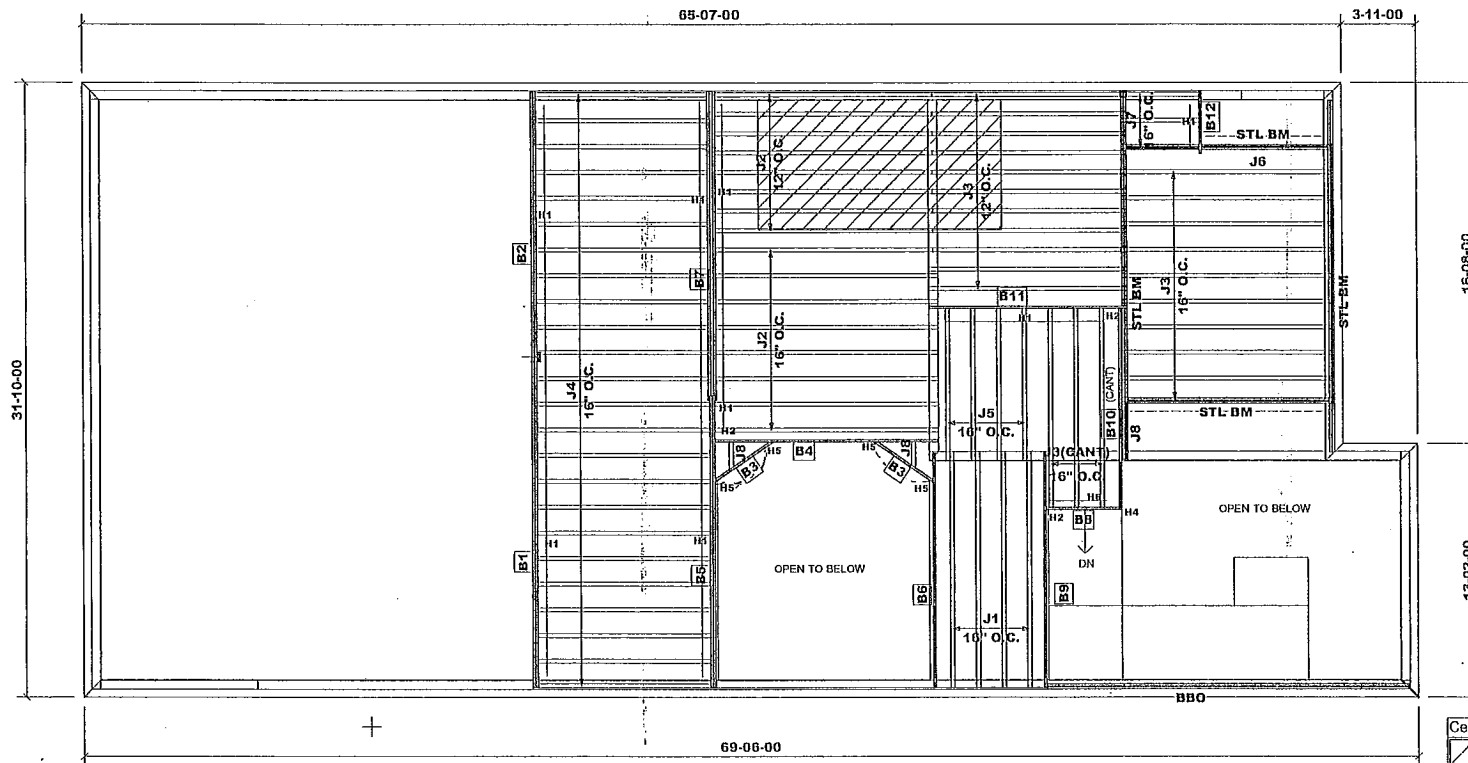




Products				
PlotID	Length	Product	Plies	Net Qty
J1	13-00-00	11 7/8" NI-20	1	4
J2	12-00-00	11 7/8" NI-20	1	16
J3	11-00-00	11 7/8" NI-20	1	24
J4	9-00-00	11 7/8" NI-20	1	24
J5	8-00-00	11 7/8" NI-20	1	4
J6	7-00-00	11 7/8" NI-20	1	1
J7	5-00-00	11 7/8" NI-20	1	3
J8	3-00-00	11 7/8" NI-20	1	3
B1	18-00-00	VERSALAM-12 2.0E	2	2
B5	16-00-00	VERSALAM-12 2.0E	2	2
B7	16-00-00	VERSALAM-12 2.0E	3	3
B2	14-00-00	VERSALAM-12 2.0E	2	2
B6	13-00-00	VERSALAM-12 2.0E	1	1
B9	13-00-00	VERSALAM-12 2.0E	1	1
B4	12-00-00	VERSALAM-12 2.0E	1	1
B10	11-00-00	VERSALAM-12 2.0E	1	1
B11	11-00-00	VERSALAM-12 2.0E	1	1
B12	4-00-00	VERSALAM-12 2.0E	1	1
B3	4-00-00	VERSALAM-12 2.0E	1	2
B8	4-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1	LT251188 (TM)
H2	HUS1.81/10(FM)
H4	HU9X(FM)
H5	LS90(FM)
H6	HU310(FM)

NOTE:

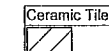
TM ----- TOP MOUNT HANGERS
FM ----- FACE MOUNT HANGERS

RIMBOARD

1- 1/8" X 11 7/8" O.S.B.

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS



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

Provide I-Joist Blocking between cantilevered joists (along bearing) and rimboard closure at ends.

1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

REVISION: December 18, 2017

MODEL: UNIT 4000 - EL.A

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 4'

98839/June 28, 2018
95915/Jan 2, 2018

S.157093-S.157097
S.152724-S.152744

JT/PL: 45147/95234

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: (290674)

Project: Pine Valley

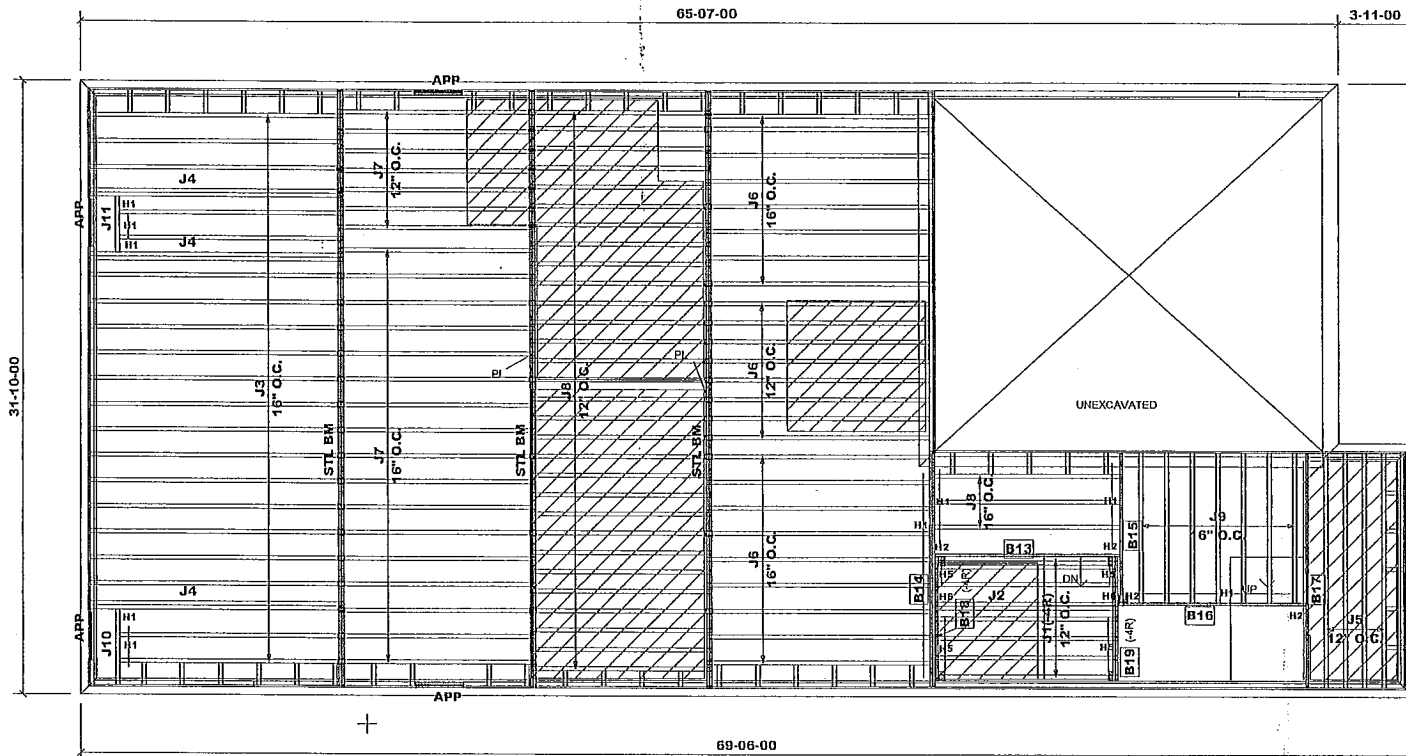
Date: November 17, 2017

Sheet: 1 of 8

Maple, Ontario

Home Lumber

299720



Products				
PlotID	Length	Product	Piles	Net Qty
J1	10-00-00	9 1/2" NI-20	1	7
J2	10-00-00	9 1/2" NI-20	2	2
J3	14-00-00	11 7/8" NI-20	1	20
J4	14-00-00	11 7/8" NI-20	2	6
J5	13-00-00	11 7/8" NI-20	1	4
J6	12-00-00	11 7/8" NI-20	1	25
J7	11-00-00	11 7/8" NI-20	1	24
J8	10-00-00	11 7/8" NI-20	1	33
J9	8-00-00	11 7/8" NI-20	1	7
J10	4-00-00	11 7/8" NI-20	1	1
J11	3-00-00	11 7/8" NI-20	1	1
B17	13-00-00	VERSALAM-12 2.0E	1	1
B14	13-00-00	VERSALAM-12 2.0E	2	2
B13	10-00-00	VERSALAM-12 2.0E	1	1
B16	10-00-00	VERSALAM-12 2.0E	1	1
B15	8-00-00	VERSALAM-12 2.0E	1	1
B18	7-00-00	VERSALAM-10 2.0E	1	1
B19	7-00-00	VERSALAM-10 2.0E	2	2

HANGER SCHEDULE	
H1	LT251108 (TM)
H2	HUS1.81/10(FM)
H5	LT259(TM)
H6	MIT39.5-2(TM)

NOTE:
 TM -----TOP MOUNT HANGERS
 FM -----FACE MOUNT HANGERS

RIMBOARD
 1- 1/8" X 9 1/2" O.S.B.
 1- 1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" NAILED & GLUED
 APP - AS PER PLAN
 BBO - BEAM BY OTHERS

Ceramic tile application as per O.B.C. 9.30.6
 1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

First Floor Framing

Do not scale - refer to architectural plans for dimensions

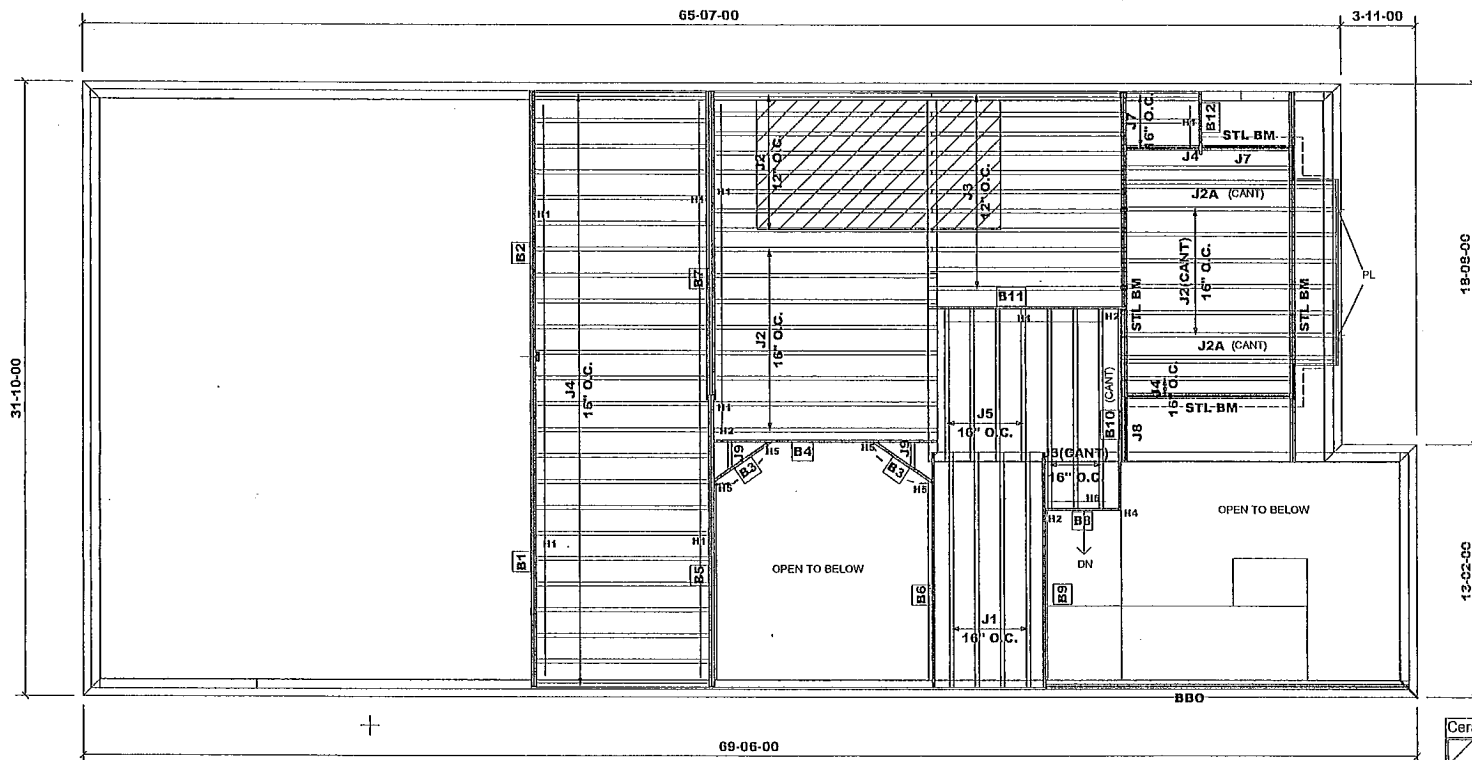
11 7/8" BLOCKING
 TOTAL LENGTH: 69'

REVISION: December 18, 2017

MODEL: UNIT 4000 - EL.A+B

98839
 95915

JT/PL: 45147/95234	Builder: Gold Park	Location: Vaughan	Designer: NL	Alpa Roof Trusses Inc.	Salesperson: Derek
LI: (290674)	Project: Pine Valley	Date: November 17, 2017	Sheet: 2 of 8	Maple, Ontario	Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	13-00-00	11 7/8" NI-20	1	4
J2	12-00-00	11 7/8" NI-20	1	22
J2A	12-00-00	11 7/8" NI-20	2	4
J3	11-00-00	11 7/8" NI-20	1	14
J4	9-00-00	11 7/8" NI-20	1	27
J5	8-00-00	11 7/8" NI-20	1	4
J7	5-00-00	11 7/8" NI-20	1	4
J8	4-00-00	11 7/8" NI-20	1	1
J9	3-00-00	11 7/8" NI-20	1	2
B1	18-00-00	VERSALAM-12 2.0E	2	2
B5	16-00-00	VERSALAM-12 2.0E	2	2
B7	16-00-00	VERSALAM-12 2.0E	3	3
B2	14-00-00	VERSALAM-12 2.0E	2	2
B6	13-00-00	VERSALAM-12 2.0E	1	1
B9	13-00-00	VERSALAM-12 2.0E	1	1
B4	12-00-00	VERSALAM-12 2.0E	1	1
B10	11-00-00	VERSALAM-12 2.0E	1	1
B11	11-00-00	VERSALAM-12 2.0E	1	1
B12	4-00-00	VERSALAM-12 2.0E	1	1
B3	4-00-00	VERSALAM-12 2.0E	1	2
B8	4-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1 ----- LT251188 (TM)
H2 ----- HUS1.81/10(FM)
H4 ----- HUBX(FM)
H5 ----- LS90(FM)
H6 ----- HUS10(FM)

NOTE:

TM ----- TOP MOUNT HANGERS
FM ----- FACE MOUNT HANGERS

RIMBOARD

1- 1/8" X 11 7/8" O.S.B.

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

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

Provide 1-Joist Blocking between cantilevered joists (along bearing) and rimboard closure at ends.

1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

REVISION: December 18, 2017

MODEL: UNIT 4000 - EL.B

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 14'

98839
95915

JT/PL: 45147/95234

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: (290674)

Project: Pine Valley

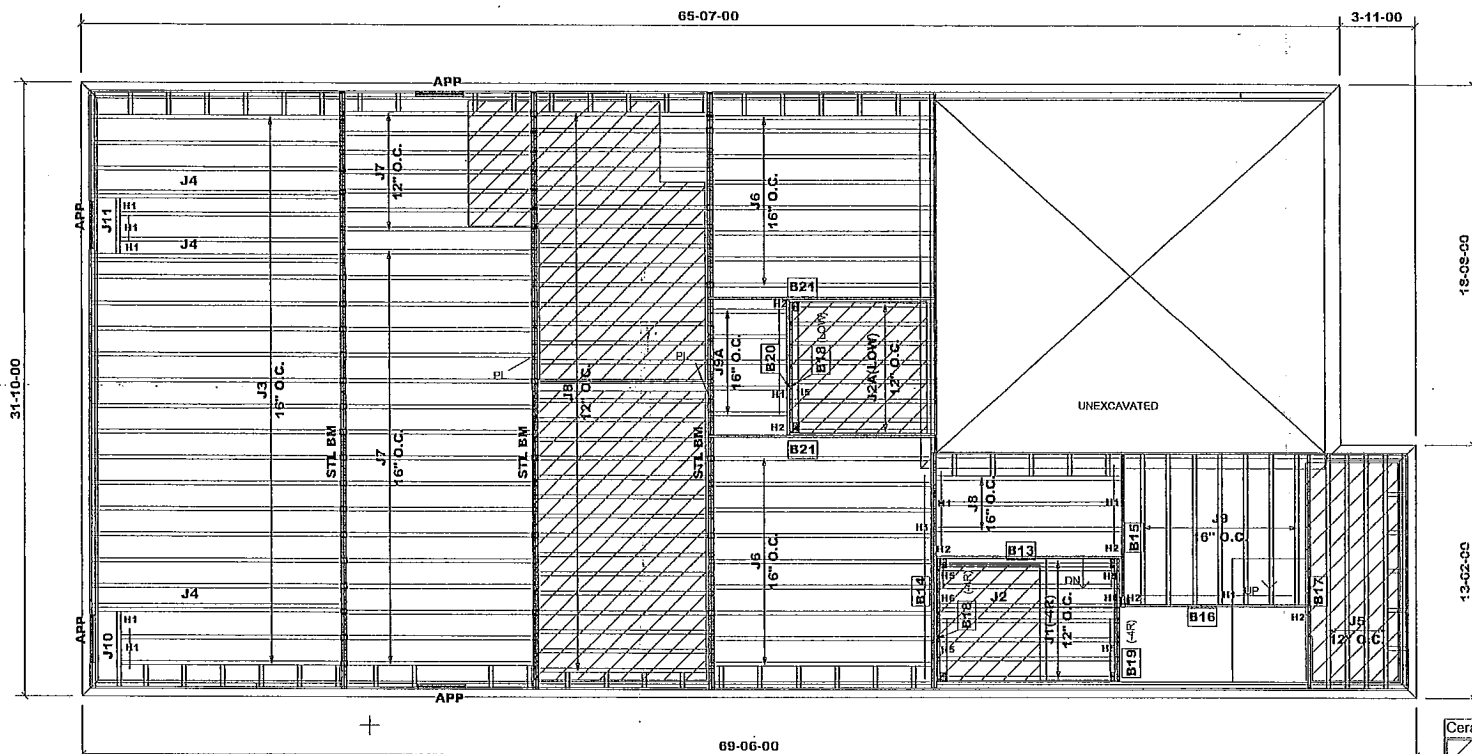
Date: November 17, 2017

Sheet: 3 of 8

Maple, Ontario

Home Lumber

299720



Products				
PlotID	Length	Product	Piles	Net Qty
J1	10-00-00	9 1/2" NI-20	1	7
J2	10-00-00	9 1/2" NI-20	2	2
J2A	8-00-00	9 1/2" NI-20	1	8
J3	14-00-00	11 7/8" NI-20	1	20
J4	14-00-00	11 7/8" NI-20	2	6
J5	13-00-00	11 7/8" NI-20	1	4
J6	12-00-00	11 7/8" NI-20	1	17
J7	11-00-00	11 7/8" NI-20	1	24
J8	10-00-00	11 7/8" NI-20	1	33
J9	8-00-00	11 7/8" NI-20	1	7
J9A	5-00-00	11 7/8" NI-20	1	5
J10	4-00-00	11 7/8" NI-20	1	1
J11	3-00-00	11 7/8" NI-20	1	1
B17	13-00-00	VERSALAM-12 2.0E	1	1
B14	13-00-00	VERSALAM-12 2.0E	2	2
B21	12-00-00	VERSALAM-12 2.0E	1	2
B13	10-00-00	VERSALAM-12 2.0E	1	1
B16	10-00-00	VERSALAM-12 2.0E	1	1
B15	8-00-00	VERSALAM-12 2.0E	1	1
B20	8-00-00	VERSALAM-12 2.0E	1	1
B18	7-00-00	VERSALAM-10 2.0E	1	2
B19	7-00-00	VERSALAM-10 2.0E	2	2

HANGER SCHEDULE	
H1	LT251188 (TM)
H2	HUS1.81/10(FM)
H5	LT259(TM)
H8	MIT39.5-2(TM)
NOTE:	
TM	TOP MOUNT HANGERS
FM	FACE MOUNT HANGERS
RIMBOARD	
1	1/8" X 9 1/2" O.S.B.
1	1/8" X 11 7/8" O.S.B.
SUBFLOOR - 3/4" NAILED & GLUED	
APP - AS PER PLAN	
BBO - BEAM BY OTHERS	

Ceramic tile application as per O.B.C. 9.30.8

1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

REVISION: December 18, 2017

MODEL: UNIT 4000 - EL.A+B
W/SUNKEN LAUNDRY

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 69'

98839
98915

JT/PL: 45147/95234

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: (290674)

Project: Pine Valley

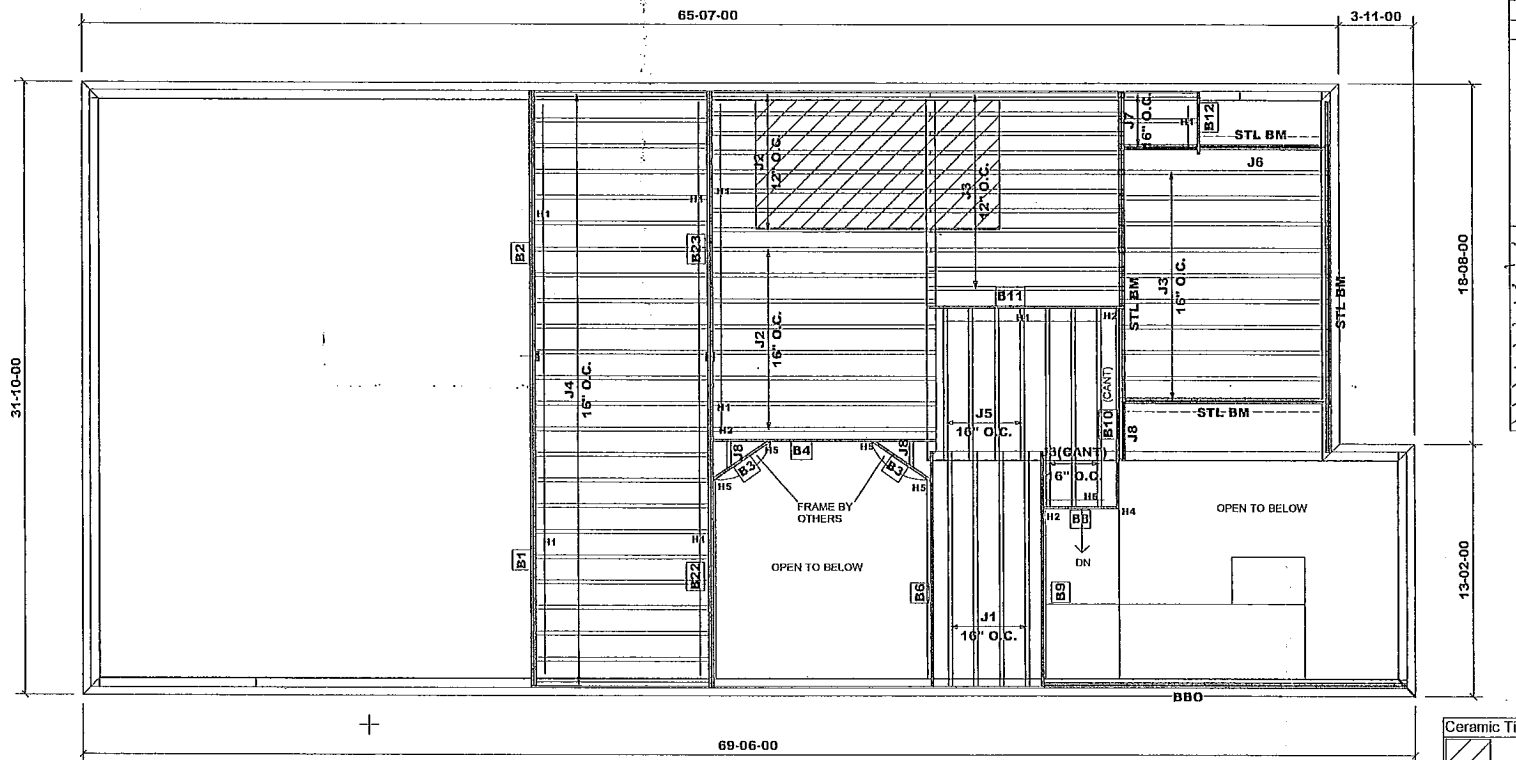
Date: November 17, 2017

Sheet: 4 of 8

Maple, Ontario

Home Lumber

299720



MODEL: UNIT 4000 - EL.A
W/OPT. 1ST FLOOR

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8\"/>

Products				
PlotID	Length	Product	Plies	Net Qty
J1	13-00-00	11 7/8" NI-20	1	4
J2	12-00-00	11 7/8" NI-20	1	16
J3	11-00-00	11 7/8" NI-20	1	24
J4	9-00-00	11 7/8" NI-20	1	24
J5	8-00-00	11 7/8" NI-20	1	4
J6	7-00-00	11 7/8" NI-20	1	1
J7	5-00-00	11 7/8" NI-20	1	3
J8	3-00-00	11 7/8" NI-20	1	3
B1	18-00-00	VERSALAM-12 2.0E	2	2
B22	18-00-00	VERSALAM-12 2.0E	2	2
B2	14-00-00	VERSALAM-12 2.0E	2	2
B23	14-00-00	VERSALAM-12 2.0E	2	2
B6	13-00-00	VERSALAM-12 2.0E	1	1
B9	13-00-00	VERSALAM-12 2.0E	1	1
B4	12-00-00	VERSALAM-12 2.0E	1	1
B10	11-00-00	VERSALAM-12 2.0E	1	1
B11	11-00-00	VERSALAM-12 2.0E	1	1
B12	4-00-00	VERSALAM-12 2.0E	1	1
B3	4-00-00	VERSALAM-12 2.0E	1	2
B8	4-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.B1/10(FM)
H4-----HUSX(FM)
H5-----LS90(FM)
H6-----HU310(FM)

NOTE:

TM-----TOP MOUNT HANGERS
FM-----FACE MOUNT HANGERS

RIMBOARD

1- 1/8\"/>

SUBFLOOR - 3/4\"/>

APP - AS PER PLAN
BBO - BEAM BY OTHERS

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

Provide I-Joist Blocking between cantilevered joists (along bearing) and rimboard closure at ends.

1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

JT/PL: 45147/98839

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 299720(290674)

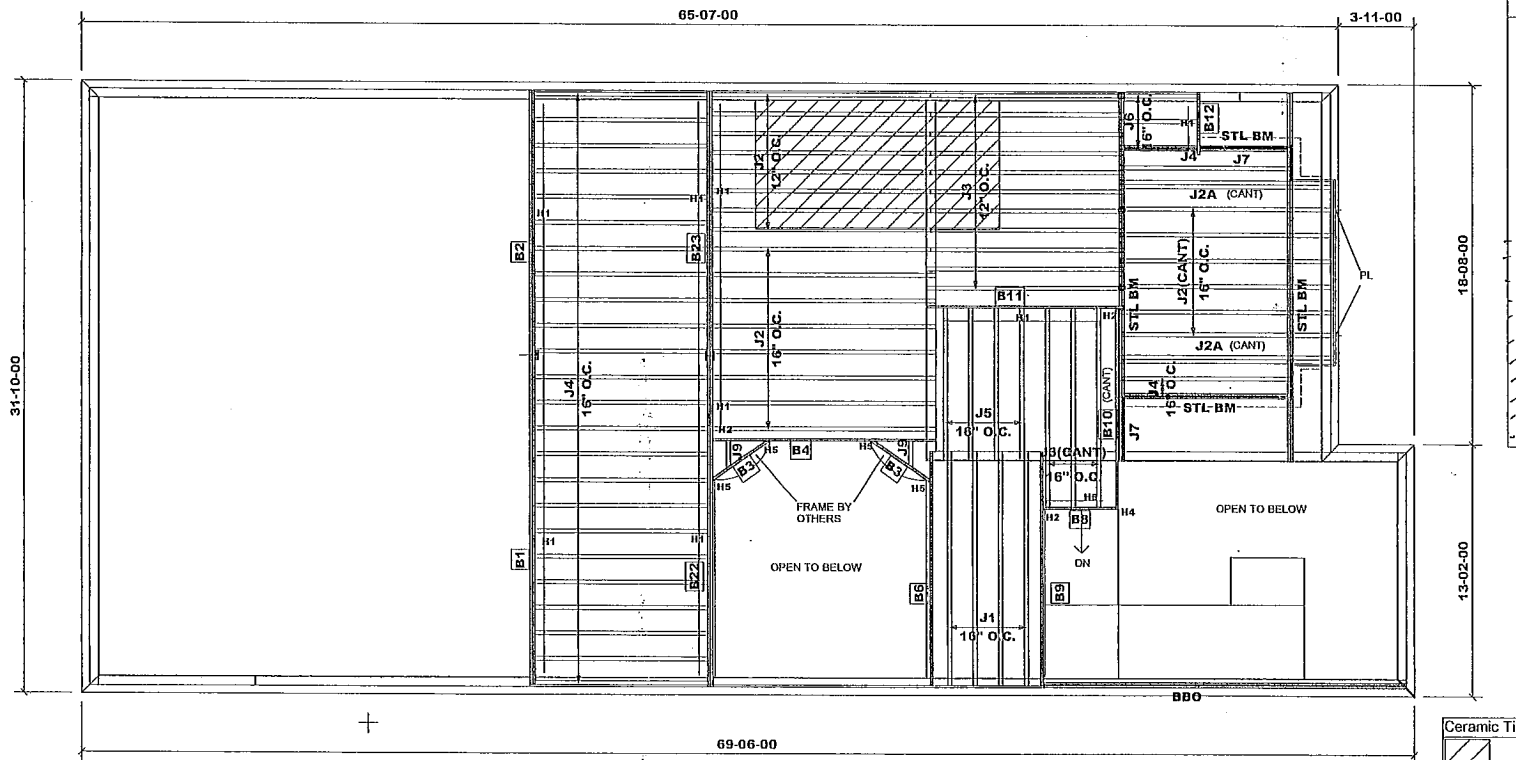
Project: Pine Valley

Date: June 28, 2018

Sheet: 5 of 8

Maple, Ontario

Home Lumber



Products				
ProdID	Length	Product	Piles	Net Qty
J1	13-00-00	11 7/8" NI-20	1	4
J2	12-00-00	11 7/8" NI-20	1	22
J2A	12-00-00	11 7/8" NI-20	2	4
J3	11-00-00	11 7/8" NI-20	1	14
J4	9-00-00	11 7/8" NI-20	1	27
J5	8-00-00	11 7/8" NI-20	1	4
J6	5-00-00	11 7/8" NI-20	1	3
J7	5-00-00	11 7/8" NI-20	1	1
J7	4-00-00	11 7/8" NI-20	1	1
J9	3-00-00	11 7/8" NI-20	1	2
B1	18-00-00	VERSALAM-12 2.0E	2	2
B22	18-00-00	VERSALAM-12 2.0E	2	2
B2	14-00-00	VERSALAM-12 2.0E	2	2
B23	14-00-00	VERSALAM-12 2.0E	2	2
B6	13-00-00	VERSALAM-12 2.0E	1	1
B9	13-00-00	VERSALAM-12 2.0E	1	1
B4	12-00-00	VERSALAM-12 2.0E	1	1
B10	11-00-00	VERSALAM-12 2.0E	1	1
B11	11-00-00	VERSALAM-12 2.0E	1	1
B12	4-00-00	VERSALAM-12 2.0E	1	1
B3	4-00-00	VERSALAM-12 2.0E	1	2
B8	4-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1	LT251188 (TM)
H2	HUS1.81/10(FM)
H4	HUSX(FM)
H5	LS90(FM)
H6	HU310(FM)

NOTE:

TM — TOP MOUNT HANGERS
FM — FACE MOUNT HANGERS

RIMBOARD

1- 1/8" X 11 7/8" O.S.B.

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

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

Provide I-Joist Blocking between cantilevered joists (along bearing) and rimboard closure at ends.

1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

MODEL: UNIT 4000 - EL.B
W/OPT. 1ST FLOOR

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 14"

JT/PL: 45147/98839

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 299720(290674)

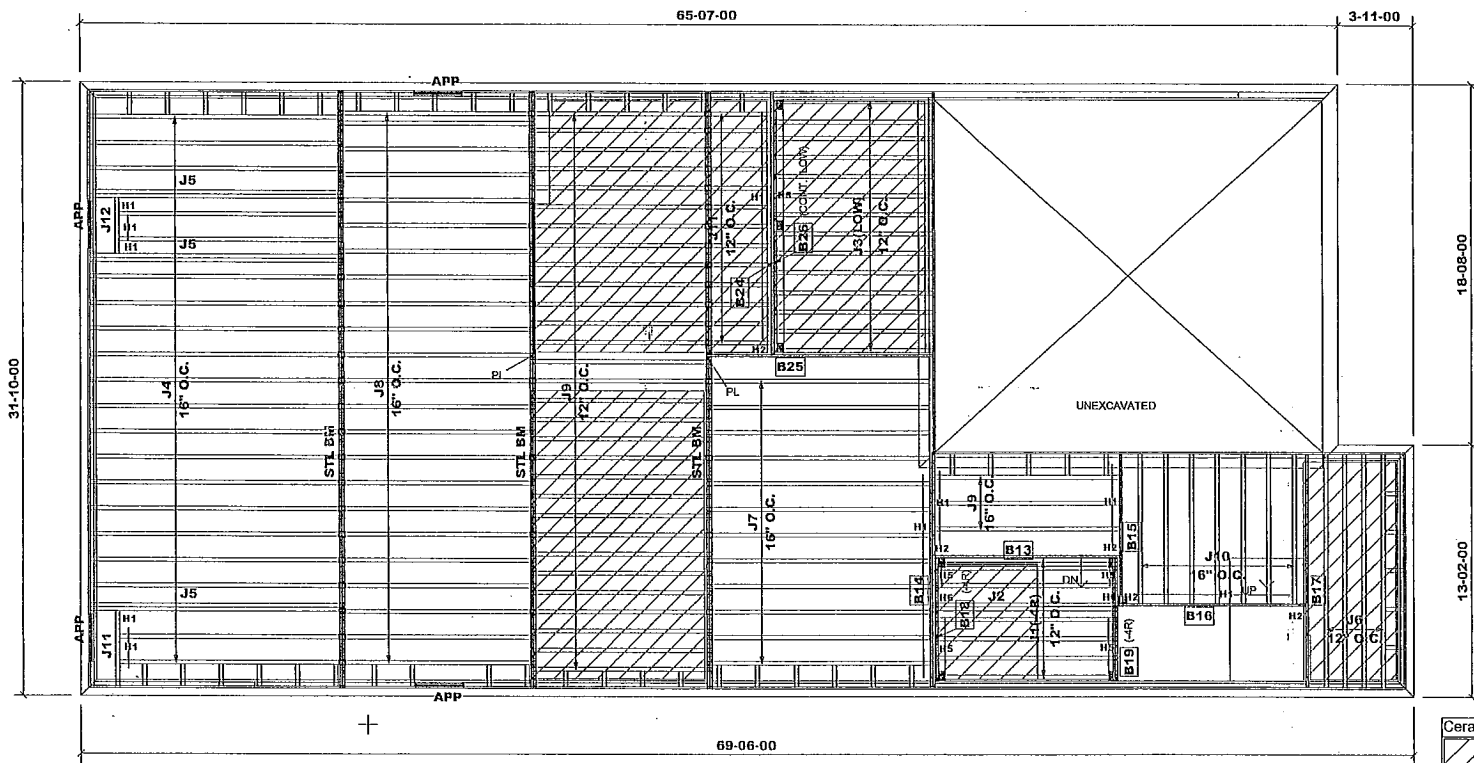
Project: Pine Valley

Date: June 28, 2018

Sheet: 7 of 8

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	10-00-00	9 1/2" NI-20	1	7
J2	10-00-00	9 1/2" NI-20	2	2
J3	9-00-00	9 1/2" NI-20	1	14
J4	14-00-00	11 7/8" NI-20	1	20
J5	14-00-00	11 7/8" NI-20	2	6
J6	13-00-00	11 7/8" NI-20	1	4
J7	12-00-00	11 7/8" NI-20	1	12
J8	11-00-00	11 7/8" NI-20	1	23
J9	10-00-00	11 7/8" NI-20	1	33
J10	8-00-00	11 7/8" NI-20	1	7
J11	4-00-00	11 7/8" NI-20	1	14
J12	3-00-00	11 7/8" NI-20	1	1
B26	14-00-00	VERSALAM-10 2.0E	1	1
B24	14-00-00	VERSALAM-12 2.0E	1	1
B17	13-00-00	VERSALAM-12 2.0E	1	1
B14	13-00-00	VERSALAM-12 2.0E	2	2
B25	12-00-00	VERSALAM-12 2.0E	1	1
B13	10-00-00	VERSALAM-12 2.0E	1	1
B16	10-00-00	VERSALAM-12 2.0E	1	1
B15	8-00-00	VERSALAM-12 2.0E	1	1
B18	7-00-00	VERSALAM-10 2.0E	1	1
B19	7-00-00	VERSALAM-10 2.0E	2	2

HANGER SCHEDULE

H1.....LT251188 (TM)
H2.....HUS1.81/10(FM)
H5.....LT259(1M)
H6.....MIT39.5-2(TM)

NOTE:

TM.....TOP MOUNT HANGERS
FM.....FACE MOUNT HANGERS

RIMBOARD

1- 1/8" X 9 1/2" O.S.B.
1- 1/8" X 11 7/8" O.S.B.

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

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

1-2X6 SPF#2 Squash Block req'd on one side of each joist under interior load bearing wall. Multiple Squash Blocks are req'd under concentrated loads.

MODEL: UNIT 4000 - EL.A+B
W/OPT. 1ST FL.(SUNKEN)

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 69'

JT/PL: 45147/98839

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 299720(290674)

Project: Pine Valley

Date: June 28, 2018

Sheet: 8 of 8

Maple, Ontario

Home Lumber



Boise Cascade

BC CALC® Design Report



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

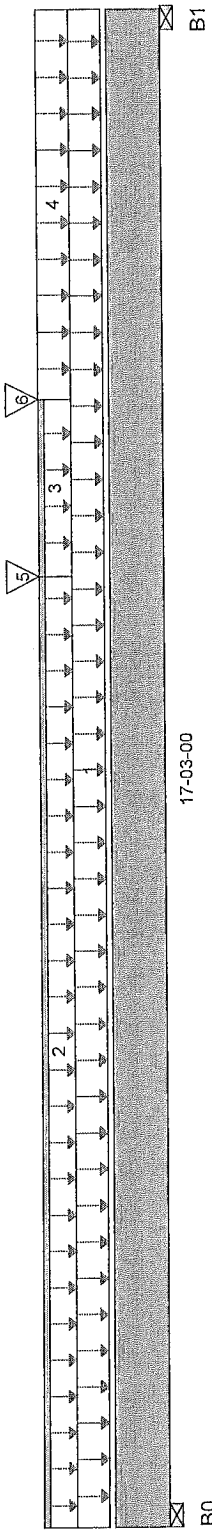
Floor Beam\B22

Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 28, 2018 15:16:49

Build 6536
Job Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 17-03-00

Reaction Summary (Down / Uplift) (lbs)

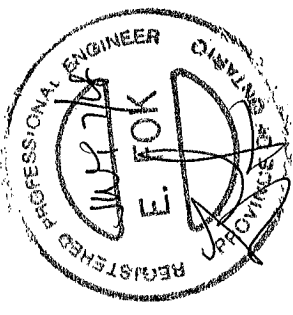
Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,885 / 0	1,285 / 0		
B1, 3"	2,871 / 0	1,446 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft ²)	L	00-00-00	17-03-00	40	15			04-09-00
2	Unf. Lin. (lb/ft)	L	00-00-00	10-10-00		60			n/a
3	Unf. Lin. (lb/ft)	L	10-10-00	12-10-00	27	14			n/a
4	Unf. Area (lb/ft ²)	L	12-10-00	17-03-00	40	15			06-00-00
5	Conc. Pt. (lbs)	L	10-10-00	10-10-00	55	33			n/a
6	Conc. Pt. (lbs)	L	12-10-00	12-10-00	310	186			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	20,177 ft-lbs	35,392 ft-lbs	57%	1	09-05-14
End Shear	5,046 lbs	14,464 lbs	34.9%	1	16-00-02
Total Load Defl.	L/266 (0.758")	0.842"	90.1%	4	08-10-11
Live Load Defl.	L/429 (0.47")	0.561"	83.8%	5	08-10-11
Max Defl.	0.758"	1"	75.8%	4	08-10-11
Span / Depth	17	n/a	n/a		00-00-00



Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	4,434 lbs	58.8%	29.7%	Spruce Pine Fir
B1 Wall/Plate	3" x 3-1/2"	6,114 lbs	94.7%	47.7%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Nail one ply to another with
3 1/2" spiral nails @ 12"
o.c, staggered in 2 rows

S-157093



Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B23

Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 28, 2018 15:16:31

BC CALC® Design Report



Build 6536

Job Name:

Address:

City, Province, Postal Code:Vaughan, ON

Customer:

Code reports:

45147 (4000)

Pine Valley

Gold Park

CCMC 12472-R

File Name: 290674.bcc

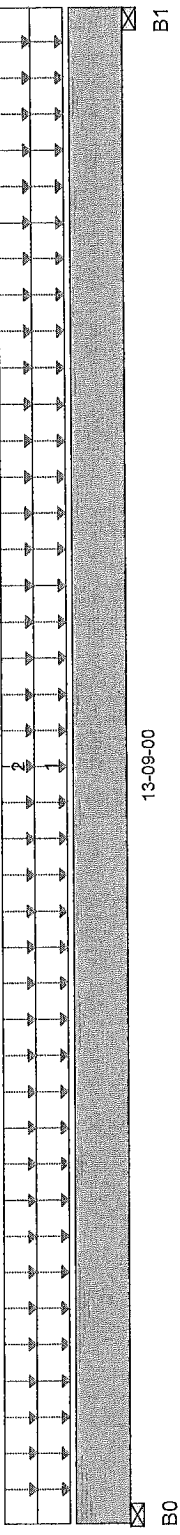
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 13-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	2,947 / 0	1,393 / 0		
B1, 3-1/2"	2,965 / 0	1,402 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft^2)	L	00-00-00	13-09-00	40	15			04-09-00
2	Unf. Area (lb/ft^2)	L	00-00-00	13-09-00	40	20			06-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	19,980 ft-lbs	35,392 ft-lbs	56.5%	1	06-10-04
End Shear	5,048 lbs	14,464 lbs	34.9%	1	01-02-14
Total Load Defl.	L/347 (0.461")	0.667"	69.2%	4	06-10-04
Live Load Defl.	L/511 (0.313")	0.444"	70.4%	5	06-10-04
Max Defl.	0.461"	1"	46.1%	4	06-10-04
Span / Depth	13.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3" x 3-1/2"	6,163 lbs	95.4%	48.1%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	6,200 lbs	82.3%	41.5%	Spruce Pine Fir

Notes

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

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

Design meets User specified (1") Maximum Total 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 2010 and CSA

O86.

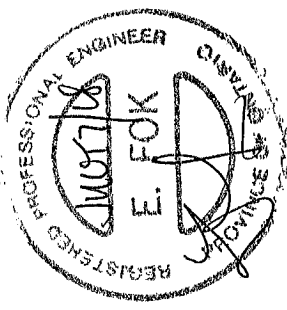
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

Nail one ply to another with

3 1/2" spiral nails @ (Z)

o.c, staggered in 2 rows



S.157094



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B24



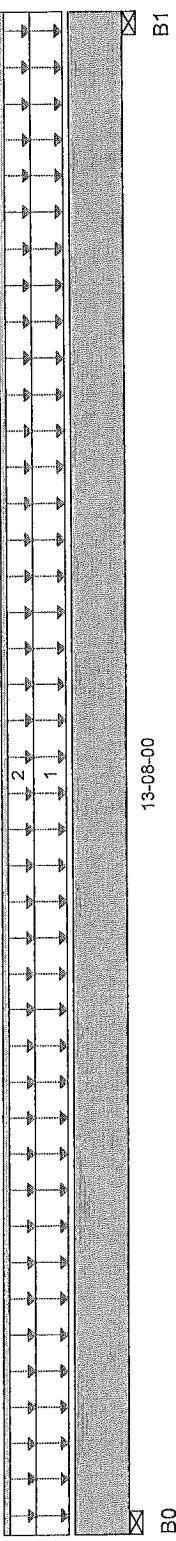
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 28, 2018 15:50:14

Build 6536
Job Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	478 / 0	690 / 0		
B1, 3-1/2"	478 / 0	690 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	13-08-00	40	20		1.00	01-09-00
2	Unf. Lin. (lb/ft)	L	00-00-00	13-08-00	60	60		1.15	n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,043 ft-lbs	17,696 ft-lbs	28.5%	1	06-10-00
End Shear	1,284 lbs	7,232 lbs	17.8%	1	01-03-06
Total Load Defl.	L/661 (0.24")	0.66"	36.3%	4	06-10-00
Live Load Defl.	L/999 (0.098")	n/a	n/a	5	06-10-00
Max Defl.	0.24"	1"	24%	4	06-10-00
Span / Depth	13.3	n/a	n/a		00-00-00

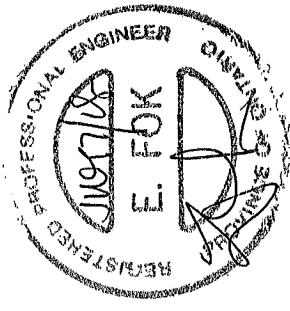
Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,580 lbs	41.9%	21.1%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,580 lbs	41.9%	21.1%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S.157095



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B25



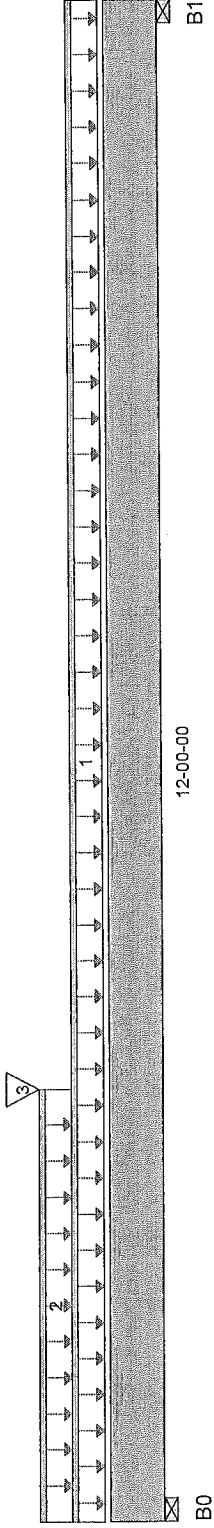
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 28, 2018 15:51:02

Build 6536
Job Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



12-00-00

B1

Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	588 / 0	1,021 / 0		
B1, 3-1/2"	306 / 0	677 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-00-00	27	74		1.00	1.15
2	Unf. Lin. (lb/ft)	L	00-00-00	03-05-00	27	14			n/a
3	Conc. Pt. (lbs)	L	03-05-00	03-05-00	478	690			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,794 ft-lbs	11,502 ft-lbs	33%	0	03-06-06
End Shear	1,261 lbs	4,701 lbs	26.8%	0	01-03-06
Total Load Defl.	L/719 (0.193")	0.577"	33.4%	4	05-08-06
Live Load Defl.	L/999 (0.067")	n/a	n/a	5	05-07-00
Max Defl.	0.193"	1"	19.3%	4	05-08-06
Span / Depth	11.7	n/a	n/a		00-00-00

Disclosure

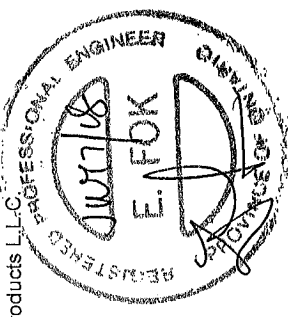
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Bearing Supports

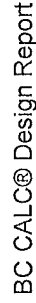
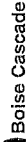
	Dim. (L x W)	Demand	Demand / Support Resistance	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,430 lbs	58.4%	29.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	948 lbs	38.7%	19.5%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S.157096



File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Reaction Summary (Down / Uplift) (lbs)

Food Consumption

Controls Summary			Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,548 ft-lbs	11,610 ft-lbs	13.3%	2	02-10-12		
Neg. Moment	-2,291 ft-lbs	-11,610 ft-lbs	19.7%	1	06-08-00		
End Shear	792 lbs	5,785 lbs	13.7%	2	01-01-00		
Cont. Shear	1,365 lbs	5,785 lbs	23.6%	1	05-08-12		
Total Load Defl.	L/999 (0.028")	n/a	n/a	9	03-01-06		
Live Load Defl.	L/999 (0.018")	n/a	n/a	13	10-00-14		
Total Neg. Defl.	L/999 (-0.003")	n/a	n/a	9	07-09-00		
Max Defl.	0.028"	n/a	n/a	9	03-01-06		
Span / Depth	8.1	n/a	n/a		00-00-00		

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Disclosure

BC CALCO®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM-PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products, LLC.

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A circular professional engineer seal for the State of Indiana. The outer ring contains the text "PROFESSIONAL ENGINEER" at the top and "REGISTERED" at the bottom. The center of the seal is divided into three vertical sections. The left section contains the number "11778" written vertically. The middle section contains the name "E. FOX" written vertically. The right section contains a stylized signature, likely "E. Fox", written vertically. The seal is stamped in black ink on a light-colored background.

Page 1 of 1

S.157097



Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B01



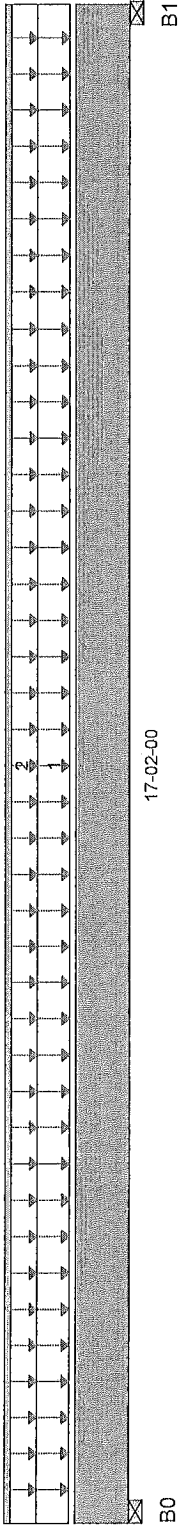
BC CALCO® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:24:50

Build 6080
Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 17-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,635 / 0	1,233 / 0		
B1, 3"	1,627 / 0	1,227 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft^2)	L	00-00-00	17-02-00	40	15		1.00 1.15	
2	Unf. Lin. (lb/ft)	L	00-00-00	17-02-00	60	60			04-09-00 n/a

Controls Summary

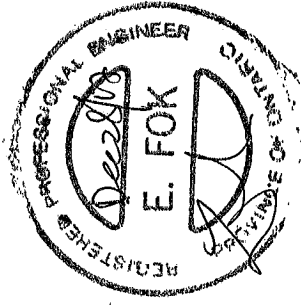
Pos. Moment	16,276 ft-lbs	35,392 ft-lbs	46%	1	08-07-04
End Shear	3,399 lbs	14,464 lbs	23.5%	1	01-03-06
Total Load Defl.	L/333 (0.604")	0.838"	72.2%	4	08-07-04
Live Load Defl.	L/583 (0.344")	0.558"	61.7%	5	08-07-04
Max Defl.	0.604"	1"	60.4%	4	08-07-04
Span / Depth	16.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

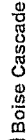
	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	3,993 lbs	53%	26.7%	Spruce Pine Fir
B1 Wall/Plate	3" x 3-1/2"	3,974 lbs	61.5%	31%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Nail one ply to another with 3 1/2" spiral nails @ 12" o.c, staggered in 2 rows



S152724

Total Horizontal Product Length = 13-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	1,302 / 0	1,925 / 0	1,799 / 0	
B1, 3-1/2"	1,310 / 0	1,936 / 0	1,810 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	1.00	0.65	1.00	1.15
1		Unf. Area (lb/ft^2)	L	00-00-00	13-09-00	40	15		04-09-00
		Unf. Lin. (lb/ft)	L	00-00-00	13-09-00		60		n/a
		Unf. Area (lb/ft^2)	L	00-00-00	13-09-00		11	21	12-06-00

Location	Load Case	Resistance	Factored Demand	Factored Resistance
Controls Summary	Resistance Case	Resistance	Demand	Factored Resistance

Pos. Moment	18,661 ft-lbs	35,392 ft-lbs	52.7%	5	06-10-04
End Shear	4,715 lbs	14,464 lbs	32.6%	5	01-02-14
Total Load Defl.	L/359 (0.446")	0.667"	66.8%	13	06-10-04
Live Load Defl.	L/664 (0.241")	0.444"	54.3%	17	06-10-04
Max Defl.	0.446"	1"	44.6%	13	06-10-04
Span / Depth	13.5	n/a	n/a		00-00-00
Squash Blocks	Valid				

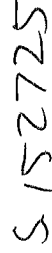
Bearing Supports	Dim. (L x W)	Demand	Support	Member	Resistance
			Support	Member	Material

B0	Wall/Plate	3" x 3-1/2"	5,756 lbs	89.1%	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	5,791 lbs	76.8%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Nail one ply to another with
3 1/2" spiral nails @ (2")
o.c. staggered in 2 rows





Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B03



BC CALCO® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:27:20

Build 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

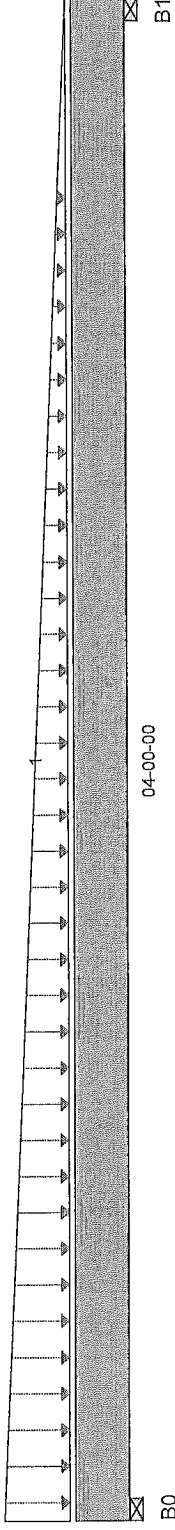
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	55 / 0	33 / 0		
B1, 3-1/2"	25 / 0	21 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Trapezoidal (lb/ft)	L	00-00-00	04-00-00	40	15	0	1.00 1.15	n/a n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	75 ft-lbs	17,696 ft-lbs	0.4%	1	01-09-05
End Shear	91 lbs	7,232 lbs	1.3%	1	01-03-06
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-11-07
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-11-07
Max Defl.	0"	n/a	n/a	4	01-11-07
Span / Depth	3.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

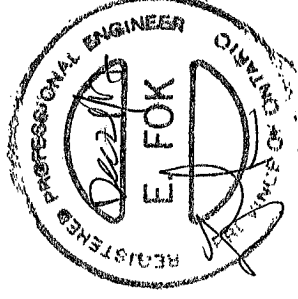
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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	123 lbs	3.3%	1.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	65 lbs	1.7%	0.9%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4



152726



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B04



BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:28:57

Build 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

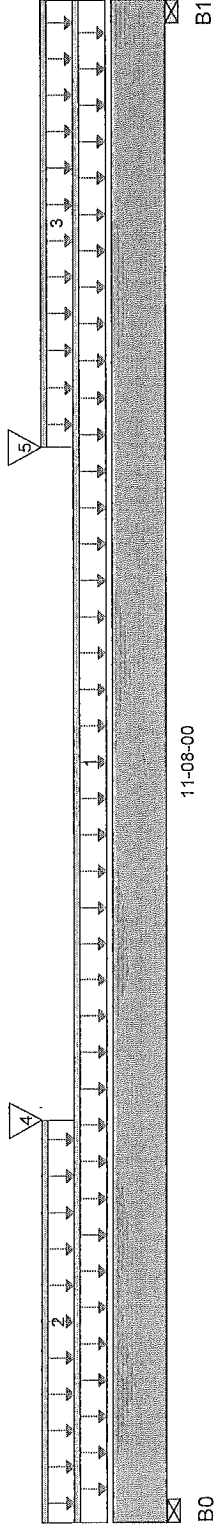
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 11-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	310 / 0	186 / 0		
B1, 3-1/2"	315 / 0	187 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	11-08-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	40	15			n/a
3	Unf. Lin. (lb/ft)	L	08-03-00	11-08-00	40	15			n/a
4	Conc. Pt. (lbs)	L	03-01-00	03-01-00	25	21			n/a
5	Conc. Pt. (lbs)	L	08-03-00	08-03-00	25	21			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,582 ft-lbs	17,696 ft-lbs	8.9%	1	05-11-14
End Shear	521 lbs	7,232 lbs	7.2%	1	10-04-10
Total Load Defl.	L/999 (0.054")	n/a	n/a	4	05-09-15
Live Load Defl.	L/999 (0.033")	n/a	n/a	5	05-09-15
Max Defl.	0.054"	n/a	n/a	4	05-09-15
Span / Depth	11.3	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

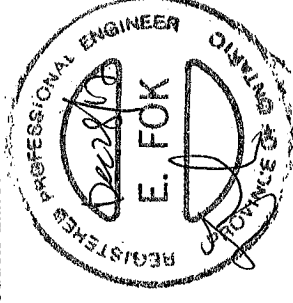
Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	698 lbs	18.5%	9.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	706 lbs	18.7%	9.4%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total 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 2010 and CSA O86.

Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4



S.152727



Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B05



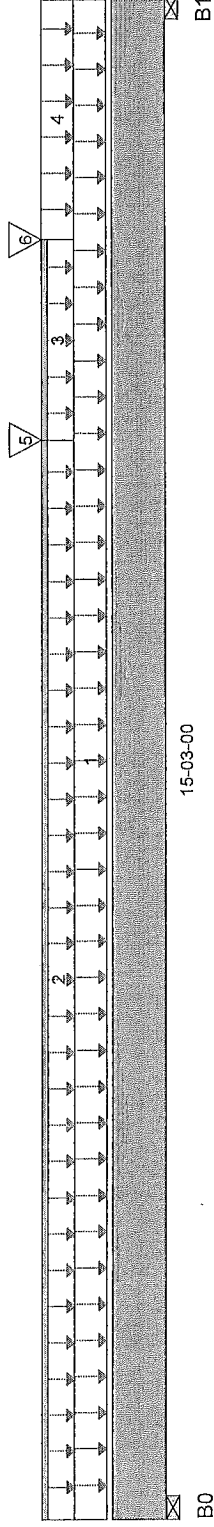
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:30:42

Build 6080
Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 15-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,567 / 0	1,118 / 0		
B1, 3"	2,329 / 0	1,267 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	15-03-00	40	15		1.00 1.15	04-09-00
	Unf. Lin. (lb/ft)	L	00-00-00	10-10-00		60			n/a
4	Unf. Lin. (lb/ft)	L	10-10-00	12-10-00	27	14			n/a
5	Unf. Area (lb/ft²)	L	12-10-00	15-03-00	40	15			06-00-00
6	Conc. Pt. (lbs)	L	10-10-00	10-10-00	55	33			n/a
	Conc. Pt. (lbs)	L	12-10-00	12-10-00	310	186			n/a

Controls Summary

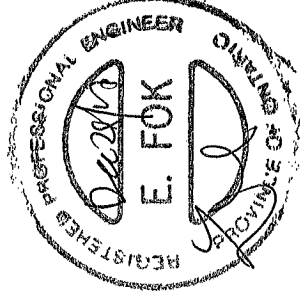
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	14,284 ft-lbs	35,392 ft-lbs	40.4%	1	08-01-12
End Shear	4,009 lbs	14,464 lbs	27.7%	1	14-00-02
Total Load Defl.	L/425 (0.419")	0.742"	56.5%	4	07-08-06
Live Load Defl.	L/708 (0.252")	0.494"	50.9%	5	07-10-03
Max Defl:	0.419"	1"	41.9%	4	07-08-06
Span / Depth	15	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	3,748 lbs	49.7%	25.1%	Spruce Pine Fir
B1 Wall/Plate	3" x 3-1/2"	5,077 lbs	78.6%	39.6%	Spruce Pine Fir

Notes

Design meets Code-minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA 3.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Nail one ply to another with
3 1/2" spiral nails @ 12"
o.c. staggered in 2 rows



5152728



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B06



BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:31:38

Project: 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

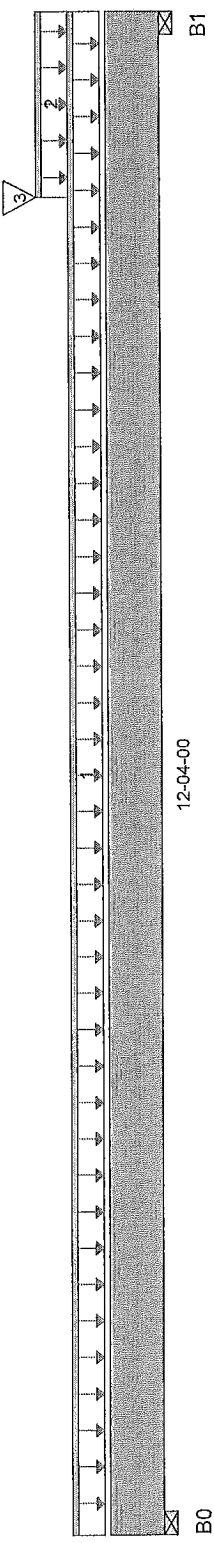
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	174 / 0	498 / 0		
B1, 3-1/2"	254 / 0	543 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-04-00	27	74		1.00	1.15
2	Unf. Lin. (lb/ft)	L	10-10-00	12-04-00	27	14			n/a
3	Conc. Pt. (lbs)	L	10-10-00	10-10-00	55	33			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,012 ft-lbs	11,502 ft-lbs	17.5%	0	06-02-08
End Shear	592 lbs	4,701 lbs	12.6%	0	11-00-10
Total Load Defl.	L/999 (0.103")	n/a	n/a	4	06-02-08
Live Load Defl.	L/999 (0.028")	n/a	n/a	5	06-02-08
Max Defl.	0.103"	n/a	n/a	4	06-02-08
Span / Depth	12	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

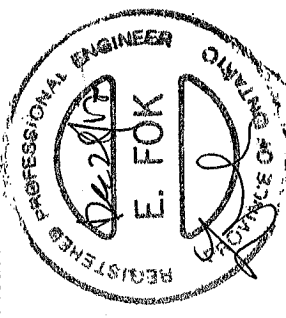
Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	697 lbs	28.5%	14.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	760 lbs	31%	15.7%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4



BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCi®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

S-152729



BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:33:04

Build 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

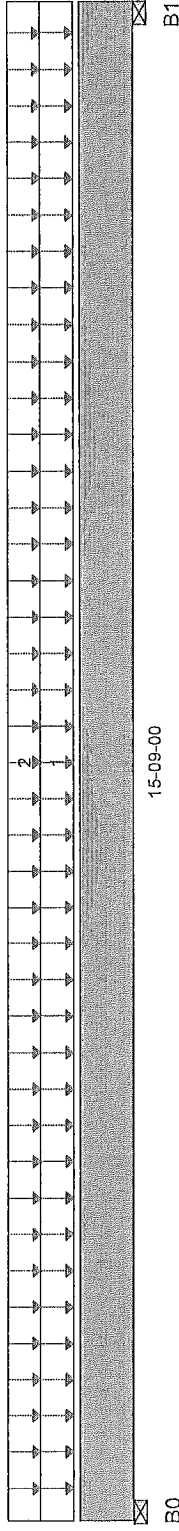
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 15-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	3,377 / 0	1,644 / 0		
B1, 3-1/2"	3,395 / 0	1,653 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft^2)	L	00-00-00	15-09-00	40	15		1.00 1.15	04-09-00
2	Unf. Area (lb/ft^2)	L	00-00-00	15-09-00	40	20			06-00-00

Controls Summary

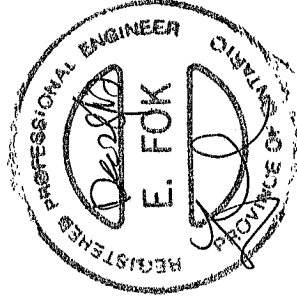
Pos. Moment	26,645 ft-lbs	55,212 ft-lbs	48.3%	1	07-10-04
End Shear	5,997 lbs	21,696 lbs	27.6%	1	01-02-14
Total Load Defl.	L/339 (0.543")	0.767"	70.8%	4	07-10-04
Live Load Defl.	L/504 (0.365")	0.511"	71.4%	5	07-10-04
Max Defl.	0.543"	1"	54.3%	4	07-10-04
Span / Depth	15.5	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3" x 5-1/4"	7,121 lbs	73.5%	37.1%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 5-1/4"	7,159 lbs	63.3%	31.9%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Nail one ply to another with 3 1/2" spiral nails @ 12" o.c, staggered in 2 rows





Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B08



Dry | 1 span | No cantilevers | 0/12 slope (deg)

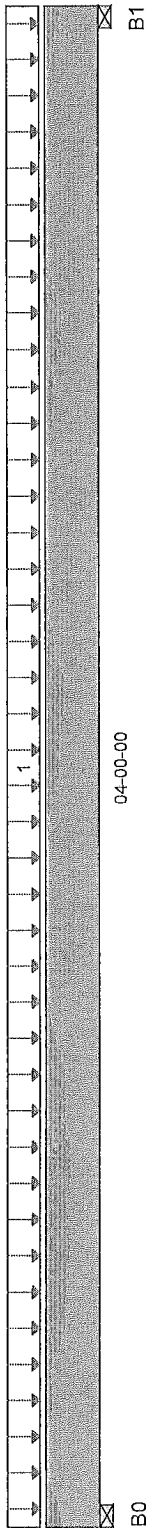
November 16, 2017 15:33:39

BC CALCO® Design Report

Build 6080

Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: Second Floor Framing
Specifier: NL
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	360 / 0	147 / 0		
B1, 3-1/2"	360 / 0	147 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00	40	15		1.00 1.15	04-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	567 ft-lbs	17,696 ft-lbs	3.2%	1	02-00-00
Shear	260 lbs	7,232 lbs	3.6%	1	01-03-06
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	02-00-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-00-00
Max Defl.	0.002"	n/a	n/a	4	02-00-00
Span / Depth	3.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

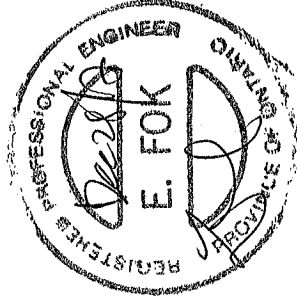
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	724 lbs	19.2%	9.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	724 lbs	19.2%	9.7%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



5152731



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B09



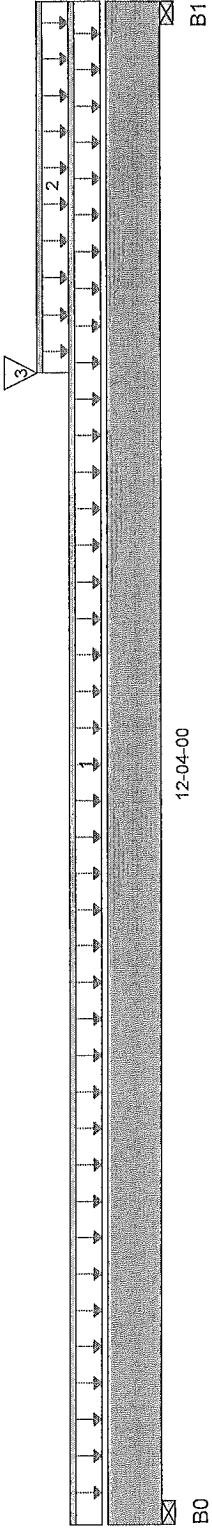
BC CALCO® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:34:20

Build 6080
Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	259 / 0	532 / 0		
B1, 3-1/2"	515 / 0	644 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-04-00	27	74		1.00	1.15
2	Unf. Lin. (lb/ft)	L	09-04-00	12-04-00	27	14			n/a
	Conc. Pt. (lbs)	L	09-04-00	09-04-00	360	147			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,716 ft-lbs	17,696 ft-lbs	21%	1	07-05-06
End Shear	1,322 lbs	7,232 lbs	18.3%	1	11-00-10
Total Load Defl.	L/992 (0.144")	0.594"	24.2%	4	06-05-04
Live Load Defl.	L/999 (0.057")	n/a	n/a	5	06-06-12
Max Defl.	0.144"	1"	14.4%	4	06-05-04
Span / Depth	12	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

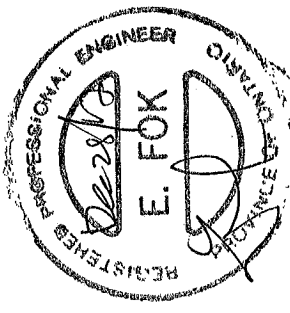
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	745 lbs	30.4%	15.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,577 lbs	41.8%	21.1%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S.152732



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B10



BC CALC® Design Report

Dry | 2 spans | Left cantilever | 0/12 slope (deg)

November 16, 2017 15:35:32

Build 6080

Name:

45147 (4000)

Address:

Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports:

CCMC 12472-R

File Name: 290674.bcc

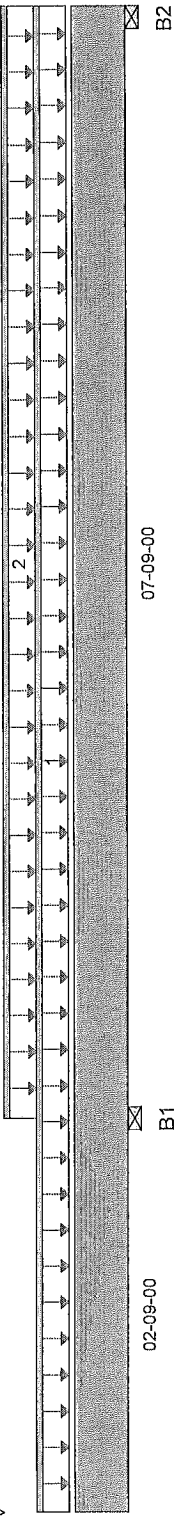
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 10-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	783 / 0	394 / 0		
B2, 3-1/2"	215 / 145	72 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	10-06-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	02-09-00	10-06-00	27	14			n/a
3	Conc. Pt. (lbs)	L	00-00-00	00-00-00	360	147			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	599 ft-lbs	17,696 ft-lbs	3.4%	3	07-01-10
Neg. Moment	-2,238 ft-lbs	-17,696 ft-lbs	12.6%	1	02-09-00
End Shear	255 lbs	7,232 lbs	3.5%	3	09-02-10
Cont. Shear	830 lbs	7,232 lbs	11.5%	1	01-07-06
Total Load Defl.	2xL/1,998 (0.046")	n/a	n/a	9	00-00-00
Live Load Defl.	2xL/1,998 (0.036")	n/a	n/a	12	00-00-00
Total Neg. Defl.	L/999 (-0.015")	n/a	n/a	9	05-08-10
Max Defl.	-0.015"	n/a	n/a	9	05-08-10
Cant. Max Defl.	0.046"	n/a	n/a	9	00-00-00
Span / Depth	7.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

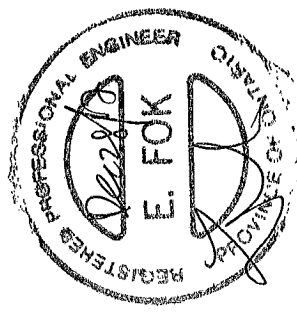
Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Wall/Plate	3-1/2" x 1-3/4"	1,666 lbs	44.2%	22.3%	Spruce Pine Fir
B2 Wall/Plate	3-1/2" x 1-3/4"	413 lbs	11%	5.5%	Spruce Pine Fir

Cautions

Uplift of 153 lbs found at span 2 - Right.

Notes



S.152733



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B11



BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 16, 2017 15:36:44

Build 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

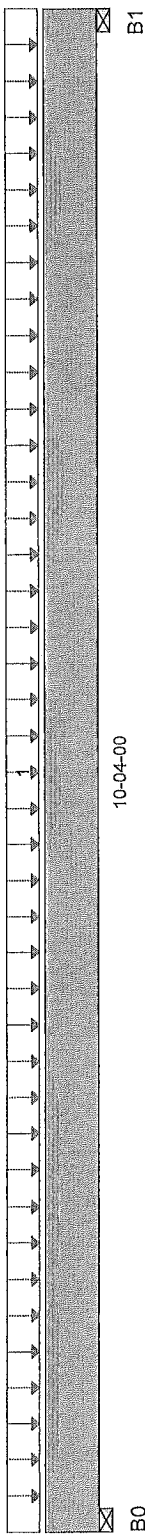
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



10-04-00

Total Horizontal Product Length = 10-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	982 / 0	399 / 0		
B1, 3-1/2"	982 / 0	399 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	10-04-00	40	15	1.00	1.15	04-09-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	4,651 ft-lbs	17,696 ft-lbs	26.3%	1	05-02-00
Shear	1,483 lbs	7,232 lbs	20.5%	1	01-03-06
Total Load Defl.	L/999 (0.117")	n/a	n/a	4	05-02-00
Live Load Defl.	L/999 (0.083")	n/a	n/a	5	05-02-00
Max Defl.	0.117"	n/a	n/a	4	05-02-00
Span / Depth	10	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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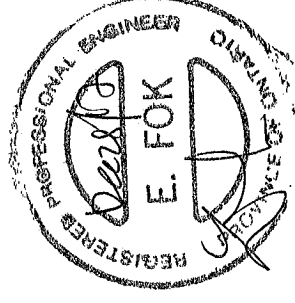
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Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,972 lbs	52.3%	26.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,972 lbs	52.3%	26.4%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4



5152734



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B12



BC CALCO® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 07:59:38

Build 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

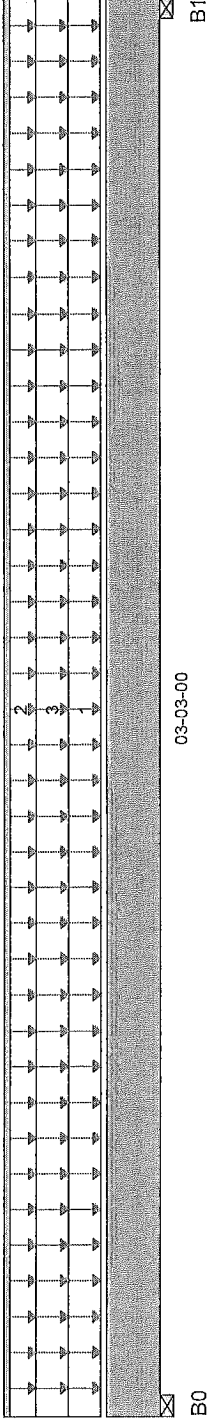
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 03-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	141 / 0	312 / 0	290 / 0	
B1, 3-1/2"	141 / 0	312 / 0	290 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	03-03-00	40	15		1.00	1.15
2	Unf. Lin. (lb/ft)	L	00-00-00	03-03-00		60			n/a
	Unf. Area (lb/ft²)	L	00-00-00	03-03-00		11		21	08-06-00

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	537 ft-lbs	17,696 ft-lbs	3%	5	01-07-08
End Shear	189 lbs	7,232 lbs	2.6%	5	01-03-06
Total Load Defl.	L/999 (0.001")	n/a	n/a	13	01-07-08
Live Load Defl.	L/999 (0.001")	n/a	n/a	17	01-07-08
Max Defl.	0.001"	n/a	n/a	13	01-07-08
Span / Depth	2.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

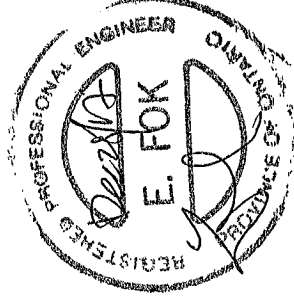
Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	896 lbs	23.8%	12%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	896 lbs	23.8%	12%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S.152735



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B13



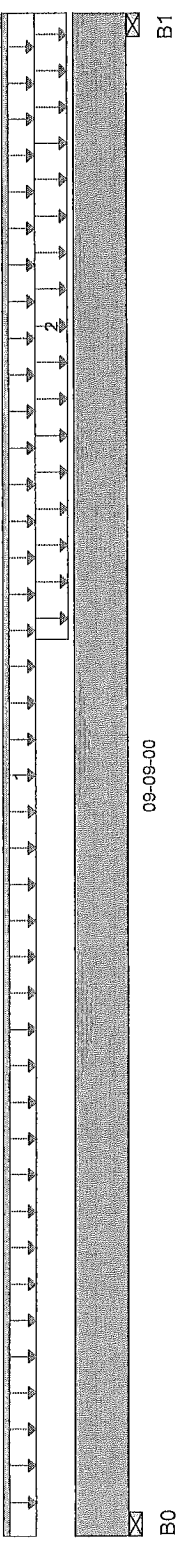
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:01:08

Build 6080
 Name: 45147 (4000)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 290674.bcc
 Description: First Floor Framing
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses
 Misc:



Total Horizontal Product Length = 09-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	178 / 0	407 / 0		
B1, 3-1/2"	326 / 0	463 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	09-09-00	27	74		1.00	1.15
2	Unf. Area (lb/ft²)	L	05-09-00	09-09-00	40	15			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,323 ft-lbs	11,502 ft-lbs	11.5%	0	05-00-10
End Shear	736 lbs	7,232 lbs	10.2%	1	08-05-10
Total Load Defl.	L/999 (0.047")	n/a	n/a	4	04-11-12
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	05-00-10
Max Defl.	0.047"	n/a	n/a	4	04-11-12
Span / Depth	9.4	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

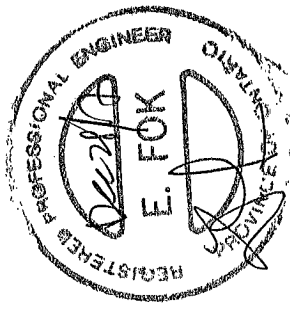
BC CALC®, BC FRAMER®, AJSTM, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	570 lbs	23.3%	11.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,067 lbs	28.3%	14.3%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4



S152236



Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B14



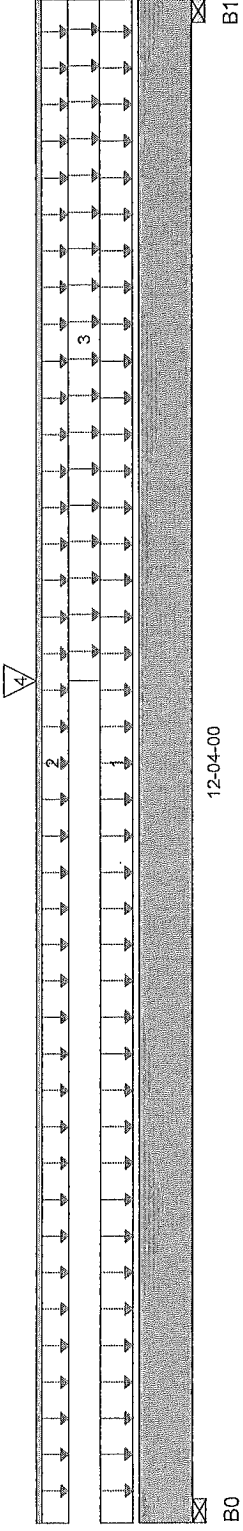
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:02:27

Build 6080
Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,793 / 0	1,268 / 0		
B1, 3-1/2"	2,445 / 0	1,550 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	12-04-00	40	15			06-00-00
3	Unf. Lin. (lb/ft)	L	00-00-00	12-04-00		60			n/a
4	Unf. Area (lb/ft²)	L	06-10-00	12-04-00	40	15			05-00-00
	Conc. Pt. (lbs)	L	06-10-00	06-10-00	178	407			n/a

Controls Summary

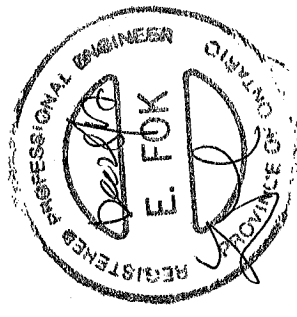
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	15,106 ft-lbs	35,392 ft-lbs	42.7%	1	06-10-00
End Shear	4,380 lbs	14,464 lbs	30.3%	1	11-00-10
Total Load Defl.	L/525 (0.272")	0.594"	45.7%	4	06-03-12
Live Load Defl.	L/899 (0.158")	0.396"	40%	5	06-03-12
Max Defl.	0.272"	1"	27.2%	4	06-03-12
Span / Depth	12	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	4,274 lbs	56.7%	28.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	5,605 lbs	74.4%	37.5%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Performance Factor : Normal Part code : Part 4
Nail one ply to another with 3 1/2" spiral nails @ 12" o.c., staggered in 2 rows



S152737



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B15



BC CALC® Design Report

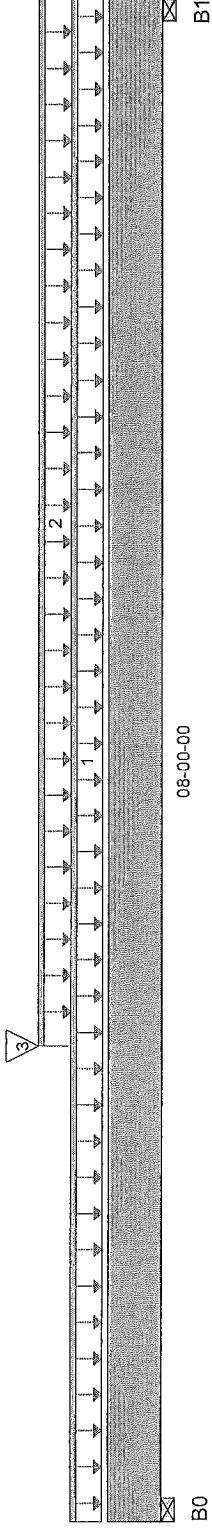
Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:03:22

Build 6080

Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	386 / 0	429 / 0		
B1, 3-1/2"	305 / 0	271 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	02-06-00	08-00-00	27	14			n/a
	Conc. Pt. (lbs)	L	02-06-00	02-06-00	326	463			n/a

Controls Summary

Pos.	Moment	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
1	2,329 ft-lbs	17,696 ft-lbs	13.2%	1	02-06-00	
End Shear	1,031 lbs	7,232 lbs	14.3%	1	01-03-06	
Total Load Defl.	L/999 (0.032")	n/a	n/a	4	03-09-01	
Live Load Defl.	L/999 (0.015")	n/a	n/a	5	03-09-13	
Max Defl.	0.032"	n/a	n/a	4	03-09-01	
Span / Depth	7.6	n/a	n/a		00-00-00	
Squash Blocks	Valid					

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

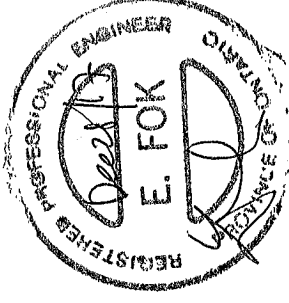
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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,115 lbs	29.6%	14.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	796 lbs	21.1%	10.6%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S.152738



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B16



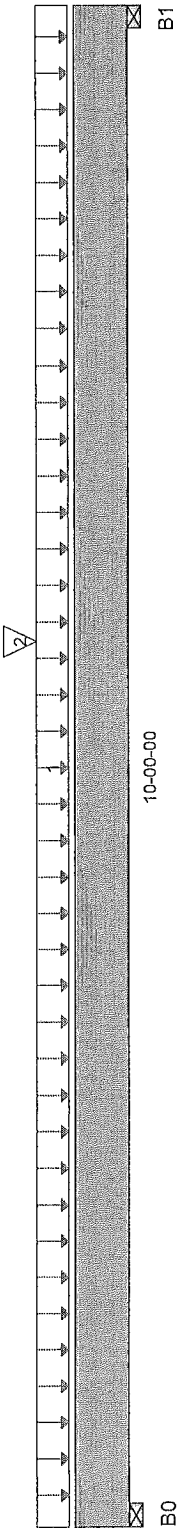
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:05:13

Build 6080
Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 10-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,089 / 0	439 / 0		
B1, 3-1/2"	1,211 / 0	485 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft^2)	L	00-00-00	10-00-00	40	15			04-00-00
2	Conc. Pt. (lbs)	L	05-10-00	05-10-00	700	263			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,747 ft-lbs	17,696 ft-lbs	38.1%	1	05-10-00
End Shear	2,009 lbs	7,232 lbs	27.8%	1	08-08-10
Total Load Defl.	L/787 (0.145")	0.477"	30.5%	4	05-01-07
Live Load Defl.	L/999 (0.104")	n/a	n/a	5	05-01-07
Max Defl.	0.145"	1"	14.5%	4	05-01-07
Span / Depth	9.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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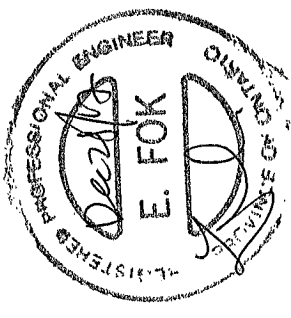
BC CALC® BC FRAMER®, AJST™, ALJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,182 lbs	57.9%	29.2%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,422 lbs	64.3%	32.4%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S. 152739



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B17



BC CALCO® Design Report

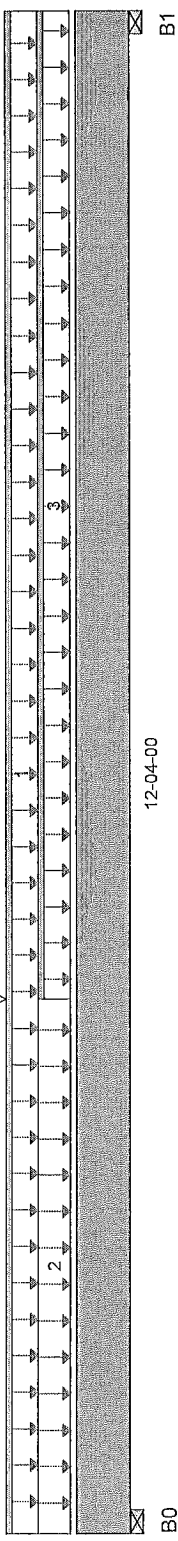
Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:07:04

Build 6080

Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,473 / 0	1,013 / 0		
B1, 3-1/2"	863 / 0	786 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-04-00	27	74			n/a
2	Unf. Area (lb/ft²)	L	00-00-00	04-04-00	40	15			02-02-00
3	Unf. Lin. (lb/ft)	L	04-04-00	12-04-00	27	14			n/a
4	Conc. Pt. (lbs)	L	04-04-00	04-04-00	200	75			n/a
5	Conc. Pt. (lbs)	L	04-04-00	04-04-00	1,211	485			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,351 ft-lbs	17,696 ft-lbs	64.1%	1	04-04-00
End Shear	3,077 lbs	7,232 lbs	42.5%	1	01-03-06
Total Load Defl.	L/387 (0.368")	0.594"	62%	4	05-09-10
Live Load Defl.	L/657 (0.217")	0.396"	54.8%	5	05-09-10
Max Defl.	0.368"	1"	36.8%	4	05-09-10
Span / Depth	12	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here 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 1-800-964-6999 before installation.

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	3,475 lbs	92.2%	46.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,278 lbs	60.4%	30.5%	Spruce Pine Fir

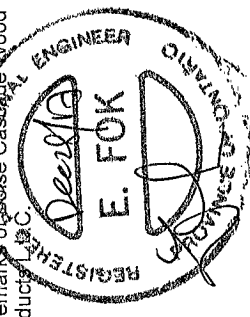
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

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S.152740



Boise Cascade

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

Floor Beam\B18



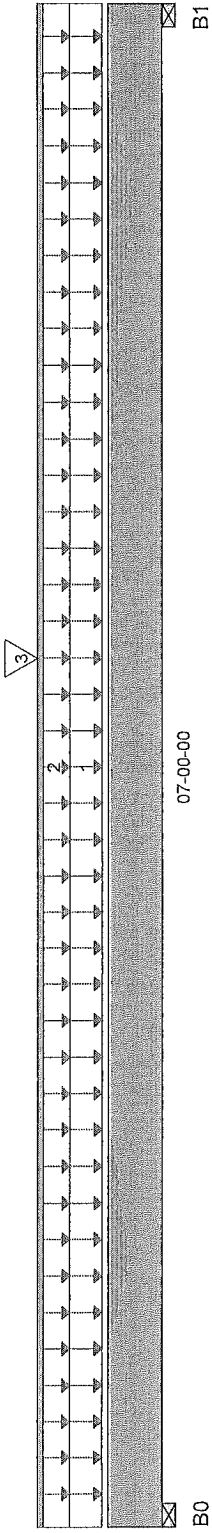
BC CALCO® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:54:13

Build 6080
Name: 45147 (4000)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290674.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	867 / 0	658 / 0		
B1, 3-1/2"	928 / 0	687 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-00-00	40	20			05-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	07-00-00		60			n/a
	Conc. Pt. (lbs)	L	04-00-00	04-00-00	395	192			n/a

Controls Summary

Pos.	Moment	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
1	3,973 ft-lbs	11,610 ft-lbs	34.2%	1	04-00-00	
End Shear	1,703 lbs	5,785 lbs	29.4%	1	05-11-00	
Total Load Defl.	L/999 (0.083")	n/a	n/a	4	03-06-08	
Live Load Defl.	L/999 (0.048")	n/a	n/a	5	03-06-08	
Max Defl.	0.083"	n/a	n/a	4	03-06-08	
Span / Depth	8.3	n/a	n/a		00-00-00	
Squash Blocks	Valid					

Disclosure

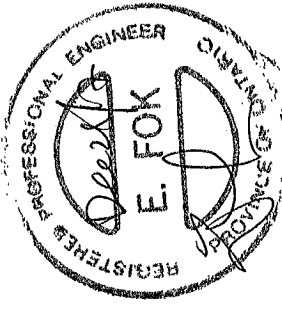
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

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Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,124 lbs	56.4%	28.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,251 lbs	59.7%	30.1%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4



S.152741



Boise Cascade

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

Floor Beam\B19



BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:49:14

Build 6080

Name:

45147 (4000)

Address:

Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

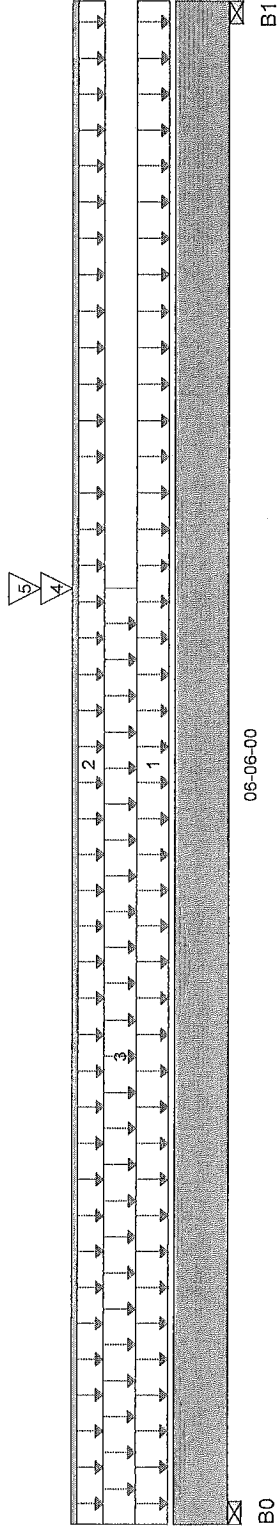
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



06-06-00

B0

B1

Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,844 / 0	1,016 / 0		
B1, 3-1/2"	1,790 / 0	1,007 / 0		

Load Summary

Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	06-06-00	40	20			05-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	06-06-00		60			n/a
3	Unf. Area (lb/ft²)	L	00-00-00	04-00-00	40	15			06-00-00
4	Conc. Pt. (lbs)	L	04-00-00	04-00-00	900	338			n/a
5	Conc. Pt. (lbs)	L	04-00-00	04-00-00	474	222			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
7,368 ft-lbs	23,220 ft-lbs	31.7%	1	04-00-00	
End Shear	3,388 lbs	11,571 lbs	29.3%	1	05-05-00
Total Load Defl.	L/999 (0.064")	n/a	n/a	4	03-03-04
Live Load Defl.	L/999 (0.042")	n/a	n/a	5	03-04-05
Max Defl.	0.064"	n/a	n/a	4	03-03-04
Span / Depth	7.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	4,036 lbs	53.6%	27%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	3,943 lbs	52.3%	26.4%	Spruce Pine Fir

Notes

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

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

Design meets User specified (1") Maximum Total load deflection criteria.

Calculations assume member is fully braced.

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

CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

O86.

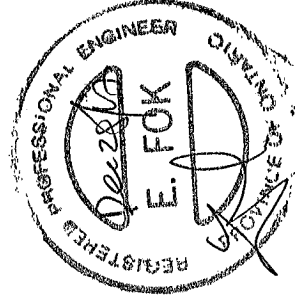
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

Nail one ply to another with

3 1/2" spiral nails @ 12"

o.c, staggered in 2 rows



S.152742



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B20



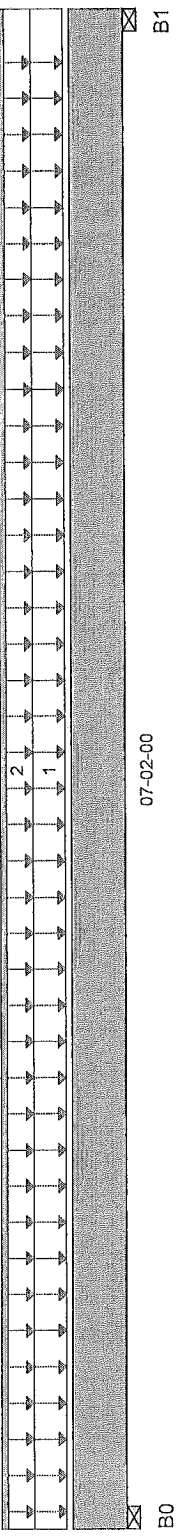
BC CALCO® Design Report

Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 17, 2017 08:54:48

Build 6080
 Name: 45147 (4000)
 Address: Pine Valley
 City, Province, Postal Code: Vaughan, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 290674.bcc
 Description: First Floor Framing
 Specifier:
 Designer: NL
 Company: Alpa Roof Trusses
 Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	323 / 0	358 / 0		
B1, 3-1/2"	323 / 0	358 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-02-00	40	15		1.00	02-03-00
2	Unf. Lin. (lb/ft)	L	00-00-00	07-02-00	40	60		1.15	n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	1,461 ft-lbs	17,696 ft-lbs	8.3%	1	03-07-00
End Shear	598 lbs	7,232 lbs	8.3%	1	01-03-06
Total Load Defl.	L/999 (0.018")	n/a	n/a	4	03-07-00
Live Load Defl.	L/999 (0.008")	n/a	n/a	5	03-07-00
Max Defl.	0.018"	n/a	n/a	4	03-07-00
Span / Depth	6.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

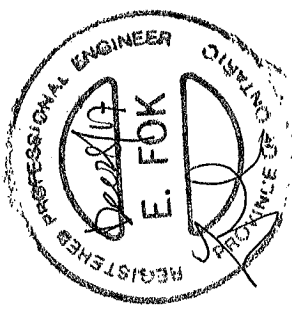
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Bearing Supports	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	931 lbs	24.7%	12.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	931 lbs	24.7%	12.5%	Spruce Pine Fir

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Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALCO® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4



9152743



Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

Floor Beam\B21

November 17, 2017 08:55:34

Dry | 1 span | No cantilevers | 0/12 slope (deg)



BC CALC® Design Report

Build 6080

Name: 45147 (4000)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290674.bcc

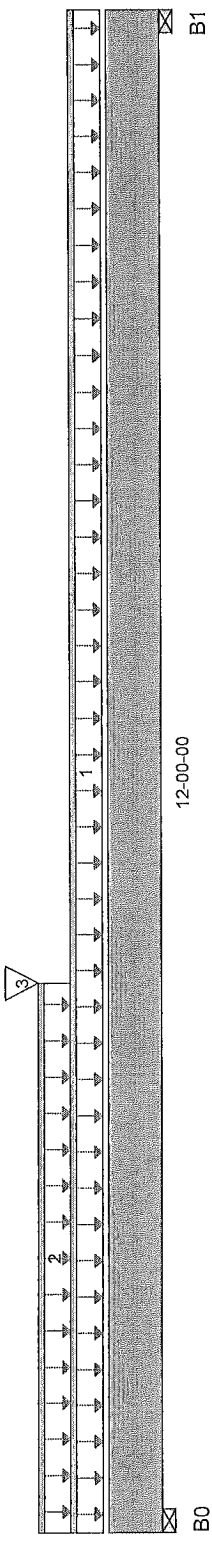
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	467 / 0	761 / 0		
B1, 3-1/2"	297 / 0	618 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-00-00	27	74		1.00	1.15
2	Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	27	14			n/a
	Conc. Pt. (lbs)	L	04-04-00	04-04-00	323	358			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,924 ft-lbs	17,696 ft-lbs	27.8%	1	04-04-00
End Shear	1,398 lbs	7,232 lbs	19.3%	1	01-03-06
Total Load Defl.	L/837 (0.166")	0.577"	28.7%	4	05-08-12
Live Load Defl.	L/999 (0.061")	n/a	n/a	5	05-08-12
Max Defl.	0.166"	1"	16.6%	4	05-08-12
Span / Depth	11.7	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

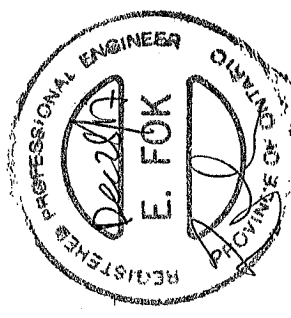
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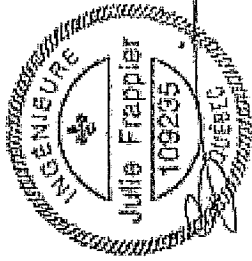
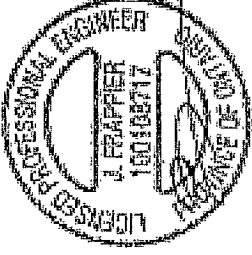
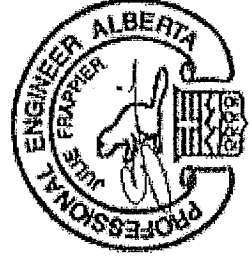
Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,653 lbs	43.9%	22.1%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	865 lbs	35.3%	17.8%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total 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 2010 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4



S152744



Maximum Floor Spans

Live Load = 40 psf Dead Load = 15 psf
Simple Spans, L/360 Deflection Limit
3/4" OSB G&N Sheathing

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

Depth	Series	Mid-Span Blocking			Mid-Span Blocking and 1/2" Gypsum Ceiling		
		On Centre Spacing			On Centre Spacing		
9-1/2"	NI-20	12"	17'-1"	16"	12"	16"	14"
	NI-40x	15'-5"	14'-6"	13'-5"	15'-5"	14'-6"	13'-5"
	NI-60	17'-8"	16'-7"	15'-3"	17'-8"	16'-7"	15'-3"
	NI-70	18'-11"	16'-10"	15'-7"	18'-11"	16'-10"	15'-7"
	NI-80	20'-3"	18'-7"	17'-9"	20'-5"	18'-2"	17'-0"
11-7/8"	NI-20	20'-2"	18'-8"	17'-6"	20'-7"	18'-8"	17'-6"
	NI-40x	21'-10"	20'-4"	19'-5"	22'-5"	20'-11"	19'-9"
	NI-60	22'-1"	20'-7"	19'-7"	22'-8"	21'-2"	20'-3"
	NI-70	23'-4"	21'-8"	20'-8"	23'-10"	21'-3"	20'-1"
	NI-80	23'-7"	21'-11"	20'-11"	24'-1"	22'-6"	21'-5"
14"	NI-20	24'-3"	22'-6"	21'-6"	24'-8"	23'-0"	22'-0"
	NI-40x	24'-5"	22'-9"	21'-8"	25'-1"	23'-6"	21'-9"
	NI-60	24'-10"	23'-1"	22'-0"	25'-6"	23'-10"	22'-9"
	NI-70	26'-1"	24'-3"	23'-2"	26'-8"	24'-11"	23'-9"
	NI-80	26'-6"	24'-7"	23'-5"	27'-1"	25'-3"	24'-1"
16"	NI-20	27'-3"	25'-4"	24'-1"	27'-9"	25'-11"	24'-8"
	NI-40x	27'-3"	25'-4"	24'-1"	27'-9"	25'-11"	24'-8"
	NI-60	28'-8"	26'-8"	25'-4"	29'-3"	27'-4"	26'-1"
	NI-70	29'-1"	27'-0"	25'-9"	29'-8"	27'-9"	26'-5"
	NI-80	29'-11"	27'-10"	26'-6"	30'-6"	28'-5"	27'-2"

1. Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of $1.50L + 1.25D$. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/360 and a total load deflection limit of L/240.

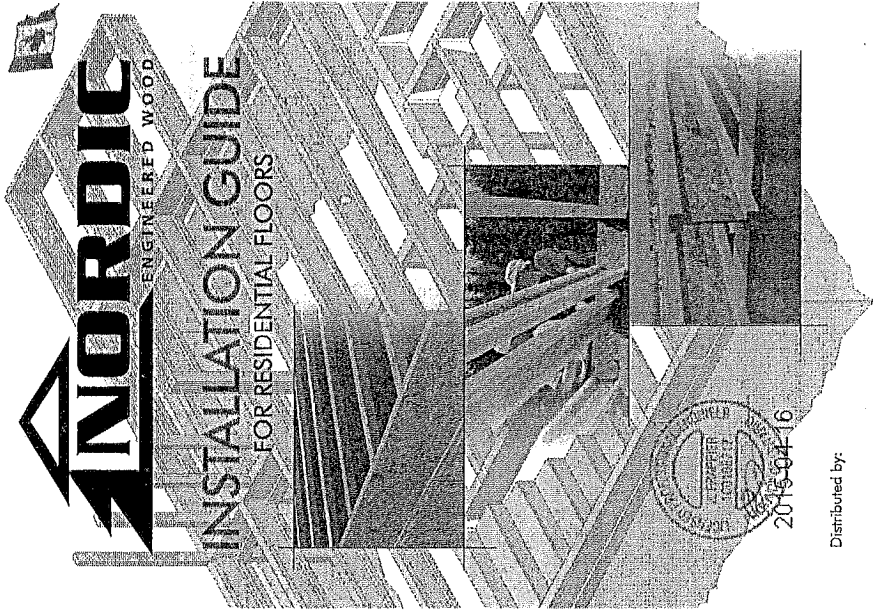
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

4. Bearing stiffeners are not required when joists are used with the spans and spacings given in this table, except as required for hangers.

5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Distributed by:



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



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

Avoid Accidents by Following these Important Guidelines:
1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.



- Temporary bracing or struts must be 1 1/4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 2x12 nails fastened to the top surface of each I-joist. Nail spacing must be 4 feet on center at the end of each bay. Top ends of bracing must be braced over at least two I-joists.
- O-r sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- 3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with corner panels, rim board, or cross-bracing.
- 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.

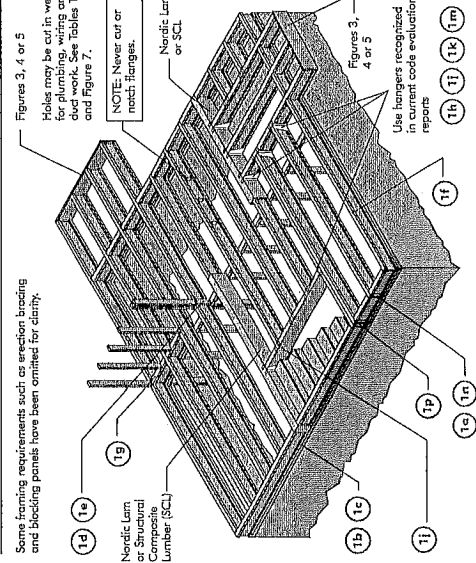
STORAGE AND HANDLING GUIDELINES

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 flanges.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled units should be kept inside until time of installation.
7. When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.
 - Pick I-joists in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
8. Do not handle I-joists in a horizontal orientation.
9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

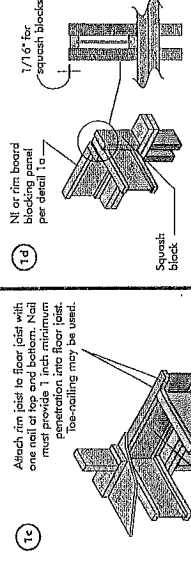
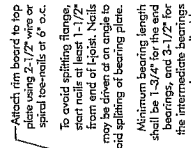
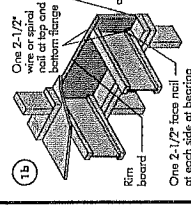
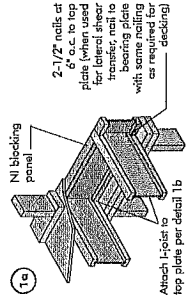
INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact the 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 to provide a level, level, be level.
5. Minimum bearing lengths: 1 3/4 inches for end bearings and 3 1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joist or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or 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: Splice nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



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



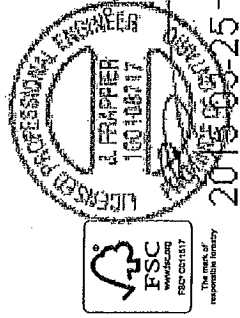
Blocking Panel or Rim Joist	Maximum Fastened Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*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 Fastened Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*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.

Full of Squash Blocks	Maximum Fastened Vertical Load* (plf)
2x Lumber	3,500
1-1/8" Rim Board Plus	4,300
Provide lateral bracing per detail 1a, 1b, or 1c	6,600



refer to the Installation Guide for Residential Floors for additional information.
CMC 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. 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.

- 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 at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 1.

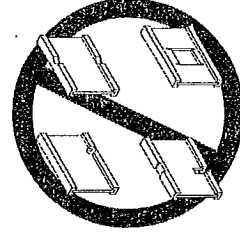
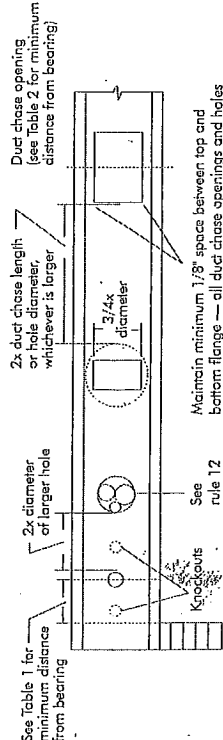
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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 (ft - in.)											
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	12-3/4
	NI-40x	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"	5-0"	6-6"	7-5"	---	---	---	---
	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"	---	---	---
	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"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-40x	0-7"	0-8"	1-0"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-3"	10-2"	---
	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-90	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"
	NI-90x	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"
	NI-60	0-7"	0-8"	1-6"	3-0"	4-2"	4-6"	5-6"	6-4"	7-0"	8-5"	9-8"	10-2"
	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"
	NI-80	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	9-5"	11-0"	12-3"

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are pre-cored 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 cut between the holes is another good method to minimize damage to the I-joist.

SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-joists until fastened and braced. Serious injuries can result.

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-bracing at joist ends.
- 2. 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.
- 3. 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.
- 4. Temporary bracing or struts must be 1 1/2 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2x12" 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.
- 5. Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- 6. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
- 7. 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.
- 8. Never install a damaged I-joist.

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

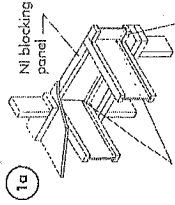
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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



PRODUCT WARRANTY

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

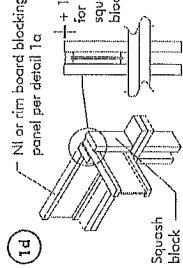
Furthermore, Chantiers Chibougamau warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.



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

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

Attach I-joist to top plate per detail 1b



Pair of Squash Blocks	Maximum Factored Vertical Load Per Pair at Squash Blocks (plf)
3-1/2" wide	5,172
5-1/2" wide	8,500
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300
	6,600

Provide lateral bracing per detail 1a or 1b

1h Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer 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)

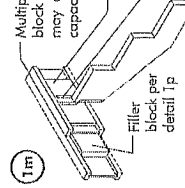
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

* 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 4-1/4".
For 2" thick flanges use net depth minus 4-1/4".

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

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

Top-mount hanger installed per manufacturer's recommendations

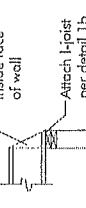


1m Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.

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

Filler block per detail 1p
Maximum support capacity = 1,620 lbs.

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



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

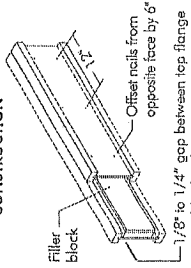
1r



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

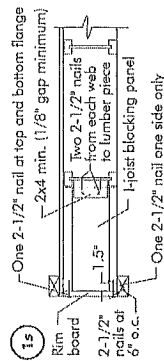
OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

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 between joists for full length of span.
 - Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch 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
1-1/2" x 2-1/2"	9-1/2"	2-1/8" x 6"
1-1/2" x 3-1/2"	11-7/8"	2-1/8" x 8"
1-1/2" x 4-1/2"	14"	2-1/8" x 10"
1-1/2" x 5-1/2"	16"	2-1/8" x 12"
1-1/2" x 6-1/2"	18"	3" x 6"
1-1/2" x 7-1/2"	20"	3" x 8"
1-1/2" x 8-1/2"	22"	3" x 10"
1-1/2" x 9-1/2"	24"	3" x 12"
1-1/2" x 10-1/2"	26"	3" x 14"
1-1/2" x 11-1/2"	28"	3" x 16"



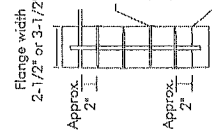
1s One 2-1/2" nail at top and bottom flange 2x4 min. (1/8" gap minimum)
Two 2-1/2" nails from each web to lumber piece
One 2-1/2" nail one side only
NOTES:
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. 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" (9.125" dia.) common spiral nails may be substituted for 2-1/2" (9.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

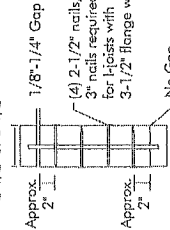
WEB STIFFENERS

RECOMMENDATIONS:

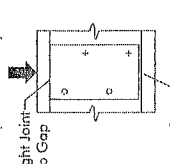
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found at the Construction Guide (C10). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported 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.



Flange width 2-1/2" or 3-1/2"



CONCENTRATED LOAD (Load stiffener)



END BEARING (Bearing stiffener)

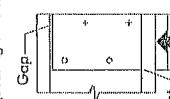


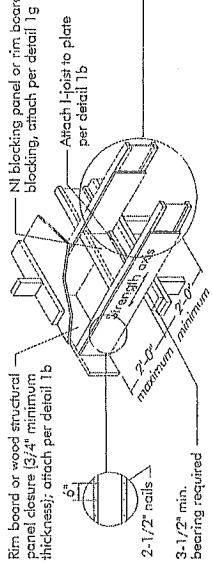
FIGURE 2-1 WEB STIFFENERS

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

See the adjacent table for web stiffener size requirements

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

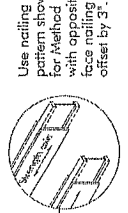
Method 1 — SHEATHING REINFORCEMENT ONE SIDE



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

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

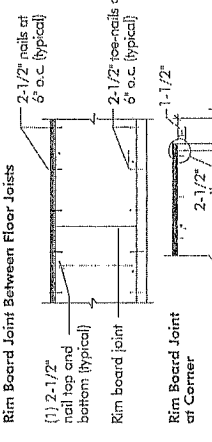
Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.



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

RIM BOARD INSTALLATION DETAILS

Method 2 — SHEATHING REINFORCEMENT TWO SIDES



Rim board joint Between Floor Joists

Rim board joint at Corner

2-1/2" nails at top and bottom (typical)

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

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

1-1/2" nails

2-1/2" nails

30°

Rim board

Top or sole plate

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

