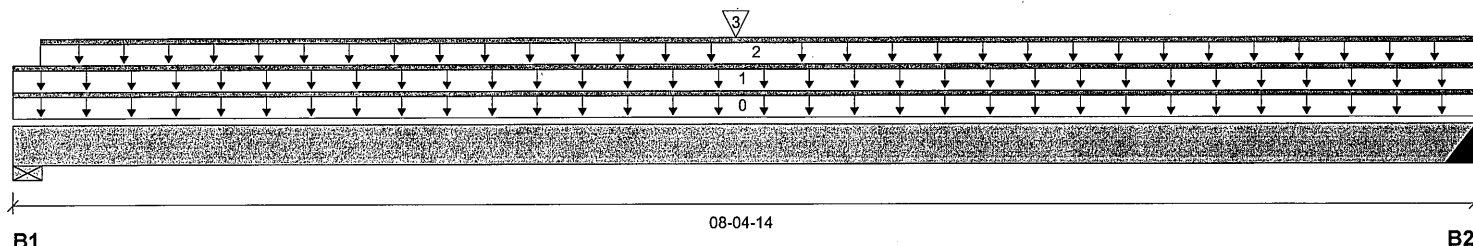
Specifier:

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, 1-7/8"	336 / 0	403 / 0		
B2, 2"	335 / 0	413 / 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	08-04-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-04-14	Top	8	4			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-01-14	08-04-14	Top	20	70			n/a
3	User Load	Conc. Pt. (lbs)	L	04-01-14	04-01-14	Top	440	165			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,959 ft-lbs	11,610 ft-lbs	25.5 %	1	04-01-14
End Shear	894 lbs	5,785 lbs	15.4 %	1	00-11-06
Total Load Deflection	L/999 (0.092")	n/a	n/a	4	04-02-08
Live Load Deflection	L/999 (0.046")	n/a	n/a	5	04-02-08
Max Defl.	0.092"	n/a	n/a	4	04-02-08
Span / Depth	10.4				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 1-7/8" x 1-3/4"	1,008 lbs	50.0 %	25.2 %	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1,019 lbs	n/a	23.9 %	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

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

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-C+D(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B9(i31472)

City, Province, Postal Code: Brampton, ON

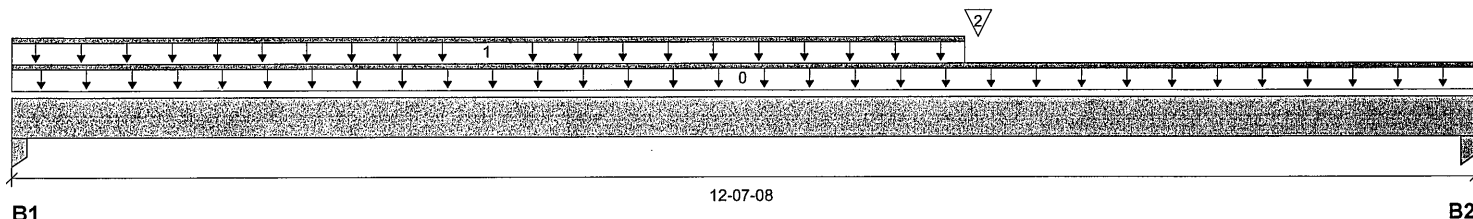
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 12-07-08

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	459 / 0	382 / 0		
B2, 4"	690 / 0	591 / 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	12-07-08	Top		10			00-00-00
1	FC6 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-02-08	Top	26	13			n/a
2	-	Conc. Pt. (lbs)	L	08-03-14	08-03-14	Top	933	744			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,951 ft-lbs	21,848 ft-lbs	31.8 %	1	08-04-08
End Shear	1,760 lbs	11,571 lbs	15.2 %	1	11-06-00
Total Load Deflection	L/659 (0.22")	n/a	36.4 %	4	06-09-13
Live Load Deflection	L/999 (0.12")	n/a	n/a	5	06-09-13
Max Defl.	0.22"	n/a	n/a	4	06-09-13
Span / Depth	15.3				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	1,166 lbs	8.0 %	6.8 %	Unspecified
B2	Column 4" x 3-1/2"	1,774 lbs	12.1 %	10.4 %	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: 04-05-00, Bottom: 04-05-00.

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

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\B10(i32303)**

Dry | 1 span | No cant.

October 28, 2019 14:44:47

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B10(i32303)

City, Province, Postal Code: Brampton, ON

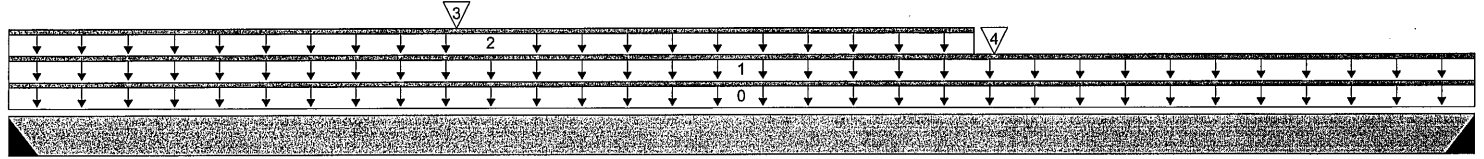
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 12-00-08

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

Bearing	Live	Dead	Snow	Wind
B1, 2"	685 / 0	686 / 0		
B2, 2"	578 / 0	493 / 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	12-00-08	Top		10			00-00-00
1	FC8 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-00-08	Top	26	13			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	07-11-00	Top	20	70			n/a
3	User Load	Conc. Pt. (lbs)	L	03-08-00	03-08-00	Top	440	165			n/a
4	PBO3(i30781)	Conc. Pt. (lbs)	L	08-01-00	08-01-00	Top	354	188			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,795 ft-lbs	23,220 ft-lbs	25.0 %	1	05-06-05
End Shear	1,739 lbs	11,571 lbs	15.0 %	1	00-11-08
Total Load Deflection	L/666 (0.213")	n/a	36.1 %	4	05-11-01
Live Load Deflection	L/999 (0.113")	n/a	n/a	5	05-11-01
Max Defl.	0.213"	n/a	n/a	4	05-11-01
Span / Depth	14.9				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 3-1/2"	1,885 lbs	n/a	22.1 %	HGUS410
B2 Hanger	2" x 3-1/2"	1,483 lbs	n/a	17.4 %	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.

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-10)

File name: 314128-A+B(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B11(i32305)

City, Province, Postal Code: Brampton, ON

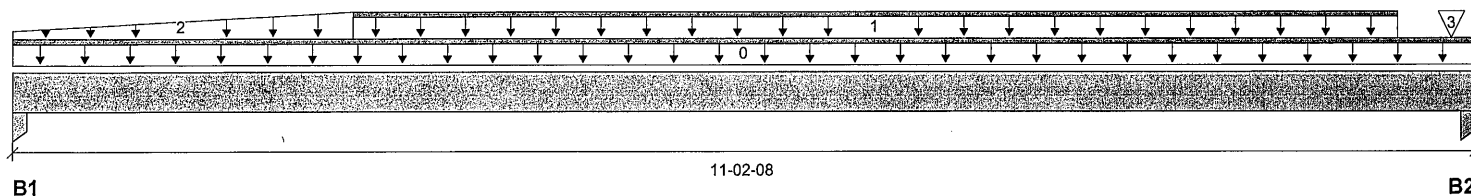
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 11-02-08

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,282 / 0	694 / 0		
B2, 4"	1,836 / 0	1,176 / 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	11-02-08	Top	100	10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-07-04	10-07-04	Top	252	126			n/a
2	Smoothed Load	Trapezoidal (lb/ft)	L	00-00-00	02-07-04	Top	93	47			n/a
3	B10(i32303)	Conc. Pt. (lbs)	L	11-00-04	11-00-04	Top	587	500			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,704 ft-lbs	23,220 ft-lbs	33.2 %	1	06-01-04
End Shear	2,691 lbs	11,571 lbs	23.3 %	1	10-01-00
Total Load Deflection	L/573 (0.223")	n/a	41.9 %	4	05-07-04
Live Load Deflection	L/881 (0.145")	n/a	40.9 %	5	05-07-04
Max Defl.	0.223"	n/a	n/a	4	05-07-04
Span / Depth	13.5				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	2,790 lbs	19.1 %	16.3 %	Unspecified
B2	Column 4" x 3-1/2"	4,224 lbs	28.9 %	24.7 %	Unspecified

**Notes**

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Nail one ply to another with

3 1/2" spiral nails @ 10"

o.c, staggered in 2 rows

**1st Floor - Supply/BOM\Flush Beams\B12(i32306)**

Dry | 1 span | No cant.

October 28, 2019 14:44:47

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B12(i32306)

City, Province, Postal Code: Brampton, ON

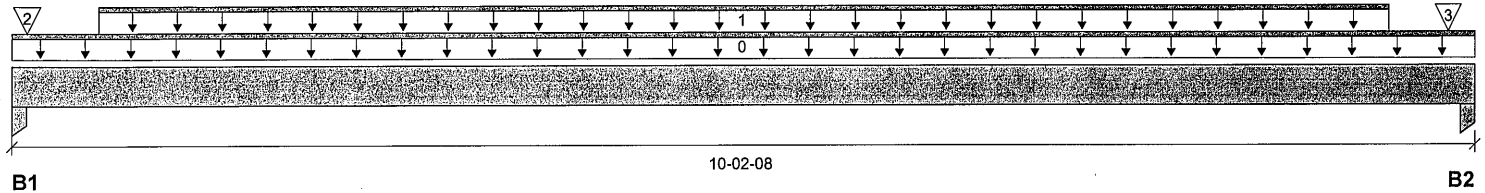
Specifier:

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, 4"	1,196 / 0	645 / 0		
B2, 4"	1,826 / 0	1,318 / 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	10-02-08	Top	100	10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-04	09-07-04	Top	252	126			n/a
2	J7(i32264)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	52	26			n/a
3	-	Conc. Pt. (lbs)	L	10-00-04	10-00-04	Top	691	706			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6,447 ft-lbs	23,220 ft-lbs	27.8 %	1	05-01-04
End Shear	2,462 lbs	11,571 lbs	21.3 %	1	01-01-08
Total Load Deflection	L/761 (0.152")	n/a	31.5 %	4	05-01-04
Live Load Deflection	L/999 (0.099")	n/a	n/a	5	05-01-04
Max Defl.	0.152"	n/a	n/a	4	05-01-04
Span / Depth	12.2				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	2,601 lbs	17.8 %	15.2 %	Unspecified
B2	Column 4" x 3-1/2"	4,387 lbs	30.0 %	25.7 %	Unspecified

**Notes**

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Nail one ply to another with  
3 1/2" spiral nails @ 16"  
o.c, staggered in 2 rows

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-A+B(-1R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B13(i32278)

City, Province, Postal Code: Brampton, ON

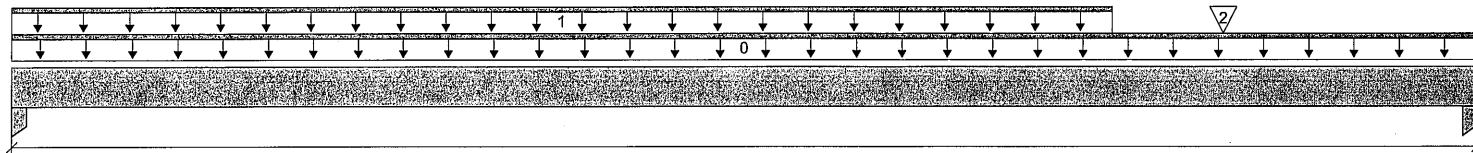
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 01-04-00

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	2 / 0	4 / 0		
B2, 4"	49 / 0	27 / 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	FC8 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	Top	3	1			n/a
2	-	Conc. Pt. (lbs)	L	01-01-03	01-01-03	Top	48	24			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"	108 lbs	1.5 %	1.3 %	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®,

BC CALC® Member Report

Build 7118

Job name: 39002(SD-10)

File name: 314128-C+D(-2R).mmdl

Address: Encore 2

Description: 1st Floor - Supply/BOM\Flush Beams\B14(i32743)

City, Province, Postal Code: Brampton, ON

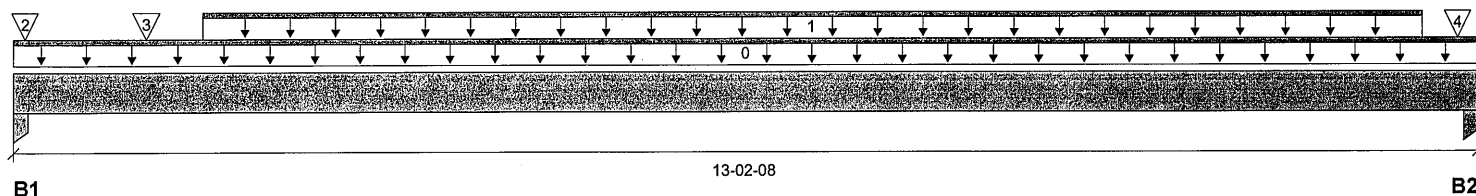
Specifier:

Customer: Gold Park

Designer: NL

Code reports: CCMC 12472-R

Company: Alpa Roof Trusses



Total Horizontal Product Length = 13-02-08

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	1,669 / 0	896 / 0		
B2, 4"	2,194 / 0	1,516 / 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	13-02-08	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-08-06	12-08-06	Top	252	126			n/a
2	J3(i32763)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	Top	151	76			n/a
3	J3(i32761)	Conc. Pt. (lbs)	L	01-02-06	01-02-06	Top	277	139			n/a
4	B10(i32440)	Conc. Pt. (lbs)	L	13-00-04	13-00-04	Top	650	666			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	11,023 ft-lbs	23,220 ft-lbs	47.5 %	1	06-02-06
End Shear	3,288 lbs	11,571 lbs	28.4 %	1	01-01-08
Total Load Deflection	L/337 (0.45")	n/a	71.1 %	4	06-08-06
Live Load Deflection	L/518 (0.293")	n/a	69.5 %	5	06-08-06
Max Defl.	0.45"	n/a	n/a	4	06-08-06
Span / Depth	16.0				


**Bearing Supports**

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 4" x 3-1/2"	3,623 lbs	24.8 %	21.2 %	Unspecified
B2	Column 4" x 3-1/2"	5,187 lbs	35.5 %	30.4 %	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 @ 16"

o.c., staggered in 2 rows

## 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 On centre spacing				1/2 in. gypsum ceiling 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"	-
	NI-90	20'-2"	18'-8"	17'-10"	-	20'-9"	19'-2"	18'-4"	-
14"	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"	-
	NI-90	22'-5"	20'-8"	19'-9"	-	23'-0"	21'-4"	20'-4"	-
16"	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 On centre spacing				Mid-span blocking and 1/2 in. gypsum ceiling 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"	-
	NI-90	23'-3"	21'-6"	20'-6"	-	23'-9"	22'-0"	21'-0"	-
14"	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"	-
	NI-90	26'-1"	24'-2"	23'-0"	-	26'-8"	24'-9"	23'-7"	-
16"	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

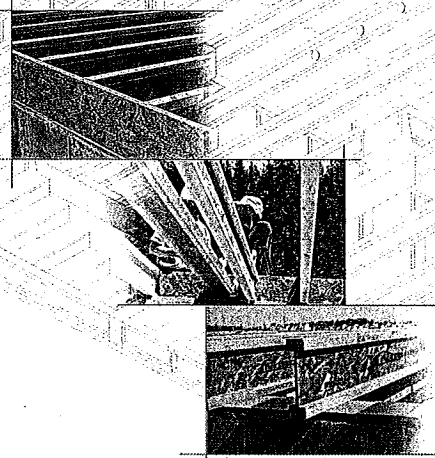
Installation must comply with latest documentation on I-Joist and other Nordic products from the <http://nordic.ca/>

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)

# NORDIC ENGINEERED WOOD

## INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



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### 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-joist 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-bridging at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
  - 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 flanges 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.

### 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 flammable.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled units should be kept intact until time of installation.
  - 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.

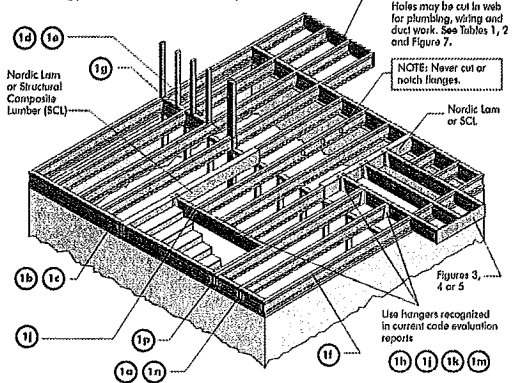


### INSTALLING NORDIC I-JOISTS

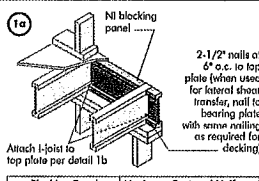
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true 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 unbraced or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

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

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

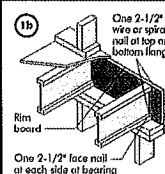


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.120" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



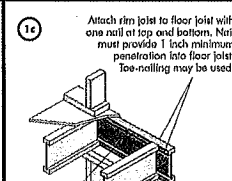
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
N1 Joists	3,300

\*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.



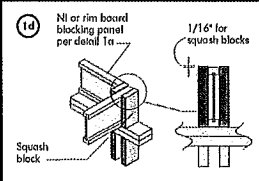
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

\*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.



Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
N1 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.



Pair of Squash Blocks	Maximum Factored Uniform Vertical Load* (plf)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

\*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.

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## 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 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 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 C085-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a 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 Unit States Design per CAN/CSA C085-07 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm  
1 foot = 0.305 m

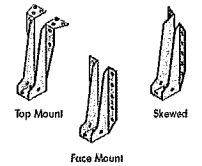
## MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans					Multiple spans				
		On centre spacing					On centre spacing				
		12"	15"	19.2"	24"		12"	15"	19.2"	24"	
9-1/2"	Ni-20	15'-1"	14'-2"	13'-9"	12'-5"	14'-3"	13'-4"	13'-0"	11'-7"	14'-7"	
	Ni-40x	16'-1"	15'-2"	14'-8"	14'-9"	17'-5"	16'-5"	15'-10"	14'-5"	15'-5"	
	Ni-60	16'-3"	15'-4"	14'-10"	14'-11"	17'-7"	16'-7"	16'-0"	14'-6"	16'-6"	
	Ni-80	17'-1"	16'-1"	15'-4"	15'-7"	18'-7"	17'-4"	16'-9"	15'-2"	17'-2"	
11-7/8"	Ni-20	16'-11"	16'-0"	15'-5"	15'-4"	18'-4"	17'-3"	16'-8"	16'-7"	17'-7"	
	Ni-40x	18'-1"	17'-0"	16'-5"	16'-8"	20'-0"	18'-9"	17'-9"	17'-7"	18'-7"	
	Ni-60	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	19'-0"	18'-0"	18'-0"	19'-0"	
	Ni-80	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-0"	19'-8"	
14"	Ni-20	19'-9"	18'-3"	17'-4"	17'-7"	21'-9"	20'-2"	19'-3"	19'-11"	20'-11"	
	Ni-40x	20'-2"	18'-7"	17'-10"	17'-11"	22'-3"	20'-7"	19'-8"	19'-8"	19'-9"	
	Ni-60	20'-4"	18'-9"	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	19'-10"	20'-5"	
	Ni-80	21'-1"	19'-1"	18'-1"	18'-2"	22'-7"	20'-11"	20'-11"	20'-11"	20'-10"	
16"	Ni-20	21'-7"	20'-0"	19'-1"	19'-2"	23'-10"	22'-1"	21'-1"	21'-1"	21'-10"	
	Ni-40x	21'-11"	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-5"	22'-2"	
	Ni-60	22'-3"	20'-8"	19'-9"	19'-9"	24'-9"	22'-10"	21'-10"	21'-10"	22'-10"	
	Ni-80	22'-7"	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-0"	22'-9"	
18"	Ni-20	22'-3"	20'-8"	19'-9"	19'-10"	24'-7"	22'-7"	21'-7"	21'-7"	22'-9"	
	Ni-40x	23'-6"	21'-9"	20'-9"	20'-10"	26'-0"	24'-0"	22'-11"	22'-9"	23'-9"	
	Ni-60	23'-11"	22'-1"	21'-1"	21'-2"	26'-5"	24'-5"	23'-3"	23'-3"	24'-1"	
	Ni-80	24'-3"	22'-6"	21'-5"	21'-8"	26'-11"	24'-10"	23'-9"	23'-9"	24'-10"	
20"	Ni-20	24'-3"	22'-9"	21'-9"	21'-10"	27'-3"	25'-2"	24'-0"	24'-0"	24'-10"	
	Ni-80	24'-3"	22'-9"	21'-9"	21'-10"	27'-3"	25'-2"	24'-0"	24'-0"	24'-10"	

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, flange 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.



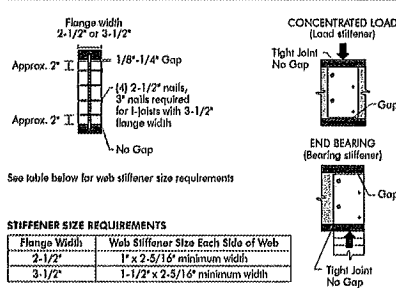
## WEB STIFFENERS

### 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 2,370 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.

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

Series	Depth	Flange Width	Weight	Spacing	Notes
Ni-20	9-1/2"	15"	2.0 lbs/ft	12"	5-PF No.2
Ni-40x	11-7/8"	16"	3.0 lbs/ft	12"	5-PF No.2
Ni-60	14"	17"	4.0 lbs/ft	12"	5-PF No.2
Ni-80	16"	18"	5.0 lbs/ft	12"	5-PF No.2
Ni-90	18"	19"	6.0 lbs/ft	12"	5-PF No.2
Ni-90x	18"	19"	6.0 lbs/ft	12"	5-PF No.2

Chantiers Chibougon 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 squish blocks per detail 1d. Match bearing area of blocks below to post above.

**1b** Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

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

**1d** Backer block (use if longer 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.

**1e** Double I-joist header

**1f** Top- or face-mount hanger

**1g** Filler block per detail 1p

**1h** Backer block required (both sides for face-mount hangers)

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

**1j** BACKER BLOCKS (Blocks must be long enough to permit required nailing without spilling)

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-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C0325 or CAN/CSA-C0437 Standard.

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

**1k** Nordic Lumber or SCL

**1l** Top- or face-mount hanger installed per manufacturer's recommendations

**1m** Top-mount hanger installed per manufacturer's recommendations

**1n** Multiple I-joist header with full depth filler block shown. Nordic Lumber or SCL headers may also be used. Vary double I-joist capacity to support concentrated loads.

**1o** Do not bowl-cut joist beyond inside face of wall

**1p** Filler block

**1q** Filler block requirements for double I-joist construction

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

**1r** Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spigot nails from each web to lumber piece, alternate on opposite side.

**1s** 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. 2-1/2" nails at 6" o.c.

**1t** 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.

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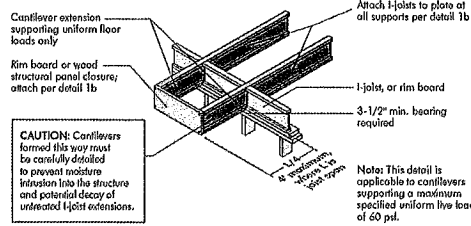
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(Nordic Request 1810-095)

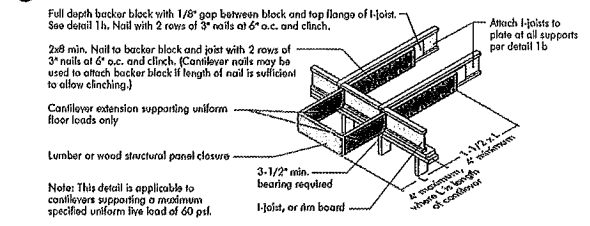


### CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

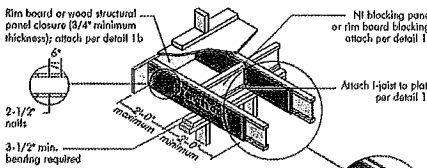


#### 3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



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

#### 4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

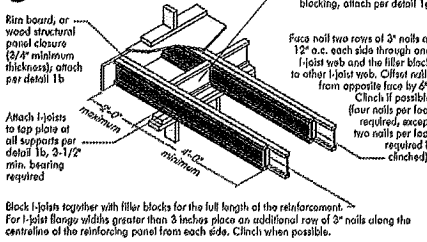


#### Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- 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\"/>

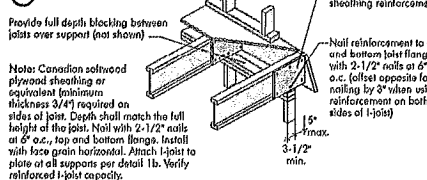
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4\"/>

#### 4b Alternate Method 2 — DOUBLE I-JOIST

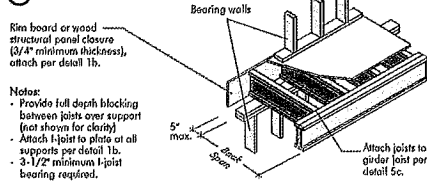


### BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

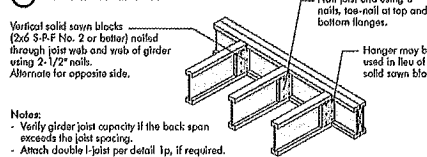
#### 5a SHEATHING REINFORCEMENT



#### 5b SET-BACK DETAIL



#### 5c SET-BACK CONNECTION



#### FIGURE 4 (continued)



#### 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			
		Joint Spacing (in.)				Joint Spacing (in.)				Joint Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2	26	N	N	1	2	N	1	2	X	N	2	X	X
	28	N	N	1	X	N	1	2	X	N	2	X	X
	30	N	1	1	X	N	1	2	X	N	1	2	X
	32	N	1	2	X	N	2	X	X	N	1	2	X
	34	N	1	2	X	N	2	X	X	N	1	1	X
11-7/8	26	N	1	2	X	N	1	2	X	N	1	1	X
	28	N	1	2	X	N	1	2	X	N	1	1	X
	30	N	1	2	X	N	1	2	X	N	1	1	X
	32	N	1	2	X	N	1	2	X	N	1	1	X
	34	N	1	2	X	N	1	2	X	N	1	1	X
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

1. N = No reinforcement required.
2. N = Reinforced with 3/4\"/>

#### FIGURE 5 (continued)



#### 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			
		Joint Spacing (in.)				Joint Spacing (in.)				Joint Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2	26	1	X	X	X	2	X	X	X	2	X	X	X
	28	1	X	X	X	2	X	X	X	2	X	X	X
	30	1	X	X	X	2	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X	2	X	X	X
11-7/8	26	1	X	X	X	2	X	X	X	2	X	X	X
	28	1	X	X	X	2	X	X	X	2	X	X	X
	30	1	X	X	X	2	X	X	X	2	X	X	X
	32	1	X	X	X	2	X	X	X	2	X	X	X
	34	1	X	X	X	2	X	X	X	2	X	X	X
14	26	N	2	X	X	N	2	X	X	N	2	X	X
	28	N	2	X	X	N	2	X	X	N	2	X	X
	30	1	2	X	X	1	X	X	X	2	X	X	X
	32	1	2	X	X	1	X	X	X	2	X	X	X
	34	1	2	X	X	1	X	X	X	2	X	X	X
16	26	1	2	X	X	1	X	X	X	2	X	X	X
	28	1	2	X	X	1	X	X	X	2	X	X	X
	30	1	2	X	X	1	X	X	X	2	X	X	X
	32	1	2	X	X	1	X	X	X	2	X	X	X
	34	1	2	X	X	1	X	X	X	2	X	X	X

1. N = No reinforcement required.
2. N = Reinforced with 3/4\"/>

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## 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 shall 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 longest 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 knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a confirmed 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 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 (8 in.)												Span adjustment factor
		2	3	4	5	6	7	8	9	10	11	12	13	
9-1/2"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
11-7/8"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
14"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
16"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0

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.

## OPTIONAL:

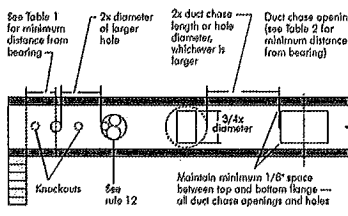
The above table is based on the I-Joist used at its maximum span. If the I-Joists are placed at less than their full maximum span (see Maximum Floor Span), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$\text{Reduced } D = \frac{\text{Actual Span}}{\text{Maximum Span}} \times D$$

Where:

- Reduced = Distance from the inside face of any support to centre of hole, reduced for less than maximum span applications (D).
- Actual = The actual measured span distance between the inside faces of supports (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 Actual is greater than 1, use 1 in the above calculation for Actual.

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.

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 (8 in.)												Span adjustment factor
		2	3	4	5	6	7	8	9	10	11	12	13	
9-1/2"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
11-7/8"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
14"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
16"	N100	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N140	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N170	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0
	N200	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	1.0

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 uniform loaded joist 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/400. For other applications, consult your local distributor.

## 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 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 wavy 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 block or an 1/8" 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<sup>(1)</sup>

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

- 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 framing.
- 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/CSB-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 sealed surfaces and edges are to be used, use only solvent-based glues check with panel manufacturer.

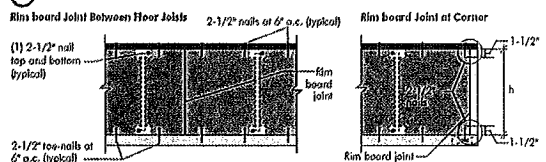
Ref.: NBC-CNBC, National Building Code of Canada 2010, Table 9.23.3.5.

## IMPORTANT NOTE:

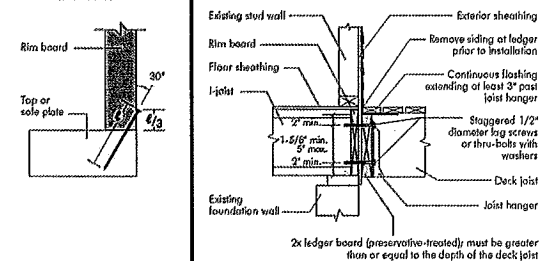
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

## RIM BOARD INSTALLATION DETAILS

## (a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



## (b) TOE-NAIL CONNECTION AT RIM BOARD

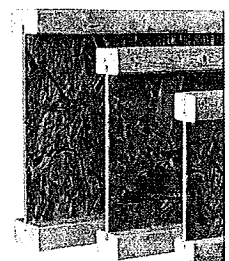


**DIAMANTIER**

**PRODUCT WARRANTY**

Chantier Diamantier warrants that, in accordance with our specifications, Nordic products are free from manufacturing defect in material and workmanship.

Furthermore, Chantier Diamantier warrants that our products, when installed in accordance with our building 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 longest rectangular hole) 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.

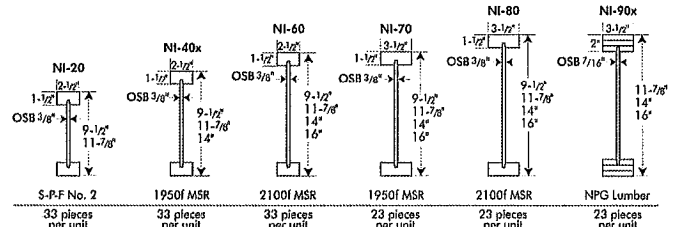
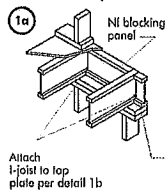


TABLE 1

### 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

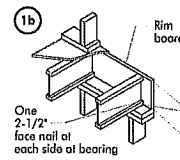
Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)														
		Round Hole Diameter (in.)														
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---	---	
	NI-40	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---	---	---	
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---	---	
	NI-70	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---	---	
	NI-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	---	---	---	---	---	---	---	---	
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"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	11-2"	---	---	---	---	
	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---	---	---	
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---	---	---	
14"	NI-90x	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-70	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"	---	---	
	NI-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	10-8"	12-4"	13-9"	---	---	
16"	NI-90x	0-7"	0-8"	0-8"	2-0"	3-9"	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"	12-2"	13-9"
	NI-70	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"	12-4"	14-0"	15-6"
	NI-80	0-7"	1-3"	2-6"	3-9"	5-0"	6-0"	7-0"	8-4"	9-1"	10-0"	11-4"	12-8"	14-5"	16-0"	---
	NI-90x	0-7"	0-8"	0-9"	2-0"	3-9"	4-2"	5-0"	6-9"	7-2"	8-4"	10-2"	11-6"	12-0"	---	---



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.

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)



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

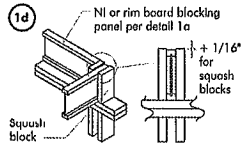
\*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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, start 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.

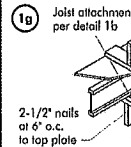
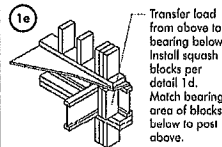


Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)
2x Lumber	5,500
1-1/8" Rim Board Plus	8,500

3-1/2" wide  
5-1/2" wide

4,300  
6,600

Provide lateral bracing per detail 1a or 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

NI blocking panel per detail 1a

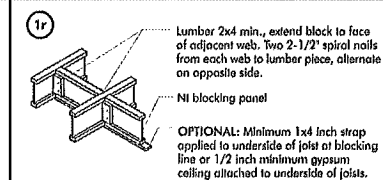
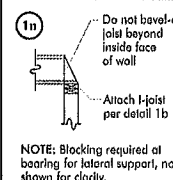
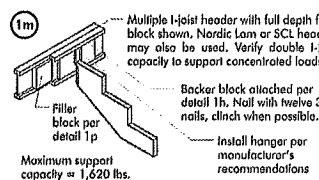
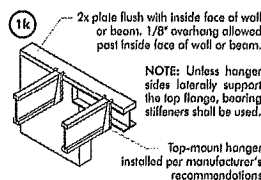
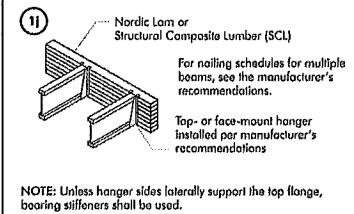
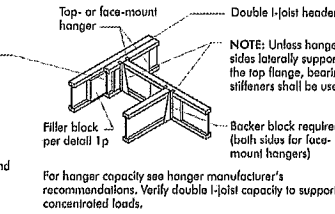
1h Backer block (use if hanger load exceeds 340 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the web and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

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

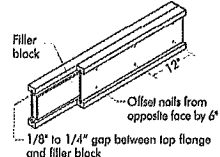
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

\* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.

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

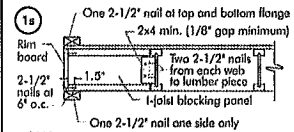


#### 1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION



- NOTES:
- Support back of I-joist web during nailing to prevent damage to web/flange connection.
  - Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
  - Filler block is required for 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" 11-7/8" 14" 16"	2-1/8" x 6" 2-1/8" x 8" 2-1/8" x 10" 2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	3" x 6" 3" x 8" 3" x 10" 3" x 12"
3-1/2" x 2"	11-7/8" 14" 16"	3" x 7" 3" x 9" 3" x 11"



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.

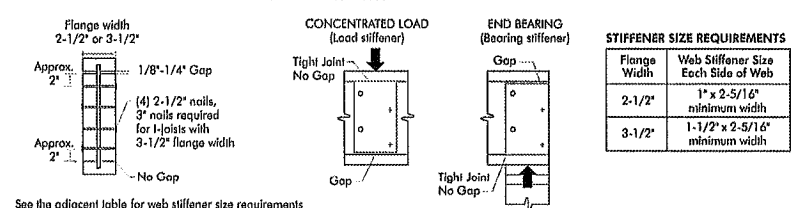
All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

#### WEB STIFFENERS

##### RECOMMENDATIONS:

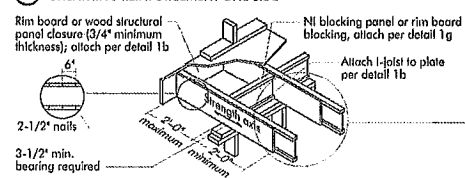
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is 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

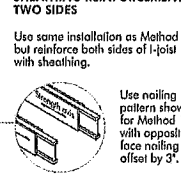


#### CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

##### Method 1 — SHEATHING REINFORCEMENT ONE SIDE



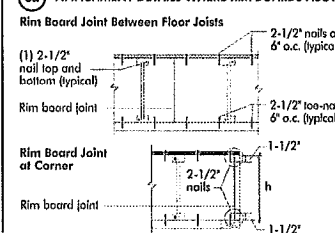
##### Method 2 — SHEATHING REINFORCEMENT TWO SIDES



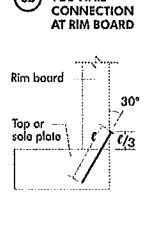
NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

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.

