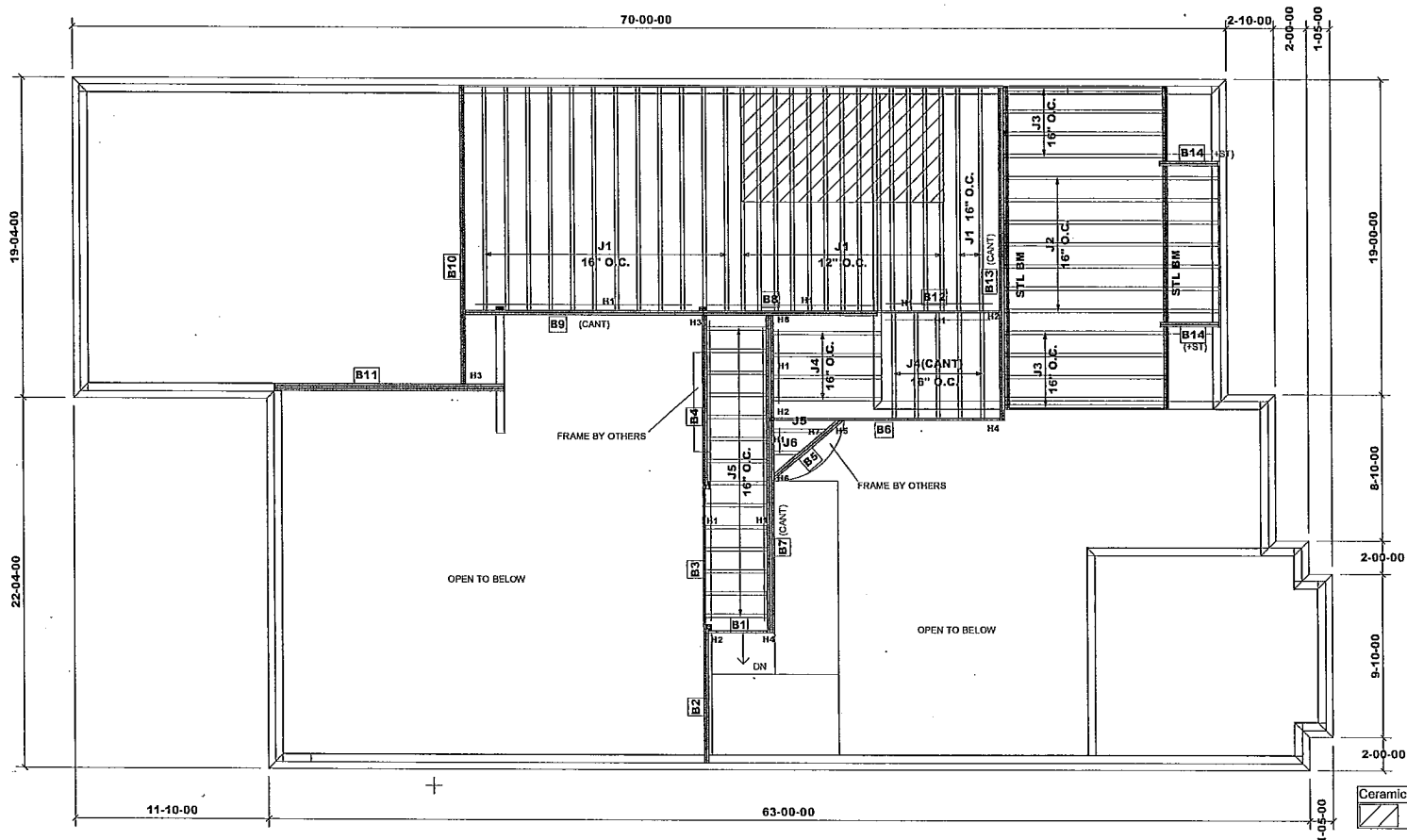




MODEL: UNIT 5006 - EL.A
+ OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH ± 8'

Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	11 7/8" NI-20	1	27
J2	13-00-00	11 7/8" NI-20	1	7
J3	10-00-00	11 7/8" NI-20	1	9
J4	7-00-00	11 7/8" NI-20	1	9
J5	4-00-00	11 7/8" NI-20	1	15
J6	2-00-00	11 7/8" NI-20	1	1
B13	21-00-00	VERSALAM-12 2.0E	2	2
B7	20-00-00	VERSALAM-12 2.0E	3	3
B10	18-00-00	VERSALAM-12 2.0E	2	2
B9	15-00-00	VERSALAM-12 2.0E	2	2
B6	14-00-00	VERSALAM-12 2.0E	1	1
B11	14-00-00	VERSALAM-12 2.0E	3	3
B4	11-00-00	VERSALAM-12 2.0E	2	2
B8	11-00-00	VERSALAM-12 2.0E	2	2
B3	9-00-00	VERSALAM-12 2.0E	1	1
B2	9-00-00	VERSALAM-12 2.0E	2	2
B12	8-00-00	VERSALAM-12 2.0E	1	1
B5	6-00-00	VERSALAM-12 2.0E	2	2
B1	4-00-00	VERSALAM-12 2.0E	1	1
B14	4-00-00	VERSALAM-12 2.0E	2	4

HANGER SCHEDULE

H1 — LT251188 (TM)
H2 — HUS1.9110(FM)
H3 — HGUS410(FM)
H4 — HUSX(FM)
H5 — SUL410(FM)
H6 — SUR410(FM)
H7 — SUR2.569(FM)
H8 — HGUS5.510(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.

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290685

Project: Pine Valley

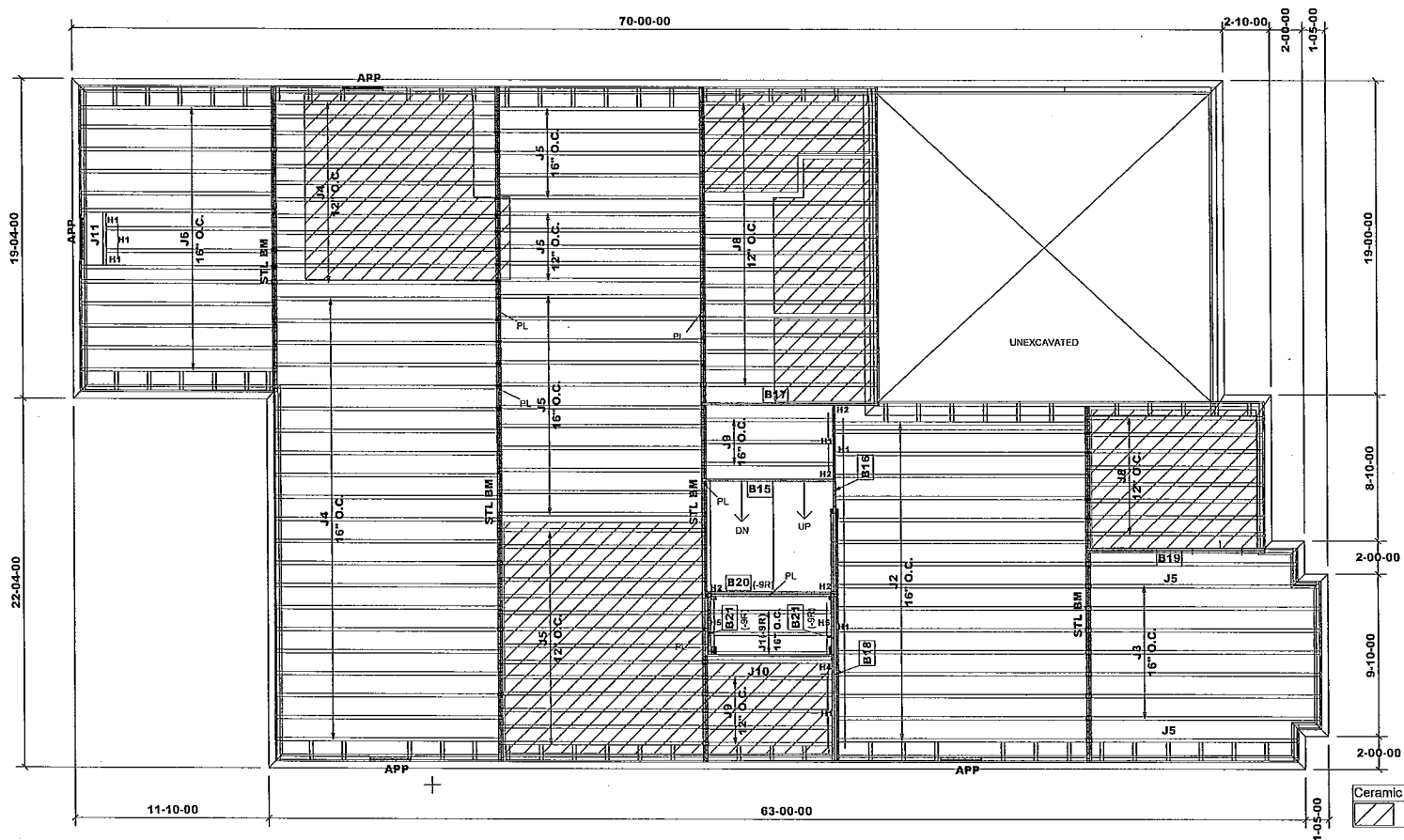
Date: November 30, 2017

Sheet: 1 of 6

Maple, Ontario

Home Lumber

S152449-S152479



MODEL: UNIT 5006 - EL.A
+ OPT. LOGGIA

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 95"

Products				
PlotID	Length	Product	Plies	Net Qty
J1	8-00-00	9 1/2" NI-20	1	3
J2	16-00-00	11 7/8" NI-20	1	16
J3	15-00-00	11 7/8" NI-20	1	7
J4	14-00-00	11 7/8" NI-20	1	33
J5	13-00-00	11 7/8" NI-20	1	37
J6	12-00-00	11 7/8" NI-20	1	14
J8	11-00-00	11 7/8" NI-20	1	26
J9	8-00-00	11 7/8" NI-20	1	8
J10	8-00-00	11 7/8" NI-20	2	2
J11	4-00-00	11 7/8" NI-20	1	1
B18	15-00-00	VERSALAM-12 2.0E	3	3
B17	11-00-00	VERSALAM-12 2.0E	1	1
B19	11-00-00	VERSALAM-12 2.0E	2	2
B15	8-00-00	VERSALAM-12 2.0E	1	1
B20	8-00-00	VERSALAM-10 2.0E	2	2
B16	7-00-00	VERSALAM-12 2.0E	1	1
B21	4-00-00	VERSALAM-10 2.0E	1	2

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(FM)
H4-----MIT311.88-2(TM)
H5-----LT259(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.

JT/PL: 45147/94992
LI: 290685

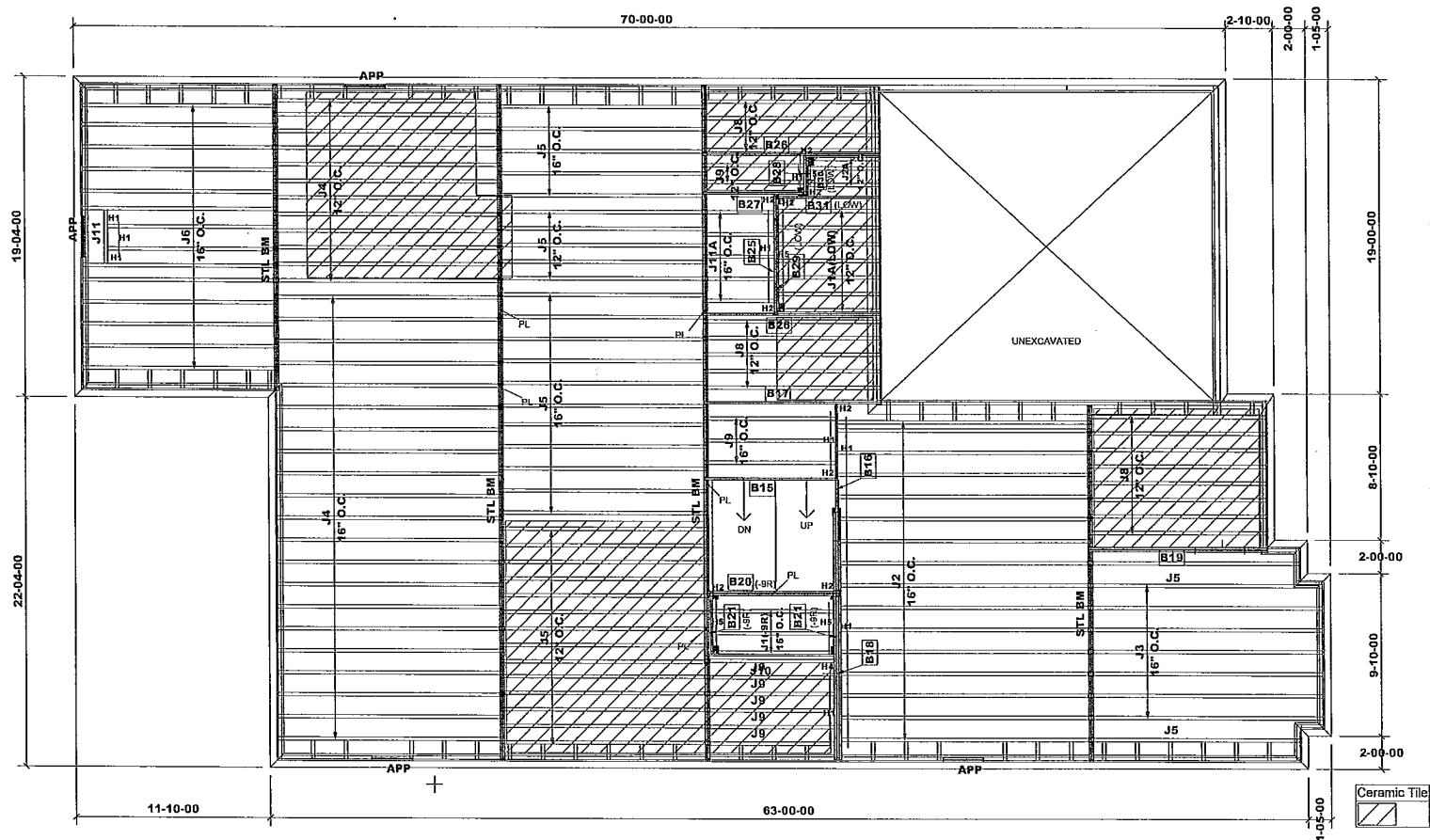
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 30, 2017

Designer: NL
Sheet: 2 of 6

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



MODEL: UNIT 5006 - ELA
+ OPT. LOGGIA(W/SUNKEN)

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 86'

Products				
PlotID	Length	Product	Piles	Net Qty
J1	8'-00"-00	9 1/2" NI-20	1	3
J1A	7'-00"-00	9 1/2" NI-20	1	7
J2A	5'-00"-00	9 1/2" NI-20	1	3
J2	16'-00"-00	11 7/8" NI-20	1	16
J3	15'-00"-00	11 7/8" NI-20	1	7
J4	14'-00"-00	11 7/8" NI-20	1	33
J5	13'-00"-00	11 7/8" NI-20	1	37
J6	12'-00"-00	11 7/8" NI-20	1	14
J8	11'-00"-00	11 7/8" NI-20	1	17
J9	8'-00"-00	11 7/8" NI-20	1	10
J10	8'-00"-00	11 7/8" NI-20	2	2
J11A	5'-00"-00	11 7/8" NI-20	1	5
J11	4'-00"-00	11 7/8" NI-20	1	1
B18	15'-00"-00	VERSALAM-12 2.0E	3	3
B17	11'-00"-00	VERSALAM-12 2.0E	1	1
B26	11'-00"-00	VERSALAM-12 2.0E	1	2
B19	11'-00"-00	VERSALAM-12 2.0E	2	2
B15	8'-00"-00	VERSALAM-12 2.0E	1	1
B25	8'-00"-00	VERSALAM-12 2.0E	1	1
B20	8'-00"-00	VERSALAM-10 2.0E	2	2
B29	7'-00"-00	VERSALAM-10 2.0E	1	1
B31	7'-00"-00	VERSALAM-10 2.0E	1	1
B16	7'-00"-00	VERSALAM-12 2.0E	1	1
B27	7'-00"-00	VERSALAM-12 2.0E	1	1
B21	4'-00"-00	VERSALAM-10 2.0E	1	2
B30	3'-00"-00	VERSALAM-10 2.0E	1	1
B28	3'-00"-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(FM)
H4-----MIT311.88-2(TM)
H5-----LT259(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.

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290685

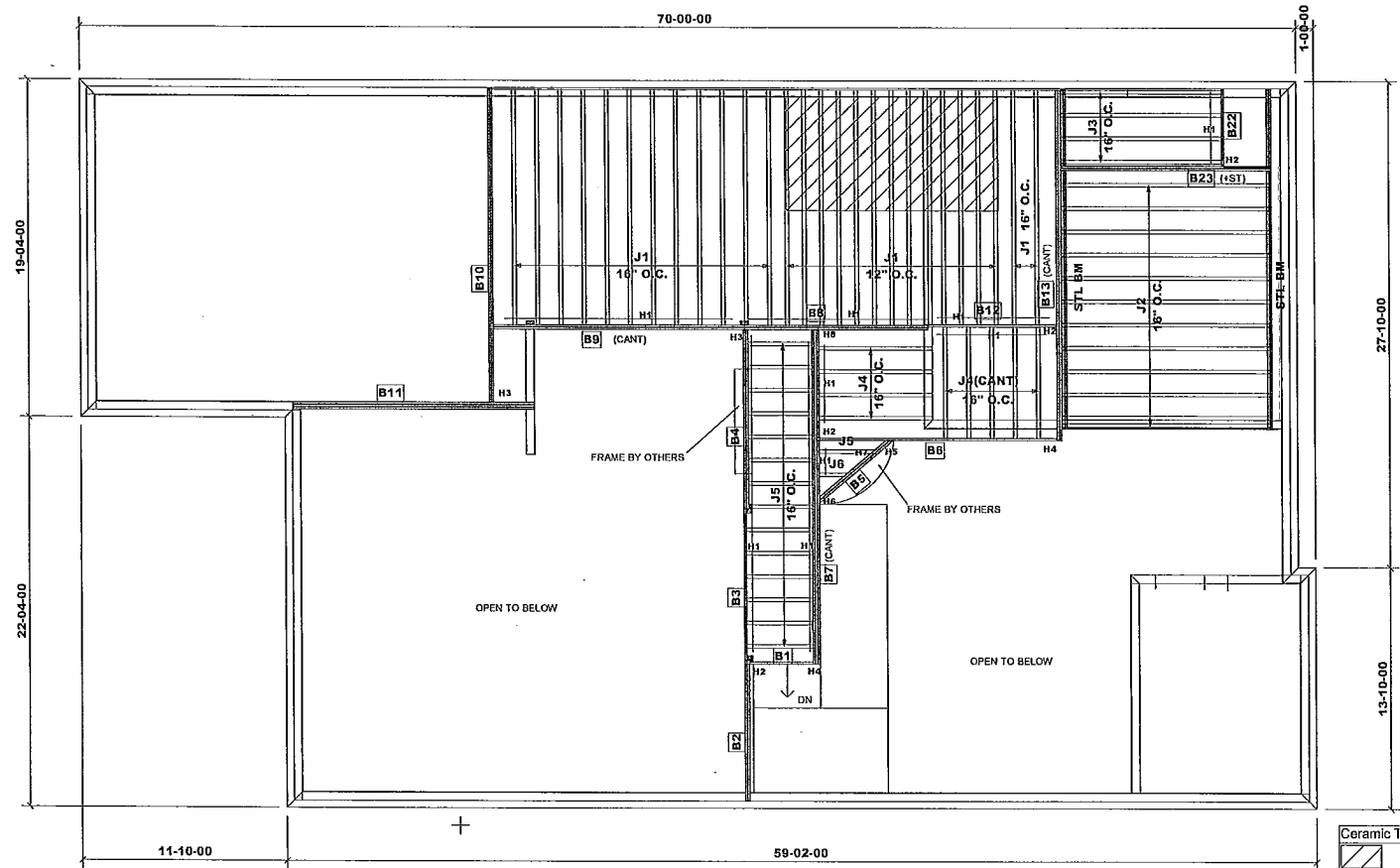
Project: Pine Valley

Date: November 30, 2017

Sheet: 3 of 6

Maple, Ontario

Home Lumber



MODEL: UNIT 5006 - EL.B
+ OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 8'

Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	11 7/8" NI-20	1	27
J2	12-00-00	11 7/8" NI-20	1	12
J3	10-00-00	11 7/8" NI-20	1	4
J4	7-00-00	11 7/8" NI-20	1	9
J5	4-00-00	11 7/8" NI-20	1	15
J6	2-00-00	11 7/8" NI-20	1	1
B13	21-00-00	VERSALAM-12 2.0E	2	2
B7	20-00-00	VERSALAM-12 2.0E	3	3
B10	18-00-00	VERSALAM-12 2.0E	2	2
B9	15-00-00	VERSALAM-12 2.0E	2	2
B6	14-00-00	VERSALAM-12 2.0E	1	1
B11	14-00-00	VERSALAM-12 2.0E	3	3
B23	13-00-00	VERSALAM-12 2.0E	2	2
B4	11-00-00	VERSALAM-12 2.0E	2	2
B8	11-00-00	VERSALAM-12 2.0E	2	2
B3	9-00-00	VERSALAM-12 2.0E	1	1
B2	9-00-00	VERSALAM-12 2.0E	2	2
B12	8-00-00	VERSALAM-12 2.0E	1	1
B5	6-00-00	VERSALAM-12 2.0E	2	2
B22	5-00-00	VERSALAM-12 2.0E	1	1
B1	4-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1	LT251188 (TM)
H2	HUS1.81/10(FM)
H3	HGUS410(FM)
H4	HU9X(FM)
H5	SUL410(FM)
H6	SUR410(FM)
H7	SUR2.56/9(FM)
H8	HGUS5.5/10(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.

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290685

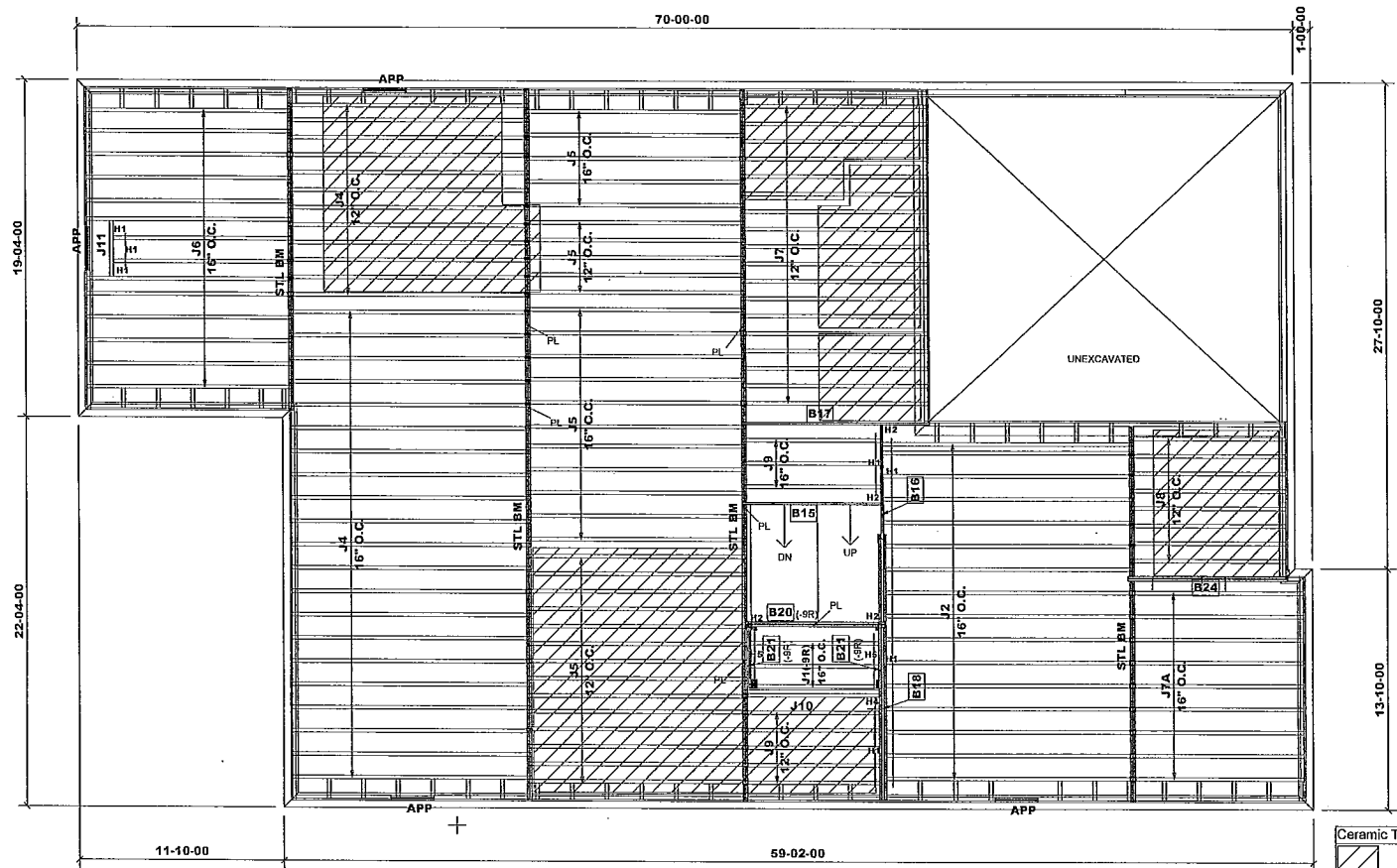
Project: Pine Valley

Date: November 30, 2017

Sheet: 4 of 6

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Pieces	Net Qty
J1	8-00-00	9 1/2" NI-20	1	3
J2	15-00-00	11 7/8" NI-20	1	16
J4	14-00-00	11 7/8" NI-20	1	33
J5	13-00-00	11 7/8" NI-20	1	35
J6	12-00-00	11 7/8" NI-20	1	14
J7	11-00-00	11 7/8" NI-20	1	18
J7A	10-00-00	11 7/8" NI-20	1	9
J8	9-00-00	11 7/8" NI-20	1	8
J9	8-00-00	11 7/8" NI-20	1	8
J10	8-00-00	11 7/8" NI-20	2	2
J11	4-00-00	11 7/8" NI-20	1	1
B18	15-00-00	VERSALAM-12 2.0E	3	3
B17	11-00-00	VERSALAM-12 2.0E	1	1
B24	10-00-00	VERSALAM-12 2.0E	2	2
B15	8-00-00	VERSALAM-12 2.0E	1	1
B20	8-00-00	VERSALAM-10 2.0E	2	2
B16	7-00-00	VERSALAM-12 2.0E	1	1
B21	4-00-00	VERSALAM-10 2.0E	1	2

HANGER SCHEDULE	
H1	LT251188 (TM)
H2	HUS1.81/10(FM)
H4	MIT311.88-2(TM)
H5	LT259(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 5006 - EL.B
 + OPT. LOGGIA

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
 TOTAL LENGTH: 93'

JT/PL: 45147/94992
 LI: 290685

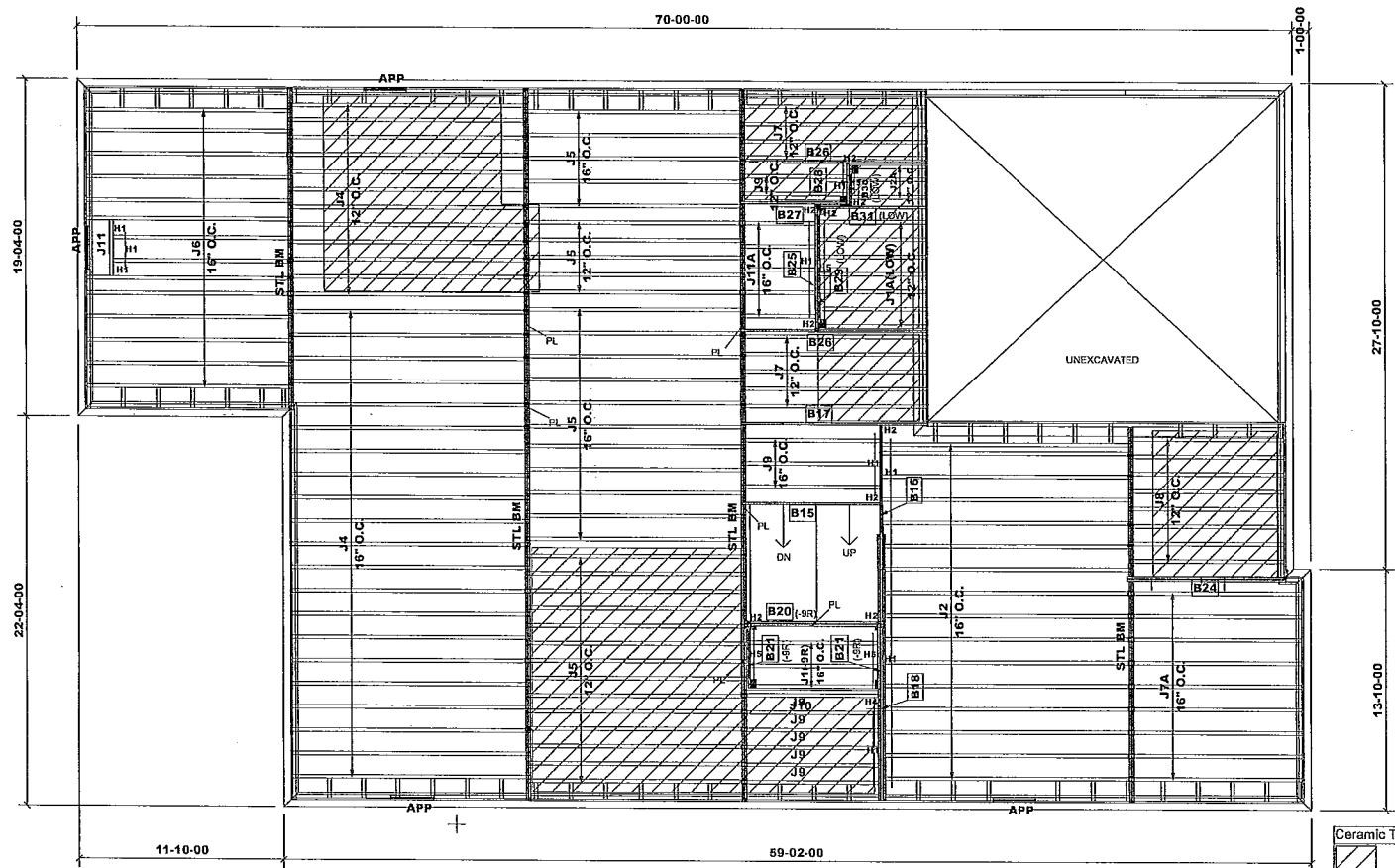
Builder: Gold Park
 Project: Pine Valley

Location: Vaughan
 Date: November 30, 2017

Designer: NL
 Sheet: 5 of 6

Alpa Roof Trusses Inc.
 Maple, Ontario

Salesperson: Derek
 Home Lumber



MODEL: UNIT 5006 - EL.B
+ OPT. LOGGIA(W/SUNKEN)

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 93'

Products				
PlotID	Length	Product	Piles	Net Qty
J1	8-00-00	9 1/2" NI-20	1	3
J1A	7-00-00	9 1/2" NI-20	1	7
J2A	5-00-00	9 1/2" NI-20	1	3
J2	15-00-00	11 7/8" NI-20	1	16
J4	14-00-00	11 7/8" NI-20	1	33
J5	13-00-00	11 7/8" NI-20	1	35
J6	12-00-00	11 7/8" NI-20	1	14
J7	11-00-00	11 7/8" NI-20	1	9
J7A	10-00-00	11 7/8" NI-20	1	9
J8	9-00-00	11 7/8" NI-20	1	8
J9	8-00-00	11 7/8" NI-20	1	10
J10	8-00-00	11 7/8" NI-20	2	2
J11A	5-00-00	11 7/8" NI-20	1	5
J11	4-00-00	11 7/8" NI-20	1	1
B18	15-00-00	VERSALAM-12 2.0E	3	3
B17	11-00-00	VERSALAM-12 2.0E	1	1
B26	11-00-00	VERSALAM-12 2.0E	1	2
B24	10-00-00	VERSALAM-12 2.0E	2	2
B15	8-00-00	VERSALAM-12 2.0E	1	1
B25	8-00-00	VERSALAM-12 2.0E	1	1
B20	8-00-00	VERSALAM-10 2.0E	2	2
B29	7-00-00	VERSALAM-10 2.0E	1	1
B31	7-00-00	VERSALAM-10 2.0E	1	1
B16	7-00-00	VERSALAM-12 2.0E	1	1
B27	7-00-00	VERSALAM-12 2.0E	1	1
B21	4-00-00	VERSALAM-10 2.0E	1	2
B30	3-00-00	VERSALAM-10 2.0E	1	1
B28	3-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.61/10(FM)
H4-----MIT311.88-2(TM)
H5-----LT259(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.

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290685

Project: Pine Valley

Date: November 30, 2017

Sheet: 6 of 6

Maple, Ontario

Home Lumber



Boise Cascade

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

Floor Beam\B01



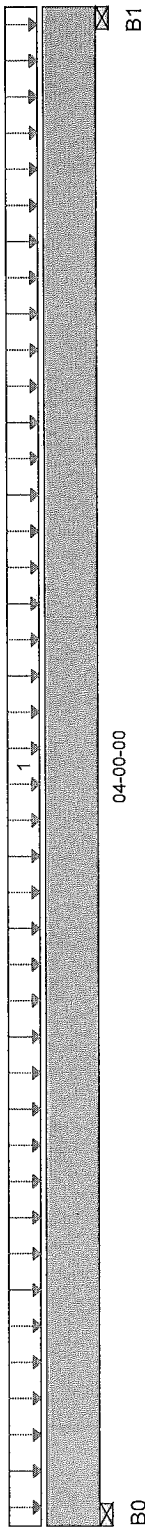
BC CALC® Design Report

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

November 29, 2017 13:18:25

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
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"	200 / 0	87 / 0		
B1, 3-1/2"	200 / 0	87 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	04-00-00	40	15		1.00 1.15	02-06-00

Controls Summary

Pos.	Moment	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
End Shear	147 lbs	17,696 ft-lbs	1.8%	1	02-00-00	02-00-00
Total Load Defl.	L/999 (0.001")	7,232 lbs	2%	1	01-03-06	01-03-06
Live Load Defl.	L/999 (0.001")	n/a	n/a	4	02-00-00	02-00-00
Max Defl.	0.001"	n/a	n/a	5	02-00-00	02-00-00
Span / Depth	3.6	n/a	n/a	4	02-00-00	02-00-00
Squash Blocks	Valid	n/a	n/a		00-00-00	00-00-00

Disclosure

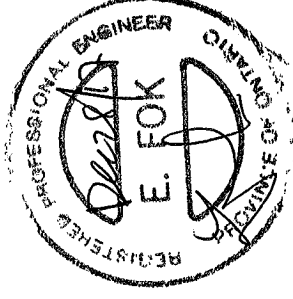
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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"	409 lbs	10.8%	5.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	409 lbs	10.8%	5.5%	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.152449



Boise Cascade

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

Floor Beam\B02



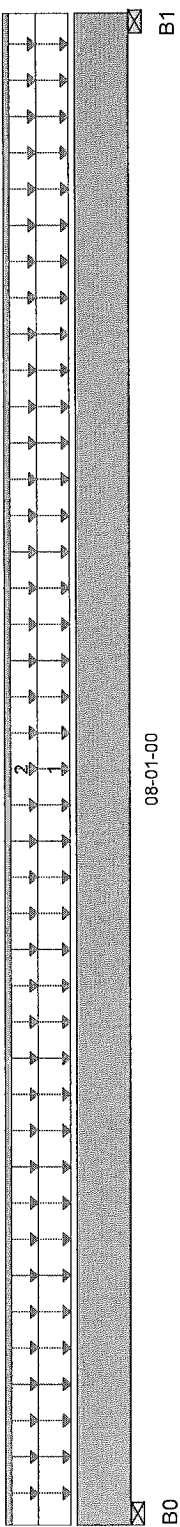
BC CALC® Design Report

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

November 29, 2017 13:10:53

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier: NL
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 08-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"		439 / 0	219 / 0	
B1, 3"		434 / 0	217 / 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	08-01-00	1.00	0.65	18	1.15	02-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	08-01-00		60			n/a

Controls Summary

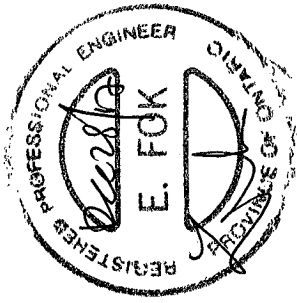
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,111 ft-lbs	23,005 ft-lbs	4.8%	0	04-00-12
End Shear	421 lbs	9,401 lbs	4.5%	0	01-03-06
Total Load Defl.	L/999 (0.012")	n/a	n/a	4	04-00-12
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	04-00-12
Max Defl.	0.012"	n/a	n/a	4	04-00-12
Span / Depth	7.7	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"	614 lbs	12.5%	6.3%	Spruce Pine Fir
B1 Wall/Plate	3" x 3-1/2"	608 lbs	14.5%	7.3%	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
Nail one ply to another with
3 1/2" spiral nails @ 12"
o.c., staggered in 2 rows



152450



Boise Cascade

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

Floor Beam\B03



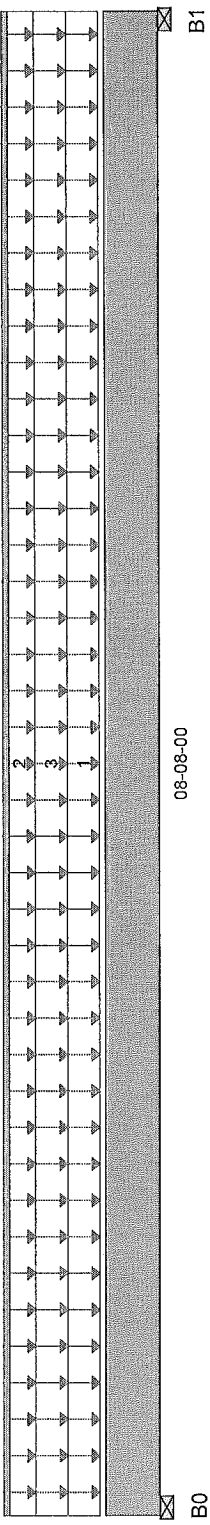
BC CALCO® Design Report

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

November 29, 2017 13:12:09

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



08-08-00

Total Horizontal Product Length = 08-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	376 / 0	583 / 0	234 / 0	
B1, 3"	376 / 0	583 / 0	234 / 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	08-08-00	40	15			02-02-00
2	Unf. Lin. (lb/ft)	L	00-00-00	08-08-00		60			n/a
3	Unf. Area (lb/ft^2)	L	00-00-00	08-08-00		18		27	02-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,794 ft-lbs	17,696 ft-lbs	15.8%	1	04-04-00
End Shear	1,006 lbs	7,232 lbs	13.9%	1	01-02-14
Total Load Defl.	L/999 (0.053")	n/a	n/a	11	04-04-00
Live Load Defl.	L/999 (0.024")	n/a	n/a	15	04-04-00
Max Defl.	0.053"	n/a	n/a	11	04-04-00
Span / Depth	8.4	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.

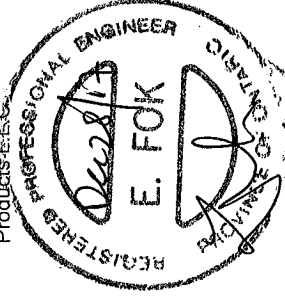
Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3" x 1-3/4"	1,409 lbs	43.6%	22%	Spruce Pine Fir
B1 Wall/Plate	3" x 1-3/4"	1,409 lbs	43.6%	22%	Spruce Pine Fir

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

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



5152451



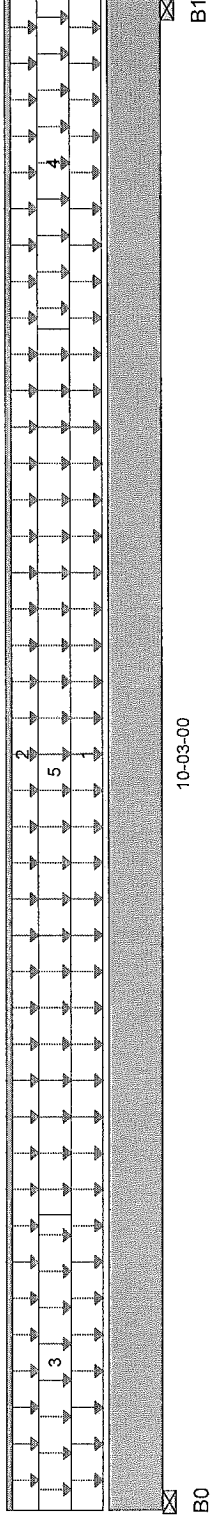
BC CALC® Design Report

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

November 29, 2017 13:14:09

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 10-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	565 / 0	653 / 0	110 / 0	
B1, 3-1/2"	563 / 0	662 / 0	119 / 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	10-03-00	40	15			02-02-00
2	Unf. Lin. (lb/ft)	L	00-00-00	10-03-00		60			n/a
3	Unf. Area (lb/ft^2)	L	00-00-00	02-00-00		18		27	02-00-00
4	Unf. Area (lb/ft^2)	L	08-00-00	10-03-00		18		27	02-00-00
5	Unf. Area (lb/ft^2)	L	02-00-00	08-00-00	40	15			01-00-00

Controls Summary

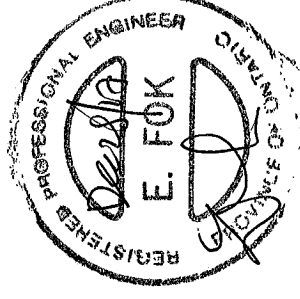
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,090 ft-lbs	35,392 ft-lbs	11.6%	1	05-01-02
End Shear	1,306 lbs	14,464 lbs	9%	1	01-02-14
Total Load Defl.	L/999 (0.053")	n/a	n/a	11	05-01-02
Live Load Defl.	L/999 (0.027")	n/a	n/a	15	05-01-02
Max Defl.	0.053"	n/a	n/a	11	05-01-02
Span / Depth	9.9	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" x 3-1/2"	1,719 lbs	26.6%	13.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,732 lbs	23%	11.6%	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 Nail one ply to another with 3 1/2" spiral nails @ 12" o.c. staggered in 2 rows





Boise Cascade

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

Floor Beam\B05



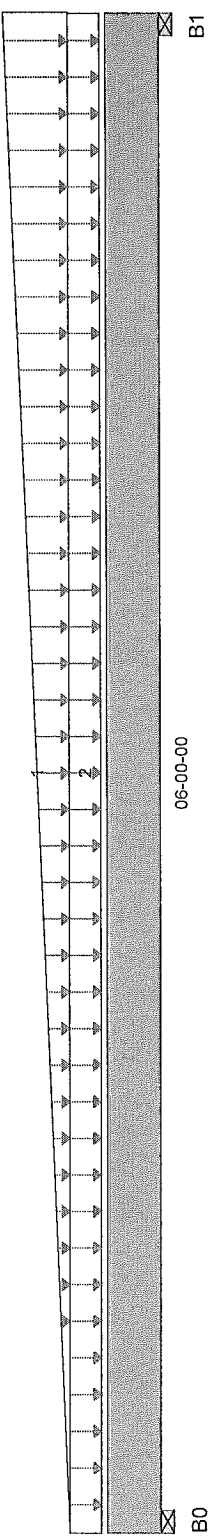
BC CALC® Design Report

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

November 29, 2017 13:15:42

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier: NL
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	216 / 0	118 / 0		
B1, 3-1/2"	324 / 0	159 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Trapezoidal (lb/ft)	L	00-00-00		0	0			n/a
2	Unf. Area (lb/ft²)	L	00-00-00	06-00-00	100	38			n/a
				06-00-00	40	15			01-00-00

Controls Summary

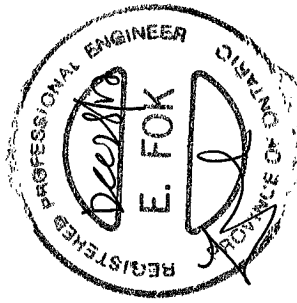
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	744 ft-lbs	35,392 ft-lbs	2.1%	1	03-02-09
End Shear	507 lbs	14,464 lbs	3.5%	1	04-08-10
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	03-00-10
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	03-00-10
Max Defl.	0.003"	n/a	n/a	4	03-00-10
Span / Depth	5.6	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"	472 lbs	6.3%	3.2%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	684 lbs	9.1%	4.6%	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 Nail one ply to another with 3 1/2" spiral nails @ 12" o.c., staggered in 2 rows



S152453



Boise Cascade

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

Floor Beam\B06



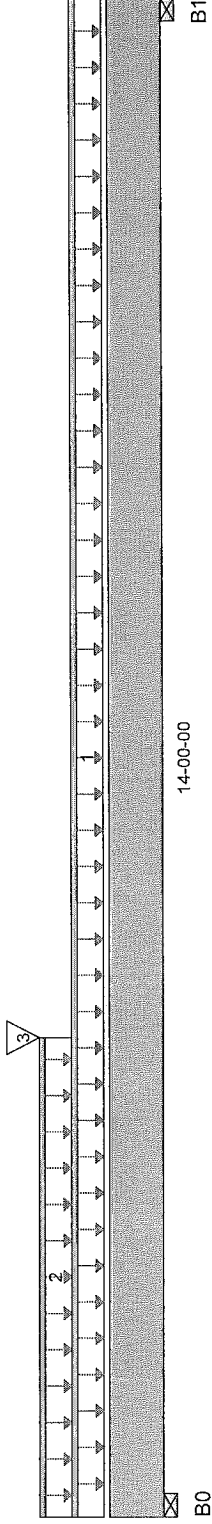
BC CALC® Design Report

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

November 29, 2017 13:16:47

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 14'-00'-00"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	515 / 0	303 / 0		
B1, 3-1/2"	307 / 0	198 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	14-00-00	27	14		1.00	1.15
2	Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	27	14			n/a
3	Conc. Pt. (lbs)	L	04-05-00	04-05-00	324	159			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,615 ft-lbs	17,696 ft-lbs	20.4%	1	04-05-00
End Shear	992 lbs	7,232 lbs	13.7%	1	01-03-06
Total Load Defl.	L/1,025 (0.159")	0.677"	23.4%	4	06-07-08
Live Load Defl.	L/999 (0.099")	n/a	n/a	5	06-07-08
Max Defl.	0.159"	1"	15.9%	4	06-07-08
Span / Depth	13.7	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 on 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.

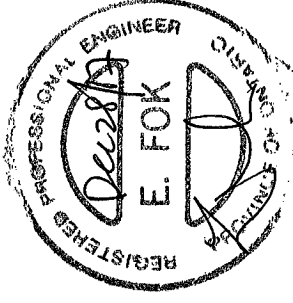
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,150 lbs	30.5%	15.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	708 lbs	18.8%	9.5%	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

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, 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.



2152454



Boise Cascade

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

Floor Beam\B07



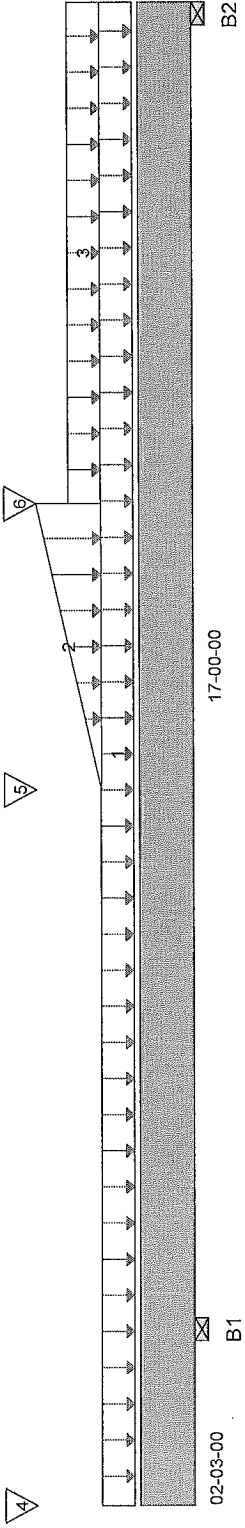
BC CALC® Design Report

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

November 30, 2017 08:47:11

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 19-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,716 / 0	914 / 0		
B2, 3-1/2"	1,984 / 40	965 / 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	19-03-00	40	15			02-02-00
2	Trapezoidal (lb/ft)	L	09-02-00		0	0			n/a
3	Unf. Area (lb/ft^2)	L	12-10-00	12-10-00	100	38			n/a
4	Conc. Pt. (lbs)	L	19-03-00	40	15				03-05-00
5	Conc. Pt. (lbs)	L	00-00-00	00-00-00	200	87			n/a
6	Conc. Pt. (lbs)	L	09-02-00	09-02-00	216	118			n/a
		L	12-10-00	12-10-00	515	303			n/a

Controls Summary

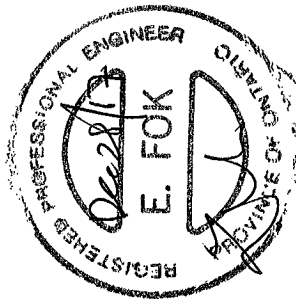
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	16,380 ft-lbs	55,212 ft-lbs	29.7%	3	12-07-04
Neg. Moment	-1,409 ft-lbs	-55,212 ft-lbs	2.6%	2	02-03-00
End Shear	3,590 lbs	21,696 lbs	16.5%	3	17-11-10
Cont. Shear	2,654 lbs	21,696 lbs	12.2%	1	03-04-10
Total Load Defl.	L/530 (0.38")	0.839"	45.3%	10	11-00-00
Live Load Defl.	L/794 (0.254")	0.559"	45.3%	13	11-00-00
Total Neg. Defl.	2xL/359 (-0.151")	-0.225"	66.9%	10	00-00-00
Max Defl.	0.38"	1"	38%	10	11-00-00
Cant. Max Defl.	-0.151"	-1"	15.1%	10	00-00-00
Span / Depth	16.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand / Support	Demand / Resistance	Member	Material
B1 Wall/Plate	3-1/2" x 5-1/4"	3,716 lbs	32.9%	16.6%		Spruce Pine Fir
B2 Wall/Plate	3-1/2" x 5-1/4"	4,183 lbs	37%	18.7%		Spruce Pine Fir

Notes

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



S152455



Boise Cascade



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

Floor Beam\B08

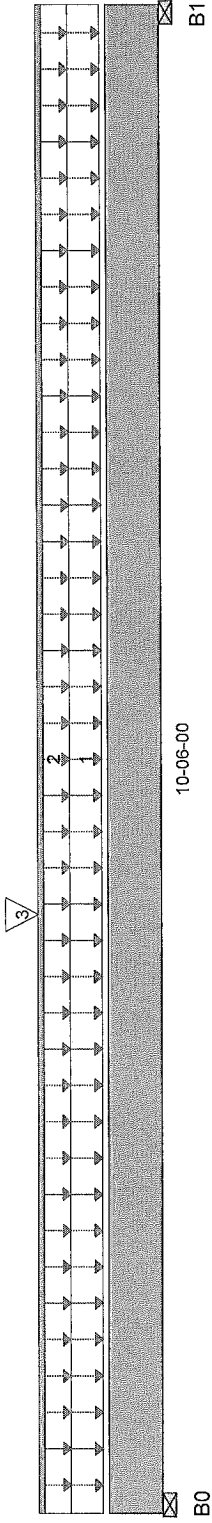
BC CALC® Design Report

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

November 30, 2017 08:47:15

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.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"	2,814 / 0	1,769 / 0		
B1, 3"	2,390 / 0	1,562 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	10-06-00	40	20			07-08-00
2	Unf. Lin. (lb/ft)	L	00-00-00	10-06-00		60			n/a
3	Conc. Pt. (lbs)	L	04-02-00	04-02-00	1,984	965			n/a

Controls Summary

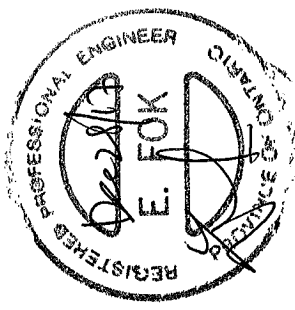
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	19,171 ft-lbs	35,392 ft-lbs	54.2%	1	04-02-00
End Shear	5,513 lbs	14,464 lbs	38.1%	1	01-02-14
Total Load Defl.	L/518 (0.235")	0.506"	46.4%	4	05-01-08
Live Load Defl.	L/835 (0.145")	0.337"	43.1%	5	05-01-08
Max Defl.	0.235"	1"	23.5%	4	05-01-08
Span / Depth	10.2	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 3-1/2"	6,432 lbs	99.6%	50.2%	Spruce Pine Fir
B1 Wall/Plate	3" x 3-1/2"	5,538 lbs	85.7%	43.2%	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 @ 10" o.c, staggered in 2 rows



S152456



Boise Cascade



BC CALC® Design Report

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

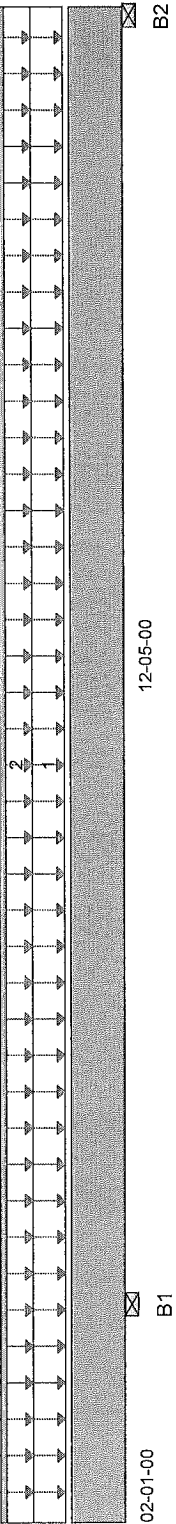
Floor Beam\B09

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

November 29, 2017 13:34:29

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	2,345 / 0	1,776 / 0		
B2, 3"	1,765 / 50	1,299 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	14-06-00	40	20			07-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	14-06-00		60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,520 ft-lbs	35,392 ft-lbs	35.4%	3	08-02-12
Neg. Moment	-1,487 ft-lbs	-35,392 ft-lbs	4.2%	1	02-01-00
End Shear	3,421 lbs	14,464 lbs	23.7%	3	13-03-02
Cont. Shear	3,533 lbs	14,464 lbs	24.4%	1	03-02-10
Total Load Defl.	L/597 (0.246")	0.611"	40.2%	10	08-02-12
Live Load Defl.	L/1,017 (0.144")	0.408"	35.4%	13	08-02-12
Total Neg. Defl.	2xL/383 (-0.13")	-0.208"	62.6%	10	00-00-00
Max Defl.	0.246"	1"	24.6%	10	08-02-12
Cant. Max Defl.	-0.13"	-1"	13%	10	00-00-00
Span / Depth	12.4	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 3-1/2"	5,738 lbs	76.1%	38.4%	Spruce Pine Fir
B2 Wall/Plate	3" x 3-1/2"	4,270 lbs	66.1%	33.3%	Spruce Pine Fir

Notes

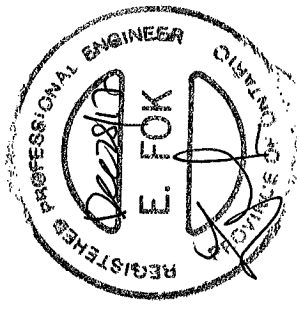
Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Design meets arbitrary (1") Cantilever Maximum Total load deflection criteria.
Calculations assume 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

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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



S152457



Boise Cascade

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

Floor Beam\B10



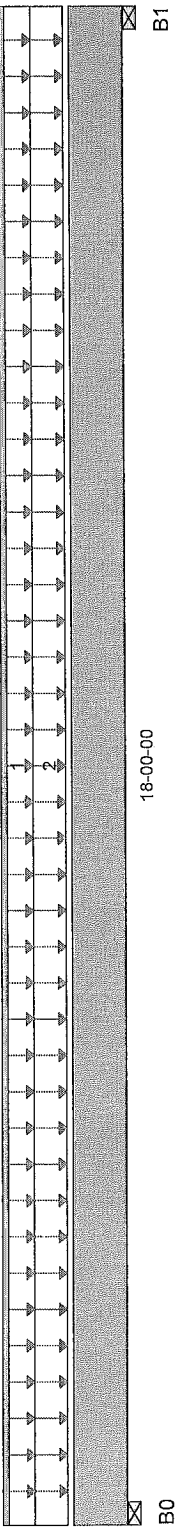
BC CALCO® Design Report

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

November 29, 2017 13:35:46

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 18-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	243 / 0	1,629 / 0	945 / 0	
B1, 3-1/2"	243 / 0	1,629 / 0	945 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	18-00-00	27	114			n/a
2	Unf. Area (lb/ft²)	L	00-00-00	18-00-00	11	11	21	1.00 1.15	05-00-00

Controls Summary

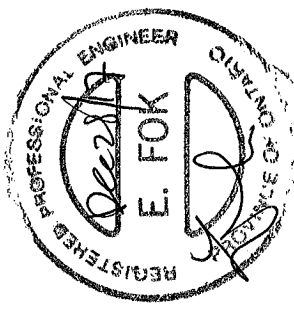
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	15,281 ft-lbs	35,392 ft-lbs	43.2%	5	09-00-00
End Shear	3,067 lbs	14,464 lbs	21.2%	5	01-03-06
Total Load Defl.	L/334 (0.63")	0.877"	71.9%	13	09-00-00
Live Load Defl.	L/894 (0.236")	0.585"	40.3%	17	09-00-00
Max Defl.	0.63"	1"	63%	13	09-00-00
Span / Depth	17.7	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"	3,576 lbs	47.4%	23.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	3,576 lbs	47.4%	23.9%	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
Nail one ply to another with 3 1/2" spiral nails @ 12" o.c, staggered in 2 rows



S152458



Boise Cascade



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

Floor Beam\B11

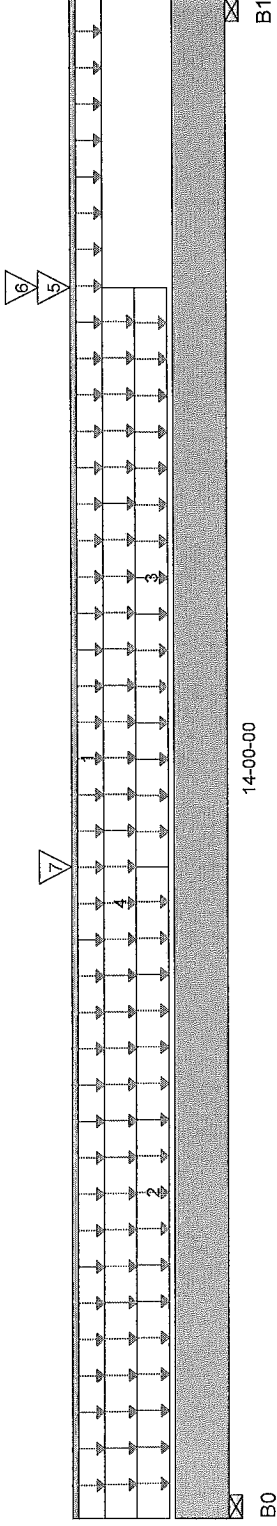
Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 29, 2017 13:38:50

BC CALC® Design Report

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 14-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Load Type	Live	Dead	Snow	Wind
B0, 3-1/2"	44 / 0	2,414 / 0	3,176 / 0		
B1, 3-1/2"	199 / 0	3,557 / 0	3,972 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	14-00-00	60				n/a
2	Unf. Area (lb/ft^2)	L	00-00-00	06-00-00	11			21	04-00-00
3	Unf. Area (lb/ft^2)	L	06-00-00	11-04-00	11			21	13-00-00
4	Unf. Area (lb/ft^2)	L	00-00-00	11-04-00	11			21	09-00-00
5	Conc. Pt. (lbs)	L	11-04-00	11-04-00	243	1,629		945	n/a
6	Conc. Pt. (lbs)	L	11-04-00	11-04-00		572		1,092	n/a
7	Conc. Pt. (lbs)	L	06-00-00	06-00-00		528		1,008	n/a

Controls Summary

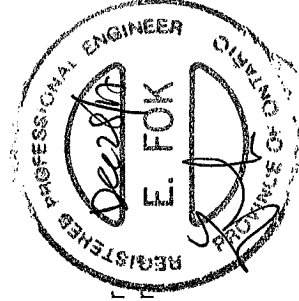
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	33,756 ft-lbs	55,212 ft-lbs	61.1%	5	07-04-00
End Shear	10,378 lbs	21,696 lbs	47.8%	5	12-08-10
Total Load Defl.	L/314 (0.517")	0.677"	76.4%	13	07-02-00
Live Load Defl.	L/580 (0.28")	0.451"	62.1%	17	07-02-00
Max Defl.	0.517"	1"	51.7%	13	07-02-00
Span / Depth	13.7	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 5-1/4"	7,803 lbs	69%	34.8%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 5-1/4"	10,503 lbs	92.9%	46.9%	Spruce Pine Fir

Notes

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



S152459



Boise Cascade

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

Floor Beam\B12

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

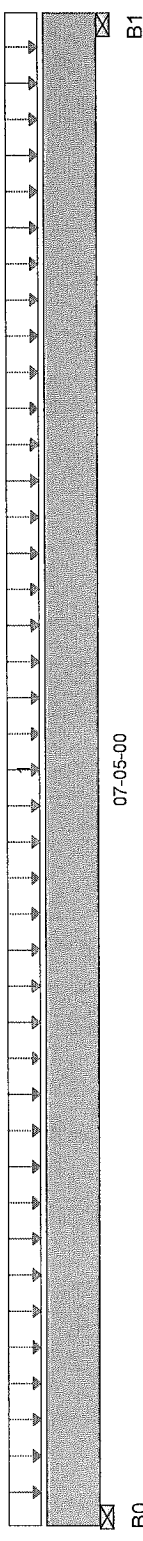
November 29, 2017 13:39:37



BC CALC® Design Report

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 07-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	1,475 / 0	760 / 0		
B1, 3-1/2"	1,492 / 0	768 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-05-00	40	20		1.00 1.15	10-00-00

Controls Summary

Pos.	Moment	Factored Demand	5,252 ft-lbs	Factored Resistance	17,696 ft-lbs	Demand / Resistance	29.7%	Load Case	1	Location	03-08-04
End Shear	2,099 lbs				7,232 lbs		29%		1		01-02-14
Total Load Defl.	L/999 (0.067")				n/a		n/a		4		03-08-04
Live Load Defl.	L/999 (0.044")				n/a		n/a		5		03-08-04
Max Defl.	0.067"				n/a		n/a		4		03-08-04
Span / Depth	7.1				n/a		n/a				00-00-00
Squash Blocks	Valid										

Disclosure

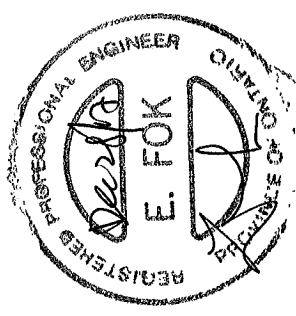
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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" x 1-3/4"	3,162 lbs	97.9%	49.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	3,198 lbs	84.9%	42.8%	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



S152460



Boise Cascade



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

Floor Beam\B13

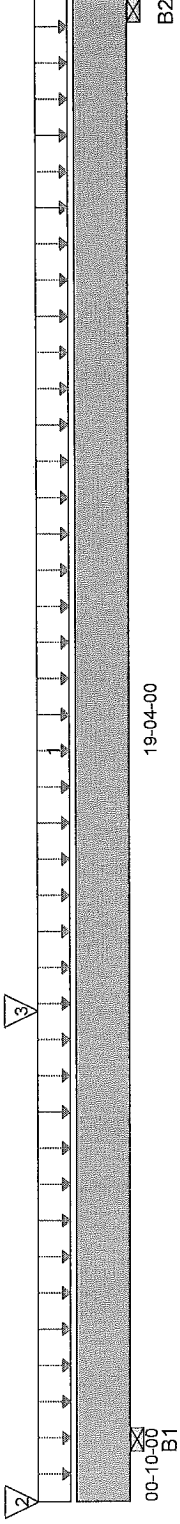
BC CALC® Design Report

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

November 29, 2017 13:41:34

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,918 / 0	1,077 / 0		
B2, 3-1/2"	971 / 14	535 / 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	20-02-00	40	15			01-04-00
2	Conc. Pt. (lbs)	L	00-00-00	00-00-00	307	198			n/a
3	Conc. Pt. (lbs)	L	06-07-00	06-07-00	1,492	768			n/a

Controls Summary

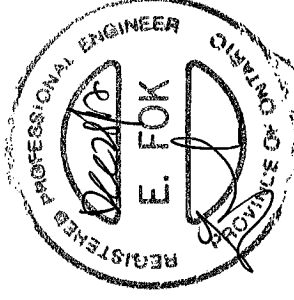
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	17,313 ft-lbs	35,392 ft-lbs	48.9%	3	06-07-00
Neg. Moment	-632 ft-lbs	-35,392 ft-lbs	1.8%	1	00-10-00
End Shear	1,972 lbs	14,464 lbs	13.6%	3	18-10-10
Cont. Shear	3,279 lbs	14,464 lbs	22.7%	1	01-11-10
Total Load Defl.	L/319 (0.719")	0.955"	75.3%	10	09-10-04
Live Load Defl.	L/487 (0.47")	0.637"	73.9%	13	09-07-15
Total Neg. Defl.	2xL/1,998 (-0.107")	n/a	n/a	10	00-00-00
Max Defl.	0.719"	1"	71.9%	10	09-10-04
Cant. Max Defl.	-0.107"	n/a	n/a	10	00-00-00
Span / Depth	19.3	n/a	n/a		
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B1 Wall/Plate	3-1/2" x 3-1/2"	4,223 lbs	56%	28.3%	Spruce Pine Fir
B2 Wall/Plate	3-1/2" x 3-1/2"	2,125 lbs	28.2%	14.2%	Spruce Pine Fir

Notes

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



S152461



Boise Cascade

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

Floor Beam\B14



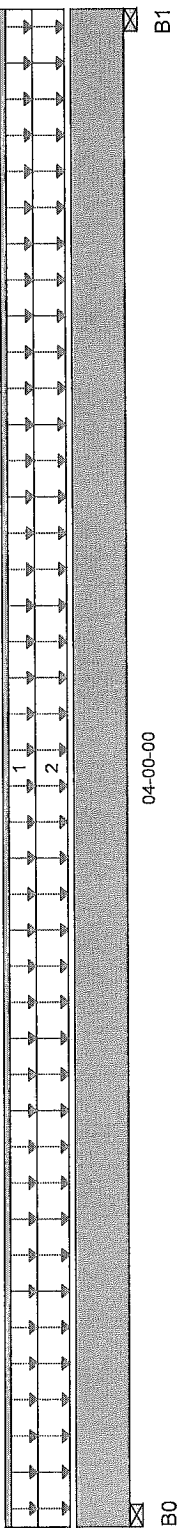
BC CALC® Design Report

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

November 30, 2017 08:33:15

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
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"	54 / 0	417 / 0	315 / 0	
B1, 3-1/2"	54 / 0	417 / 0	315 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	27	114		1.00 1.15	n/a
2	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00	11			21	07-06-00

Controls Summary

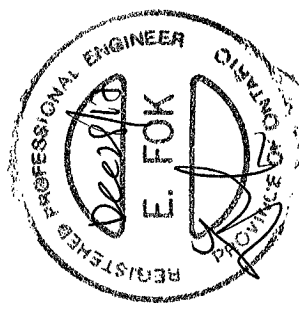
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	800 ft-lbs	35,392 ft-lbs	2.3%	5	02-00-00
End Shear	367 lbs	14,464 lbs	2.5%	5	01-03-06
Total Load Defl.	L/999 (0.001")	n/a	n/a	13	02-00-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	17	02-00-00
Max Defl.	0.001"	n/a	n/a	13	02-00-00
Span / Depth	3.6	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"	1,021 lbs	13.5%	6.8%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,021 lbs	13.5%	6.8%	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
Nail one ply to another with
3 1/2" spiral nails @ 6"
o.c. staqqered in 2 rows





Boise Cascade

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

Floor Beam\B15



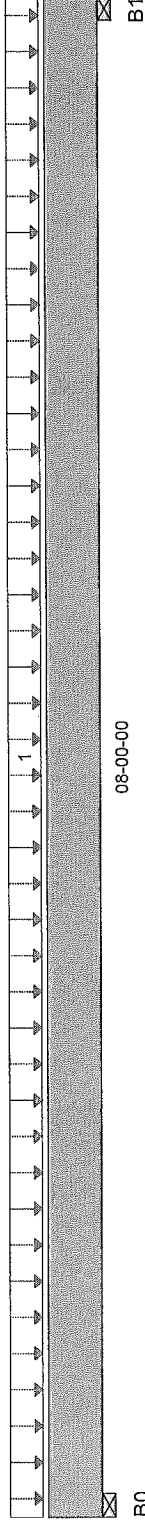
BC CALC® Design Report

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

November 30, 2017 08:37:55

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



08-00-00

B1

Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	800 / 0	324 / 0		
B1, 3-1/2"	800 / 0	324 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	08-00-00	40	15		1.00 1.15	05-00-00

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,853 ft-lbs	17,696 ft-lbs	16.1%	1	04-00-00
End Shear	1,091 lbs	7,232 lbs	15.1%	1	01-03-06
Total Load Defl.	L/999 (0.042")	n/a	n/a	4	04-00-00
Live Load Defl.	L/999 (0.03")	n/a	n/a	5	04-00-00
Max Defl.	0.042"	n/a	n/a	4	04-00-00
Span / Depth	7.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

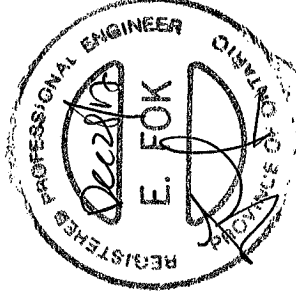
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,605 lbs	42.6%	21.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,605 lbs	42.6%	21.5%	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.152463



Boise Cascade

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

Floor Beam\B16



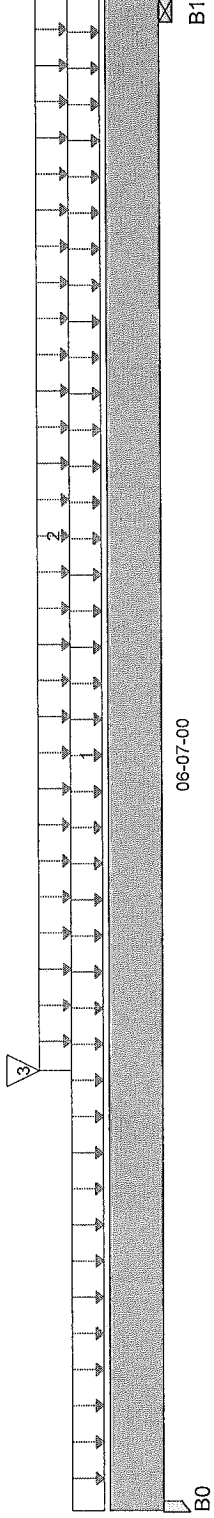
BC CALC® Design Report

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

November 30, 2017 08:39:50

Build 6080
Job Name:
Address:
City, Province, Postal Code: Vaughan, ON
Customer:
Code reports:

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 06-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	1,878 / 0	741 / 0		
B1, 3-1/2"	1,776 / 0	692 / 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	06-07-00	40	15			08-00-00
2	Unf. Area (lb/ft^2)	L	01-11-00	06-07-00	40	15			04-00-00
3	Conc. Pt. (lbs)	L	01-11-00	01-11-00	800	324			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,753 ft-lbs	17,696 ft-lbs	32.5%	1	02-10-07
End Shear	2,953 lbs	7,232 lbs	40.8%	1	01-02-14
Total Load Defl.	L/999 (0.056")	n/a	n/a	4	03-02-04
Live Load Defl.	L/999 (0.041")	n/a	n/a	5	03-02-04
Max Defl.	0.056"	n/a	n/a	4	03-02-04
Span / Depth	6.2	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

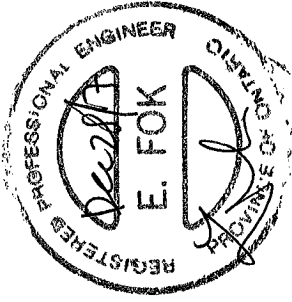
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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 Post	3" x 1-3/4"	3,743 lbs	41.1%	58.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	3,529 lbs	93.7%	47.2%	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



S152464



Boise Cascade

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

Floor Beam\B17



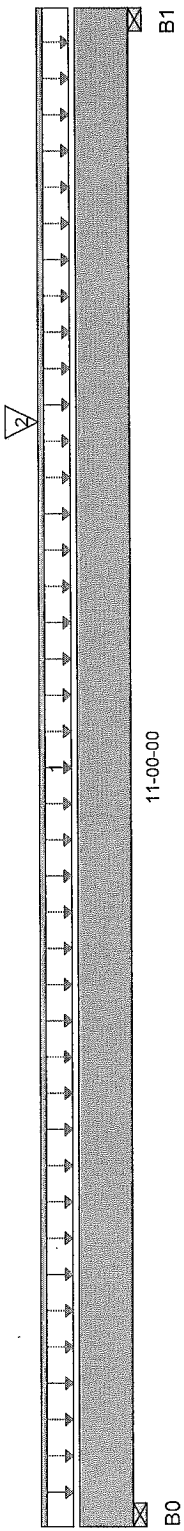
BC CALC® Design Report

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

November 30, 2017 08:40:27

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 11-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	764 / 0	693 / 0		
B1, 3-1/2"	1,606 / 0	1,022 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	11-00-00	54	87		1.00	1.15
2	Conc. Pt. (lbs)	L	08-00-00	08-00-00	1,776	692			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,329 ft-lbs	17,696 ft-lbs	52.7%	1	08-00-00
End Shear	3,434 lbs	7,232 lbs	47.5%	1	09-08-10
Total Load Defl.	L/532 (0.238")	0.527"	45.1%	4	05-10-13
Live Load Defl.	L/892 (0.142")	0.351"	40.3%	5	05-10-13
Max Defl.	0.238"	1"	23.8%	4	05-10-13
Span / Depth	10.7	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

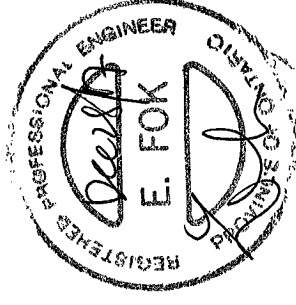
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design on properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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"	2,012 lbs	53.4%	26.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	3,687 lbs	97.8%	49.3%	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



5152465



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

Floor Beam\B18

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

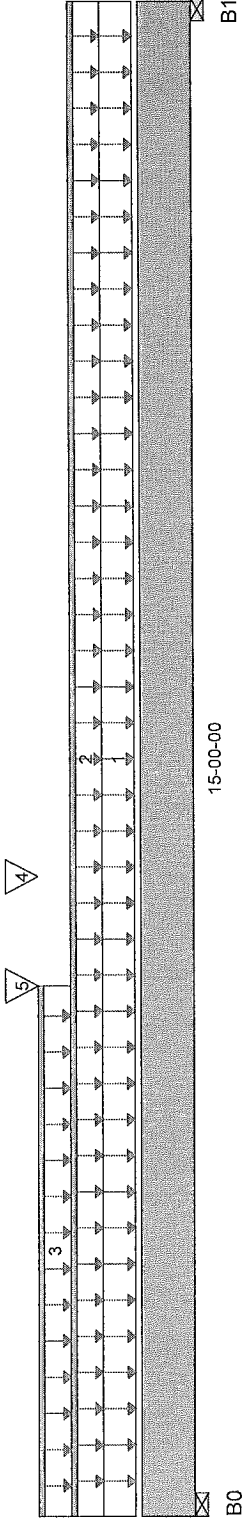
November 30, 2017 08:42:34

BC CALC® Design Report



Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 15-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	3,403 / 0	2,033 / 0		
B1, 3"	2,878 / 0	1,774 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	15-00-00	40	15			08-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	15-00-00		60			n/a
3	Unf. Lin. (lb/ft)	L	00-00-00	05-03-00	27	14			n/a
4	Conc. Pt. (lbs)	L	06-04-00	06-04-00		240			n/a
5	Conc. Pt. (lbs)	L	05-03-00	05-03-00	1,339	522			n/a

Controls Summary

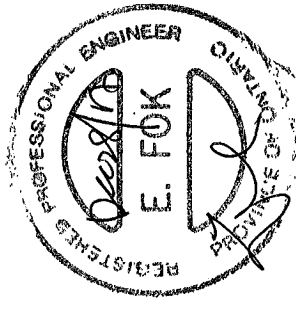
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	28,085 ft-lbs	55,212 ft-lbs	50.9%	1	06-04-00
End Shear	6,639 lbs	21,696 lbs	30.6%	1	01-03-06
Total Load Defl.	L/344 (0.508")	0.729"	69.7%	4	07-03-02
Live Load Defl.	L/554 (0.316")	0.486"	65%	5	07-03-02
Max Defl.	0.508"	1"	50.8%	4	07-03-02
Span / Depth	14.7	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 5-1/4"	7,646 lbs	67.6%	34.1%	Spruce Pine Fir
B1 Wall/Plate	3" x 5-1/4"	6,533 lbs	67.4%	34%	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 @ 1' o.c., staggered in 2 rows



S.152466



Boise Cascade

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

Floor Beam\B19



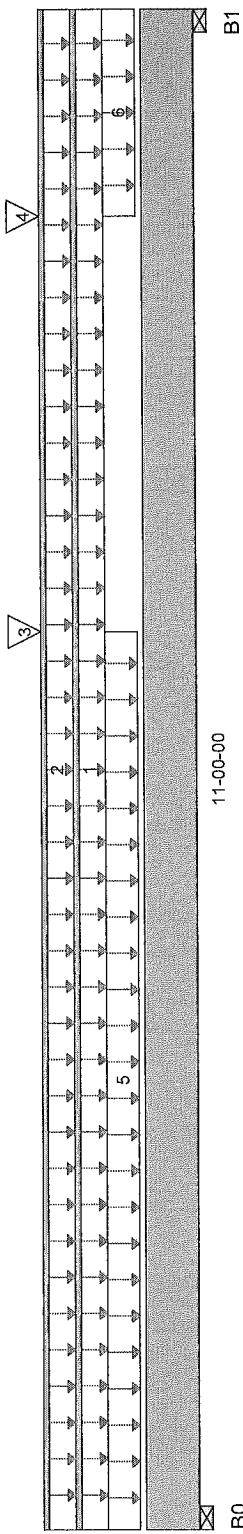
BC CALC® Design Report

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

November 30, 2017 08:45:09

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 11-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	297 / 0	1,520 / 0	1,122 / 0	
B1, 3-1/2"	297 / 0	1,902 / 0	1,651 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	11-00-00	54	27			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	11-00-00		120			n/a
3	Conc. Pt. (lbs)	L	06-06-00	06-06-00		416		584	n/a
4	Conc. Pt. (lbs)	L	09-06-00	09-06-00		495		735	n/a
5	Unf. Area (lb/ft^2)	L	00-00-00	06-06-00		11		21	08-00-00
6	Unf. Area (lb/ft^2)	L	09-06-00	11-00-00		11		21	11-06-00

Controls Summary

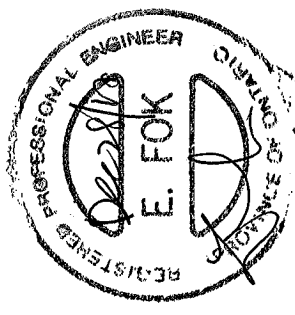
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,010 ft-lbs	35,392 ft-lbs	31.1%	5	06-04-00
End Shear	4,045 lbs	14,464 lbs	28%	5	09-08-10
Total Load Defl.	L/807 (0.157")	0.527"	29.7%	13	05-06-04
Live Load Defl.	L/999 (0.069")	n/a	n/a	17	05-08-03
Max Defl.	0.157"	1"	15.7%	13	05-06-04
Span / Depth	10.7	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"	3,732 lbs	49.5%	25%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	5,001 lbs	66.4%	33.5%	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



S152467



Boise Cascade

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

Floor Beam\B20

November 30, 2017 08:47:47

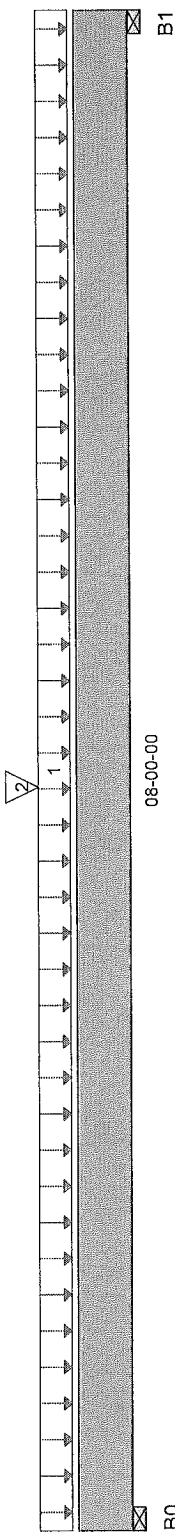


BC CALC® Design Report

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

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.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"	1,677 / 0	806 / 0		
B1, 3-1/2"	1,639 / 0	785 / 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	08-00-00	40	15			05-00-00
2	Conc. Pt. (lbs)	L	03-11-00	03-11-00	1,716	914			n/a

Controls Summary

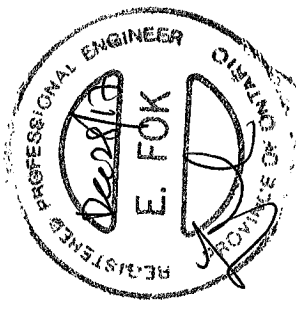
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,887 ft-lbs	23,220 ft-lbs	42.6%	1	03-11-00
End Shear	3,083 lbs	11,571 lbs	26.6%	1	01-01-00
Total Load Defl.	L/999 (0.123")	n/a	n/a	4	04-00-02
Live Load Defl.	L/999 (0.082")	n/a	n/a	5	04-00-02
Max Defl.	0.123"	n/a	n/a	4	04-00-02
Span / Depth	9.5	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	3-1/2" x 3-1/2"	3,522 lbs	46.7%	23.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	3,440 lbs	45.7%	23%	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.152468



Boise Cascade

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

Floor Beam\B21

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

November 30, 2017 09:35:48



BC CALC® Design Report

Build 6080

Job Name: 45147 (5006)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290685.bcc

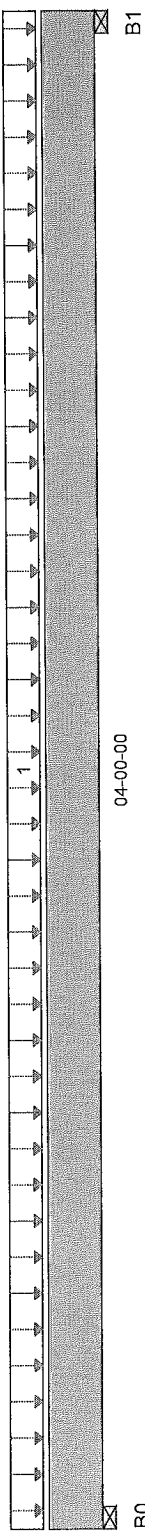
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



04-00-00

B1

Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	320 / 0	130 / 0		
B1, 3-1/2"	320 / 0	130 / 0		

Load Summary

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

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.

BC CALC®, BC FRAMER®, AUS™, 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.

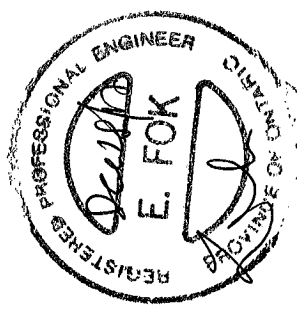
Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	503 ft-lbs	11,610 ft-lbs	4.3%	1	02-00-00
End Shear	294 lbs	5,785 lbs	5.1%	1	01-01-00
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	02-00-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	02-00-00
Max Defl.	0.003"	n/a	n/a	4	02-00-00
Span / Depth	4.5	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	3-1/2" x 1-3/4"	642 lbs	17%	8.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	642 lbs	17%	8.6%	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



2152469



Boise Cascade

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

Floor Beam\B22



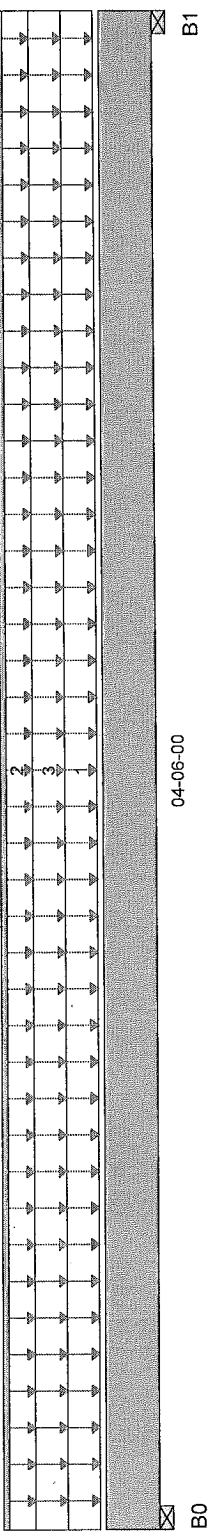
BC CALC® Design Report

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

November 30, 2017 09:36:45

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.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"	450 / 0	491 / 0	331 / 0	
B1, 3-1/2"	450 / 0	491 / 0	331 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	04-06-00	40	15			05-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	04-06-00		60			n/a
3	Unf. Area (lb/ft²)	L	00-00-00	04-06-00		11	21	1.00 1.15	07-00-00

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,319 ft-lbs	17,696 ft-lbs	7.5%	1	02-03-00
End Shear	626 lbs	7,232 lbs	8.7%	1	01-03-06
Total Load Defl.	L/999 (0.006")	n/a	n/a	11	02-03-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	15	02-03-00
Max Defl.	0.006"	n/a	n/a	11	02-03-00
Span / Depth	4.1	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

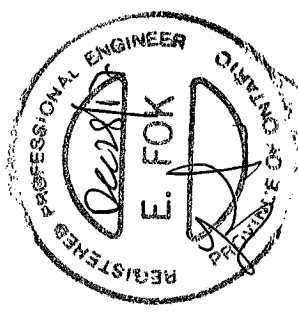
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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,454 lbs	38.6%	19.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,454 lbs	38.6%	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



S152470



Boise Cascade



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

Floor Beam\B23

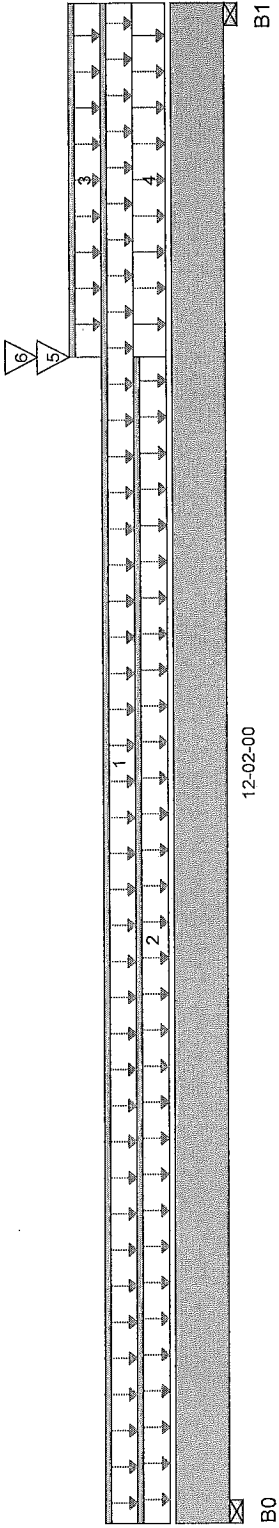
BC CALC® Design Report

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

November 30, 2017 09:38:30

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 12-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	421 / 0	505 / 0	339 / 0	
B1, 3-1/2"	610 / 0	1,379 / 0	1,473 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-02-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	09-04-00	27	14			n/a
3	Unf. Lin. (lb/ft)	L	09-04-00	12-02-00		60			n/a
4	Unf. Area (lb/ft^2)	L	09-04-00	12-02-00		11		21	09-00-00
5	Conc. Pt. (lbs)	L	09-04-00	09-04-00	450	491		331	n/a
6	Conc. Pt. (lbs)	L	09-04-00	09-04-00		495		945	n/a

Controls Summary

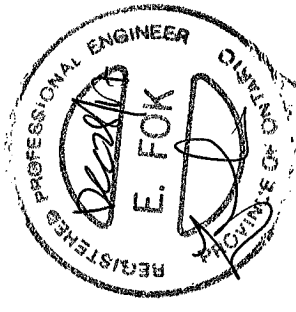
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,930 ft-lbs	35,392 ft-lbs	25.2%	5	09-04-00
End Shear	3,561 lbs	14,464 lbs	24.6%	5	10-10-10
Total Load Defl.	L/1,061 (0.132")	0.585"	22.6%	13	06-08-05
Live Load Defl.	L/999 (0.071")	n/a	n/a	17	06-08-05
Max Defl.	0.132"	1"	13.2%	13	06-08-05
Span / Depth	11.8	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"	1,431 lbs	19%	9.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	4,238 lbs	56.2%	28.4%	Spruce Pine Fir

Notes

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



S-152471



Boise Cascade

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

Floor Beam\B24



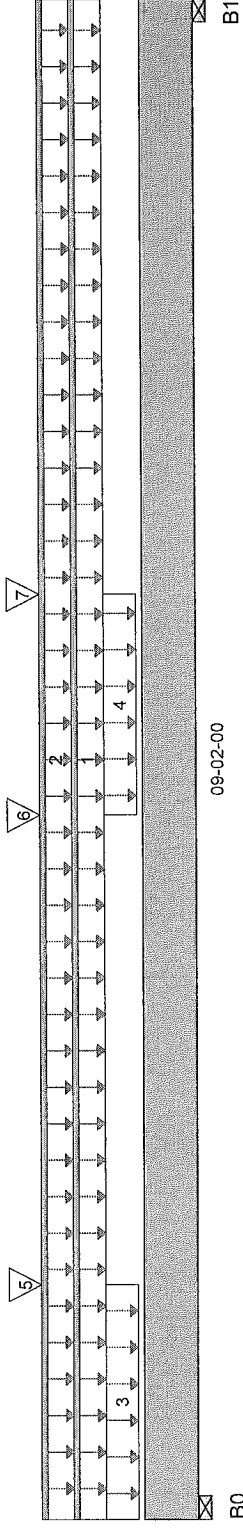
BC CALC® Design Report

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

November 30, 2017 10:40:31

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 09-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	247 / 0	1,047 / 0	608 / 0	
B1, 3-1/2"	247 / 0	922 / 0	369 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	09-02-00	54	27			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	09-02-00		120			n/a
3	Unf. Area (lb/ft^2)	L	00-00-00	01-05-00		11		21	06-00-00
4	Unf. Area (lb/ft^2)	L	04-03-00	05-07-00		11		21	06-00-00
5	Conc. Pt. (lbs)	L	01-05-00	01-05-00		99		189	n/a
6	Conc. Pt. (lbs)	L	04-03-00	04-03-00		99		189	n/a
7	Conc. Pt. (lbs)	L	05-07-00	05-07-00		132		252	n/a

Controls Summary

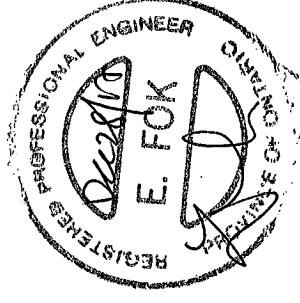
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,920 ft-lbs	35,392 ft-lbs	13.9%	5	04-07-00
End Shear	1,707 lbs	14,464 lbs	11.8%	5	01-03-06
Total Load Defl.	L/999 (0.049")	n/a	n/a	13	04-07-00
Live Load Defl.	L/999 (0.019")	n/a	n/a	17	04-07-00
Max Defl.	0.049"	n/a	n/a	13	04-07-00
Span / Depth	8.8	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"	2,345 lbs	31.1%	15.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,291 lbs	26.4%	13.3%	Spruce Pine Fir

Notes

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



S152472



Boise Cascade

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

Floor Beam\B25



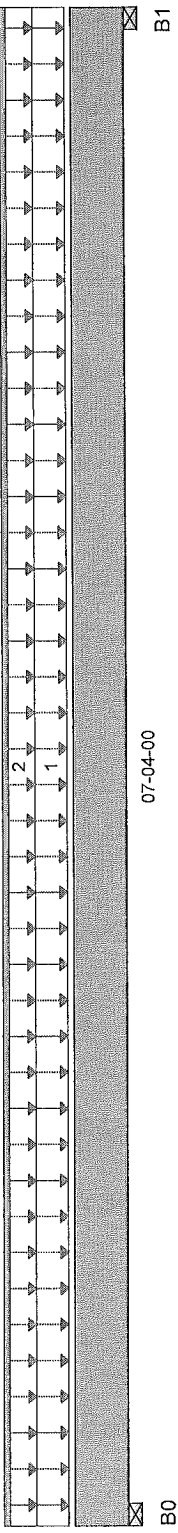
BC CALC® Design Report

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

November 30, 2017 10:41:08

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 07-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	367 / 0	380 / 0			
B1, 3-1/2"	367 / 0	380 / 0			

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-04-00	40	15		1.00	1.15
2	Unf. Lin. (lb/ft)	L	00-00-00	07-04-00	40	60			02-06-00 n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,651 ft-lbs	17,696 ft-lbs	9.3%	1	03-08-00
End Shear	666 lbs	7,232 lbs	9.2%	1	01-03-06
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	03-08-00
Live Load Defl.	L/999 (0.01")	n/a	n/a	5	03-08-00
Max Defl.	0.021"	n/a	n/a	4	03-08-00
Span / Depth	6.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

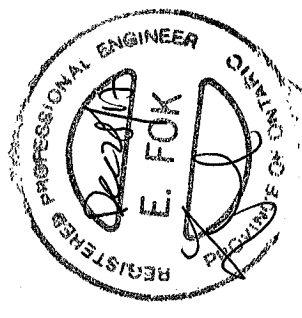
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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"	1,024 lbs	27.2%	13.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,024 lbs	27.2%	13.7%	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





Boise Cascade

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

Floor Beam\B26

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

November 30, 2017 10:41:51



BC CALC® Design Report

Build 6080

Job Name: 45147 (5006)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290685.bcc

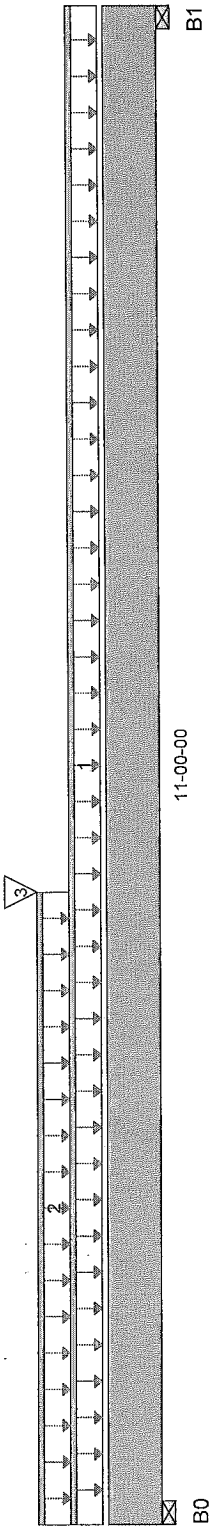
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	463 / 0	715 / 0		
B1, 3-1/2"	324 / 0	610 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	11-00-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	04-07-00	27	14			n/a
3	Conc. Pt. (lbs)	L	04-07-00	04-07-00	367	380			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,837 ft-lbs	17,696 ft-lbs	27.3%	1	04-07-00
End Shear	1,334 lbs	7,232 lbs	18.4%	1	01-03-06
Total Load Defl.	L/964 (0.131")	0.527"	24.9%	4	05-04-10
Live Load Defl.	L/999 (0.051")	n/a	n/a	5	05-02-11
Max Defl.	0.131"	1"	13.1%	4	05-04-10
Span / Depth	10.7	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.

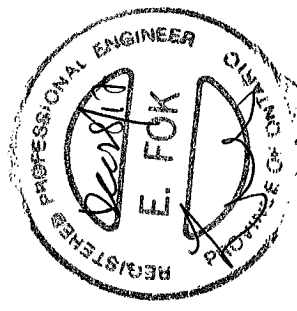
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,589 lbs	42.2%	21.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	853 lbs	34.8%	17.6%	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



S152474



Boise Cascade

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

Floor Beam\B27



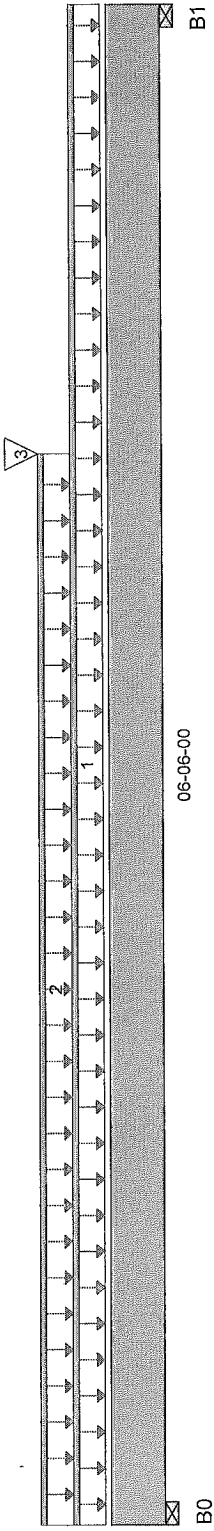
BC CALC® Design Report

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

November 30, 2017 10:42:36

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.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"	272 / 0	408 / 0		
B1, 3-1/2"	395 / 0	556 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	06-06-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	04-07-00	27	14			n/a
3	Conc. Pt. (lbs)	L	04-07-00	04-07-00	367	380			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,917 ft-lbs	17,696 ft-lbs	10.8%	1	04-07-00
End Shear	1,107 lbs	7,232 lbs	15.3%	1	05-02-10
Total Load Defl.	L/999 (0.018")	n/a	n/a	4	03-04-12
Live Load Defl.	L/999 (0.008")	n/a	n/a	5	03-05-06
Max Defl.	0.018"	n/a	n/a	4	03-04-12
Span / Depth	6.1	n/a	n/a		00-00-00
Squash Blocks	Valid				

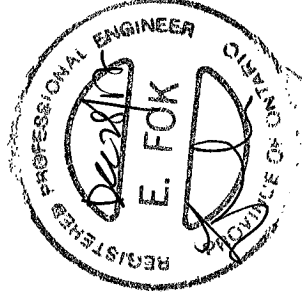
Disclosure

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"	918 lbs	24.4%	12.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,287 lbs	34.1%	17.2%	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



S152475



Boise Cascade

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

Floor Beam\B28



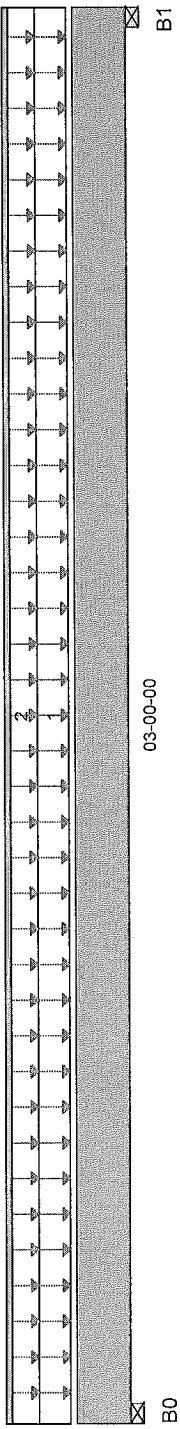
BC CALC® Design Report

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

November 30, 2017 10:43:45

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 03-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	195 / 0	197 / 0			
B1, 3-1/2"	195 / 0	197 / 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	03-00-00	40	20			03-03-00
2	Unf. Lin. (lb/ft)	L	00-00-00	03-00-00		60			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	290 ft-lbs	17,696 ft-lbs	1.6%	1	01-06-00
End Shear	78 lbs	7,232 lbs	1.1%	1	01-03-06
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-06-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-06-00
Max Defl.	0.001"	n/a	n/a	4	01-06-00
Span / Depth	2.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

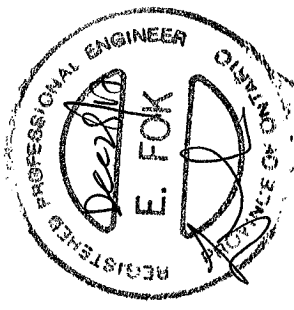
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Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	538 lbs	14.3%	7.2%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	538 lbs	14.3%	7.2%	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



5152476



Boise Cascade

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

Floor Beam\B29



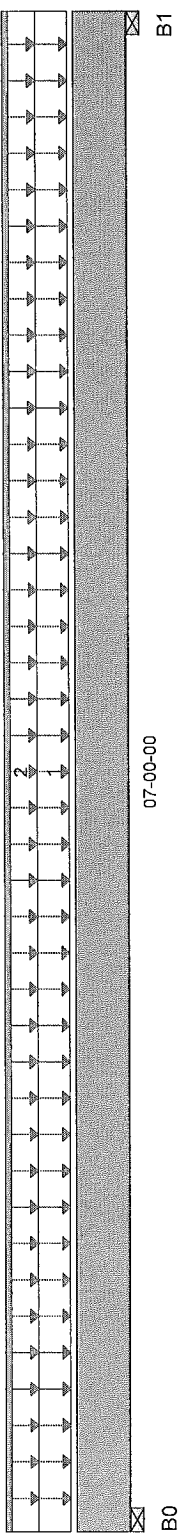
BC CALCO® Design Report

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

November 30, 2017 10:44:23

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.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"	455 / 0	454 / 0		
B1, 3-1/2"	455 / 0	454 / 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		1.00 1.15	03-03-00
2	Unf. Lin. (lb/ft)	L	00-00-00	07-00-00		60			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,911 ft-lbs	11,610 ft-lbs	16.5%	1	03-06-00
End Shear	863 lbs	5,785 lbs	14.9%	1	01-01-00
Total Load Defl.	L/999 (0.043")	n/a	n/a	4	03-06-00
Live Load Defl.	L/999 (0.021")	n/a	n/a	5	03-06-00
Max Defl.	0.043"	n/a	n/a	4	03-06-00
Span / Depth	8.3	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

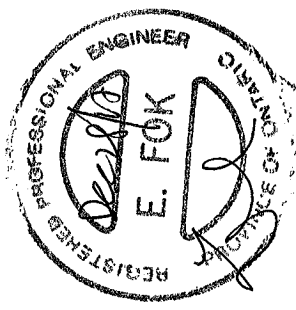
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Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,250 lbs	33.2%	16.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,250 lbs	33.2%	16.7%	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



5152477



Boise Cascade

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

Floor Beam\B30

November 30, 2017 10:44:55

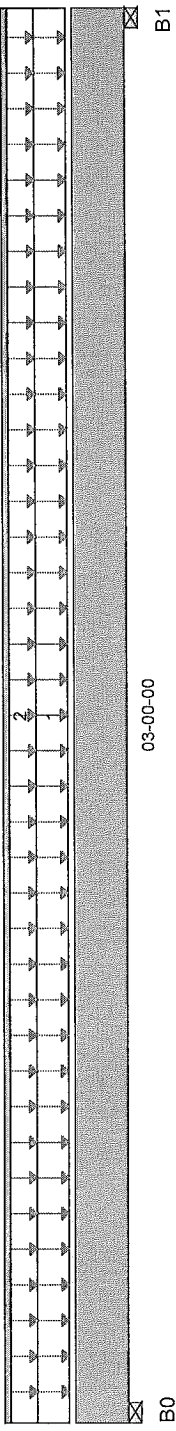


BC CALC® Design Report

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

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 03-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	150 / 0	172 / 0			
B1, 3-1/2"	150 / 0	172 / 0			

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	03-00-00	40	20			02-06-00
2	Unf. Lin. (lb/ft)	L	00-00-00	03-00-00	60	60			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	237 ft-lbs	11,610 ft-lbs	2%	1	01-06-00
End Shear	122 lbs	5,785 lbs	2.1%	1	01-01-00
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-06-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-06-00
Max Defl.	0.001"	n/a	n/a	4	01-06-00
Span / Depth	3.2	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

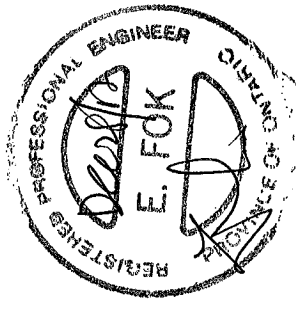
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Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	440 lbs	11.7%	5.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	440 lbs	11.7%	5.9%	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



S.152478



Boise Cascade

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

Floor Beam\B31



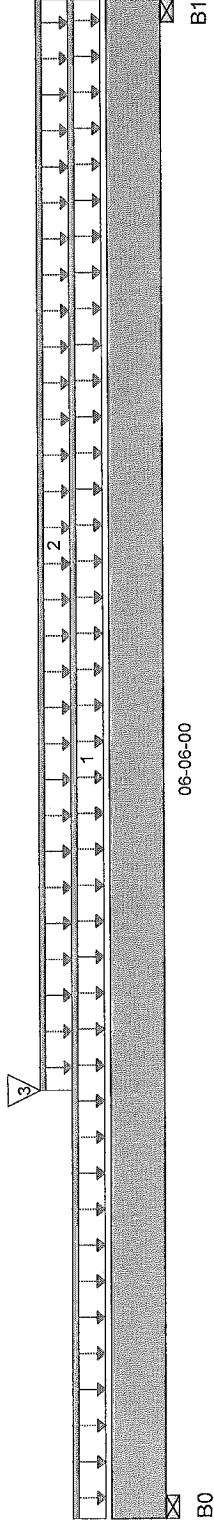
BC CALC® Design Report

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

November 30, 2017 11:00:01

Build 6080
Job Name: 45147 (5006)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290685.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	242 / 0	405 / 0		
B1, 3-1/2"	210 / 0	344 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	06-06-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	01-10-00	06-06-00	27	14			n/a
3	Conc. Pt. (lbs)	L	01-10-00	01-10-00	150	172			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,242 ft-lbs	11,610 ft-lbs	10.7%	1	02-08-12
End Shear	719 lbs	5,785 lbs	12.4%	1	01-01-00
Total Load Defl.	L/999 (0.024")	n/a	n/a	4	03-02-02
Live Load Defl.	L/999 (0.009")	n/a	n/a	5	03-01-07
Max Defl.	0.024"	n/a	n/a	4	03-02-02
Span / Depth	7.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

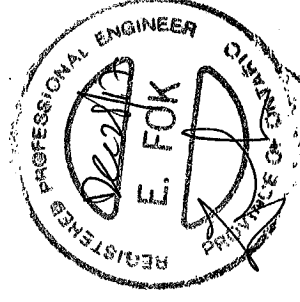
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

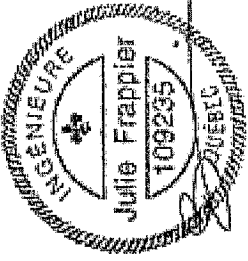
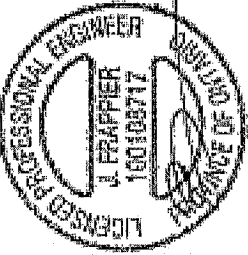
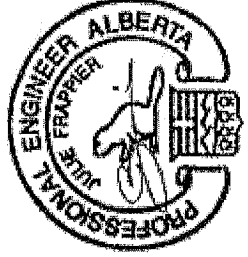
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	567 lbs	23.2%	11.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	745 lbs	19.8%	10%	Spruce Pine Fir

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



5152479



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		
		12"	16"	On Centre Spacing	12"	16"	On Centre Spacing
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	15'-5"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	16'-7"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	17'-3"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	16'-1"
11-7/8"	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	17'-4"	16'-9"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	17'-2"
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	18'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	19'-0"
14"	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"
	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"
16"	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"
	NI-40x	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"
	NI-60	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"
	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	23'-1"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	23'-8"

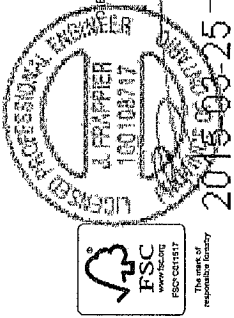
Depth	Series	Mid-Span Blocking			Mid-Span Blocking and 1/2" Gypsum Ceiling		
		12"	16"	On Centre Spacing	12"	16"	On Centre Spacing
9-1/2"	NI-20	17'-1"	15'-5"	14'-6"	13'-5"	17'-1"	15'-5"
	NI-40x	18'-8"	17'-6"	16'-7"	15'-3"	19'-2"	17'-8"
	NI-60	18'-11"	17'-8"	16'-10"	15'-7"	19'-4"	18'-0"
	NI-70	20'-0"	18'-7"	17'-9"	17'-0"	20'-5"	19'-0"
	NI-80	20'-3"	18'-10"	17'-11"	17'-2"	20'-8"	18'-4"
11-7/8"	NI-20	20'-2"	18'-8"	17'-6"	16'-2"	20'-7"	18'-8"
	NI-40x	21'-10"	20'-4"	19'-5"	17'-8"	22'-5"	20'-11"
	NI-60	22'-1"	20'-7"	19'-7"	18'-7"	22'-8"	21'-2"
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"
14"	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-6"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-10"
	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	26'-1"
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	26'-5"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	27'-2"

- 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.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



www.nordicwpc.com

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:

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

TABLE 1

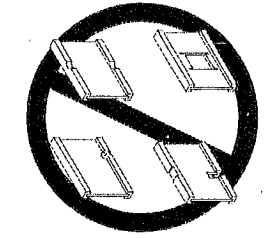
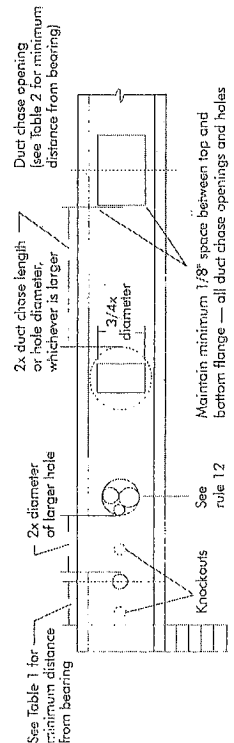
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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"	NL-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---
	NL-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---
	NL-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---
	NL-80	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---
11-7/8"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NL-40x	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NL-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-10"	---	---	---
	NL-80	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	8-4"	10-0"	11-2"	---	---	---
14"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NL-40x	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NL-60	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	---	---	---
	NL-80	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	---	---	---
16"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NL-40x	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NL-60	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	---	---	---
	NL-80	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	---	---	---

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

FIELD-CUT HOLE LOCATOR



SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

- WARNING:** I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.
- AVOID ACCIDENTS BY FOLLOWING THESE INSTALLATION 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 continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
 - 2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - 3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
 - 4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
 - 5. Never install a damaged I-joist.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

TABLE 2

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft. - in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
9-1/2"	NL-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	---	---	---
	NL-40x	5-3"	5-8"	6-0"	6-10"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---
	NL-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"	---	---	---
	NL-80	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"	---	---	---
11-7/8"	NL-20	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---
	NL-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-9"	---	---	---
	NL-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"	---	---	---
	NL-80	7-1"	7-6"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-4"	---	---	---
14"	NL-20	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"	---	---	---
	NL-40x	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"	---	---	---
	NL-60	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-3"	13-0"	---	---	---
	NL-80	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"	---	---	---
16"	NL-20	9-2"	9-7"	10-0"	10-5"	10-11"	11-5"	11-9"	12-4"	12-11"	---	---	---
	NL-40x	9-4"	9-9"	10-3"	10-7"	11-1"	11-7"	12-1"	12-7"	13-2"	---	---	---
	NL-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"	---	---	---
	NL-80	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-3"	14-0"	---	---	---

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

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

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

Holes in webs should be cut with a sharp saw.

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



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



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



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.

1a

NI blocking panel

Attach I-joist to top plate per detail 1b

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

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.

1d

NI or rim board blocking panel per detail 1a

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

Pair of Squash Blocks	Maximum Factored Vertical Load per Span or Squash Block (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
2x Lumber	4,300
1-1/8" Rim Board Plus	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 where the 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**
3-1/2"	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 lumber and wood structural panels conforming to CAN/CSA-C0925 or CAN/CSA-O437 Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

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

1p

Filler block

Offset nails from opposite face by 6"

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

NOTES:

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

WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

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

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

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

Attach I-joist to plate per detail 1b

2-1/2" min. bearing required

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

1b

Rim board

One 2-1/2" face nail at each side of bearing

1e

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

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.

1m

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

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

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

1s

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

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

1-1/2" gap between top flange and filler block

1-1/2" gap between bottom flange and filler block

One 2-1/2" nail one side only

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

WEB STIFFENER INSTALLATION DETAILS

FIGURE 2

CONCENTRATED LOAD

END BEARING

Gap

Tight Joint No Gap

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

Approx. 2" gap

Approx. 2" gap

1/8" - 1/4" Gap

(4) 2-1/2" nails, 3" nails required for I-joists with 3-1/2" flange width

No Gap

See the adjacent table for web stiffener size requirements

RIM BOARD INSTALLATION DETAILS

8a

ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

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

Rim board joint

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

Rim board joint at corner

2-1/2" nails

1-1/2" gap

Rim board joint

1g

Joist attachment per detail 1b

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

1i

Nordic Lam or Structural Composite Lumber (SCL)

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

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

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.

NI blocking panel

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

1t

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

1u

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (10-122" dia.) common spiral nails may be substituted for 2-1/2" (10-128" dia.) common wire nails.

Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

STIFFENER SIZE REQUIREMENTS

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

100108117

100108117

1v

Rim board

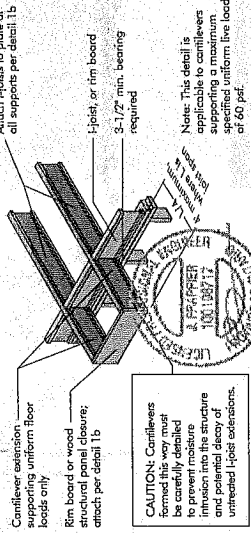
Top or sole plate

30°

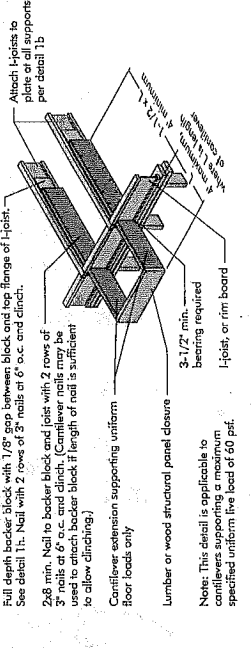
1/8"

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

4a) I-JOIST CANTILEVER DETAIL FOR BALCONIES (NO WALL LOAD)

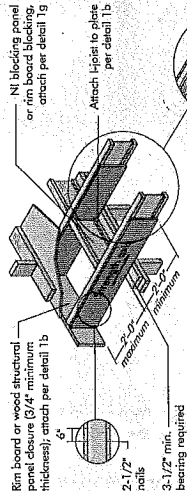


3b) LUMBER CANTILEVER DETAIL FOR BALCONIES (NO WALL LOAD)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

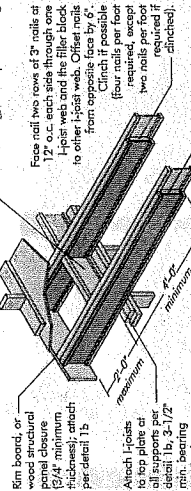


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

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

4b) Alternate Method 2 — DOUBLE I-JOIST



Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange widths greater than 3 inches place an additional row of 3" nails along the cantiline of the reinforcing panel from each side. Clinch when possible.

FIGURE 4 (continued)

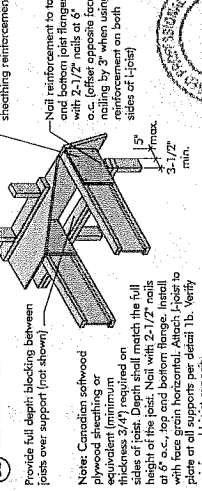
See table below for NI reinforcement requirements at cantilever.

CANTILEVER REINFORCEMENT METHODS ALLOWED

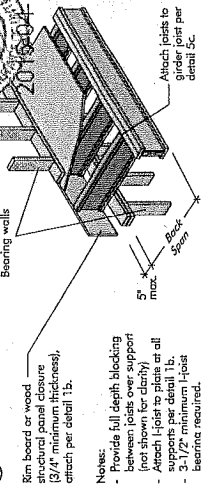
JOIST DEPTH (in.)	TRUSS SPAN (ft.)	UNIFORM LOADS (UNFACTORED)												JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)
		11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf			
9 1/2	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24
11 7/8	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24
14	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24
16	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24

- N = No reinforcement required.
 - N1 = NI reinforced with 3/4" wood structural panel on one side only.
 - N2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
 - X = Try a deeper joist or closer spacing.
2. Maximum design load shall be 15 psf for dead load and 30 psf for live load. Wall load is based on 3-0" maximum width window or door opening.
3. For larger openings, or multiple 3-0" wide openings spaced less than 6-0" o.c., additional joists beneath the opening's cripple beam are required.
4. For conventional roof construction using a ridge beam, the roof truss span column must be located within the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the roof truss span is equivalent to the live load of 40 psf and dead load of 10 psf. 12" o.c. requirements for lesser spacing.
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

5a) SHEATHING REINFORCEMENT



5b) SET-BACK DETAIL



5c) SET-BACK CONNECTION

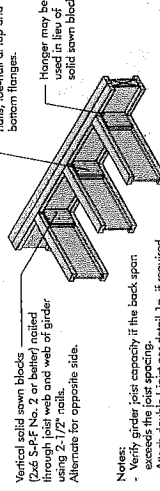


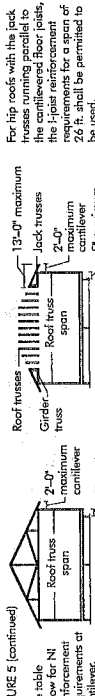
FIGURE 5 (continued)

See table below for NI reinforcement requirements at cantilever.

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	TRUSS SPAN (ft.)	UNIFORM LOADS (UNFACTORED)												JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)
		11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf	11'-0" max DL = 15 psf			
9 1/2	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24
11 7/8	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24
14	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24
16	24	N	N	N	N	N	N	N	N	N	N	N	N	24	24	24

- N = No reinforcement required.
 - N1 = NI reinforced with 3/4" wood structural panel on one side only.
 - N2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
 - X = Try a deeper joist or closer spacing.
2. Maximum design load shall be 15 psf for dead load, 35 psf for floor load, and 80 psf wall load. Wall load is based on 3-0" maximum width window or door opening.
3. For larger openings, or multiple 3-0" wide openings spaced less than 6-0" o.c., additional joists beneath the opening's cripple studs may be required.
4. For conventional roof construction using a ridge beam, the roof truss span column must be located within the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the roof truss span is equivalent to the live load of 40 psf and dead load of 10 psf. 12" o.c. requirements for lesser spacing.
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

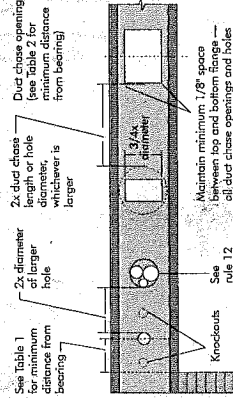


WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



A knockout is NOT considered a hole and may be utilized wherever it occurs and may be ignored for purposes of calculating minimum distances between holes.

Knockouts are pre-scored holes provided for the contractor's convenience to install electrical conduit and other small pipes. They are spaced 15 inches on center along the length of the I-post. 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 hole with a sharp hole saw or hole diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-post.

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Minimum Fastener Spacing	Minimum Fastener Spacing	Minimum Fastener Spacing	Minimum Fastener Spacing
End Joints	Interior Joints	Edges	Subfloor
16"	24"	2"	2"
20"	24"	2"	2"
24"	24"	2"	2"

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

Ref: NRC-CNRC, National Building Code of Canada 2010, Table 2.23.3.5.

IMPORTANT NOTE:
Floor sheathing must be field glued to the I-post flanges in order to achieve the maximum design strength. If sheathing is nailed only, I-post spans must be verified with your local distributor.

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

Span Length (ft)	Minimum distance from inside face of any support to center of hole (in)				Span Length (ft)	Minimum distance from inside face of any support to center of hole (in)			
	1	2	3	4		1	2	3	4
1-1/2	12	12	12	12	12	12	12	12	12
2	12	12	12	12	12	12	12	12	12
3	12	12	12	12	12	12	12	12	12
4	12	12	12	12	12	12	12	12	12
5	12	12	12	12	12	12	12	12	12
6	12	12	12	12	12	12	12	12	12
7	12	12	12	12	12	12	12	12	12
8	12	12	12	12	12	12	12	12	12
9	12	12	12	12	12	12	12	12	12
10	12	12	12	12	12	12	12	12	12
11	12	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12
13	12	12	12	12	12	12	12	12	12
14	12	12	12	12	12	12	12	12	12
15	12	12	12	12	12	12	12	12	12

1. Above table may be used for light loading of 24 inches on center or less.
2. Hole location distance is measured from inside face of supports to center of hole.
3. Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

The above table is based on the I-joist used at their maximum span. If the I-joist are placed at less than their full maximum span (see Manufacturer's literature for details), the minimum distance from the centerline of the hole to the face of any support (D) as given above may be reduced as follows:

Where:
D = Distance from the centerline of the hole to the face of any support (D) as given above may be reduced as follows:
D_{adj} = D x (S_{max} / S)
S_{max} = Maximum span of I-joist used at full maximum span.
S = Actual span of I-joist used.

1. The actual measured span distance between the inside faces of supports (S).
2. Span Adjustment factor given in this table.
3. D_{adj} is greater than 1, use 1 in the above calculation for D_{adj}.
4. D_{adj} is less than 1, use 1 in the above calculation for D_{adj}.

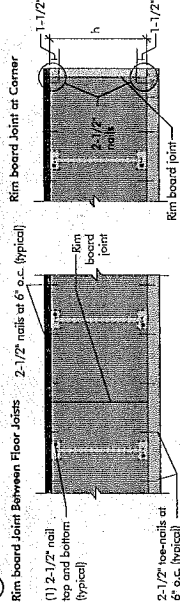
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth (in)	Minimum distance from inside face of any support to center of opening (in)				Joist Depth (in)	Minimum distance from inside face of any support to center of opening (in)			
	1	2	3	4		1	2	3	4
1-1/2	12	12	12	12	12	12	12	12	12
2	12	12	12	12	12	12	12	12	12
3	12	12	12	12	12	12	12	12	12
4	12	12	12	12	12	12	12	12	12
5	12	12	12	12	12	12	12	12	12
6	12	12	12	12	12	12	12	12	12
7	12	12	12	12	12	12	12	12	12
8	12	12	12	12	12	12	12	12	12
9	12	12	12	12	12	12	12	12	12
10	12	12	12	12	12	12	12	12	12
11	12	12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12	12	12
13	12	12	12	12	12	12	12	12	12
14	12	12	12	12	12	12	12	12	12
15	12	12	12	12	12	12	12	12	12

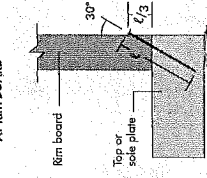
1. Above table may be used for light loading of 24 inches on center or less.
2. Duct chase opening location distance is measured from inside face of supports to center of opening.
3. The above table is based on simple span joists only. For other span conditions, contact your local distributor.
4. D_{adj} is greater than 1, use 1 in the above calculation for D_{adj}.
5. D_{adj} is less than 1, use 1 in the above calculation for D_{adj}.

RIM BOARD INSTALLATION DETAILS

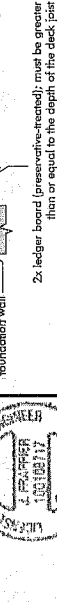
8c ATTACHMENT DETAILS WHERE RIM BOARDS ABOUT



8b TOE-NAIL CONNECTION AT RIM BOARD



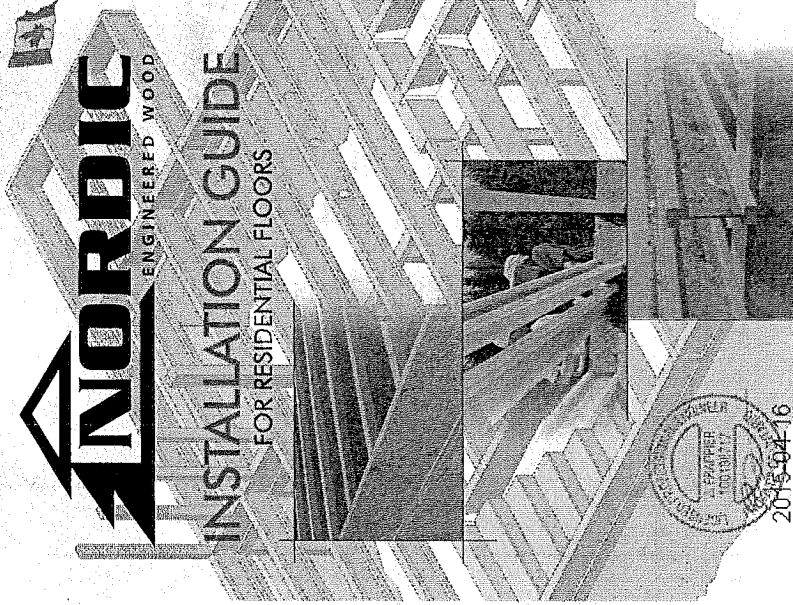
8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



PRODUCT WARRANTY

Our products are guaranteed to be free from manufacturing defects in material and workmanship.

Fasteners: Customer's responsibility to ensure proper installation and use of fasteners in accordance with the manufacturer's recommendations.



SAFETY AND CONSTRUCTION PRECAUTIONS



WARNING
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 joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When 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-beams. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-beam rollover or buckling.

- Temporary bracing or girts must be 1/4 inch minimum, at least 8 feet long and must be braced at least 4 feet apart. Temporary bracing must be secured with a minimum of two 1/2-inch nails fastened to the top surface of each 1x4. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of bracing over at least two 1x4s.
 - O₂ shunting (temporary or permanent) can be nailed to the top flange of the first 4 feet of 1x4s at the end of the bay.
3. For cantilevered 1x4s, brace top and bottom flanges, and brace ends with down panels, rim board, or cross-briding.
 4. Install end and fully nail permanent sheathing to each 1x4s before placing loads on the floor system. Then, stack building materials over beams or walls only.
 5. Never install a damaged 1x4.

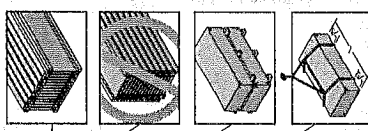


Do not walk on I-joists until fully fastened and braced, or serious injuries can result.

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

STORAGE AND HANDLING GUIDELINES



1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
2. Store, stack, and handle I-lofts vertically and level only.
3. Always stack and handle I-lofts in the upright position only.
4. Do not store I-lofts in direct contact with the ground and/or flammable.
5. Packed I-lofts from weather, and use spacers to separate bundles.
6. Bundled units should be kept intact until time of installation.
7. When handling I-lofts with a crane on the job site, take a few simple precautions to prevent damage to the I-lofts and injury to your work crew.
 - Pick I-lofts in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the I-lofts are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
 - Do not handle I-lofts in a horizontal orientation.
9. NEVER USE TRY TO REPAIR A DAMAGED I-LOFT.

INSTALLING NORDIC I-JOISTS

1. Before tying off floor system components, verify that I-joist flange widths match hanger widths. If not, 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 below floor sheathing is attached, and supports for multiple spans must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist and a chheader.
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. To support additional loads, consult with the manufacturer. Do not apply loads to the bottom flange or web. Do not concentrate 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. Concentrated loads where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of I-joists to prevent rollover. Use rim joist or I-joist blocking panels.
11. For I-joists installed one and a half bays bearing walls, use full depth blocking panels, rim boards or squash blocks (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 lateral support.
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 finished ceiling is applied, temporary bracing or studs 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, or if a separate underlayment layer is installed.
15. Nail splicing: Some nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

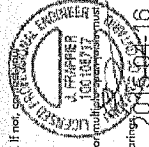
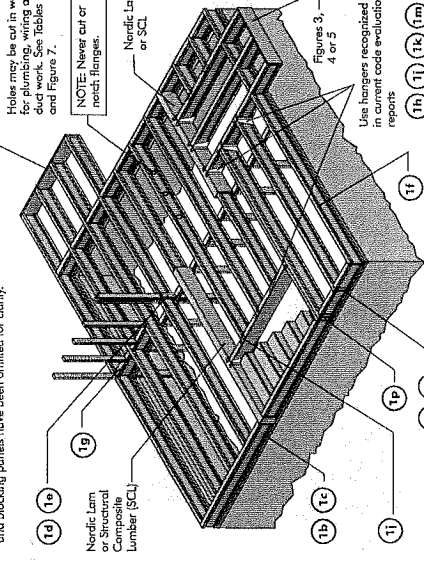


FIGURE 1
TYPICAL NORDIC L-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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

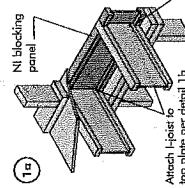


Holes may be cut in wall for plumbing, wiring and duct work. See Tables and Figure 7

NOTE: Never cut or notch flanges

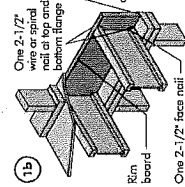
use hangers recognized in current code evaluation reports

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



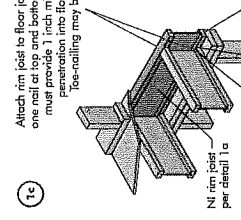
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

*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.



Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load ¹ (plf)
when applicable	

1-1/8" Rim Board Plus	8,090
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Pair of Squash Blocks	Maximum Factored Vertical Pressure on Pair of Squash Blocks (lbs)	
	3'-1/2" wide	5'-1/2" wide
2x Lumber	5,500	8,500
1-1/8" Rim Board Plus	4,300	6,600

Provide lateral bracing per detail 7a 7b or 7c

MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf. For multiple spans, the maximum span shall be 1,500 ft. The serviceability limit state includes the consideration for floor vibration and a live load deflection limit of $L/480$. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches and 3/4 inch for joist spacing of 16 inches. For a conservative design, use a 3/4 inch joist spacing. (See CAN/CSA C809.02, Table 10.1.1.)
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the girders and joists given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Lamin Series Design per CAN/CSA C809.02 Standard, and NSC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Joist Span	Simple spans					Multiple spans				
	On center	15'	16'	18'	24'	On center	15'	16'	18'	24'
9'-1/2"	N40	18'-1"	15'-2"	14'-8"	14'-9"	17'-5"	14'-5"	14'-0"	15'-10"	14'-5"
	N44	18'-2"	15'-3"	14'-10"	14'-10"	17'-6"	14'-6"	14'-1"	15'-10"	14'-6"
	N48	17'-1"	14'-1"	13'-5"	13'-6"	16'-4"	13'-4"	12'-11"	14'-11"	13'-5"
	N80	16'-11"	13'-0"	12'-5"	12'-6"	15'-4"	12'-4"	11'-7"	13'-8"	12'-2"
	N80	18'-1"	15'-0"	14'-5"	14'-6"	17'-7"	14'-9"	14'-2"	15'-9"	14'-7"
11'-7/8"	N40	19'-5"	16'-5"	16'-4"	17'-5"	21'-4"	18'-1"	18'-0"	19'-1"	18'-0"
	N44	19'-6"	16'-6"	16'-5"	17'-6"	21'-5"	18'-2"	18'-1"	19'-2"	18'-1"
	N48	18'-5"	15'-4"	14'-9"	15'-0"	20'-3"	17'-0"	16'-9"	18'-0"	17'-0"
	N80	17'-4"	14'-3"	13'-8"	13'-9"	19'-2"	16'-0"	15'-9"	17'-1"	16'-0"
	N80	20'-2"	17'-1"	16'-6"	16'-7"	22'-5"	18'-9"	18'-8"	20'-0"	18'-11"
14"	N40	20'-5"	18'-1"	17'-10"	17'-11"	22'-2"	21'-4"	19'-8"	19'-4"	19'-4"
	N44	20'-6"	18'-2"	17'-11"	18'-2"	22'-3"	21'-5"	20'-0"	20'-1"	20'-1"
	N48	21'-11"	19'-4"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"	21'-6"
	N80	22'-5"	20'-8"	19'-9"	19'-10"	24'-9"	22'-10"	21'-10"	21'-10"	21'-10"
	N80	22'-7"	20'-10"	19'-11"	20'-10"	24'-11"	22'-12"	21'-11"	21'-11"	21'-11"
16"	N40	22'-7"	20'-10"	20'-9"	20'-10"	24'-11"	22'-12"	21'-11"	21'-11"	21'-11"
	N44	23'-1"	20'-5"	20'-5"	20'-6"	25'-0"	22'-6"	21'-6"	21'-6"	21'-6"
	N48	23'-11"	22'-4"	21'-5"	21'-6"	26'-5"	24'-0"	22'-11"	22'-0"	22'-0"
	N80	23'-11"	22'-4"	21'-5"	21'-6"	26'-5"	24'-0"	22'-11"	22'-0"	22'-0"
	N80	24'-5"	22'-8"	21'-9"	21'-10"	27'-3"	25'-2"	23'-6"	23'-4"	23'-4"