

Product	Length	Product	Piles	Net Qty
JT	14'-00-00	9 1/2" N-20	1	7
J2	13'-00-00	9 1/2" N-20	1	26
J3	11'-00-00	9 1/2" N-20	1	12
J4	10'-00-00	9 1/2" N-20	1	1
J5	7'-00-00	9 1/2" N-20	1	1
J6	6'-00-00	9 1/2" N-20	1	2
J7	4'-00-00	9 1/2" N-20	1	12
J8	17'-00-00	9 1/2" N-40x	1	18
J9	16'-00-00	9 1/2" N-40x	1	23
B5	14'-00-00	VERSALAM-10 20E	4	4
B2	13'-00-00	VERSALAM-10 20E	2	2
B1	11'-00-00	VERSALAM-10 20E	1	1
B3	11'-00-00	VERSALAM-10 20E	1	1
B4	7'-00-00	VERSALAM-10 20E	1	1
B6	5'-00-00	VERSALAM-10 20E	2	2

BLOCKING: 9 1/2" N-20 - 16 FEET

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

FLANGERS SCHEDULE
H1 - L1259
H2 - HUST 81/10

1-2x6 SP#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. § 30.6

Do not scale - refer to architectural plans for dimensions

PL# 89609 Sec. 07/16
PL# 85974 April 21 / 2016

Revised : April 21 / 2016

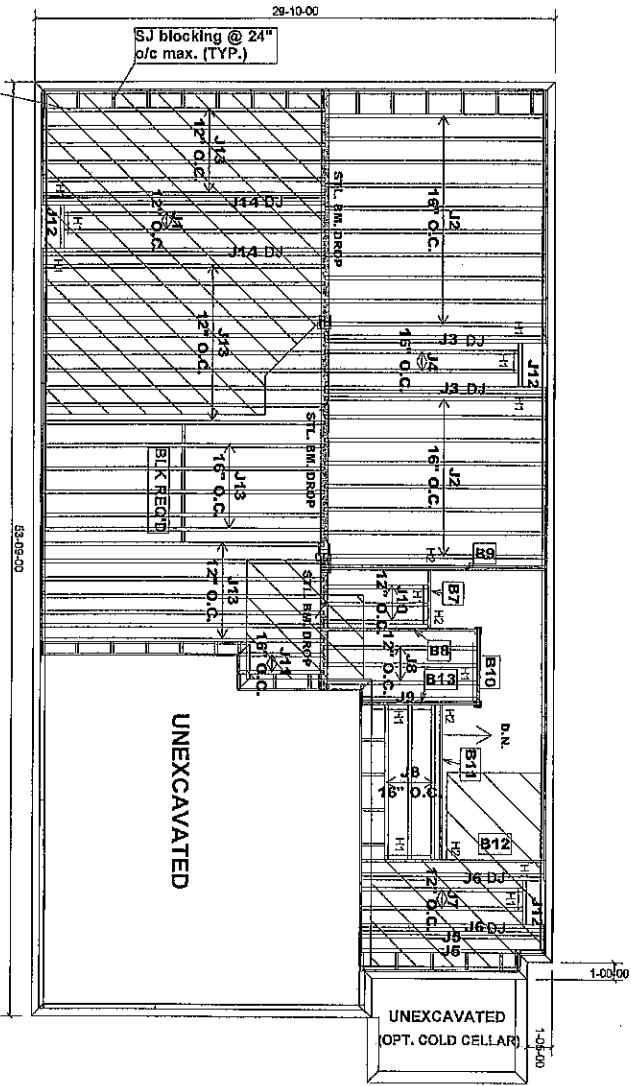
MODEL : 38-4
ELEVATION A

SECOND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

JT: 40297/79712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ
File: 253720 Project: HUNTINGTON & NASHVILLE Date: May 06/15 Sheet: 1 of 6
Alpa Roof Trusses Inc. Salesperson: Derek Frankfort
Maple, Ontario Home Lumber

S-129467-S-129490



Product	Product	Piles	Net Qty
J1	15'-00'-00 9 1/2" NI-20	1	2
J2	13'-00'-00 9 1/2" NI-20	1	18
J3	13'-00'-00 9 1/2" NI-20	2	4
J4	12'-00'-00 9 1/2" NI-20	1	2
J5	11'-00'-00 9 1/2" NI-20	1	2
J6	11'-00'-00 9 1/2" NI-20	2	4
J7	10'-00'-00 9 1/2" NI-20	1	2
J8	9'-00'-00 9 1/2" NI-20	1	6
J9	7'-00'-00 9 1/2" NI-20	1	1
J10	6'-00'-00 9 1/2" NI-20	1	3
J11	5'-00'-00 9 1/2" NI-20	1	2
J12	3'-00'-00 9 1/2" NI-20	1	3
J13	17'-00'-00 9 1/2" NI-40x	1	28
J14	17'-00'-00 9 1/2" NI-40x	2	4
B9	13'-00'-00 VERSALAM-10 2.0E	2	2
B12	11'-00'-00 VERSALAM-10 2.0E	1	1
B6	10'-00'-00 VERSALAM-10 2.0E	1	1
B11	9'-00'-00 VERSALAM-10 2.0E	1	1
B13	7'-00'-00 VERSALAM-10 2.0E	1	1
B10	5'-00'-00 VERSALAM-10 2.0E	1	1
B7	4'-00'-00 VERSALAM-10 2.0E	1	1

BLOCKING: 9 1/2" NI-20 - 49 FEET

HANGERS SCHEDULE

H1: LT259
H2: HUS1.81/10

SJ (set back one joist spacing) (TYP.)
MODEL: 38-4
ELEVATION A

GROUND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

OR SIDE UP.

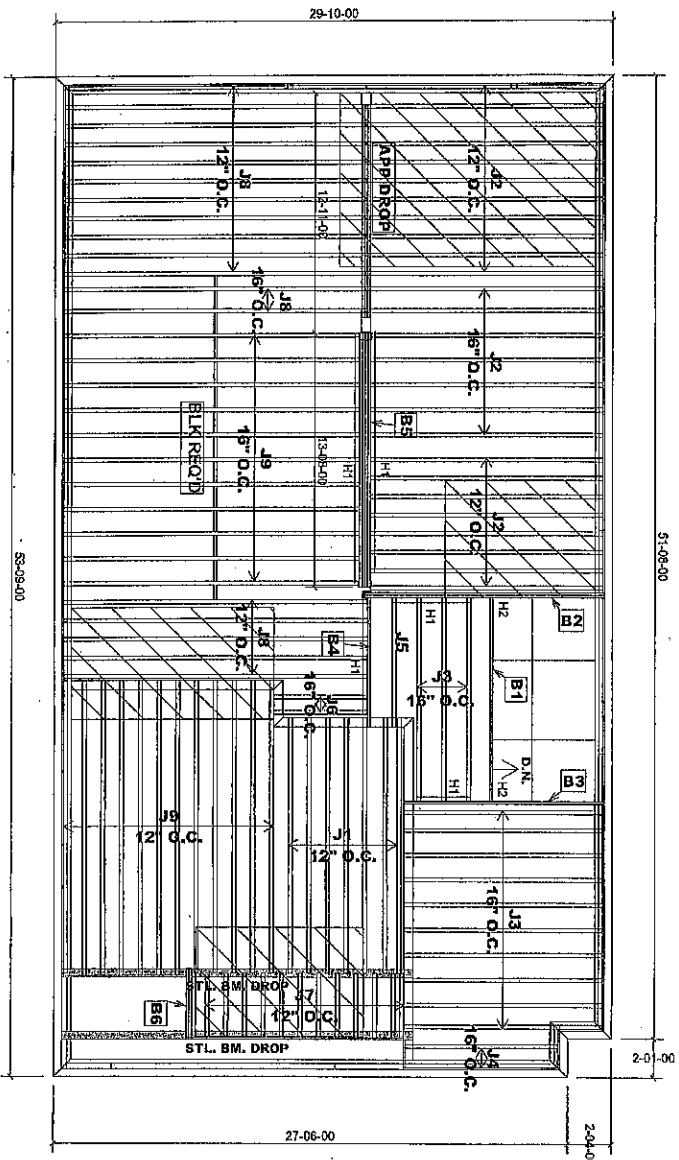
Revised: April 21 / 2016

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

1-2x6 SFR#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

U# 89609 Dec. 07/16
PL# 85974 April 21 / 2016

JT: 40297/79712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ Alpha Roof Trusses Inc. Salesperson: Derek Frankfort
File: 253720 Project: HUNTINGTON & NASHVILLE Date: May 06/15 Sheet: 2 of 6 Maple, Ontario Home Lumber



ProductID	Length	Product	Pieces	Net Qty
J1	14'-00-00	9 1/2" N:20	1	7
J2	13'-00-00	9 1/2" N:20	1	26
J3	11'-00-00	9 1/2" N:20	1	13
J4	9'-00-00	9 1/2" N:20	1	2
J5	7'-00-00	9 1/2" N:20	1	1
J6	6'-00-00	9 1/2" N:20	1	2
J7	4'-00-00	9 1/2" N:20	1	12
J8	17'-00-00	9 1/2" N:40x	1	18
J9	16'-00-00	9 1/2" N:40x	1	23
B5	14'-00-00	VERSALAM-10 2.0E	4	4
B2	13'-00-00	VERSALAM-10 2.0E	2	2
B1	11'-00-00	VERSALAM-10 2.0E	1	1
B3	11'-00-00	VERSALAM-10 2.0E	1	1
B4	7'-00-00	VERSALAM-10 2.0E	1	1
B6	5'-00-00	VERSALAM-10 2.0E	2	2

BLOCKING: 9 1/2" N:20 - 16 FEET

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

FLANGERS SCHEDULE
H1 - LT259
H2 - HUS1.81/10
H3 - HGUS410

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

PL# 85974 April 21 / 2016

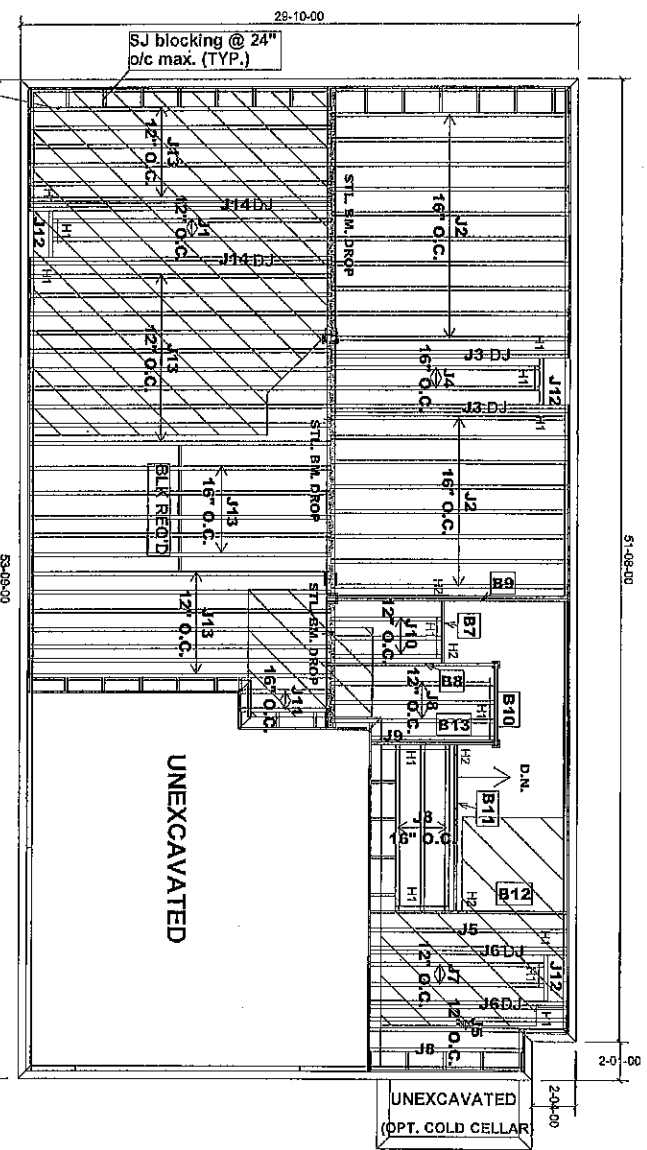
Revised : April 21 / 2016

MODEL: 38-4
ELEVATION B

SECOND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

JT: 4029779712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ
File: 253720 Project: HUNTINGTON & NASHVILLE Date: May 06/15 Sheet: 3 of 6
Alpa Roof Trusses Inc. Salesperson: Derek Frankfort
Maple, Ontario Home Lumber



SJ (set back one joist spacing) (TYP.)
 MODEL : 38-4
 ELEVATION B

GROUND 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
 BEO - BEAM BY OTHERS
 BLK - MIDSPAN BLOCKING

1-2x6 SPT #2 Squash Block req'd on one side of joists under interior load bearing wall
 Multiple squash blocks are required under concentrated loads
 Joist 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

BLOCKING: 9 1/2" NL-20 - 49 FEET

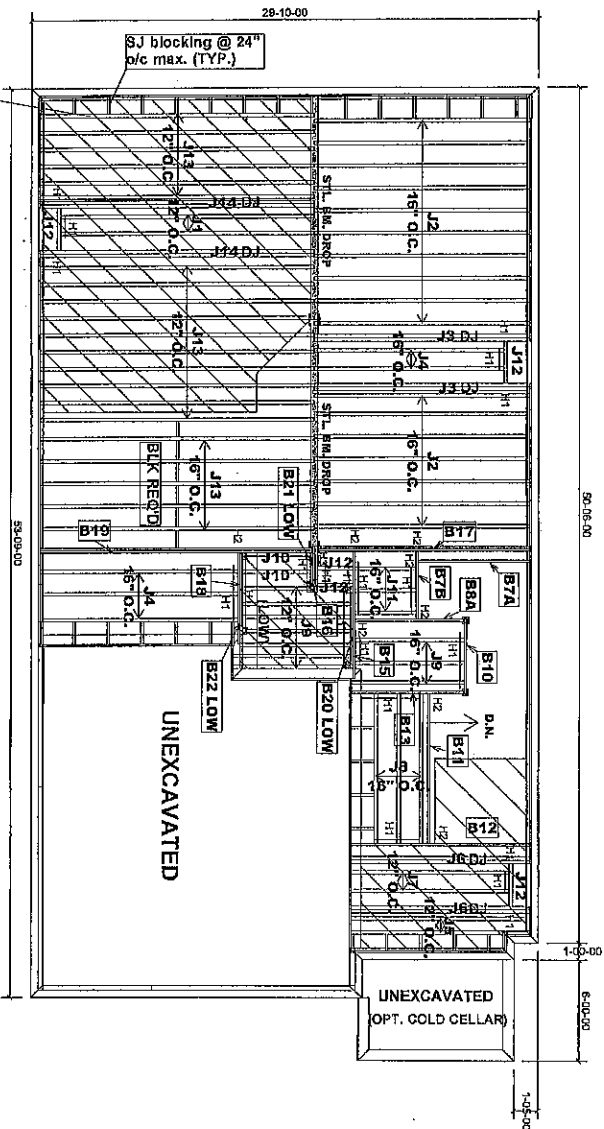
FANGERS SCHEDULE

H1 - L17259
 H2 - HUS1.871/10

ProductID	Length	Product	Piles	Net Qty
J1	15'-00-00	9 1/2" NL-20	1	2
J2	13'-00-00	9 1/2" NL-20	1	18
J3	13'-00-00	9 1/2" NL-20	2	4
J4	12'-00-00	9 1/2" NL-20	1	2
J5	11'-00-00	9 1/2" NL-20	1	3
J6	11'-00-00	9 1/2" NL-20	2	4
J7	10'-00-00	9 1/2" NL-20	1	2
J8	9'-00-00	9 1/2" NL-20	1	7
J9	7'-00-00	9 1/2" NL-20	1	1
J10	6'-00-00	9 1/2" NL-20	1	3
J11	5'-00-00	9 1/2" NL-20	1	2
J12	3'-00-00	9 1/2" NL-20	1	3
J13	17'-00-00	9 1/2" NL-40x	1	28
J14	17'-00-00	9 1/2" NL-40x	2	4
B9	13'-00-00	VERSALAM-10 2.0E	2	2
B12	11'-00-00	VERSALAM-10 2.0E	1	1
B8	10'-00-00	VERSALAM-10 2.0E	1	1
B11	9'-00-00	VERSALAM-10 2.0E	1	1
B13	7'-00-00	VERSALAM-10 2.0E	1	1
B10	5'-00-00	VERSALAM-10 2.0E	1	1
B7	4'-00-00	VERSALAM-10 2.0E	1	1

PL# 85974 April 21 / 2016

JT: 4029779712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ
 File: 253720 Project: HUNTINGTON & NASHVILLE Date: May 06/15 Sheet: 4 of 6
 Alpha Roof Trusses Inc. Salesperson: Derek Frankfort
 Maple, Ontario Home Lumber



SJ (set back one joist spacing) (TYP.)
 MODEL: 38-4
 ELEVATION: A
 MUD ROOM
 MUD ROOM

GROUND 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
 BLK - MIDSPAN BLOCKING

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. 9.20.5
 Do not scale - refer to architectural plans for dimensions

Field	Length	Product	Piles	Net Qty
J1	15'-00"-00	9 1/2" N-20	1	2
J2	13'-00"-00	9 1/2" N-20	1	17
J3	13'-00"-00	9 1/2" N-20	2	4
J4	12'-00"-00	9 1/2" N-20	1	5
J5	11'-00"-00	9 1/2" N-20	1	2
J6	11'-00"-00	9 1/2" N-20	2	4
J7	10'-00"-00	9 1/2" N-20	1	2
J8	9'-00"-00	9 1/2" N-20	1	3
J9	7'-00"-00	9 1/2" N-20	1	10
J10	5'-00"-00	9 1/2" N-20	1	2
J11	4'-00"-00	9 1/2" N-20	1	3
J12	3'-00"-00	9 1/2" N-20	1	5
J13	17'-00"-00	9 1/2" N-40x	1	21
J14	17'-00"-00	9 1/2" N-40x	2	4
B19	17'-00"-00	VERSALAM-10 2.0E	2	2
B17	13'-00"-00	VERSALAM-10 2.0E	2	2
B12	11'-00"-00	VERSALAM-10 2.0E	1	1
B11	9'-00"-00	VERSALAM-10 2.0E	1	1
B15	8'-00"-00	VERSALAM-10 2.0E	1	1
B13	7'-00"-00	VERSALAM-10 2.0E	1	1
B7A	7'-00"-00	VERSALAM-10 2.0E	1	1
B8A	7'-00"-00	VERSALAM-10 2.0E	1	1
B18	6'-00"-00	VERSALAM-10 2.0E	1	1
B10	5'-00"-00	VERSALAM-10 2.0E	1	1
B20 LOW	5'-00"-00	VERSALAM-10 2.0E	1	1
B22 LOW	5'-00"-00	VERSALAM-10 2.0E	1	1
B7B	4'-00"-00	VERSALAM-10 2.0E	1	1
B16	3'-00"-00	VERSALAM-10 2.0E	2	2
B21 LOW	2'-00"-00	VERSALAM-10 2.0E	1	1

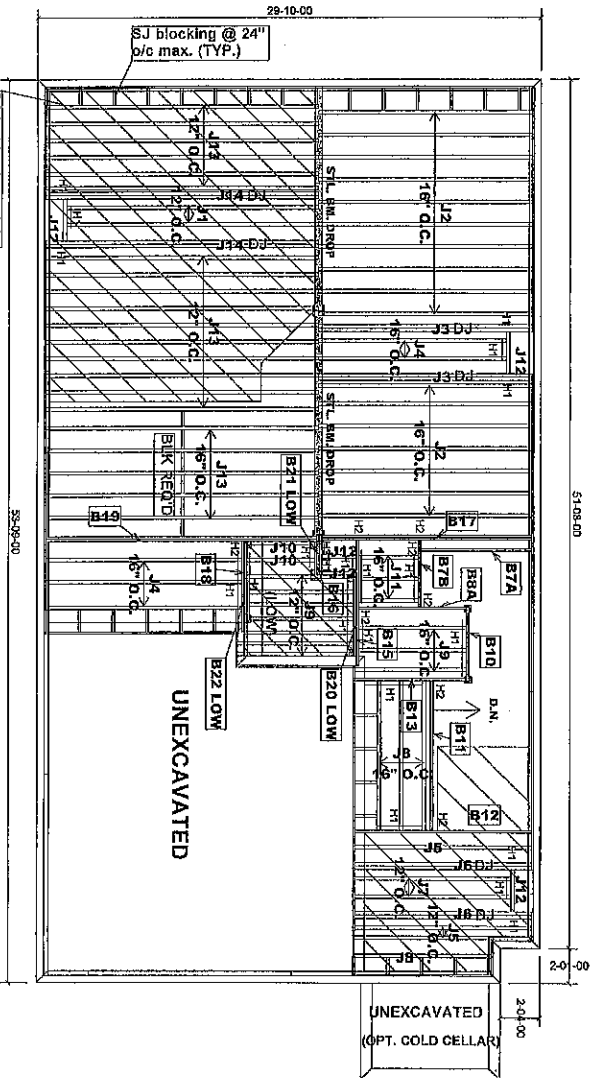
BLOCKING: 9 1/2" N-20 - 49 FEET

HANGERS SCHEDULE

H1 - L759
 H2 - HUST, B11/10
 H3 - HIGUS410

PL# 85974 Dec. 07/16
 April 21 / 2016

JT: 402977/9712 Builder: GOLD PARK Location: KLEINBURG Designer: MQ
 File: 253720 Project: HUNTINGTON & NASHVILLE Date: May 06/15 Sheet: 5 of 6
 Alpha Roof Trusses Inc. Salesperson: Derek Frankfort
 Maple, Ontario Home Lumber



SJ (set back one joist spacing) (TYP.)

MODEL : 38-4

ELEVATION B

W/OPT. SUNKEN MUD ROOM

GROUND FLOOR FRAMING

Ceramic Tile

Ceramic Tile

PLIMBOARD

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

SUBFLOOR - 5/8" NAILED & GLUED

APP - AS PER PLAN

BBO - BEAM BY OTHERS

BLK - MIDSPAN BLOCKING

Revised : April 21 / 2016

Product	Length	Product	Pieces	Net Qty
J1	15'-00-00	9 1/2" N-20	1	2
J2	13'-00-00	9 1/2" N-20	1	17
J3	13'-00-00	9 1/2" N-20	1	4
J4	12'-00-00	9 1/2" N-20	1	6
J5	11'-00-00	9 1/2" N-20	1	3
J6	11'-00-00	9 1/2" N-20	1	4
J7	10'-00-00	9 1/2" N-20	1	2
J8	9'-00-00	9 1/2" N-20	1	4
J9	7'-00-00	9 1/2" N-20	1	10
J10	5'-00-00	9 1/2" N-20	1	2
J11	4'-00-00	9 1/2" N-20	1	3
J12	3'-00-00	9 1/2" N-20	1	5
J13	17'-00-00	9 1/2" N-40x	1	21
J14	17'-00-00	9 1/2" N-40x	2	4
B19	17'-00-00	VERSALAM-10 2.0E	2	2
B17	13'-00-00	VERSALAM-10 2.0E	2	2
B12	11'-00-00	VERSALAM-10 2.0E	1	1
B11	9'-00-00	VERSALAM-10 2.0E	1	1
B15	8'-00-00	VERSALAM-10 2.0E	1	1
B13	7'-00-00	VERSALAM-10 2.0E	1	1
B7A	7'-00-00	VERSALAM-10 2.0E	1	1
B8A	7'-00-00	VERSALAM-10 2.0E	1	1
B18	6'-00-00	VERSALAM-10 2.0E	1	1
B10	5'-00-00	VERSALAM-10 2.0E	1	1
B20 LOW	5'-00-00	VERSALAM-10 2.0E	1	1
B22 LOW	5'-00-00	VERSALAM-10 2.0E	1	1
B7B	4'-00-00	VERSALAM-10 2.0E	1	1
B16	3'-00-00	VERSALAM-10 2.0E	2	2
B21 LOW	2'-00-00	VERSALAM-10 2.0E	1	1

BLOCKING: 9 1/2" N-20 - 48 FEET

HANGERS SCHEDULE
H1 - L17269
H2 - HUS1.81/10
H3 - HIGUS410

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

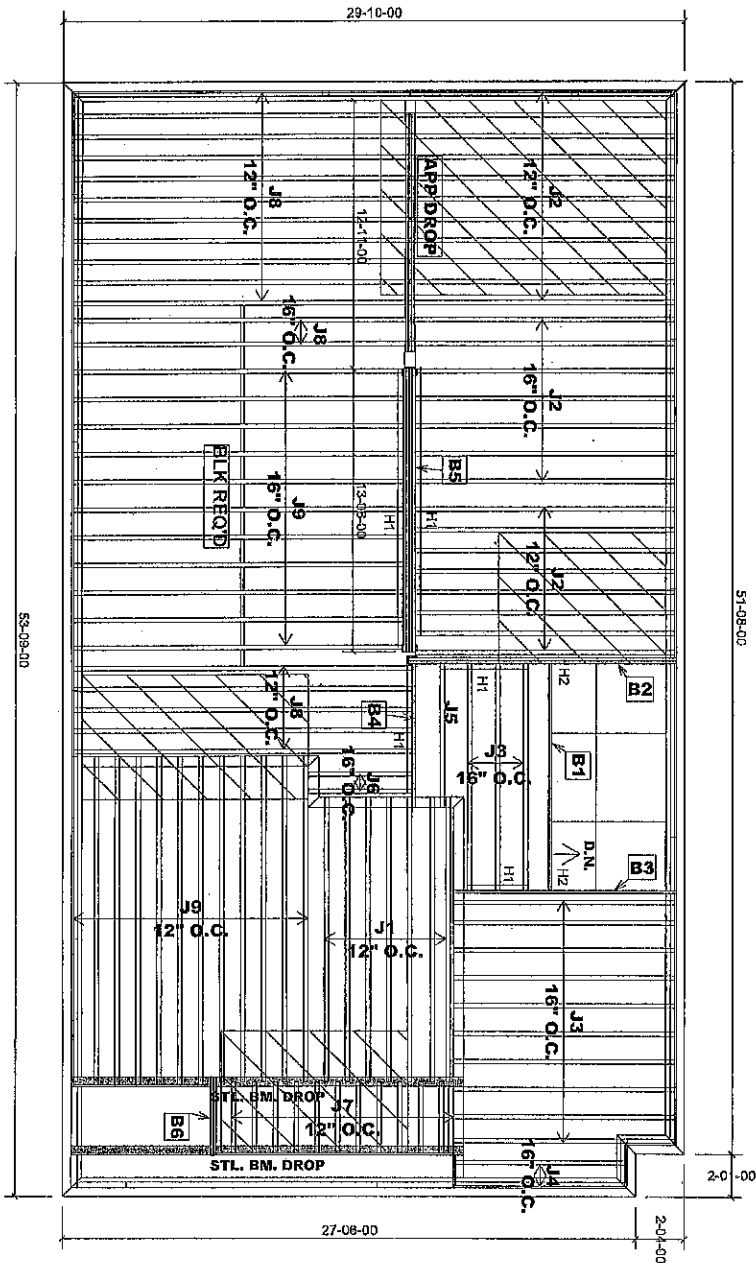
Ceramic tiles application is as per O.B.C. 9.30.6

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: 253720 Project: HUNTINGTON & NASHVILLE Date: May 06/15 Sheet: 6 of 6 Maple, Ontario Home Lumber

PL# 85974 April 21 / 2016



MODEL : 38-4
ELEVATION B

SECOND FLOOR FRAMING

Ceramic Tile
Ceramic Tile

LOT 68

S-129467-S-129490

JT/PL: 40297/88464
LI: 272903

Builder: GOLD PARK
Project: HUNTINGTON & NASHVILLE

Location: KLEINBURG
Date: Sept. 20 / 2016
Designer: MQ
Sheet: 1 of 3

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

Products			
PlotID	Length	Product	Piles Net Qty
J1	14-00-00	9 1/2" NI-20	1 7
J2	13-00-00	9 1/2" NI-20	1 26
J3	11-00-00	9 1/2" NI-20	1 13
J4	9-00-00	9 1/2" NI-20	1 2
J5	7-00-00	9 1/2" NI-20	1 1
J6	6-00-00	9 1/2" NI-20	1 2
J7	4-00-00	9 1/2" NI-20	1 12
J8	17-00-00	9 1/2" NI-40x	1 18
J9	16-00-00	9 1/2" NI-40x	1 23
B5	14-00-00	VERSALAM-10 2.0E	4 4
B2	13-00-00	VERSALAM-10 2.0E	2 2
B1	11-00-00	VERSALAM-10 2.0E	1 1
B3	11-00-00	VERSALAM-10 2.0E	1 1
B4	7-00-00	VERSALAM-10 2.0E	1 1
B6	5-00-00	VERSALAM-10 2.0E	2 2

BLOCKING: 9 1/2" NI-20 - 16 FEET

RIMBOARD

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

SUBFLOOR - 5/8" NAILLED & GLUED

APP - AS PER PLAN

BBO - BEAM BY OTHERS

BLK - MIDSPAN BLOCKING

HANGERS SCHEDULE

H1 - LT259

H2 - HUS1.81/10

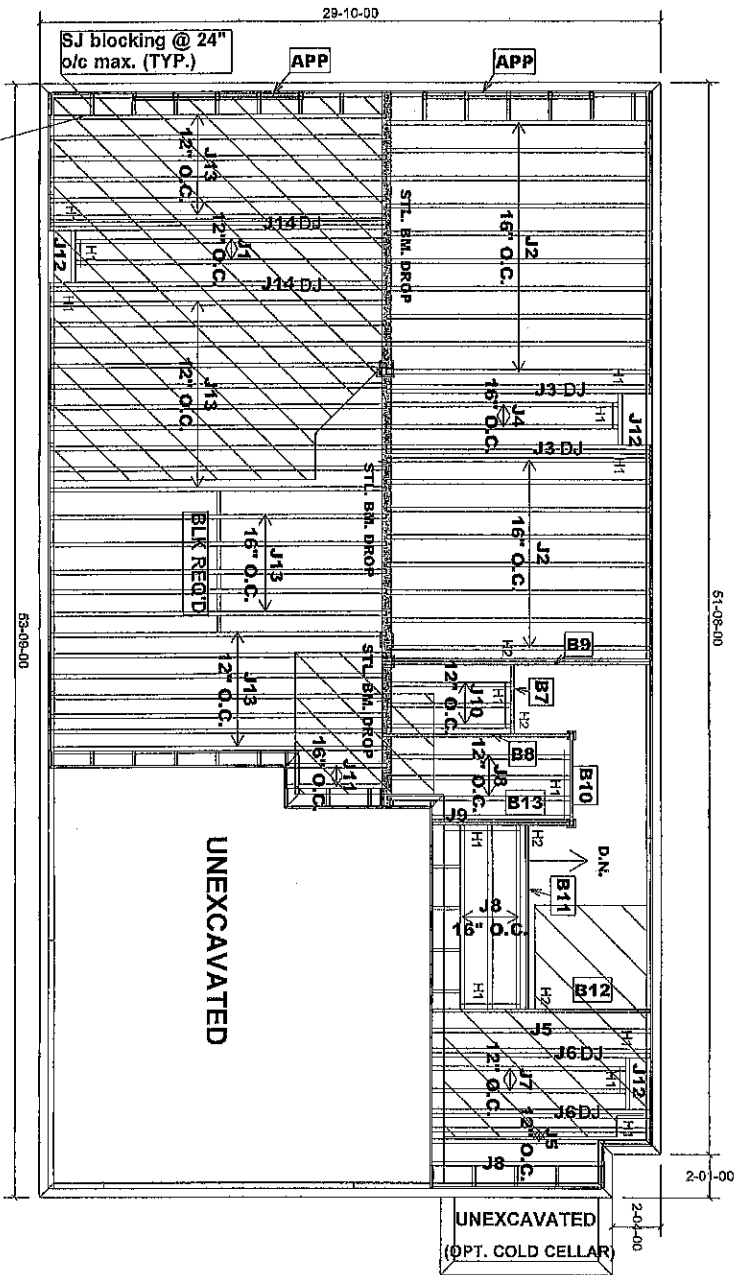
1-2x6 SPF#2 Squash Block req'd on one side of joists under interior load bearing wall

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



SJ (set back one joist spacing) (TYP.)

MODEL : 38-4
ELEVATION B

LOT 68

GROUND 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

BLK - MIDSPAN BLOCKING

Products				
ProdID	Length	Product	Piles	Net Qty
J1	15-00-00	9 1/2" NI-20	1	2
J2	13-00-00	9 1/2" NI-20	1	18
J3	13-00-00	9 1/2" NI-20	2	4
J4	12-00-00	9 1/2" NI-20	1	2
J5	11-00-00	9 1/2" NI-20	1	3
J6	11-00-00	9 1/2" NI-20	2	4
J7	10-00-00	9 1/2" NI-20	1	2
J8	9-00-00	9 1/2" NI-20	1	7
J9	7-00-00	9 1/2" NI-20	1	1
J10	6-00-00	9 1/2" NI-20	1	3
J11	5-00-00	9 1/2" NI-20	1	2
J12	3-00-00	9 1/2" NI-20	1	3
J13	17-00-00	9 1/2" NI-40x	1	28
J14	17-00-00	9 1/2" NI-40x	2	4
B9	13-00-00	VERSALAM-10 2.0E	2	2
B12	11-00-00	VERSALAM-10 2.0E	1	1
B8	10-00-00	VERSALAM-10 2.0E	1	1
B11	9-00-00	VERSALAM-10 2.0E	1	1
B13	7-00-00	VERSALAM-10 2.0E	1	1
B10	5-00-00	VERSALAM-10 2.0E	1	1
B7	4-00-00	VERSALAM-10 2.0E	1	1

BLOCKING: 9 1/2" NI-20 -- 49 FEET

HANGERS SCHEDULE

H1-----LT269

H2-----HUS1.81/10

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

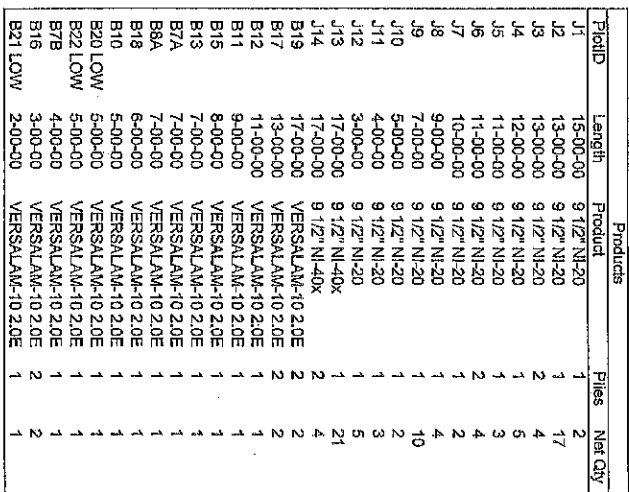
Ceramic tiles application is as per O.B.C 9.30.6

Do not scale - refer to architectural plans for dimensions

JT/PL: 40297/88464 Builder: GOLD PARK Location: KLEINBURG Designer: MQ Alpha Roof Trusses Inc. Salesperson: Derek Frankfort

Li: 272903 Project: HUNTINGTON & NASHVILLE Date: Sept. 20 / 2016 Sheet: 2 of 3 Maple, Ontario Home Lumber

Salesperson: Derek Frankfort
Home Lumber



PileID	Length	Product	Piles		Net Qty
			Piles	Net Qty	
J1	15:00-00	9 1/2" NI-20	1	2	
J2	13:00-00	9 1/2" NI-20		17	
J3	13:00-00	9 1/2" NI-20	2	4	
J4	12:00-00	9 1/2" NI-20	1	5	
J5	11:00-00	9 1/2" NI-20	1	3	
J6	11:00-00	9 1/2" NI-20	2	4	
J7	10:00-00	9 1/2" NI-20	1	2	
J8	9:00-00	9 1/2" NI-20	1	4	
J9	7:00-00	9 1/2" NI-20	1	10	
J10	5:00-00	9 1/2" NI-20	1	2	
J11	4:00-00	9 1/2" NI-20	1	3	
J12	3:00-00	9 1/2" NI-20	1	1	
J13	2:00-00	9 1/2" NI-40x	1	21	
J14	17:00-00	9 1/2" NI-40x	2	4	
B19	17:00-00	VERSALAM-10 2.0E	2	2	
B17	13:00-00	VERSALAM-10 2.0E	2	2	
B11	11:00-00	VERSALAM-10 2.0E	1	1	
B12	9:00-00	VERSALAM-10 2.0E	1	1	
B15	8:00-00	VERSALAM-10 2.0E	1	1	
B13	7:00-00	VERSALAM-10 2.0E	1	1	
B7A	7:00-00	VERSALAM-10 2.0E	1	1	
B8A	7:00-00	VERSALAM-10 2.0E	1	1	
B18	6:00-00	VERSALAM-10 2.0E	1	1	
B10	5:00-00	VERSALAM-10 2.0E	1	1	
B20 LOW	5:00-00	VERSALAM-10 2.0E	1	1	
B22 LOW	5:00-00	VERSALAM-10 2.0E	1	1	
B7B	4:00-00	VERSALAM-10 2.0E	2	2	
B16	3:00-00	VERSALAM-10 2.0E	1	1	
B21 LOW	2:00-00	VERSALAM-10 2.0E	1	1	

BLOCKING: 9 1/2" NI-20 — 49 FEET

HANGERS SCHEDULE

H1-----LT259
H2-----HUS1.81/10
H3-----HGUS410

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

Salesperson: Derek Frankfort
Home Lumber

BC CALC® Design Report

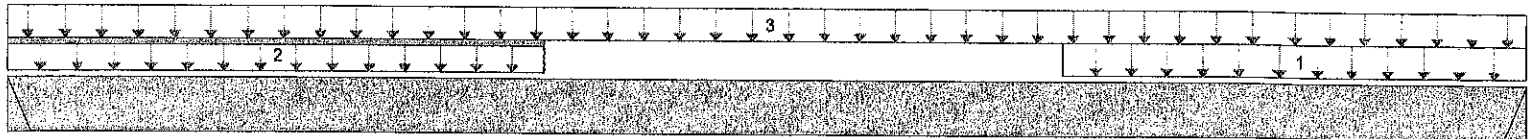


Dry | 1 span | No cantilevers | 0/12 slope (deg)

May-14-15

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

File Name: 253720.bcc
 Description: Designs\01
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



B0

10-11-00

B1

Total Horizontal Product Length = 10-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	204 / 0	294 / 0		
B1	487 / 0	248 / 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/ft²)	L	07-07-00	10-11-00	40	15			03-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	0	60			n/a
3		Unf. Area (lb/ft²)	L	00-00-00	10-11-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,752 ft-lbs	12,704 ft-lbs	0.14	1	06-07-12
End Shear	758 lbs	5,785 lbs	0.13	1	09-11-08
Total Load Defl.	L/999 (0.108")	n/a	n/a	4	05-07-02
Live Load Defl.	L/999 (0.061")	n/a	n/a	5	05-09-14
Span / Depth	13.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Hanger	2" x 1-3/4"	673 lbs	n/a	0.16	Hanger
B1 Hanger	2" x 1-3/4"	1,040 lbs	n/a	0.24	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.





Build 3272

Job Name:

40297

File Name: 253720.bcc

Description: Designs\02

Address:

HUNTINGTON & NASHVILLE

Specifier: 38-4

City, Province, Postal Code: KLEINBURG, ON

Designer: MQ

Customer:

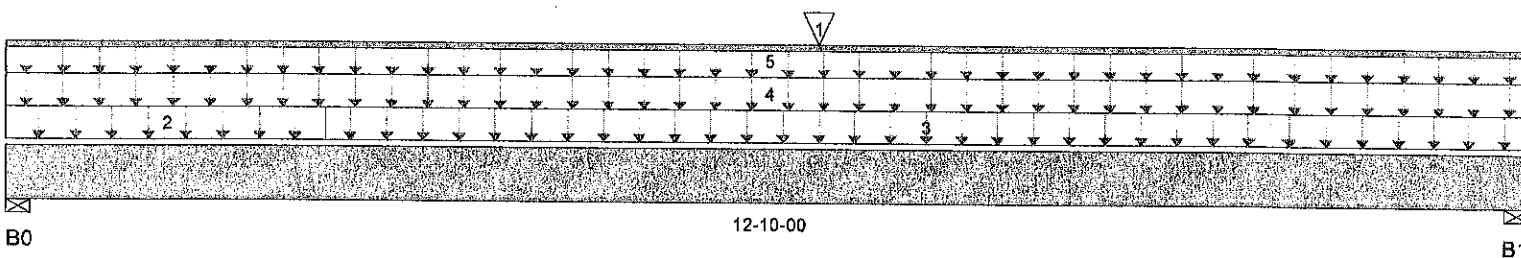
GOLD PARK

Company: Alpa Roof Trusses Inc

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 12-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,518 / 0	1,139 / 0		
B1, 3-1/2"	1,714 / 0	1,227 / 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	06-10-00	06-10-00	204	294			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	02-08-00	40	15			03-07-00
3		Unf. Area (lb/ft^2)	L	02-08-00	12-10-00	40	15			05-08-00
4		Unf. Area (lb/ft^2)	L	00-00-00	12-10-00	40	20			00-08-00
5		Unf. Lin. (lb/ft)	L	00-00-00	12-10-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	13,089 ft-lbs	25,408 ft-lbs	0.52	1	06-10-00
End Shear	3,466 lbs	11,571 lbs	0.3	1	11-09-00
Total Load Defl.	L/296 (0.501")	0.619"	0.81	4	06-05-05
Live Load Defl.	L/517 (0.287")	0.413"	0.7	5	06-05-05
Span / Depth	15.6	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 3-1/2"	3,701 lbs	0.49	0.25	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	4,106 lbs	0.54	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

@ 12" O.C., STAGGERED IN TWO ROWS



S.129468



Build 3272

Job Name:

40297

File Name: 253720.bcc

Description: Designs\03

Address:

HUNTINGTON & NASHVILLE

Specifier: 38-4

City, Province, Postal Code: KLEINBURG, ON

Designer: MQ

Customer:

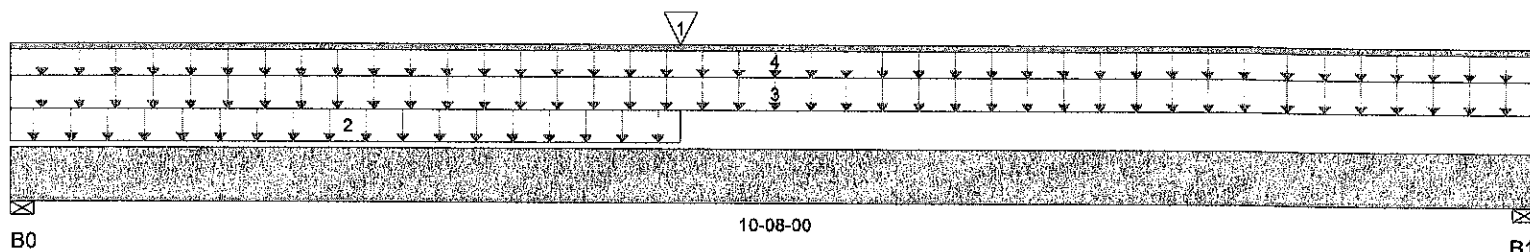
GOLD PARK

Company: Alpa Roof Trusses Inc

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 10-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,257 / 0	854 / 0		
B1, 3-1/2"	573 / 0	589 / 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	04-08-00	04-08-00	487	248			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-08-00	40	15			05-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	10-08-00	40	15			00-08-00
4		Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,805 ft-lbs	12,704 ft-lbs	0.54	1	04-08-00
End Shear	2,325 lbs	5,785 lbs	0.4	1	01-01-00
Total Load Defl.	L/370 (0.331")	0.51"	0.65	4	05-00-10
Live Load Defl.	L/653 (0.188")	0.34"	0.55	5	05-00-10
Max Defl.	0.331"	1"	0.33	4	05-00-10
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"	2,953 lbs	0.78	0.4	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,595 lbs	0.42	0.21	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.

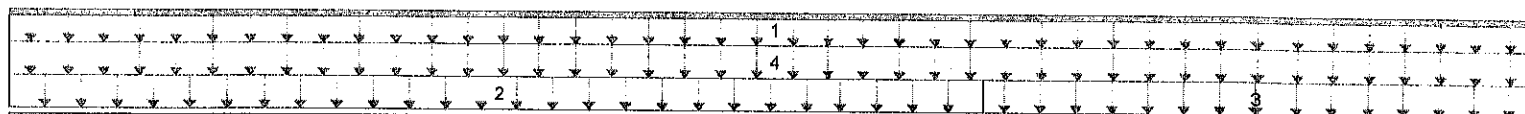

User Notes

8.129469

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: 253720.bcc
 Description: Designs\04
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



B0

06-11-00

B1

Total Horizontal Product Length = 06-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,165 / 0	786 / 0		
B1, 3-1/2"	921 / 0	625 / 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	06-11-00	0	60			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-05-00	40	20			08-02-00
3		Unf. Area (lb/ft^2)	L	04-05-00	06-11-00	40	15			04-07-00
4		Unf. Area (lb/ft^2)	L	00-00-00	06-11-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,896 ft-lbs	12,704 ft-lbs	0.31	1	03-03-14
End Shear	1,833 lbs	5,785 lbs	0.32	1	01-01-00
Total Load Defl.	L/999 (0.082")	n/a	n/a	4	03-05-02
Live Load Defl.	L/999 (0.049")	n/a	n/a	5	03-05-02
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 1-3/4"	2,729 lbs	0.72	0.37	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,162 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.
 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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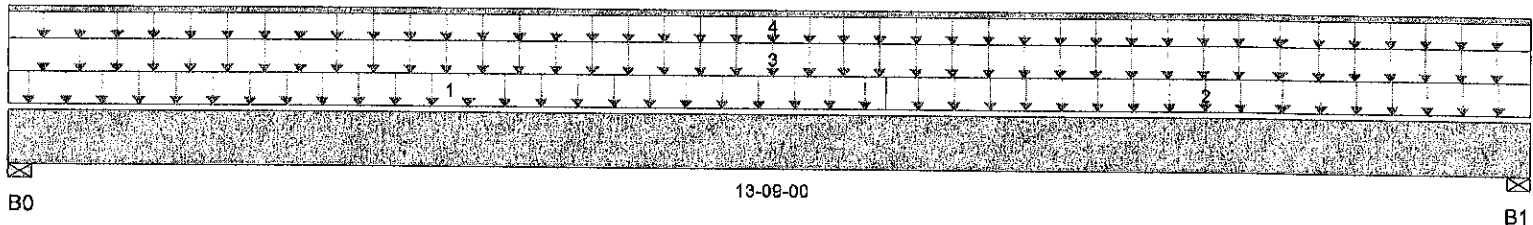


S.129470

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: 253720.bcc
 Description: Designs\05
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 13-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	4,079 / 0	2,113 / 0		
B1, 3-1/2"	4,079 / 0	2,228 / 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/ft²)	L	00-00-00	07-11-00	40	15			06-07-00
2		Unf. Area (lb/ft²)	L	07-11-00	13-09-00	40	20			06-07-00
3		Unf. Area (lb/ft²)	L	00-00-00	13-09-00	40	15			08-03-00
4		Unf. Lin. (lb/ft)	L	00-00-00	13-09-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	28,306 ft-lbs	52,848 ft-lbs	0.54	1	06-10-03
End Shear	7,486 lbs	23,142 lbs	0.32	1	12-08-00
Total Load Defl.	L/250 (0.637")	0.665"	0.96	4	06-10-03
Live Load Defl.	L/383 (0.417")	0.443"	0.94	5	06-10-03
Max Defl.	0.637"	1"	0.64	4	06-10-03
Span / Depth	16.8	n/a	n/a		00-00-00

Bearing Supports

Bearing Supports			Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 7"	8,761 lbs	0.58	0.29	Spruce Pine Fir	
B1	Wall/Plate	3-1/2" x 7"	8,903 lbs	0.59	0.3	Spruce Pine Fir	

Notes

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

@ 6" O.C., STAGGERED IN TWO ROWS, PLUS 1/2" Φ BOLTS, NUTS & WASHERS

@ 40" O.C., STAGGERED IN 2 ROWS



S-129471

Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code:

KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253720.bcc

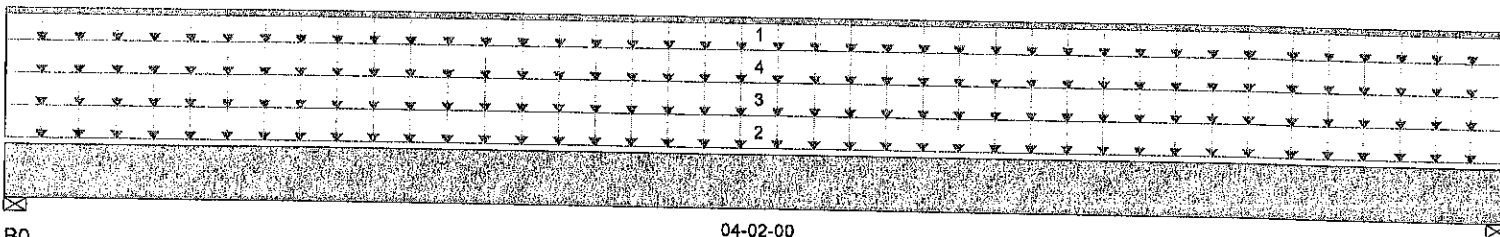
Description: Designs\06

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



B0

04-02-00

B1

Total Horizontal Product Length = 04-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	346 / 0	516 / 0	558 / 0	
B1, 4-3/4"	364 / 0	542 / 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		Unf. Lin. (lb/ft)	L	00-00-00	04-02-00	0	100			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-02-00	40	20			00-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	04-02-00	11	10	21		12-01-00
4		Unf. Area (lb/ft^2)	L	00-00-00	04-02-00	11	10	21		01-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,323 ft-lbs	25,408 ft-lbs	0.05	5	02-00-04
End Shear	772 lbs	11,571 lbs	0.07	5	01-01-00
Total Load Defl.	L/999 (0.004")	n/a	n/a	13	02-00-04
Live Load Defl.	L/999 (0.003")	n/a	n/a	17	02-00-04
Span / Depth	4.6	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 3-1/2"	1,655 lbs	0.22	0.11	Spruce Pine Fir
B1 Wall/Plate	4-3/4" x 3-1/2"	1,740 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 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: 253720.bcc

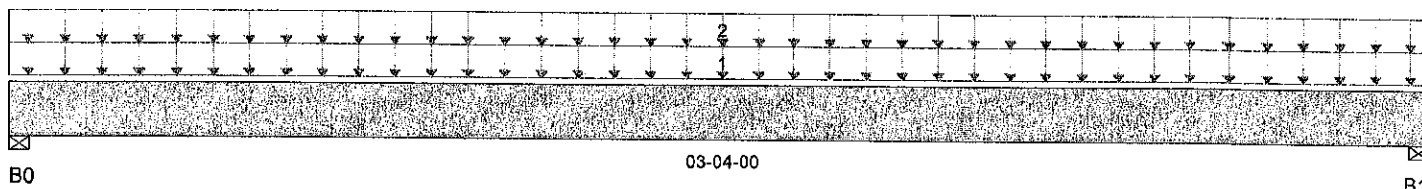
Description: Designs\07

Specifier: 38-4

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"	711 / 0	301 / 0		
B1, 3-1/2"	711 / 0	301 / 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	20			03-02-00
2		Unf. Area (lb/ft^2)	L	00-00-00	03-04-00	40	15			07-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	895 ft-lbs	12,704 ft-lbs	0.07	1	01-08-00
End Shear	505 lbs	5,785 lbs	0.09	1	01-01-00
Total Load Defl.	L/999 (0.004")	n/a	n/a	4	01-08-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-08-00
Max Defl.	0.004"	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	Support	member	material
B0	Wall/Plate	3-1/2" x 1-3/4"	1,443 lbs	0.38	0.19	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	1,443 lbs	0.38	0.19	Spruce Pine Fir

Notes

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





Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code:

KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253720.bcc

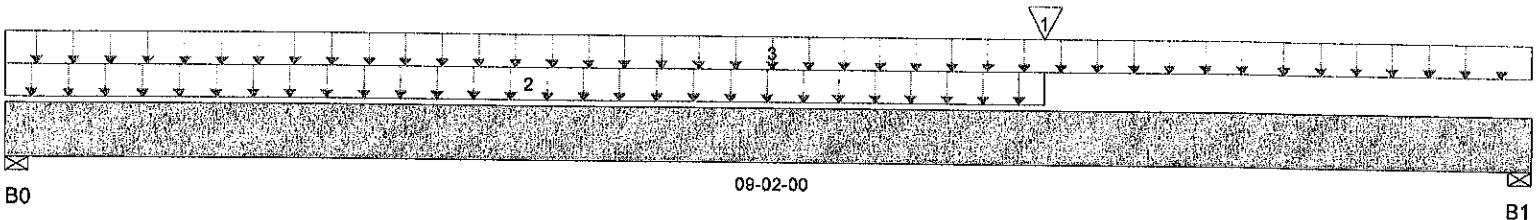
Description: Designs\08

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



Total Horizontal Product Length = 09-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	453 / 0	232 / 0		
B1, 3-1/2"	669 / 0	319 / 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	06-03-00	06-03-00	711	301			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	06-03-00	40	20			00-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	09-02-00	40	20			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,505 ft-lbs	12,704 ft-lbs	0.28	1	06-03-00
End Shear	1,335 lbs	5,785 lbs	0.23	1	08-01-00
Total Load Defl.	L/999 (0.118")	n/a	n/a	4	04-09-09
Live Load Defl.	L/999 (0.08")	n/a	n/a	5	04-09-09
Max Defl.	0.118"	n/a	n/a	4	04-09-09
Span / Depth	11	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"	969 lbs	0.26	0.13	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,403 lbs	0.37	0.19	Spruce Pine Fir

Notes

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



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: 253720.bcc

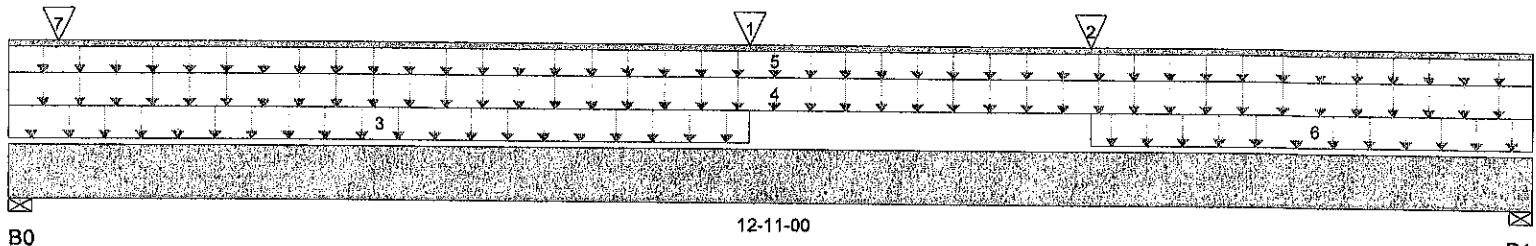
Description: Designs\09

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



Total Horizontal Product Length = 12-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,482 / 0	1,975 / 0		
B1, 3-1/2"	1,984 / 0	1,224 / 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	06-03-00	06-03-00	711	301			n/a
2		Conc. Pt. (lbs)	L	09-02-00	09-02-00	600	225			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	06-03-00	40	20			00-08-00
4		Unf. Area (lb/ft^2)	L	00-00-00	12-11-00	40	15			00-08-00
5		Unf. Lin. (lb/ft)	L	00-00-00	12-11-00	0	60			n/a
6		Unf. Area (lb/ft^2)	L	09-02-00	12-11-00	40	15			07-06-00
7		Conc. Pt. (lbs)	L	00-05-00	00-05-00	1,518	1,139			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,861 ft-lbs	25,408 ft-lbs	0.47	1	06-03-00
End Shear	3,714 lbs	11,571 lbs	0.32	1	11-10-00
Total Load Defl.	L/324 (0.462")	0.623"	0.74	4	06-07-06
Live Load Defl.	L/546 (0.274")	0.415"	0.66	5	06-08-08
Max Defl.	0.462"	1"	0.46	4	06-07-06
Span / Depth	15.7	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"	6,191 lbs	0.82	0.41	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	4,505 lbs	0.6	0.3	Spruce Pine Fir

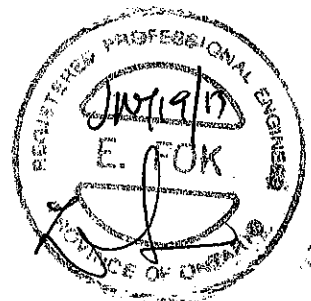
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 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 ROW TO ANOTHER WITH 3/2" SPIRAL NAILS @ 12" O.C.
 STRUTTED IN 2 ROWS

S.129475



BC CALC® Design Report



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

May-14-15

Build 3272

Job Name:

40297

File Name: 253720.bcc

Description: Designs\10

Address:

HUNTINGTON & NASHVILLE

Specifier: 38-4

City, Province, Postal Code: KLEINBURG, ON

Designer: MQ

Customer:

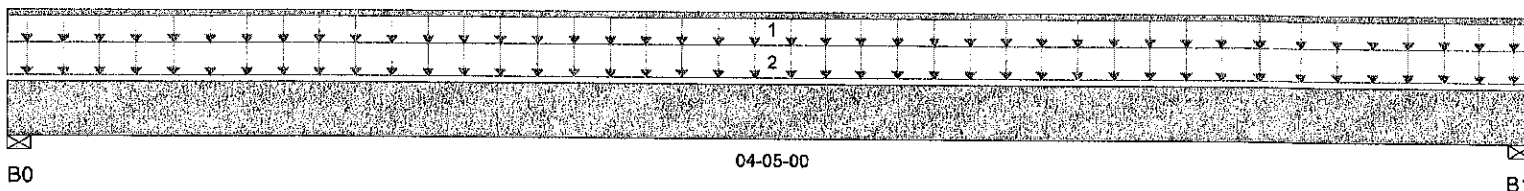
GOLD PARK

Company: Alpa Roof Trusses Inc

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 04-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	405 / 0	346 / 0		
B1, 3-1/2"	405 / 0	346 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1		Unf. Lin. (lb/ft)	L	00-00-00	04-05-00	0	60			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-05-00	40	20			04-07-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	922 ft-lbs	12,704 ft-lbs	0.07	1	02-02-08
End Shear	529 lbs	5,785 lbs	0.09	1	01-01-00
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-02-08
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	02-02-08
Max Defl.	0.008"	n/a	n/a	4	02-02-08
Span / Depth	5	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"	1,039 lbs	0.28	0.14	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,039 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.
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. 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


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

May-14-15

Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code: KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253720.bcc

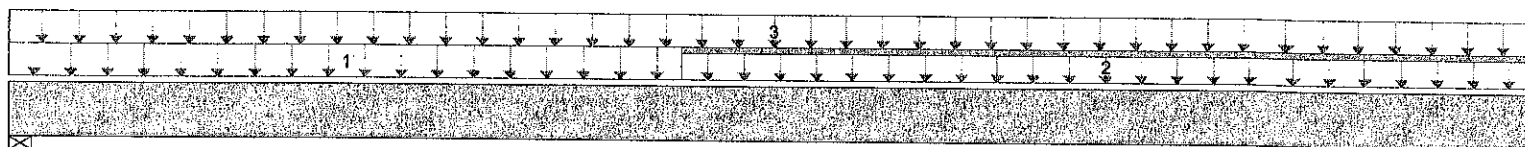
Description: Designs\11

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



B0

08-11-00

B1

Total Horizontal Product Length = 08-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	503 / 0	291 / 0		
B1, 3-1/2"	218 / 0	322 / 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	03-11-00	40	15			03-01-00
2		Unf. Lin. (lb/ft)	L	03-11-00	08-11-00	0	60			n/a
3		Unf. Area (lb/ft ²)	L	00-00-00	08-11-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,824 ft-lbs	12,704 ft-lbs	0.14	1	03-08-14
End Shear	791 lbs	5,785 lbs	0.14	1	01-01-00
Total Load Defl.	L/999 (0.067")	n/a	n/a	4	04-04-02
Live Load Defl.	L/999 (0.035")	n/a	n/a	5	04-01-15
Max Defl.	0.067"	n/a	n/a	4	04-04-02
Span / Depth	10.7	n/a	n/a		00-00-00

Bearing Supports

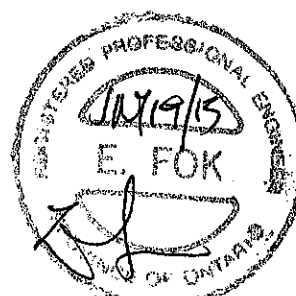
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,118 lbs	0.3	0.15	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	730 lbs	0.19	0.1	Spruce Pine Fir

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.

User Notes

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



BC CALC® Design Report



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

May-14-15

Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code: KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253720.bcc

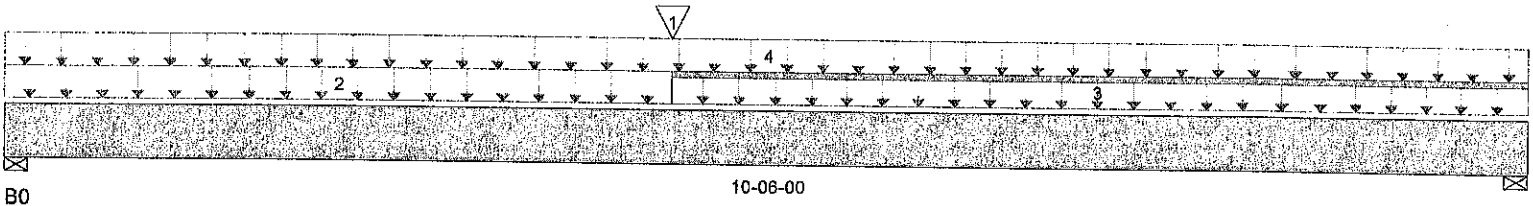
Description: Designs\12

Specifier: 38-4

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"	931 / 0	625 / 0		
B1, 3-1/2"	408 / 0	558 / 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	04-07-00	04-07-00	218	322			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-07-00	40	15			04-07-00
3		Unf. Lin. (lb/ft)	L	04-07-00	10-06-00	0	60			n/a
4		Unf. Area (lb/ft^2)	L	00-00-00	10-06-00	40	20			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,039 ft-lbs	12,704 ft-lbs	0.4	1	04-07-00
End Shear	1,718 lbs	5,785 lbs	0.3	1	01-01-00
Total Load Defl.	L/497 (0.242")	0.502"	0.48	4	05-00-07
Live Load Defl.	L/999 (0.122")	n/a	n/a	5	04-11-09
Max Defl.	0.242"	1"	0.24	4	05-00-07
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 1-3/4"	2,177 lbs	0.58	0.29	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,309 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.
 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

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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: 253720.bcc

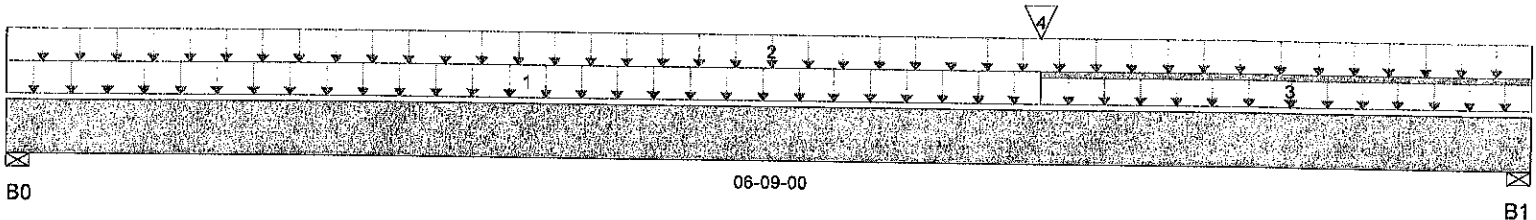
Description: Designs\13

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



Total Horizontal Product Length = 06-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	809 / 0	369 / 0		
B1, 3-1/2"	714 / 0	467 / 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	04-07-00	40	15			04-07-00
2		Unf. Area (lb/ft ²)	L	00-00-00	06-09-00	40	15			00-08-00
3		Unf. Lin. (lb/ft)	L	04-07-00	06-09-00	0	60			n/a
4		Conc. Pt. (lbs)	L	04-07-00	04-07-00	503	291			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,971 ft-lbs	12,704 ft-lbs	0.23	1	03-11-12
End Shear	1,510 lbs	5,785 lbs	0.26	1	05-08-00
Total Load Defl.	L/999 (0.059")	n/a	n/a	4	03-05-03
Live Load Defl.	L/999 (0.039")	n/a	n/a	5	03-05-03
Max Defl.	0.059"	n/a	n/a	4	03-05-03
Span / Depth	7.9	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"	1,675 lbs	0.44	0.22	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,655 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.
 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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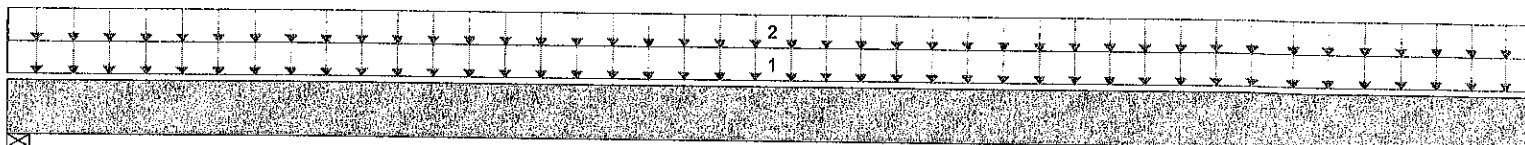
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCi®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



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: 253720.bcc
 Description: Designs\14
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



B0

04-04-00

B1

Total Horizontal Product Length = 04-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	621 / 0	243 / 0		
B1, 3-1/2"	621 / 0	243 / 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	04-04-00	40	15			06-06-00
2		Unf. Area (lb/ft^2)	L	00-00-00	04-04-00	40	15			00-08-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,071 ft-lbs	12,704 ft-lbs	0.08	1	02-02-00
End Shear	618 lbs	5,785 lbs	0.11	1	01-01-00
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-02-00
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-02-00
Max Defl.	0.008"	n/a	n/a	4	02-02-00
Span / Depth	4.9	n/a	n/a		00-00-00

Disclosure

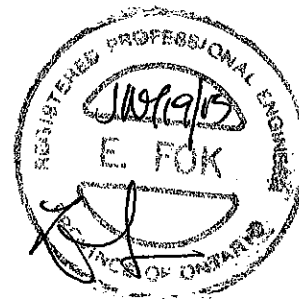
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Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,236 lbs	0.33	0.17	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,236 lbs	0.33	0.17	Spruce Pine Fir

Notes

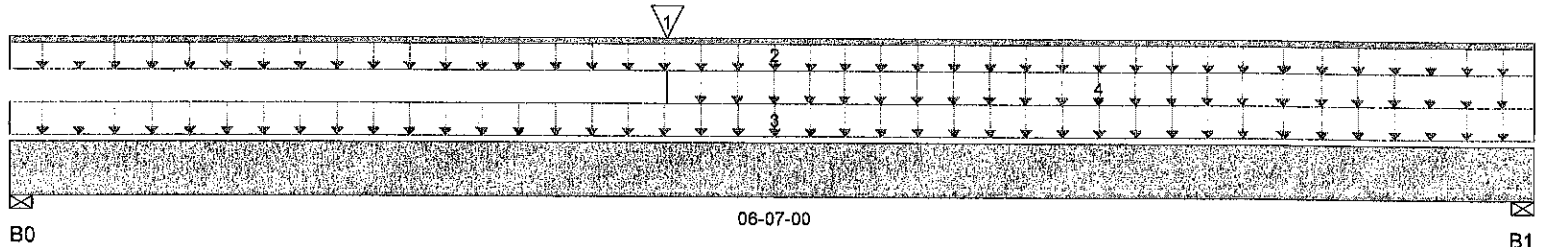
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 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.





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

File Name: 253720.bcc
 Description: Designs\07A
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 06-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	736 / 0	489 / 0		
B1, 3-1/2"	1,164 / 0	650 / 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	02-10-00	02-10-00	600	225			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	06-07-00	0	60			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	06-07-00	40	15			00-08-00
4		Unf. Area (lb/ft^2)	L	02-10-00	06-07-00	40	15			07-06-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,953 ft-lbs	12,704 ft-lbs	0.31	1	03-01-00
End Shear	1,774 lbs	5,785 lbs	0.31	1	05-06-00
Total Load Defl.	L/999 (0.072")	n/a	n/a	4	03-04-00
Live Load Defl.	L/999 (0.046")	n/a	n/a	5	03-04-00
Max Defl.	0.072"	n/a	n/a	4	03-04-00
Span / Depth	7.7	n/a	n/a		00-00-00

Bearing Supports

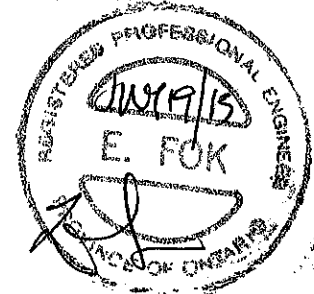
	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,716 lbs	0.46	0.23	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,559 lbs	0.68	0.34	Spruce Pine Fir

Notes

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



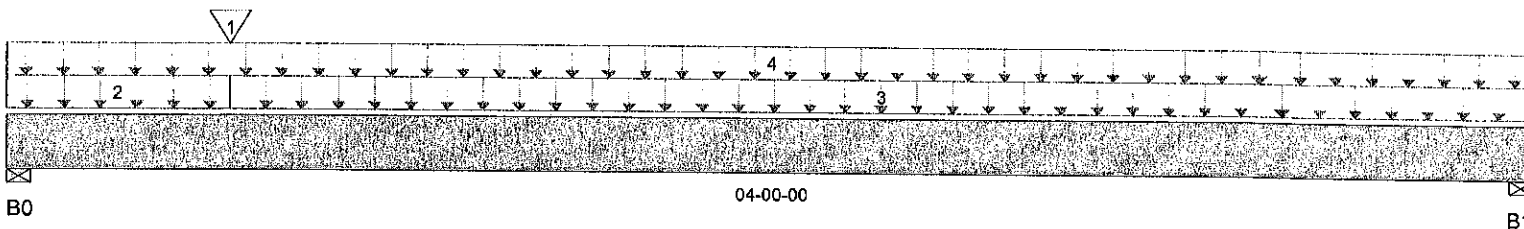
BC CALC® Design Report


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

May-14-15

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

File Name: 253720.bcc
 Description: Designs\07B
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,268 / 0	677 / 0		
B1, 3-1/2"	829 / 0	342 / 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	00-07-00	00-07-00	736	489			n/a
2	Unf. Area (lb/ft^2)		L	00-00-00	00-07-00	40	15			00-08-00
3	Unf. Area (lb/ft^2)		L	00-07-00	04-00-00	40	15			07-06-00
4	Unf. Area (lb/ft^2)		L	00-00-00	04-00-00	40	15			02-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,487 ft-lbs	12,704 ft-lbs	0.12	1	01-09-04
End Shear	1,472 lbs	5,785 lbs	0.25	1	01-01-00
Total Load Defl.	L/999 (0.01")	n/a	n/a	4	01-11-05
Live Load Defl.	L/999 (0.007")	n/a	n/a	5	01-11-05
Max Defl.	0.01"	n/a	n/a	4	01-11-05
Span / Depth	4.5	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"	2,747 lbs	0.73	0.37	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,670 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.
 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/n BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



S.129482

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

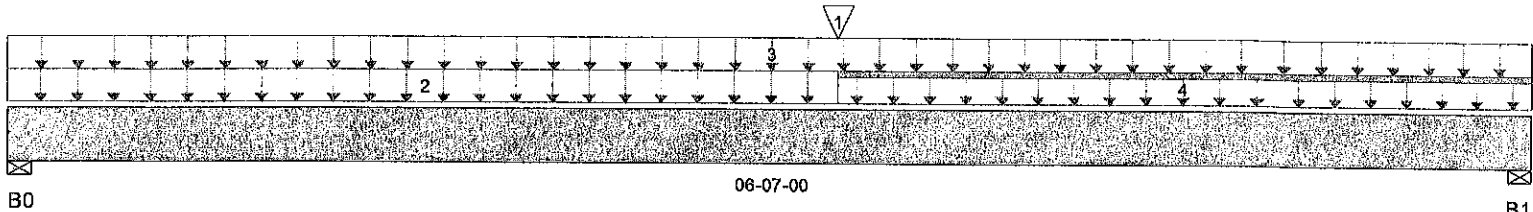
May-14-15

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: 253720.bcc
 Description: Designs\08A
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 06-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	534 / 0	268 / 0		
B1, 3-1/2"	566 / 0	388 / 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	03-07-00	03-07-00	829	342			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	03-07-00	40	15			00-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	06-07-00	40	15			00-08-00
4		Unf. Lin. (lb/ft)	L	03-07-00	06-07-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,099 ft-lbs	12,704 ft-lbs	0.24	1	03-07-00
End Shear	1,189 lbs	5,785 lbs	0.21	1	05-06-00
Total Load Defl.	L/999 (0.049")	n/a	n/a	4	03-04-03
Live Load Defl.	L/999 (0.032")	n/a	n/a	5	03-04-03
Max Defl.	0.049"	n/a	n/a	4	03-04-03
Span / Depth	7.7	n/a	n/a		00-00-00

Bearing Supports

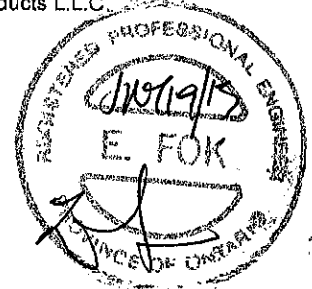
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,136 lbs	0.3	0.15	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,334 lbs	0.35	0.18	Spruce Pine Fir

Notes

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

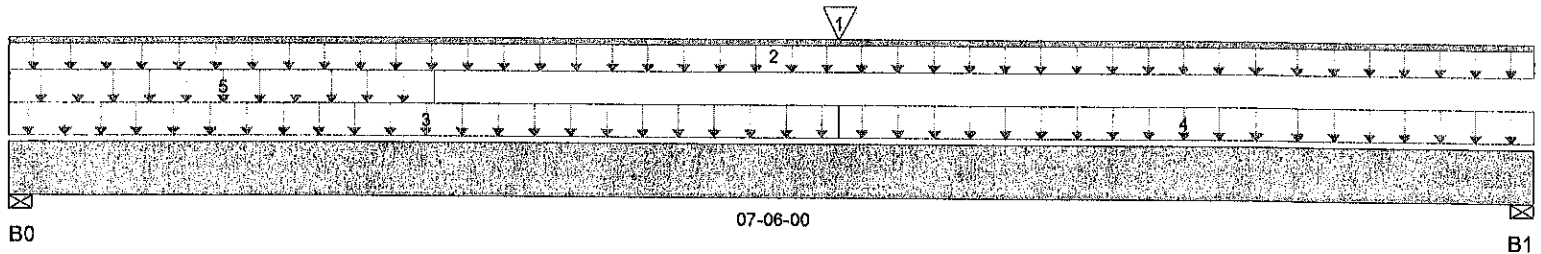


Dry | 1 span | No cantilevers | 0/12 slope (deg)

May-14-15

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

File Name: 253720.bcc
Description: Designs\15
Specifier: 38-4
Designer: MQ
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"	683 / 0	530 / 0		
B1, 3-1/2"	767 / 0	568 / 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	04-01-00	04-01-00	534	268			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	07-06-00	0	60			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	04-01-00	40	15			02-00-00
4		Unf. Area (lb/ft^2)	L	04-01-00	07-06-00	40	15			03-06-00
5		Unf. Area (lb/ft^2)	L	00-00-00	02-01-00	40	15			01-04-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,857 ft-lbs	12,704 ft-lbs	0.3	1	04-01-00
End Shear	1,474 lbs	5,785 lbs	0.25	1	06-05-00
Total Load Defl.	L/999 (0.089")	n/a	n/a	4	03-10-00
Live Load Defl.	L/999 (0.052")	n/a	n/a	5	03-10-00
Max Defl.	0.089"	n/a	n/a	4	03-10-00
Span / Depth	8.9	n/a	n/a		00-00-00

Bearing Supports

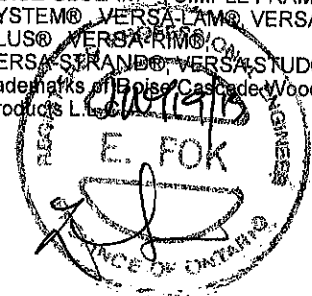
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,687 lbs	0.45	0.23	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,860 lbs	0.49	0.25	Spruce Pine Fir

Notes

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

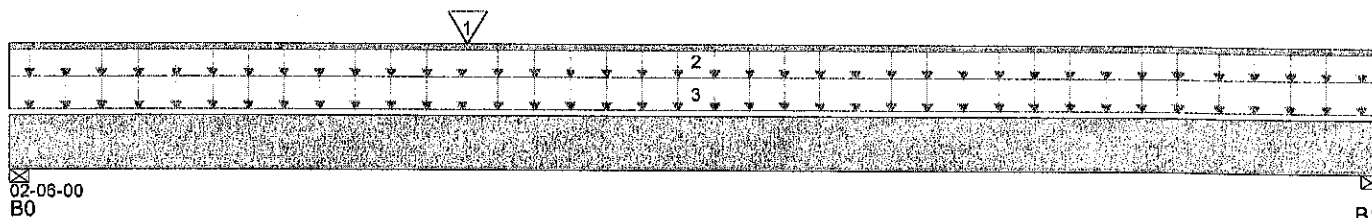
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Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253720.bcc
 Description: Designs\16
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 02-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,136 / 0	914 / 0		
B1, 3-1/2"	516 / 0	449 / 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	00-10-00	00-10-00	1,518	1,139			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	02-06-00	0	60			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	02-06-00	40	15			01-04-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,657 ft-lbs	25,408 ft-lbs	0.07	1	00-10-00
End Shear	1,470 lbs	11,571 lbs	0.13	1	01-01-00
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-01-12
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-01-12
Max Defl.	0.001"	n/a	n/a	4	01-01-12
Span / Depth	2.6	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 3-1/2"	2,847 lbs	0.38	0.19	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	1,334 lbs	0.18	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.
 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
 @ 6" O.C., STAGGERED IN TWO ROWS



S.129485



Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code:

KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253720.bcc

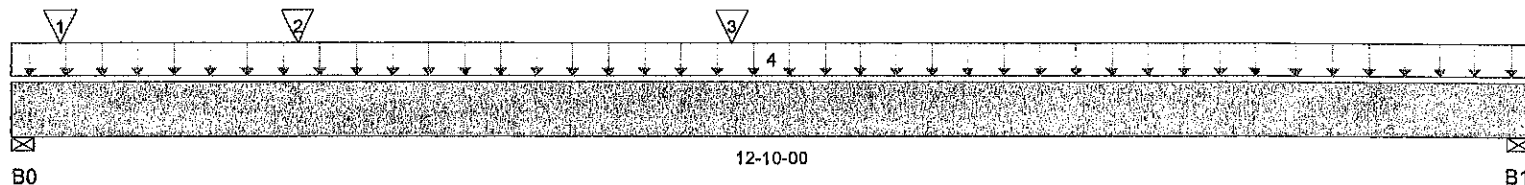
Description: Designs\17

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



Total Horizontal Product Length = 12-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,692 / 0	1,883 / 0		
B1, 3-1/2"	1,080 / 0	618 / 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	00-05-00	00-05-00	1,136	914			n/a
2		Conc. Pt. (lbs)	L	02-05-00	02-05-00	683	530			n/a
3		Conc. Pt. (lbs)	L	06-01-00	06-01-00	1,268	677			n/a
4		Unf. Area (lb/ft^2)	L	00-00-00	12-10-00	40	15			01-04-00

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,937 ft-lbs	25,408 ft-lbs	0.51	1	06-01-00
End Shear	3,868 lbs	11,571 lbs	0.33	1	01-01-00
Total Load Defl.	L/331 (0.449")	0.619"	0.73	4	06-03-02
Live Load Defl.	L/524 (0.283")	0.413"	0.69	5	06-03-02
Max Defl.	0.449"	1"	0.45	4	06-03-02
Span / Depth	15.6	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 3-1/2"	6,392 lbs	0.85	0.43	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,392 lbs	0.32	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.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 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

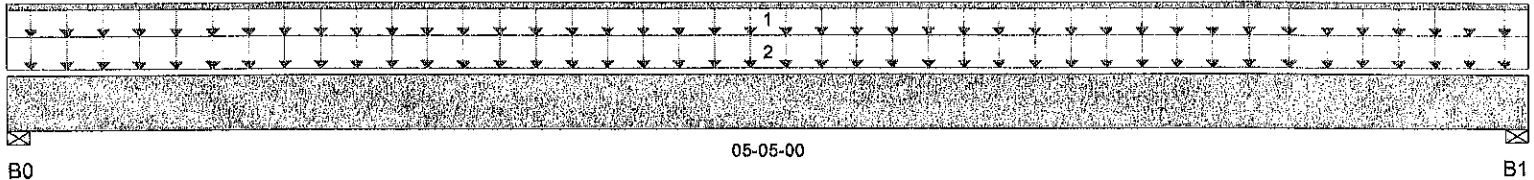


S.129486

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: 253720.bcc
 Description: Designs\18
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 05-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	650 / 0	419 / 0		
B1, 3-1/2"	650 / 0	419 / 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	05-05-00	0	60			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	05-05-00	40	15			06-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,701 ft-lbs	12,704 ft-lbs	0.13	1	02-08-08
End Shear	899 lbs	5,785 lbs	0.16	1	01-01-00
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	02-08-08
Live Load Defl.	L/999 (0.013")	n/a	n/a	5	02-08-08
Max Defl.	0.021"	n/a	n/a	4	02-08-08
Span / Depth	6.3	n/a	n/a		00-00-00

Bearing Supports

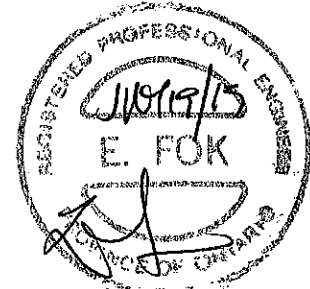
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,499 lbs	0.4	0.2	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,499 lbs	0.4	0.2	Spruce Pine Fir

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.

Disclosure

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Build 3272

Job Name:

40297

Address:

HUNTINGTON & NASHVILLE

City, Province, Postal Code:

KLEINBURG, ON

Customer:

GOLD PARK

Code reports:

CCMC 12472-R

File Name: 253720.bcc

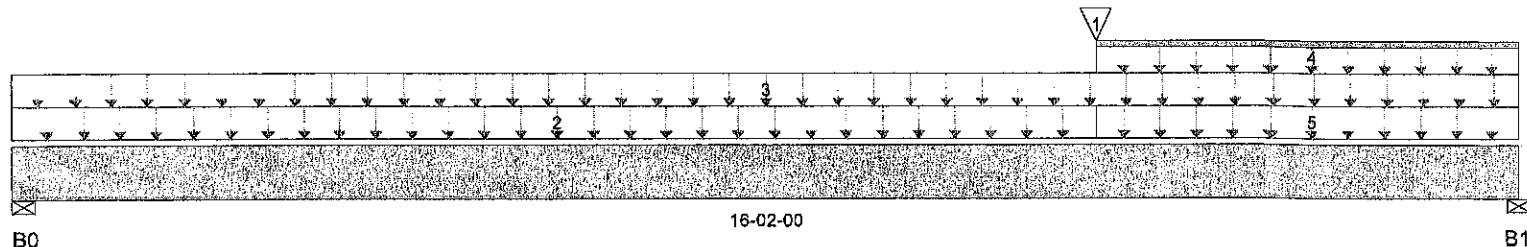
Description: Designs\19

Specifier: 38-4

Designer: MQ

Company: Alpa Roof Trusses Inc

Misc:



B0

B1

Total Horizontal Product Length = 16-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	624 / 0	398 / 0		
B1, 1-3/4"	948 / 0	792 / 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	11-08-00	11-08-00	650	419			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	11-08-00	40	15			00-08-00
3		Unf. Area (lb/ft^2)	L	00-00-00	16-02-00	40	15			00-08-00
4		Unf. Lin. (lb/ft)	L	11-08-00	16-02-00	0	60			n/a
5		Unf. Area (lb/ft^2)	L	11-08-00	16-02-00	40	15			01-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,445 ft-lbs	25,408 ft-lbs	0.33	1	11-08-00
End Shear	2,207 lbs	11,571 lbs	0.19	1	15-02-12
Total Load Defl.	L/375 (0.507")	0.793"	0.64	4	08-08-04
Live Load Defl.	L/636 (0.299")	0.528"	0.57	5	08-06-06
Max Defl.	0.507"	1"	0.51	4	08-08-04
Span / Depth	20	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	3-1/2" x 3-1/2"	1,434 lbs	0.19	0.1	Spruce Pine Fir
B1	Wall/Plate	1-3/4" x 3-1/2"	2,412 lbs	0.64	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.
 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

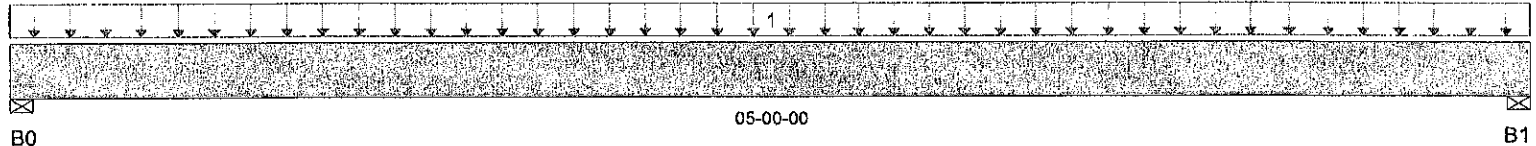
NAIL ONE ROW TO ANOTHER WITH 3 1/2" SQUARE NAILS
 @ 12" O.C., STRUTTED IN 2 ROWS



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: 253720.bcc
 Description: Designs\20 & 22
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 05-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	333 / 0	179 / 0		
B1, 3-1/2"	333 / 0	179 / 0		

Load Summary

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

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	746 ft-lbs	12,704 ft-lbs	0.06	1	02-06-00
End Shear	410 lbs	5,785 lbs	0.07	1	01-01-00
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-06-00
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	02-06-00
Max Defl.	0.008"	n/a	n/a	4	02-06-00
Span / Depth	5.7	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 1-3/4"	723 lbs	0.19	0.1	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	723 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.

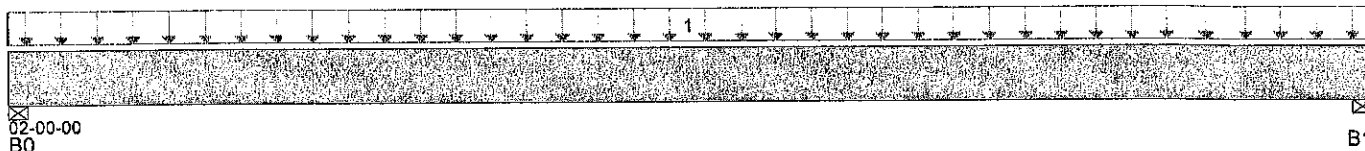


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Build 3272
 Job Name: 40297
 Address: HUNTINGTON & NASHVILLE
 City, Province, Postal Code: KLEINBURG, ON
 Customer: GOLD PARK
 Code reports: CCMC 12472-R

File Name: 253720.bcc
 Description: Designs\21
 Specifier: 38-4
 Designer: MQ
 Company: Alpa Roof Trusses Inc
 Misc:



Total Horizontal Product Length = 02-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	87 / 0	48 / 0		
B1, 3-1/2"	87 / 0	48 / 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	02-00-00	40	20			02-02-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	57 ft-lbs	12,704 ft-lbs	0	1	01-00-00
End Shear	16 lbs	5,785 lbs	0	1	01-01-00
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-00-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-00-00
Max Defl.	0"	n/a	n/a	4	01-00-00
Span / Depth	1.9	n/a	n/a		00-00-00

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"	190 lbs	0.05	0.03
B1	Wall/Plate	3-1/2" x 1-3/4"	190 lbs	0.05	0.03

Notes

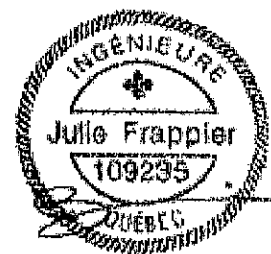
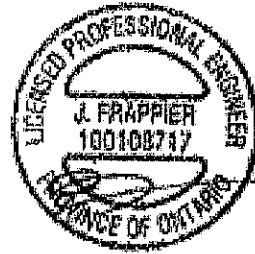
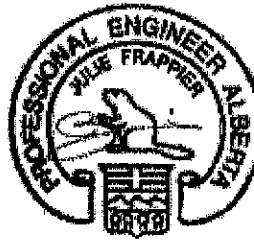
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented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



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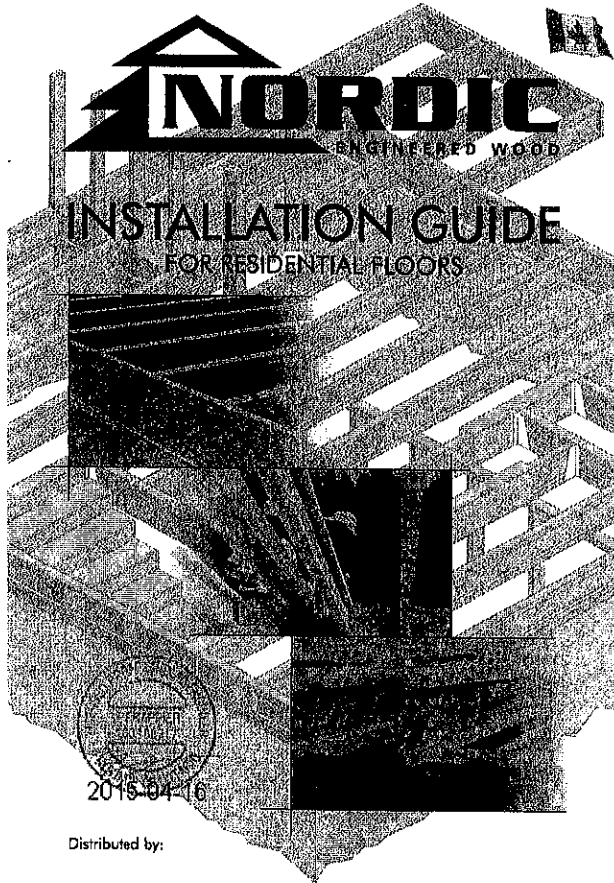


Maximum Floor Spans

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'-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			
		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.



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SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unshathed I-joists. Once shathed, do not over-stress I-joist 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 shathed.

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 continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on 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 flatwires.
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.

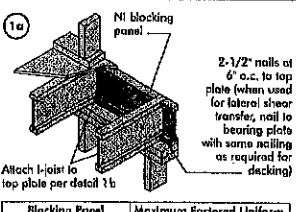
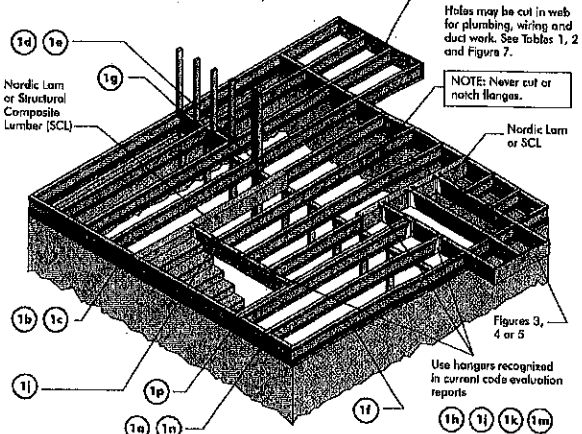


INSTALLING NORDIC I-JOISTS

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-span joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist 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. 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 on 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.

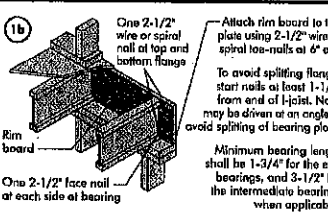
FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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



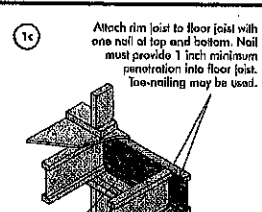
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

*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.



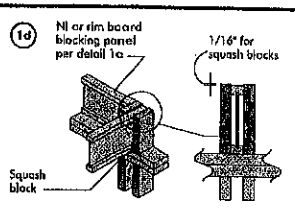
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,000

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a 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	8,000

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



Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lb)
2x Lumber	3,500
1-1/8" Rim Board Plus	4,300

*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.



Joist Series	NI-20	NI-40x	NI-60	NI-70	NI-80	NI-90	NI-90x
5-P-F No.2	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
1950f MSR	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
2100f MSR	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
1950f MSR	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
2100f MSR	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
2400f MSR	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
NPG Lumber	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"	1-1/2" x 2-1/2"
33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit	33 pieces per unit

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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

- 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.
- 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 largest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

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

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.)												
		Round Hole Diameter (in.)												
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---
	NI-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	---	---	---	---	---	---	---
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---
	NI-70	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---
11-7/8"	NI-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	---	---	---	---	---	---	---
	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---	---	---
14"	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---	---
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---	---
	NI-90	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-90x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---	---
16"	NI-40x	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"	---
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	8-8"	10-4"	11-9"	---
	NI-70	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"	---
	NI-80	0-10"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	10-8"	12-4"	13-9"	---
18"	NI-90	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"	---
	NI-90x	0-7"	0-8"	0-8"	2-5"	3-9"	4-2"	5-5"	7-3"	8-5"	9-2"	---	---	---
20"	NI-40x	0-7"	0-8"	0-8"	1-6"	2-10"	3-2"	4-2"	5-6"	6-4"	7-0"	8-5"	9-8"	10-2"
	NI-60	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-0"	12-4"
	NI-70	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	9-5"	11-0"	12-3"	12-9"
	NI-80	0-7"	0-8"	0-8"	1-9"	3-3"	3-8"	4-9"	6-5"	7-5"	8-0"	9-4"	11-3"	11-9"
22"	NI-90	0-7"	0-8"	0-9"	2-0"	3-6"	4-0"	5-0"	6-9"	7-9"	8-4"	10-2"	11-6"	12-0"
	NI-90x	0-7"	0-8"	0-9"	2-0"	3-6"	4-0"	5-0"	6-9"	7-9"	8-4"	10-2"	11-6"	12-0"

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

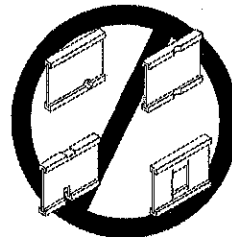
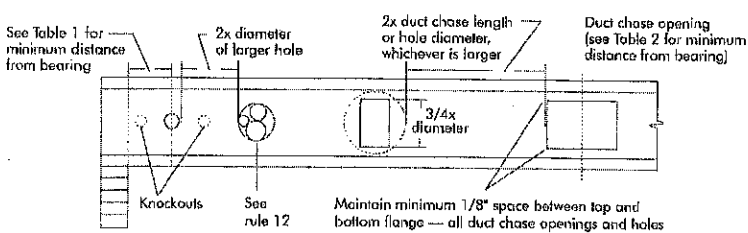
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

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	26	28	30	32
9-1/2"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	---	---	---	---
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---	---
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"	---	---	---	---
	NI-70	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"	---	---	---	---
11-7/8"	NI-80	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---	---
	NI-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"	---	---	---	---
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-9"	---	---	---	---
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"	---	---	---	---
14"	NI-70	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-4"	---	---	---	---
	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"	---	---	---	---
	NI-90	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	10-11"	---	---	---	---
	NI-90x	7-7"	8-1"	8-5"	8-10"	9-4"	9-8"	10-2"	10-8"	11-2"	---	---	---	---
16"	NI-40x	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	12-0"	12-8"	---	---	---	---
	NI-60	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	13-3"	13-0"	---	---	---	---
	NI-70	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"	---	---	---	---
	NI-80	9-0"	9-3"	9-9"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"	---	---	---	---
18"	NI-90	9-2"	9-8"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"	---	---	---	---
	NI-90x	9-4"	9-9"	10-3"	10-7"	11-1"	11-7"	12-1"	12-7"	13-2"	---	---	---	---
20"	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"	---	---	---	---
	NI-70	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-3"	14-0"	---	---	---	---
	NI-80	10-4"	10-9"	11-3"	11-9"	12-1"	12-7"	13-1"	13-8"	14-4"	---	---	---	---
	NI-90	10-9"	11-2"	11-8"	12-0"	12-6"	13-0"	13-6"	14-2"	14-10"	---	---	---	---
22"	NI-90x	11-1"	11-5"	11-10"	12-4"	12-10"	13-2"	13-9"	14-4"	15-2"	---	---	---	---

- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of supports to centre of opening.
- The above table is based on simple-span joists only. For other applications, contact your local distributor.
- 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.
- 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.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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 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.

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:

- 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 at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. 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.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
- Never install a damaged I-joist.

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



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



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



PRODUCT WARRANTY

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

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

1a

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 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

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 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.

Blocking Panel or Rim Joist
Maximum Factored Uniform Vertical Load* (plf)

1-1/8" Rim Board Plus	8,090
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*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.

1d

NI or rim board blocking panel per detail 1a

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

Squash block

Pair of Squash Blocks

Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)

3-1/2" wide	5-1/2" wide
5,500	8,500
4,300	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

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

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

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

NI blocking panel per detail 1a

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-PF 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

Top- or face-mount hanger

Double I-joist header

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

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.

1j

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.

Filler block per detail 1p

Maximum support capacity = 1,620 lbs.

Install hanger per manufacturer's recommendations

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

Offset nails from opposite face by 6"

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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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
2-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	2-1/8" x 6" 2-1/8" x 8" 2-1/8" x 10" 2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	3" x 6" 3" x 8" 3" x 10" 3" x 12"
3-1/2" x 2"	11-7/8" 14" 16"	3" x 7" 3" x 9" 3" x 11"

1s

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

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.

All nails shown in this detail shall be common spiral nails. The minimum nail size shall be 2-1/2 inch. All nails shall be driven at an angle to avoid splitting of the blocking. The blocking shall be installed 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.

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

CONCENTRATED LOAD (Load stiffener)

END BEARING (Bearing stiffener)

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" 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".

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.

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

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

Rim Board Joint at Corner

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

Rim Board Joint

1-1/2"

Rim board

Top or sole plate

30°

1-1/2"

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 conditioned 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
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	

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 applicable to I-joist), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

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

Where:

D_{reduced} =L_{actual} =

SAF =

D =

If L_{actual} is greater than 1, use 1 in the above calculation for L_{actual}.

SAF

SAF

SAF

SAF

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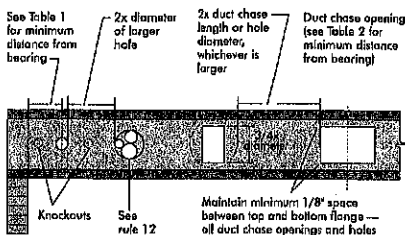
SAF

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 this 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.

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft/in.)											
		Joist/chase length (in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
10	2												
12	2												
14	2												
16	2												
18	2												
20	2												
22	2												
24	2												
26	2												
28	2												
30	2												
32	2												
34	2												
36	2												
38	2												
40	2												

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

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 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 topped into place with a block and sledgeman.
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 with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to ensure 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. Top the second row of panels into place, using a block to protect groove edges.
9. Stagger 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)

Minimum Nail Spacing (ft)	Minimum Panel Thickness (in.)	Nail Size and Type				Minimum Spacing of Fasteners
		Common Nails or Spiral Nails	Ring Thread p. Screws	Staples	Edges or Ends	
20	5/8	2"	1-3/4"	2"	6"	12"
24	3/4	2"	1-3/4"	2"	6"	12"
28	3/4	2"	1-3/4"	2"	6"	12"

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.
5. Use only adhesives conforming to CAN/CSB-71.24 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.

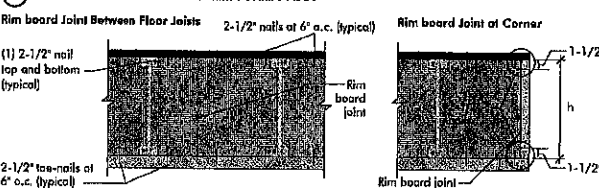
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

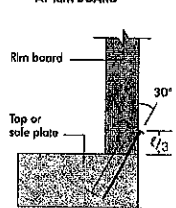
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

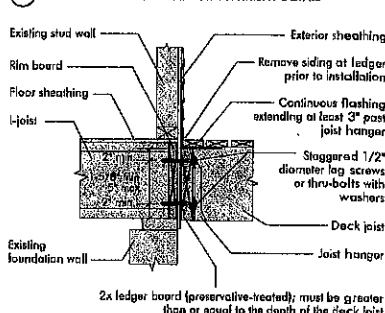
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



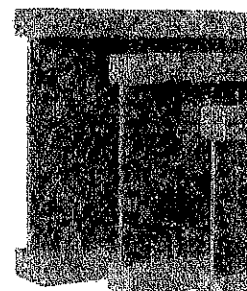
8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

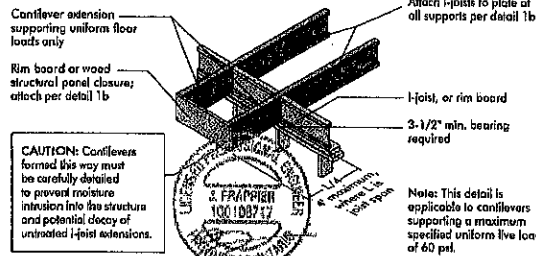


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CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

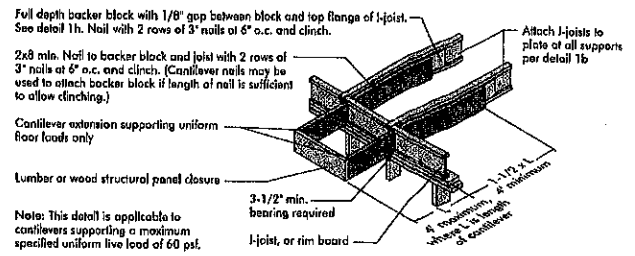
3a I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



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

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

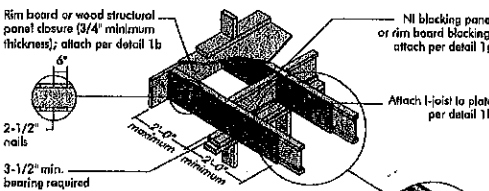
3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE

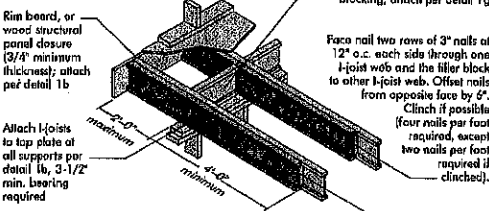


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

Note: Canadian softwood 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.

4b Alternate Method 2 — DOUBLE I-JOIST



Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange widths greater than 2 inches place an additional row of 3\" nails along the centerline of the reinforcing panel from each side. Clinch when possible.

FIGURE 4 (continued)

See table below for NI reinforcement requirements of cantilever.



For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

CANTILEVER REINFORCEMENT METHODS ALLOWED

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

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 CGES-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

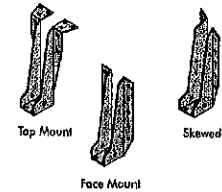
SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Spacing	Simple spans				Multiple spans			
		12'	16'	19.2'	24'	12'	16'	19.2'	24'
12"	12"	10'	12'	14'	16'	10'	12'	14'	16'
12"	16"	8'	10'	12'	14'	8'	10'	12'	14'
12"	19.2"	7'	9'	11'	13'	7'	9'	11'	13'
12"	24"	6'	8'	10'	12'	6'	8'	10'	12'
16"	12"	12'	14'	16'	18'	12'	14'	16'	18'
16"	16"	10'	12'	14'	16'	10'	12'	14'	16'
16"	19.2"	9'	11'	13'	15'	9'	11'	13'	15'
16"	24"	8'	10'	12'	14'	8'	10'	12'	14'
24"	12"	16'	18'	20'	22'	16'	18'	20'	22'
24"	16"	14'	16'	18'	20'	14'	16'	18'	20'
24"	19.2"	13'	15'	17'	19'	13'	15'	17'	19'
24"	24"	12'	14'	16'	18'	12'	14'	16'	18'

CCMC EVALUATION REPORT 1302-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.

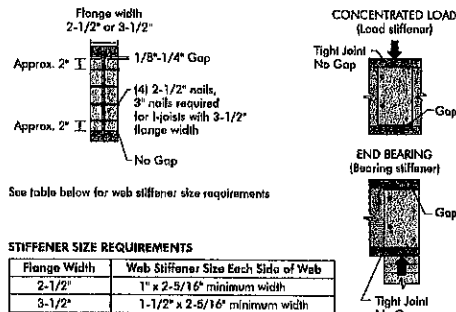


WEB STIFFENERS

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



NORDIC I-JOIST SERIES

NI-20	NI-24	NI-28	NI-32	NI-36	NI-40	NI-44	NI-48	NI-52	NI-56	NI-60
OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"	OSB 1/2"
5-PF No. 2	1900 MSR	2100F MSR	1900 MSR	2100F MSR	2400F MSR	2400F MSR	2400F MSR	2400F 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	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 harvest 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 squish 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 nailable sheathing is used. 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. 2-1/2" nails at 6" o.c. to top plate. Joist attachment per detail 1b. NI blocking panel per detail 1a.

1h

Backer block (as if hanger load exceeds 960 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.

1i

Top- or face-mount hanger installed per manufacturer's recommendations. For nailing schedules for multiple beams, see the manufacturer's recommendations.

1j

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

1k

Multi-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. Filler block per detail 1p. Install hanger per manufacturer's recommendations. Backer block attached per detail 1h. Nail with twelve 3" nails, clinched when possible. Maximum support capacity = 1,620 lbs.

1l

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*	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 nail joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use nail depth minus 4-1/4".

1p

Filler block. 1/8" to 1/4" gap between top flange and filler block. Offset nails from opposite face by 6".

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"

1q

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.

1r

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.