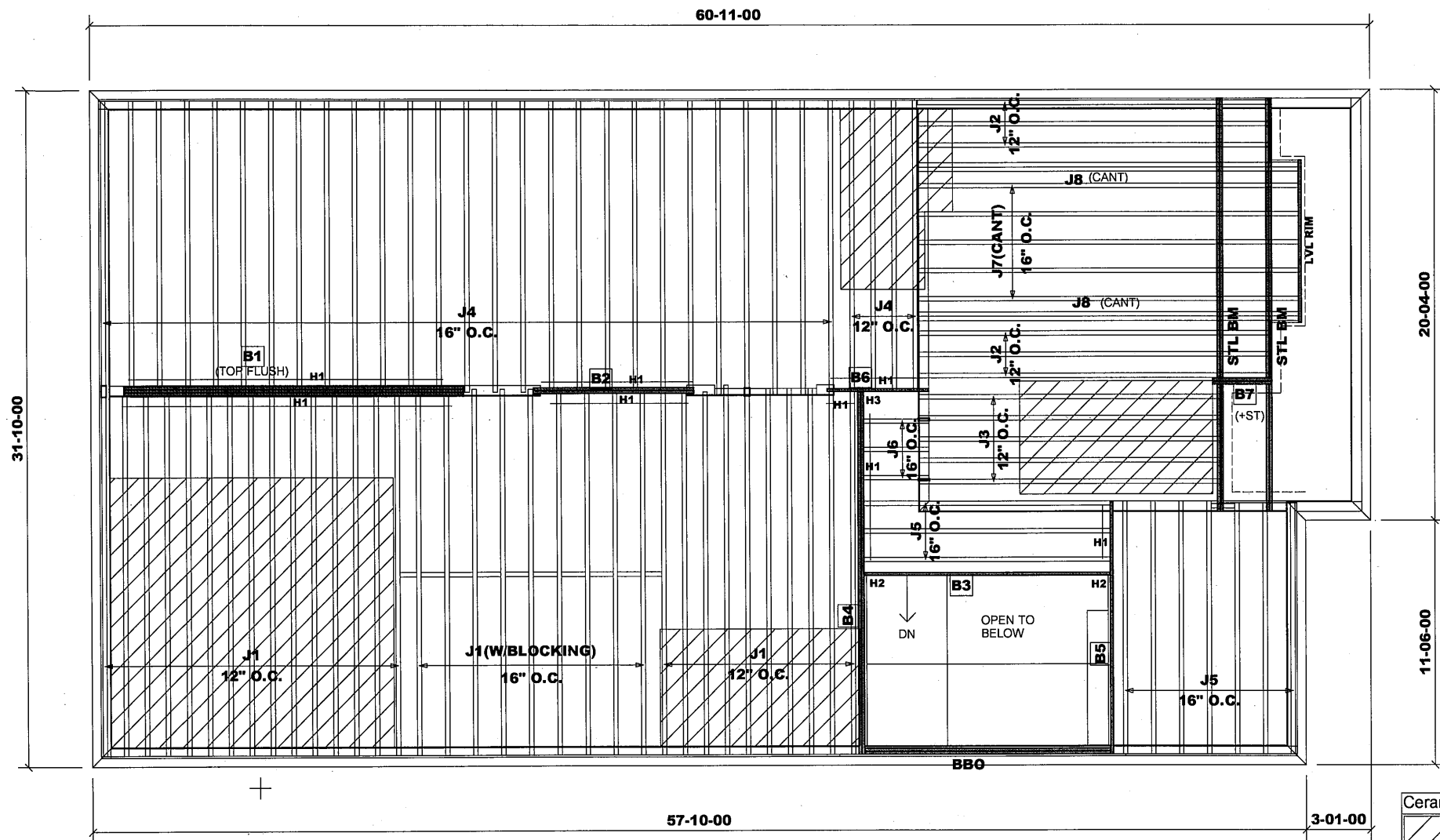




Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-20	1	34
J2	17-00-00	11 7/8" NI-20	1	6
J3	15-00-00	11 7/8" NI-20	1	5
J4	14-00-00	11 7/8" NI-20	1	31
J5	12-00-00	11 7/8" NI-20	1	10
J6	4-00-00	11 7/8" NI-20	1	3
J7	19-00-00	11 7/8" NI-40x	1	5
J8	19-00-00	11 7/8" NI-40x	2	4
B4	18-00-00	VERSALAM-12 2.0E	2	2
B1	17-00-00	VERSALAM-14 2.0E	3	3
B3	12-00-00	VERSALAM-12 2.0E	1	1
B5	12-00-00	VERSALAM-12 2.0E	1	1
LVL RIM	8-00-00	VERSALAM-12 2.0E	1	1
B2	8-00-00	VERSALAM-12 2.0E	2	2
B6	5-00-00	VERSALAM-12 2.0E	1	1
B7	3-00-00	VERSALAM-12 2.0E	2	2

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(FM)
H3-----HGUS410(FM)

NOTE:

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

RIMBOARD

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

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

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

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

REVISION: December 18, 2017

MODEL: UNIT 4004 - EL.A
+ OPT. LOGGIA

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 20'

98839 / June 28, 2018
9595 / Jan. 2, 2018

S. 152651 - S. 152671

JT/PL: 45147/95234

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: (290677)

Project: Pine Valley

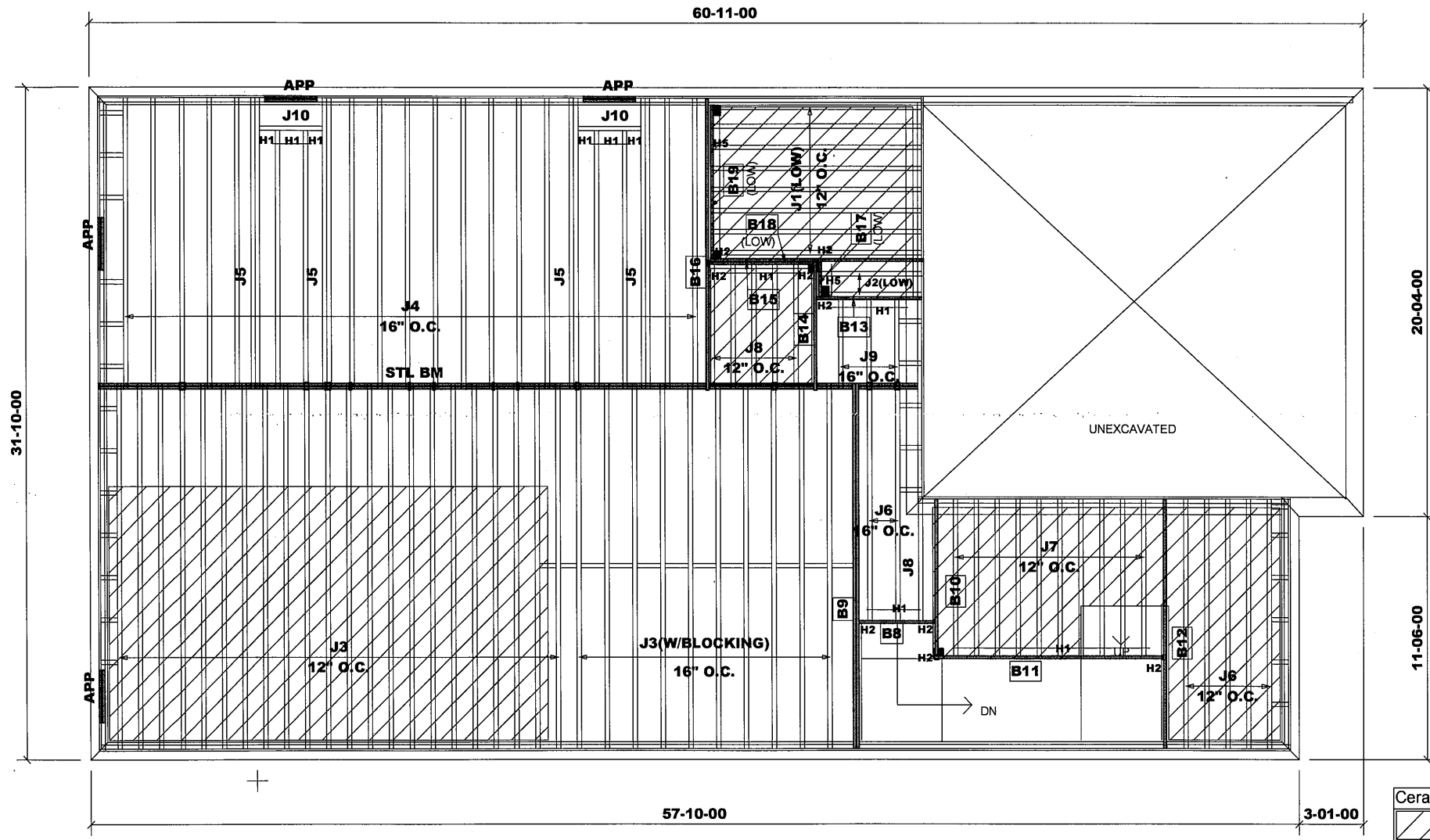
Date: November 20, 2017

Sheet: 1 of 8

Maple, Ontario

Home Lumber

299743



Products				
PlotID	Length	Product	Plies	Net Qty
J1	11'-00"-00	9 1/2" NI-20	1	8
J2	5'-00"-00	9 1/2" NI-20	1	2
J3	18'-00"-00	11 7/8" NI-20	1	32
J4	14'-00"-00	11 7/8" NI-20	1	19
J5	14'-00"-00	11 7/8" NI-20	2	8
J6	12'-00"-00	11 7/8" NI-20	1	7
J7	8'-00"-00	11 7/8" NI-20	1	10
J8	6'-00"-00	11 7/8" NI-20	1	6
J9	5'-00"-00	11 7/8" NI-20	1	3
J10	3'-00"-00	11 7/8" NI-20	1	2
B9	18'-00"-00	VERSALAM-12 2.0E	2	2
B16	14'-00"-00	VERSALAM-12 2.0E	1	1
B11	12'-00"-00	VERSALAM-12 2.0E	1	1
B12	12'-00"-00	VERSALAM-12 2.0E	1	1
B18	11'-00"-00	VERSALAM-10 2.0E	1	1
B19	8'-00"-00	VERSALAM-10 2.0E	1	1
B10	8'-00"-00	VERSALAM-12 2.0E	1	1
B14	7'-00"-00	VERSALAM-12 2.0E	1	1
B15	6'-00"-00	VERSALAM-12 2.0E	1	1
B13	5'-00"-00	VERSALAM-12 2.0E	1	1
B8	4'-00"-00	VERSALAM-12 2.0E	1	1
B17	2'-00"-00	VERSALAM-10 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.

REVISION: June 29, 2018

MODEL: UNIT 4004 - EL.A
+ OPT. LOGGIA

First Floor Framing

Do not scale - refer to architectural plans for dimensions

JT/PL: 45147/98839

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 299743(290677)

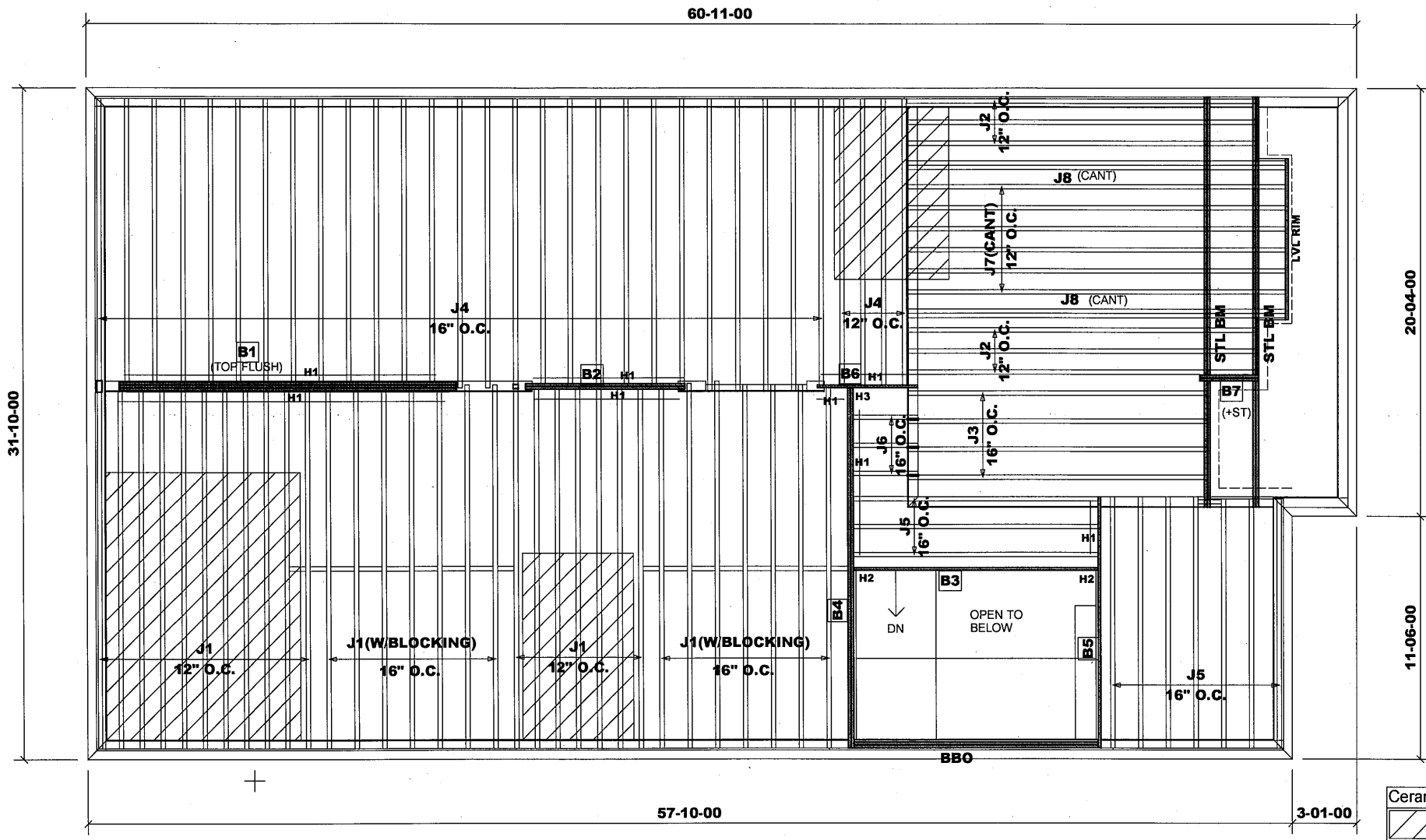
Project: Pine Valley

Date: June 29, 2018

Sheet: 2 of 8

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-20	1	32
J2	17-00-00	11 7/8" NI-20	1	6
J3	15-00-00	11 7/8" NI-20	1	4
J4	14-00-00	11 7/8" NI-20	1	31
J5	12-00-00	11 7/8" NI-20	1	10
J6	4-00-00	11 7/8" NI-20	1	3
J7	19-00-00	11 7/8" NI-40x	1	6
J8	19-00-00	11 7/8" NI-40x	2	4
B4	18-00-00	VERSALAM-12 2.0E	2	2
B1	17-00-00	VERSALAM-14 2.0E	3	3
B3	12-00-00	VERSALAM-12 2.0E	1	1
B5	12-00-00	VERSALAM-12 2.0E	1	1
LVL RIM	8-00-00	VERSALAM-12 2.0E	1	1
B2	8-00-00	VERSALAM-12 2.0E	2	2
B6	5-00-00	VERSALAM-12 2.0E	1	1
B7	3-00-00	VERSALAM-12 2.0E	2	2

HANGER SCHEDULE	
H1-----	LT251188 (TM)
H2-----	HUS1.81/10(FM)
H3-----	HGUS410(FM)
NOTE:	
TM-----	TOP MOUNT HANGERS
FM-----	FACE MOUNT HANGERS

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

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

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

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

REVISION: December 18, 2017

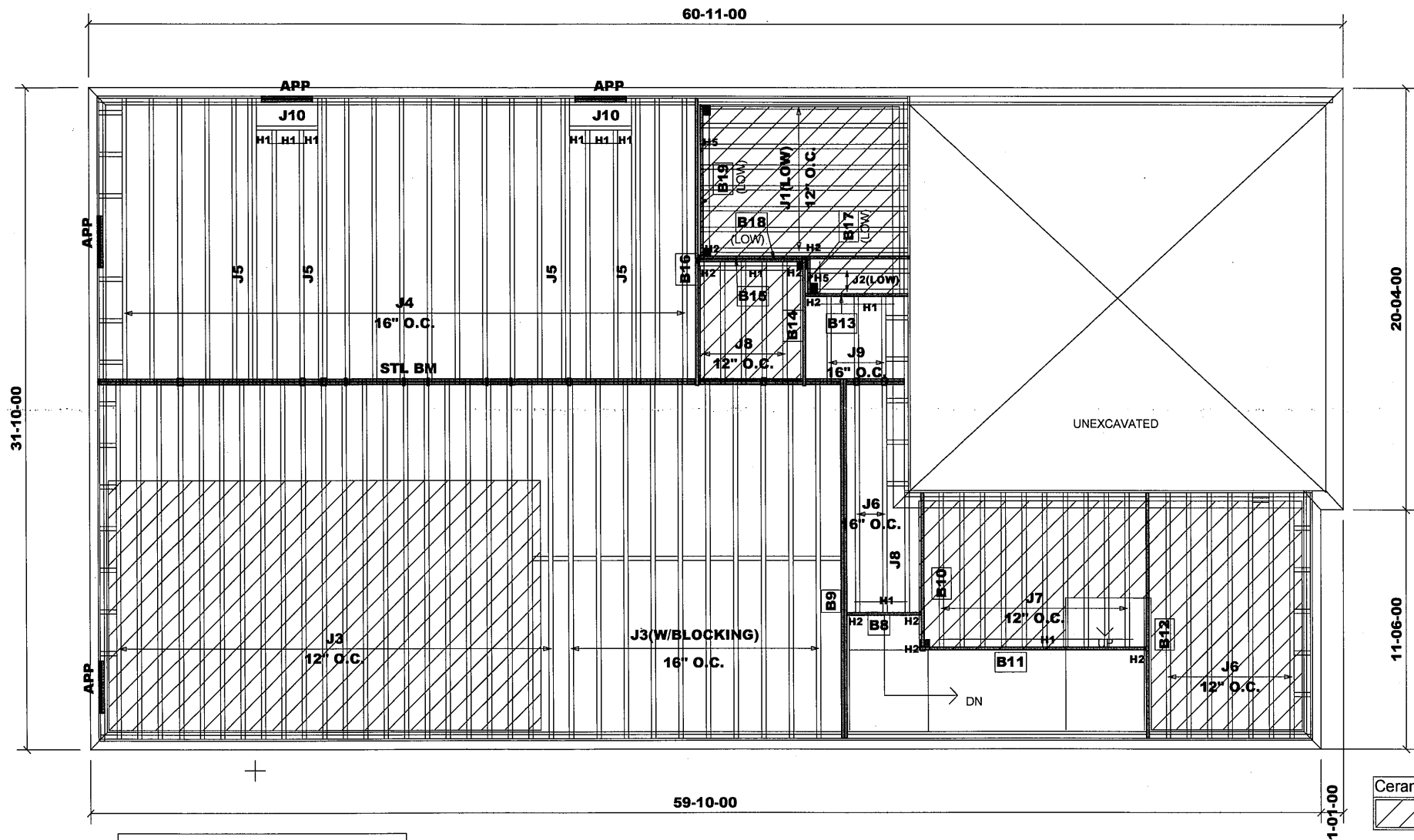
MODEL: UNIT 4004 - EL.A
+ OPT. LOGGIA(W/OPT. 2ND FL.)

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 29'

98879
95915
299743



Products				
PlotID	Length	Product	Plies	Net Qty
J1	11-00-00	9 1/2" NI-20	1	8
J2	5-00-00	9 1/2" NI-20	1	2
J3	18-00-00	11 7/8" NI-20	1	32
J4	14-00-00	11 7/8" NI-20	1	19
J5	14-00-00	11 7/8" NI-20	2	8
J6	12-00-00	11 7/8" NI-20	1	9
J7	8-00-00	11 7/8" NI-20	1	10
J8	6-00-00	11 7/8" NI-20	1	6
J9	5-00-00	11 7/8" NI-20	1	3
J10	3-00-00	11 7/8" NI-20	1	2
B9	18-00-00	VERSALAM-12 2.0E	2	2
B16	14-00-00	VERSALAM-12 2.0E	1	1
B11	12-00-00	VERSALAM-12 2.0E	1	1
B12	12-00-00	VERSALAM-12 2.0E	1	1
B18	11-00-00	VERSALAM-10 2.0E	1	1
B19	8-00-00	VERSALAM-10 2.0E	1	1
B10	8-00-00	VERSALAM-12 2.0E	1	1
B14	7-00-00	VERSALAM-12 2.0E	1	1
B15	6-00-00	VERSALAM-12 2.0E	1	1
B13	5-00-00	VERSALAM-12 2.0E	1	1
B8	4-00-00	VERSALAM-12 2.0E	1	1
B17	2-00-00	VERSALAM-10 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.

REVISION: June 29, 2018

MODEL: UNIT 4004 - EL.B+C
+ OPT. LOGGIA

First Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 50'

JT/PL: 45147/98839

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: 299743(290677)

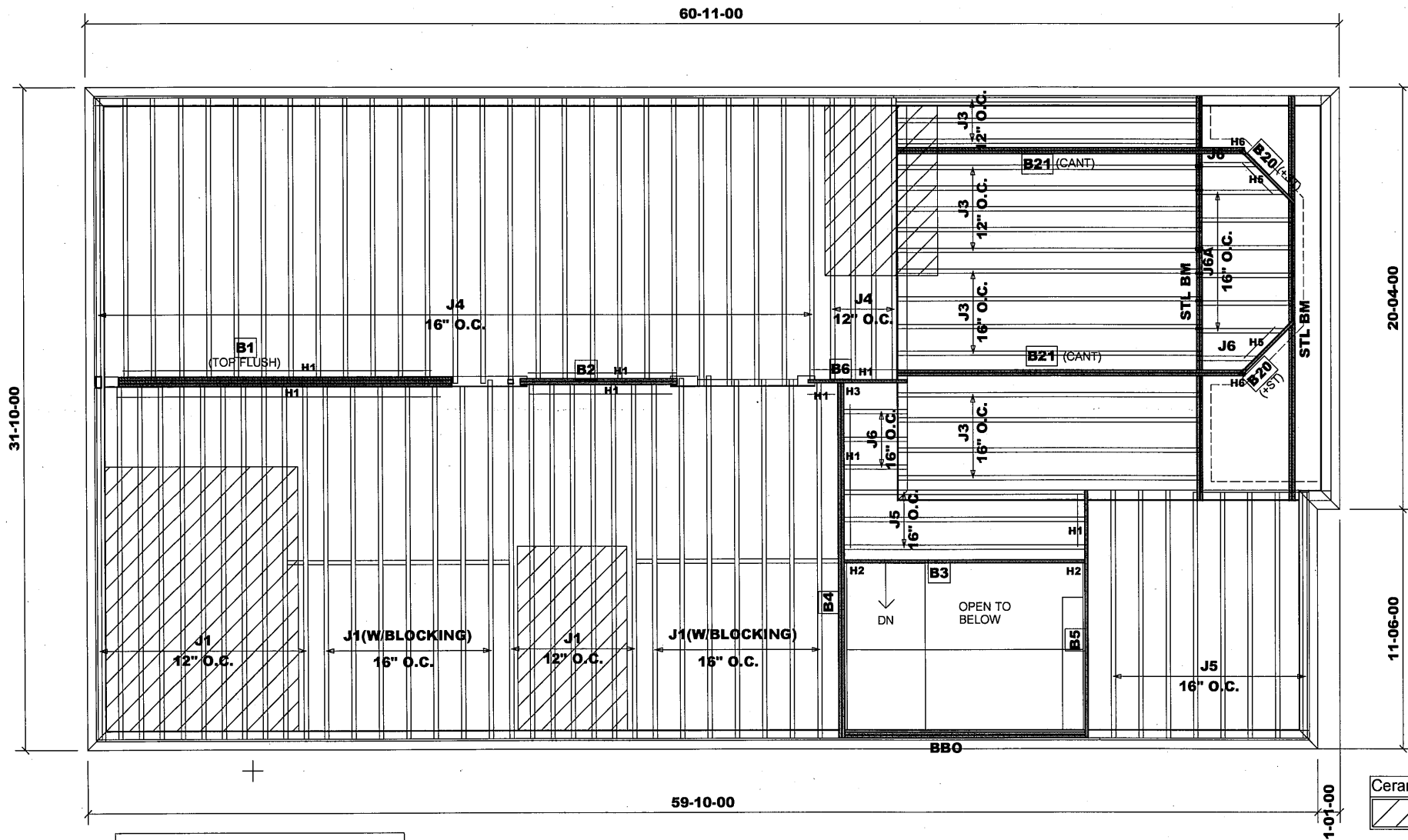
Project: Pine Valley

Date: June 29, 2018

Sheet: 5 of 8

Maple, Ontario

Home Lumber



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-20	1	32
J3	15-00-00	11 7/8" NI-20	1	16
J4	14-00-00	11 7/8" NI-20	1	31
J5	12-00-00	11 7/8" NI-20	1	11
J6A	5-00-00	11 7/8" NI-20	1	6
J6	4-00-00	11 7/8" NI-20	1	5
B4	18-00-00	VERSALAM-12 2.0E	2	2
B21	17-00-00	VERSALAM-12 2.0E	2	4
B1	17-00-00	VERSALAM-14 2.0E	3	3
B3	12-00-00	VERSALAM-12 2.0E	1	1
B5	12-00-00	VERSALAM-12 2.0E	1	1
B2	8-00-00	VERSALAM-12 2.0E	2	2
B6	5-00-00	VERSALAM-12 2.0E	1	1
B20	4-00-00	VERSALAM-12 2.0E	1	2

HANGER SCHEDULE	
H1-----	LT251188 (TM)
H2-----	HUS1.81/10(FM)
H3-----	HGUS410(FM)
H5-----	LSUH310(FM)
H6-----	LS90(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.

REVISION: December 18, 2017

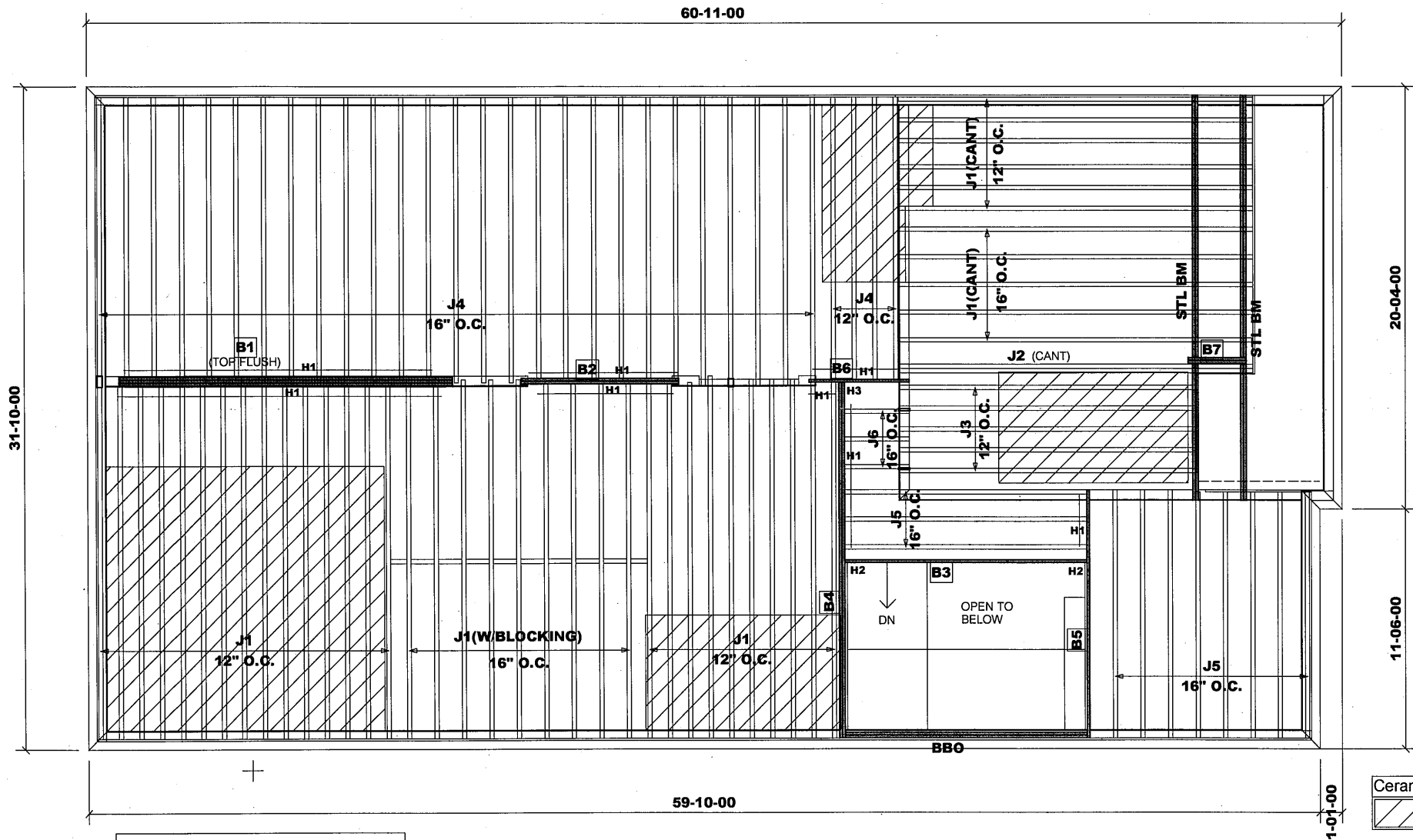
MODEL: UNIT 4004 - EL.B
+ OPT. LOGGIA(W/OPT. 2ND FL.)

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING
TOTAL LENGTH: 21'

98839
95915
299743



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-20	1	45
J2	18-00-00	11 7/8" NI-20	2	2
J3	15-00-00	11 7/8" NI-20	1	5
J4	14-00-00	11 7/8" NI-20	1	31
J5	12-00-00	11 7/8" NI-20	1	11
J6	4-00-00	11 7/8" NI-20	1	3
B4	18-00-00	VERSALAM-12 2.0E	2	2
B1	17-00-00	VERSALAM-14 2.0E	3	3
B3	12-00-00	VERSALAM-12 2.0E	1	1
B5	12-00-00	VERSALAM-12 2.0E	1	1
B2	8-00-00	VERSALAM-12 2.0E	2	2
B6	5-00-00	VERSALAM-12 2.0E	1	1
B7	3-00-00	VERSALAM-12 2.0E	2	2

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: 45147/95234

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI: (290677)

Project: Pine Valley

Date: November 20, 2017

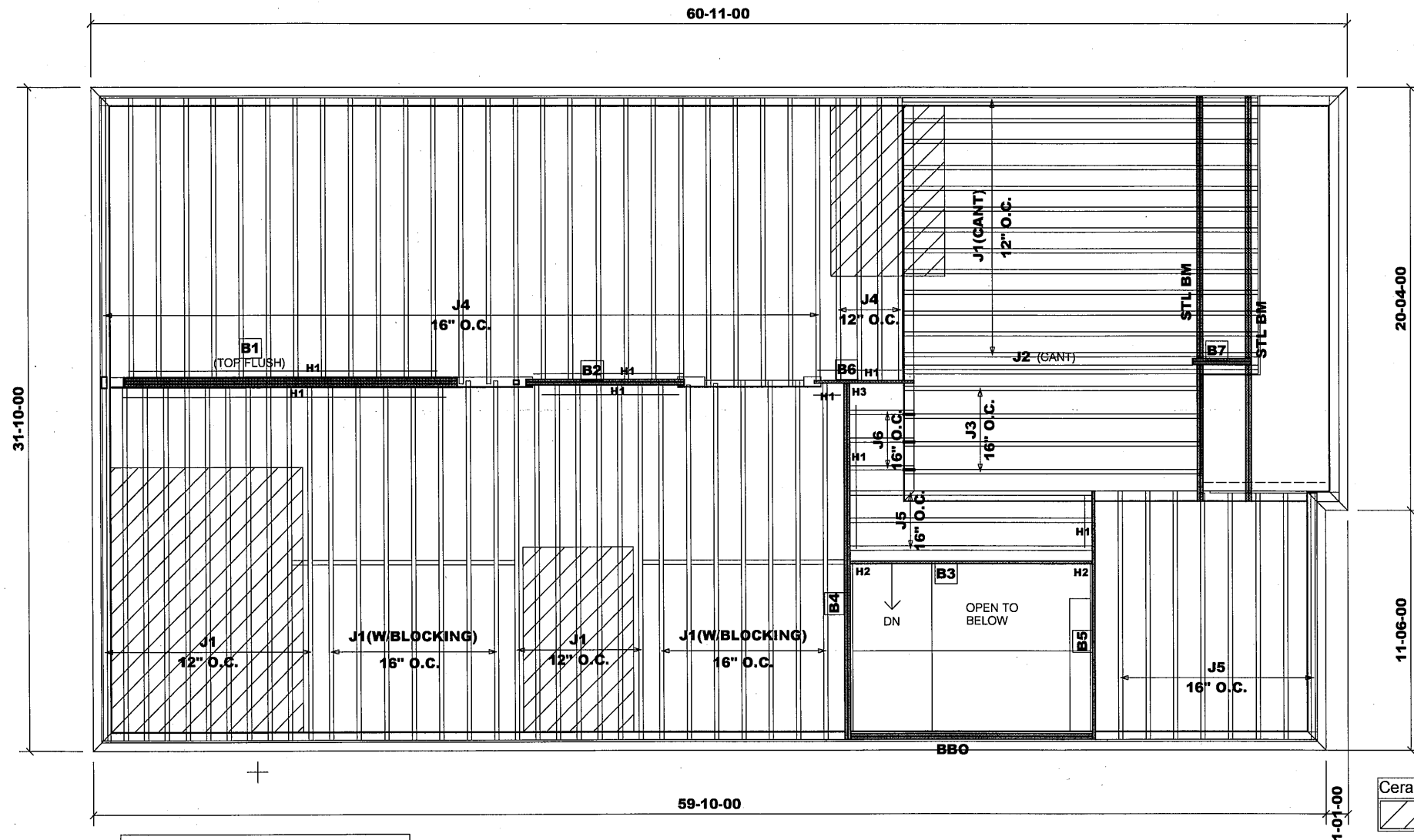
Sheet: 7 of 8

Maple, Ontario

Home Lumber

98839
95915

299743



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-20	1	45
J2	18-00-00	11 7/8" NI-20	2	2
J3	15-00-00	11 7/8" NI-20	1	4
J4	14-00-00	11 7/8" NI-20	1	31
J5	12-00-00	11 7/8" NI-20	1	11
J6	4-00-00	11 7/8" NI-20	1	3
B4	18-00-00	VERSALAM-12 2.0E	2	2
B1	17-00-00	VERSALAM-14 2.0E	3	3
B3	12-00-00	VERSALAM-12 2.0E	1	1
B5	12-00-00	VERSALAM-12 2.0E	1	1
B2	8-00-00	VERSALAM-12 2.0E	2	2
B6	5-00-00	VERSALAM-12 2.0E	1	1
B7	3-00-00	VERSALAM-12 2.0E	2	2

HANGER SCHEDULE

H1-----LT251188 (TM)
H2-----HUS1.81/10(FM)
H3-----HGUS410(FM)

NOTE:

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

RIMBOARD

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

SUBFLOOR - 3/4" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

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

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

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

REVISION: December 18, 2017

MODEL: UNIT 4004 - EL.C
+ OPT. LOGGIA(W/OPT. 2ND FL.)

Second Floor Framing

Do not scale - refer to architectural plans for dimensions

11 7/8" BLOCKING

TOTAL LENGTH: 35'

98839
95915

JT/PL: 45147/95234

Builder: Gold Park

Location: Vaughan

Designer: NL

Alpa Roof Trusses Inc.

Salesperson: Derek

LI:(290677)

Project: Pine Valley

Date: November 20, 2017

Sheet: 8 of 8

Maple, Ontario

Home Lumber

299743



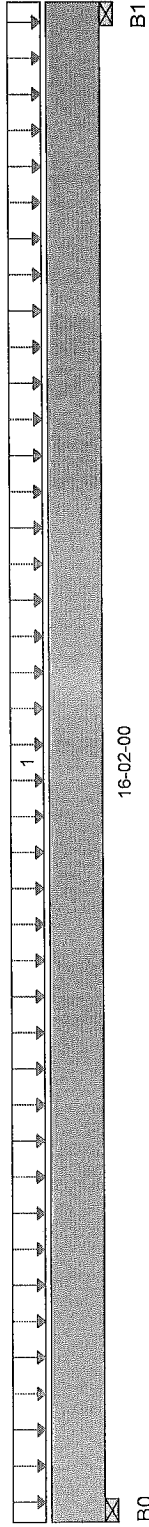
November 19, 2017 15:02:10



BC CALCO® Design Report

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.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"	5,012 / 0	2,678 / 0		
B1, 3-1/2"	5,012 / 0	2,678 / 0		

Load Summary						
Tag Description	Load Type	Ref.	Start	End	Live	Dead
1	Unf. Area (lb/ft²)	L	00-00-00	16-02-00	40	20
					1.00	0.65
					1.00	1.15
						15-06-00

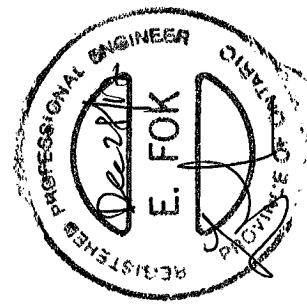
Controls Summary				
Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Location
Pos. Moment	41,458 ft-lbs	75,349 ft-lbs	55%	1 08-01-00
End Shear	8,905 lbs	25,578 lbs	34.8%	1 01-05-08
Total Load Defl.	L/347 (0.543")	0.785"	69.1%	4 08-01-00
Live Load Defl.	L/533 (0.354")	0.524"	67.6%	5 08-01-00
Max Defl.	0.543"	1"	54.3%	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
B0 Wall/Plate	3-1/2" x 5-1/4"	10,865 lbs	96.1%	48.5%
B1 Wall/Plate	3-1/2" x 5-1/4"	10,865 lbs	96.1%	48.5%
				Spruce Pine Fir
				Spruce Pine Fir

Notes

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

Nail one ply to another with
3 1/2" spiral nails @ 6" o.c., staggered in 2 rows





Boise Cascade

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

Floor Beam\B02



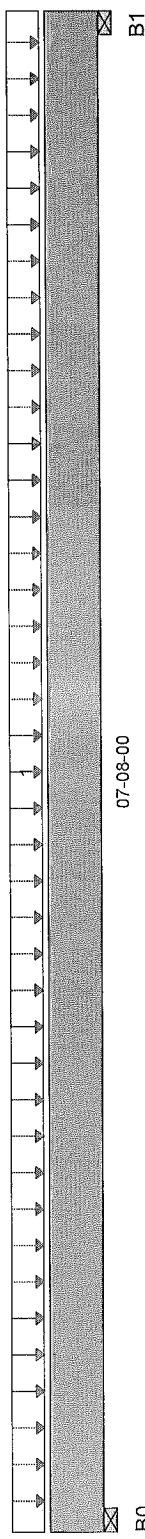
BC CALCO Design Report

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

November 19, 2017 15:04:26

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 07-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,377 / 0	1,234 / 0		
B1, 3-1/2"	2,377 / 0	1,234 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-08-00	40	20		1.00 1.15	15-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,655 ft-lbs	35,392 ft-lbs	24.5%	1	03-10-00
End Shear	3,401 lbs	14,464 lbs	23.5%	1	01-03-06
Total Load Defl.	L/999 (0.059")	n/a	n/a	4	03-10-00
Live Load Defl.	L/999 (0.039")	n/a	n/a	5	03-10-00
Max Defl.	0.059"	n/a	n/a	4	03-10-00
Span / Depth	7.3	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"	5,108 lbs	67.8%	34.2%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	5,108 lbs	67.8%	34.2%	Spruce Pine Fir

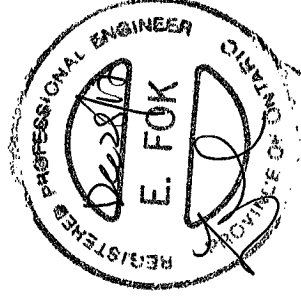
Notes

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

Nail one ply to another with
3 1/2" spiral nails @ 9"
o.c. staggered in 2 rows



S.152652



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

November 19, 2017 15:05:56



BC CALC® Design Report

Build 6080

Job Name: 45147 (4004)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290677.bcc

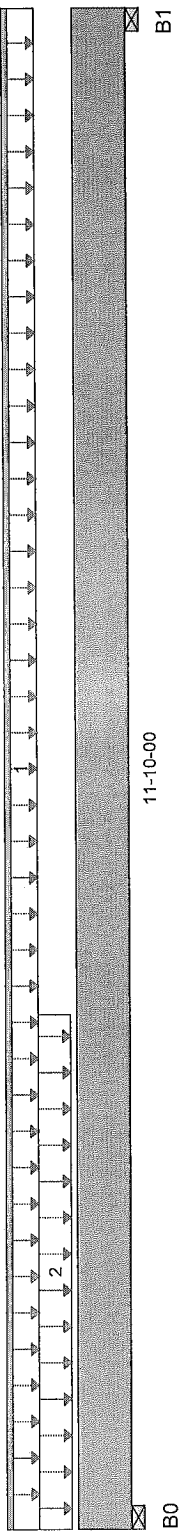
Description: Second Floor Framing

Specifier: NL

Designer: NL

Company: Alpa Roof Trusses

Misc:



B0

B1

Total Horizontal Product Length = 11'-10'-00"

Reaction Summary (Down / Uplift) (lbs)					
Bearing	Live	Dead	Snow	Wind	
B0, 3-1/2"	497 / 0	245 / 0			
B1, 3-1/2"	222 / 0	142 / 0			

Load Summary					
Tag Description	Load Type	Ref.	Start	End	Live
1	Unf. Lin. (lb/ft)	L	00-00-00	11-10-00	27
2	Unf. Area (lb/ft²)	L	00-00-00	04-00-00	40
					Dead
					0.65
					14
					15
					n/a
					02-06-00

Controls Summary					
Pos.	Moment	Factored Demand	Factored Resistance	Demand / Resistance	Location
1	1,875 ft-lbs	17,696 ft-lbs	10.6%	1	04-00-00
2	716 lbs	7,232 lbs	9.9%	1	01-03-06
3	Total Load Defl.	L/999 (0.062")	n/a	4	05-07-11
4	Live Load Defl.	L/999 (0.04")	n/a	5	05-07-11
5	Max Defl.	0.062"	n/a	4	05-07-11
6	Span / Depth	11.5	n/a	4	00-00-00
7	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"	1,052 lbs	27.9%	14.1%
B1	Wall/Plate	3-1/2" x 1-3/4"	511 lbs	13.6%	6.8%

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.

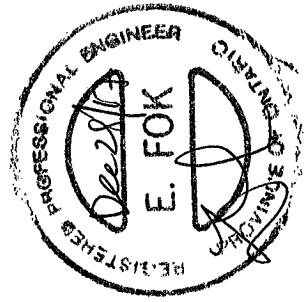
Calculations assume member is fully braced.

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\B04



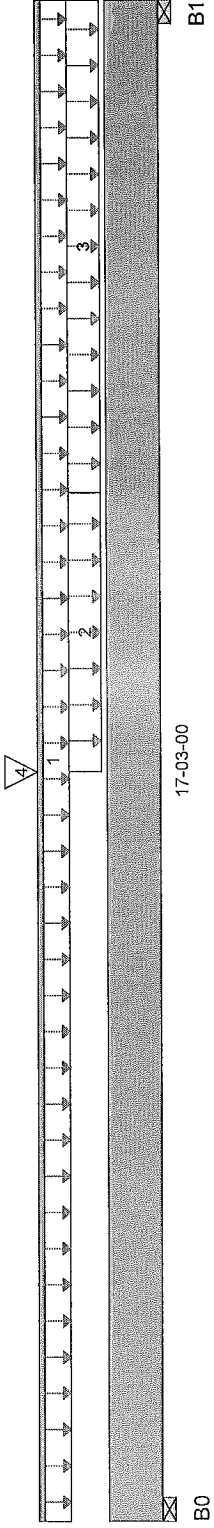
BC CALC® Design Report

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

November 19, 2017 15:07:11

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 17-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	850 / 0	1,003 / 0		
B1, 3-1/2"	1,207 / 0	1,136 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	17-03-00	27	74			n/a
2	Unf. Area (lb/ft^2)	L	08-06-00	11-08-00	40	15			06-00-00
3	Unf. Area (lb/ft^2)	L	11-08-00	17-03-00	40	15			01-06-00
4	Conc. Pt. (lbs)	L	08-06-00	08-06-00	497	245			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	15,615 ft-lbs	35,392 ft-lbs	44.1%	1	08-10-12
End Shear	2,891 lbs	14,464 lbs	20%	1	15-11-10
Total Load Defl.	L/371 (0.543")	0.84"	64.7%	4	08-10-12
Live Load Defl.	L/704 (0.286")	0.56"	51.2%	5	08-10-12
Max Defl.	0.543"	1"	54.3%	4	08-10-12
Span / Depth	17	n/a	n/a		00-00-00
Squash Blocks	Valid				

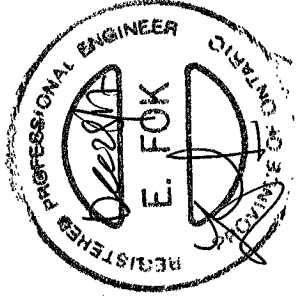
Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,529 lbs	33.6%	16.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	3,232 lbs	42.9%	21.6%	Spruce Pine Fir

Notes

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

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





Boise Cascade

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

Floor Beam\B05



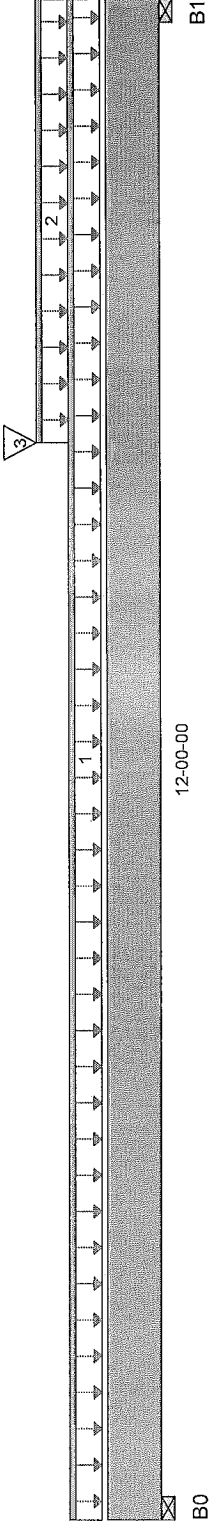
BC CALCO® Design Report

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

November 19, 2017 15:07:54

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	237 / 0	527 / 0		
B1, 3-1/2"	403 / 0	624 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-00-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	08-06-00	12-00-00	27	14			n/a
3	Conc. Pt. (lbs)	L	08-06-00	08-06-00	222	142			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,262 ft-lbs	11,502 ft-lbs	19.7%	0	06-07-00
End Shear	1,131 lbs	7,232 lbs	15.6%	1	10-08-10
Total Load Defl.	L/1,107 (0.125")	0.577"	21.7%	4	06-02-15
Live Load Defl.	L/999 (0.045")	n/a	n/a	5	06-04-04
Max Defl.	0.125"	1"	12.5%	4	06-02-15
Span / Depth	11.7	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

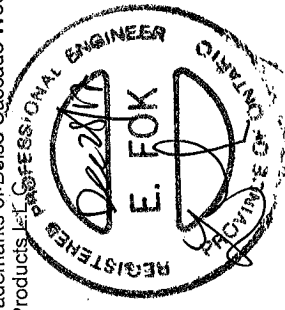
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	738 lbs	30.1%	15.2%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,385 lbs	36.8%	18.5%	Spruce Pine Fir

Notes

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



S.152655



Boise Cascade

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

Floor Beam\B06



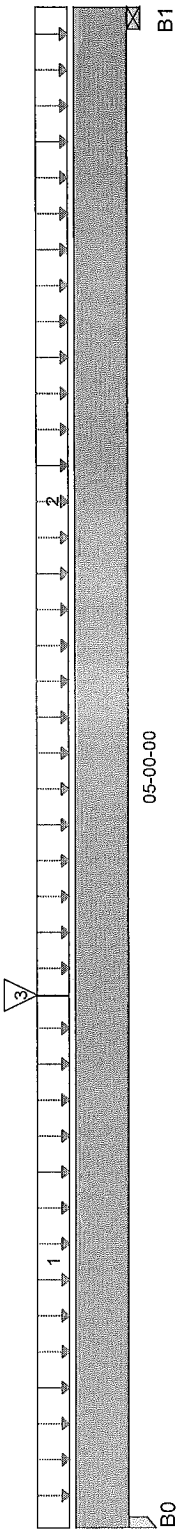
BC CALC® Design Report

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

November 19, 2017 15:09:13

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 05-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,038 / 0	1,388 / 0		
B1, 3-1/2"	1,251 / 0	819 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	01-09-00	40	20			15-06-00
2	Unf. Area (lb/ft²)	L	01-09-00	05-00-00	40	20			07-08-00
3	Conc. Pt. (lbs)	L	01-09-00	01-09-00	1,207	1,136			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,295 ft-lbs	17,696 ft-lbs	29.9%	1	01-09-00
End Shear	3,094 lbs	7,232 lbs	42.8%	1	01-03-06
Total Load Defl.	L/999 (0.025")	n/a	n/a	4	02-04-06
Live Load Defl.	L/999 (0.015")	n/a	n/a	5	02-04-06
Max Defl.	0.025"	n/a	n/a	4	02-04-06
Span / Depth	4.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

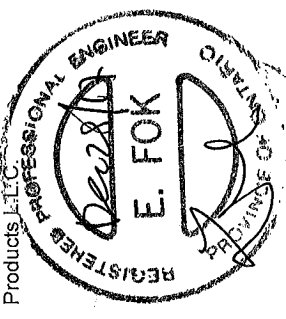
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance 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 Post	3-1/2" x 1-3/4"	4,792 lbs	45.1%	64.1%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,901 lbs	77%	38.8%	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



5152656



Boise Cascade

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

Floor Beam\B07



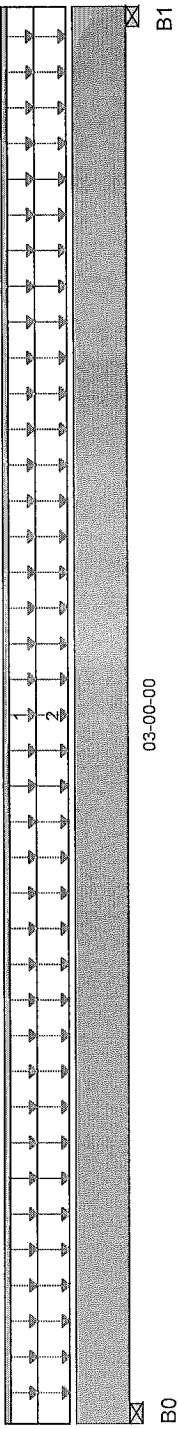
BC CALC® Design Report

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

November 20, 2017 10:10:18

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 03-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	40 / 0	346 / 0	299 / 0	
B1, 3-1/2"	41 / 0	346 / 0	299 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	03-00-00	27	114			n/a
2	Unf. Area (lb/ft^2)	L	00-00-00	03-00-00	11		21	1.00 1.15	09-06-00

Controls Summary

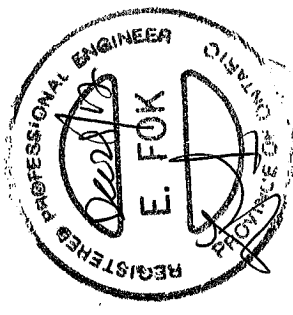
Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
1	485 ft-lbs	35,392 ft-lbs	1.4%	5	01-06-00
End Shear	131 lbs	14,464 lbs	0.9%	5	01-03-06
Total Load Defl.	L/999 (0")	n/a	n/a	13	01-06-00
Live Load Defl.	L/999 (0")	n/a	n/a	17	01-06-00
Max Defl.	0"	n/a	n/a	13	01-06-00
Span / Depth	2.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	901 lbs	12%	6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	901 lbs	12%	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 @ 6"
o.c. staggered in 2 rows



S152657



Boise Cascade

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

Floor Beam\B08



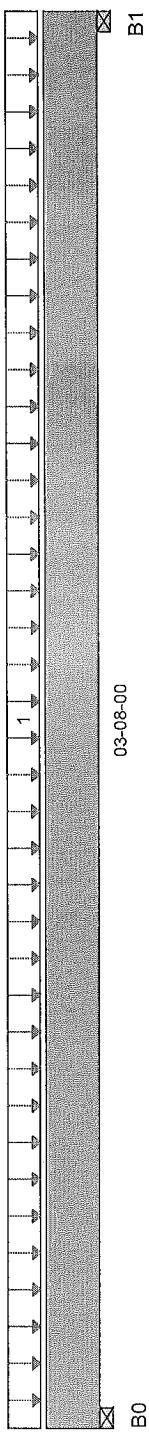
BC CALC® Design Report

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

November 19, 2017 15:54:04

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: First Floor Framing
Specifier:
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"	513 / 0	204 / 0			
B1, 3-1/2"	513 / 0	204 / 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	07-00-00

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	719 ft-lbs	17,696 ft-lbs	4.1%	1	01-10-00
End Shear	308 lbs	7,232 lbs	4.3%	1	01-03-06
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-10-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-10-00
Max Defl.	0.002"	n/a	n/a	4	01-10-00
Span / Depth	3.2	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

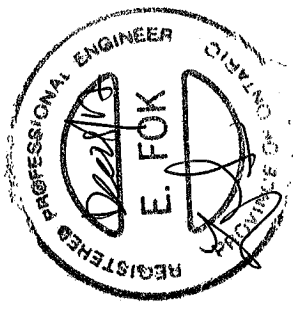
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,024 lbs	27.2%	13.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,024 lbs	27.2%	13.7%	Spruce Pine Fir

Notes

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



2152632



Boise Cascade



BC CALC® Design Report

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

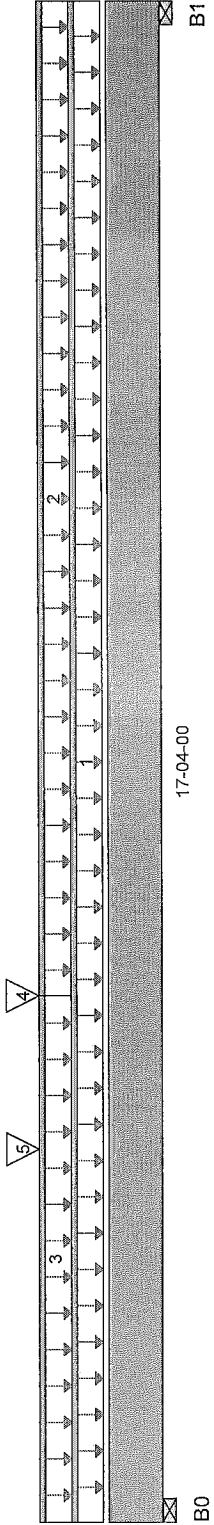
Floor Beam\B09

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

November 19, 2017 15:55:32

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 17-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,051 / 0	1,375 / 0		
B1, 3-1/2"	736 / 0	1,027 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1		Unf. Lin. (lb/ft)	L	00-00-00	17-04-00	27	74			n/a
2		Unf. Lin. (lb/ft)	L	06-00-00	17-04-00	27	14			n/a
3		Unf. Lin. (lb/ft)	L	00-00-00	06-00-00		60			n/a
4		Conc. Pt. (lbs)	L	06-00-00	06-00-00	513	204			n/a
5		Conc. Pt. (lbs)	L	04-03-00	04-03-00	500	188			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	13,285 ft-lbs	35,392 ft-lbs	37.5%	1	06-00-00
End Shear	3,010 lbs	14,464 lbs	20.8%	1	01-03-06
Total Load Defl.	L/415 (0.488")	0.844"	57.9%	4	08-02-06
Live Load Defl.	L/897 (0.226")	0.562"	40.1%	5	08-02-06
Max Defl.	0.488"	1"	48.8%	4	08-02-06
Span / Depth	17.1	n/a	n/a		00-00-00
Squash Blocks	Valid				

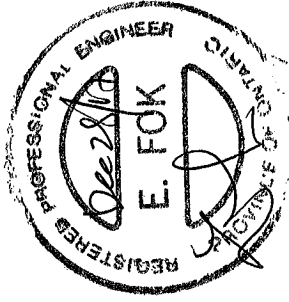
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	3,295 lbs	43.7%	22%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,388 lbs	31.7%	16%	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.152659



Boise Cascade

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

Floor Beam\B10



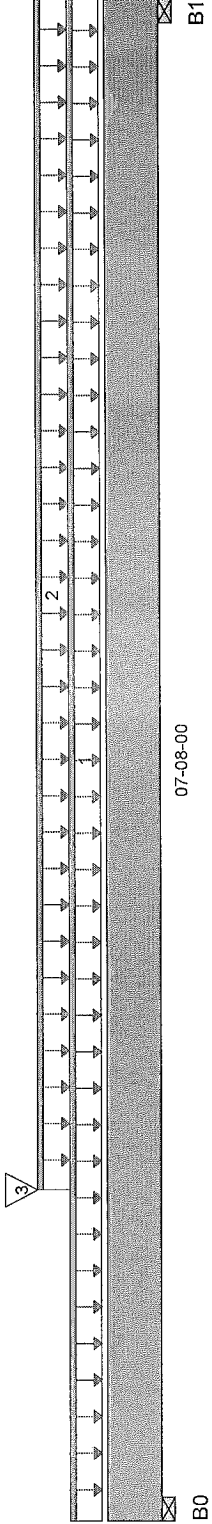
BC CALCO® Design Report

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

November 19, 2017 15:56:05

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 07-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	577 / 0	272 / 0			
B1, 3-1/2"	305 / 0	169 / 0			

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	07-08-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	01-08-00	07-08-00	27	14			n/a
3	Conc. Pt. (lbs)	L	01-08-00	01-08-00	513	204			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,664 ft-lbs	17,696 ft-lbs	9.4%	1	02-03-01
End Shear	1,121 lbs	7,232 lbs	15.5%	1	01-03-06
Total Load Defl.	L/999 (0.022")	n/a	n/a	4	03-07-00
Live Load Defl.	L/999 (0.015")	n/a	n/a	5	03-07-00
Max Defl.	0.022"	n/a	n/a	4	03-07-00
Span / Depth	7.3	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

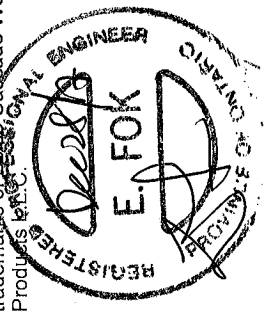
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,205 lbs	32%	16.1%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	669 lbs	17.8%	9%	Spruce Pine Fir

Notes

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

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



S-152660



Boise Cascade

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

Floor Beam\B11



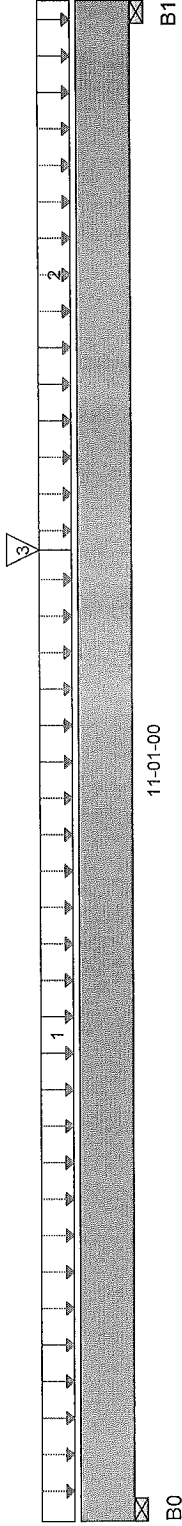
BC CALC® Design Report

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

November 19, 2017 15:57:12

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 11-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B0, 3-1/2"	1,174 / 0	474 / 0
B1, 3-1/2"	1,566 / 0	620 / 0

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-01-00	40	15			03-10-00
2	Unf. Area (lb/ft²)	L	07-01-00	11-01-00	40	15			05-04-00
3	Conc. Pt. (lbs)	L	07-01-00	07-01-00	800	300			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,372 ft-lbs	17,696 ft-lbs	47.3%	1	07-01-00
End Shear	2,576 lbs	7,232 lbs	35.6%	1	09-09-10
Total Load Defl.	L/561 (0.227")	0.531"	42.8%	4	05-09-12
Live Load Defl.	L/784 (0.163")	0.354"	45.9%	5	05-09-12
Max Defl.	0.227"	1"	22.7%	4	05-09-12
Span / Depth	10.7	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

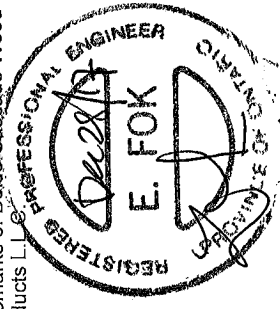
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,353 lbs	62.4%	31.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	3,124 lbs	82.9%	41.8%	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



S152661



Boise Cascade



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

Floor Beam\B12

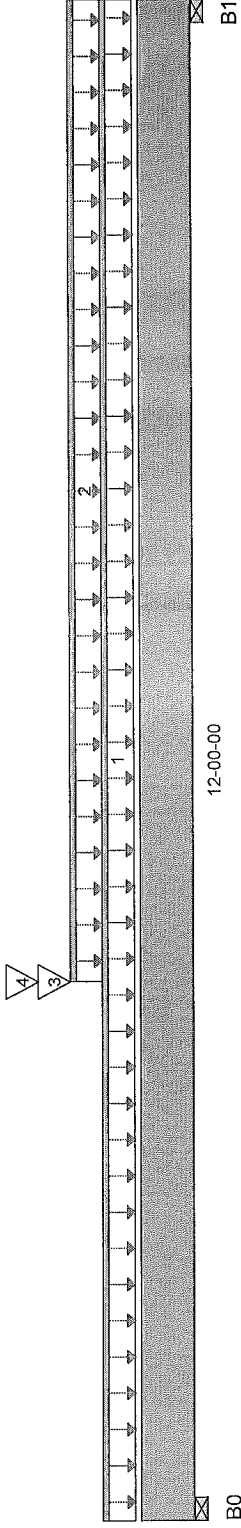
BC CALCO® Design Report

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

November 19, 2017 15:58:19

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,509 / 0	1,016 / 0		
B1, 3-1/2"	990 / 0	823 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	12-00-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	04-03-00	12-00-00	27	14			n/a
3	Conc. Pt. (lbs)	L	04-03-00	04-03-00	400	150			n/a
4	Conc. Pt. (lbs)	L	04-03-00	04-03-00	1,566	620			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	12,946 ft-lbs	17,696 ft-lbs	73.2%	1	04-03-00
End Shear	3,353 lbs	7,232 lbs	46.4%	1	01-03-06
Total Load Defl.	L/360 (0.385")	0.577"	66.8%	4	05-08-00
Live Load Defl.	L/590 (0.235")	0.385"	61%	5	05-06-12
Max Defl.	0.385"	1"	38.5%	4	05-08-00
Span / Depth	11.7	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	3,534 lbs	93.8%	47.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,514 lbs	66.7%	33.6%	Spruce Pine Fir

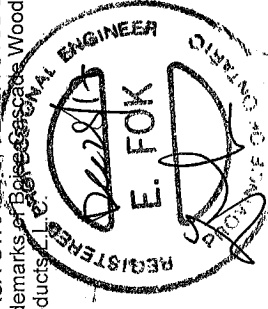
Notes

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 4

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



S 152662



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 19, 2017 15:59:09

Build 6080

Job Name: 45147 (4004)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

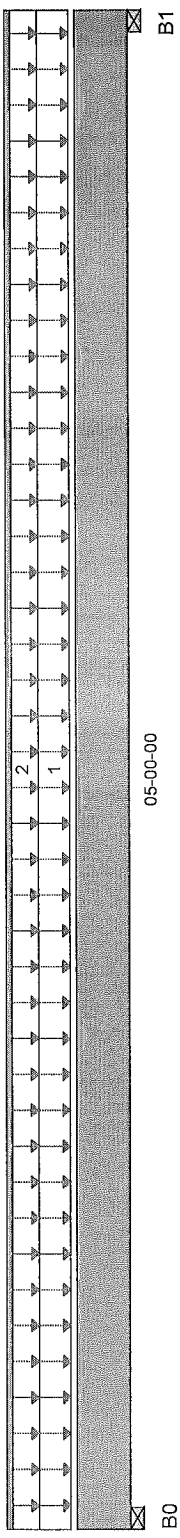
File Name: 290677.bcc

Description: First Floor Framing

Specifier: NL

Designer: Alpa Roof Trusses

Misc:



Reaction Summary (Down / Uplift) (lbs)					
Bearing	Live	Dead	Snow	Wind	
B0, 3-1/2"	325 / 0	287 / 0			
B1, 3-1/2"	325 / 0	287 / 0			

Load Summary					
Tag Description	Load Type	Ref.	Start	End	Live
1	Unf. Area (lb/ft²)	L	00-00-00	05-00-00	40
2	Unf. Lin. (lb/ft)	L	00-00-00	05-00-00	60
					15
					03-03-00
					n/a

Controls Summary					
Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
1	873 ft-lbs	17,696 ft-lbs	4.9%	1	02-06-00
2	412 lbs	7,232 lbs	5.7%	1	01-03-06
3	L/999 (0.005")	n/a	n/a	4	02-06-00
4	L/999 (0.003")	n/a	n/a	5	02-06-00
5	0.005"	n/a	n/a	4	02-06-00
6	4.6	n/a	n/a		00-00-00
7	Valid				

Bearing Supports			
Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member
3-1/2" x 1-3/4"	846 lbs	22.5%	11.3%
3-1/2" x 1-3/4"	846 lbs	22.5%	11.3%

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.

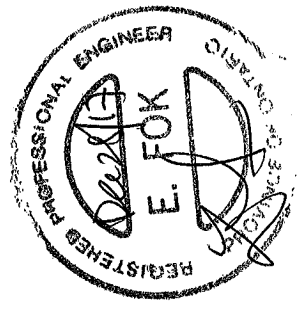
Calculations assume member is fully braced.

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



Disclosure

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2152663



Boise Cascade

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

Floor Beam\B14



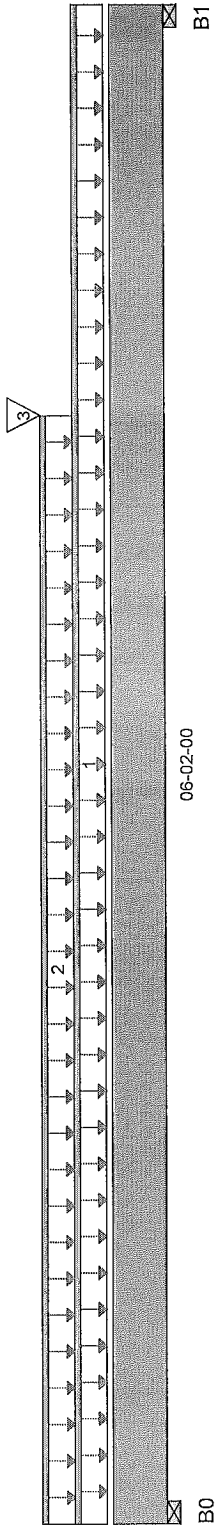
BC CALC® Design Report

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

November 19, 2017 15:59:49

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.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"	243 / 0	175 / 0		
B1, 3-1/2"	370 / 0	299 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	06-02-00	27	14			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	04-06-00	27	14			n/a
3	Conc. Pt. (lbs)	L	04-06-00	04-06-00	325	287			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,244 ft-lbs	17,696 ft-lbs	7%	1	04-06-00
End Shear	844 lbs	7,232 lbs	11.7%	1	04-10-10
Total Load Defl.	L/999 (0.01")	n/a	n/a	4	03-03-08
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	03-03-08
Max Defl.	0.01"	n/a	n/a	4	03-03-08
Span / Depth	5.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

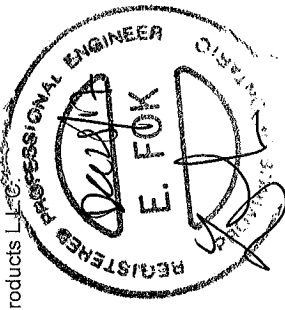
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Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	583 lbs	15.5%	7.8%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	928 lbs	24.6%	12.4%	Spruce Pine Fir

Notes

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



S 152664



Boise Cascade

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

Floor Beam\B15



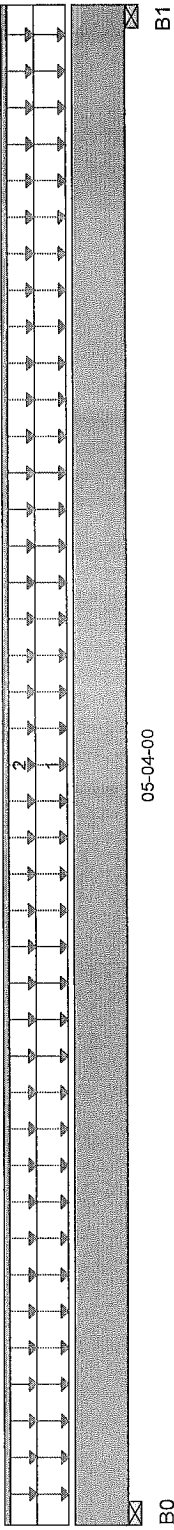
BC CALC® Design Report

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

November 19, 2017 16:00:33

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 05-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	320 / 0	336 / 0			
B1, 3-1/2"	320 / 0	336 / 0			

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	05-04-00	40	20			03-00-00
2	Unf. Lin. (lb/ft)	L	00-00-00	05-04-00	40	60			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,003 ft-lbs	17,696 ft-lbs	5.7%	1	02-08-00
End Shear	468 lbs	7,232 lbs	6.5%	1	01-03-06
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	02-08-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-08-00
Max Defl.	0.006"	n/a	n/a	4	02-08-00
Span / Depth	4.9	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.

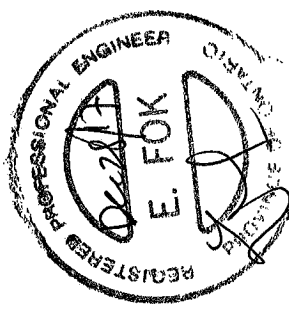
Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	900 lbs	23.9%	12%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	900 lbs	23.9%	12%	Spruce Pine Fir

Notes

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

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



S-152665



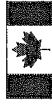
Boise Cascade

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)

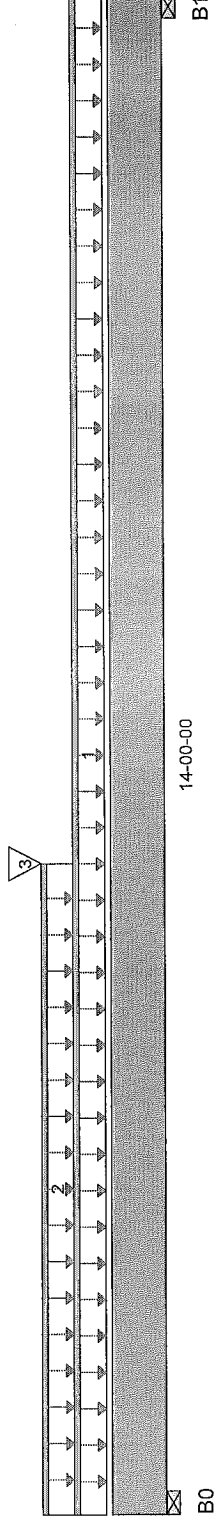
November 20, 2017 08:07:15



BC CALC® Design Report

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.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"	501 / 0	820 / 0		
B1, 3-1/2"	359 / 0	721 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	14-00-00	27	74		1.00	n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	27	14		1.15	n/a
3	Conc. Pt. (lbs)	L	06-00-00	06-00-00	320	336			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,685 ft-lbs	17,696 ft-lbs	37.8%	1	06-00-00
End Shear	1,522 lbs	7,232 lbs	21.1%	1	01-03-06
Total Load Defl.	L/530 (0.307")	0.677"	45.3%	4	06-10-01
Live Load Defl.	L/999 (0.115")	n/a	n/a	5	06-08-13
Max Defl.	0.307"	1"	30.7%	4	06-10-01
Span / Depth	13.7	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

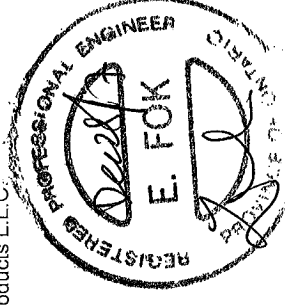
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Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,777 lbs	47.2%	23.8%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,009 lbs	41.2%	20.8%	Spruce Pine Fir

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



9152666



Boise Cascade



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

Floor Beam\B17

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

November 20, 2017 08:11:37

BC CALCO® Design Report

Build 6080

Job Name: 45147 (4004)

Address: Pine Valley

City, Province, Postal Code: Vaughan, ON

Customer: Gold Park

Code reports: CCMC 12472-R

File Name: 290677.bcc

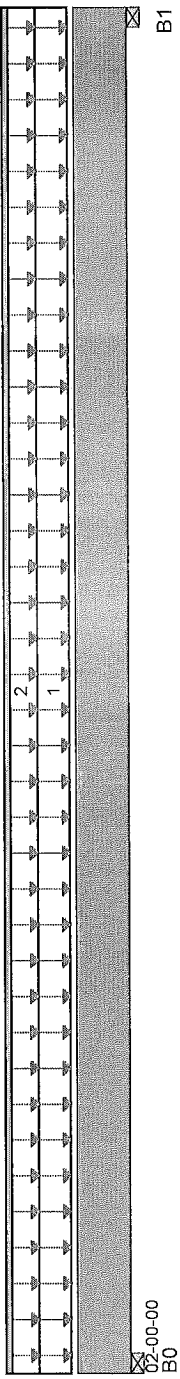
Description: First Floor Framing

Specifier:

Designer: NL

Company: Alpa Roof Trusses

Misc:



Total Horizontal Product Length = 02-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	100 / 0	115 / 0			
B1, 3-1/2"	100 / 0	115 / 0			

Load Summary

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

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	87 ft-lbs	11,610 ft-lbs	0.8%	1	01-00-00
End Shear	24 lbs	5,785 lbs	0.4%	1	01-01-00
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-00-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-00-00
Max Defl.	0"	n/a	n/a	4	01-00-00
Span / Depth	1.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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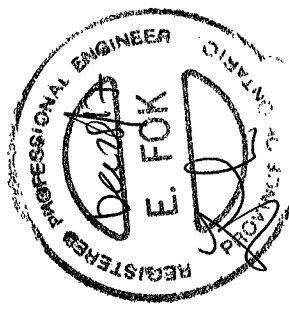
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	294 lbs	7.8%	3.9%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	294 lbs	7.8%	3.9%	Spruce Pine Fir

Notes

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

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



S.152667



Boise Cascade

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

Floor Beam\B18



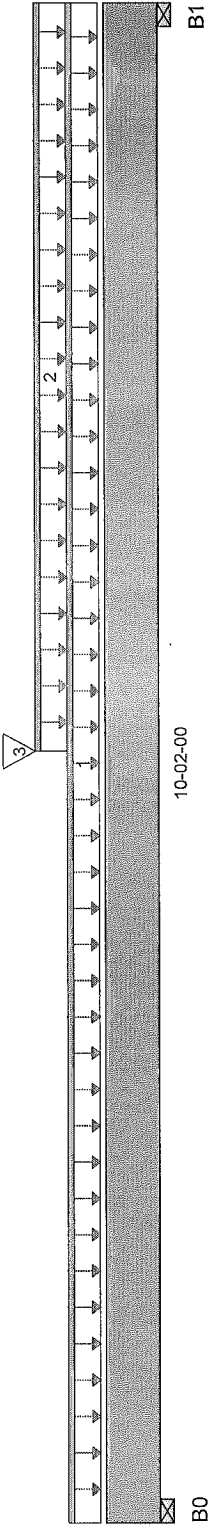
BC CALC® Design Report

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

November 20, 2017 08:12:13

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.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"	218 / 0	474 / 0		
B1, 3-1/2"	291 / 0	513 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	10-02-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	05-02-00	10-02-00	27	14			n/a
3	Conc. Pt. (lbs)	L	05-02-00	05-02-00	100	115			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,804 ft-lbs	7,546 ft-lbs	23.9%	0	05-02-00
End Shear	577 lbs	3,761 lbs	15.3%	0	09-01-00
Total Load Defl.	L/904 (0.129")	0.485"	26.5%	4	05-02-00
Live Load Defl.	L/999 (0.045")	n/a	n/a	5	05-02-00
Max Defl.	0.129"	1"	12.9%	4	05-02-00
Span / Depth	12.3	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

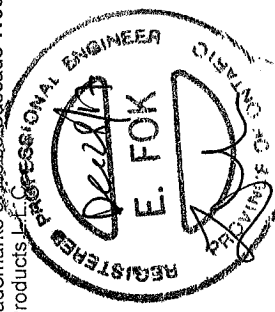
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	663 lbs	27.1%	13.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	718 lbs	29.3%	14.8%	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

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



S.152668



Boise Cascade

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

Floor Beam\B19



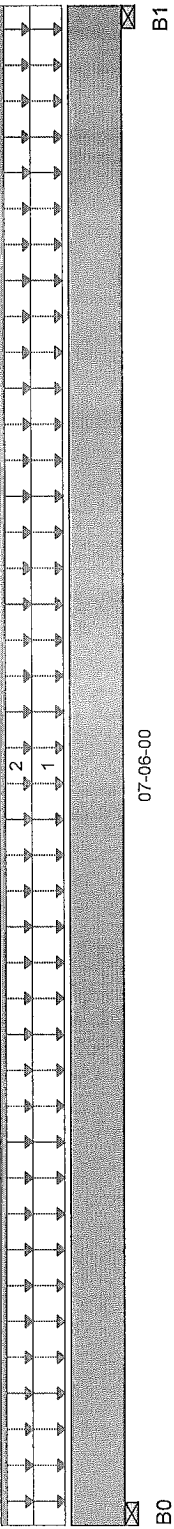
BC CALC® Design Report

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

November 20, 2017 09:00:12

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 2906777.bcc
Description: First Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 07-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	787 / 0	637 / 0			
B1, 3-1/2"	787 / 0	637 / 0			

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Area (lb/ft²)	L	00-00-00	07-06-00	40	20			05-03-00
2	Unf. Lin. (lb/ft)	L	00-00-00	07-06-00		60			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,268 ft-lbs	11,610 ft-lbs	28.1%	1	03-09-00
End Shear	1,406 lbs	5,785 lbs	24.3%	1	01-01-00
Total Load Defl.	L/999 (0.084")	n/a	n/a	4	03-09-00
Live Load Defl.	L/999 (0.046")	n/a	n/a	5	03-09-00
Max Defl.	0.084"	n/a	n/a	4	03-09-00
Span / Depth	8.9	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

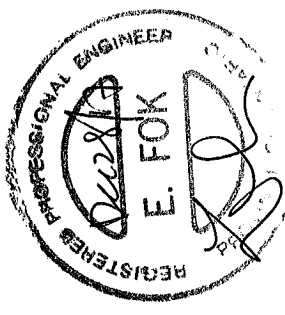
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,977 lbs	52.5%	26.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,977 lbs	52.5%	26.5%	Spruce Pine Fir

Notes

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



S-152669



Boise Cascade



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

Floor Beam\B20

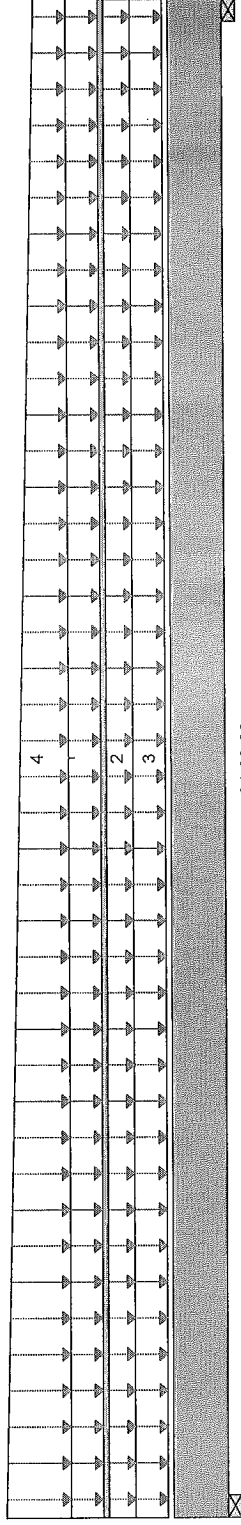
Dry | 1 span | No cantilevers | 0/12 slope (deg)

November 20, 2017 09:28:22

BC CALC® Design Report

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



B0 B1 04-00-00

Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	132 / 0	384 / 0	233 / 0	
B1, 3-1/2"	168 / 0	385 / 0	209 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Trapezoidal (lb/ft)	L	00-00-00		50	19			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	100	38			n/a
3	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00		100			n/a
4	Trapezoidal (lb/ft)	L	00-00-00	04-00-00		11		21	03-06-00
						28		53	n/a
						11		21	n/a

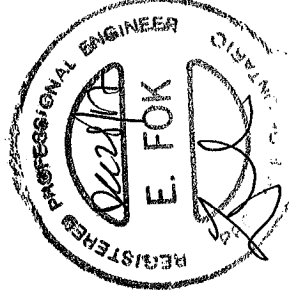
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	696 ft-lbs	17,696 ft-lbs	3.9%	5	02-00-00
End Shear	497 lbs	7,232 lbs	6.9%	1	02-08-10
Total Load Defl.	L/999 (0.002")	n/a	n/a	13	02-00-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	17	02-00-00
Max Defl.	0.002"	n/a	n/a	13	02-00-00
Span / Depth	3.6	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	895 lbs	23.7%	12%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	880 lbs	23.3%	11.8%	Spruce Pine Fir

Notes



S152670



Boise Cascade

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

Floor Beam\B21

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

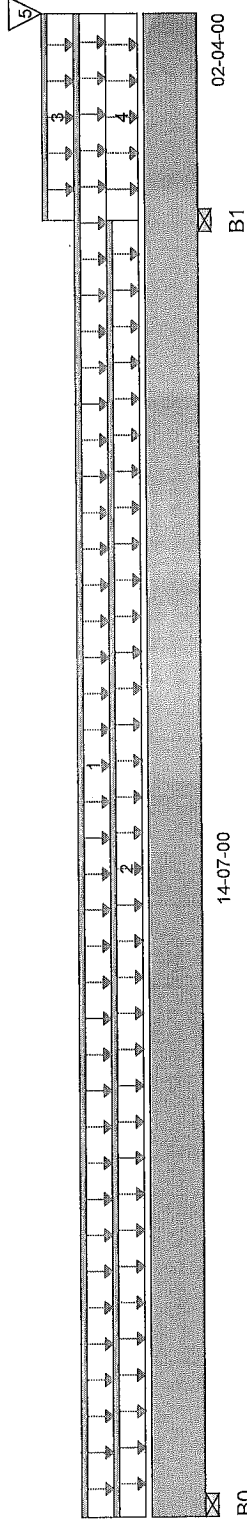
November 20, 2017 09:10:56



BC CALC® Design Report

Build 6080
Job Name: 45147 (4004)
Address: Pine Valley
City, Province, Postal Code: Vaughan, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 290677.bcc
Description: Second Floor Framing
Specifier:
Designer: NL
Company: Alpa Roof Trusses
Misc:



Total Horizontal Product Length = 16-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	400 / 27	637 / 0	0 / 50	
B1, 3-1/2"	609 / 0	1,717 / 0	430 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	16-11-00	27	74			n/a
2	Unf. Lin. (lb/ft)	L	00-00-00	14-07-00	27	14			n/a
3	Unf. Lin. (lb/ft)	L	14-07-00	16-11-00		100			n/a
4	Unf. Area (lb/ft²)	L	14-07-00	16-11-00		11		21	03-00-00
5	Conc. Pt. (lbs)	L	16-11-00	16-11-00	132	384		233	n/a

Controls Summary

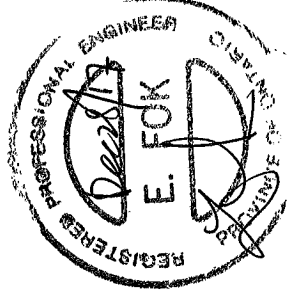
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,415 ft-lbs	35,392 ft-lbs	12.5%	8	06-09-09
Neg. Moment	-2,089 ft-lbs	-23,005 ft-lbs	9.1%	0	14-07-00
End Shear	1,132 lbs	14,464 lbs	7.8%	8	01-03-06
Cont. Shear	992 lbs	9,401 lbs	10.5%	0	13-05-06
Total Load Defl.	L/999 (0.117")	n/a	n/a	23	07-02-02
Live Load Defl.	L/999 (0.053")	n/a	n/a	33	07-04-06
Total Neg. Defl.	2xL/1,998 (-0.045")	n/a	n/a	23	16-11-00
Max Defl.	0.117"	n/a	n/a	23	07-02-02
Cant. Max Defl.	-0.045"	n/a	n/a	23	16-11-00
Span / Depth	14.5	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

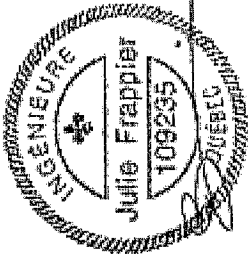
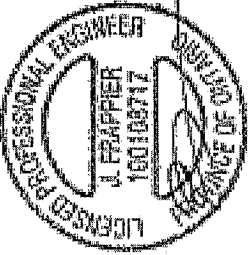
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,396 lbs	18.5%	9.3%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,404 lbs	49.1%	24.7%	Spruce Pine Fir

Notes

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



S.152671



Maximum Floor Spans

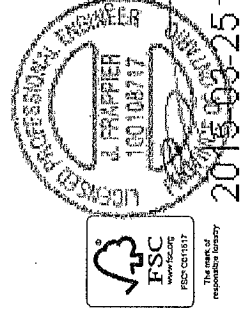
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/360 Deflection Limit
3/4" OSB G&N Sheathing

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



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 centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch 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"	NL-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	10-3/4	11
	NL-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	12	12-3/4
	NL-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---
	NL-80	2-0"	3-4"	4-8"	6-3"	8-0"	8-4"	---	---	---	---	---
11-7/8"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---
	NL-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-2"	8-4"	---	---
	NL-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---
	NL-80	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---
14"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---
	NL-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-2"	8-4"	---	---
	NL-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---
	NL-80	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---
16"	NL-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---
	NL-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-2"	8-4"	---	---
	NL-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---
	NL-80	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---

- 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

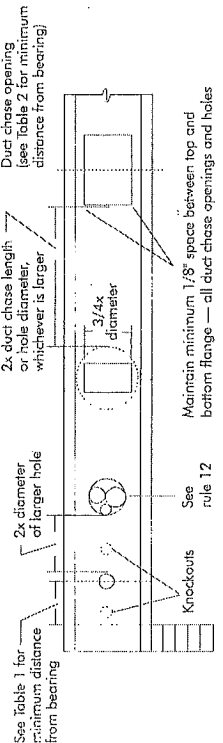


FIGURE 7

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 shrouded, do not over-stress I-joists with concentrated loads from building materials.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2x12 inch nailing to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.

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

9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

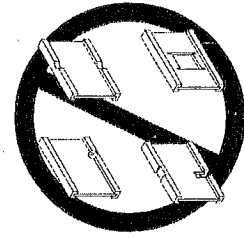
TABLE 2

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

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

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

Holes in webs should be cut with a sharp saw.

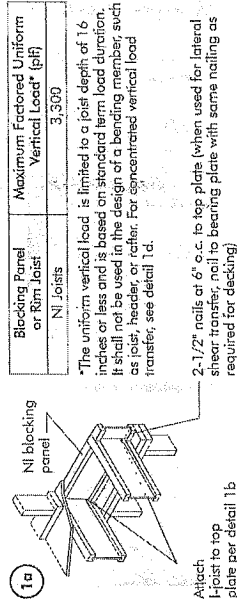
For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another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



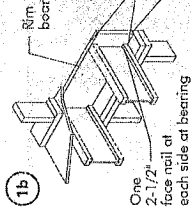
PRODUCT WARRANTY

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

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



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



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

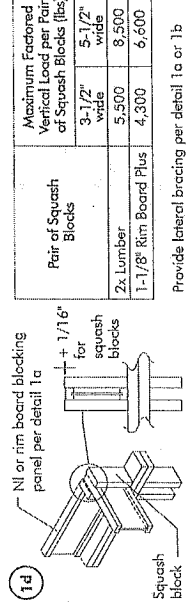
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

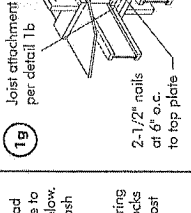
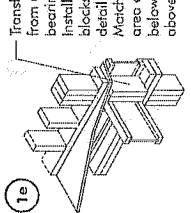
Attach rim board to top plate using 2-1/2" wire or spiral bee-nails at 6" o.c.

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.



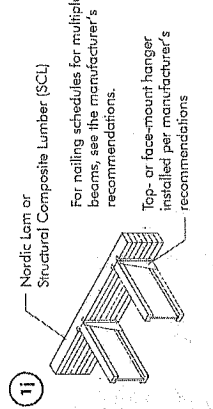
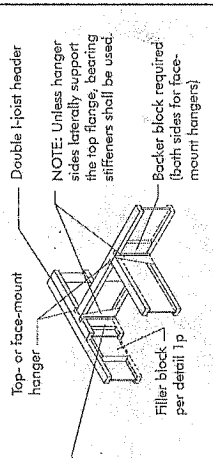
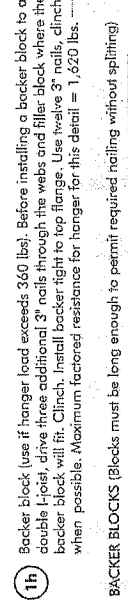
Pair of Squash Blocks	Maximum Factored Vertical Load per Pair at Squash Block (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300
	6,600



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

Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support

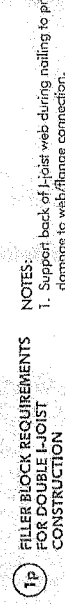
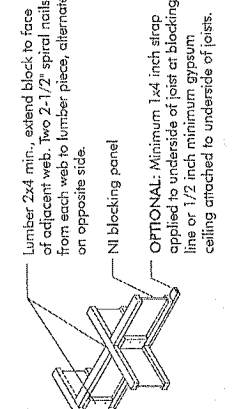
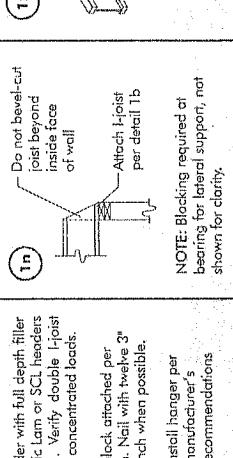
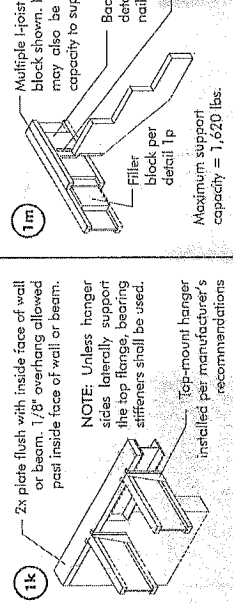
NI blocking panel per detail 1a



Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3 inch nails through the webs and filler block where the backer block will fit. Clinch. Install backer block tight to top flange. Use twelve 3 inch nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

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

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



Flange Size	Net Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2"	2-1/8" x 6"
3-1/2" x 1-1/2"	11-7/8"	2-1/8" x 8"
3-1/2" x 1-1/2"	14"	2-1/8" x 10"
3-1/2" x 1-1/2"	16"	2-1/8" x 12"
3-1/2" x 1-1/2"	18"	3" x 6"
3-1/2" x 1-1/2"	20"	3" x 8"
3-1/2" x 1-1/2"	22"	3" x 10"
3-1/2" x 1-1/2"	24"	3" x 12"
3-1/2" x 1-1/2"	26"	3" x 14"
3-1/2" x 1-1/2"	28"	3" x 16"

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

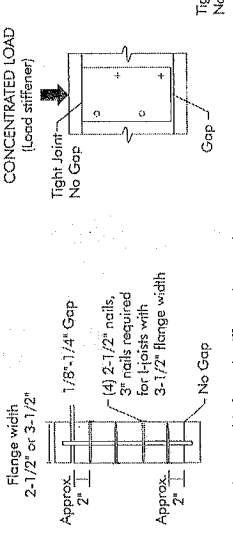
WEB STIFFENERS

WEB STIFFENER INSTALLATION DETAILS

NOTE: The above details are common wire nails assumed to be common spiral nails. 3" (10-122 dia.) common spiral nails may be substituted for 2-1/2" (10-128 dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

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

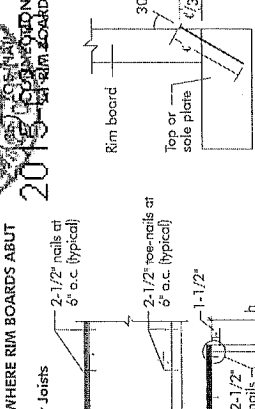
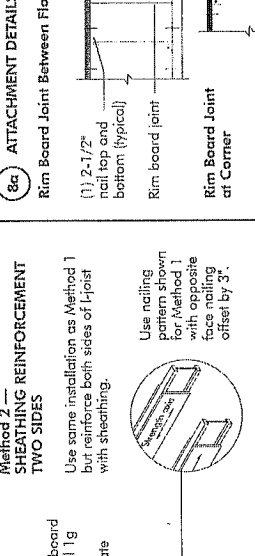
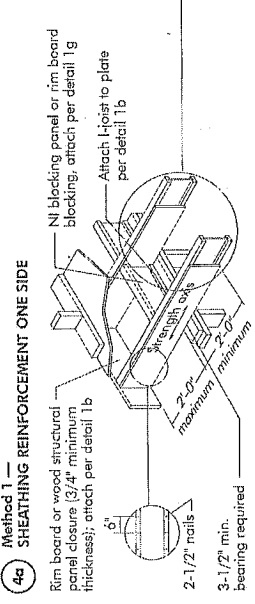


Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

RIM BOARD INSTALLATION DETAILS

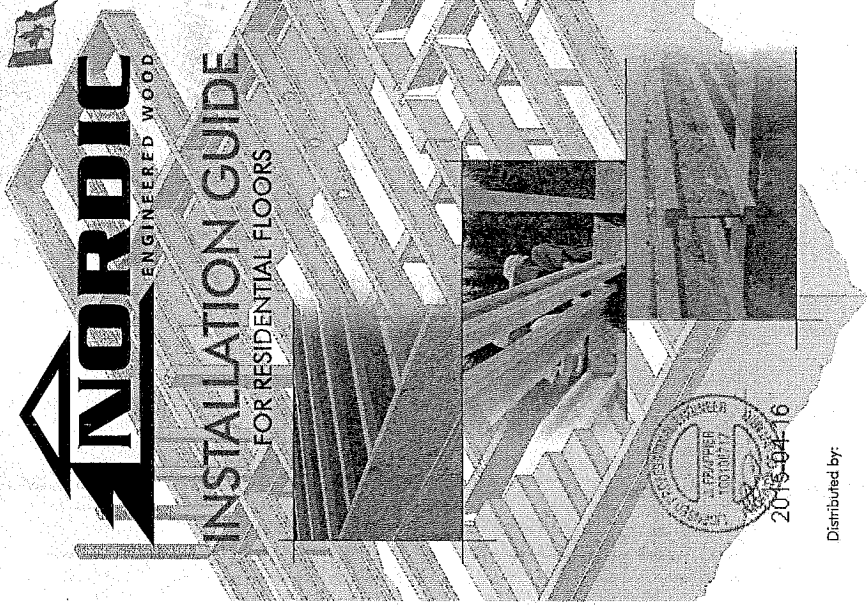
NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2 inch nails at 6 inch o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per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



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 inch nails at 6 inch 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.

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 inch nails at 6 inch 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.

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 inch nails at 6 inch 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.



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



WARNING
Joists are not stable until completely installed, and will not carry any load until fully sheathed 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 joist location, blocking will be required to support the joists until the floor sheathing is installed to prevent I-joist rollover or buckling.
2. When the building is completed, the floor sheathing will provide lateral support for the joists. Until then, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1 1/4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 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 cantilevered 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.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for joists, and failure to follow applicable building codes can result in serious accidents. Follow these installation guidelines carefully.



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

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

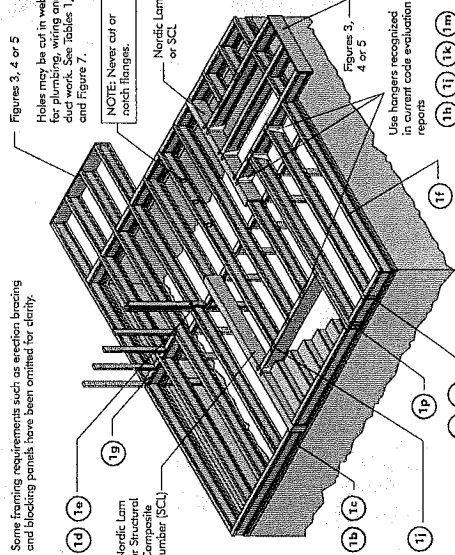
STORAGE AND HANDLING GUIDELINES

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

INSTALLING NORDIC I-JOISTS

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

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



All walls shown in the above details are assumed to be common with walls otherwise noted. 3" (0.125" dia) nail spacing is required for 2-1/2" (0.125" dia) wire nails. Framing lumber assumed to be Spruce-Pine-Fir, No. 2 or better. Individual components not shown to scale for clarity.

1a

Attach I-joist to top plate per detail 1b

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (psf)
N Joist	3,300

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

1b

One 2-1/2" face nail

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (psf)
1-1/8" Rim Board Plus	9,000

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

1c

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.

1d

NI or rim board blocking panel per detail 1a

Pair of Squash Blocks (3" dia)	2x Lumber	1-1/8" Rim Board Plus
3-1/2" wide	5,500	4,500
5-1/2" wide	9,500	6,600

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

MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf. Spans are based on the factored loads of 1,500 + 1,250. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of $1/480$. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, and 3/4 inch for a joist spacing of 24 inches. The OSB shall meet the requirements given in CGS871.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.

3. Minimum bearing length shall be 1 3/4 inches for the end bearings, and 3 1/2 inches for the intermediate bearings.

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

5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.

6. Tables are based on Lint Series Design per CAN/CSA C08-09 Standard, and NBC 2010.

7. SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

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

Joist Depth	Simple spans		On edge spans	
	Joist Spacing	Span	Joist Spacing	Span
9-1/2"	N-20	12'-1"	12'-2"	12'-3"
	N-24	14'-1"	14'-2"	14'-3"
	N-30	16'-1"	16'-2"	16'-3"
	N-36	18'-1"	18'-2"	18'-3"
	N-40	20'-1"	20'-2"	20'-3"
11-7/8"	N-20	12'-1"	12'-2"	12'-3"
	N-24	14'-1"	14'-2"	14'-3"
	N-30	16'-1"	16'-2"	16'-3"
	N-36	18'-1"	18'-2"	18'-3"
	N-40	20'-1"	20'-2"	20'-3"
14"	N-20	12'-1"	12'-2"	12'-3"
	N-24	14'-1"	14'-2"	14'-3"
	N-30	16'-1"	16'-2"	16'-3"
	N-36	18'-1"	18'-2"	18'-3"
	N-40	20'-1"	20'-2"	20'-3"
16"	N-20	12'-1"	12'-2"	12'-3"
	N-24	14'-1"	14'-2"	14'-3"
	N-30	16'-1"	16'-2"	16'-3"
	N-36	18'-1"	18'-2"	18'-3"
	N-40	20'-1"	20'-2"	20'-3"

WEB STIFFENERS

RECOMMENDATIONS:

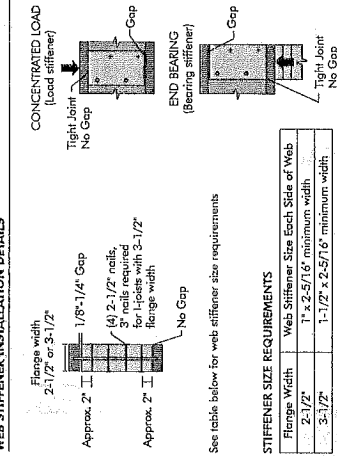
■ A bearing stiffener is required in all engineering applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (CUG). The gap between the stiffener and the flange is at the top.

■ A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

■ A load stiffener is required at locations where a factored concentrated load greater than 2,070 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever support and the free end. The stiffener shall extend for the full length of the load, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

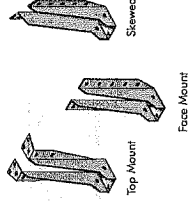


STIFFENER SIZE REQUIREMENTS

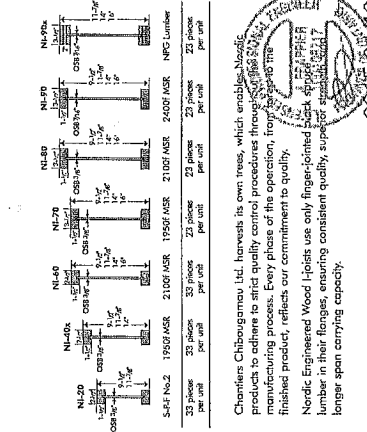
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

I-JOIST HANGERS

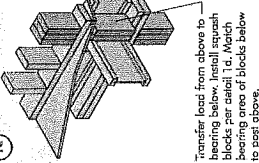
- Hangers should illustrate the three most commonly used metal hangers to support I-joists.
- All nailing must meet the hanger manufacturer's recommendations.
- Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- Web stiffeners are required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



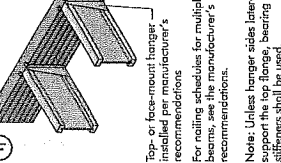
NORDIC I-JOIST SERIES



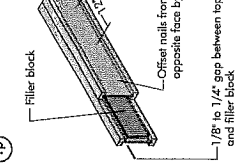
1a



1b



1c



1d



1e



1f



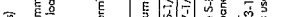
1g



1h



1i



1j



1k



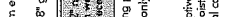
1l



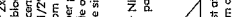
1m



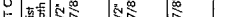
1n



1o



1p



1q

