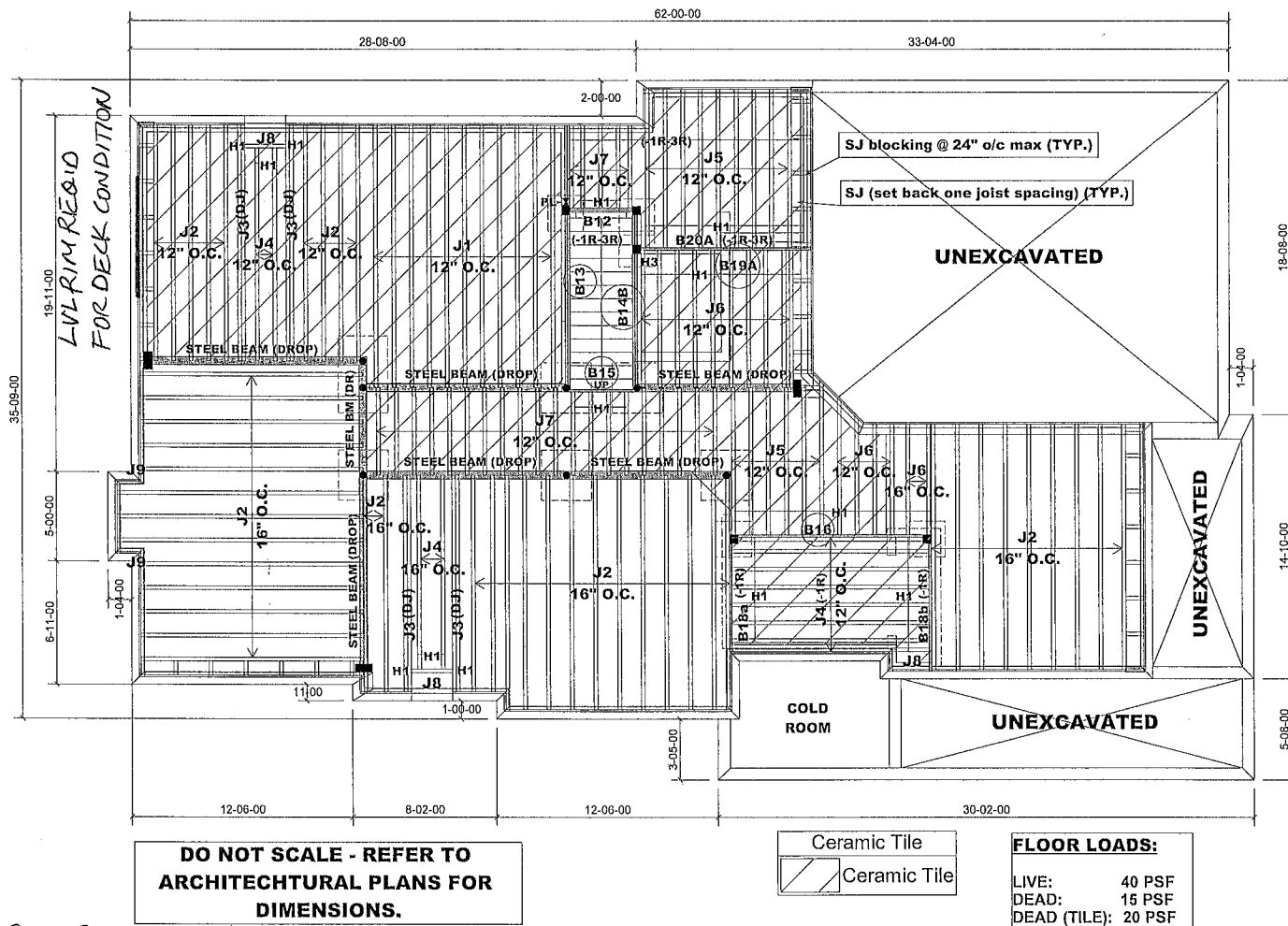




PlotID	Length	Product	Piles	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	11
J2	14-00-00	9 1/2" NI-40x	1	46
J3 (DJ)	14-00-00	9 1/2" NI-40x	2	8
J4	12-00-00	9 1/2" NI-40x	1	12
J5	10-00-00	9 1/2" NI-40x	1	15
J6	8-00-00	9 1/2" NI-40x	1	16
J7	6-00-00	9 1/2" NI-40x	1	25
J8	4-00-00	9 1/2" NI-40x	1	3
J9	2-00-00	9 1/2" NI-40x	1	2
B13	15-00-00	VERSALAM-10 2.0E	2	2
B16	12-00-00	VERSALAM-10 2.0E	1	1
B20A	11-00-00	VERSALAM-10 2.0E	1	1
B14B	11-00-00	VERSALAM-10 2.0E	2	2
B19A	10-00-00	VERSALAM-10 2.0E	1	1
B18b	8-00-00	VERSALAM-10 2.0E	1	1
B18a	7-00-00	VERSALAM-10 2.0E	1	1
B15	5-00-00	VERSALAM-10 2.0E	1	1
B12	4-00-00	VERSALAM-10 2.0E	1	1

97055 - March 8/18 revised

JT: 44997/94450

Builder: Bayview Wellington

Location: Bradford

Designer: RL/SG

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Mario
Tamarack Lumber

File: 288224(248460)

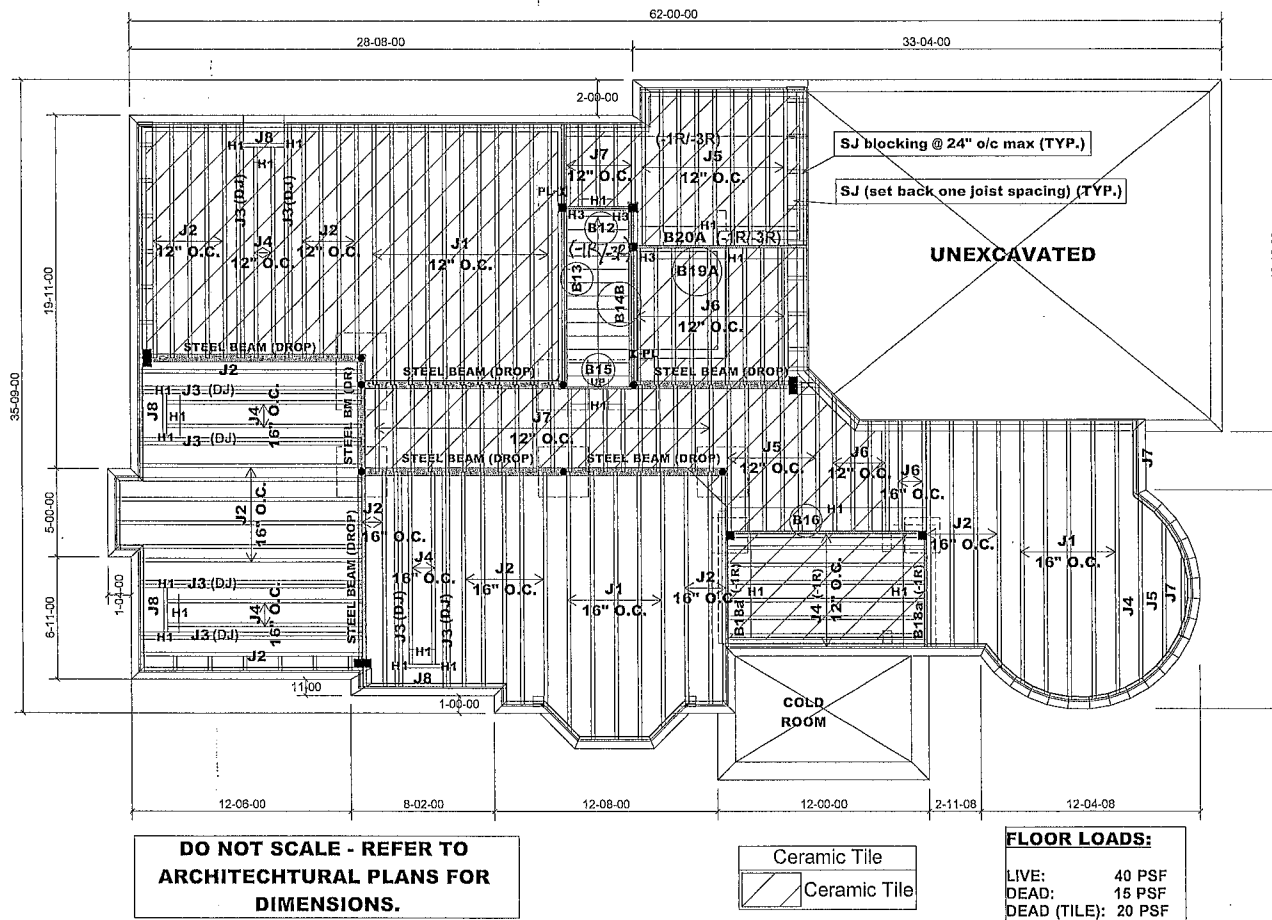
Project: Green Valley Estates East

Date: Sept. 18, 2017

Sheet: 2 of 9

295643

Site Copy



Products				
PlotID	Length	Product	Piles	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	21
J2	14-00-00	9 1/2" NI-40x	1	31
J3	14-00-00	9 1/2" NI-40x	2	16
J4	12-00-00	9 1/2" NI-40x	1	17
J5	10-00-00	9 1/2" NI-40x	1	16
J6	8-00-00	9 1/2" NI-40x	1	16
J7	6-00-00	9 1/2" NI-40x	1	27
J8	4-00-00	9 1/2" NI-40x	1	4
B13	15-00-00	VERSALAM-10 2.0E	2	2
B16	12-00-00	VERSALAM-10 2.0E	1	1
B20A	11-00-00	VERSALAM-10 2.0E	1	1
B14B	11-00-00	VERSALAM-10 2.0E	2	2
B19A	10-00-00	VERSALAM-10 2.0E	1	1
B18a	7-00-00	VERSALAM-10 2.0E	1	2
B15	5-00-00	VERSALAM-10 2.0E	1	1
B12	4-00-00	VERSALAM-10 2.0E	1	1

HANGER SCHEDULE

H1 ----- IUS2.56/9 (TM)
 H3 ----- HUS1.81/10 (FM)

NOTE:

TM - Top Mount Hanger
 FM - Face Mount Hanger

APP - As Per Plan
 BBO - Beam By Others

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD - 1-1/8" x 9-1/2" O.S.B.

1 - 2 x 6 SPF#2 squash block req'd on one side of each joist under interior load bearing walls.

Multiple squash blocks are req'd under concentrated loads.

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

FIRST FLOOR FRAMING S42-8C PLAN "B" W/SUNKEN LAUNDRY CONDITION (-1R/-2R/-3R)

97055 - March 8/18

JT: 44997/94450

Builder: Bayview Wellington

Location: Bradford

Designer: RL/SG

Alpa Roof Trusses Inc.
 Maple, Ontario

Salesperson: Mario
 Tamarack Lumber

File: 288224(248460)

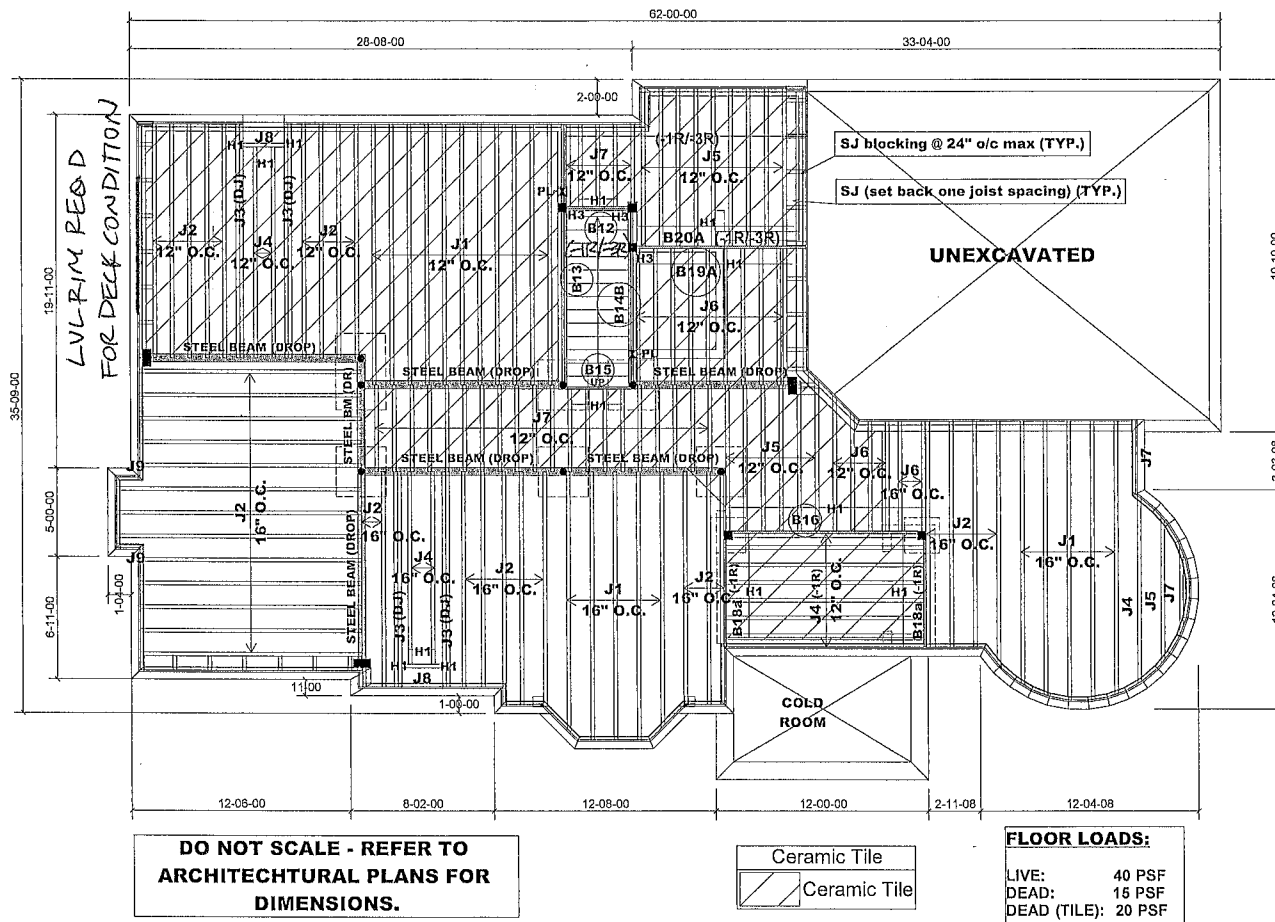
Project: Green Valley Estates East

Date: Sept.18, 2017

Sheet: 3 of 9

295643

Site Copy



Products				
PlotID	Length	Product	Piles	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	21
J2	14-00-00	9 1/2" NI-40x	1	36
J3	14-00-00	9 1/2" NI-40x	2	8
J4	12-00-00	9 1/2" NI-40x	1	13
J5	10-00-00	9 1/2" NI-40x	1	16
J6	8-00-00	9 1/2" NI-40x	1	16
J7	6-00-00	9 1/2" NI-40x	1	27
J8	4-00-00	9 1/2" NI-40x	1	2
J9	2-00-00	9 1/2" NI-40x	1	2
B13	15-00-00	VERSALAM-10 2.0E	2	2
B16	12-00-00	VERSALAM-10 2.0E	1	1
B20A	11-00-00	VERSALAM-10 2.0E	1	1
B14B	11-00-00	VERSALAM-10 2.0E	2	2
B19A	10-00-00	VERSALAM-10 2.0E	1	1
B18a	7-00-00	VERSALAM-10 2.0E	1	2
B15	5-00-00	VERSALAM-10 2.0E	1	1
B12	4-00-00	VERSALAM-10 2.0E	1	1

97055-March 8-revised

JT: 44997/94450

Builder: Bayview Wellington

Location: Bradford

Designer: RL/SG

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Mario
Tamarack Lumber

File: 288224(248460)

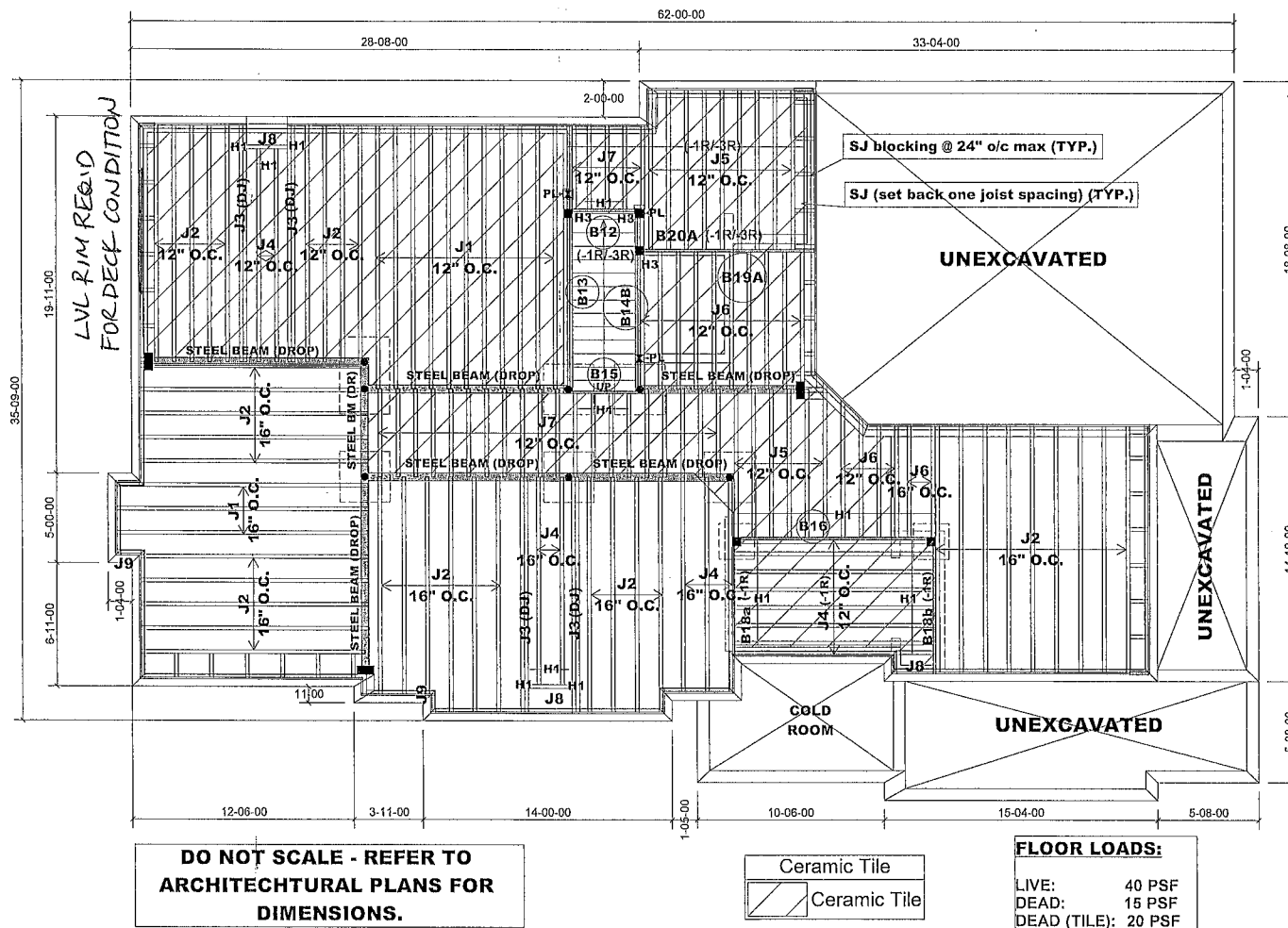
Project: Green Valley Estates East

Date: Sept.18, 2017

Sheet: 4 of 9

295643

Site Copy



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	14
J2	14-00-00	9 1/2" NI-40x	1	38
J3	14-00-00	9 1/2" NI-40x	2	8
J4	12-00-00	9 1/2" NI-40x	1	15
J5	10-00-00	9 1/2" NI-40x	1	15
J6	8-00-00	9 1/2" NI-40x	1	16
J7	6-00-00	9 1/2" NI-40x	1	25
J8	4-00-00	9 1/2" NI-40x	1	3
J9	2-00-00	9 1/2" NI-40x	1	2
B13	15-00-00	VERSALAM-10 2.0E	2	2
B16	12-00-00	VERSALAM-10 2.0E	1	1
B20A	11-00-00	VERSALAM-10 2.0E	1	1
B14B	11-00-00	VERSALAM-10 2.0E	2	2
B19A	10-00-00	VERSALAM-10 2.0E	1	1
B18b	8-00-00	VERSALAM-10 2.0E	1	1
B18a	7-00-00	VERSALAM-10 2.0E	1	1
B15	5-00-00	VERSALAM-10 2.0E	1	1
B12	4-00-00	VERSALAM-10 2.0E	1	1

HANGER SCHEDULE

H1 ----- IUS2.56/9 (TM)
H3 ----- HUS1.81/10 (FM)

NOTE:

TM - Top Mount Hanger
FM - Face Mount Hanger

APP - As Per Plan
BBO - Beam By Others

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD - 1-1/8" x 9-1/2" O.S.B.

1 - 2 x 6 SPF#2 squash block req'd on one side of each joist under interior load bearing walls.

Multiple squash blocks are req'd under concentrated loads.

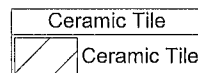
Ceramic tile application as per O.B.C. 9.30.6

FIRST FLOOR FRAMING
S42-8C PLAN "C"
W/ SUNKEN LAUNDRY
CONDITION (-1R/-2R/-3R)
WOD CONDITION

FLOOR LOADS:

LIVE: 40 PSF
DEAD: 15 PSF
DEAD (TILE): 20 PSF

**DO NOT SCALE - REFER TO
ARCHITECTURAL PLANS FOR
DIMENSIONS.**



97055-March 8/18 revised

JT: 44997/94450

Builder: Bayview Wellington

Location: Bradford

Designer: RL/SG

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Mario
Tamarack Lumber

File: 288224(248460)

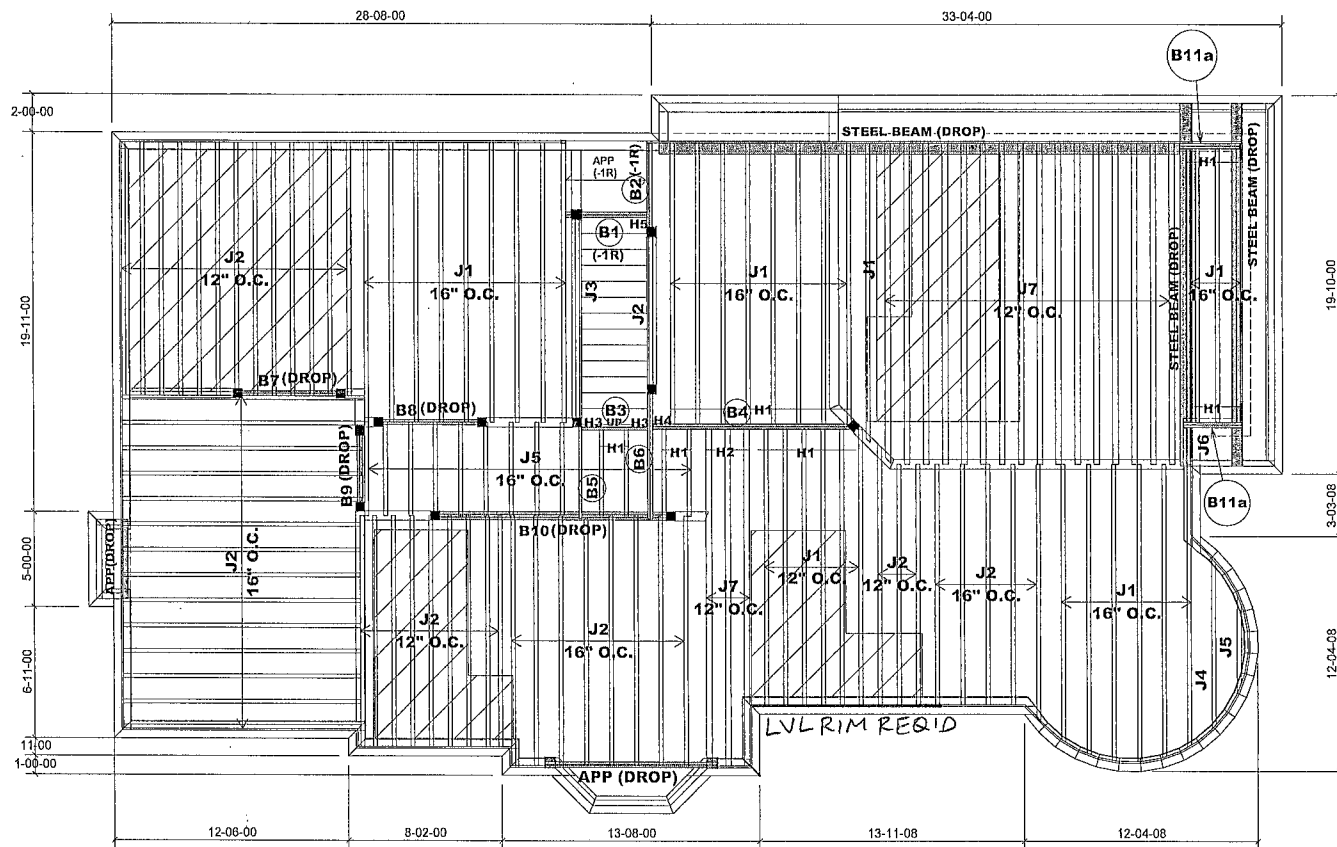
Project: Green Valley Estates East

Date: Sept. 18, 2017

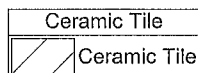
Sheet: 6 of 9

295643

Site Copy



**DO NOT SCALE - REFER TO
ARCHITECTURAL PLANS FOR
DIMENSIONS.**



FLOOR LOADS:

LIVE: 40 PSF
DEAD: 15 PSF
DEAD (TILE): 20 PSF

Products				
PlotID	Length	Product	Piles	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	34
J2	14-00-00	9 1/2" NI-40x	1	53
J3	12-00-00	9 1/2" NI-40x	1	1
J4	10-00-00	9 1/2" NI-40x	1	1
J5	6-00-00	9 1/2" NI-40x	1	14
J6	2-00-00	9 1/2" NI-40x	1	1
J7	18-00-00	9 1/2" NI-80	1	19
B10	13-00-00	VERSALAM-10 2.0E	3	3
B4	11-00-00	VERSALAM-10 2.0E	2	2
B6	8-00-00	VERSALAM-10 2.0E	2	2
B5	6-00-00	VERSALAM-10 2.0E	1	1
B7	6-00-00	VERSALAM-10 2.0E	2	2
B8	6-00-00	VERSALAM-10 2.0E	2	2
B9	5-00-00	VERSALAM-10 2.0E	2	2
B1	5-00-00	VERSALAM-7.25 2.0E	2	2
B2	5-00-00	VERSALAM-7.25 2.0E	2	2
B3	4-00-00	VERSALAM-10 2.0E	1	1
B11a	4-00-00	VERSALAM-10 2.0E	2	4

HANGER SCHEDULE

H1 ----- IUS2.56/9 (TM)
H2 ----- IUS3.56/9 (TM)
H3 ----- HUS1.81/10 (FM)
H4 ----- HGUS410 (FM)
H5 ----- HGUS48

NOTE:

TM - Top Mount Hanger
FM - Face Mount Hanger

APP - As Per Plan
BBO - Beam By Others

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD - 1-1/8" x 9-1/2" O.S.B.

1 - 2 x 6 SPF#2 squash block req'd on one side of each joist under interior load bearing walls.

Multiple squash blocks are req'd under concentrated loads.

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

**SECOND FLOOR FRAMING
S42-8C PLAN "B"
4 BEDROOM W/ MEDIA LOFT
& 5 BEDROOM W/ FOUR BATH
REVISED : MARCH 8, 2018**

JT: 44997/97055
File: 295643
288224(248460)

Builder: Bayview Wellington
Project: Green Valley Estates East

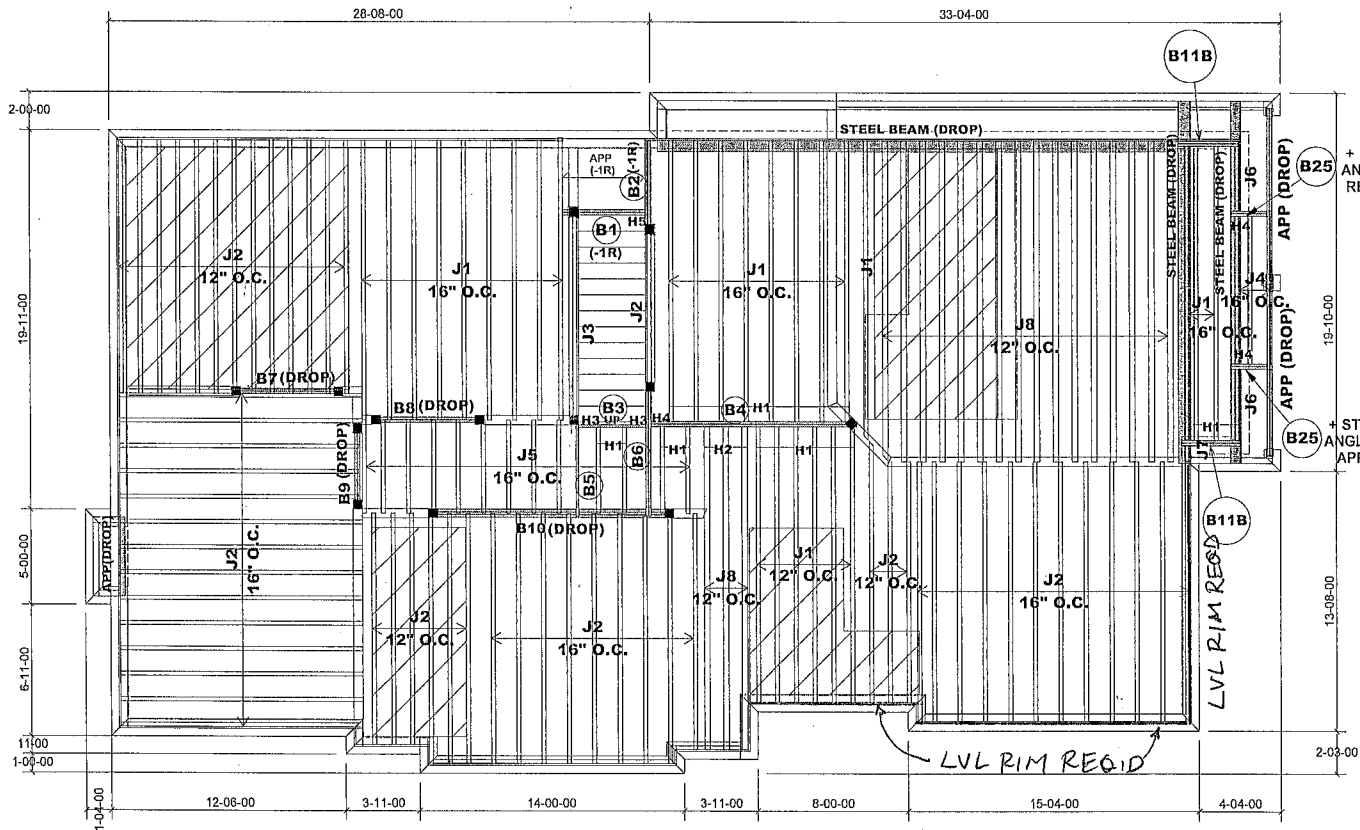
Location: Bradford
Date: Sept.18, 2017

Designer: RL/SG
Sheet: 8 of 9

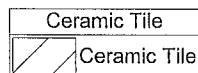
Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Mario
Tamarack Lumber

Site Copy



**DO NOT SCALE - REFER TO
ARCHITECTURAL PLANS FOR
DIMENSIONS.**



FLOOR LOADS:

LIVE: 40 PSF
DEAD: 15 PSF
DEAD (TILE): 20 PSF

Products				
PlotID	Length	Product	Piles	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	27
J2	14-00-00	9 1/2" NI-40x	1	58
J3	12-00-00	9 1/2" NI-40x	1	1
J4	8-00-00	9 1/2" NI-40x	1	3
J5	6-00-00	9 1/2" NI-40x	1	13
J6	4-00-00	9 1/2" NI-40x	1	2
J7	2-00-00	9 1/2" NI-40x	1	1
J8	18-00-00	9 1/2" NI-80	1	19
B10	13-00-00	VERSALAM-10 2.0E	3	3
B4	11-00-00	VERSALAM-10 2.0E	2	2
B6	8-00-00	VERSALAM-10 2.0E	2	2
B5	6-00-00	VERSALAM-10 2.0E	1	1
B7	6-00-00	VERSALAM-10 2.0E	2	2
B8	6-00-00	VERSALAM-10 2.0E	2	2
B9	5-00-00	VERSALAM-10 2.0E	2	2
B1	5-00-00	VERSALAM-7.25 2.0E	2	2
B2	5-00-00	VERSALAM-7.25 2.0E	2	2
B3	4-00-00	VERSALAM-10 2.0E	1	1
B11B	4-00-00	VERSALAM-10 2.0E	2	4
B25	3-00-00	VERSALAM-10 2.0E	2	4

HANGER SCHEDULE

H1 ----- IUS2.56/9 (TM)
H2 ----- IUS3.56/9 (TM)
H3 ----- HUS1.81/10 (FM)
H4 ----- HGUS410 (FM)
H5 ----- HGUS48

NOTE:

TM - Top Mount Hanger
FM - Face Mount Hanger

APP - As Per Plan
BBO - Beam By Others

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD - 1-1/8" x 9-1/2" O.S.B.

1 - 2 x 6 SPF#2 squash block req'd on one side of each joist under interior load bearing walls.

Multiple squash blocks are req'd under concentrated loads.

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

**SECOND FLOOR FRAMING
S42-8C PLAN "C"
4 BEDROOM W/ MEDIA LOFT
& 5 BEDROOM W/ FOUR BATH
REVISED : MARCH 8, 2018**

JT: 44997/97055
File: 295643
288224(248460)

Builder: Bayview Wellington
Project: Green Valley Estates East

Location: Bradford
Date: Sept.18, 2017

Designer: RL/SG
Sheet: 9 of 9

Alpa Roof Trusses Inc.
Maple, Ontario

Salesperson: Mario
Tamarack Lumber

Site Copy



Boise Cascade

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

Floor Beam\FB19A



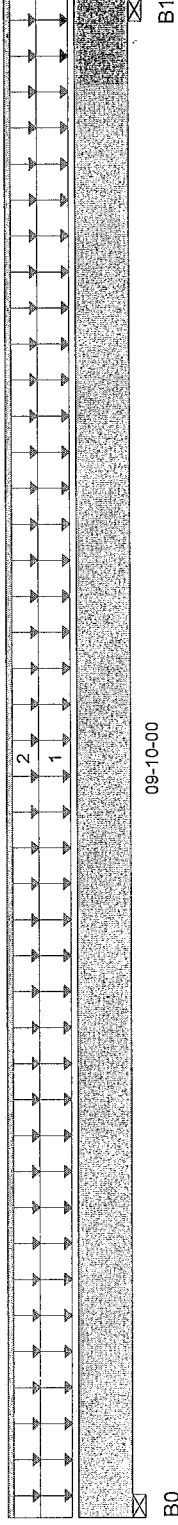
BC CALC® Design Report

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

September 18, 2017 11:06:08

Build 6080
Job Name: 38514
Address: Green Valley Estates - S42-8C
City, Province, Postal Code: Bradford, ON
Customer: Bayview Wellington
Code reports: CCMC 12472-R

File Name: 248460 BC.bcc
Description: Designs\FB19A
Specifier: 76836
Designer: RL
Company: Alpa Roof Trusses Inc.
Misc:



Total Horizontal Product Length = 09-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	787 / 0	712 / 0		
B1, 3-1/2"	787 / 0	712 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft²)	L	00-00-00	09-10-00	40	20			04-00-00
2 Wall	Unf. Lin. (lb/ft)	L	00-00-00	09-10-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,625 ft-lbs	11,610 ft-lbs	39.8%	1	04-11-00
End Shear	1,614 lbs	5,785 lbs	27.9%	1	01-01-00
Total Load Defl.	L/531 (0.212")	0.469"	45.2%	4	04-11-00
Live Load Defl.	L/999 (0.111")	n/a	n/a	5	04-11-00
Max Defl.	0.212"	n/a	n/a	4	04-11-00
Span / Depth	11.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

Bearing Supports

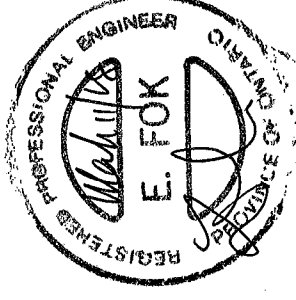
	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,070 lbs	54.9%	27.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,070 lbs	54.9%	27.7%	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
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

User Notes

MAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
O.C., STAGGERED IN TWO ROWS



Site Copy

T11803010



Boise Cascade

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

Floor Beam\FB14B



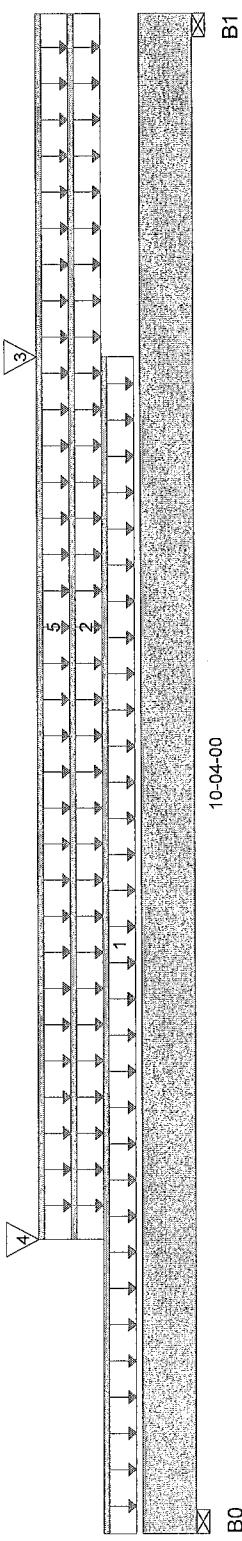
BC CALC® Design Report

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

September 18, 2017 11:19:07

Build 6080
 Job Name: 38514
 Address: Green Valley Estates - S42-8C
 City, Province, Postal Code: Bradford, ON
 Customer: Bayview Wellington
 Code reports: CCMC 12472-R

File Name: 248460 BC.bcc
 Description: Designs\FB14B
 Specifier: 76836
 Designer: RL
 Company: Alpa Roof Trusses Inc.
 Misc:



B0
 10-04-00
 Total Horizontal Product Length = 10-04-00
 B1

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,179 / 0	1,745 / 0		
B1, 3-1/2"	1,214 / 0	1,524 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00	20	10			n/a
2	Unf. Lin. (lb/ft)	L	02-00-00	10-04-00	0	120			n/a
3	Conc. Pt. (lbs)	L	08-00-00	08-00-00	787	712			n/a
4	Conc. Pt. (lbs)	L	02-00-00	02-00-00	2,221	1,294			n/a
5	Unf. Lin. (lb/ft)	L	02-00-00	10-04-00	27	10			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,843 ft-lbs	23,220 ft-lbs	42.4%	1	03-06-00
End Shear	5,390 lbs	11,571 lbs	46.6%	1	01-01-00
Total Load Defl.	L/446 (0.266")	0.494"	53.8%	4	05-00-00
Live Load Defl.	L/906 (0.131")	0.329"	39.7%	5	04-10-14
Max Defl.	0.266"	n/a	n/a	4	05-00-00
Span / Depth	12.5	n/a	n/a		00-00-00
Squash Blocks	Valid				

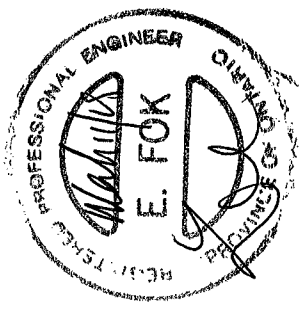
Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	3-1/2" x 3-1/2"	5,449 lbs	72.3%	36.5%	Spruce Pine Fir
B1	3-1/2" x 3-1/2"	3,726 lbs	49.4%	24.9%	Spruce Pine Fir

Notes

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

User Notes



Site Copy

T-1803011



Boise Cascade

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

Floor Beam\FB20A



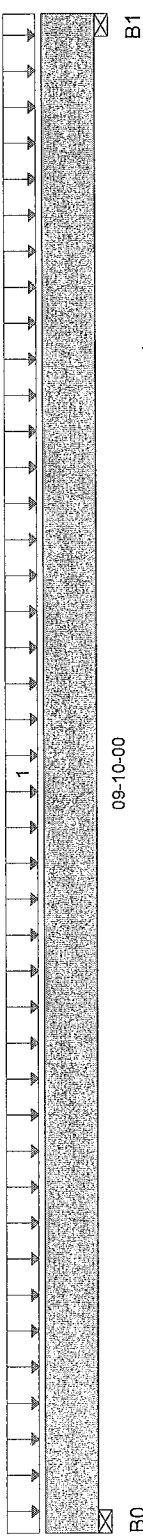
BC CALC® Design Report

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

September 18, 2017 11:07:09

Build 6080
Job Name: 38514
Address: Green Valley Estates - S42-8C
City, Province, Postal Code: Bradford, ON
Customer: Bayview Wellington
Code reports: CCMC 12472-R

File Name: 248460 BC.bcc
Description: Designs\FB20A
Specifier: 76836
Designer: RL
Company: Alpa Roof Trusses Inc.
Misc:



Total Horizontal Product Length = 09-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	885 / 0	466 / 0		
B1, 3-1/2"	885 / 0	466 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft²)	L	00-00-00	09-10-00	40	20	0.65	1.00 1.15	04-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,268 ft-lbs	11,610 ft-lbs	36.8%	1	04-11-00
End Shear	1,489 lbs	5,785 lbs	25.7%	1	01-01-00
Total Load Defl.	L/589 (0.191")	0.469"	40.7%	4	04-11-00
Live Load Defl.	L/899 (0.125")	0.313"	40%	5	04-11-00
Max Defl.	0.191"	n/a	n/a	4	04-11-00
Span / Depth	11.8	n/a	n/a		00-00-00
Squash Blocks	Valid				

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,910 lbs	50.7%	25.6%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,910 lbs	50.7%	25.6%	Spruce Pine Fir

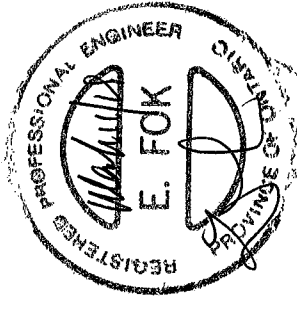
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
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

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
O.C., STAGGERED IN TWO ROWS



Site Copy

T. 1803012



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Floor Beam\FB11B

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

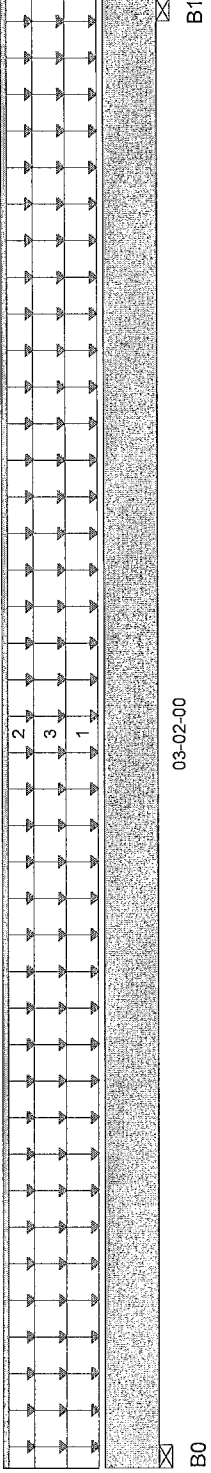
September 19, 2017 11:09:12

BC CALC® Design Report



Build 6080
 Job Name: 38514
 Address: Green Valley Estates - S42-8C
 City, Province, Postal Code: Bradford, ON
 Customer: Bayview Wellington
 Code reports: CCMC 12472-R

File Name: 248460 BC.bcc
 Description: Designs\FB11B
 Specifier: 76836
 Designer: RL
 Company: Alpa Roof Trusses Inc.
 Misc:



Total Horizontal Product Length = 03-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	507 / 0	451 / 0	257 / 0	
B1, 3-1/2"	507 / 0	451 / 0	257 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft^2)	L	00-00-00	03-02-00	40	15			08-00-00
2 Wall	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	0	100			n/a
3	Unf. Area (lb/ft^2)	L	00-00-00	03-02-00	11	11	32	1.00 1.15	05-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	841 ft-lbs	23,220 ft-lbs	3.6%	1	01-07-00
End Shear	459 lbs	11,571 lbs	4%	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	11	01-07-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	15	01-07-00
Max Defl.	0.002"	n/a	n/a	11	01-07-00
Span / Depth	3.4	n/a	n/a		00-00-00
Squash Blocks	Valid				

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,452 lbs	19.3%	9.7%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,452 lbs	19.3%	9.7%	Spruce Pine Fir

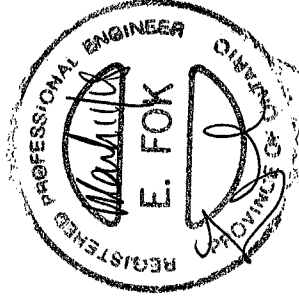
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 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

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ 6" O.C., STAGGERED IN TWO ROWS

Site Copy



T-1803013



Boise Cascade

BC CALC® Design Report



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

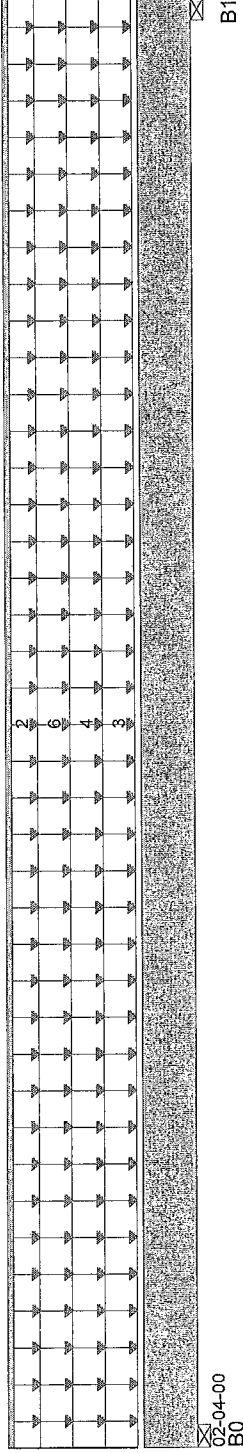
Floor Beam\FB25

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

March 8, 2018 14:10:18

Build 6536
 Job Name: 38514
 Address: Green Valley Estates - S42-8C
 City, Province, Postal Code:Bradford, ON
 Customer: Bayview Wellington
 Code reports: CCMC 12472-R

File Name: 248460 BC.bcc
 Description: Designs\FB25
 Specifier: 76836
 Designer: RL
 Company: Alpa Roof Trusses Inc.
 Misc:



Total Horizontal Product Length = 02-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	183 / 0	256 / 0	160 / 0	
B1, 3-1/2"	183 / 0	256 / 0	160 / 0	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
2	Unf. Lin. (lb/ft)	L	00-00-00	02-04-00	0	100			n/a
3	Unf. Area (lb/ft^2)	L	00-00-00	02-04-00		20		52	02-00-00
4	Unf. Area (lb/ft^2)	L	00-00-00	02-04-00		11		32	01-00-00
6	Unf. Area (lb/ft^2)	L	00-00-00	02-04-00	40	15			03-11-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	254 ft-lbs	23,220 ft-lbs	1.1%	1	01-02-00
End Shear	48 lbs	11,571 lbs	0.4%	1	01-01-00
Total Load Defl.	L/999 (0")	n/a	n/a	11	01-02-00
Live Load Defl.	L/999 (0")	n/a	n/a	15	01-02-00
Max Defl.	0"	n/a	n/a	11	01-02-00
Span / Depth	2.4	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	674 lbs	8.9%	4.5%	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	674 lbs	8.9%	4.5%	Spruce Pine Fir

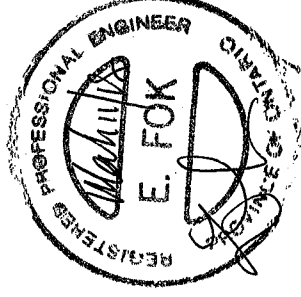
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 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

User Notes



Site Copy

T-1803014



Boise Cascade

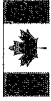
Double 1-3/4" x 7-1/4" VERSA-LAM® 2.0 3100 SP

Floor Beam\FB01

BC CALC® Design Report

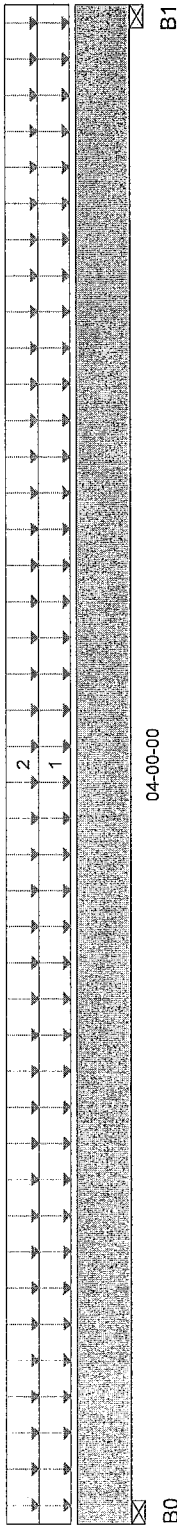
Dry | 1 span | No cantilevers | 0/12 slope (deg)

November-30-14



File Name: 248460 BC
Description: Designs\FB01
Specifier: 76836
Designer: RL
Company: Alpa Roof Trusses Inc.
Misc:

38514
Green Valley Estates - S42-8C
City, Province, Postal Code:Bradford, ON
Customer: Bayview Wellington
Code reports: CCMC 12472-R



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	533 / 0	215 / 0		
B1, 3-1/2"	533 / 0	215 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Landing	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00	40	15		1.00	1.15
2 Stairs	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00	40	15			00-08-00 06-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	838 ft-lbs	15,249 ft-lbs	0.05	1	02-00-00
End Shear	590 lbs	8,830 lbs	0.07	1	00-10-12
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	02-00-00
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	02-00-00
Span / Depth	5.9	n/a	n/a		00-00-00

Bearing Supports

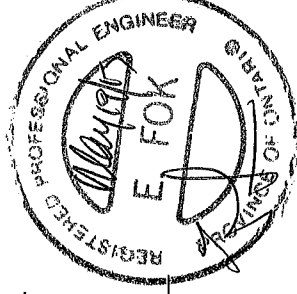
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,068 lbs	0.14	0.07	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,068 lbs	0.14	0.07	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ 12" O.C., STAGGERED IN TWO ROWS



Site Copy

T-1505145



Boise Cascade

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

Floor Beam\FB02

BC CALC® Design Report

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

November-30-14



Build 3272

Name:

38514

Address:

Green Valley Estates - S42~8C

City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports: CCMC 12472-R

File Name: 248460 BC

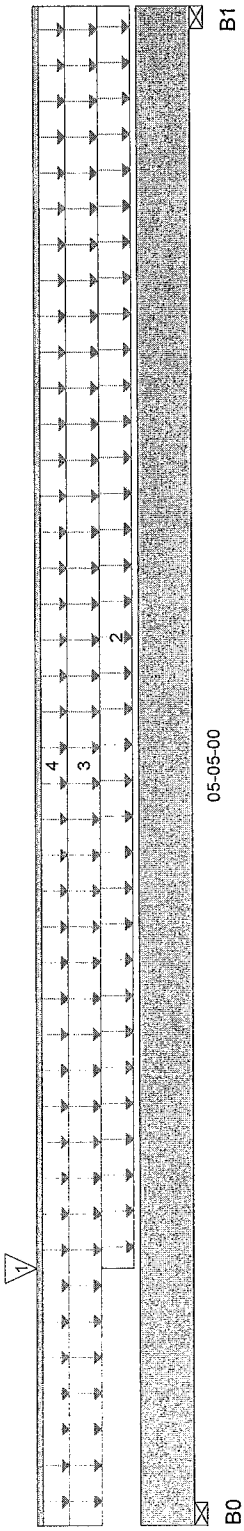
Description: Designs\FB02

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



05-05-00

B1

Total Horizontal Product Length = 05-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	678 / 0	450 / 0		
B1, 3-1/2"	359 / 0	319 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 - B1	Conc. Pt. (lbs)	L	00-11-00	00-11-00	533	215			n/a
2 - Landing	Unf. Area (lb/ft^2)	L	00-11-00	05-05-00	40	15			02-00-00
3 - Floor	Unf. Area (lb/ft^2)	L	00-00-00	05-05-00	40	15			00-08-00
4 - Wall	Unf. Lin. (lb/ft)	L	00-00-00	05-05-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,287 ft-lbs	15,249 ft-lbs	0.08	1	02-02-09
End Shear	1,457 lbs	8,830 lbs	0.17	1	00-10-12
Total Load Defl.	L/999 (0.019")	n/a	n/a	4	02-07-04
Live Load Defl.	L/999 (0.011")	n/a	n/a	5	02-06-10
Span / Depth	8.2	n/a	n/a		00-00-00

Bearing Supports

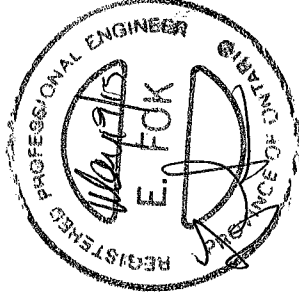
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,579 lbs	0.21	0.11	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	938 lbs	0.12	0.06	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
(21' O.C., STAGGERED IN TWO ROWS)



Site Copy

T-1505460



Boise Cascade

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

Floor Beam\FB03

BC CALC® Design Report

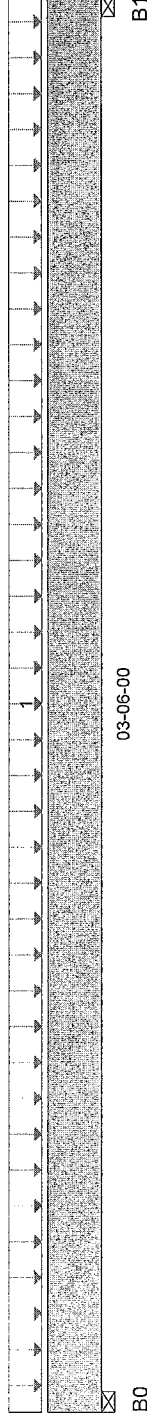
Dry | 1 span | No cantilevers | 0/12 slope (deg)

November-30-14



Build 3272
 Name: 38514
 Address: Green Valley Estates - S42~8C
 City, Province, Postal Code: Bradford, ON
 Customer: Bayview Wellington
 Code reports: CCMC 12472-R

File Name: 248460 BC
 Description: Designs\FB03
 Specifier: 76836
 Designer: RL
 Company: Alpa Roof Trusses Inc.
 Misc:



Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	163 / 0	70 / 0		
B1, 3-1/2"	163 / 0	70 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft^2)	L	00-00-00	03-06-00	40	15		1.00 1.15	02-04-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	219 ft-lbs	12,704 ft-lbs	0.02	1	01-09-00
1 Shear	127 lbs	5,785 lbs	0.02	1	01-01-00
1 Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-09-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-09-00
Span / Depth	3.8	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. \n\nBC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

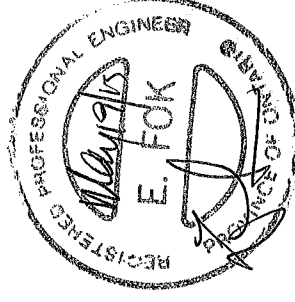
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	332 lbs	0.09	0.04	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	332 lbs	0.09	0.04	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4
 Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ O.C., STAGGERED IN TWO ROWS



T-1505147



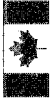
Boise Cascade

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

Floor Beam\FB04

November-30-14

BC CALC® Design Report



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

Build 3272

Name:

38514

Address:

Green Valley Estates - S42~8C

City, Province, Postal Code:Bradford, ON

Customer:

Bayview Wellington

Code reports:

CCMC 12472-R

File Name: 248460 BC

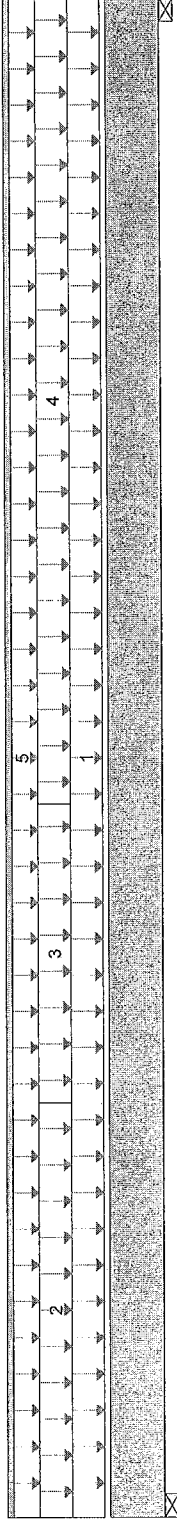
Description: Designs\FB04

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



11-00-00

B1

Total Horizontal Product Length = 11-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,836 / 0	1,501 / 0		
B1, 3-1/2"	3,244 / 0	1,759 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft²)	L	00-00-00	11-00-00	40	15			07-06-00
2 Floor	Unf. Area (lb/ft²)	L	00-00-00	03-00-00	40	15			02-05-00
3 Floor	Unf. Area (lb/ft²)	L	03-00-00	05-02-00	40	15			09-00-00
4 Tile Floor	Unf. Area (lb/ft²)	L	05-02-00	11-00-00	40	20			07-04-00
5 Wall	Unf. Lin. (lb/ft)	L	00-00-00	11-00-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	17,598 ft-lbs	25,408 ft-lbs	0.69	1	05-07-06
End Shear	5,656 lbs	11,571 lbs	0.49	1	09-11-00
Total Load Defl.	L/256 (0.494")	0.527"	0.94	4	05-05-09
Live Load Defl.	L/392 (0.323")	0.351"	0.92	5	05-05-09
Span / Depth	13.3	n/a	n/a		00-00-00

Bearing Supports

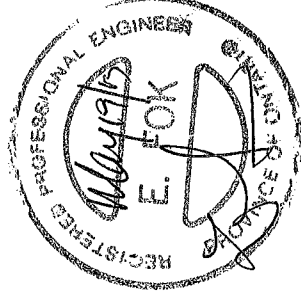
	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	6,131 lbs	0.81	0.41	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	7,065 lbs	0.94	0.47	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
10" O.C., STAGGERED IN TWO ROWS



Site Copy

T-1505148



Boise Cascade

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

Floor Beam\FB05

BC CALC® Design Report

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

November-30-14



Build 3272

38514

File Name: 248460 BC

Description: Designs\FB05

Name:

Specifier: 76836

Address: Green Valley Estates - S42~8C

City, Province, Postal Code:Bradford, ON

Customer: Bayview Wellington

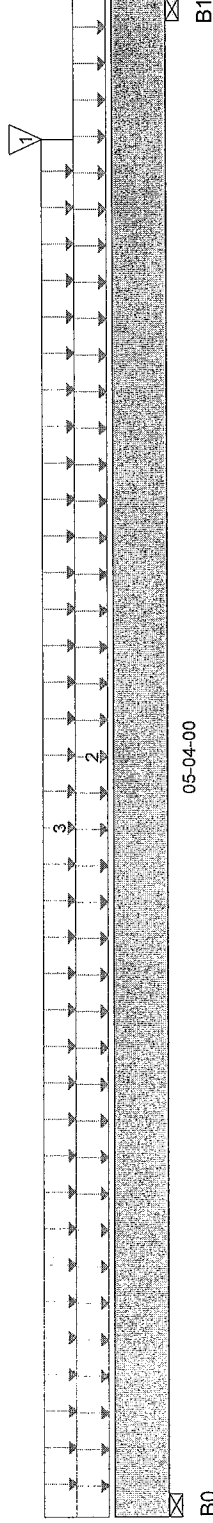
Designer: RL

Company: Alpa Roof Trusses Inc.

Code reports:

Misc:

CCMC 12472-R



05-04-00

Total Horizontal Product Length = 05-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	151 / 0	70 / 0		
B1, 3-1/2"	283 / 0	127 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 B3	Conc. Pt. (lbs)	L	04-10-00	04-10-00	163	70			n/a
2 Floor	Unf. Area (lb/ft²)	L	00-00-00	05-04-00	40	15			00-08-00
Floor	Unf. Area (lb/ft²)	L	00-00-00	04-10-00	40	15			00-08-00

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	375 ft-lbs	12,704 ft-lbs	0.03	1	02-09-12
End Shear	276 lbs	5,785 lbs	0.05	1	04-03-00
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-08-09
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-08-09
Span / Depth	6.2	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. \n\nBC 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.

Bearing Supports

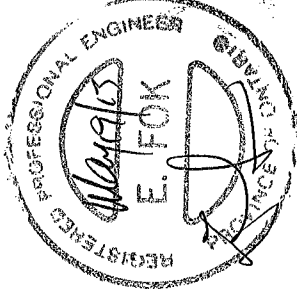
	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	314 lbs	0.08	0.04	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	584 lbs	0.15	0.08	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4
 Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ O.C., STAGGERED IN TWO ROWS



T-1505149

Site Copy



Boise Cascade

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

Floor Beam\FB06

November-30-14

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



BC CALC® Design Report

Build 3272

38514

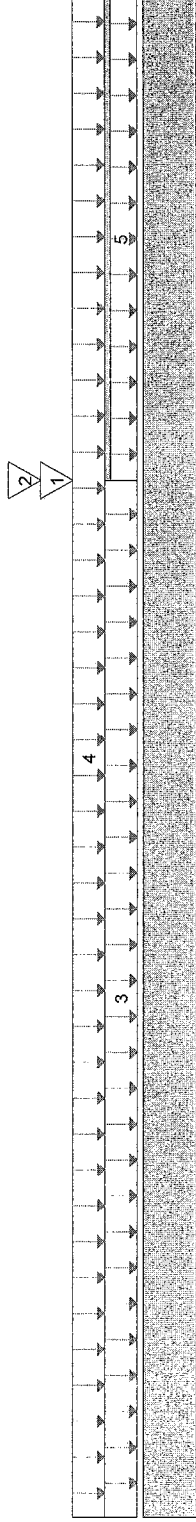
Name: Green Valley Estates - S42-8C

Address: City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports: CCMC 12472-R

File Name: 248460 BC
Description: Designs\FB06
Specifier: 76836
Designer: RL
Company: Alpa Roof Trusses Inc.
Misc:



07-01-00

B1

Total Horizontal Product Length = 07-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,096 / 0	600 / 0		
B1, 3-1/2"	2,221 / 0	1,294 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 B3	Conc. Pt. (lbs)	L	04-10-00	04-10-00	163	70			n/a
2 B4	Conc. Pt. (lbs)	L	04-10-00	04-10-00	2,836	1,501			n/a
3 Floor	Unf. Area (lb/ft^2)	L	00-00-00	04-10-00	40	15			00-08-00
4 Floor	Unf. Area (lb/ft^2)	L	00-00-00	07-01-00	40	15			00-08-00
5 Wall	Unf. Lin. (lb/ft)	L	04-10-00	07-01-00	0	60			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
End Shear	9,653 ft-lbs	25,408 ft-lbs	0.38	1	04-10-00
Total Load Defl.	4,797 lbs	11,571 lbs	0.41	1	06-00-00
Live Load Defl.	L/999 (0.085")	n/a	n/a	4	03-10-01
Span / Depth	L/999 (0.055")	n/a	n/a	5	03-10-01
	8.4	n/a	n/a		00-00-00

Bearing Supports

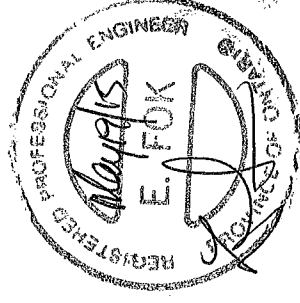
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,394 lbs	0.32	0.16	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	4,948 lbs	0.66	0.33	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

12' ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
12' O.C., STAGGERED IN TWO ROWS



T-1509150



Boise Cascade

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

Floor Beam\FB07

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

November-30-14

BC CALC® Design Report

38514

File Name: 248460 BC

Description: Designs\FB07

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:

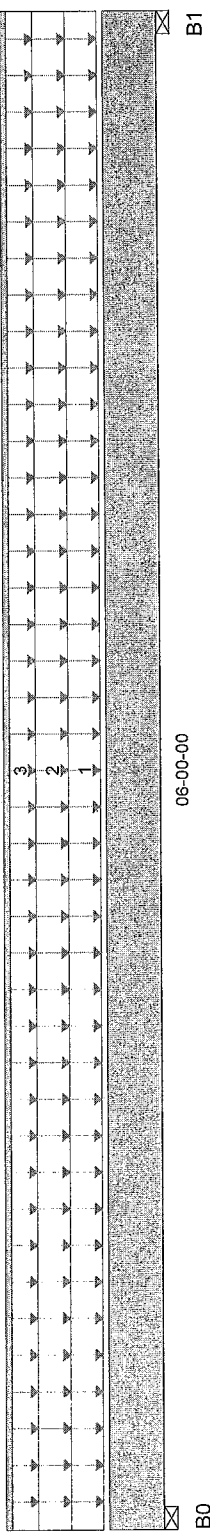
38514

Green Valley Estates - S42-8C

City, Province, Postal Code:Bradford, ON

Customer: Bayview Wellington

CCMC 12472-R



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	880 / 0	639 / 0			06-08-00
B1, 3-1/2"	880 / 0	639 / 0			00-08-00

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Tile Floor	Unf. Area (lb/ft^2)	L	00-00-00	06-00-00	40	20			06-08-00
2 Floor Wall	Unf. Area (lb/ft^2)	L	00-00-00	06-00-00	40	15			00-08-00
	Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	0	60			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	2,711 ft-lbs	25,408 ft-lbs	0.11	1	03-00-00
End Shear	1,354 lbs	11,571 lbs	0.12	1	01-01-00
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	03-00-00
Live Load Defl.	L/999 (0.012")	n/a	n/a	5	03-00-00
Span / Depth	7	n/a	n/a		00-00-00

Bearing Supports

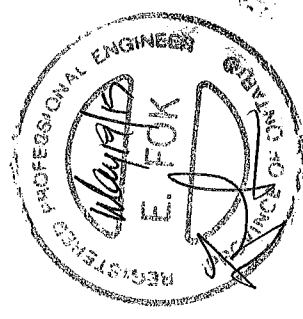
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,119 lbs	0.28	0.14	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,119 lbs	0.28	0.14	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ (2" O.C., STAGGERED IN TWO ROWS



Site Copy

T-150515



Boise Cascade

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

Floor Beam\FB08

BC CALC® Design Report

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

November-30-14



Project ID: 3272

38514

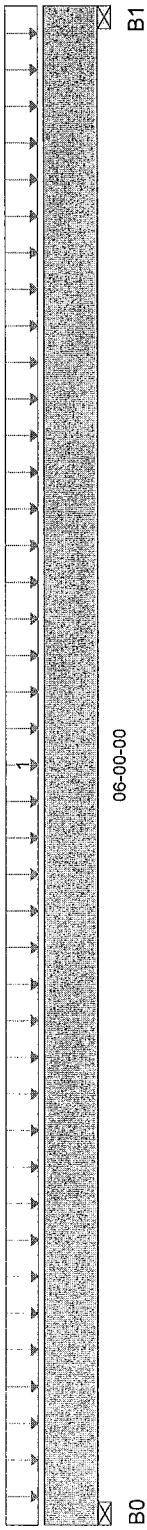
Green Valley Estates - S42 - 8

City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports: CCMC 12472-R

File Name: 248460 BC
Description: Designs\FB08
Specifier: 76836
Designer: RL
Company: Alpa Roof Trusses Inc.
Misc:



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,180 / 0	471 / 0		
B1, 3-1/2"	1,180 / 0	471 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft^2)	L	00-00-00	06-00-00	40	15		1.00 1.15	09-10-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,019 ft-lbs	25,408 ft-lbs	0.12	1	03-00-00
Pos. Shear	1,507 lbs	11,571 lbs	0.13	1	01-01-00
Total Load Defl.	L/999 (0.023")	n/a	n/a	4	03-00-00
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	03-00-00
Span / Depth	7	n/a	n/a		00-00-00

Bearing Supports

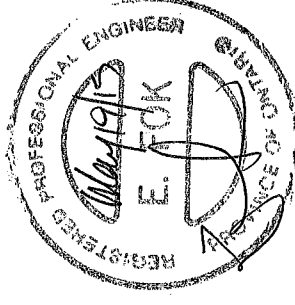
	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,359 lbs	0.31	0.16	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,359 lbs	0.31	0.16	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ 12" O.C., STAGGERED IN TWO ROWS (Top & Bottom)



Site Copy

T-15051572



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Floor Beam\FB09

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

November-30-14

BC CALC® Design Report



38514

File Name: 248460 BC

Description: Designs\FB09

38514 Green Valley Estates - S42 -8C

Specifier: 76836

City, Province, Postal Code: Bradford, ON

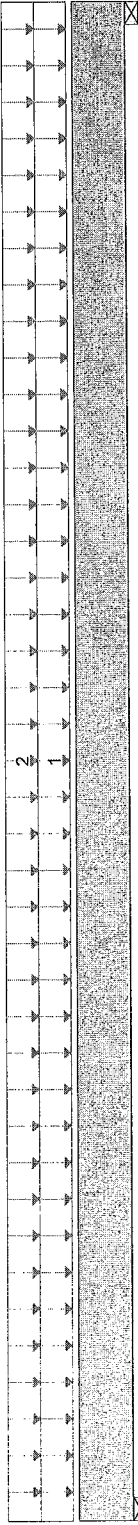
Designer: RL

Customer: Bayview Wellington

Company: Alpa Roof Trusses Inc.

Code reports: CCMC 12472-R

Misc:



04-06-00

B1

Total Horizontal Product Length = 04-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	638 / 0	261 / 0		
B1, 3-1/2"	638 / 0	261 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft²)	L	00-00-00	04-06-00	40	15			06-05-00
2 Floor	Unf. Area (lb/ft²)	L	00-00-00	04-06-00	40	15			00-08-00

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
End Moment	1,164 ft-lbs	25,408 ft-lbs	0.05	1	02-03-00
End Shear	665 lbs	11,571 lbs	0.06	1	01-01-00
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-03-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-03-00
Span / Depth	5.1	n/a	n/a		00-00-00

Bearing Supports

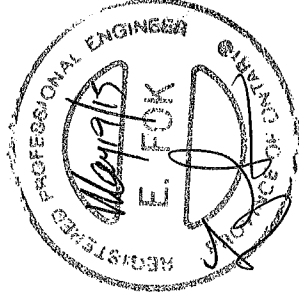
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,282 lbs	0.17	0.09	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,282 lbs	0.17	0.09	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4
 Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ 12" O.C., STAGGERED IN TWO ROWS



Site Copy

T-1505153



Boise Cascade

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

Floor Beam\FB10

November-30-14

BC CALC® Design Report



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

Project 3272

38514

File Name: 248460 BC

Name:

Green Valley Estates - S42-8C

Description: Designs\FB10

Address:

Specifier: 76836

City, Province, Postal Code:Bradford, ON

Designer: RL

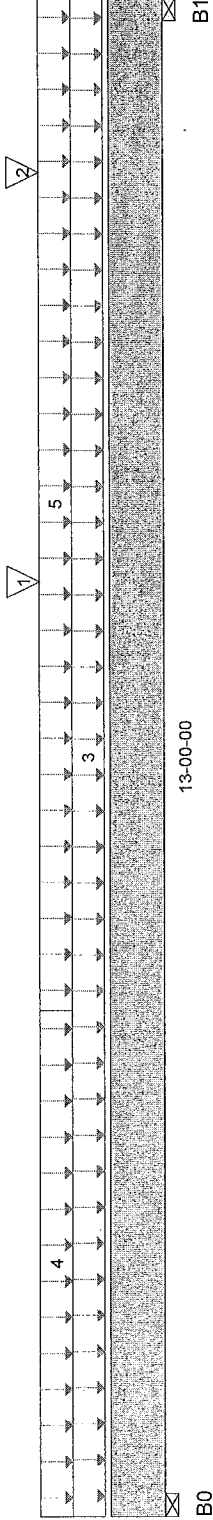
Customer: Bayview Wellington

Company: Alpa Roof Trusses Inc.

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 13-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,457 / 0	1,152 / 0		
B1, 3-1/2"	3,427 / 0	1,578 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 B5	Conc. Pt. (lbs)	L	08-00-00	08-00-00	151	70			n/a
2 B6	Conc. Pt. (lbs)	L	11-06-00	11-06-00	1,096	600			n/a
Floor	Unf. Area (lb/ft²)	L	00-00-00	13-00-00	40	15			02-05-00
Tile Floor	Unf. Area (lb/ft²)	L	00-00-00	04-04-00	40	20			06-02-00
5 Floor	Unf. Area (lb/ft²)	L	04-04-00	13-00-00	40	15			06-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	16,777 ft-lbs	39,636 ft-lbs	0.42	1	06-11-10
End Shear	6,318 lbs	17,356 lbs	0.36	1	11-11-00
Total Load Defl.	L/335 (0.45")	0.627"	0.72	4	06-07-08
Live Load Defl.	L/485 (0.31")	0.418"	0.74	5	06-07-08
Span / Depth	15.8	n/a	n/a		00-00-00

Bearing Supports

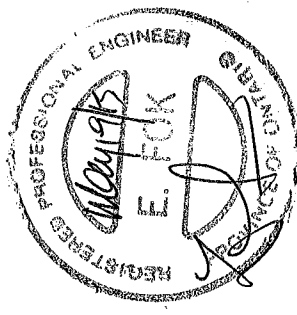
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 5-1/4"	5,126 lbs	0.45	0.23	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 5-1/4"	7,112 lbs	0.63	0.32	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
12" O.C., STAGGERED IN TWO ROWS



Site Copy

T-1805154



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Floor Beam\FB11a

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

November-30-14

BC CALC® Design Report

38514

Name:

Address: Green Valley Estates - S42-8C

City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports: CCMC 12472-R

File Name: 248460 BC

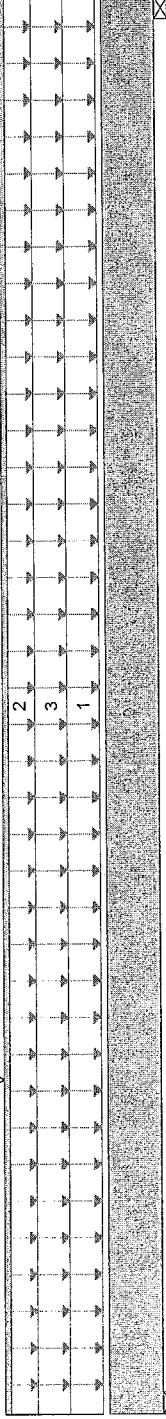
Description: Designs\FB11a

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



03-02-00

B0 B1

Total Horizontal Product Length = 03-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	706 / 0	572 / 0	714 / 0		
B1, 3-1/2"	581 / 0	452 / 0	327 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
Floor	Unf. Area (lb/ft²)	L	00-00-00	03-02-00	40	15			07-06-00
Wall	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	0	100			n/a
3	Unf. Area (lb/ft²)	L	00-00-00	03-02-00	11	10			04-00-00
4	Conc. Pt. (lbs)	L	00-09-00	00-09-00	204	194			n/a

Controls Summary

Pos.	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	1,071 ft-lbs	25,408 ft-lbs	0.04	1	01-04-12
End Shear	845 lbs	11,571 lbs	0.07	5	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	11	01-06-10
Live Load Defl.	L/999 (0.001")	n/a	n/a	15	01-06-04
Span / Depth	3.4	n/a	n/a		00-00-00

Bearing Supports

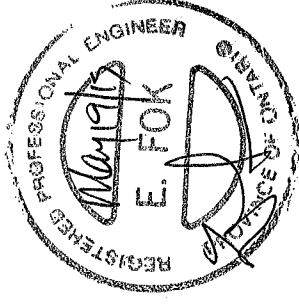
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,139 lbs	0.28	0.14	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,600 lbs	0.21	0.11	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 4
 Deflections less than 1/8" were ignored in the results.

User Notes

MAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 12" O.C., STAGGERED IN TWO ROWS



Site Copy

T-15051557



Boise Cascade

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

Floor Beam\FB12

BC CALC® Design Report

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

November-30-14



Printed 3272

Name: 38514

Address: Green Valley Estates - S42 - 8C

City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports: CCMC 12472-R

File Name: 248460 BC

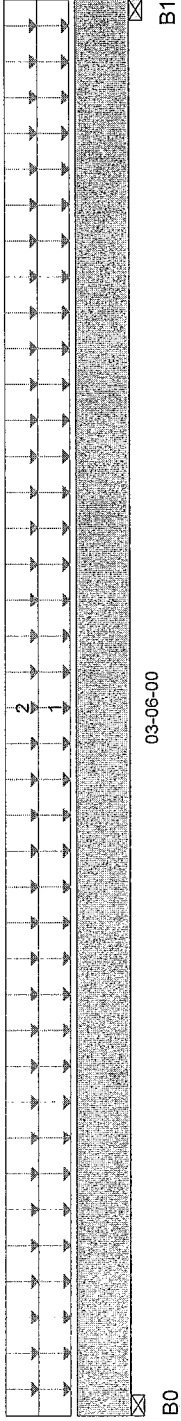
Description: Designs\FB12

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	607 / 0	259 / 0			
B1, 3-1/2"	607 / 0	259 / 0			

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Tile Floor	Unf. Area (lb/ft²)	L	00-00-00	03-06-00	40	20			02-08-00
2 Stairs	Unf. Area (lb/ft²)	L	00-00-00	03-06-00	40	15			06-00-00

Controls Summary

Pos.	Moment	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
1	816 ft-lbs	12,704 ft-lbs	0.06	1	01-09-00	
End Shear	470 lbs	5,785 lbs	0.08	1	01-01-00	
Total Load Defl.	L/999 (0.004")	n/a	n/a	4	01-09-00	
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-09-00	
Span / Depth	3.8	n/a	n/a		00-00-00	

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. In 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.

Bearing Supports

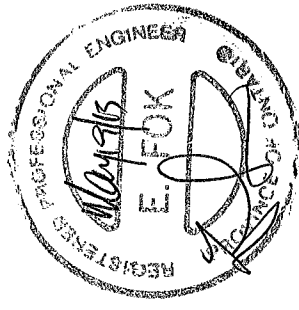
	Dim. (L x W)	Demand	Demand/Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,234 lbs	0.33	0.17	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,234 lbs	0.33	0.17	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ O.C., STAGGERED IN TWO ROWS



Site Copy

7-505157



Boise Cascade

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

Floor Beam\FB13

BC CALC® Design Report



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

November-30-14

Project 3272

Name:

Green Valley Estates - S42-8C

Address:

City, Province, Postal Code: Bradford, ON

Customer:

Bayview Wellington

Code reports:

CCMC 12472-R

File Name: 248460 BC

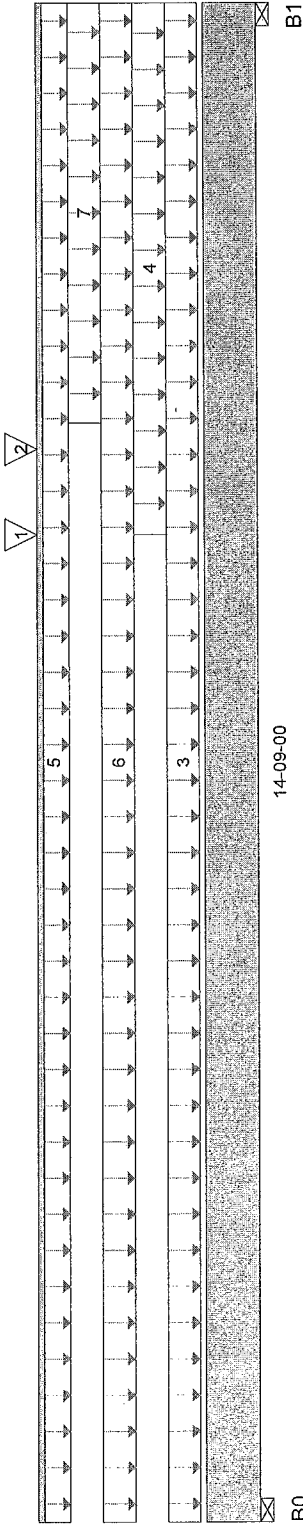
Description: Designs\FB13

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



Total Horizontal Product Length = 14-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Trib.
B0, 3-1/2"	738 / 0	826 / 0			
B1, 3-1/2"	1,303 / 0	1,063 / 0			

Load Summary

Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 B12	Conc. Pt. (lbs)	L	09-07-00	09-07-00	607	259			n/a
2 B1	Conc. Pt. (lbs)	L	10-05-00	10-05-00	533	215			n/a
3 Tile Floor	Unf. Area (lb/ft²)	L	00-00-00	14-09-00	40	20			00-06-00
4 Tile Floor	Unf. Area (lb/ft²)	L	09-07-00	14-09-00	40	20			00-06-00
5 Wall	Unf. Lin. (lb/ft)	L	00-00-00	14-09-00	0	60			n/a
6	Unf. Area (lb/ft²)	L	00-00-00	14-09-00	40	15			00-08-00
7	Unf. Area (lb/ft²)	L	10-08-00	14-09-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,657 ft-lbs	25,408 ft-lbs	0.46	1	09-07-00
End Shear	2,982 lbs	11,571 lbs	0.26	1	13-08-00
Total Load Defl.	L/305 (0.563")	0.715"	0.79	4	07-08-11
Live Load Defl.	L/563 (0.305")	0.476"	0.64	5	07-10-04
Span / Depth	18.1	n/a	n/a		00-00-00

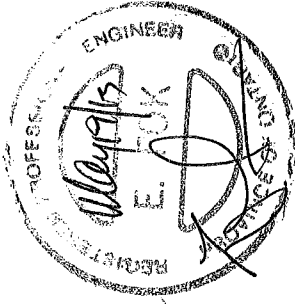
Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,139 lbs	0.28	0.14	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	3,282 lbs	0.44	0.22	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Portance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes NAIL ONE ROW TO ANOTHER WITH 8" SPAC NAILS @ 12" O.C., STAGGERED IN 2 ROWS



T-1505158



Boise Cascade

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

Floor Beam\FB15

BC CALC® Design Report

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

May-17-15



File Name:

248460 BC.bcc

Description:

Designs\FB15

Specifier:

76836

Designer:

RL

Company:

Alpa Roof Trusses Inc.

Misc:

CCMC 12472-R

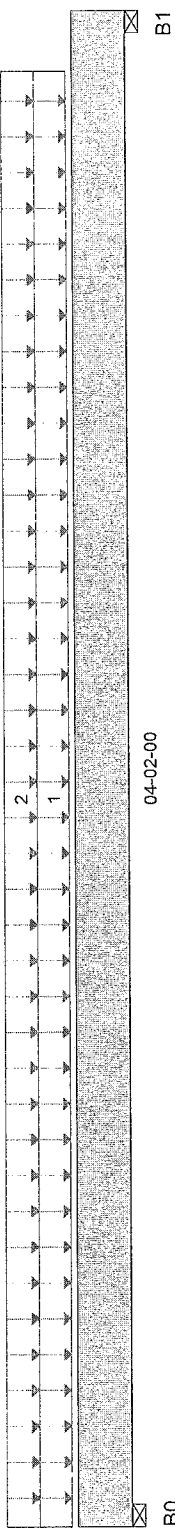
38514

Green Valley Estates - S42-8C

City, Province, Postal Code: Bradford, ON

Bayview Wellington

CCMC 12472-R



Total Horizontal Product Length = 04-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	708 / 0	302 / 0		
B1, 3-1/2"	652 / 0	278 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Stairs	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00	40	15			06-00-00
2 Floor	Unf. Area (lb/ft^2)	L	00-00-00	04-00-00	40	20			02-06-00

Controls Summary

	Factored Demand	Resistance	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,188 ft-lbs	12,704 ft-lbs	0.09	1	02-01-00	
End Shear	691 lbs	5,785 lbs	0.12	1	01-01-00	
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-01-00	
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-01-00	
Span / Depth	4.7	n/a	n/a		00-00-00	

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. \n\nBC CALC®, BC FRAMER®, AUS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

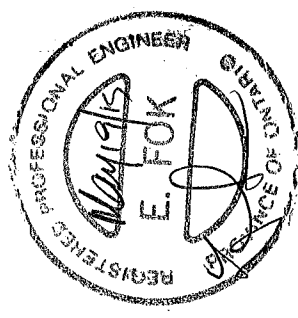
	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,440 lbs	0.38	0.19	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,325 lbs	0.35	0.18	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ O.C., STAGGERED IN TWO ROWS



Site Copy



Boise Cascade

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

Floor Beam\FB16

BC CALC® Design Report

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

May-17-15



File No: 3272

Name: 38514

Address: Green Valley Estates - S42-8C

City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports: CCMC 12472-R

File Name: 248460 BC.bcc

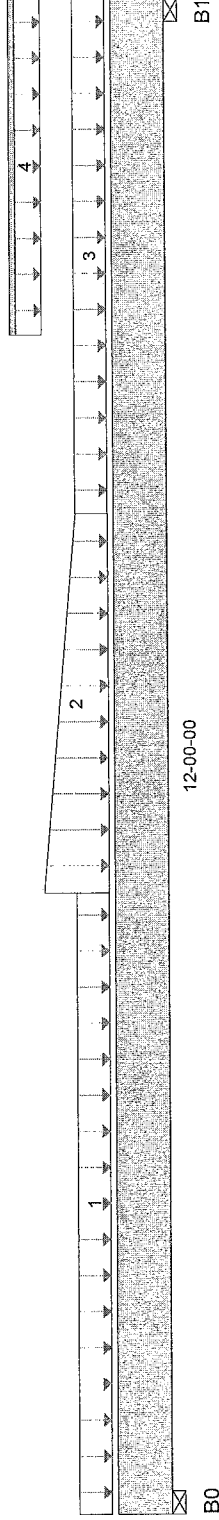
Description: Designs\FB16

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	962 / 0	526 / 0		
B1, 3-1/2"	830 / 0	589 / 0		

Load Summary

Load Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Floor	Unf. Area (lb/ft^2)	L	00-00-00	04-11-00	40	20			04-03-00
2 Floor	Trapezoidal (lb/ft)	L	04-11-00		170	85			n/a
				07-11-00	123	62			n/a
3 Floor	Unf. Area (lb/ft^2)	L	07-11-00	12-00-00	40	20			03-02-00
4 Wall	Unf. Lin. (lb/ft)	L	09-04-00	12-00-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,540 ft-lbs	12,704 ft-lbs	0.44	1	05-08-00
End Shear	1,703 lbs	5,785 lbs	0.29	1	01-01-00
Total Load Defl.	L/367 (0.377")	0.577"	0.65	4	06-00-08
Live Load Defl.	L/578 (0.24")	0.385"	0.62	5	05-10-04
Span / Depth	14.6	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. \n\nBC CALC®, BC FRAMER®, AUS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

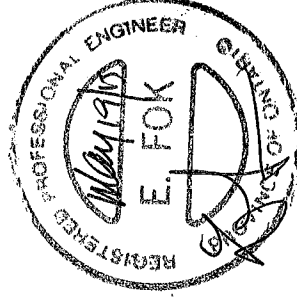
Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,101 lbs	0.56	0.28	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,981 lbs	0.53	0.27	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ O.C., STAGGERED IN TWO ROWS





Boise Cascade

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

Floor Beam\FB18a

BC CALC® Design Report

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

November-30-14



Build 3272

Name: 38514

Address:

Green Valley Estates - S42-8C

City, Province, Postal Code: Bradford, ON

Customer: Bayview Wellington

Code reports:

CCMC 12472-R

File Name: 248460 BC

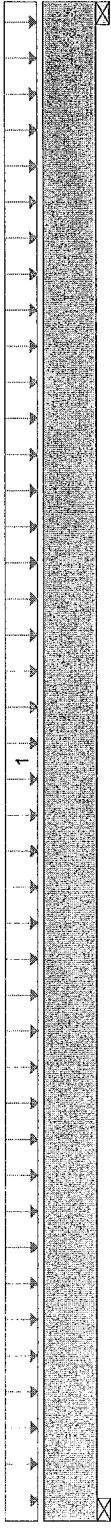
Description: Designs\FB18a

Specifier: 76836

Designer: RL

Company: Alpa Roof Trusses Inc.

Misc:



06-06-00

B0

B1

Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	780 / 0	406 / 0		
B1, 3-1/2"	780 / 0	406 / 0		

Load Summary

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

Controls Summary

Req.	Moment	Shear	Local Load Defl.	Live Load Defl.	Span / Depth	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
	2,354 ft-lbs	1,118 lbs	L/999 (0.044")	L/999 (0.029")	7.6	12,704 ft-lbs	5,785 lbs	0.19	1	03-03-00
								0.19	1	01-01-00
								n/a	4	03-03-00
								n/a	5	03-03-00
								n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. \h\hBC 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.

Bearing Supports

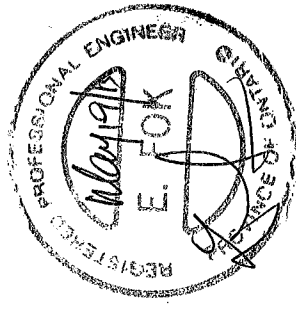
	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,677 lbs	0.45	0.45	0.22	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,677 lbs	0.45	0.45	0.22	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ O.C., STAGGERED IN TWO ROWS



Site Copy

7-1520563



Boise Cascade

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

Floor Beam\FB18b



BC CALC® Design Report

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

November-30-14

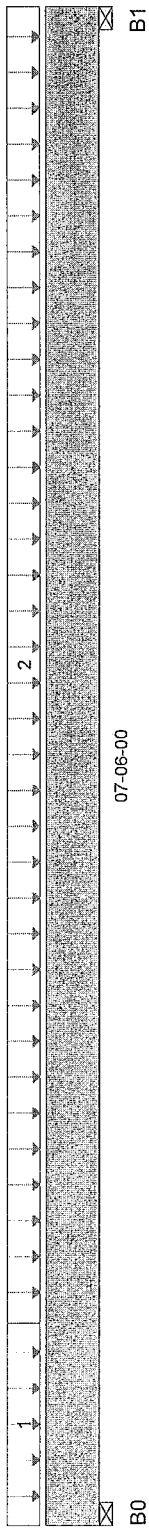
Project 3272

38514

Name: Green Valley Estates - S42-8C

Address: Bradford, ON
City, Province, Postal Code: Bayview Wellington
Customer: CCMC 12472-R

File Name: 248460 BC
Description: Designs\FB18b
Specifier: 76836
Designer: RL
Company: Alpa Roof Trusses Inc.
Misc:



Total Horizontal Product Length = 07-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	728 / 0	382 / 0		
B1, 3-1/2"	892 / 0	464 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Low Tile Floor	Unf. Area (lb/ft²)	L	00-00-00	01-00-00	40	20			01-06-00
2 Low Tile Floor	Unf. Area (lb/ft²)	L	01-00-00	07-06-00	40	20			06-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Moment	3,142 ft-lbs	12,704 ft-lbs	0.25	1	03-09-00
End Shear	1,525 lbs	5,785 lbs	0.26	1	01-01-00
Total Load Defl.	L/999 (0.079")	n/a	n/a	4	03-09-00
Live Load Defl.	L/999 (0.052")	n/a	n/a	5	03-09-00
Span / Depth	8.9	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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. \n\nBC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Bearing Supports

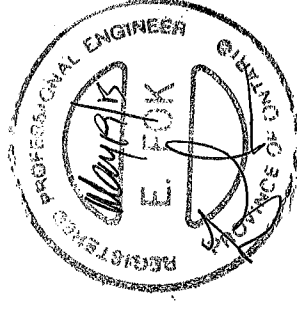
	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,569 lbs	0.42	0.21	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,919 lbs	0.51	0.26	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 4
Deflections less than 1/8" were ignored in the results.

User Notes

NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
@ O.C., STAGGERED IN TWO ROWS

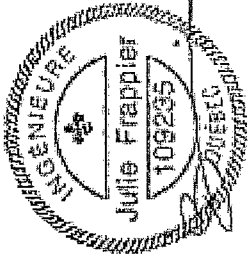
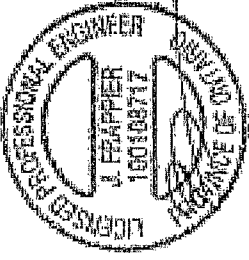
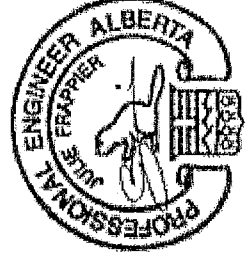


Site Copy

T-1505164



Maximum Spans - A5
Limit States Design (CAN)



Maximum Floor Spans

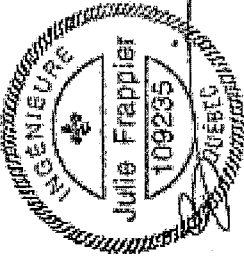
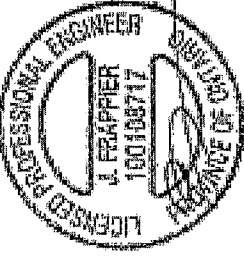
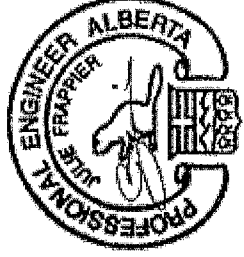
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/360 Deflection Limit
5/8" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
9-1/2"	Ni-20	12"	15'-1"	14'-2"	13'-9"	15"	19'-2"	16"	19'-2"
	Ni-40x		16'-1"	15'-2"	14'-8"		14'-8"	15'-7"	14'-2"
	Ni-60		16'-3"	15'-4"	14'-10"		15'-7"	15'-1"	N/A
	Ni-70		17'-1"	16'-1"	15'-6"		16'-8"	15'-9"	N/A
	Ni-80		17'-3"	16'-3"	15'-8"		17'-5"	15'-10"	N/A
11-7/8"	Ni-20		16'-11"	16'-0"	15'-5"		17'-8"	16'-7"	N/A
	Ni-40x		18'-1"	17'-0"	16'-5"		17'-6"	16'-0"	N/A
	Ni-60		18'-4"	17'-3"	16'-7"		18'-9"	17'-6"	N/A
	Ni-70		19'-6"	18'-0"	17'-4"		19'-0"	17'-8"	N/A
	Ni-80		19'-9"	18'-3"	17'-6"		20'-1"	18'-7"	N/A
14"	Ni-20		20'-4"	18'-9"	17'-11"		20'-4"	18'-10"	N/A
	Ni-40x		20'-1"	18'-7"	17'-10"		20'-10"	19'-3"	N/A
	Ni-60		20'-5"	18'-11"	18'-1"		20'-10"	19'-4"	N/A
	Ni-70		21'-7"	20'-0"	19'-1"		21'-2"	19'-7"	N/A
	Ni-80		21'-11"	20'-3"	19'-4"		22'-3"	20'-11"	N/A
16"	Ni-20		22'-3"	20'-8"	19'-9"		23'-1"	21'-5"	N/A
	Ni-40x		22'-7"	20'-11"	19'-11"		23'-3"	21'-6"	N/A
	Ni-60		23'-6"	21'-9"	20'-9"		24'-3"	22'-5"	N/A
	Ni-70		23'-11"	22'-1"	21'-1"		24'-8"	22'-10"	N/A
	Ni-80		24'-8"	22'-9"	21'-9"		25'-4"	23'-5"	N/A

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

1. Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/360 and a total load deflection limit of L/240.
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings.
4. Bearing stiffeners are not required when 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 uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

Site Copy



Maximum Floor Spans

Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/360 Deflection Limit
5/8" OSB G&N Sheathing

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing		On Centre Spacing		On Centre Spacing		On Centre Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	13'-11"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
11-7/8"	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
14"	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
16"	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

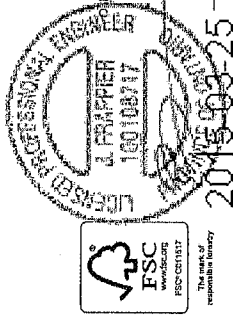
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing		On Centre Spacing		On Centre Spacing		On Centre Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-4"	14'-10"	13'-11"	N/A	16'-4"	14'-10"	13'-11"	N/A
	NI-40x	17'-11"	16'-10"	15'-7"	N/A	18'-5"	16'-10"	15'-7"	N/A
	NI-60	18'-2"	17'-1"	16'-1"	N/A	18'-7"	17'-2"	16'-1"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
11-7/8"	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
	NI-20	19'-6"	17'-10"	16'-9"	N/A	19'-8"	17'-10"	16'-9"	N/A
	NI-40x	21'-0"	19'-6"	17'-9"	N/A	21'-7"	19'-6"	17'-9"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-4"	N/A
14"	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-3"	21'-5"	19'-6"	N/A
16"	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-1"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 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 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



www.nordicw.com

Refer to the Installation Guide for Residential Floors for additional information.
CMC EVALUATION REPORT 13032-R



WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joint 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-joint web shall equal the clear distance between the flanges of the I-joint 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-joint flange.

TABLE 1

LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

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

1. Above table may be used for I-joint 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

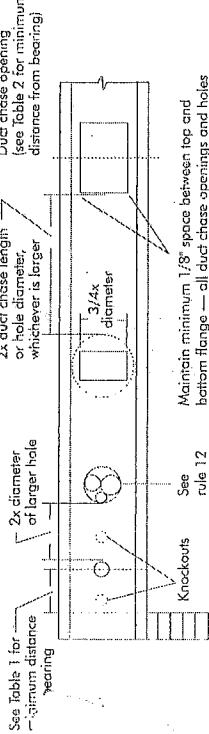


FIGURE 7

SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and nail each I-joint 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.
- 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, eight feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2x12" nails fastened to the top surface of each I-joint. Nail the bracing to a lateral restraint at the end of each bay. Top ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
- Install and fully nail permanent sheathing to each I-joint before placing loads on the floor system. Then, start building materials over beams or walls only.
- Never install a damaged I-joint.

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

TABLE 2

DUCT CHASE OPENING SIZES AND LOCATIONS
Simple Span Only

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

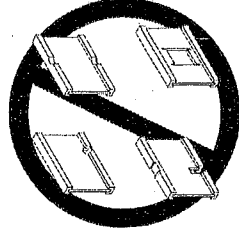
1. Above table may be used for I-joint spacing of 24 inches on centre or less.

2. Duct chase opening location distance is measured from inside face of supports to centre of opening.

3. The above table is based on simple-span joists only. For other applications, contact your local distributor.

4. Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480.

5. The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.



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

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

Holes in webs should be cut with a sharp saw.

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



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



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



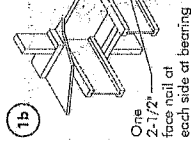
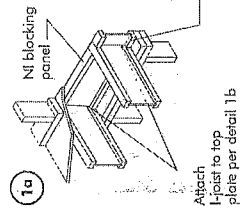
PRODUCT WARRANTY

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

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

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

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



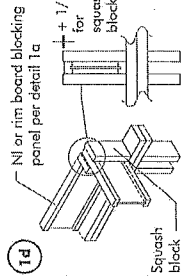
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

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

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

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

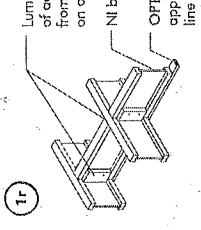
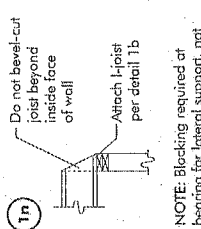
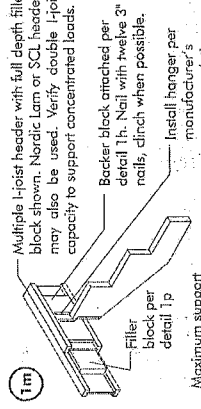
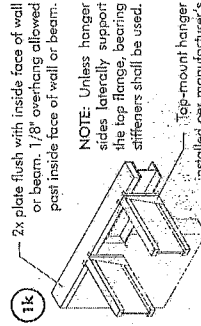
Pair of Squash Blocks	Maximum Factored Vertical Load per Pair at Squash Block (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
2x Lumber	4,300
1-1/8" Rim Board Plus	6,600



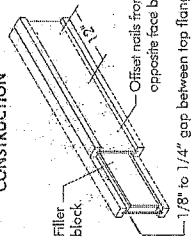
Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer block to top flange. Use twelve 3" nails, clinched when possible. Maximum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

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q37 Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".



Filler block



NOTES:

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

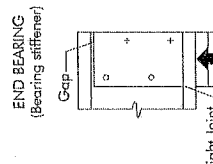
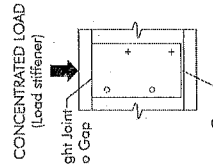
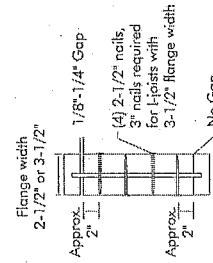
WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the 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.

WEB STIFFENER INSTALLATION DETAILS

FIGURE 2

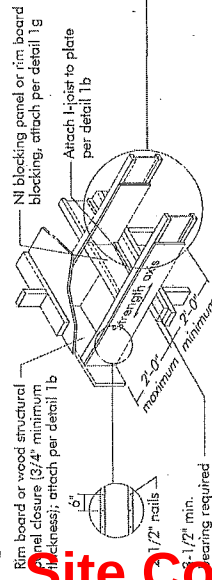


Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

See the adjacent table for web stiffener size requirements

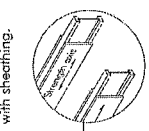
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE



Method 2 — SHEATHING REINFORCEMENT TWO SIDES

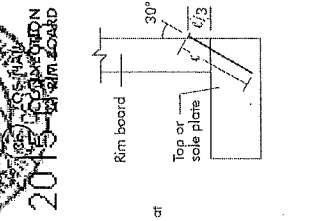
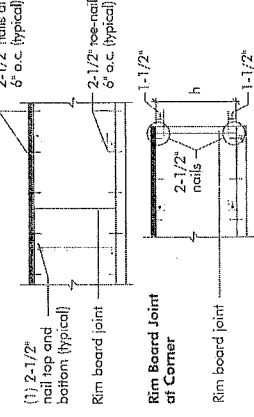
Use same installation as Method 1 but reinforce both sides of I-joist with sheathing.



RIM BOARD INSTALLATION DETAILS

FIGURE 3

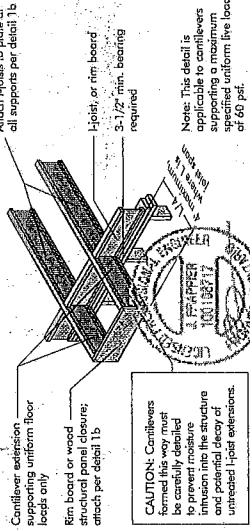
ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



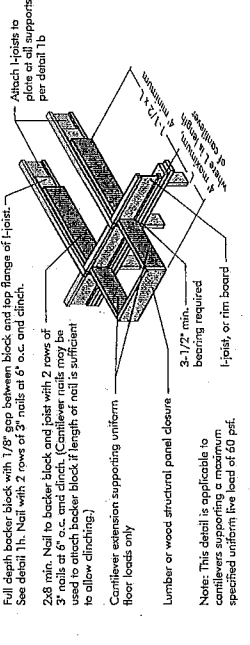
NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach joist to plate at all supports per detail 1b.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

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a) L-JOIST CANTILEVER DETAIL FOR BALCONIES (NO WALL LOAD)

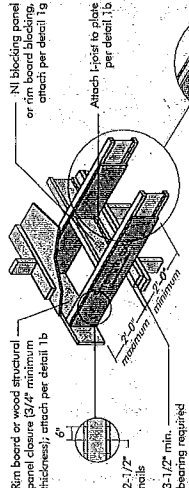


3b) LUMBER CANTILEVER DETAIL FOR BALCONIES (NO WALL LOAD)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

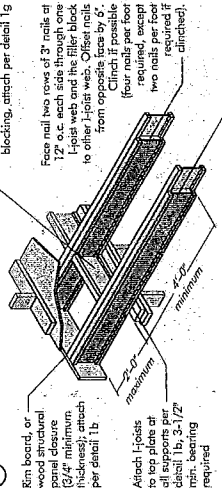


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

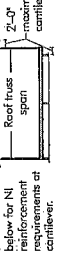
Note: Condition showed plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2 inch nails at 6 inch o.c. top and bottom flanges. Install with face grain horizontal. Attach L-joist to plate at all supports per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

4b) Alternate Method 2 — DOUBLE L-JOIST



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

FIGURE 4 (continued)

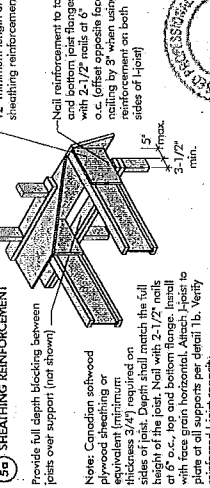


CANTILEVER REINFORCEMENT METHODS ALLOWED

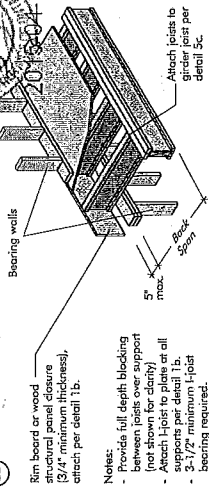
JOIST DEPTH (in)	ROOF TRUSS SPAN (ft)										JOIST SPACING (in)									
	12	16	18	24	30	36	42	48	54	60	12	16	18	24	30	36	42	48	54	60
12	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
18	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
36	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
42	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
48	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
54	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
60	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

1. N = No reinforcement required.
- 2 = NI reinforced with 3/4" wood structural panel on one side only.
- 3 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 4 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 5 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 6 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 7 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 8 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 9 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 10 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 11 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 12 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 13 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 14 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 15 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 16 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 17 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 18 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 19 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 20 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.

5a) SHEATHING REINFORCEMENT



5b) SET-BACK DETAIL



5c) SET-BACK CONNECTION

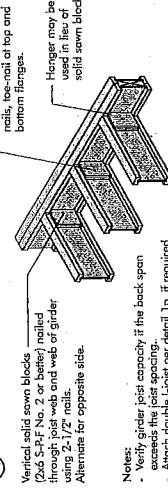


FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

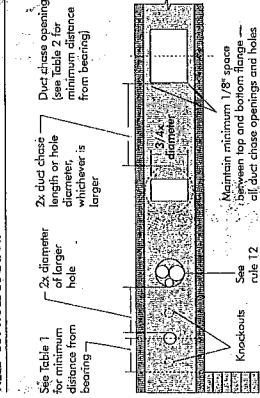
JOIST DEPTH (in)	ROOF TRUSS SPAN (ft)										JOIST SPACING (in)									
	12	16	18	24	30	36	42	48	54	60	12	16	18	24	30	36	42	48	54	60
12	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
18	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
36	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
42	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
48	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
54	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
60	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

1. N = No reinforcement required.
- 2 = NI reinforced with 3/4" wood structural panel on one side only.
- 3 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 4 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 5 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 6 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 7 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 8 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 9 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 10 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 11 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 12 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 13 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 14 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 15 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 16 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 17 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 18 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 19 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.
- 20 = NI reinforced with 3/4" wood structural panel on both sides, or double L-joist.

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

1. The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centred on the middle of the web.
4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
5. The sides of square holes or largest sides of rectangular holes shall not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest hole. The distance between the longest rectangular hole or duct chase opening and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
8. Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a non-structural section of a joist. Holes of greater size may be permitted subject to verification.
9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

Knockouts are pre-scored holes provided for the contractor's convenience to install into the joist web. 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 hole with a 1/2 inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

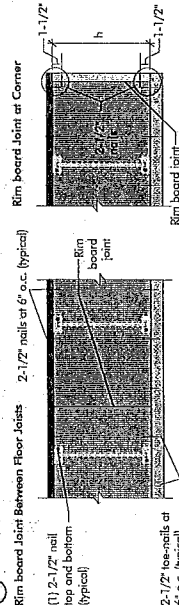
Panel Thickness	Span	Fastener Type	Spacing
3/4"	2'	2"	6"
1"	2'	2"	6"
1 1/4"	2'	2"	6"
1 1/2"	2'	2"	6"

1. Fasteners of sheathing and subflooring shall conform to the above table.
 2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
 3. Flooring screws shall not be less than 1/8-inch in diameter.
 4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
- Use only adhesives conforming to CAN/CGSB-71.26 Standard Adhesives for Field-Gluing Plywood to Joists. Do not use contact cement. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glue, check with panel manufacturer.

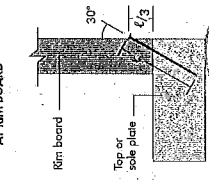
IMPORTANT NOTE: The field glue to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

8c ATTACHMENT DETAILS WHERE RIM BOARDS ABOUT



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

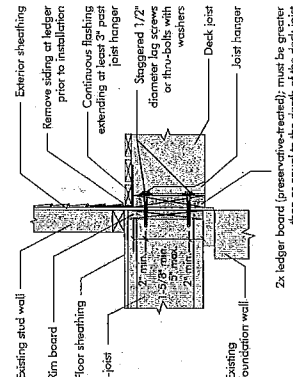


TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Span Length (ft)	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
Minimum distance from inside face of any support (inches)	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100

1. Above table may be used for joist spacing of 24 inches on centre or less.
2. The above table is based on the I-joist used as their maximum span. If the I-joist are placed at less than their full maximum span (see Manufacturer's literature for details), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:
3. Distance in this chart are based on uniformly loaded joists.

OPTIONAL:

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

Where:
D = Distance from the inside face of any support to centre of hole, reduced for less than maximum span application (see Manufacturer's literature for details).

SF = Span Adjustment factor given in this table.

D = Distance from the inside face of any support to centre of hole from this table.

If legend is greater than 1, use 1 in the above calculation for legend.

SF =

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

Span Length (ft)	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
Minimum distance from inside face of any support (inches)	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100

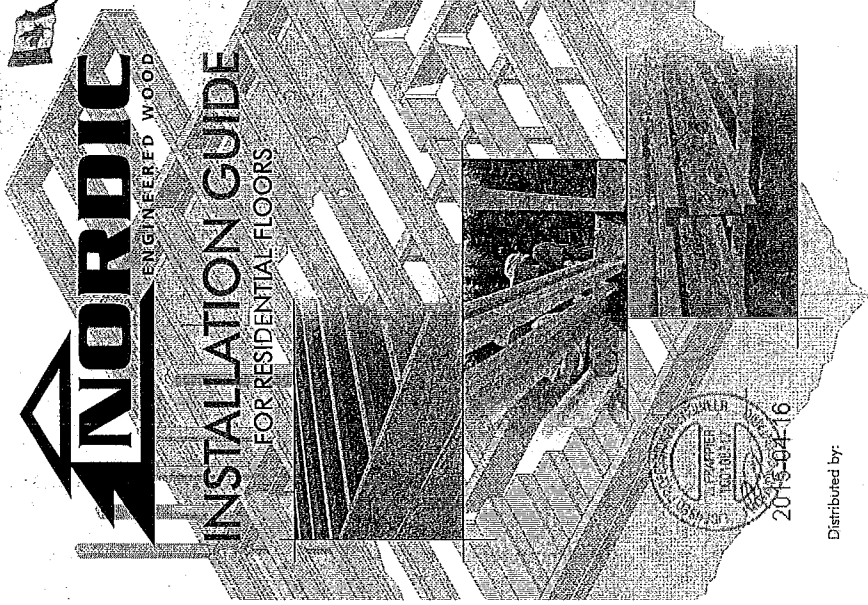
1. Above table may be used for joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. Duct chase opening size is based on an applied loaded floor joist that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. For other applications, contact your local distributor.

PRODUCT WARRANTY

Canadian Glue Systems warrants that its adhesives and sealants are of high quality and will perform as intended when used in accordance with the instructions on the product label.

Fasteners, Glue, and Sealants are warranted to be free from defects in material and workmanship.

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INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:

N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



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

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joist ends. When I-joists are applied continuous blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral bracing for the I-joists. Until this work is completed, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
- Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
- Or, sheathing (temporary or permanent) can be nailed to the top 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.



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

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for NORDIC L-joists, failure to follow applicable load and location, failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

STORAGE AND HANDLING GUIDELINES

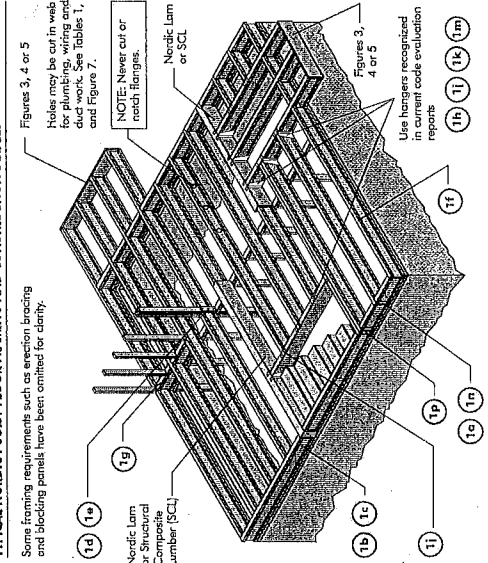
1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
2. Store, stack, and handle I-joists vertically and level only.
3. Always stack and handle I-joists in the upright position only.
4. Do not store I-joists in direct contact with the ground and/or flange.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled ends 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

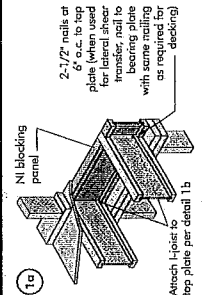
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical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



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

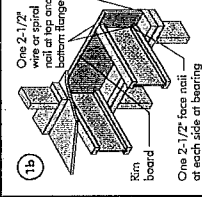


All nails shown in the above details are assumed to be common wire nails, unless otherwise noted. 3" (0.127 dia) common spiral nails may be substituted for 2-1/2" (0.128 dia) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2, or better. Individual components not shown to scale for clarity.



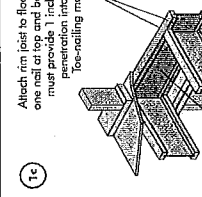
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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



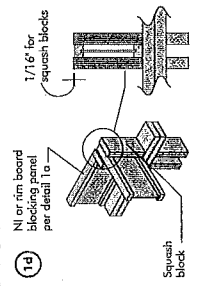
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	3,070

*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 post, header, or rafter. For concentrated vertical load transfer, see detail 1d.



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

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



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

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

MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or continuous-span joist construction. The design live load is 40 psf and the dead load is 15 psf. The limit spans are based on the factored loads of 1,500 and 1,250. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of $L/480$. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.

- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/8 inch for a joist spacing of 16 inches and 1/2 inch for a joist spacing of 24 inches. The OSB shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.

- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangars.

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

- Tables are based on Limit States Design per CAN/CSA C84-09 Standard, and NBC 2100.

- SI units conversion: 1 inch = 25.4 mm
1 foot = 305 mm

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Span Depth	Simple Span			Multiple Span		
	Span Depth	Span Depth	Span Depth	Span Depth	Span Depth	Span Depth
N-20	12'	14'	16'	12'	14'	16'
N-24	16'	18'	20'	16'	18'	20'
N-30	20'	22'	24'	20'	22'	24'
N-36	24'	26'	28'	24'	26'	28'
N-42	28'	30'	32'	28'	30'	32'
N-48	32'	34'	36'	32'	34'	36'
N-54	36'	38'	40'	36'	38'	40'
N-60	40'	42'	44'	40'	42'	44'
N-66	44'	46'	48'	44'	46'	48'
N-72	48'	50'	52'	48'	50'	52'
N-78	52'	54'	56'	52'	54'	56'
N-84	56'	58'	60'	56'	58'	60'
N-90	60'	62'	64'	60'	62'	64'
N-96	64'	66'	68'	64'	66'	68'
N-102	68'	70'	72'	68'	70'	72'
N-108	72'	74'	76'	72'	74'	76'
N-114	76'	78'	80'	76'	78'	80'
N-120	80'	82'	84'	80'	82'	84'
N-126	84'	86'	88'	84'	86'	88'
N-132	88'	90'	92'	88'	90'	92'
N-138	92'	94'	96'	92'	94'	96'
N-144	96'	98'	100'	96'	98'	100'
N-150	100'	102'	104'	100'	102'	104'
N-156	104'	106'	108'	104'	106'	108'
N-162	108'	110'	112'	108'	110'	112'
N-168	112'	114'	116'	112'	114'	116'
N-174	116'	118'	120'	116'	118'	120'
N-180	120'	122'	124'	120'	122'	124'
N-186	124'	126'	128'	124'	126'	128'
N-192	128'	130'	132'	128'	130'	132'

WEB STIFFENERS

RECOMMENDATIONS:

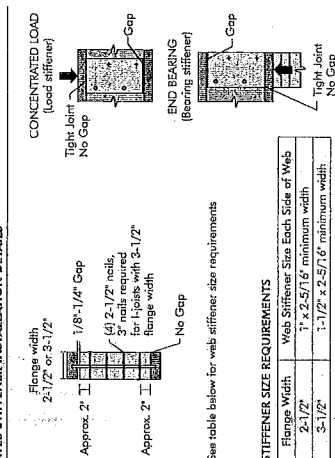
- A bearing stiffener is required in all applications with factored reactions greater than shown in the tables. The bearing stiffener shall be designed to resist the full reaction and the flange is at the top.

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

- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lb is applied to the top flange of the I-joist. The load stiffener shall be designed to resist the full load and the flange is at the bottom.

- SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



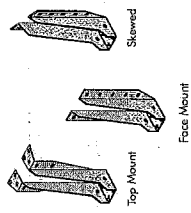
See table below for web stiffener size requirements

STIFFENER SIZE REQUIREMENTS

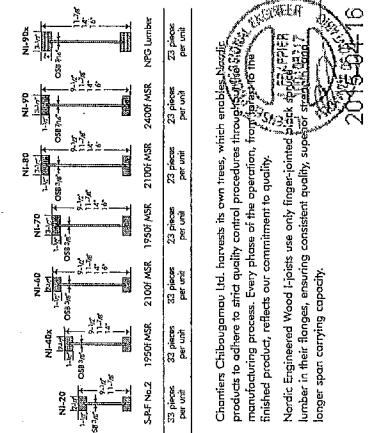
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

I-JOIST HANGERS

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



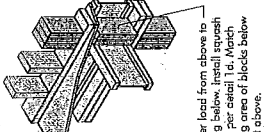
NORDIC I-JOIST SERIES



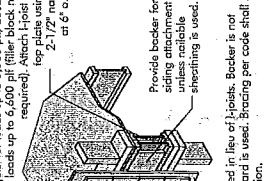
Chimney's Chibougamau Ltd. harvests its own trees, which enables it to produce products to adhere to and quality control procedures through the entire manufacturing process. Every phase of the operation, from the logging to the final product, reflects our commitment to quality.

Nordic Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

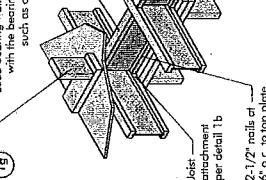
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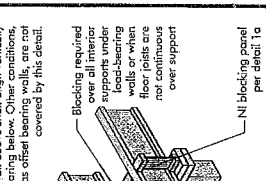
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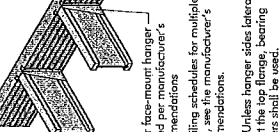
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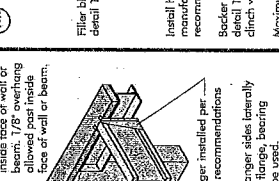
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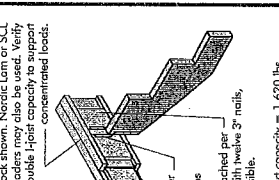
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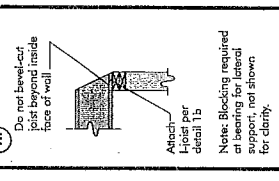
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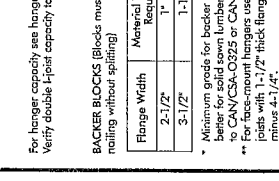
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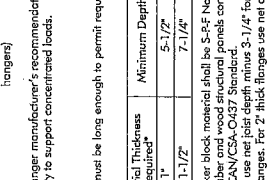
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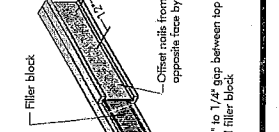
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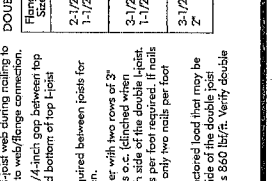
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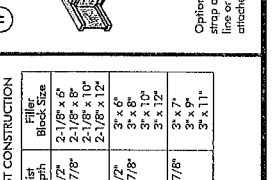
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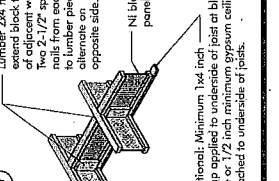
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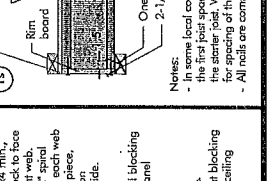
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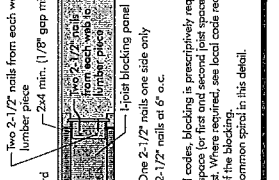
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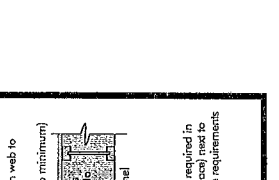
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