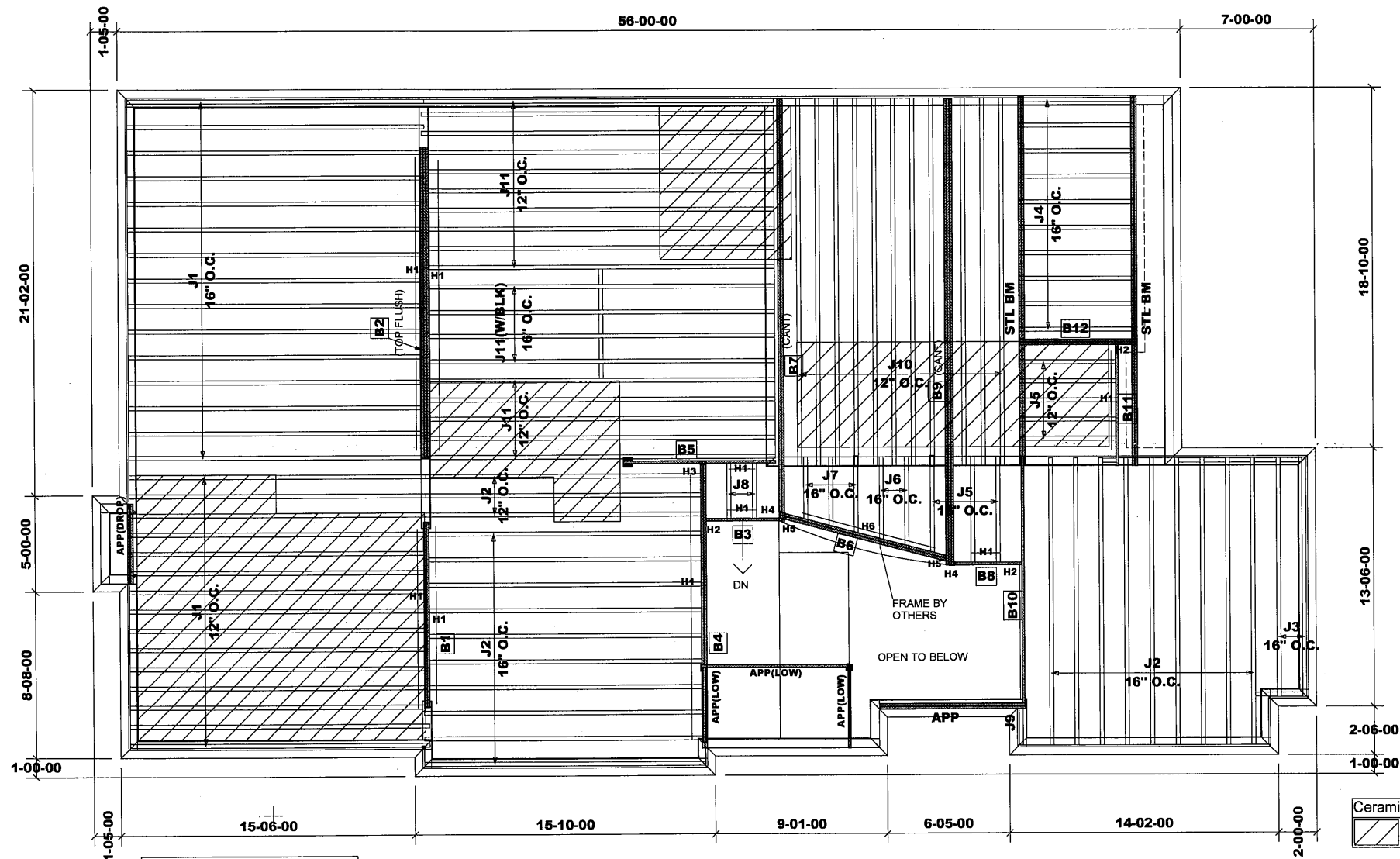




Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-20	1	30
J2	15-00-00	11 7/8" NI-20	1	22
J3	13-00-00	11 7/8" NI-20	1	2
J4	7-00-00	11 7/8" NI-20	1	10
J5	6-00-00	11 7/8" NI-20	1	8
J6	5-00-00	11 7/8" NI-20	1	2
J7	4-00-00	11 7/8" NI-20	1	3
J8	3-00-00	11 7/8" NI-20	1	2
J9	2-00-00	11 7/8" NI-20	1	1
J10	20-00-00	11 7/8" NI-40x	1	11
J11	19-00-00	11 7/8" NI-40x	1	19
B9	25-00-00	VERSALAM-12 2.0E	3	3
B7	23-00-00	VERSALAM-12 2.0E	2	2
B2	17-00-00	VERSALAM-14 2.0E	3	3
B4	15-00-00	VERSALAM-12 2.0E	2	2
B10	14-00-00	VERSALAM-12 2.0E	1	1
B1	10-00-00	VERSALAM-12 2.0E	2	2
B6	10-00-00	VERSALAM-12 2.0E	2	2
B5	8-00-00	VERSALAM-12 2.0E	1	1
B11	7-00-00	VERSALAM-12 2.0E	1	1
B12	7-00-00	VERSALAM-12 2.0E	2	2
B3	4-00-00	VERSALAM-12 2.0E	1	1
B8	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	LSSUH410(FM)
H6	LSSUH310(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

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

REVISION: July 3, 2018

MODEL: UNIT 4204 - CORNER - EL.A

Second Floor Framing

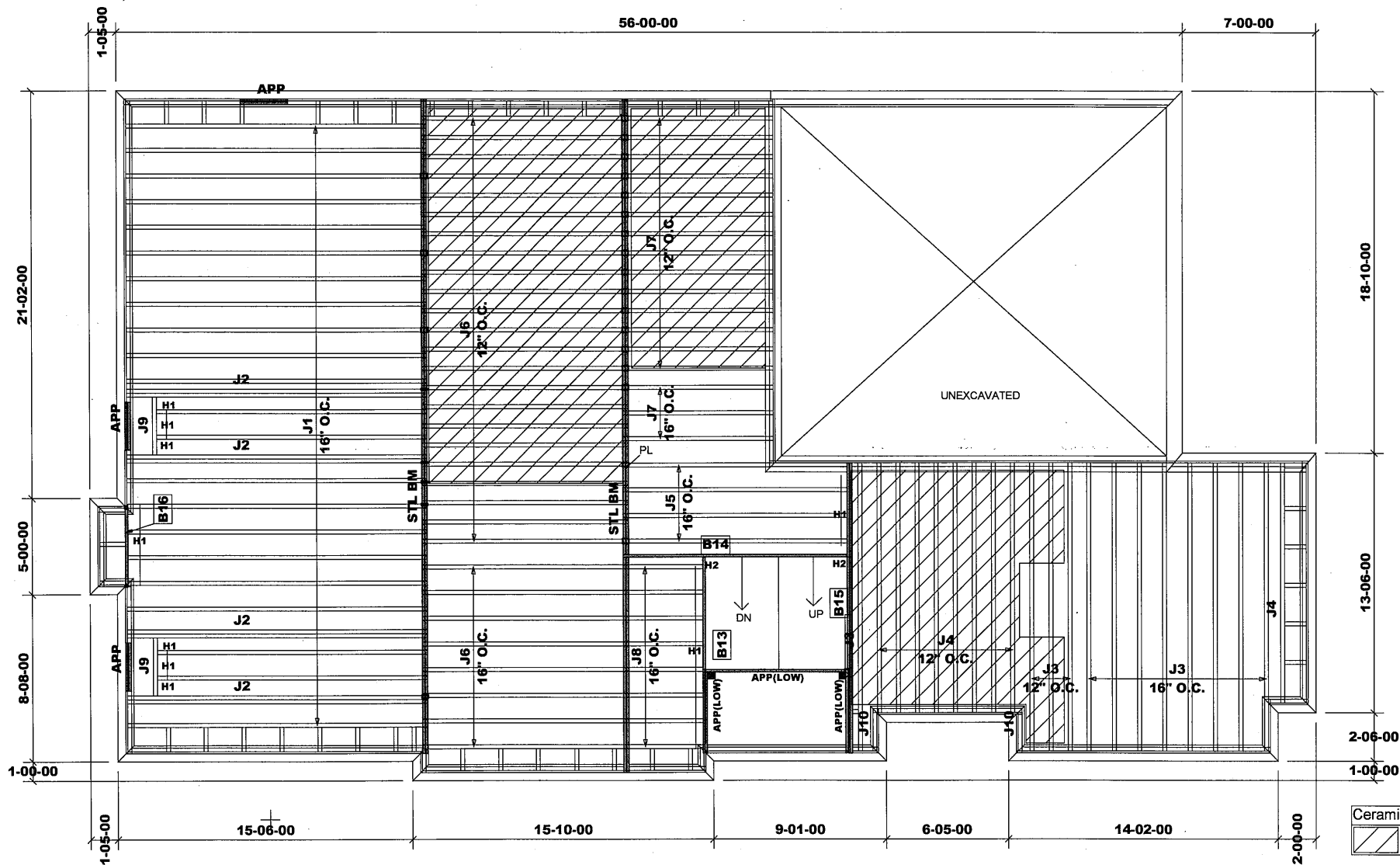
Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 6'

ENGINEERING FILE NO.

S- 152430 - 152448



MODEL: UNIT 4204 - CORNER
- EL.A

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 60'

Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-20	1	22
J2	16-00-00	11 7/8" NI-20	2	8
J3	15-00-00	11 7/8" NI-20	1	12
J4	13-00-00	11 7/8" NI-20	1	9
J5	12-00-00	11 7/8" NI-20	1	4
J6	11-00-00	11 7/8" NI-20	1	31
J7	8-00-00	11 7/8" NI-20	1	17
J8	5-00-00	11 7/8" NI-20	1	8
J9	3-00-00	11 7/8" NI-20	1	2
J10	2-00-00	11 7/8" NI-20	1	2
B15	16-00-00	VERSALAM-12 2.0E	2	2
B14	12-00-00	VERSALAM-12 2.0E	1	1
B13	11-00-00	VERSALAM-12 2.0E	1	1
B16	5-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(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

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.

98839/July 3, 2018

95915

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290680

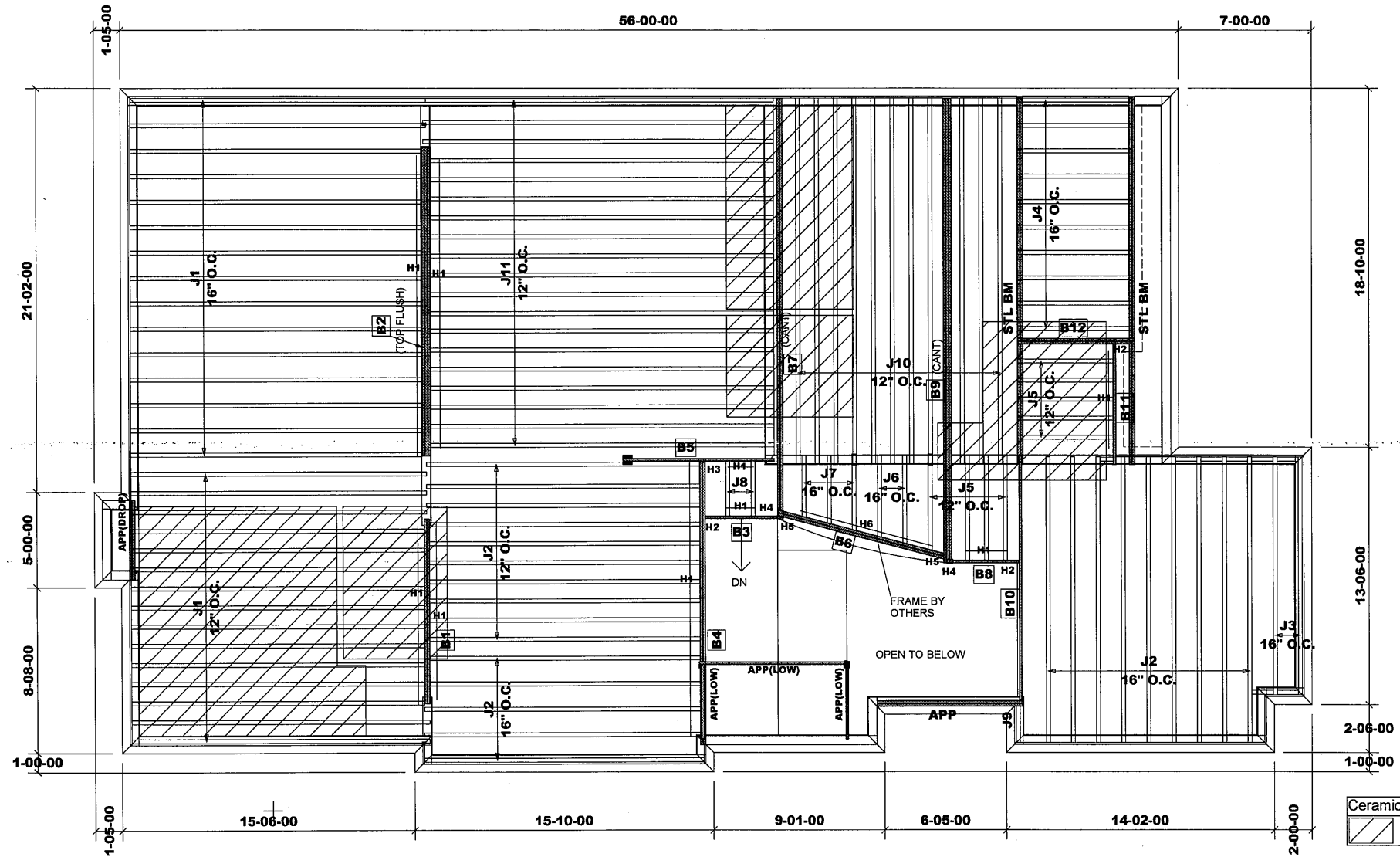
Project: Pine Valley

Date: November 23, 2017

Sheet: 2 of 8

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-20	1	30
J2	15-00-00	11 7/8" NI-20	1	24
J3	13-00-00	11 7/8" NI-20	1	2
J4	7-00-00	11 7/8" NI-20	1	10
J5	6-00-00	11 7/8" NI-20	1	9
J6	5-00-00	11 7/8" NI-20	1	2
J7	4-00-00	11 7/8" NI-20	1	3
J8	3-00-00	11 7/8" NI-20	1	2
J9	2-00-00	11 7/8" NI-20	1	1
J10	20-00-00	11 7/8" NI-40x	1	11
J11	19-00-00	11 7/8" NI-40x	1	19
B9	25-00-00	VERSALAM-12 2.0E	3	3
B7	23-00-00	VERSALAM-12 2.0E	2	2
B2	17-00-00	VERSALAM-14 2.0E	3	3
B4	15-00-00	VERSALAM-12 2.0E	2	2
B10	14-00-00	VERSALAM-12 2.0E	1	1
B1	10-00-00	VERSALAM-12 2.0E	2	2
B6	10-00-00	VERSALAM-12 2.0E	2	2
B5	8-00-00	VERSALAM-12 2.0E	1	1
B11	7-00-00	VERSALAM-12 2.0E	1	1
B12	7-00-00	VERSALAM-12 2.0E	2	2
B3	4-00-00	VERSALAM-12 2.0E	1	1
B8	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	LSSUH410(FM)
H6	LSSUH310(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

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 4204 - CORNER
- EL.A(W/OPT. 2ND FL.)

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

REVISION: July 3, 2018

JT/PL: 45147/98839
LI: 299728

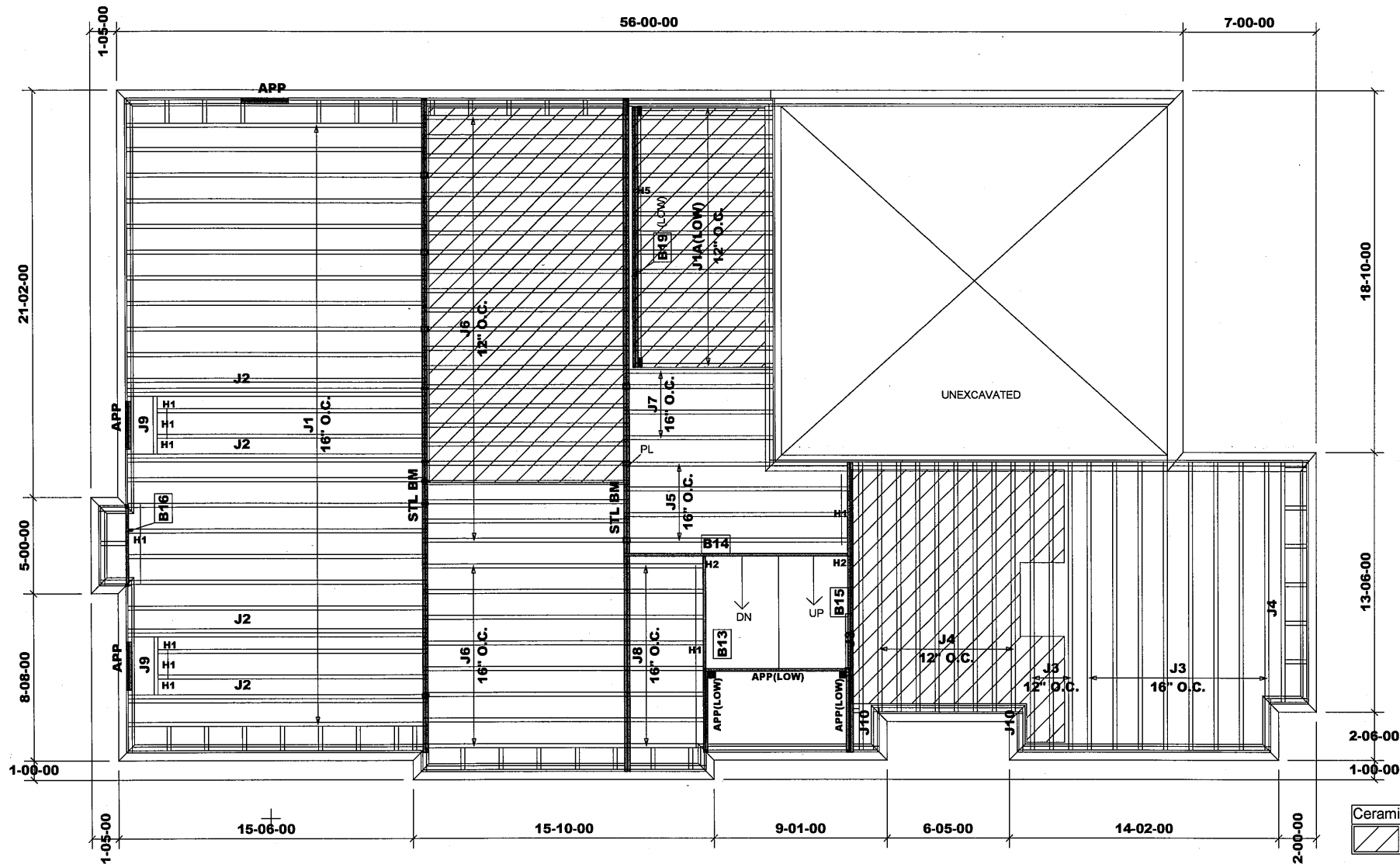
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 23, 2017

Designer: NL
Sheet: 3 of 8

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



MODEL: UNIT 4204 - CORNER
- EL.A(W/SUNKEN)

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 56'

Products				
PlotID	Length	Product	Plies	Net Qty
J1A	8-00-00	9 1/2" NI-20	1	15
J1	16-00-00	11 7/8" NI-20	1	22
J2	16-00-00	11 7/8" NI-20	2	8
J3	15-00-00	11 7/8" NI-20	1	12
J4	13-00-00	11 7/8" NI-20	1	9
J5	12-00-00	11 7/8" NI-20	1	4
J6	11-00-00	11 7/8" NI-20	1	31
J7	8-00-00	11 7/8" NI-20	1	4
J8	5-00-00	11 7/8" NI-20	1	8
J9	3-00-00	11 7/8" NI-20	1	2
J10	2-00-00	11 7/8" NI-20	1	2
B15	16-00-00	VERSALAM-12 2.0E	2	2
B19	14-00-00	VERSALAM-10 2.0E	2	2
B14	12-00-00	VERSALAM-12 2.0E	1	1
B13	11-00-00	VERSALAM-12 2.0E	1	1
B16	5-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(FM)
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: 290680

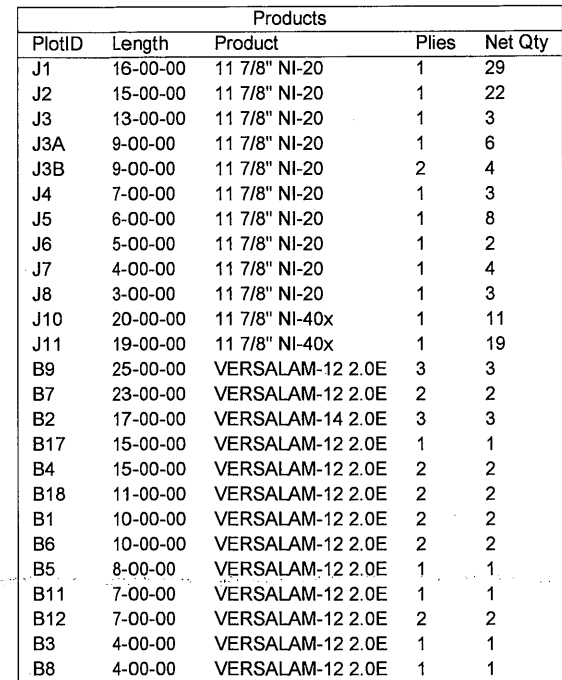
Project: Pine Valley

Date: November 23, 2017

Sheet: 4 of 8

Maple, Ontario

Home Lumber



HANGER SCHEDULE

H1-----	LT251188 (TM)
H2-----	HUS1.81/10(FM)
H3-----	HGUS410 (FM)
H4-----	HU9X(FM)
H5-----	LSSUH410(FM)
H6-----	LSSUH310(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.

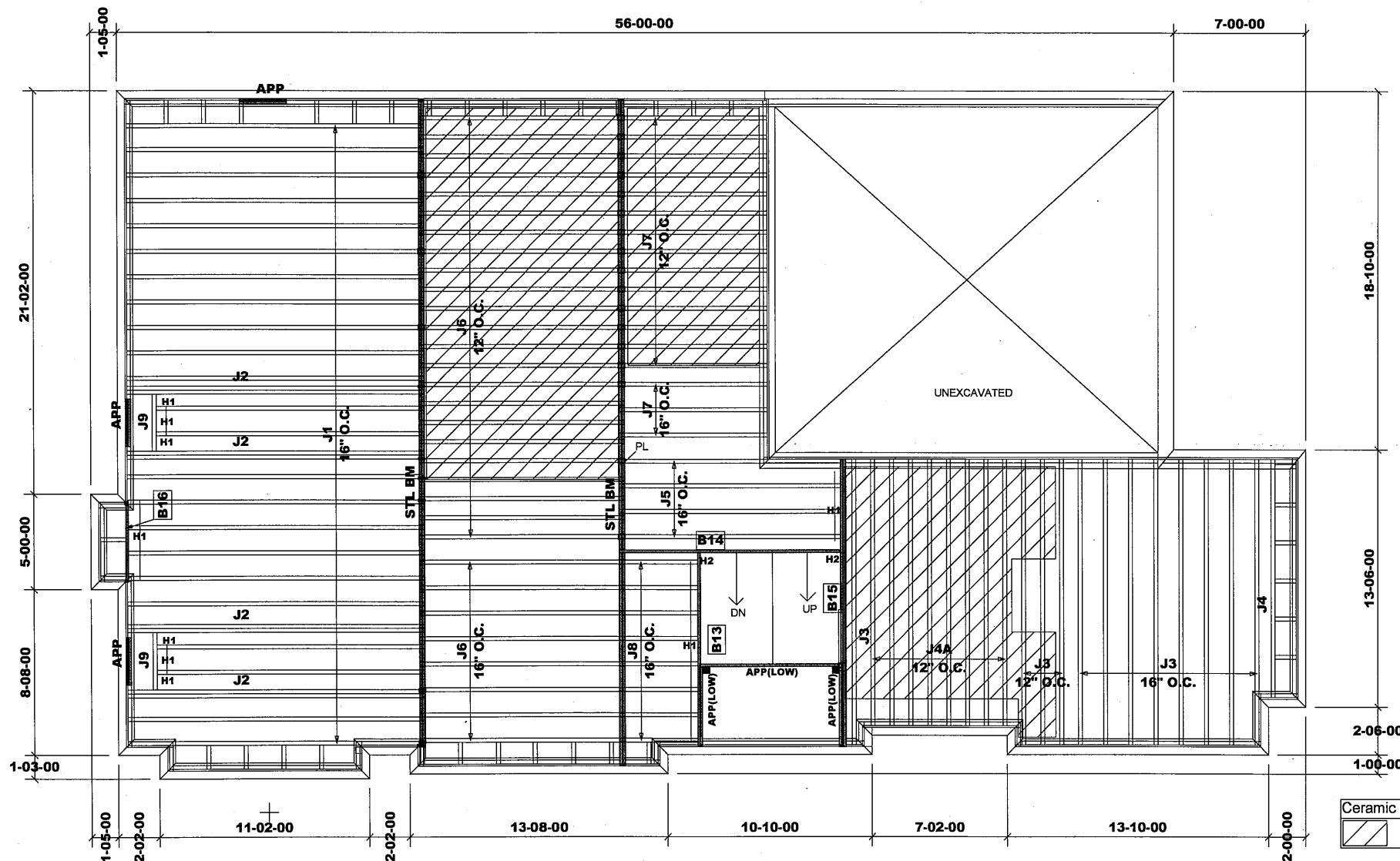
Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 15'

REVISION: July 3, 2018



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-20	1	23
J2	16-00-00	11 7/8" NI-20	2	8
J3	15-00-00	11 7/8" NI-20	1	12
J4A	14-00-00	11 7/8" NI-20	1	8
J4	13-00-00	11 7/8" NI-20	1	1
J5	12-00-00	11 7/8" NI-20	1	4
J6	11-00-00	11 7/8" NI-20	1	31
J7	8-00-00	11 7/8" NI-20	1	17
J8	5-00-00	11 7/8" NI-20	1	8
J9	3-00-00	11 7/8" NI-20	1	2
B15	16-00-00	VERSALAM-12 2.0E	2	2
B14	12-00-00	VERSALAM-12 2.0E	1	1
B13	11-00-00	VERSALAM-12 2.0E	1	1
B16	5-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(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

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 4204 - CORNER
- EL.B

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 60'

98839
95915

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290680

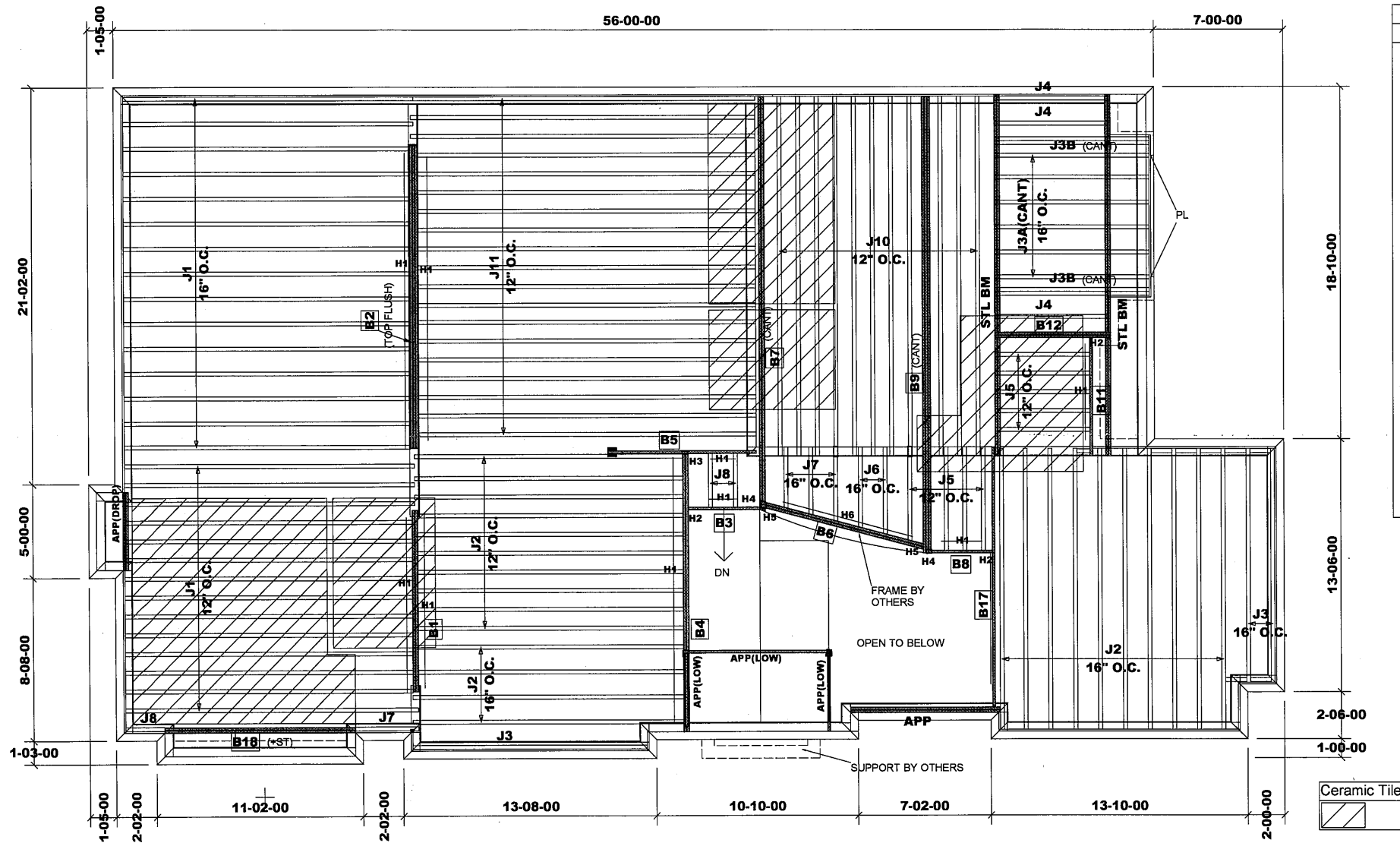
Project: Pine Valley

Date: November 23, 2017

Sheet: 6 of 8

Maple, Ontario

Home Lumber



MODEL: UNIT 4204 - CORNER
- EL.B(W/OPT. 2ND FL.)

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 9"

REVISION: July 3, 2018

Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-20	1	29
J2	15-00-00	11 7/8" NI-20	1	24
J3	13-00-00	11 7/8" NI-20	1	3
J3A	9-00-00	11 7/8" NI-20	1	6
J3B	9-00-00	11 7/8" NI-20	2	4
J4	7-00-00	11 7/8" NI-20	1	3
J5	6-00-00	11 7/8" NI-20	1	9
J6	5-00-00	11 7/8" NI-20	1	2
J7	4-00-00	11 7/8" NI-20	1	4
J8	3-00-00	11 7/8" NI-20	1	3
J10	20-00-00	11 7/8" NI-40x	1	11
J11	19-00-00	11 7/8" NI-40x	1	19
B9	25-00-00	VERSALAM-12 2.0E	3	3
B7	23-00-00	VERSALAM-12 2.0E	2	2
B2	17-00-00	VERSALAM-14 2.0E	3	3
B17	15-00-00	VERSALAM-12 2.0E	1	1
B4	15-00-00	VERSALAM-12 2.0E	2	2
B18	11-00-00	VERSALAM-12 2.0E	2	2
B1	10-00-00	VERSALAM-12 2.0E	2	2
B6	10-00-00	VERSALAM-12 2.0E	2	2
B5	8-00-00	VERSALAM-12 2.0E	1	1
B11	7-00-00	VERSALAM-12 2.0E	1	1
B12	7-00-00	VERSALAM-12 2.0E	2	2
B3	4-00-00	VERSALAM-12 2.0E	1	1
B8	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-----LSSUH410(FM)
- H6-----LSSUH310(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: 45147/98839
LI: 299728

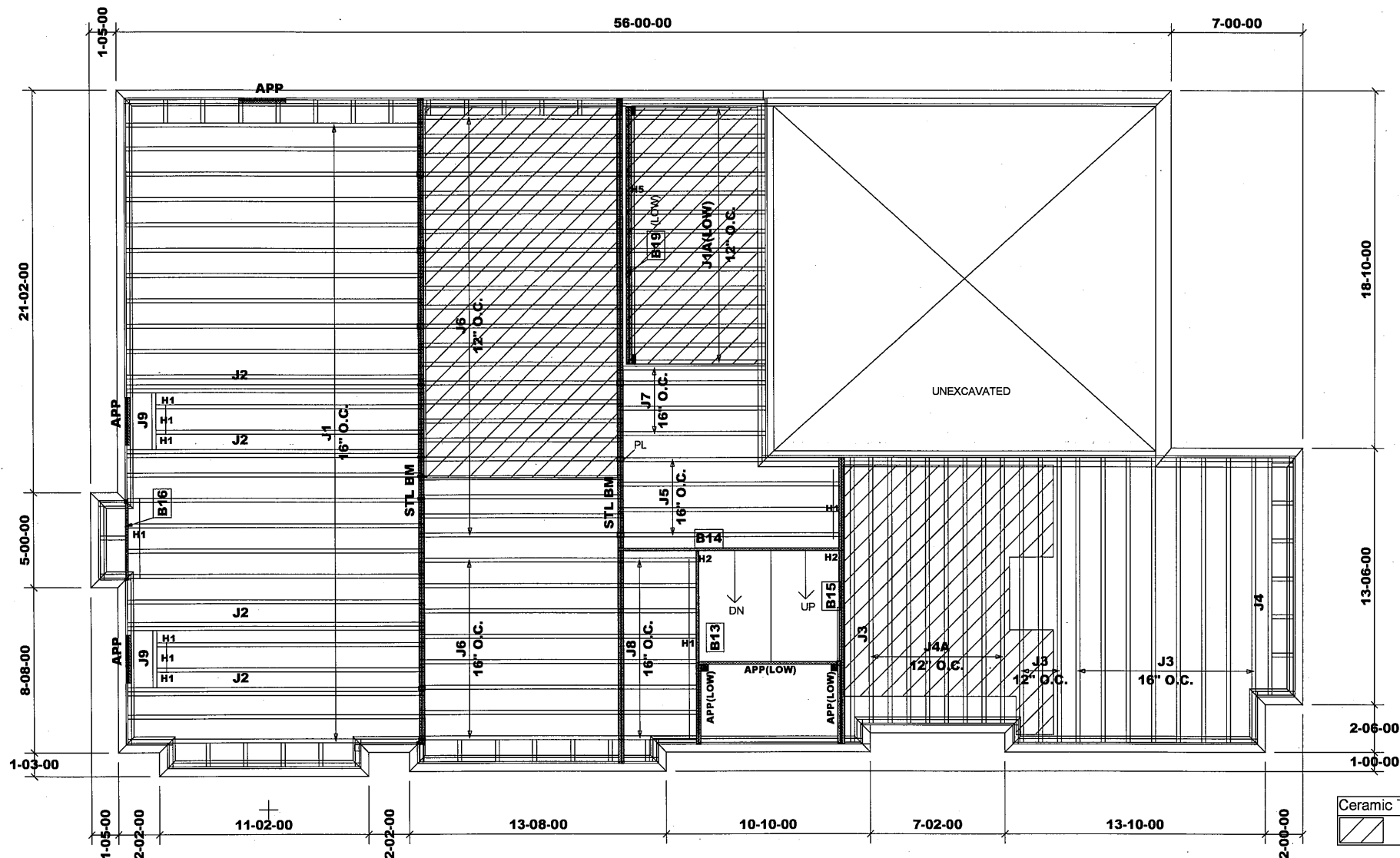
Builder: Gold Park
Project: Pine Valley

Location: Vaughan
Date: November 23, 2017

Designer: NL
Sheet: 7 of 8

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Derek
Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1A	8-00-00	9 1/2" NI-20	1	15
J1	16-00-00	11 7/8" NI-20	1	23
J2	16-00-00	11 7/8" NI-20	2	8
J3	15-00-00	11 7/8" NI-20	1	12
J4A	14-00-00	11 7/8" NI-20	1	8
J4	13-00-00	11 7/8" NI-20	1	1
J5	12-00-00	11 7/8" NI-20	1	4
J6	11-00-00	11 7/8" NI-20	1	31
J7	8-00-00	11 7/8" NI-20	1	4
J8	5-00-00	11 7/8" NI-20	1	8
J9	3-00-00	11 7/8" NI-20	1	2
B15	16-00-00	VERSALAM-12 2.0E	2	2
B19	14-00-00	VERSALAM-10 2.0E	2	2
B14	12-00-00	VERSALAM-12 2.0E	1	1
B13	11-00-00	VERSALAM-12 2.0E	1	1
B16	5-00-00	VERSALAM-12 2.0E	1	1

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(FM)
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 4204 - CORNER
- EL.B(W/SUNKEN)**

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 60'

98839
95915

JT/PL: 45147/94992

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 290680

Project: Pine Valley

Date: November 23, 2017

Sheet: 8 of 8

Maple, Ontario

Home Lumber



Boise Cascade



BC CALC® Design Report

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

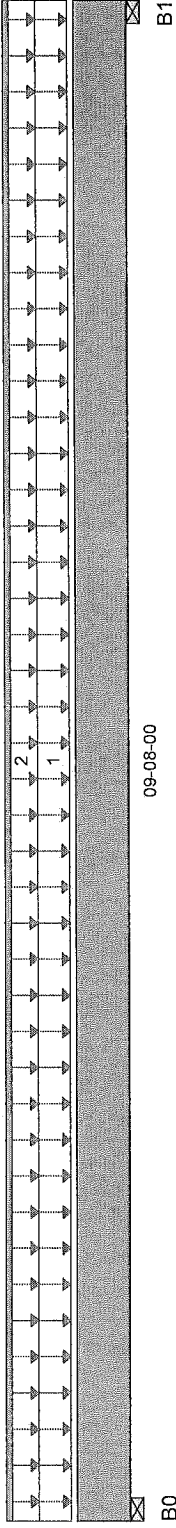
Floor Beam\B01

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

November 22, 2017 14:45:29

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 09-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	3,093 / 0	1,895 / 0		
B1, 3-1/2"	3,093 / 0	1,895 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	09-08-00	40	20		1.00 1.15	16-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	09-08-00	60	60			n/a

Controls Summary

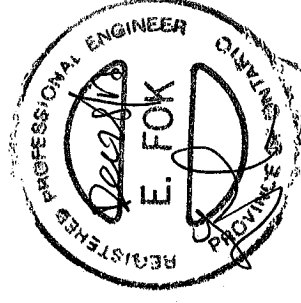
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	15,369 ft-lbs	35,392 ft-lbs	43.4%	1	04-10-00
End Shear	5,151 lbs	14,464 lbs	35.6%	1	01-03-06
Total Load Defl.	L/647 (0.171")	0.46"	37.1%	4	04-10-00
Live Load Defl.	L/999 (0.106")	n/a	n/a	5	04-10-00
Max Defl.	0.171"	1"	17.1%	4	04-10-00
Span / Depth	9.3	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"	7,009 lbs	93%	46.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	7,009 lbs	93%	46.9%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Nail one ply to another with
3 1/2" spiral nails @ 10" o.c. staggered in 2 rows



S.152430



Boise Cascade



BC CALC® Design Report

Triple 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP

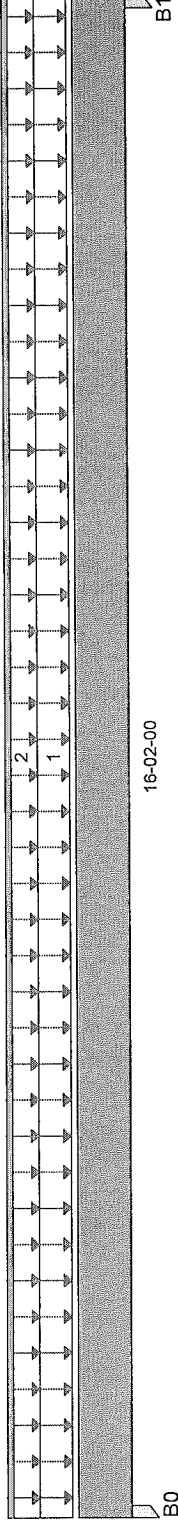
Floor Beam\B02

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

November 22, 2017 14:47:40

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 16-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	5,497 / 0	3,405 / 0		
B1, 3-1/2"	5,497 / 0	3,405 / 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	16-02-00	40	20		1.00 1.15	17-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	16-02-00	60	60			n/a

Controls Summary

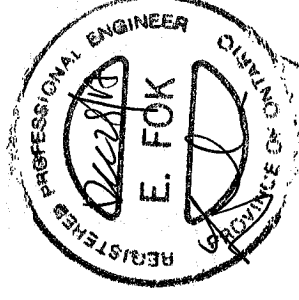
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	47,703 ft-lbs	75,349 ft-lbs	63.3%	1	08-01-00
End Shear	10,246 lbs	25,578 lbs	40.1%	1	01-05-08
Total Load Defl.	L/300 (0.628")	0.785"	80%	4	08-01-00
Live Load Defl.	L/486 (0.388")	0.524"	74.1%	5	08-01-00
Max Defl.	0.628"	1"	62.8%	4	08-01-00
Span / Depth	13.5	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 Post	3-1/2" x 5-1/4"	12,502 lbs	39.2%	55.8%	Spruce Pine Fir
B1 Post	3-1/2" x 5-1/4"	12,502 lbs	39.2%	55.8%	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, staggered in 2 rows



S.152431



Boise Cascade

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

Floor Beam\B03



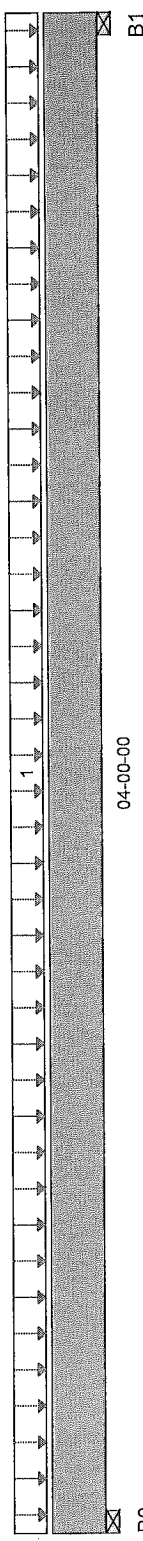
BC CALC® Design Report

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

November 22, 2017 14:48:09

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second 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"	480 / 0	192 / 0		
B1, 3-1/2"	480 / 0	192 / 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	06-00-00

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.

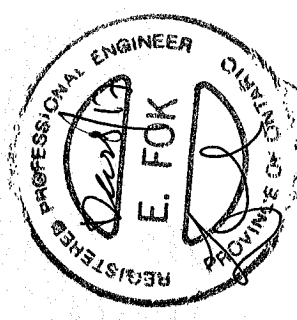
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	960 lbs	25.5%	12.8%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	960 lbs	25.5%	12.8%	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



S152432



BC CALC® Design Report

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

November 22, 2017 14:49:25

Build 6080

Job Name:

45147 (4204)

Address:

Pine Valley

City, Province, Postal Code:

Vaughan, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 290680.bcc

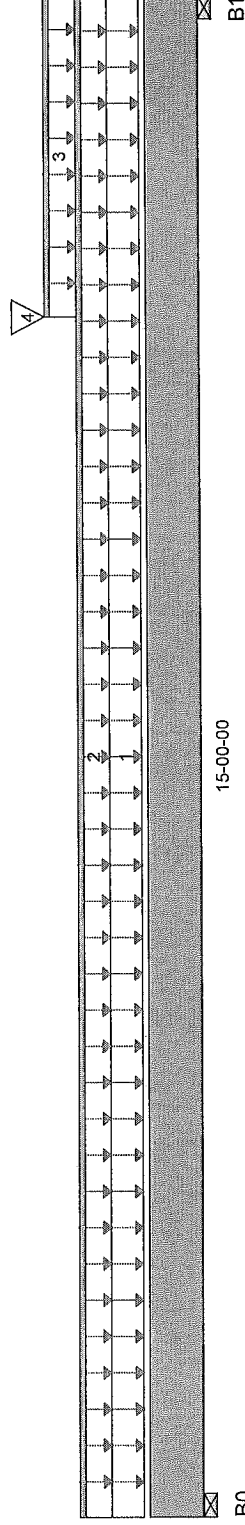
Description: Second Floor Framing

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"	2,355 / 0	1,708 / 0		
B1, 3-1/2"	2,711 / 0	1,859 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft ²)	L	00-00-00	15-00-00	40	20			07-06-00
2	Unf. Lin. (lb/ft)	L	00-00-00	15-00-00		60			n/a
3	Unf. Lin. (lb/ft)	L	11-10-00	15-00-00	27	14			n/a
4	Conc. Pt. (lbs)	L	11-10-00	11-10-00	480	192			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	20,794 ft-lbs	35,392 ft-lbs	58.8%	1	07-08-09
End Shear	5,383 lbs	14,464 lbs	37.2%	1	13-08-10
Total Load Defl.	L/298 (0.585")	0.727"	80.5%	4	07-06-09
Live Load Defl.	L/509 (0.343")	0.485"	70.7%	5	07-06-09
Max Defl.	0.585"	1"	58.5%	4	07-06-09
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 3-1/2"	5,668 lbs	75.2%	37.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	6,389 lbs	84.8%	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.

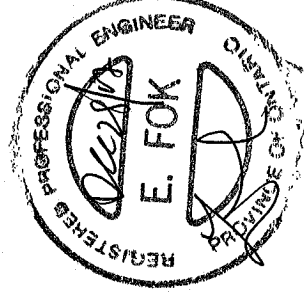
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

Nail one ply to another with

3 1/2" spiral nails @ 10"

o.c., staggered in 2 rows





Boise Cascade

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

Floor Beam\B05



BC CALCO® Design Report

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

November 22, 2017 14:50:49

Build 6080

Job Name:

Address:

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290680.bcc

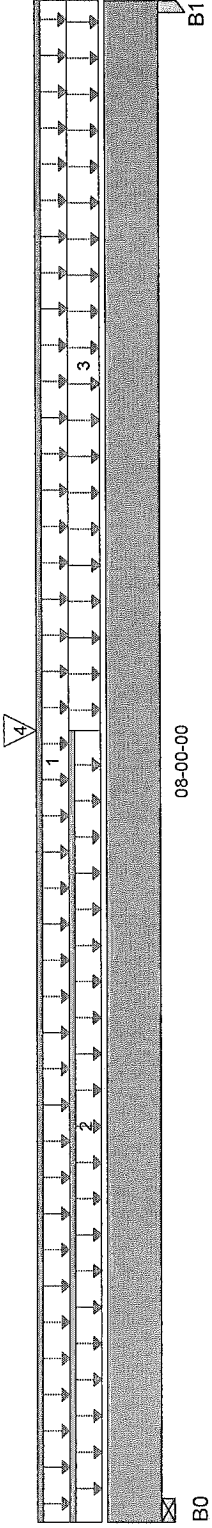
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,537 / 0	1,031 / 0		
B1, 3-1/2"	1,719 / 0	1,128 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	04-02-00	27	14			n/a
3	Unf. Area (lb/ft²)	L	04-02-00	08-00-00	40	15			01-05-00
4	Conc. Pt. (lbs)	L	04-02-00	04-02-00	2,711	1,859			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	13,082 ft-lbs	17,696 ft-lbs	73.9%	1	04-02-00
End Shear	3,762 lbs	7,232 lbs	52%	1	06-08-10
Total Load Defl.	L/566 (0.16")	0.377"	42.4%	4	04-00-15
Live Load Defl.	L/999 (0.096")	n/a	n/a	5	04-00-15
Max Defl.	0.16"	1"	16%	4	04-00-15
Span / Depth	7.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

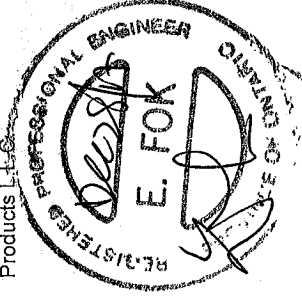
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	3,595 lbs	95.4%	48.1%	Spruce Pine Fir
B1 Post	3-1/2" x 1-3/4"	3,989 lbs	37.5%	53.4%	Spruce Pine Fir

Notes

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



S-152434



Boise Cascade

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

Floor Beam\B06



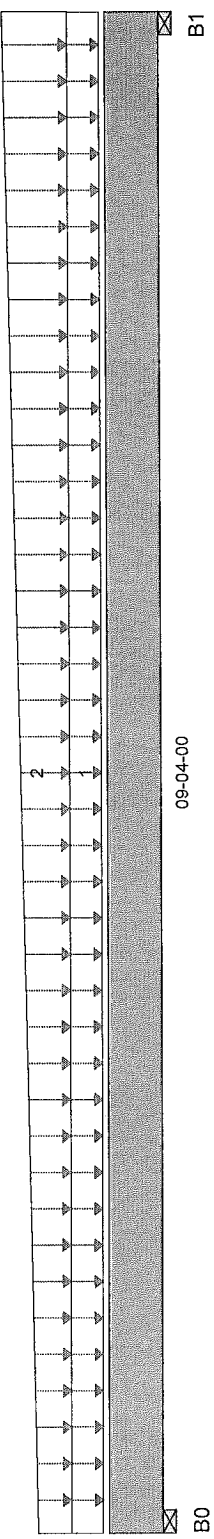
BC CALC® Design Report

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

November 22, 2017 14:53:00

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 09-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	527 / 0	256 / 0		
B1, 3-1/2"	593 / 0	281 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	09-04-00	40	15			01-00-00
2	Trapezoidal (lb/ft)	L	00-00-00	09-04-00	60	23			n/a
					100	38			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,482 ft-lbs	35,392 ft-lbs	7%	1	04-09-04
End Shear	1,062 lbs	14,464 lbs	7.3%	1	08-00-10
Total Load Defl.	L/999 (0.025")	n/a	n/a	4	04-08-00
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	04-08-00
Max Defl.	0.025"	n/a	n/a	4	04-08-00
Span / Depth	9	n/a	n/a		00-00-00
Squash Blocks	Valid				

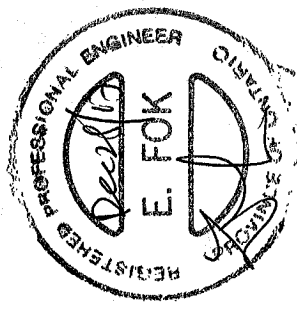
Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,111 lbs	14.7%	7.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,240 lbs	16.5%	8.3%	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 @ (2) o.c., staggered in 2 rows



S152435



Boise Cascade

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

Floor Beam\B07

November 22, 2017 14:54:11



BC CALC® Design Report

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

Build 6080

Job Name: 45147 (4204)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290680.bcc

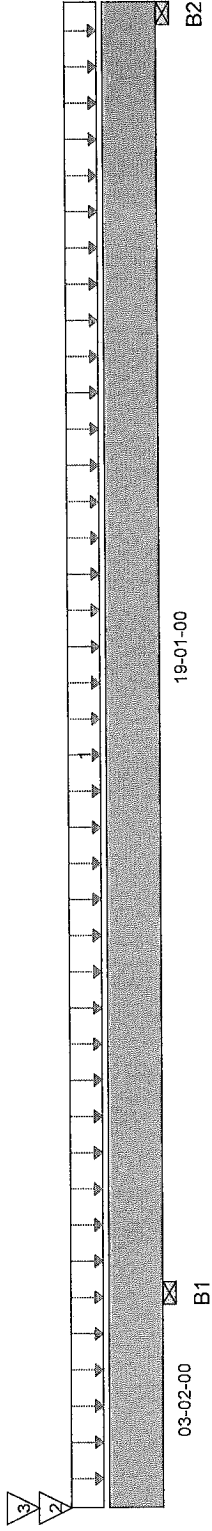
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 22-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,862 / 0	935 / 0		
B2, 3-1/2"	515 / 183	226 / 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	22-03-00	40	15			01-04-00
2	Conc. Pt. (lbs)	L	00-00-00	00-00-00	480	192			n/a
3	Conc. Pt. (lbs)	L	00-00-00	00-00-00	527	256			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,393 ft-lbs	35,392 ft-lbs	12.4%	3	13-05-00
Neg. Moment	-7,158 ft-lbs	-35,392 ft-lbs	20.2%	1	03-02-00
End Shear	901 lbs	14,464 lbs	6.2%	3	20-11-10
Cont. Shear	2,314 lbs	14,464 lbs	16%	2	02-00-06
Total Load Defl.	2xL/486 (0.156")	0.317"	49.4%	9	00-00-00
Live Load Defl.	2xL/536 (0.142")	0.211"	67.1%	12	00-00-00
Total Neg. Defl.	L/999 (-0.115")	n/a	n/a	9	10-00-06
Max Defl.	0.187"	1"	18.7%	10	12-10-12
Cant. Max Defl.	0.156"	1"	15.6%	9	00-00-00
Span / Depth	19.1	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

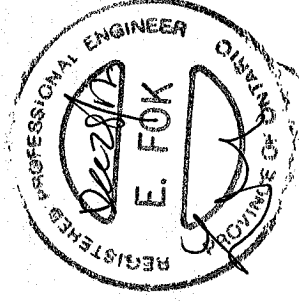
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Wall/Plate	3-1/2" x 3-1/2"	3,962 lbs	52.6%	26.5%	Spruce Pine Fir
B2 Wall/Plate	3-1/2" x 3-1/2"	1,054 lbs	14%	7.1%	Spruce Pine Fir

Cautions

Uplift of 72 lbs found at span 2 - Right.

Notes

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



S152436



Boise Cascade

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

Floor Beam\B08



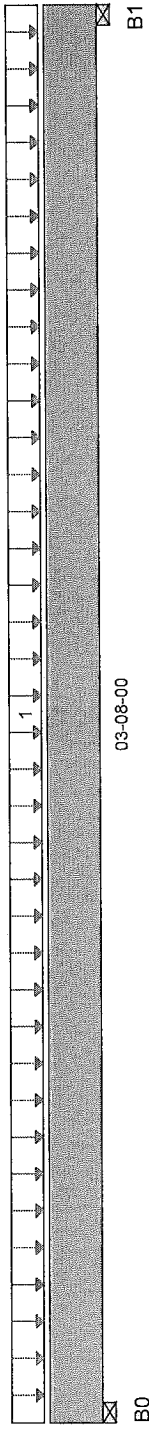
BC CALC® Design Report

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

November 22, 2017 14:55:02

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier: NL
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 03-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	202 / 0	87 / 0			
B1, 3-1/2"	202 / 0	87 / 0			

Load Summary	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	03-08-00	40	15	1.00	1.15	02-09-00

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.

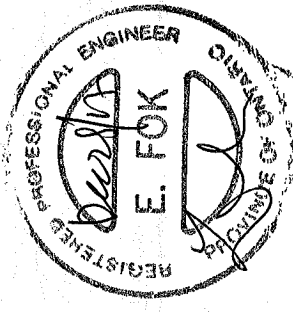
BC CALC®, BC FRAMER®, AJUST®, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	411 lbs	10.9%	5.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	411 lbs	10.9%	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



5152437



Boise Cascade



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

Floor Beam\B09

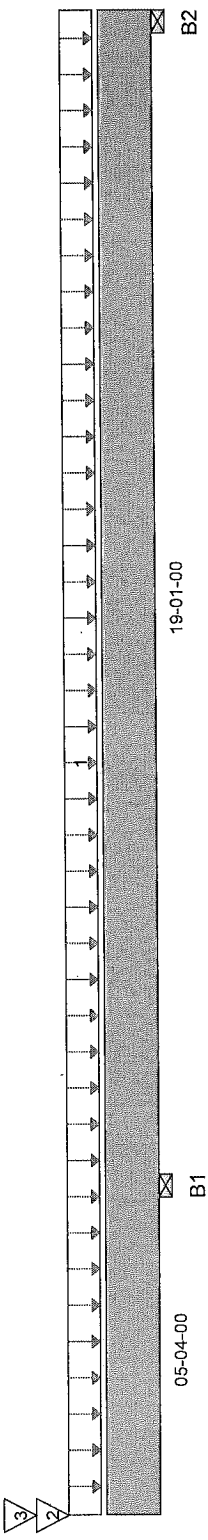
Dry | 2 spans | Left cantilever | 0/12 slope (deg)

November 22, 2017 14:57:21

BC CALC® Design Report

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 24'-05"-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,847 / 0	1,062 / 0		
B2, 3-1/2"	515 / 265	235 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	24-05-00	40	15			01-04-00
2	Conc. Pt. (lbs)	L	00-00-00	00-00-00	593	281			n/a
3	Conc. Pt. (lbs)	L	00-00-00	00-00-00	202	87			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,212 ft-lbs	55,212 ft-lbs	7.6%	3	16-01-04
Neg. Moment	-10,627 ft-lbs	-55,212 ft-lbs	19.2%	1	05-04-00
End Shear	902 lbs	21,696 lbs	4.2%	3	23-01-10
Cont. Shear	2,188 lbs	21,696 lbs	10.1%	1	04-02-06
Total Load Defl.	2xL/413 (0.31")	0.533"	58.1%	9	00-00-00
Live Load Defl.	2xL/509 (0.251")	0.356"	70.7%	12	00-00-00
Total Neg. Defl.	L/1,724 (-0.131")	-0.943"	13.9%	9	12-05-08
Max Defl.	-0.131"	1"	13.1%	9	12-05-08
Cant. Max Defl.	0.31"	1"	31%	9	00-00-00
Span / Depth	19.1	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

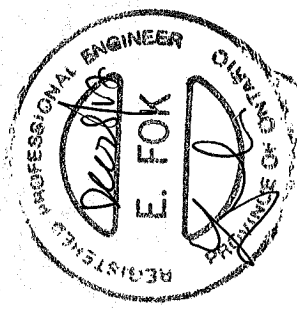
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Wall/Plate	3-1/2" x 5-1/4"	4,099 lbs	36.3%	18.3%	Spruce Pine Fir
B2 Wall/Plate	3-1/2" x 5-1/4"	1,066 lbs	9.4%	4.8%	Spruce Pine Fir

Cautions

Uplift of 186 lbs found at span 2 - Right.

Notes

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





Boise Cascade

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

Floor Beam\B10



BC CALC® Design Report

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

November 23, 2017 09:24:37

Build 6080

Job Name:

Address:

City, Province, Postal Code: Vaughan, ON

Customer:

Code reports:

45147 (4204)

Pine Valley

Gold Park

CCMC 12472-R

File Name: 290680.bcc

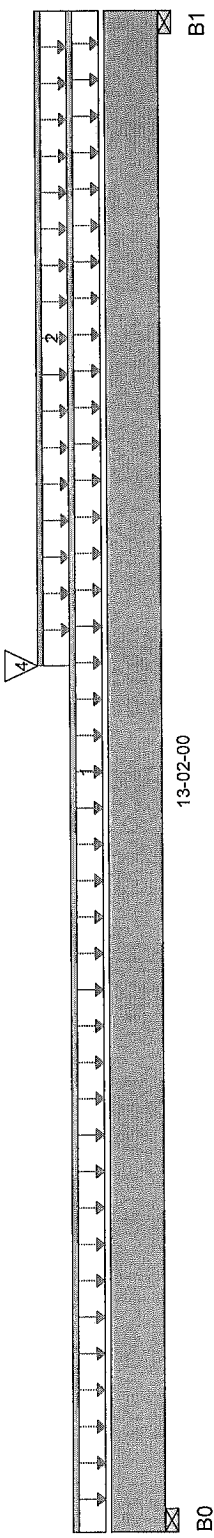
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	296 / 0	580 / 0		
B1, 3-1/2"	415 / 0	640 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	13-02-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	07-06-00	13-02-00	27	14			n/a
4	Conc. Pt. (lbs)	L	07-06-00	07-06-00	202	87			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,549 ft-lbs	17,696 ft-lbs	25.7%	1	07-06-00
End Shear	1,168 lbs	7,232 lbs	16.1%	1	11-10-10
Total Load Defl.	L/802 (0.19")	0.635"	29.9%	4	06-08-11
Live Load Defl.	L/999 (0.075")	n/a	n/a	5	06-08-11
Max Defl.	0.19"	1"	19%	4	06-08-11
Span / Depth	12.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

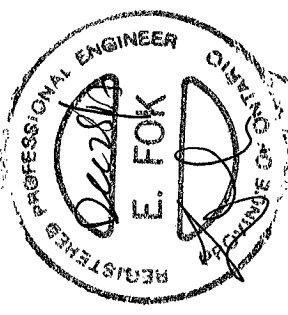
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	812 lbs	33.2%	16.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,422 lbs	37.7%	19%	Spruce Pine Fir

Notes

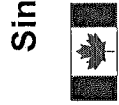
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum Total load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented 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



5152439



Boise Cascade



Single 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 22, 2017 15:00:55

BC CALCO® Design Report

Build 6080

Job Name: 45147 (4204)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290680.bcc

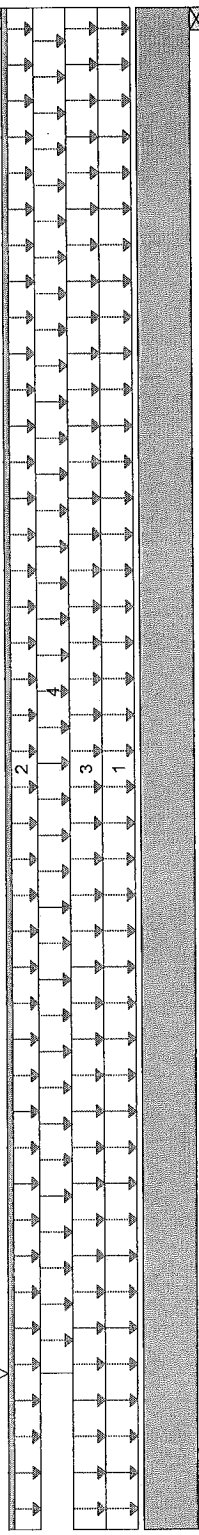
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



06-06-00

B1

Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	358 / 0	936 / 0	788 / 0	
B1, 3-1/2"	358 / 0	738 / 0	410 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	06-06-00	40	20			02-09-00
2	Unf. Lin. (lb/ft)	L	00-00-00	06-06-00		100			n/a
3	Unf. Area (lb/ft²)	L	00-00-00	06-06-00		11		21	01-06-00
4	Unf. Area (lb/ft²)	L	00-08-00	06-06-00		11		21	04-00-00
5	Conc. Pt. (lbs)	L	00-08-00	00-08-00		264		504	n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,539 ft-lbs	17,696 ft-lbs	14.3%	5	03-01-08
End Shear	1,442 lbs	7,232 lbs	19.9%	5	01-03-06
Total Load Defl.	L/999 (0.026")	n/a	n/a	13	03-02-04
Live Load Defl.	L/999 (0.011")	n/a	n/a	17	03-02-04
Max Defl.	0.026"	n/a	n/a	13	03-02-04
Span / Depth	6.1	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

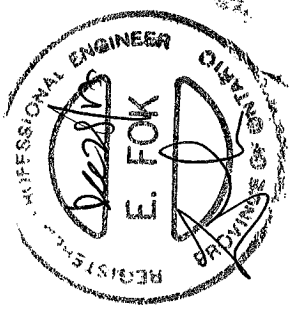
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,532 lbs	67.2%	33.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,717 lbs	45.6%	23%	Spruce Pine Fir

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 CALCO analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4



S.152440



Boise Cascade

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

Floor Beam\B12

November 22, 2017 15:50:29

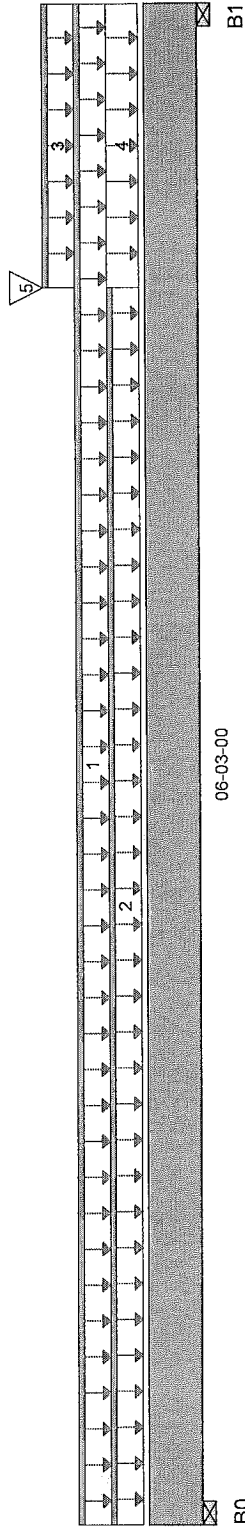


BC CALC® Design Report

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

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 06-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	225 / 0	253 / 0	71 / 0	
B1, 3-1/2"	439 / 0	873 / 0	412 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	06-03-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	05-01-00	27	14			n/a
3	Unf. Lin. (lb/ft)	L	05-01-00	06-03-00		100			n/a
4	Unf. Area (lb/ft^2)	L	05-01-00	06-03-00		11		21	03-00-00
5	Conc. Pt. (lbs)	L	05-01-00	05-01-00	358	738		410	n/a

Controls Summary

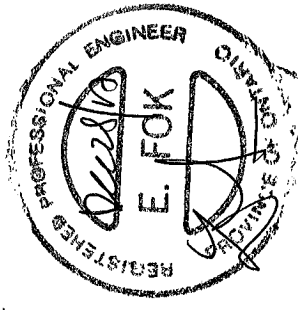
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,655 ft-lbs	35,392 ft-lbs	4.7%	1	05-01-00
End Shear	1,613 lbs	14,464 lbs	11.2%	1	04-11-10
Total Load Defl.	L/999 (0.007")	n/a	n/a	11	03-04-04
Live Load Defl.	L/999 (0.003")	n/a	n/a	15	03-04-04
Max Defl.	0.007"	n/a	n/a	11	03-04-04
Span / Depth	5.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	689 lbs	9.1%	4.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,957 lbs	26%	13.1%	Spruce Pine Fir

Notes

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



5152441



Boise Cascade

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

Floor Beam\B13



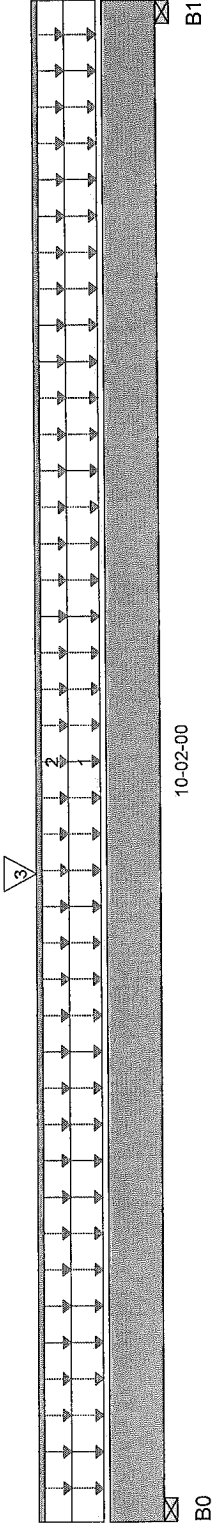
BC CALC® Design Report

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

November 22, 2017 15:52:16

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 10-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,087 / 0	743 / 0		
B1, 3-1/2"	914 / 0	678 / 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	10-02-00	40	15			02-02-00
2	Unf. Lin. (lb/ft)	L	00-00-00	10-02-00		60			n/a
3	Conc. Pt. (lbs)	L	04-04-00	04-04-00	1,120	420			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,135 ft-lbs	17,696 ft-lbs	46%	1	04-04-00
End Shear	2,235 lbs	7,232 lbs	30.9%	1	01-03-06
Total Load Defl.	L/661 (0.176")	0.485"	36.3%	4	04-11-11
Live Load Defl.	L/999 (0.109")	n/a	n/a	5	04-10-13
Max Defl.	0.176"	1"	17.6%	4	04-11-11
Span / Depth	9.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

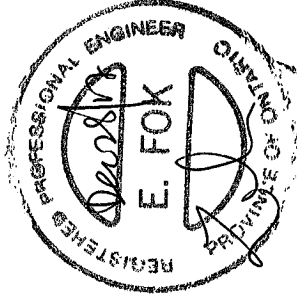
BC CALC®, BC FRAMER®, AJUST™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,560 lbs	67.9%	34.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,219 lbs	58.9%	29.7%	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\B14



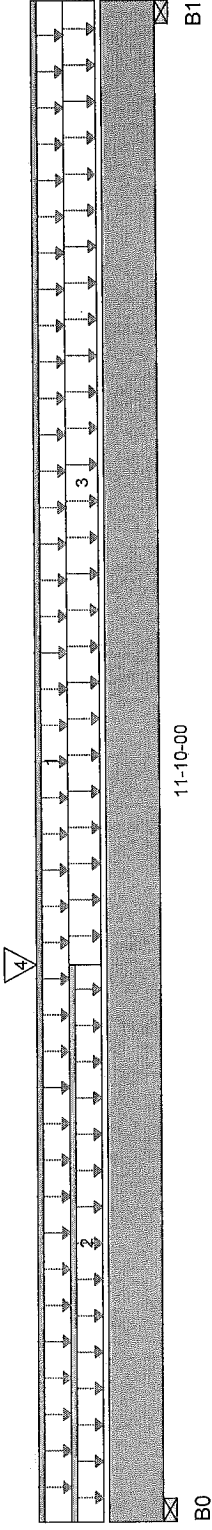
BC CALC® Design Report

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

November 22, 2017 15:52:27

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.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"	1,166 / 0	724 / 0		
B1, 3-1/2"	1,234 / 0	645 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	11-10-00	27	14		1.00 1.15	n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	27	14			n/a
3	Unf. Area (lb/ft²)	L	04-04-00	11-10-00	40	15			03-06-00
4	Conc. Pt. (lbs)	L	04-04-00	04-04-00	914	678			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,738 ft-lbs	17,696 ft-lbs	55%	1	04-04-00
End Shear	2,496 lbs	7,232 lbs	34.5%	1	01-03-06
Total Load Defl.	L/446 (0.306")	0.569"	53.8%	4	05-09-08
Live Load Defl.	L/708 (0.193")	0.379"	50.8%	5	05-09-08
Max Defl.	0.306"	1"	30.6%	4	05-09-08
Span / Depth	11.5	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

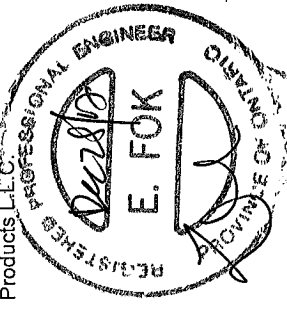
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,655 lbs	70.4%	35.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,658 lbs	70.5%	35.6%	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





Boise Cascade

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

Floor Beam\B15

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

November 22, 2017 15:54:17

BC CALC® Design Report



Build 6080

Job Name:

45147 (4204)

Address:

Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 290680.bcc

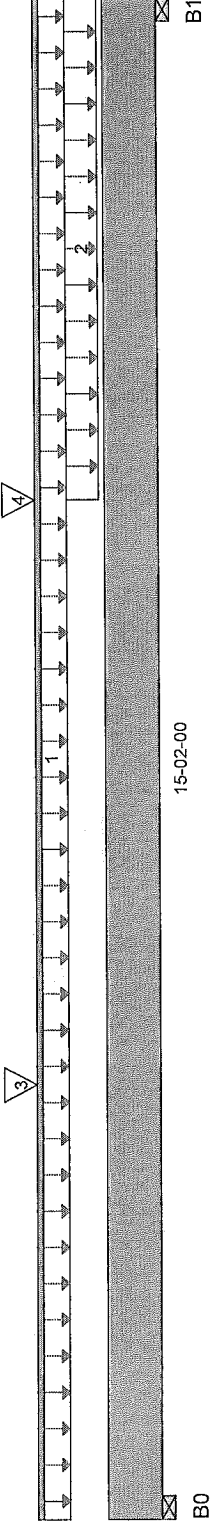
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 15'-02"-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,598 / 0	1,234 / 0		
B1, 3-1/2"	2,365 / 0	1,586 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	15-02-00	27	74			n/a
2	Unf. Area (lb/ft²)	L	10-02-00	15-02-00	40	15			06-00-00
3	Conc. Pt. (lbs)	L	04-04-00	04-04-00	1,120	420			n/a
4	Conc. Pt. (lbs)	L	10-02-00	10-02-00	1,234	645			n/a

Controls Summary

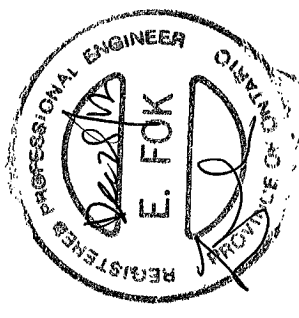
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	18,643 ft-lbs	35,392 ft-lbs	52.7%	1	10-02-00
End Shear	4,735 lbs	14,464 lbs	32.7%	1	13-10-10
Total Load Defl.	L/336 (0.526")	0.735"	71.5%	4	07-09-09
Live Load Defl.	L/570 (0.31")	0.49"	63.2%	5	07-09-09
Max Defl.	0.526"	1"	52.6%	4	07-09-09
Span / Depth	14.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	3,940 lbs	52.3%	26.4%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	5,530 lbs	73.4%	37%	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 @ (2") o.c. staggered in 2 rows



S.152444



Boise Cascade

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

Floor Beam\B16

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

November 23, 2017 09:22:16



BC CALC® Design Report

Build 6080

Job Name: 45147 (4204)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290680.bcc

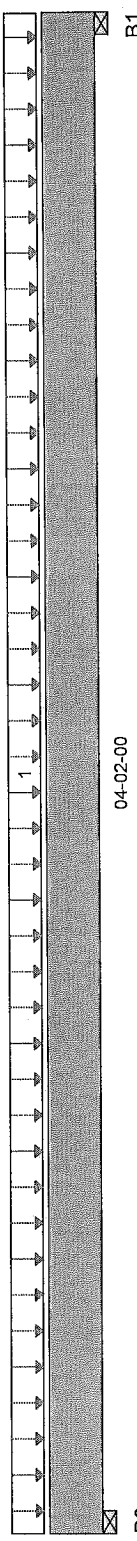
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



04-02-00

Total Horizontal Product Length = 04-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	750 / 0	294 / 0		
B1, 3-1/2"	750 / 0	294 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	04-02-00	40	15		1.00 1.15	09-00-00

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.

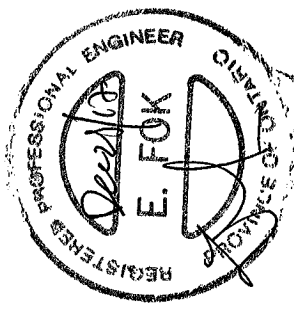
BC CALC®, BC FRAMER®, AUS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,492 lbs	39.6%	20%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,492 lbs	39.6%	20%	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.152445



Boise Cascade

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

Floor Beam\B17

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

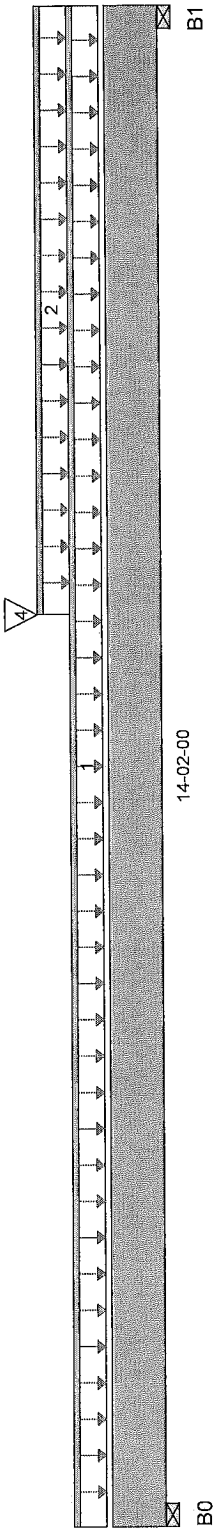
November 23, 2017 09:42:39



BC CALC® Design Report

Build 6080
Job Name: 45147 (4204)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290680.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 14'-02'-00"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	300 / 0	616 / 0		
B1, 3-1/2"	437 / 0	684 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	14-02-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	08-06-00	14-02-00	27	14			n/a
4	Conc. Pt. (lbs)	L	08-06-00	08-06-00	202	87			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,028 ft-lbs	17,696 ft-lbs	28.4%	1	08-06-00
End Shear	1,256 lbs	7,232 lbs	17.4%	1	12-10-10
Total Load Defl.	L/662 (0.248")	0.685"	36.2%	4	07-01-12
Live Load Defl.	L/999 (0.095")	n/a	n/a	5	07-04-07
Max Defl.	0.248"	1"	24.8%	4	07-01-12
Span / Depth	13.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

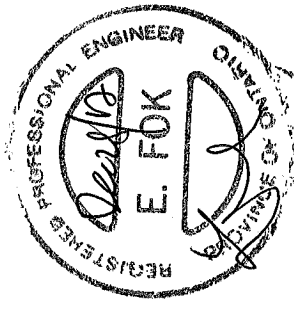
Disclosure

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.

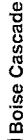
Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	863 lbs	35.2%	17.8%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,510 lbs	40.1%	20.2%	Spruce Pine Fir

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



S.152446



BC CALC® Design Report

Build 6080

Job Name:

Address:

Pine Valley

.:Vaughan, ON

Gold Park

CCMC 12

File Name: 290680.bcc

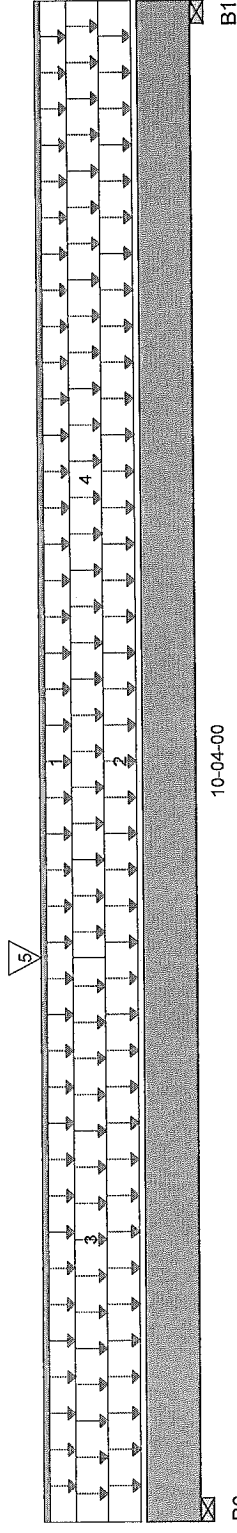
Description: Second Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0 3-1/2"	139 / 0	1,732 / 0	2,063 / 0	
B1 3-1/2"	139 / 0	1,961 / 0	2,501 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	1.00	0.65	1.00	1.15	n/a
1	Unf. Lin. (lb/ft)	L	00-00-00	10-04-00	27	114			n/a
2	Unf. Area (lb/ft^2)	L	00-00-00	10-04-00		11	21		01-00-00
3	Unf. Area (lb/ft^2)	L	00-00-00	03-10-00		11	21		03-00-00
4	Unf. Area (lb/ft^2)	L	03-10-00	10-04-00		11	21		19-00-00
5	Conc. Pt. (lbs)	L	03-10-00	03-10-00		792	1,512		n/a

Controls Summary

	04-05-13	09-00-10	05-01-11	05-01-11	05-01-11	00-00-00
Pos. Moment	16,873 ft-lbs	35,392 ft-lbs	47.7%			5
End Shear	4,894 lbs	14,464 lbs	33.8%			5
Total Load Defl.	L/593 (0.2")	0.494"	40.5%			13
Live Load Defl.	L/999 (0.11")	n/a	n/a			17
Max Defl.	0.2"	1"	20%			13
Span / Depth	10	n/a	n/a			
Squash Blocks	Valid					

Bearing Supports

Panel	Panel Description	Weight (lbs)	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	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 ϕ has been applied to all presented results per CSA O86.

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

086

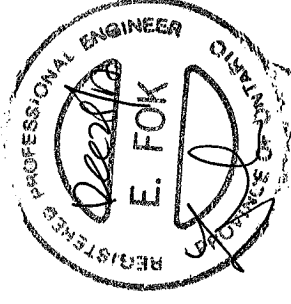
Design based on Drv Service Condition.

Importance Factor: Normal Part code: Part 4

Nail one ply to another with

3 1/2" spiral nails @ 17" o.c.

o.c, staggered in 2 rows



S. 152447



Boise Cascade

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

Floor Beam\B19

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

November 23, 2017 10:33:44



BC CALC® Design Report

Build 6080

Job Name:

45147 (4204)

Address:

Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 290680.bcc

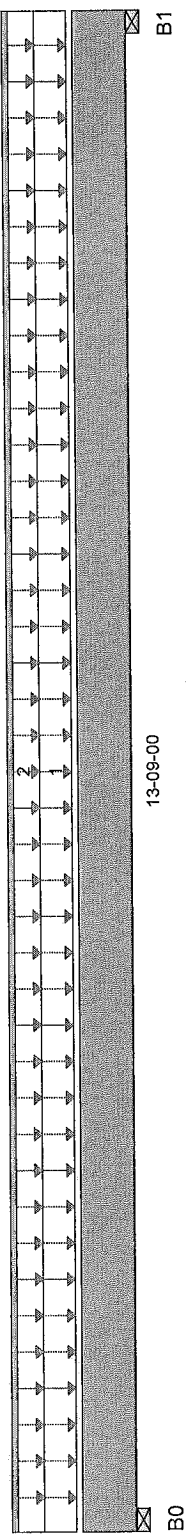
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 13-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,100 / 0	1,029 / 0		
B1, 3-1/2"	1,100 / 0	1,029 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft^2)	L	00-00-00	13-09-00	40	20			04-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	13-09-00	60	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,430 ft-lbs	23,220 ft-lbs	40.6%	1	06-10-08
End Shear	2,473 lbs	11,571 lbs	21.4%	1	01-01-00
Total Load Defl.	L/367 (0.435")	0.665"	65.4%	4	06-10-08
Live Load Defl.	L/710 (0.225")	0.443"	50.7%	5	06-10-08
Max Defl.	0.435"	1"	43.5%	4	06-10-08
Span / Depth	16.8	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"	2,936 lbs	39%	19.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,936 lbs	39%	19.6%	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.

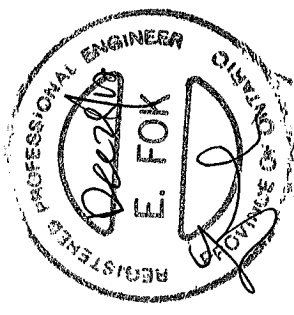
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

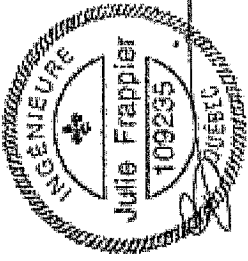
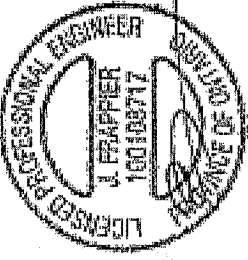
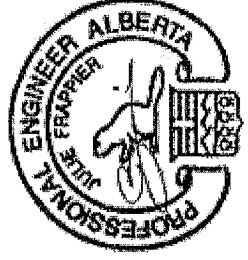
Nail one ply to another with

3 1/2" spiral nails @ 12"

o.c., staggered in 2 rows



S.152448



Maximum Floor Spans

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

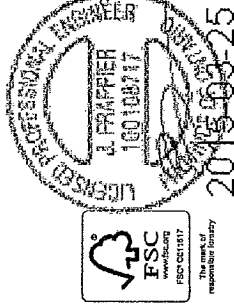
Depth	Series	Bare			1/2" Gypsum Ceiling		
		12"	16"	On Centre Spacing	12"	16"	On Centre Spacing
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	15'-5"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	16'-7"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	17'-3"	15'-11"
	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'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	17'-0"
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	19'-9"	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"	19'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	19'-7"
	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"	21'-9"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"
	NI-70	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"	16'-10"
	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"	19'-3"
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"	20'-3"
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	21'-3"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"
14"	NI-90x	24'-3"	22'-6"	20'-4"	20'-4"	24'-8"	22'-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.nordicewp.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.
- Whenever possible, field-cut holes must NEVER be cut, notched, or otherwise modified. 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
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	12-3/4"
	NI-40x	0-7"	1-6"	3-0"	4-4"	6-0"	7-5"	---	---	---	---	---
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---
	NI-80	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---
	NI-90x	2-3"	3-6"	5-0"	6-4"	8-0"	8-4"	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-5"	7-9"	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---
	NI-80	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	8-4"	10-0"	11-2"	---	---
	NI-90x	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-5"	10-3"	11-4"	---	---
14"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-5"	8-9"	10-2"	---	---
	NI-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---
	NI-60	0-7"	0-8"	1-0"	2-4"	3-9"	3-9"	5-2"	6-0"	8-3"	10-2"	---
	NI-80	0-7"	0-8"	1-8"	3-0"	4-3"	4-3"	5-8"	7-2"	8-0"	11-9"	---
	NI-90x	0-7"	0-8"	1-10"	3-4"	4-9"	5-10"	6-2"	7-3"	8-9"	10-4"	13-5"
16"	NI-20	0-7"	0-8"	1-0"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"
	NI-40x	0-7"	0-8"	0-8"	2-0"	3-3"	3-3"	4-6"	6-5"	7-5"	---	---
	NI-60	0-7"	0-8"	1-6"	3-1"	4-5"	5-3"	6-3"	8-5"	9-2"	10-8"	12-0"
	NI-80	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-8"	8-0"	9-0"	11-0"	12-3"
	NI-90x	0-7"	0-8"	0-9"	2-0"	3-6"	4-0"	5-0"	6-9"	7-9"	8-4"	10-2"

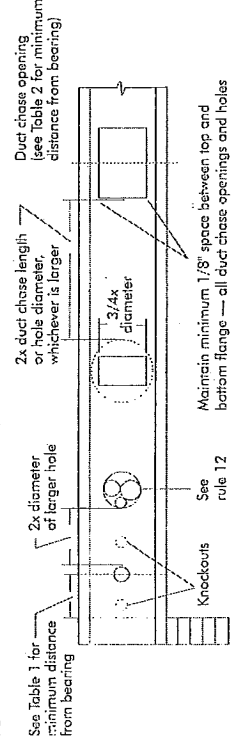
1. Above table may be used for I-joist spacing of 24 inches on centre or less.

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 unfastened I-joists. Once sheathed, do not over-stress I-joists with concentrated loads from building materials.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, end/or cross-bracing at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on 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. Top ends of adjoining bracing over at least two I-joists.
- Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
- Never install a damaged I-joist.

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

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
9-1/2"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	---	---
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"	---	---
	NI-80	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-5"	8-1"	8-4"	---	---
	NI-90x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---
11-7/8"	NI-20	5-0"	6-2"	7-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"	---	---
	NI-40x	6-8"	7-2"	7-6"	8-0"	8-6"	9-1"	9-6"	10-1"	10-9"	---	---
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"	---	---
	NI-80	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-4"	---	---
	NI-90x	7-6"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"	---	---
14"	NI-20	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"	---	---
	NI-40x	8-7"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-3"	13-0"	---	---
	NI-60	8-9"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"	---	---
	NI-80	8-7"	9-1"	9-5"	9-9"	10-1"	10-7"	11-1"	11-6"	12-1"	---	---
	NI-90x	9-2"	9-8"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"	---	---
16"	NI-20	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"	---	---
	NI-40x	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-3"	14-0"	---	---
	NI-60	10-4"	10-9"	11-3"	11-9"	12-1"	12-7"	13-1"	13-8"	14-4"	---	---
	NI-80	10-9"	11-2"	11-8"	12-0"	12-6"	13-0"	13-6"	14-2"	14-10"	---	---
	NI-90x	11-1"	11-5"	11-10"	12-4"	12-10"	13-2"	13-9"	14-4"	15-2"	---	---

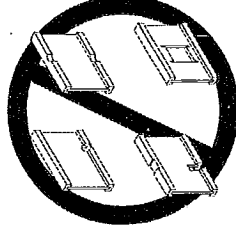
1. Above table may be used for I-joist spacing of 24 inches on centre or less.

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 prescored 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.

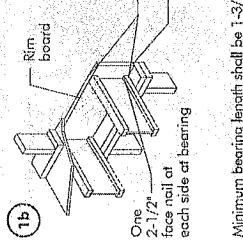
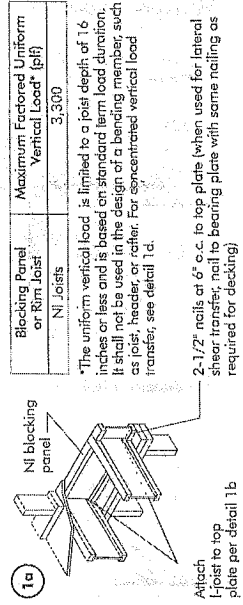
For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Storing the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good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



PRODUCT WARRANTY

Changers Chikingsman guarantee that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

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



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

*The uniform vertical load is limited to a rim board depth of 1 1/2 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

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

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

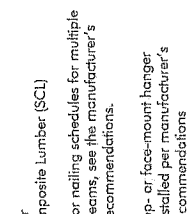
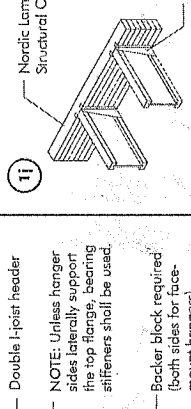
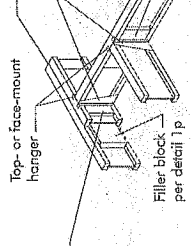
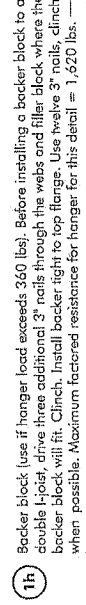
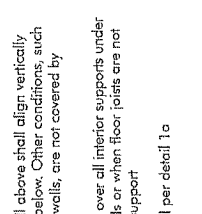
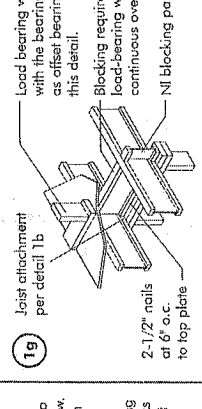
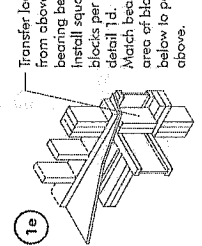
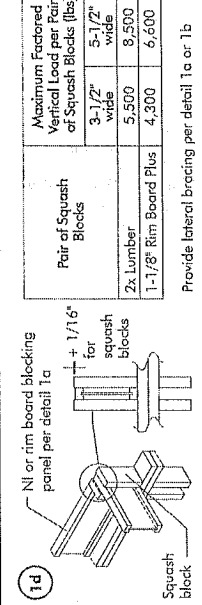
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Blocking Panel or Rim Joist

Maximum Factored Uniform Vertical Load* (plf)

1-1/8" Rim Board Plus

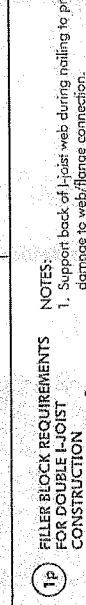
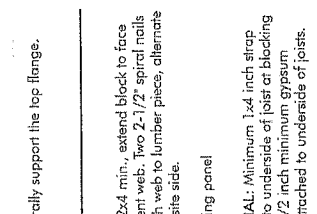
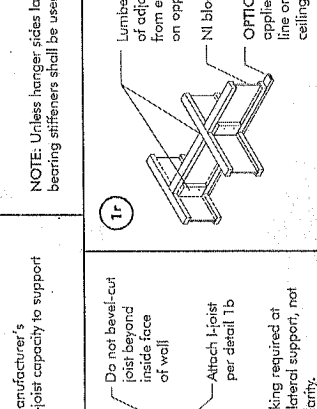
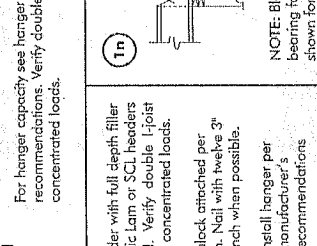
8,090



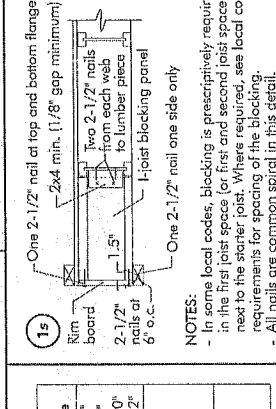
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O332 or CAN/CSA-O337 Standard.

** 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".

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



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



All nails shown in the above details are 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.

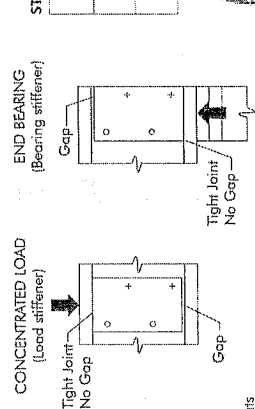
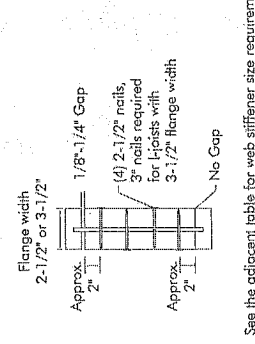
WEB STIFFENERS

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 flange 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.

WEB STIFFENER INSTALLATION DETAILS

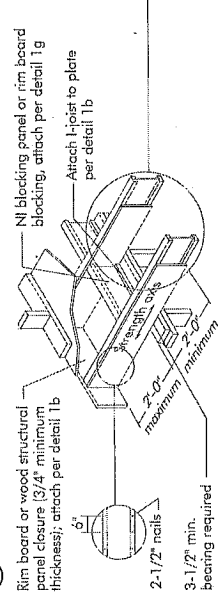
FIGURE 2



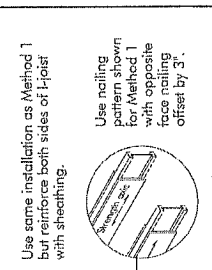
All nails shown in the above details are common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE

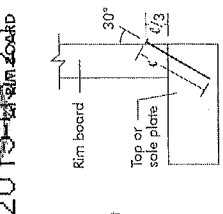


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

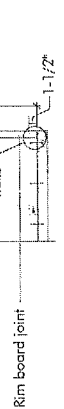


RIM BOARD INSTALLATION DETAILS

8c ATTACHMENT DETAILS WHERE RIM BOARDS ABOUT

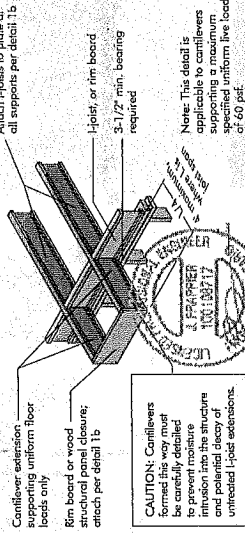


NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4" required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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



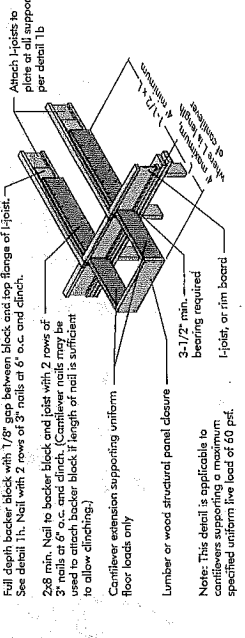
CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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



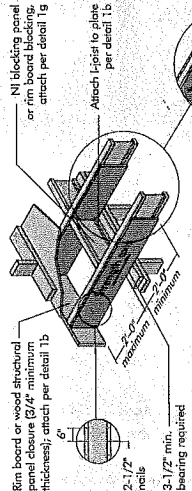
CAUTION: Cantilevers formed this way must be carefully designed and constructed to prevent intrusion into the structure and potential decay of untreated I-joist extensions.

4b) LUMBER CANTILEVER DETAIL FOR BALCONIES (NO WALL LOAD)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

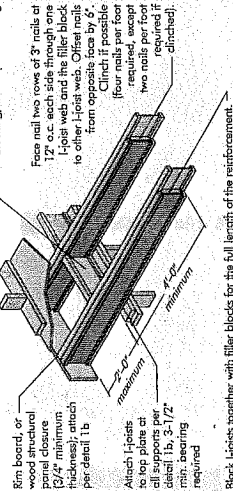


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- 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 softwood 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\" nailing offset by 3\".

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\" nailing along the centerline of the reinforcing panel from each side. Clinch when possible.

FIGURE 4 (continued)

See table below for NI reinforcement requirements at maximum cantilever.

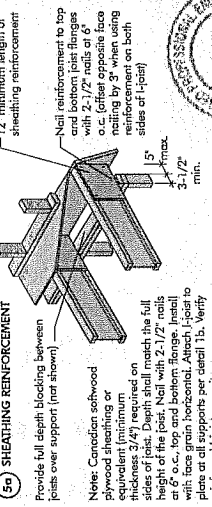
CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF LOADING (UNFACTORED)											
	1L = 30 psf DL = 15 psf				1L = 40 psf DL = 15 psf				1L = 50 psf DL = 15 psf			
	12	16	19 1/2	24	12	16	19 1/2	24	12	16	19 1/2	24
9 1/2	N	N	N	N	N	N	N	N	N	N	N	N
11 7/8	N	N	N	N	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N

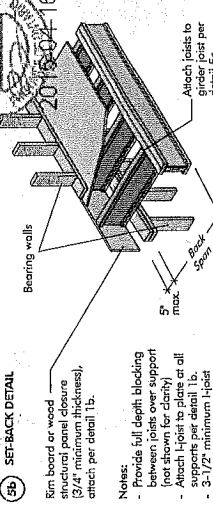
- N = No reinforcement required.
- NI = Reinforced with 3/4\" wood structural panel on one side only.
- 2 = Reinforced with 3/4\" wood structural panel on both sides, or double I-joist.
- X = Try a deeper joist or closer spacing.
- Maximum design load shall be: 15 psf roof dead load, 40 psf roof live load, 80 psf total load. Wall load is based on 30\" maximum width window or door opening.

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

5a) SHEATHING REINFORCEMENT



5b) SET-BACK DETAIL



5c) SET-BACK CONNECTION

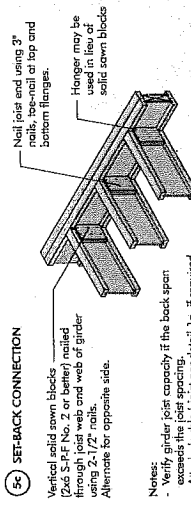


FIGURE 5 (continued)

See table below for NI reinforcement requirements at maximum cantilever.

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF LOADING (UNFACTORED)											
	1L = 30 psf DL = 15 psf				1L = 40 psf DL = 15 psf				1L = 50 psf DL = 15 psf			
	12	16	19 1/2	24	12	16	19 1/2	24	12	16	19 1/2	24
9 1/2	N	N	N	N	N	N	N	N	N	N	N	N
11 7/8	N	N	N	N	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N

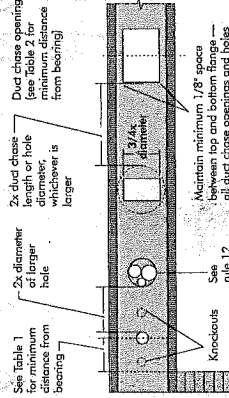
- N = No reinforcement required.
- NI = Reinforced with 3/4\" wood structural panel on one side only.
- 2 = NI reinforced with 3/4\" wood structural panel on both sides, or double I-joist.
- X = Try a deeper joist or closer spacing.
- Maximum design load shall be: 15 psf roof dead load, 40 psf roof live load, 80 psf total load. Wall load is based on 30\" maximum width window or door opening.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 1-pipe top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
- The sides of square holes or larger holes of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges that exceed twice the diameter of the larger round hole or the longer rectangular hole or duct chase opening and each hole and each duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout in a web, may be utilized anywhere it occurs, and may not 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 transversely 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 three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

Knockouts are precast holes provided for the contractor's convenience to install electrical and/or plumbing lines. They shall be cut in a workmanlike manner and 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 steep saw.

For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting with a 1/4 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.

INSTALLING THE GLUED FLOOR SYSTEM

- Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- Step a chalk line across the joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when stepped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
- 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 TAG edges, is recommended. (Use a spacer tool or run 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. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Maximum Spacing	Minimum Spacing	Common Spacing	Ring Shank Nail or Screw	Minimum Spacing	Minimum Spacing
Edges	Interior	Edges	Interior	Edges	Interior
16"	24"	2"	1-3/4"	2"	6"
20"	24"	2"	1-3/4"	2"	6"
24"	24"	2"	1-3/4"	2"	6"

- 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 OSB panels are used, use only OSB panels with adhesive applied to the back of the panels. Check with panel manufacturer.

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

IMPORTANT NOTE:
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum span rating of the floor system. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

TABLE 1 LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Span	2	3	4	5	6	7	8	8-5/8	10	10-5/8	11	12	12-1/2
Minimum distance from inside face of any support to centre of hole (in.)	10	15	20	25	30	35	40	45	50	55	60	65	70
Maximum distance from inside face of any support to centre of hole (in.)	10	15	20	25	30	35	40	45	50	55	60	65	70
Minimum distance from inside face of any support to centre of hole (in.)	10	15	20	25	30	35	40	45	50	55	60	65	70
Maximum distance from inside face of any support to centre of hole (in.)	10	15	20	25	30	35	40	45	50	55	60	65	70

1. Above table may be used for 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. Distance in this chart are based on uniformly loaded joists.

OPTIONAL:

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

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

Where:

Actual = Actual span

Maximum = Maximum span

D = Distance from inside face of hole to face of any support

If $\frac{\text{Actual span}}{\text{Maximum span}} < 1$, use 1 in the above calculation for $\frac{\text{Actual span}}{\text{Maximum span}}$.

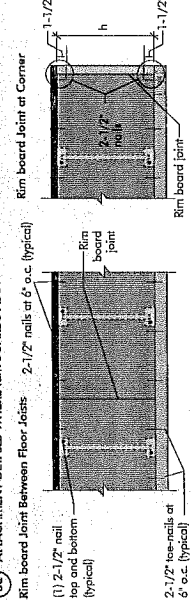
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth	Joist Spacing	Minimum distance from inside face of any support to centre of hole (in.)												
		2	3	4	5	6	7	8	8-5/8	10	10-5/8	11	12	12-1/2
6-1/2"	24"	10	15	20	25	30	35	40	45	50	55	60	65	70
6-1/2"	36"	10	15	20	25	30	35	40	45	50	55	60	65	70
6-1/2"	48"	10	15	20	25	30	35	40	45	50	55	60	65	70
11-7/8"	24"	10	15	20	25	30	35	40	45	50	55	60	65	70
11-7/8"	36"	10	15	20	25	30	35	40	45	50	55	60	65	70
11-7/8"	48"	10	15	20	25	30	35	40	45	50	55	60	65	70
14"	24"	10	15	20	25	30	35	40	45	50	55	60	65	70
14"	36"	10	15	20	25	30	35	40	45	50	55	60	65	70
14"	48"	10	15	20	25	30	35	40	45	50	55	60	65	70
16"	24"	10	15	20	25	30	35	40	45	50	55	60	65	70
16"	36"	10	15	20	25	30	35	40	45	50	55	60	65	70
16"	48"	10	15	20	25	30	35	40	45	50	55	60	65	70

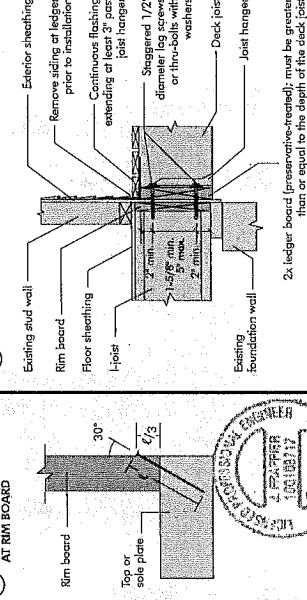
1. Above table may be used for joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. This table is based on simple span conditions. For other conditions, contact your local distributor.
4. This table is based on simple span conditions. For other conditions, contact your local distributor.

RIM BOARD INSTALLATION DETAILS

8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



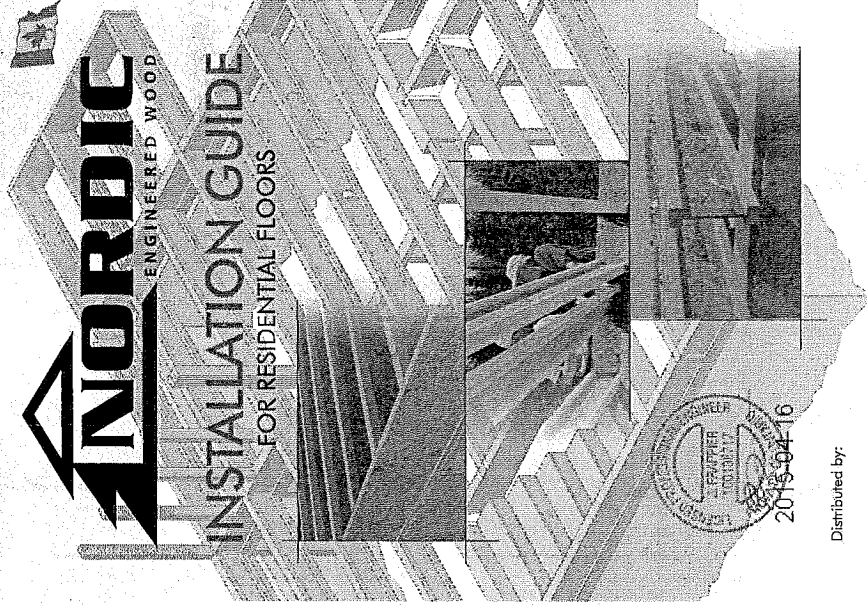
8b) TOE-NAIL CONNECTION AT RIM BOARD



PRODUCT WARRANTY

Our Company warrants its products to be free from manufacturing defects in material and workmanship for a period of 10 years from the date of installation.

Excludes: Conditions of use, improper installation, or damage caused by fire, flood, or other external factors.



SAFETY AND CONSTRUCTION PRECAUTIONS



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

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied 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 flange of the I-joists. Until this sheathing is applied, temporary bracing or shoring, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or shoring must be 1x4 inch minimum, at least 8 feet long and placed at 8-foot intervals. Bracing or shoring must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
3. For continuous I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.



Never stack building materials on 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 size and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

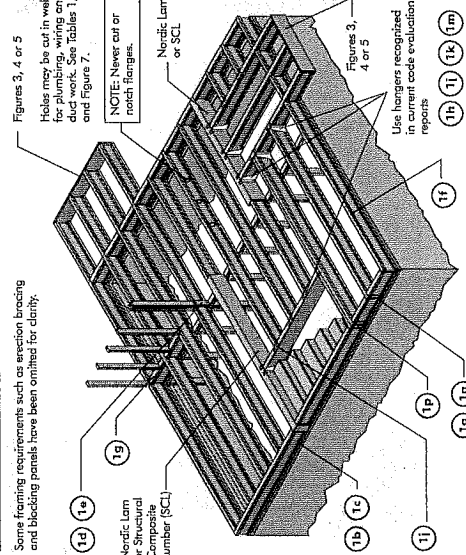
STORAGE AND HANDLING GUIDELINES

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

INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports to foundation must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearing.
6. When using hangers, seal I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may crease be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an I-joist-compatible depth attached.
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 this end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or shoring must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or a separate underlayment layer is installed.
15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

FIGURE 1 TYPICAL NORDIC I-JOIST FRAMING AND CONSTRUCTION DETAILS



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

- 1a. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1b. Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1c. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1d. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1e. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1f. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1g. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1h. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1i. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1j. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1k. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1l. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1m. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1n. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1o. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1p. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1q. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1r. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1s. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1t. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1u. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1v. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1w. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1x. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1y. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.
- 1z. Attach I-joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

- 1a. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1b. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1c. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1d. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1e. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1f. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1g. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1h. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1i. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1j. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1k. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1l. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1m. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1n. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1o. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1p. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1q. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1r. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1s. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1t. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1u. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1v. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1w. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1x. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1y. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.
- 1z. Attach rim board to top plate using 2-1/2" wire or spiral nail at top and bottom flange. To avoid splitting flange, start nail at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Maximum End-use Vertical Load per Pair of Squash Blocks (lbs)	3-1/2" wide	5-1/2" wide
2x Lumber	5,500	8,000
1-1/8" Rim Board Plus	4,300	6,600

Provide lateral bracing per detail 1a, 1b, or 1c

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

7. SI units conversion:

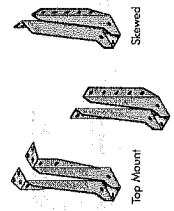
1 inch = 25.4 mm
1 foot = 0.305 m

7. SI units conversion:

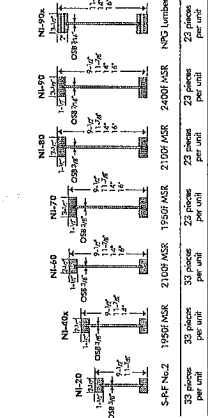
1 inch = 25.4 mm
1 foot = 0.305 m

SI units conversion: 1 inch = 25.4 mm

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



CCMC EVALUATION REPORT 13032-R



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

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

1-point for loads up to 6,000 plf (filler block not required). Attach 1-point to top flange of joist at 2 1/2" max. at 6' o.c.

Provide backer for siding attachment

Wall sheathing, as required

Joist — attached per detail

2 1/2"

Double hoist header

Top- or face-mount hanger

Backer block

Cinch

Nose

U.S. PATENT OFFICE

2015-04-16

Top-of-face hanger installed per manufacturer's recommendations

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

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

Filler block shown. Nautic Lam or SCL headers may also be used. Verify double hanger for concentrated loads.

Filler block per detail 1P

Install hanger per manufacturer's recommendations

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

Top-mount hanger installed per manufacturer's recommendations

Note: Unless hanger slides laterally into the top rail, bearing stiffeners shall be used.

Do not bevel-cut
block beyond inside
face of wall.

hangers)

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

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

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

* Minimum grade for backer block material shall be S-3-F No. 2 or better for solid bases, turning and wall structural points conforming to S-3-F No. 2.

** For backer block hangers use net joint depth minus 3-1/4" for joints with 1-1/2" thick flanges. For 2" thick flanges use net depths minus 4-1/4".

Blocking required
nailing for lateral
br., not shown
any.

[illegible]

Notes:

- Use the same 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 requirement for spacing of the blocking.
- Minimum 1 1/2 inch gap applied to underside of joist at blocking
- 1/2 inch minimum gap between blocking and joist