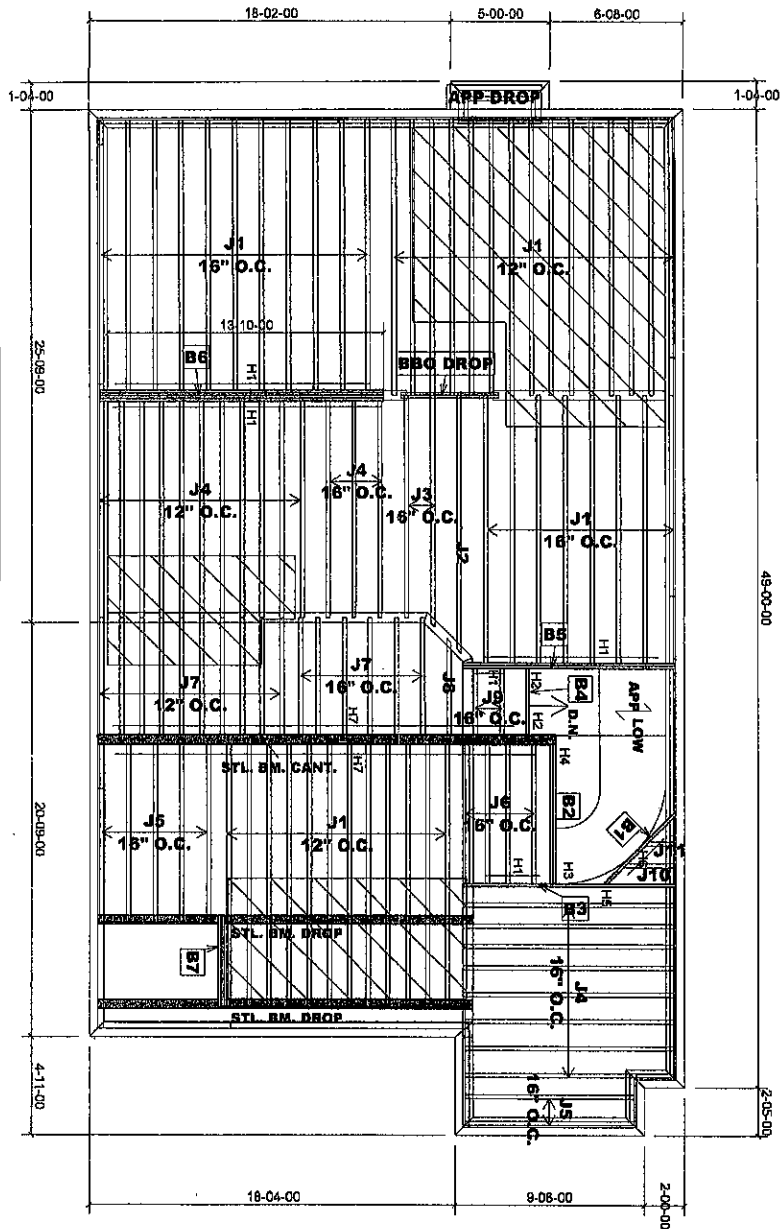




MODEL : 38-2
ELEVATION A & B

SECOND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

RIMBOARD
1-1/8" X 9 1/2" O.S.B
SUBFLOOR - 5/8" NAILED & GLUED
APP - AS PER PLAN
BBO - BEAM BY OTHERS

Products				
PileID	Length	Product	Piles	Net Qty
J1	14'-00-00	9 1/2" NI-20	1	46
J2	13'-00-00	9 1/2" NI-20	1	1
J3	12'-00-00	9 1/2" NI-20	1	2
J4	11'-00-00	9 1/2" NI-20	1	22
J5	9'-00-00	9 1/2" NI-20	1	7
J6	7'-00-00	9 1/2" NI-20	1	4
J7	6'-00-00	9 1/2" NI-20	1	16
J8	5'-00-00	9 1/2" NI-20	1	1
J9	4'-00-00	9 1/2" NI-20	1	2
J10	3'-00-00	9 1/2" NI-20	1	1
J11	2'-00-00	9 1/2" NI-20	1	1
B6	15'-00-00	VERSALAM-10 2.0E	4	4
B3	11'-00-00	VERSALAM-10 2.0E	1	1
B5	11'-00-00	VERSALAM-10 2.0E	2	2
B2	7'-00-00	VERSALAM-10 2.0E	2	2
B1	6'-00-00	VERSALAM-10 2.0E	1	1
B7	5'-00-00	VERSALAM-10 2.0E	2	2
B4	4'-00-00	VERSALAM-10 2.0E	1	1

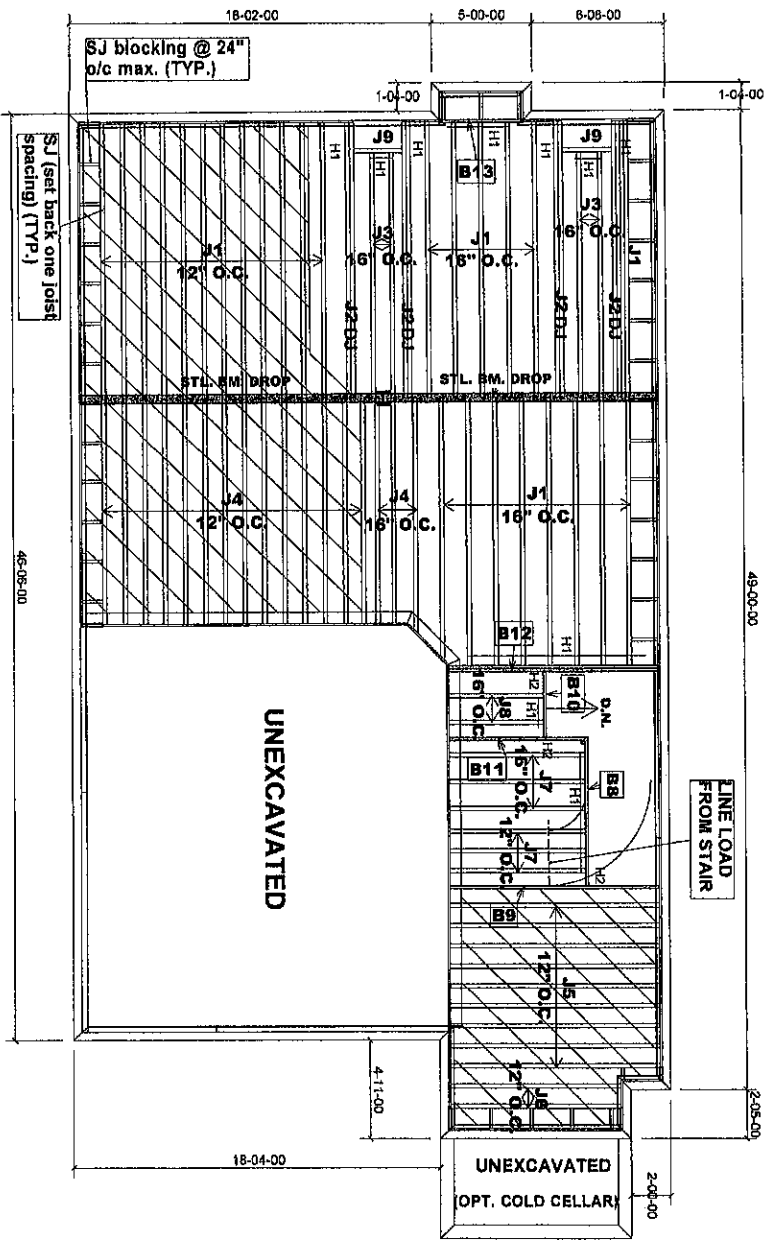
HANGERS SCHEDULE	
H1	L7259
H2	HUS1.81/10
H3	HUS410
H4	HUC410
H5	LSSU25
H6	LSSUH310
H7	LF259

1-2x6 SPF#2 Squash Block req'd on one side of joists under interior load bearing wall
Multiple squash blocks are required under concentrated loads
Joists spacing under ceramic tile is 12" o/c
Ceramic tiles application is as per O.B.C 9.30.6

Do not scale - refer to architectural plans for dimensions

JT: 40297/79712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ Alpha Roof Trusses Inc. Salesperson: Derek Frankfort
File: 253717 Project: HUNTINGTON & NASHVILLE Date: May 12/15 Sheet: 1 of 2 Maple, Ontario Home Lumber

5.129508-5.129520



MODEL : 38-2
ELEVATION A & B

GROUND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

Products				
ProdID	Length	Product	Pieces	Net Qty
J1	14-00-00	9 1/2" NI-20	1	26
J2	14-00-00	9 1/2" NI-20	2	8
J3	13-00-00	9 1/2" NI-20	1	4
J4	12-00-00	9 1/2" NI-20	1	17
J5	11-00-00	9 1/2" NI-20	1	9
J6	9-00-00	9 1/2" NI-20	1	2
J7	7-00-00	9 1/2" NI-20	1	6
J8	5-00-00	9 1/2" NI-20	1	2
J9	3-00-00	9 1/2" NI-20	1	2
B9	11-00-00	VERSALAM-10 2.0E	1	1
B12	11-00-00	VERSALAM-10 2.0E	2	2
B8	8-00-00	VERSALAM-10 2.0E	1	1
B11	7-00-00	VERSALAM-10 2.0E	1	1
B13	5-00-00	VERSALAM-10 2.0E	1	1
B10	4-00-00	VERSALAM-10 2.0E	1	1

BLOCKING: 9 1/2" NI-20 - 44 FEET

HANGERS SCHEDULE

H1 - LT259
H2 - HUST1.81/10

RIMBOARD

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

SUBFLOOR - 5/8" NAILED & GLUED

APP - AS PER PLAN
BBO - BEAM BY OTHERS

1-2x6 SPF#2 Squash Block req'd on one side of joists under interior load bearing wall

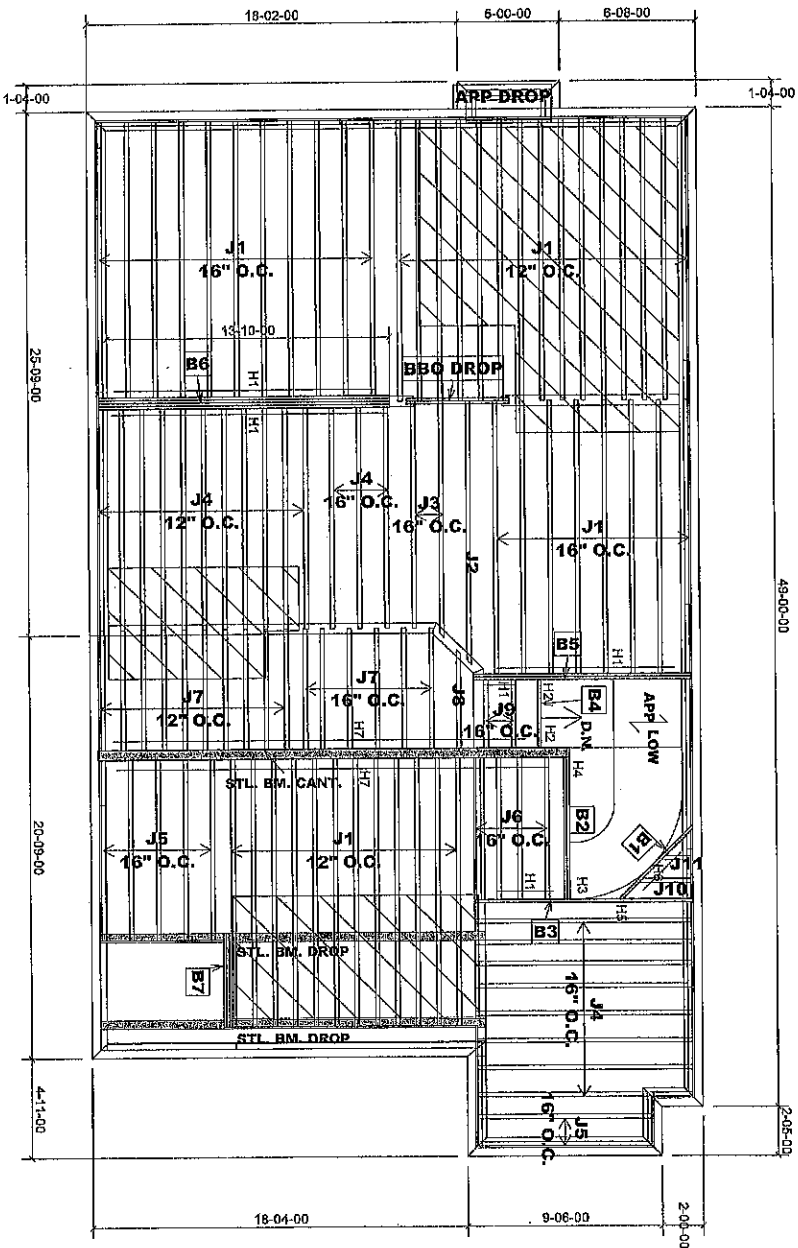
Multiple squash blocks are required under concentrated loads

Joists spacing under ceramic tile is 12" o/c

Ceramic tiles application is as per O.B.C. 9.30.6

Do not scale - refer to architectural plans for dimensions

JT: 40297/79712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ Alpa Roof Trusses Inc. Salesperson: Derek Frankfort
File: 253717 Project: HUNTINGTON & NASHVILLE Date: May 12/15 Sheet: 2 of 2 Maple, Ontario Home Lumber



MODEL : 38-2
ELEVATION A

LOT 65

SECOND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

RIMBOARD

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

SUBFLOOR - 5/8" NAILED & GLUED

APP - AS PER PLAN

BBO - BEAM BY OTHERS

Product	Length	Product	Piles	Net Qty
J1	14'-00-00	9 1/2" NI-20	1	46
J2	13'-00-00	9 1/2" NI-20	1	1
J3	12'-00-00	9 1/2" NI-20	1	2
J4	11'-00-00	9 1/2" NI-20	1	22
J5	9'-00-00	9 1/2" NI-20	1	7
J6	7'-00-00	9 1/2" NI-20	1	4
J7	6'-00-00	9 1/2" NI-20	1	16
J8	5'-00-00	9 1/2" NI-20	1	1
J9	4'-00-00	9 1/2" NI-20	1	2
J10	3'-00-00	9 1/2" NI-20	1	1
J11	2'-00-00	9 1/2" NI-20	1	1
B6	15'-00-00	VERSALAM-10 2.0E	4	4
B3	11'-00-00	VERSALAM-10 2.0E	1	1
B5	11'-00-00	VERSALAM-10 2.0E	2	2
B2	7'-00-00	VERSALAM-10 2.0E	2	2
B1	6'-00-00	VERSALAM-10 2.0E	1	1
B7	5'-00-00	VERSALAM-10 2.0E	2	2
B4	4'-00-00	VERSALAM-10 2.0E	1	1

HANGERS SCHEDULE

H1	LI259
H2	HUS1.81/10
H3	HIGUS410
H4	HUC410
H5	LSUJ25
H6	LSUJH310
H7	LF259

F-2x6 SPF#2 Sqaush Block req'd on one side of joists under interior load bearing wall

Multiple sqaush blocks are required under concentrated loads

Joists spacing under ceramic tile is 12" o/c

Ceramic tiles application is as per O.B.C 9.30.6

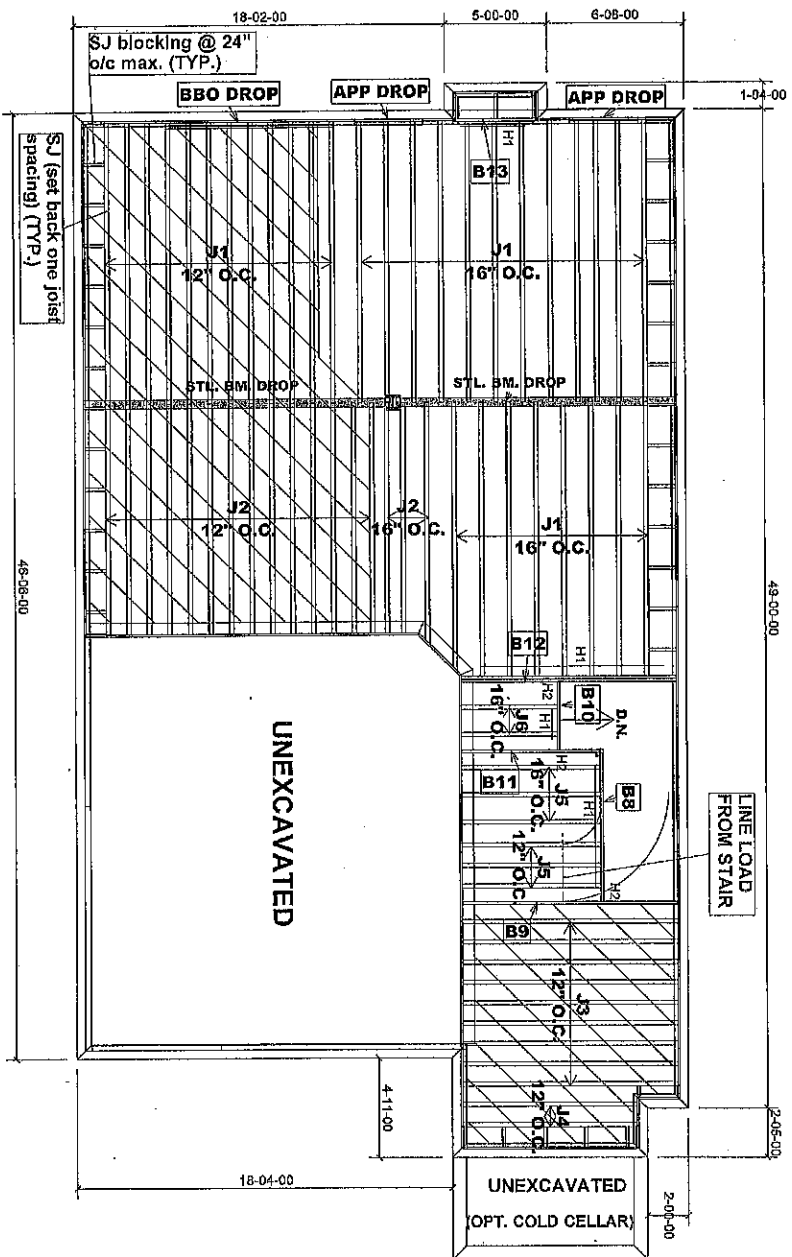
Do not scale - refer to architectural plans for dimensions

5-129508-5-129520

JT/PL: 40297/88464 Builder: GOLD PARK
Li: 272902 Project: HUNTINGTON & NASHVILLE

Location: KLEINBURG Designer: MQ
Date: Sept. 20 / 2016 Sheet: 1 of 2

Alpa Roof Trusses Inc. Salesperson: Derek Frankfort
Maple, Ontario Home Lumber



MODEL : 38-2
ELEVATION A

LOT 661

GROUND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

JT/PL: 40297/88464 Builder: GOLD PARK
LI: 272902 Project: HUNTINGTON & NASHVILLE

Location: KLEINBURG Date: Sept. 20 / 2016
Designer: MQ Sheet 2 of 2

Alpa Roof Trusses Inc. Salesperson: Derek Frankfort
Maple, Ontario Home Lumber

Products				
PileID	Length	Product	Piles	Net Qty
J1	14'-00"-00	9 1/2" NI-20	1	32
J2	12'-00"-00	9 1/2" NI-20	1	17
J3	11'-00"-00	9 1/2" NI-20	1	9
J4	9'-00"-00	9 1/2" NI-20	1	2
J5	7'-00"-00	9 1/2" NI-20	1	6
J6	5'-00"-00	9 1/2" NI-20	1	2
B9	11'-00"-00	VERSALAM-10 2.0E	1	1
B12	11'-00"-00	VERSALAM-10 2.0E	2	2
B8	8'-00"-00	VERSALAM-10 2.0E	1	1
B11	7'-00"-00	VERSALAM-10 2.0E	1	1
B13	5'-00"-00	VERSALAM-10 2.0E	1	1
B10	4'-00"-00	VERSALAM-10 2.0E	1	1

BLOCKING: 9 1/2" NI-20 - 44 FEET

HANGERS SCHEDULE

H1 - LT259
H2 - HUST 81/10

RIMBOARD

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

SUBFLOOR - 5/8" NAILED & GLUED

APP - AS PER PLAN

BBO - BEAM BY OTHERS

1-2x6 SPF#2 Squash Block req'd on one side of joists under interior load bearing wall

Multiple squash blocks are required under concentrated loads

Joists spacing under ceramic tile is 12" o/c

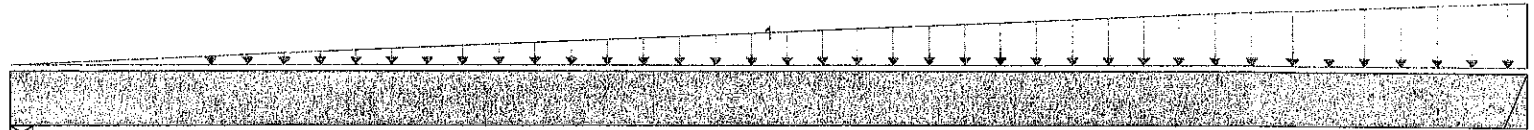
Ceramic tiles application is as per O.B.C 9.30.6

Do not scale - refer to architectural plans for dimensions

BC CALC® Design Report


Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\01
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



B0

05-03-00

B1

Total Horizontal Product Length = 05-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	70 / 0	39 / 0		
B1	140 / 0	65 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1		Trapezoidal (lb/ft)	L	00-00-00	05-03-00	0 80	0 30	1.00	1.15	n/a n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	267 ft-lbs	12,704 ft-lbs	0.02	1	03-00-02
End Shear	259 lbs	5,785 lbs	0.04	1	04-03-08
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	02-09-04
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	02-09-04
Span / Depth	6.2	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 1-3/4"	155 lbs	0.04	0.02	Spruce Pine Fir
B1 Hanger	2" x 1-3/4"	290 lbs	n/a	0.07	Hanger

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

Disclosure

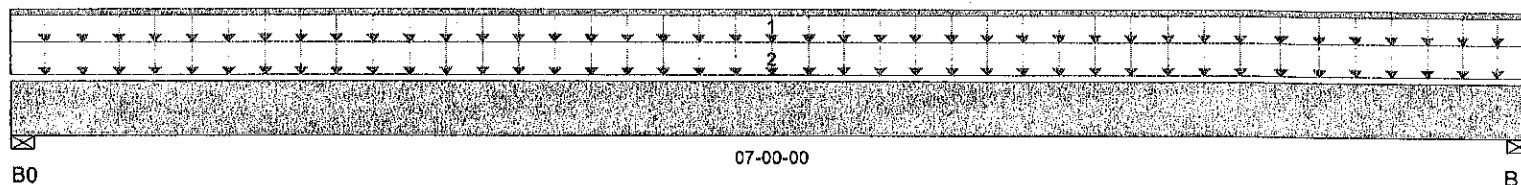
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE engineered wood products must be in accordance with current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



BC CALC® Design Report


Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\02
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	93 / 0	279 / 0		
B1, 3-1/2"	93 / 0	279 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Lin. (lb/ft)	L	00-00-00	07-00-00	0	60			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	07-00-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	596 ft-lbs	16,515 ft-lbs	0.04	0	03-06-00
End Shear	269 lbs	7,521 lbs	0.04	0	01-01-00
Total Load Defl.	L/999 (0.009")	n/a	n/a	4	03-06-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	03-06-00
Span / Depth	8.3	n/a	n/a		00-00-00

Bearing Supports

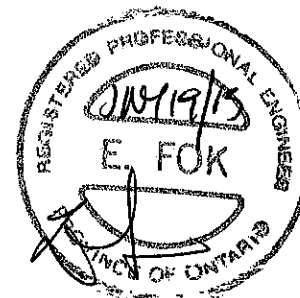
			Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports		Dim. (L x W)	Demand		Material
B0	Wall/Plate	3-1/2" x 3-1/2"	390 lbs	0.08	0.04
B1	Wall/Plate	3-1/2" x 3-1/2"	390 lbs	0.08	0.04

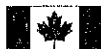
Notes

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



BC CALC® Design Report


Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code: KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253717.bcc

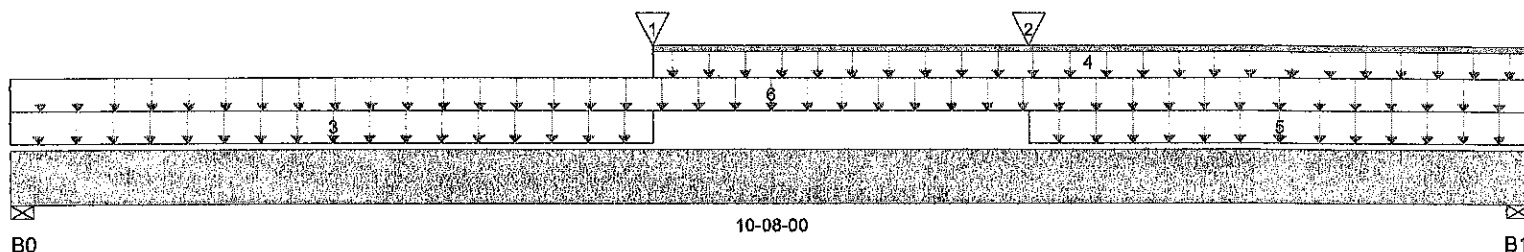
Description: Designs\03

Specifier: 38-2

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



Total Horizontal Product Length = 10-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	808 / 0	578 / 0		
B1, 3-1/2"	493 / 0	587 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Conc. Pt. (lbs)	L	04-06-00	04-06-00	93	279			n/a
2		Conc. Pt. (lbs)	L	07-02-00	07-02-00	140	65			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	04-06-00	40	15			03-10-00
4		Unf. Lin. (lb/ft)	L	04-06-00	10-08-00	0	60			n/a
5		Unf. Area (lb/ft^2)	L	07-02-00	10-08-00	40	15			00-08-00
6		Unf. Area (lb/ft^2)	L	00-00-00	10-08-00	40	15			00-08-00

Controls Summary

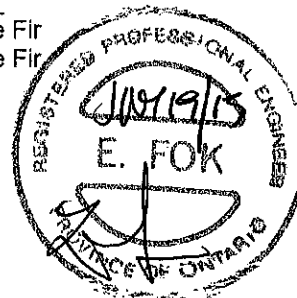
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,626 ft-lbs	12,704 ft-lbs	0.36	1	04-06-00
End Shear	1,545 lbs	5,785 lbs	0.27	1	01-01-00
Total Load Defl.	L/504 (0.243")	0.51"	0.48	4	05-02-00
Live Load Defl.	L/999 (0.119")	n/a	n/a	5	05-02-00
Max Defl.	0.243"	1"	0.24	4	05-02-00
Span / Depth	12.9	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 1-3/4"	1,935 lbs	0.51	0.26	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,473 lbs	0.39	0.2	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 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

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

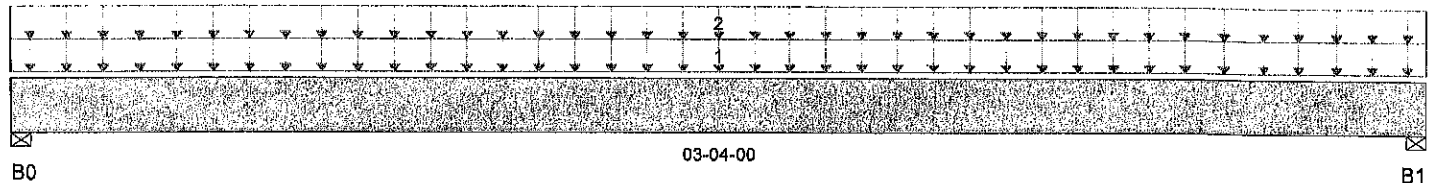
May-13-15

BC CALC® Design Report



Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\04
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 03-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	294 / 0	118 / 0		
B1, 3-1/2"	294 / 0	118 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Area (lb/ft^2)	L	00-00-00	03-04-00	40	15			03-09-00
2		Unf. Area (lb/ft^2)	L	00-00-00	03-04-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	366 ft-lbs	12,704 ft-lbs	0.03	1	01-08-00
End Shear	206 lbs	5,785 lbs	0.04	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-08-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-08-00
Span / Depth	3.6	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 1-3/4"	590 lbs	0.16	0.08	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	590 lbs	0.16	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

Disclosure

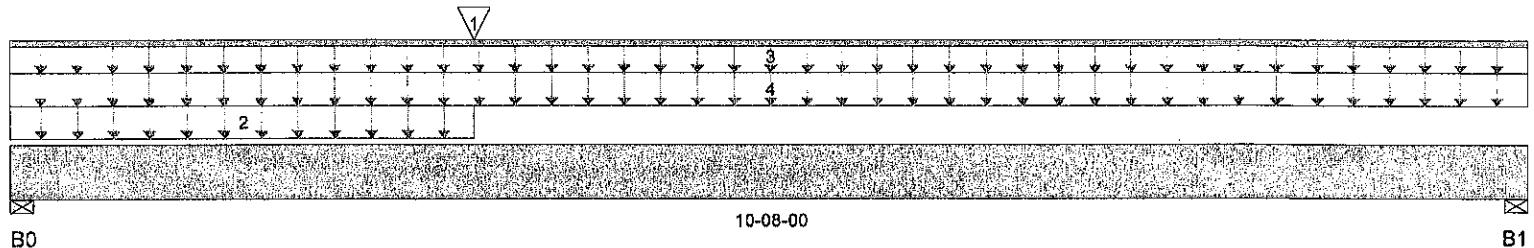
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BC CALC® Design Report


Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\05
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 10-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,925 / 0	1,099 / 0		
B1, 3-1/2"	1,616 / 0	980 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Conc. Pt. (lbs)	L	03-03-00	03-03-00	294	118			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	03-03-00	40	15			02-00-00
3		Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	0	60			n/a
4		Unf. Area (lb/ft^2)	L	00-00-00	10-08-00	40	15			07-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,610 ft-lbs	25,408 ft-lbs	0.38	1	04-11-03
End Shear	3,398 lbs	11,571 lbs	0.29	1	01-01-00
Total Load Defl.	L/476 (0.258")	0.51"	0.5	4	05-02-12
Live Load Defl.	L/755 (0.162")	0.34"	0.48	5	05-02-12
Span / Depth	12.9	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	3-1/2" x 3-1/2"	4,260 lbs	0.57	0.29	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 3-1/2"	3,649 lbs	0.48	0.24	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



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

May-13-15

BC CALC® Design Report


Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code: KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253717.bcc

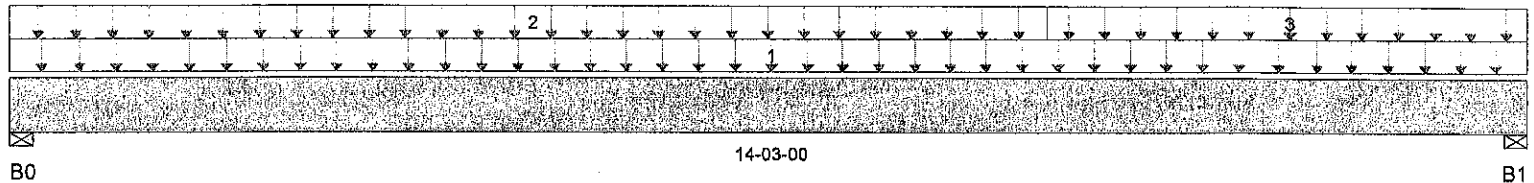
Description: Designs\06

Specifier: 38-2

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



Total Horizontal Product Length = 14-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	3,657 / 0	1,697 / 0		
B1, 3-1/2"	3,657 / 0	1,605 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Area (lb/ft^2)	L	00-00-00	14-03-00	40	15			07-00-00
2		Unf. Area (lb/ft^2)	L	00-00-00	09-09-00	40	20			05-10-00
3		Unf. Area (lb/ft^2)	L	09-09-00	14-03-00	40	15			05-10-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	25,300 ft-lbs	52,848 ft-lbs	0.48	1	07-00-08
End Shear	6,447 lbs	23,142 lbs	0.28	1	01-01-00
Total Load Defl.	L/272 (0.609")	0.69"	0.88	4	07-02-02
Live Load Defl.	L/396 (0.418")	0.46"	0.91	5	07-02-02
Span / Depth	17.4	n/a	n/a		00-00-00

Bearing Supports

			Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supports	Dim. (L x W)	Demand			
B0	Wall/Plate	3-1/2" x 7"	7,608 lbs	0.5	0.25
B1	Wall/Plate	3-1/2" x 7"	7,492 lbs	0.5	0.25
					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

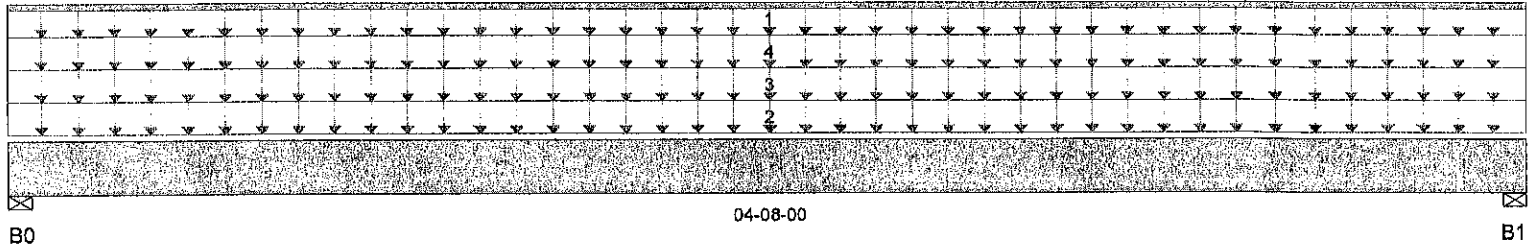
NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ 8" O.C., STAGGERED IN TWO ROWS, PLUS 1/2" ϕ BOLTS, NUTS
 & WASHERS @ 4'-0" O.C., STAGGERED IN 2 ROWS



BC CALC® Design Report


Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\07
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 04-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	167 / 0	382 / 0	200 / 0	
B1, 3-1/2"	167 / 0	382 / 0	200 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	0	100			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-08-00	40	20			00-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	04-08-00	11	10	21		03-01-00
4		Unf. Area (lb/ft^2)	L	00-00-00	04-08-00	11	10	21		01-00-00

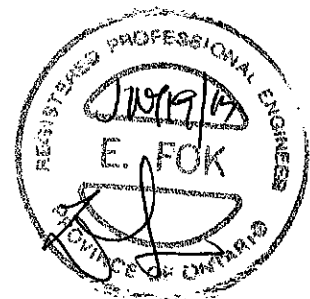
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	817 ft-lbs	25,408 ft-lbs	0.03	5	02-04-00
End Shear	461 lbs	11,571 lbs	0.04	5	01-01-00
Total Load Defl.	L/999 (0.004")	n/a	n/a	13	02-04-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	17	02-04-00
Max Defl.	0.004"	n/a	n/a	13	02-04-00
Span / Depth	5.3	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"	861 lbs	0.11	0.06	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	861 lbs	0.11	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.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 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 3/2" SPACED NAILS @ 12" O.C., STAGGERED IN 2 ROWS

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

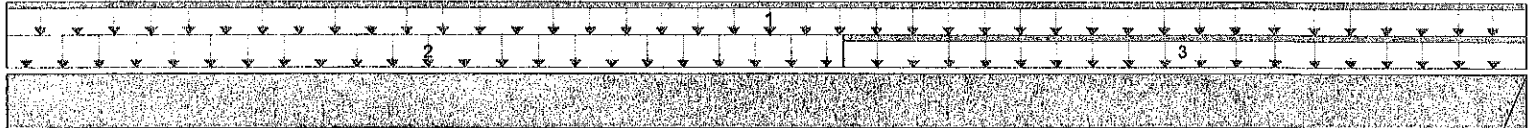
May-13-15

BC CALC® Design Report



Build 3272
Job Name: 40297
Address: HUNTINGTON & NASHVILLE
City, Province, Postal Code: KLEINBURG, ON
Customer: GOLD PARK
Code reports: CCMC 12472-R

File Name: 253717.bcc
Description: Designs\08
Specifier: 38-2
Designer: MQ
Company: Alpa Roof Trusses Inc
Misc:



B0

07-05-00

B1

Total Horizontal Product Length = 07-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	665 / 0	499 / 0		
B1	993 / 0	629 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Unf. Lin. (lb/ft)	L	00-00-00	07-05-00	0	60				n/a
2	Unf. Area (lb/ft^2)	L	00-00-00	04-01-00	40	15				03-06-00
3	Unf. Lin. (lb/ft)	L	04-01-00	07-05-00	326	130				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,304 ft-lbs	12,704 ft-lbs	0.26	1	04-03-09
End Shear	1,574 lbs	5,785 lbs	0.27	1	06-05-08
Total Load Defl.	L/999 (0.084")	n/a	n/a	4	03-10-12
Live Load Defl.	L/999 (0.05")	n/a	n/a	5	03-10-12
Max Defl.	0.084"	n/a	n/a	4	03-10-12
Span / Depth	8.9	n/a	n/a		00-00-00

Bearing Supports

			Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supports	Dim. (L x W)	Demand			
B0	Wall/Plate	3-1/2" x 1-3/4"	1,621 lbs	0.43	0.22
B1	Hanger	2" x 1-3/4"	2,276 lbs	n/a	0.53

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum total load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 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

Disclosure

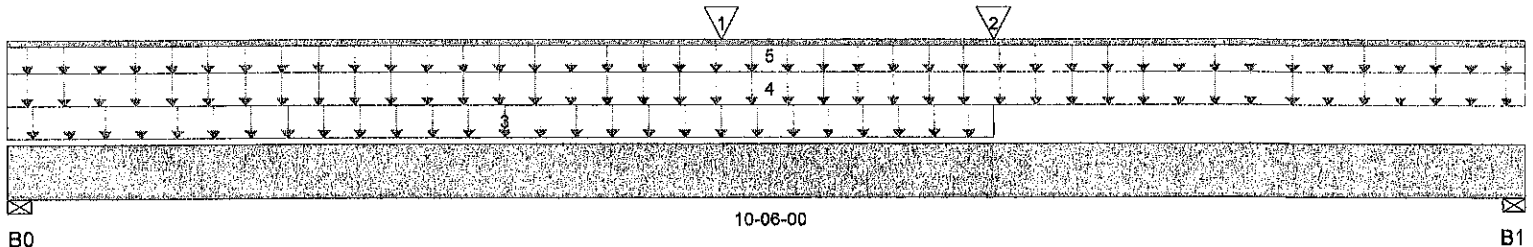
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE engineered wood products must be in accordance with current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



BC CALC® Design Report


Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\09
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 10-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	746 / 0	726 / 0		
B1, 3-1/2"	975 / 0	892 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Conc. Pt. (lbs)	L	04-11-00	04-11-00	266	100			n/a
2		Conc. Pt. (lbs)	L	06-10-00	06-10-00	993	629			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	06-10-00	40	15			00-08-00
4		Unf. Area (lb/ft^2)	L	00-00-00	10-06-00	40	20			00-08-00
5		Unf. Lin. (lb/ft)	L	00-00-00	10-06-00	0	60			n/a

Controls Summary

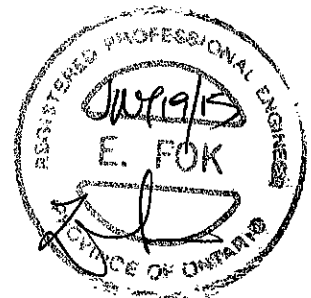
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,940 ft-lbs	12,704 ft-lbs	0.63	1	06-10-00
End Shear	2,429 lbs	5,785 lbs	0.42	1	09-05-00
Total Load Defl.	L/318 (0.379")	0.502"	0.76	4	05-04-12
Live Load Defl.	L/582 (0.207")	0.335"	0.62	5	05-06-03
Max Defl.	0.379"	1"	0.38	4	05-04-12
Span / Depth	12.7	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	3-1/2" x 1-3/4"	2,026 lbs	0.54	0.27	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	2,578 lbs	0.68	0.35	Spruce Pine Fir

Notes

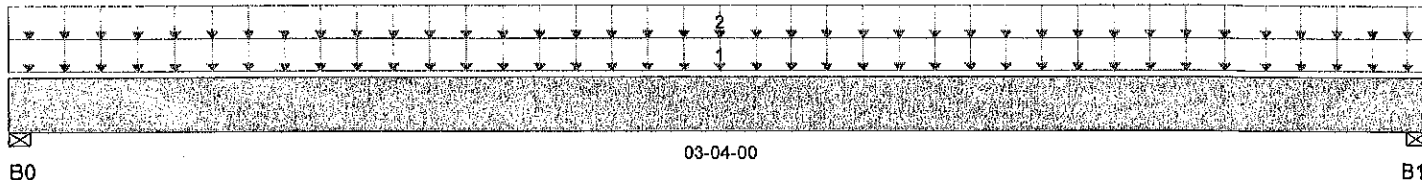
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 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




Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\10
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 03-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	367 / 0	146 / 0		
B1, 3-1/2"	367 / 0	146 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Area (lb/ft ²)	L	00-00-00	03-04-00	40	15			02-06-00
2		Unf. Area (lb/ft ²)	L	00-00-00	03-04-00	40	15			03-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	454 ft-lbs	12,704 ft-lbs	0.04	1	01-08-00
End Shear	256 lbs	5,785 lbs	0.04	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-08-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-08-00
Max Defl.	0.002"	n/a	n/a	4	01-08-00
Span / Depth	3.6	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 1-3/4"	732 lbs	0.19	0.1	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	732 lbs	0.19	0.1	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 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.

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.



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

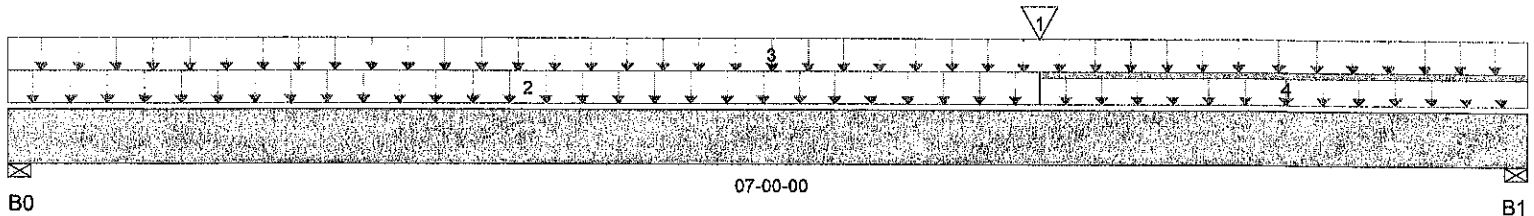
May-13-15

BC CALC® Design Report



Build 3272
Job Name: 40297
Address: HUNTINGTON & NASHVILLE
City, Province, Postal Code: KLEINBURG, ON
Customer: GOLD PARK
Code reports: CCMC 12472-R

File Name: 253717.bcc
Description: Designs\11
Specifier: 38-2
Designer: MQ
Company: Alpa Roof Trusses Inc
Misc:



Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	292 / 0	148 / 0		
B1, 3-1/2"	389 / 0	285 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Conc. Pt. (lbs)	L	04-09-00	04-09-00	367	146			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-09-00	40	15			00-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	07-00-00	40	15			00-08-00
4		Unf. Lin. (lb/ft)	L	04-09-00	07-00-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,562 ft-lbs	12,704 ft-lbs	0.12	1	04-09-00
End Shear	794 lbs	5,785 lbs	0.14	1	05-11-00
Total Load Defl.	L/999 (0.031")	n/a	n/a	4	03-08-10
Live Load Defl.	L/999 (0.02")	n/a	n/a	5	03-07-15
Max Defl.	0.031"	n/a	n/a	4	03-08-10
Span / Depth	8.3	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 1-3/4"	622 lbs	0.17	0.08	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	939 lbs	0.25	0.13	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum total load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 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.

Disclosure

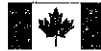
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Dry | 1 span | No cantilevers | 0/12 slope (deg)

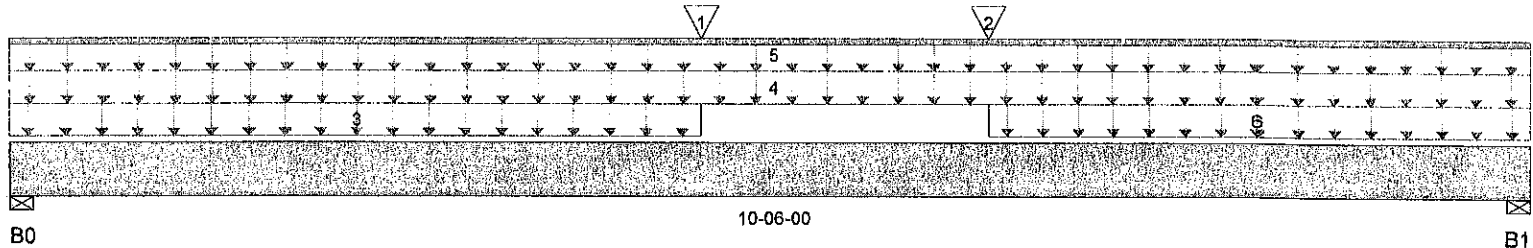
May-13-15

BC CALC® Design Report



Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253717.bcc
 Description: Designs\12
 Specifier: 38-2
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 10-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,900 / 0	1,083 / 0		
B1, 3-1/2"	1,954 / 0	1,102 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Conc. Pt. (lbs)	L	04-09-00	04-09-00	367	146			n/a
2		Conc. Pt. (lbs)	L	06-09-00	06-09-00	320	120			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	04-09-00	40	15			00-08-00
4		Unf. Area (lb/ft^2)	L	00-00-00	10-06-00	40	15			07-00-00
5		Unf. Lin. (lb/ft)	L	00-00-00	10-06-00	0	60			n/a
6		Unf. Area (lb/ft^2)	L	06-09-00	10-06-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,254 ft-lbs	25,408 ft-lbs	0.44	1	05-00-00
End Shear	3,560 lbs	11,571 lbs	0.31	1	09-05-00
Total Load Defl.	L/423 (0.285")	0.502"	0.57	4	05-03-00
Live Load Defl.	L/657 (0.183")	0.335"	0.55	5	05-03-00
Max Defl.	0.285"	1"	0.28	4	05-03-00
Span / Depth	12.7	n/a	n/a		00-00-00

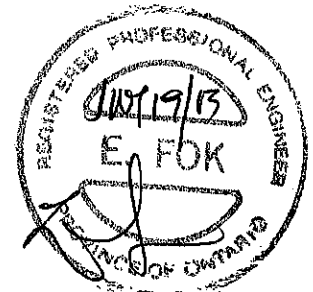
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	4,203 lbs	0.56	0.28	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	4,308 lbs	0.57	0.29	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 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., STRUTTED IN 2 ROWS



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

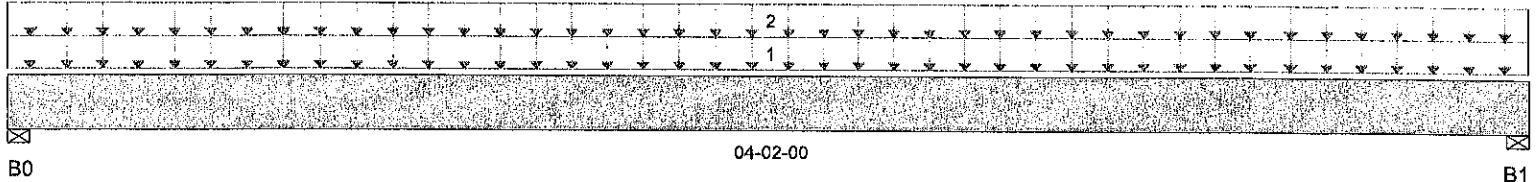
May-13-15

BC CALC® Design Report



Build 3272
Job Name: 40297
Address: HUNTINGTON & NASHVILLE
City, Province, Postal Code: KLEINBURG, ON
Customer: GOLD PARK
Code reports: CCMC 12472-R

File Name: 253717.bcc
Description: Designs\13
Specifier: 38-2
Designer: MQ
Company: Alpa Roof Trusses Inc
Misc:



Total Horizontal Product Length = 04-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	646 / 0	252 / 0		
B1, 3-1/2"	646 / 0	252 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Area (lb/ft^2)	L	00-00-00	04-02-00	40	15			07-01-00
2		Unf. Area (lb/ft^2)	L	00-00-00	04-02-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,059 ft-lbs	12,704 ft-lbs	0.08	1	02-01-00
End Shear	616 lbs	5,785 lbs	0.11	1	01-01-00
Total Load Defl.	L/999 (0.007")	n/a	n/a	4	02-01-00
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	02-01-00
Max Defl.	0.007"	n/a	n/a	4	02-01-00
Span / Depth	4.7	n/a	n/a		00-00-00

Disclosure

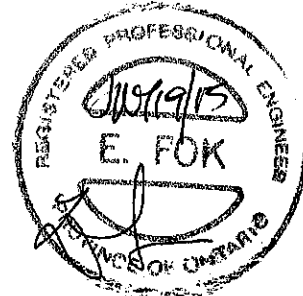
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE engineered wood products must be in accordance with current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

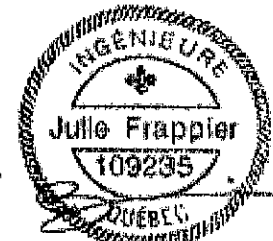
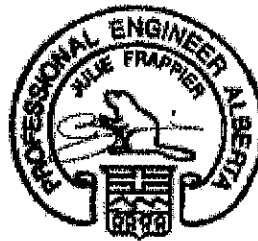
Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,284 lbs	0.34	0.17	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,284 lbs	0.34	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.
Design meets User specified (1") Maximum total load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA 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.





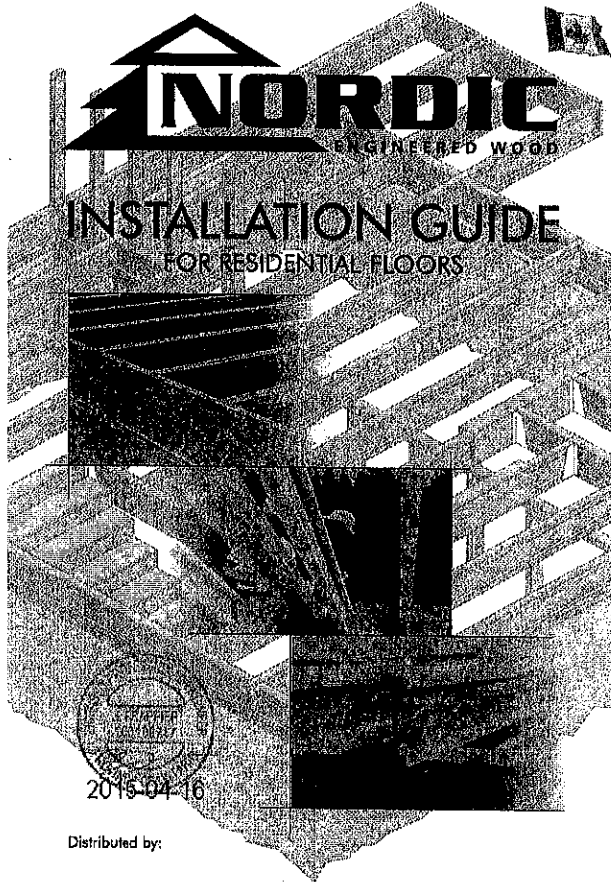
Maximum Floor Spans

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			
		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"	14'-2"	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
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	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
	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
14"	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
	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
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-9"	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			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	N/A	17'-1"	15'-5"	14'-6"	N/A
	NI-40x	17'-11"	16'-11"	16'-4"	N/A	18'-5"	17'-4"	16'-7"	N/A
	NI-60	18'-2"	17'-1"	16'-6"	N/A	18'-7"	17'-6"	16'-10"	N/A
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
11-7/8"	NI-20	19'-6"	18'-1"	17'-5"	N/A	20'-2"	18'-8"	17'-6"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-3"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
	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
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	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
16"	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'-2"	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 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/360 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 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, and NBC 2010.
- 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.



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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



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



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

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

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

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

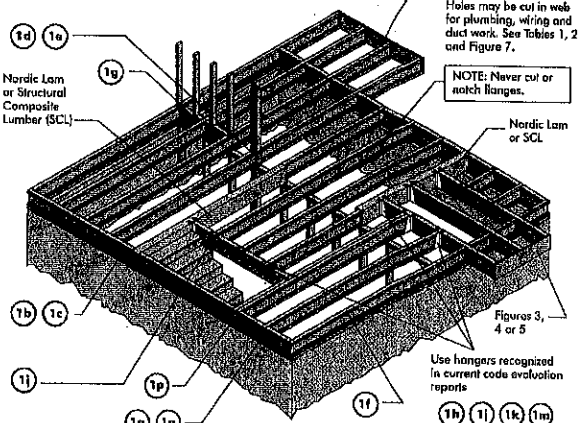


INSTALLING NORDIC I-JOISTS

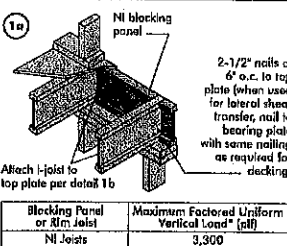
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple spans must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seal I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may 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: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

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

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



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



Attach I-joist to top plate per detail 1b

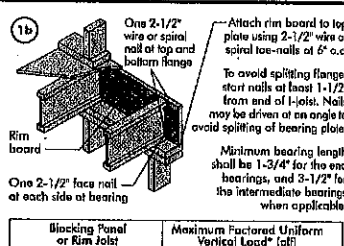
Blocking Panel or Rim Joist

NI Joists

Maximum Factored Uniform Vertical Load* (plf)

3,300

*The uniform vertical load is limited to a joist depth of 14 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.



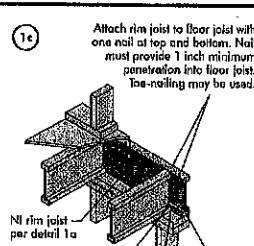
Blocking Panel or Rim Joist

Maximum Factored Uniform Vertical Load* (plf)

8,090

1-1/8" Rim Board Plus

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

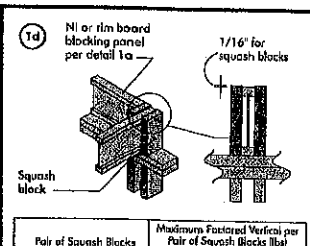


Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

NI rim joist per detail 1a

Attach I-joist per detail 1b

Minimum 1-3/4" bearing required



Pair of Squash Blocks

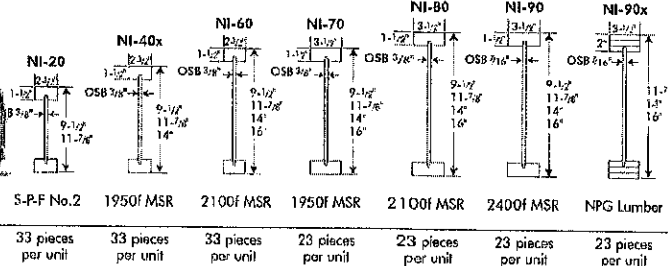
Maximum Factored Vertical per Pair of Squash Blocks (lbs)

3-1/2" wide 5-1/2" wide

2x Lumber 5,500 8,500

1-1/8" Rim Board Plus 4,300 6,600

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



RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

5. The sides of square holes or longest sides of rectangular holes should 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 round hole or twice the size of the largest square hole (or twice the length of the longest side of 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 are permitted anywhere in a cantilevered 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 of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS
Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.)									
		Duct Chase Length (in.)									
		8	10	12	14	16	18	20	22	24	
9-1/2"	NL-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5"	
	NL-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	
	NL-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	8'-9"	
	NL-80	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"	
	NL-90x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	
11-7/8"	NL-20	5'-0"	5'-2"	5'-6"	7'-1"	8'-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'-1"	10'-9"	
	NL-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	10'-3"	11'-0"	
	NL-70	7'-1"	7'-4"	7'-9"	8'-7"	9'-1"	9'-6"	10'-1"	10'-4"	11'-1"	
	NL-80	7'-2"	7'-7"	8'-0"	8'-5"	9'-0"	9'-3"	9'-8"	10'-2"	10'-8"	
NL-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-6"	11'-2"		
NL-90x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-6"	11'-2"		
14"	NL-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	12'-0"	12'-8"	
	NL-60	8'-5"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	12'-3"	13'-0"	
	NL-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11'-2"	11'-7"	12'-3"	
	NL-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"	
	NL-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	11'-5"	11'-9"	12'-4"	12'-11"	
NL-90x	9'-4"	9'-9"	10'-3"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-2"		
16"	NL-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-10"	
	NL-70	10'-1"	10'-5"	11'-0"	11'-4"	11'-10"	12'-3"	12'-8"	13'-4"	14'-0"	
	NL-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"	
	NL-90	10'-9"	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"	
	NL-90x	11'-1"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-6"	15'-0"	

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

See Table 1 for minimum distance from bearing

2x diameter of larger hole

2x duct chase length or hole diameter, whichever is larger

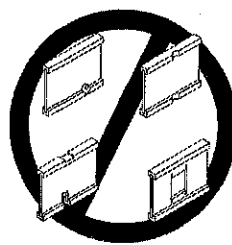
Duct chase opening (see Table 2 for minimum distance from bearing)

3/4x diameter

Knockouts

See rule 12

Maintain minimum 1/8" space between top and bottom flange — all duct chase openings and holes



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. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

1. Brace and nail each I-joint as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joint ends. When I-joints are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joints. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joint 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-joint. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joints.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joints at the end of the bay.
3. For cantilevered I-joints, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and fully nail permanent sheathing to each I-joint before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joint.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic 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.



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



PRODUCT WARRANTY

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

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

1a NI blocking panel

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

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

Attach I-joist to top plate per detail 1b

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

1b Rim board

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

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

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

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

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

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

1d NI or rim board blocking panel per detail 1a

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

Provide lateral bracing per detail 1a or 1b

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

1g Joist attachment per detail 1b

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls or when floor joists are not continuous over support

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

NI blocking panel per detail 1a

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

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

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

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.

** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

1i Nordic Lam or Structural Composite Lumber (SCL)

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

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

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

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

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

Top-mount hanger installed per manufacturer's recommendations

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

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

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

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

Attach I-joist per detail 1b

NOTE: Blocking required at bearing for lateral support, not shown for clarity.

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

NI blocking panel

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

1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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

NOTES:

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

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

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

Rim board

2-1/2" nails of 6" o.c.

2x4 min. (1/8" gap minimum)

Two 2-1/2" nails from each web to lumber piece

I-joist blocking panel

One 2-1/2" nail one side only

NOTES:

- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

WEB STIFFENERS

RECOMMENDATIONS:

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

FIGURE 2

WEB STIFFENER INSTALLATION DETAILS

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

Approx. 2"

1/8"-1/4" Gap

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

No Gap

CONCENTRATED LOAD (Load stiffener)

Tight Joint No Gap

Gap

END BEARING (Bearing stiffener)

Gap

Tight Joint No Gap

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

See the adjacent table for web stiffener size requirements

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

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

Attach I-joist to plate per detail 1b

2-1/2" nails

3-1/2" min. bearing required

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

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

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

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

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

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

Rim Board Joint at Corner

1-1/2"

2-1/2" nails

h

1-1/2"

Rim board joint

Rim board

Top or sole plate

30°

1/3"

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

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 longest sides of rectangular holes should 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 round hole or twice the size of the largest square hole (or twice the length of the longest side of 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 continuous 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 of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to center of hole (ft-in)															Span adjustment factor
		Round hole diameter (in)															
		2	3	4	5	6	6-1/2	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	

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

OPTIONAL:

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Span Table), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$D_{reduced} = \frac{L_{actual} \times D}{L_{max}}$$

Where:

D_{reduced}L_{actual}L_{max}

D

SAF

SAF

SAF

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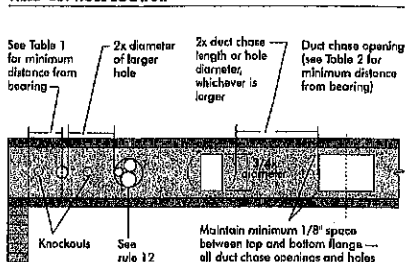
SAF

SAF

SAF

SAF

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 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 like flange, or over-cut the web.

Holes in webs should be cut with a sharp saw.

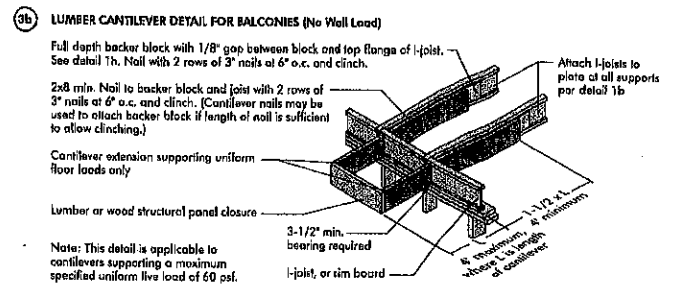
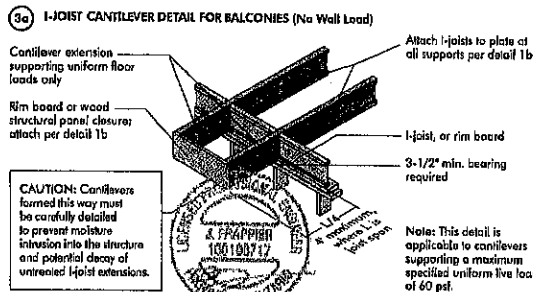
For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another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

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

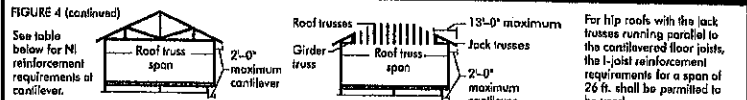
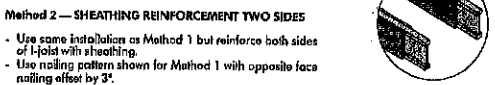
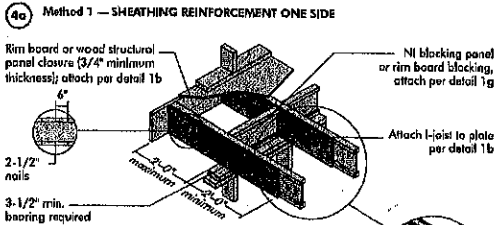
Simple span Only													
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in)											
		Ded chase length (in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
10	200												
12	240												
14	280												
16	320												
18	360												
20	400												
22	440												
24	480												
26	520												
28	560												
30	600												
32	640												
34	680												
36	720												
38	760												
40	800												
42	840												
44	880												
46	920												
48	960												
50	1000												
52	1040												
54	1080												
56	1120												
58	1160												
60	1200												
62	1240												
64	1280												
66	1320												
68	1360												
70	1400												
72	1440												
74	1480												
76	1520												
78	1560												
80	1600												
82	1640												
84	1680												
86	1720												
88	1760												
90	1800												
92	1840												
94	1880												
96	1920												
98	1960												
100	2000												

1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)



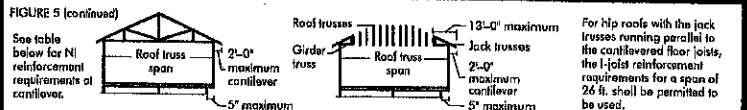
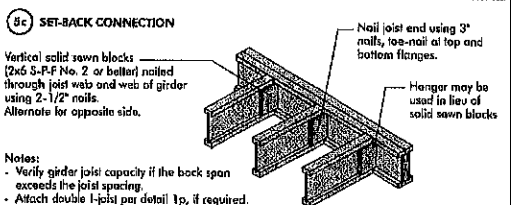
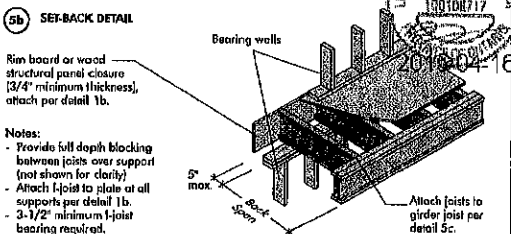
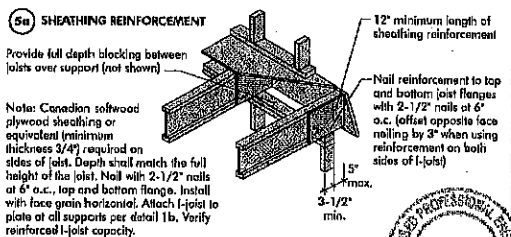
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



CANTILEVER REINFORCEMENT METHODS ALLOWED					ROOF LOADING (UNFACTORED)												
JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft.)	LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf							
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)							
	(ft.)	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24				

- N = No reinforcement required.
- N = NI reinforced with 3/4" wood structural panel on one side only.
- N = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist. X = Try a deeper joist or closer spacing.
- Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/460. Use 12" o.c. requirements for lesser spacing.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft.)	LL = 30 psf, DL = 15 psf			ROOF LOADING (UNFACTORED)			LL = 40 psf, DL = 15 psf			LL = 50 psf, DL = 15 psf		
		JOIST SPACING (in.)			JOIST SPACING (in.)			JOIST SPACING (in.)			JOIST SPACING (in.)		
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24

- N = No reinforcement required.
- N = NI reinforced with 3/4" wood structural panel on one side only.
- N = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist. X = Try a deeper joist or closer spacing.
- Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
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- Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-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 and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGCS-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 hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

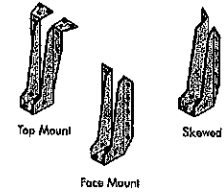
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
10	NI-10	12'-0"	10'-0"	8'-0"	6'-0"	12'-0"	10'-0"	8'-0"	6'-0"
12	NI-12	14'-0"	12'-0"	10'-0"	8'-0"	14'-0"	12'-0"	10'-0"	8'-0"
14	NI-14	16'-0"	14'-0"	12'-0"	10'-0"	16'-0"	14'-0"	12'-0"	10'-0"
16	NI-16	18'-0"	16'-0"	14'-0"	12'-0"	18'-0"	16'-0"	14'-0"	12'-0"
18	NI-18	20'-0"	18'-0"	16'-0"	14'-0"	20'-0"	18'-0"	16'-0"	14'-0"
20	NI-20	22'-0"	20'-0"	18'-0"	16'-0"	22'-0"	20'-0"	18'-0"	16'-0"
22	NI-22	24'-0"	22'-0"	20'-0"	18'-0"	24'-0"	22'-0"	20'-0"	18'-0"
24	NI-24	26'-0"	24'-0"	22'-0"	20'-0"	26'-0"	24'-0"	22'-0"	20'-0"
26	NI-26	28'-0"	26'-0"	24'-0"	22'-0"	28'-0"	26'-0"	24'-0"	22'-0"
28	NI-28	30'-0"	28'-0"	26'-0"	24'-0"	30'-0"	28'-0"	26'-0"	24'-0"
30	NI-30	32'-0"	30'-0"	28'-0"	26'-0"	32'-0"	30'-0"	28'-0"	26'-0"
32	NI-32	34'-0"	32'-0"	30'-0"	28'-0"	34'-0"	32'-0"	30'-0"	28'-0"
34	NI-34	36'-0"	34'-0"	32'-0"	30'-0"	36'-0"	34'-0"	32'-0"	30'-0"
36	NI-36	38'-0"	36'-0"	34'-0"	32'-0"	38'-0"	36'-0"	34'-0"	32'-0"
38	NI-38	40'-0"	38'-0"	36'-0"	34'-0"	40'-0"	38'-0"	36'-0"	34'-0"
40	NI-40	42'-0"	40'-0"	38'-0"	36'-0"	42'-0"	40'-0"	38'-0"	36'-0"
42	NI-42	44'-0"	42'-0"	40'-0"	38'-0"	44'-0"	42'-0"	40'-0"	38'-0"
44	NI-44	46'-0"	44'-0"	42'-0"	40'-0"	46'-0"	44'-0"	42'-0"	40'-0"
46	NI-46	48'-0"	46'-0"	44'-0"	42'-0"	48'-0"	46'-0"	44'-0"	42'-0"
48	NI-48	50'-0"	48'-0"	46'-0"	44'-0"	50'-0"	48'-0"	46'-0"	44'-0"
50	NI-50	52'-0"	50'-0"	48'-0"	46'-0"	52'-0"	50'-0"	48'-0"	46'-0"
52	NI-52	54'-0"	52'-0"	50'-0"	48'-0"	54'-0"	52'-0"	50'-0"	48'-0"
54	NI-54	56'-0"	54'-0"	52'-0"	50'-0"	56'-0"	54'-0"	52'-0"	50'-0"
56	NI-56	58'-0"	56'-0"	54'-0"	52'-0"	58'-0"	56'-0"	54'-0"	52'-0"
58	NI-58	60'-0"	58'-0"	56'-0"	54'-0"	60'-0"	58'-0"	56'-0"	54'-0"
60	NI-60	62'-0"	60'-0"	58'-0"	56'-0"	62'-0"	60'-0"	58'-0"	56'-0"
62	NI-62	64'-0"	62'-0"	60'-0"	58'-0"	64'-0"	62'-0"	60'-0"	58'-0"
64	NI-64	66'-0"	64'-0"	62'-0"	60'-0"	66'-0"	64'-0"	62'-0"	60'-0"
66	NI-66	68'-0"	66'-0"	64'-0"	62'-0"	68'-0"	66'-0"	64'-0"	62'-0"
68	NI-68	70'-0"	68'-0"	66'-0"	64'-0"	70'-0"	68'-0"	66'-0"	64'-0"
70	NI-70	72'-0"	70'-0"	68'-0"	66'-0"	72'-0"	70'-0"	68'-0"	66'-0"
72	NI-72	74'-0"	72'-0"	70'-0"	68'-0"	74'-0"	72'-0"	70'-0"	68'-0"
74	NI-74	76'-0"	74'-0"	72'-0"	70'-0"	76'-0"	74'-0"	72'-0"	70'-0"
76	NI-76	78'-0"	76'-0"	74'-0"	72'-0"	78'-0"	76'-0"	74'-0"	72'-0"
78	NI-78	80'-0"	78'-0"	76'-0"	74'-0"	80'-0"	78'-0"	76'-0"	74'-0"
80	NI-80	82'-0"	80'-0"	78'-0"	76'-0"	82'-0"	80'-0"	78'-0"	76'-0"
82	NI-82	84'-0"	82'-0"	80'-0"	78'-0"	84'-0"	82'-0"	80'-0"	78'-0"
84	NI-84	86'-0"	84'-0"	82'-0"	80'-0"	86'-0"	84'-0"	82'-0"	80'-0"
86	NI-86	88'-0"	86'-0"	84'-0"	82'-0"	88'-0"	86'-0"	84'-0"	82'-0"
88	NI-88	90'-0"	88'-0"	86'-0"	84'-0"	90'-0"	88'-0"	86'-0"	84'-0"
90	NI-90	92'-0"	90'-0"	88'-0"	86'-0"	92'-0"	90'-0"	88'-0"	86'-0"
92	NI-92	94'-0"	92'-0"	90'-0"	88'-0"	94'-0"	92'-0"	90'-0"	88'-0"
94	NI-94	96'-0"	94'-0"	92'-0"	90'-0"	96'-0"	94'-0"	92'-0"	90'-0"
96	NI-96	98'-0"	96'-0"	94'-0"	92'-0"	98'-0"	96'-0"	94'-0"	92'-0"
98	NI-98	100'-0"	98'-0"	96'-0"	94'-0"	100'-0"	98'-0"	96'-0"	94'-0"
100	NI-100	102'-0"	100'-0"	98'-0"	96'-0"	102'-0"	100'-0"	98'-0"	96'-0"

CEMC EVALUATION REPORT 13032-R

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.



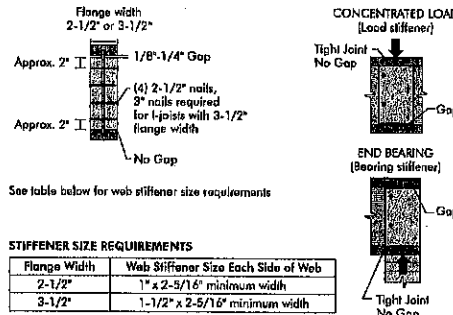
WEB STIFFENERS

RECOMMENDATIONS:

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

SI units conversion: 1 inch = 25.4 mm

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



STIFFENER SIZE REQUIREMENTS

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

NORDIC I-JOIST SERIES

NI-30	NI-40s	NI-60	NI-70	NI-80	NI-90	NI-90s
3-1/2" No. 2	1960f MSR	2160f MSR	1960f MSR	2160f MSR	2400f MSR	NPG Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit

Chantiers Chibougamau Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from the raw log to the finished 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.

2015-04-16

1e

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

1f

Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

Provide backer for siding attachment unless available sheathing is used.

Wall sheathing, as required.

Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried to the foundation.

1g

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

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

Joist attachment per detail 1b.

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

NI blocking panel per detail 1a.

1h

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

Double I-joist header.

Top- or face-mount hanger.

Filler block per detail 1p.

Backer block required (both sides for face-mount hangers).

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

1i

Top- or face-mount hanger. Installed per manufacturer's recommendations.

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

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

1k

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

Top-mount hanger installed per manufacturer's recommendations.

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

1m

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

Filler block per detail 1p.

Install hanger per manufacturer's recommendations.

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

Maximum support capacity = 1,620 lbs.

1n

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

Attach I-joist per detail 1b.

Note: Blocking required at bearing for lateral support, not shown for clarity.

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

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

¹ Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.

² 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".

1p

Filler block.

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

Notes:

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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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

1r

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

NI blocking panel.

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

1s

One 2-1/2" nails at top and bottom flange.

Two 2-1/2" nails from each web to lumber piece.

2x4 min. (1/8" gap minimum).

I-joist blocking panel.

One 2-1/2" nails one side only.

2-1/2" nails at 6" o.c.

Notes:

- In some local codes, blocking is prescriptively required in the first joist space (for first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.