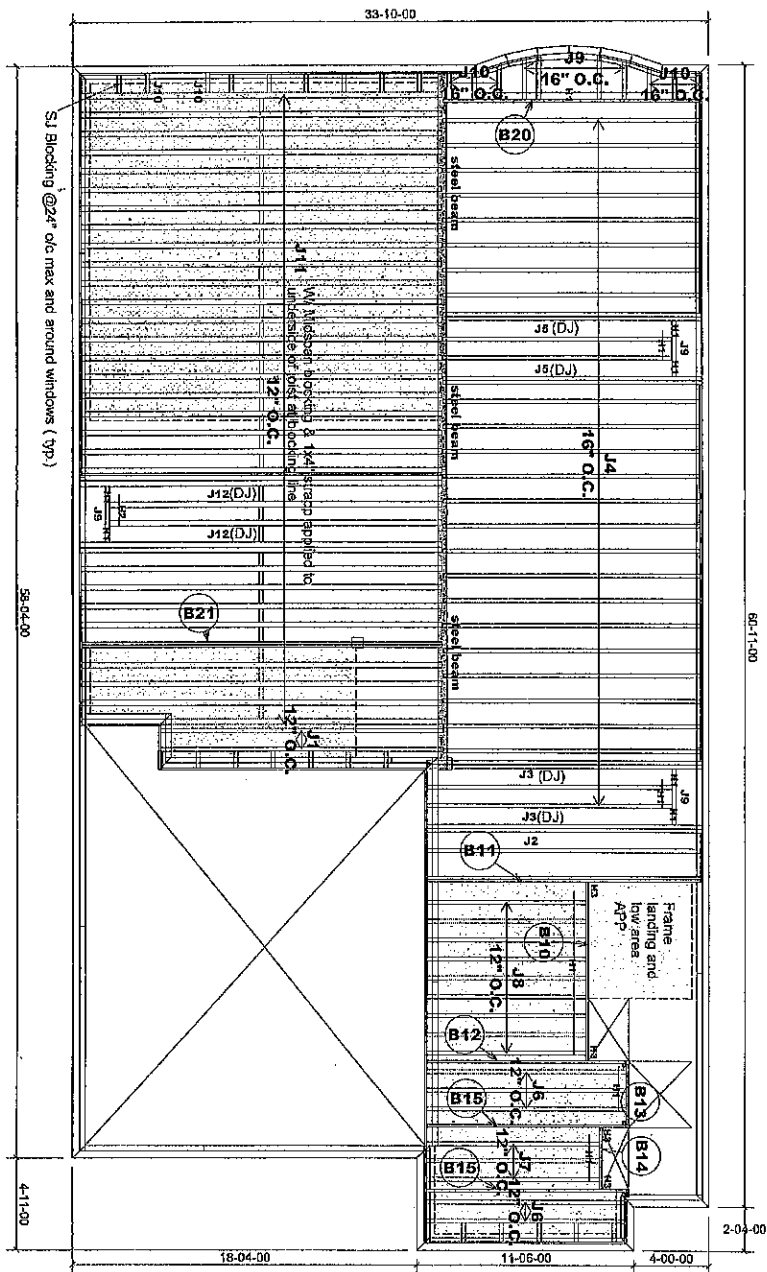




MODEL : 42-5
ELEVATION A & B
STANDARD GROUND FLOOR

FIRST FLOOR FRAMING

OFFICE USE ONLY
ENGINEERED FROM
S-12851 TO S-128670

Do not scale - refer to architectural plans for dimensions

Product	Length	Product	Piles	Net Qty
J1	18-00-00	9 1/2" NI-20	1	2
J2	15-00-00	9 1/2" NI-20	1	1
J3	15-00-00	9 1/2" NI-20	2	4
J4	14-00-00	9 1/2" NI-20	1	27
J5	14-00-00	9 1/2" NI-20	2	4
J6	11-00-00	9 1/2" NI-20	1	5
J7	10-00-00	9 1/2" NI-20	1	3
J8	9-00-00	9 1/2" NI-20	1	9
J9	3-00-00	9 1/2" NI-20	1	7
J10	2-00-00	9 1/2" NI-20	1	8
J11	20-00-00	9 1/2" NI-80	1	31
J12	20-00-00	9 1/2" NI-80	2	4
B21	20-00-00	VERSALAM-10 2.0E	2	2
B11	15-00-00	VERSALAM-10 2.0E	2	2
B20	14-00-00	VERSALAM-10 2.0E	1	1
B12	11-00-00	VERSALAM-10 2.0E	1	1
B15	11-00-00	VERSALAM-10 2.0E	1	2
B10	10-00-00	VERSALAM-10 2.0E	1	1
B13	4-00-00	VERSALAM-10 2.0E	1	1
B14	4-00-00	VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING 60 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

KLIMBOARD

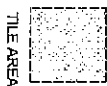
1-1/8" X 9 1/2" O.S.B

HANGERS SCHEDULE

H1 - L1759

H2 - L1759

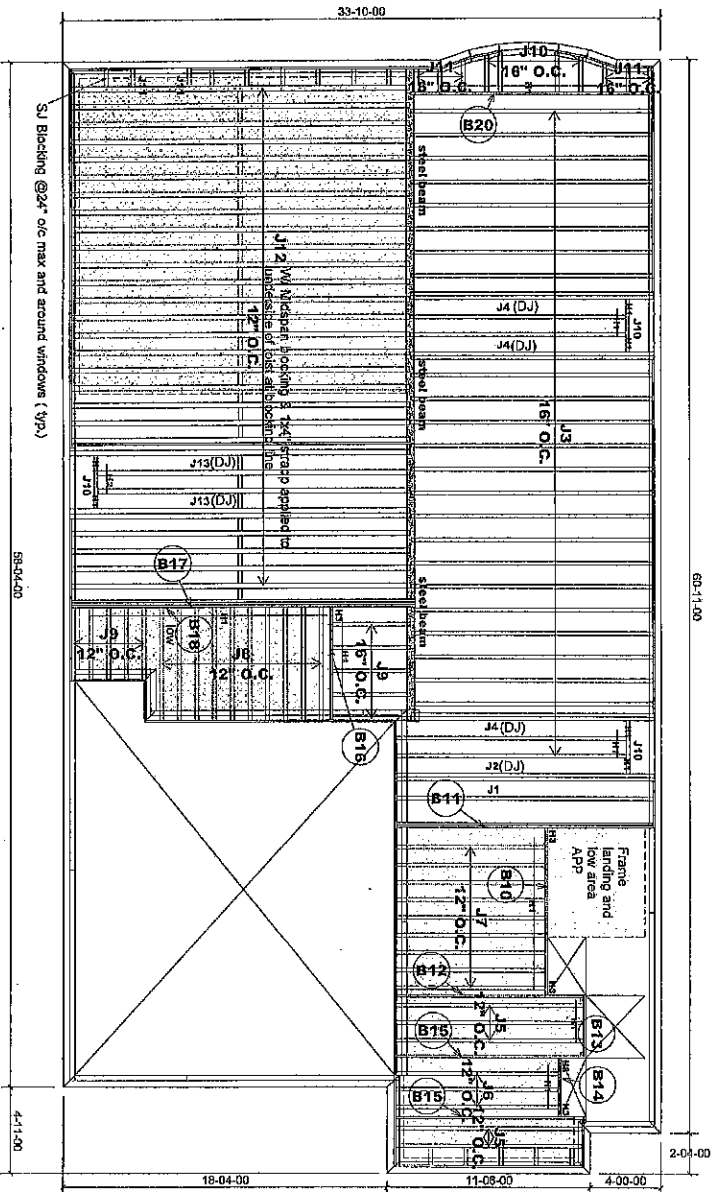
H3 - HUST. 81/10



TILE AREA

1-2x6 SP-F#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

JT: 4029779712 Builder: Gold Park Homes Location: Kleinburg Designer: LA Alpa Roof Trusses Inc. Salesperson: Derek
File: 253787 (1) Project: Huntington & Nashville Date: May 01/15 Sheet: 1 of 16 Maple, Ontario Home Lumber



MODEL : 425
ELEVATION A & B
STANDARD GROUND FLOOR
W/STUNKEN MUDROOM

FIRST FLOOR FRAMING

OFFICE USE ONLY
ENGINEERED FROM
S.S.

Do not scale - refer to architectural plans for dimensions

Product	Length	Product	Piles	Net Qty
J1	15'-00"-00	9 1/2" N-20	1	1
J2	15'-00"-00	9 1/2" N-20	2	2
J3	14'-00"-00	9 1/2" N-20	1	27
J4	14'-00"-00	9 1/2" N-20	2	6
J5	11'-00"-00	9 1/2" N-20	1	5
J6	10'-00"-00	9 1/2" N-20	1	3
J7	9'-00"-00	9 1/2" N-20	1	9
J8	7'-00"-00	9 1/2" N-20	1	10
J9	5'-00"-00	9 1/2" N-20	1	10
J10	3'-00"-00	9 1/2" N-20	1	7
J11	2'-00"-00	9 1/2" N-20	1	8
J12	20'-00"-00	9 1/2" N-80	1	27
J13	20'-00"-00	9 1/2" N-80	1	4
B17	20'-00"-00	VERSALAM-10 2.0E	3	2
B14	15'-00"-00	VERSALAM-10 2.0E	2	2
B18	15'-00"-00	VERSALAM-10 2.0E	2	2
B20	14'-00"-00	VERSALAM-10 2.0E	1	1
B12	11'-00"-00	VERSALAM-10 2.0E	1	2
B15	11'-00"-00	VERSALAM-10 2.0E	1	1
B16	10'-00"-00	VERSALAM-10 2.0E	1	1
B13	7'-00"-00	VERSALAM-10 2.0E	1	1
B14	4'-00"-00	VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING 50 L.F.

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED
RIMBOARD

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

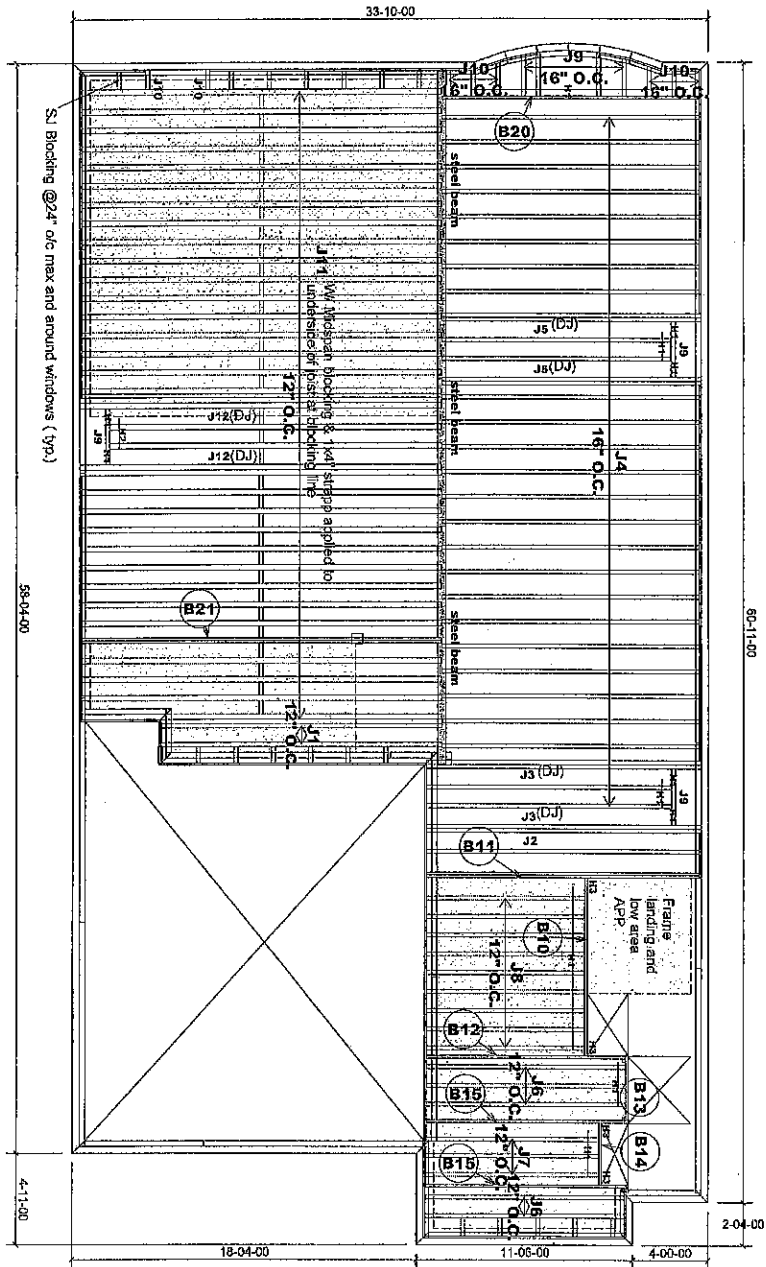
PANIGERS SCHEDULE

H1 - 1.7259
H2 - 1.7359
H3 - HUS1.81/10



1-3x6 S.P.F. #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

JT: 40297/79712 Builder: Gold Park Homes Location: Kleinburg Designer: LA Salesperson: Derek
File: 253787 (2) Project: Huntington & Nashville Date: May 01/15 Sheet: 2 of 16 Maple, Ontario



MODEL: 42-5
ELEVATION A & B
OPT. GROUND FLOOR

FIRST FLOOR FRAMING

NO.	REVISION	PL. NO.
1.	DATE: April 1916	88974

OFFICE USE ONLY
ENGINEERED FROM
S

Do not scale - refer to architectural plans for dimensions

Product	Length	Product	Piles	Net City
J1	16-00-00	9 1/2" NI-20	1	2
J2	15-00-00	9 1/2" NI-20	1	1
J3	15-00-00	9 1/2" NI-20	2	4
J4	14-00-00	9 1/2" NI-20	2	27
J5	14-00-00	9 1/2" NI-20	2	4
J6	11-00-00	9 1/2" NI-20	1	5
J7	10-00-00	9 1/2" NI-20	1	3
J8	9-00-00	9 1/2" NI-20	1	9
J9	3-00-00	9 1/2" NI-20	1	7
J10	2-00-00	9 1/2" NI-20	1	8
J11	20-00-00	9 1/2" NI-80	1	31
J12	20-00-00	9 1/2" NI-80	2	4
B21	20-00-00	VERSALAM-10 2.0E	2	2
B11	15-00-00	VERSALAM-10 2.0E	2	2
B20	14-00-00	VERSALAM-10 2.0E	1	1
B12	11-00-00	VERSALAM-10 2.0E	1	1
B15	11-00-00	VERSALAM-10 2.0E	1	2
B10	10-00-00	VERSALAM-10 2.0E	1	1
B13	4-00-00	VERSALAM-10 2.0E	1	1
B14	4-00-00	VERSALAM-10 2.0E	1	1

8 1/2" BLOCKING 80 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

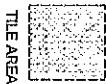
SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

HANGERS SCHEDULE

H1 - L1759
H2 - L1359
H3 - HUS1,5/1/10

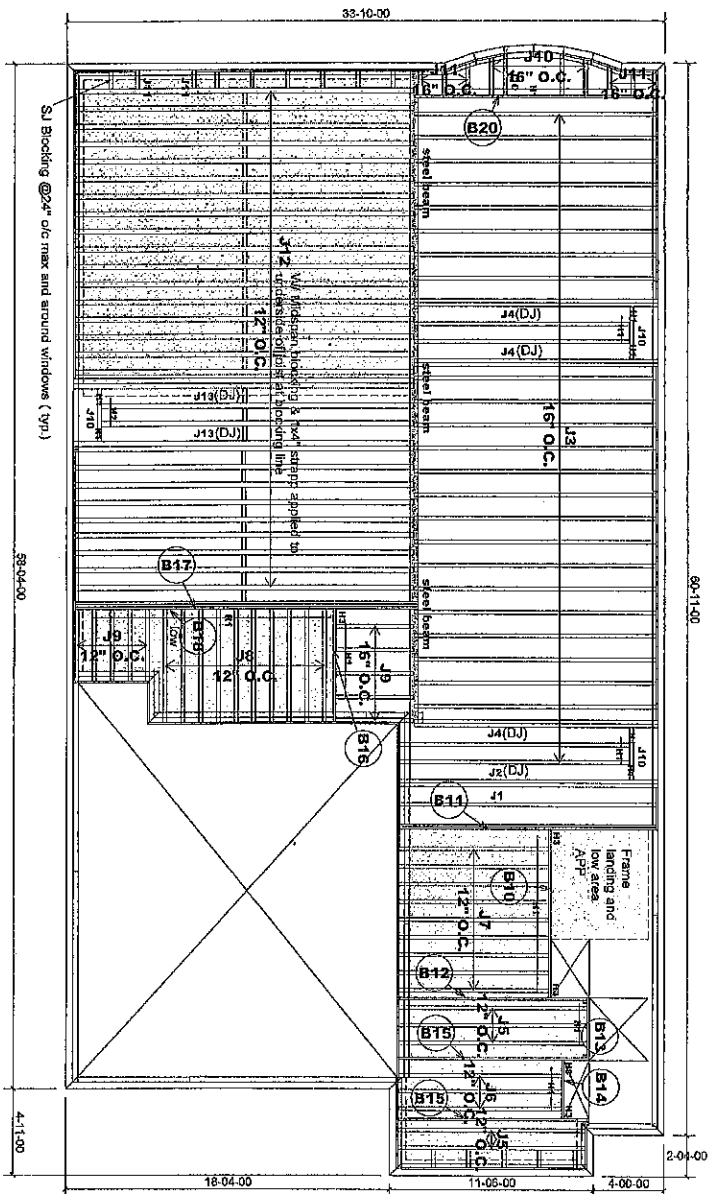


TILE AREA

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

JT: 40297/79712 Builder: Gold Park Homes Location: Kleinburg Designer: LA Salesperson: Derek
File: 253787 (3) Project: Huntington & Nashville Date: May 01/15 Sheet: 3 of 16 Maple, Ontario Home Lumber



MODEL : 425
ELEVATION A & B
OPT. GROUND FLOOR
MISUNKEN MUDROOM

REVISION			
NO.	DATE	PL. NO.	
1.	April 1915	B571	

FIRST FLOOR FRAMING

Do not scale - refer to architectural plans for dimensions

OFFICE USE ONLY
ENGINEERED FROM
S.S.

Products				
PicID	Length	Product	Piles	Net Qty
J1	15-00-00	9 1/2" N-20	1	1
J2	15-00-00	9 1/2" N-20	2	2
J3	14-00-00	9 1/2" N-20	1	27
J4	14-00-00	9 1/2" N-20	2	6
J5	11-00-00	9 1/2" N-20	1	5
J6	10-00-00	9 1/2" N-20	1	3
J7	9-00-00	9 1/2" N-20	1	9
J8	7-00-00	9 1/2" N-20	1	10
J9	5-00-00	9 1/2" N-20	1	7
J10	3-00-00	9 1/2" N-20	1	8
J11	2-00-00	9 1/2" N-20	1	27
J12	20-00-00	9 1/2" N-80	1	4
J13	20-00-00	9 1/2" N-80	2	3
B17	20-00-00	VERSALAM-10 2.0E	3	2
B18	15-00-00	VERSALAM-10 2.0E	2	2
B19	15-00-00	VERSALAM-10 2.0E	1	1
B20	14-00-00	VERSALAM-10 2.0E	1	1
B12	11-00-00	VERSALAM-10 2.0E	1	2
B15	11-00-00	VERSALAM-10 2.0E	1	1
B10	10-00-00	VERSALAM-10 2.0E	1	1
B16	7-00-00	VERSALAM-10 2.0E	1	1
B14	4-00-00	VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING 50 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

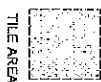
SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

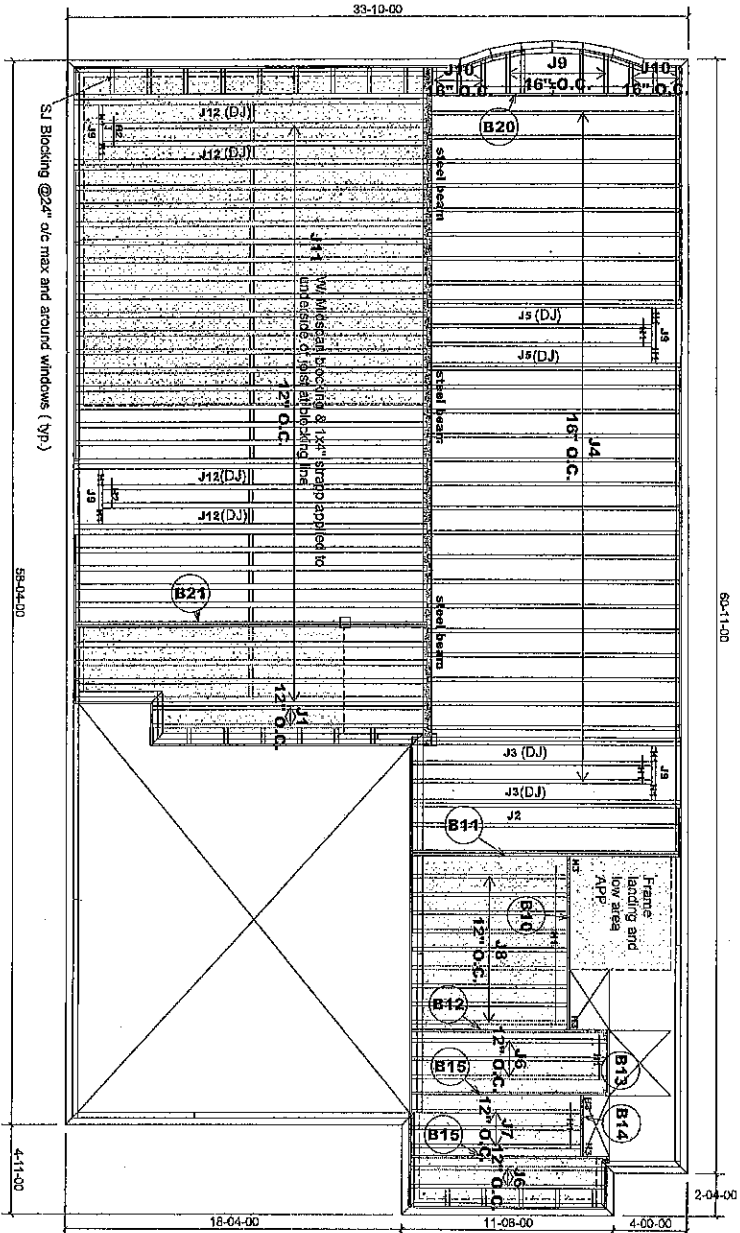
HANGERS SCHEDULE

H1 - LT259
H2 - LT359
H3 - HUS181/10



1-2x6 SPS#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 3s per O.B.C. 9.30.6

JT: 40297/79712 Builder: Gold Park Homes Location: Kleinburg Designer: LA Salesperson: Derek
File: 253787 (4) Project: Huntington & Nashville Date: May 01/15 Sheet: 4 of 16 Maple, Ontario Home Lumber



MODEL : 425-
ELEVATION A & B
STANDARD GROUND FLOOR
W/OPT. LOGGIA

NO.	DATE	PL. NO.
1	April 19/10	003/14

FIRST FLOOR FRAMING

Do not scale - refer to architectural plans for dimensions

OFFICE USE ONLY
ENGINEERED FROM
S.S.

ProdID	Length	Product	Pieces	Net Qty
J1	16'-00.00	9 1/2" NI-20	1	2
J2	15'-00.00	9 1/2" NI-20	1	1
J3	15'-00.00	9 1/2" NI-20	2	4
J4	14'-00.00	9 1/2" NI-20	1	27
J5	14'-00.00	9 1/2" NI-20	2	4
J6	11'-00.00	9 1/2" NI-20	1	5
J7	10'-00.00	9 1/2" NI-20	1	3
J8	9'-00.00	9 1/2" NI-20	1	9
J9	3'-00.00	9 1/2" NI-20	1	8
J10	2'-00.00	8 1/2" NI-80	1	1
J11	20'-00.00	9 1/2" NI-80	1	27
J12	20'-00.00	9 1/2" NI-80	2	8
B21	20'-00.00	VERSALAM-10 2.0E	2	2
B11	15'-00.00	VERSALAM-10 2.0E	2	2
B20	14'-00.00	VERSALAM-10 2.0E	1	1
B12	11'-00.00	VERSALAM-10 2.0E	1	1
B15	11'-00.00	VERSALAM-10 2.0E	1	2
B10	10'-00.00	VERSALAM-10 2.0E	1	1
B13	4'-00.00	VERSALAM-10 2.0E	1	1
B14	4'-00.00	VERSALAM-10 2.0E	1	1

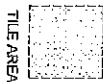
9 1/2" BLOCKING 60 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 6/8" NAILED & GULDED
RIMBOARD
1-1/8" X 9 1/2" O.S.B

FANGERS SCHEDULE

H1-----L 17269
H2-----L 17369
H3-----HUS1.81/10



TILE AREA

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

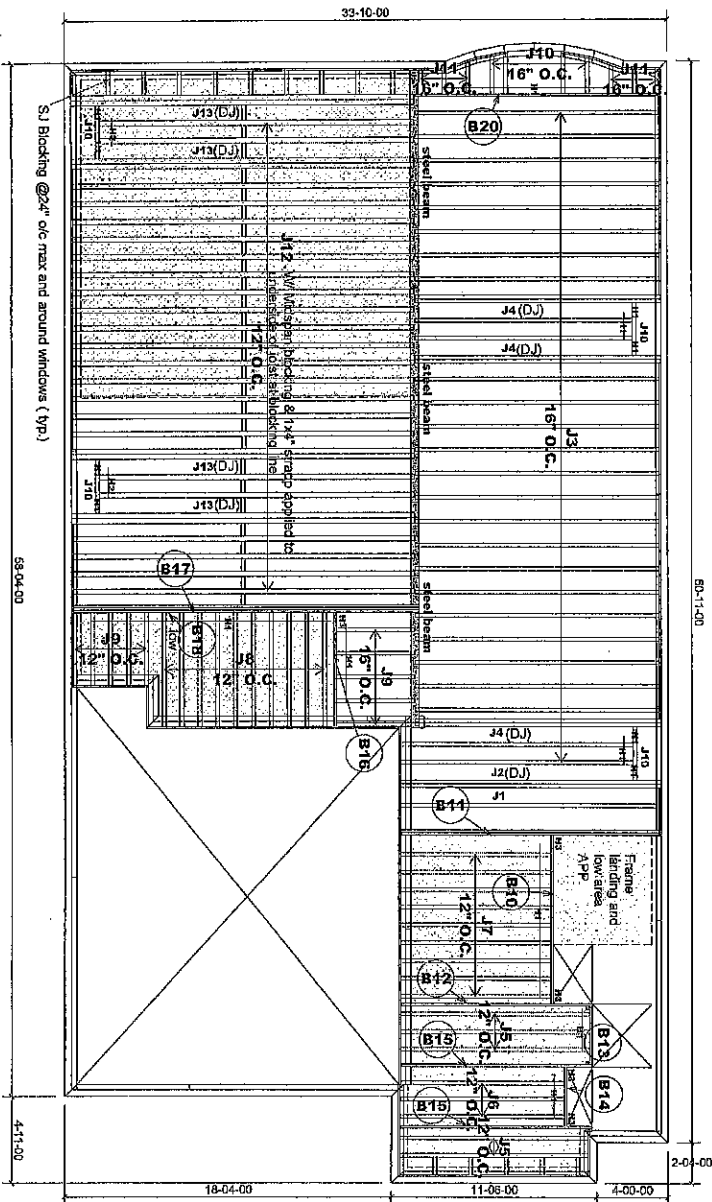
JT: 40297/79/12
File: 253/87 (5)

Builder: Gold Park Homes
Project: Huntington & Nashville

Location: Kleinburg
Date: May 01/15

Designer: LA
Sheet: 5 of 16

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



REVISION			
NO.	DATE	BY	APP.
1.	April 1985	BSB	

MODEL: 42.5
ELEVATION A & B
STANDARD GROUND FLOOR
WISJUNKEN WUDROOM
W/ OPT. LOGGIA

FIRST FLOOR FRAMING

OFFICE USE ONLY
ENGINEERED FROM
S-

Do not scale - refer to architectural plans for dimensions

Products			
ProductID	Length	Product	Net Qty
J1	15'-00"-00	9 1/2" N-20	1
J2	15'-00"-00	9 1/2" N-20	2
J3	14'-00"-00	9 1/2" N-20	1
J4	14'-00"-00	9 1/2" N-20	2
J5	11'-00"-00	9 1/2" N-20	5
J6	10'-00"-00	9 1/2" N-20	3
J7	9'-00"-00	9 1/2" N-20	1
J8	7'-00"-00	9 1/2" N-20	1
J9	5'-00"-00	9 1/2" N-20	1
J10	3'-00"-00	9 1/2" N-20	1
J11	2'-00"-00	9 1/2" N-20	1
J12	20'-00"-00	9 1/2" N-80	1
J13	20'-00"-00	9 1/2" N-80	2
B17	20'-00"-00	VERSALAM-10 2.0E	3
B11	15'-00"-00	VERSALAM-10 2.0E	2
B18	15'-00"-00	VERSALAM-10 2.0E	2
B20	14'-00"-00	VERSALAM-10 2.0E	1
B12	11'-00"-00	VERSALAM-10 2.0E	1
B15	11'-00"-00	VERSALAM-10 2.0E	2
B10	10'-00"-00	VERSALAM-10 2.0E	1
B16	7'-00"-00	VERSALAM-10 2.0E	1
B13	4'-00"-00	VERSALAM-10 2.0E	1
B14	4'-00"-00	VERSALAM-10 2.0E	1

9 1/2" BLOCKING 50 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

FRANGERS SCHEDULE

H1-1 T259

H2-1 T359

H3-1 HUST 81710

TILE AREA

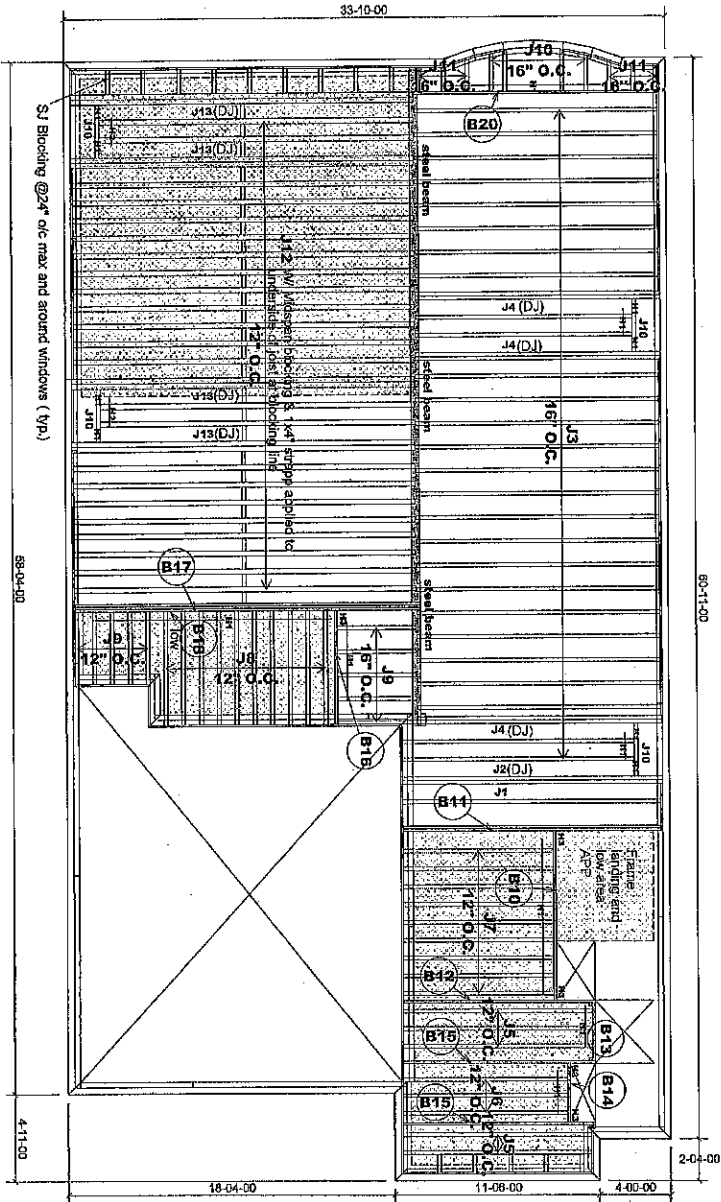
1-2x6 SPP#2 Squash Block req'd on one side of joists under interior load bearing wall
Multiple squash blocks are required under concentrated loads
Joists spacing under ceramic tile is 12" o/c
Ceramic tiles application is as per O.B.C. 9.30.6

JT: 40297/79712
File: 253787 (6) Project: Huntington & Nashville

Builder: Gold Park Homes
Location: Kleinburg
Date: May 01/15

Designer: LA
Sheet: 6 of 16

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



MODEL : 42.5
ELEVATION A & B
OPT. GROUND FLOOR
W/ SUNKEN BUDROOM
W/ OPT. LOGGIA

FIRST FLOOR FRAMING

NO.	REVISION	DATE	FL NO.
1.	As per 12/16	6/24	
2.	Nov 15/16		

Do not scale - refer to architectural plans for dimensions

OFFICE USE ONLY
ENGINEERED FROM
\$

ProductID	Length	Product	Pieces	Net Qty
J1	15-00-00	9 1/2" NL-20	1	1
J2	15-00-00	9 1/2" NL-20	2	2
J3	14-00-00	9 1/2" NL-20	1	27
J4	14-00-00	9 1/2" NL-20	2	6
J5	11-00-00	9 1/2" NL-20	1	5
J6	10-00-00	9 1/2" NL-20	1	3
J7	9-00-00	9 1/2" NL-20	1	9
J8	7-00-00	9 1/2" NL-20	1	10
J9	5-00-00	9 1/2" NL-20	1	10
J10	3-00-00	9 1/2" NL-20	1	8
J11	2-00-00	9 1/2" NL-20	1	6
J12	20-00-00	9 1/2" NL-80	1	23
J13	20-00-00	9 1/2" NL-80	2	8
B17	20-00-00	VERSALAM-10.2.0E	3	3
B11	20-00-00	VERSALAM-10.2.0E	2	2
B18	15-00-00	VERSALAM-10.2.0E	1	1
B20	14-00-00	VERSALAM-10.2.0E	1	1
B12	11-00-00	VERSALAM-10.2.0E	1	2
B15	11-00-00	VERSALAM-10.2.0E	1	1
B10	10-00-00	VERSALAM-10.2.0E	1	1
B16	7-00-00	VERSALAM-10.2.0E	1	1
B13	4-00-00	VERSALAM-10.2.0E	1	1
B14	4-00-00	VERSALAM-10.2.0E	1	1

9 1/2" BLOCKING 60 LF
APP - AS PER PLAN
BSO - BEAM BY OTHERS

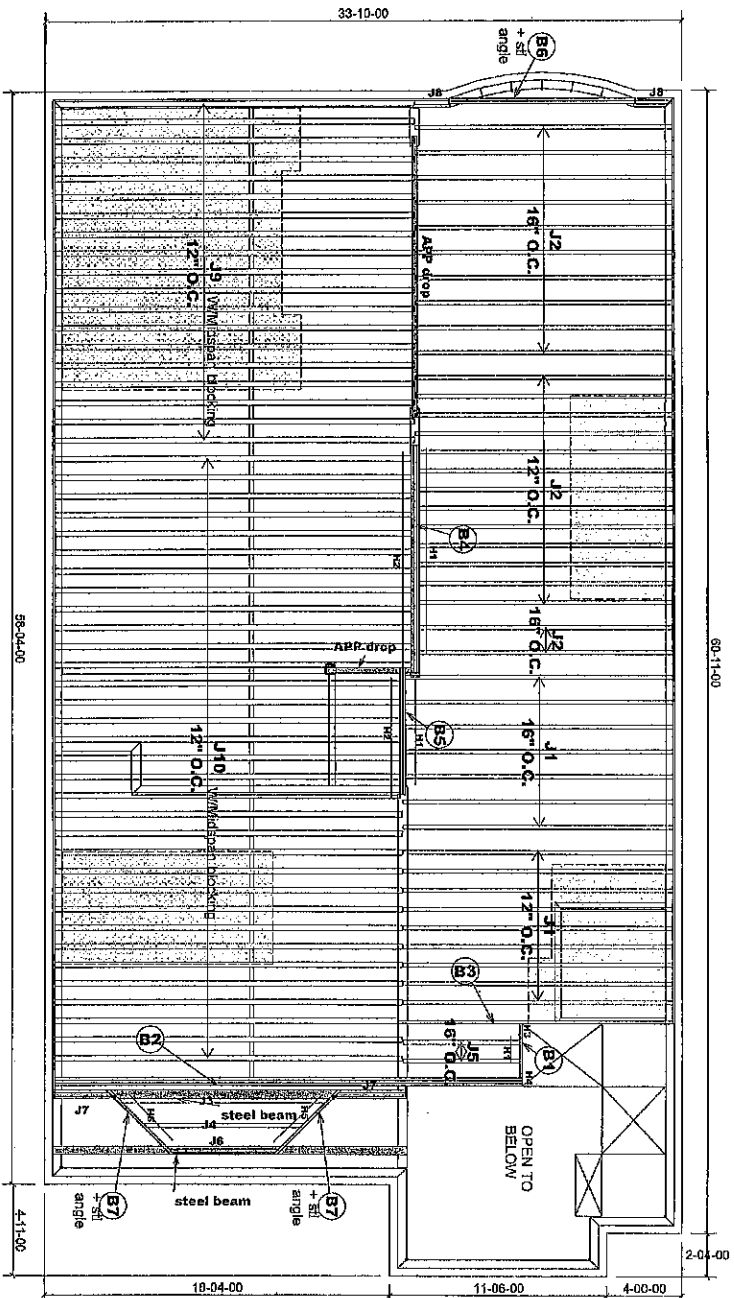
SUBFLOOR - 5/8" NAILED & GLUED
RIMBOARD
1-1/8" X 9 1/2" O.S.B

FRANGERS SCHEDULE

H1	LT259
H2	LT359
H3	HUST1.61/10

TILE AREA

T-2x6 SPS#42 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



MODEL: 42-5
ELEVATION A
STANDARD GROUND FLOOR
STANDARD SECOND FLOOR

REVISION			
NO	DATE	BY	CHK
1.	April 1975	859/2	

SECOND FLOOR FRAMING

Do not scale - refer to architectural plans for dimensions

Products			
PlotID	Length	Product	Plies Net Qty
J1	15-00-00	9 1/2" NI-20	1 16
J2	14-00-00	9 1/2" NI-20	1 25
J3	12-00-00	9 1/2" NI-20	1 1
J4	9-00-00	9 1/2" NI-20	1 1
J5	7-00-00	9 1/2" NI-20	1 2
J6	6-00-00	9 1/2" NI-20	1 1
J7	4-00-00	9 1/2" NI-20	1 2
J8	2-00-00	9 1/2" NI-20	1 2
J9	20-00-00	9 1/2" NI-80	1 19
J10	19-00-00	9 1/2" NI-80	1 33
B2	25-00-00	VERSALAM-10 2.0E	3 3
B3	15-00-00	VERSALAM-10 2.0E	1 1
B4	13-00-00	VERSALAM-10 2.0E	3 3
B6	10-00-00	VERSALAM-10 2.0E	2 2
B5	7-00-00	VERSALAM-10 2.0E	2 2
B7	6-00-00	VERSALAM-10 2.0E	2 2
B1	3-00-00	VERSALAM-10 2.0E	1 1

9 1/2" BLOCKING 54 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

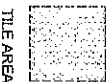
SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

HANGERS SCHEDULE

H1	LT259
H2	LT359
H3	HUST 81/10
H4	HUGX
H5	LSUH310



TILE AREA

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

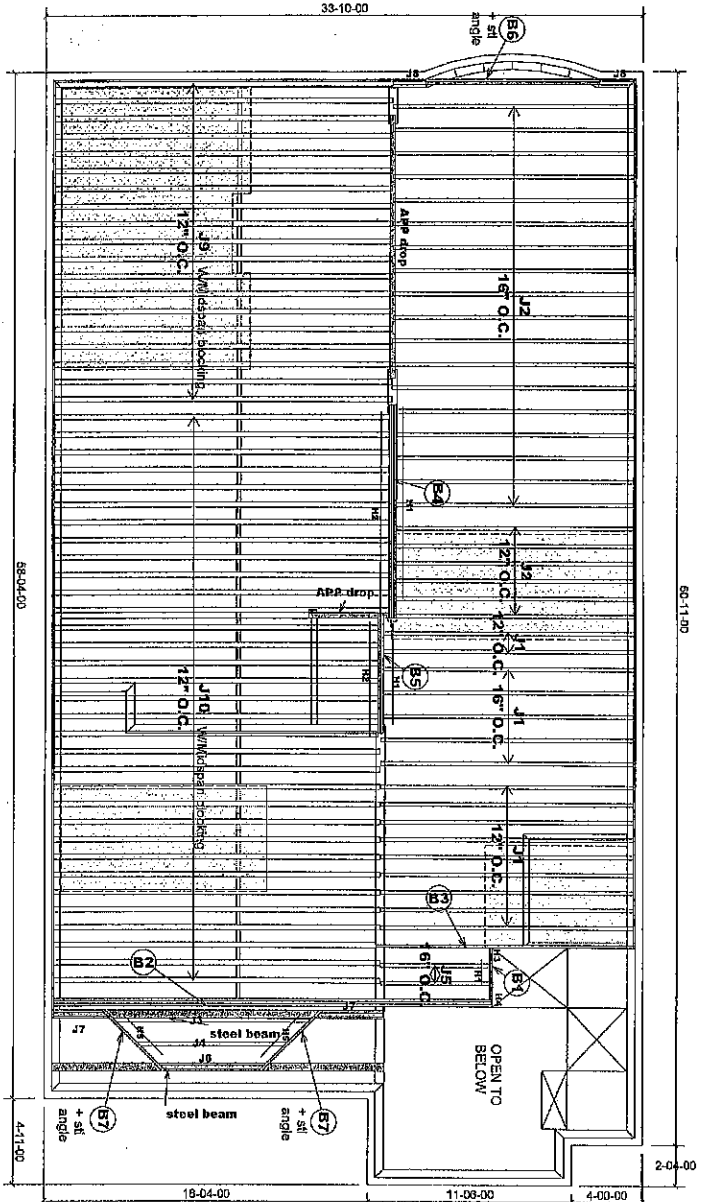
Ceramic tiles application is as per O.B.C. 9.30.6

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

JT: 40297/79712
File: 253787 (1)
Builder: Gold Park Homes
Project: Huntingdon & Nashville
Location: Kleinburg
Date: May 01/15

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

Sheet: 9 of 16



Product	Piles	Net Qty
J1 15'-00-00 9 1/2" NI-20	1	18
J2 14'-00-00 9 1/2" NI-20	1	24
J3 12'-00-00 9 1/2" NI-20	1	1
J4 9'-00-00 9 1/2" NI-20	1	1
J5 7'-00-00 9 1/2" NI-20	1	2
J6 6'-00-00 9 1/2" NI-20	1	1
J7 4'-00-00 9 1/2" NI-20	1	2
J8 2'-00-00 9 1/2" NI-20	1	2
J9 20'-00-00 9 1/2" NI-50	1	19
J10 19'-00-00 9 1/2" NI-50	1	33
B2 25'-00-00 VERSALAM-10 2.0E	3	3
B3 16'-00-00 VERSALAM-10 2.0E	1	1
B4 13'-00-00 VERSALAM-10 2.0E	3	3
B5 10'-00-00 VERSALAM-10 2.0E	2	2
B6 7'-00-00 VERSALAM-10 2.0E	2	2
B7 6'-00-00 VERSALAM-10 2.0E	1	2
B1 3'-00-00 VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING 54 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

HANGERS SCHEDULE

H1	L17269
H2	L17359
H3	HUS1.8/1.10
H4	HUGX
H5	LSSUH310



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. § 30.5

Provide (-) Joint Blocking between cantilevered (-) Joist (along bearing) and rimboard closure at ends

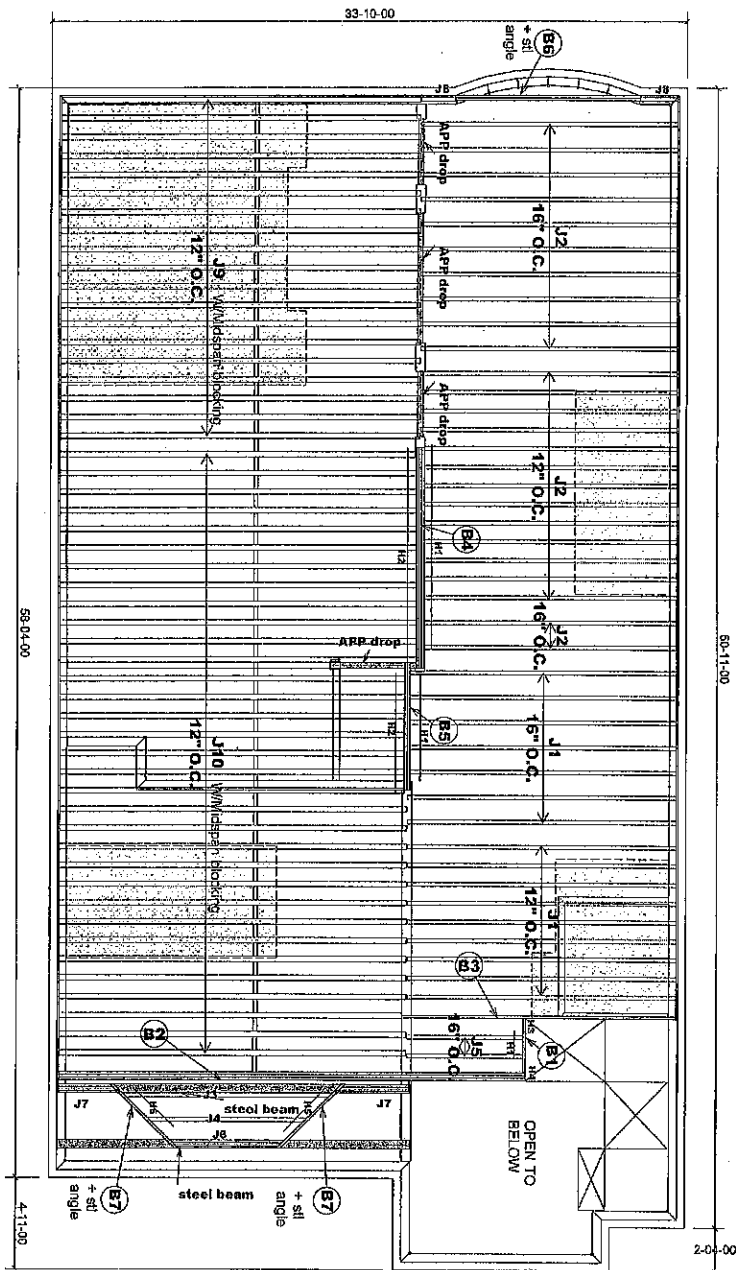
SECOND FLOOR FRAMING

MODEL : 42-5
ELEVATION A
STANDARD GROUND FLOOR
OPT. SECOND FLOOR W/5 BEDROOM

NO	DATE	PL. NO.
1.	April 19/15	82874

Do not scale - refer to architectural plans for dimensions

JT: 40297/79712 Builder: Gold Park Homes Location: Kleinburg Designer: LA
File: 253787 (2) Project: Huntington & Nashville Date: May 01/15 Sheet: 10 of 16
Alpa Roof Trusses Inc. Salesperson: Derek
Maple, Ontario Home Lumber



MODEL : 42-5
ELEVATION A
OPT. GROUND FLOOR
STANDARD SECOND FLOOR

REVISION			
NO	DATE	FL. NO.	
1.	APR 1986	SS87A	

SECOND FLOOR FRAMING

Do not scale - refer to architectural plans for dimensions

Products			
ProdID	Length	Product	Piles Net Qty
J1	15-00-00	9 1/2" NI-20	1 16
J2	14-00-00	9 1/2" NI-20	1 25
J3	12-00-00	9 1/2" NI-20	1 1
J4	9-00-00	9 1/2" NI-20	1 1
J5	7-00-00	9 1/2" NI-20	1 2
J6	6-00-00	9 1/2" NI-20	1 1
J7	4-00-00	9 1/2" NI-20	1 2
J8	2-00-00	9 1/2" NI-20	1 19
J9	20-00-00	9 1/2" NI-80	1 33
J10	19-00-00	9 1/2" NI-80	1 3
B2	25-00-00	VERSALAM-10 2.0E	3 3
B3	15-00-00	VERSALAM-10 2.0E	1 1
B4	12-00-00	VERSALAM-10 2.0E	3 3
B6	10-00-00	VERSALAM-10 2.0E	2 2
B5	7-00-00	VERSALAM-10 2.0E	2 2
B7	6-00-00	VERSALAM-10 2.0E	2 2
B1	3-00-00	VERSALAM-10 2.0E	1 1

9 1/2" BLOCKING 54 LF

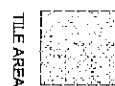
APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

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

HANGERS SCHEDULE

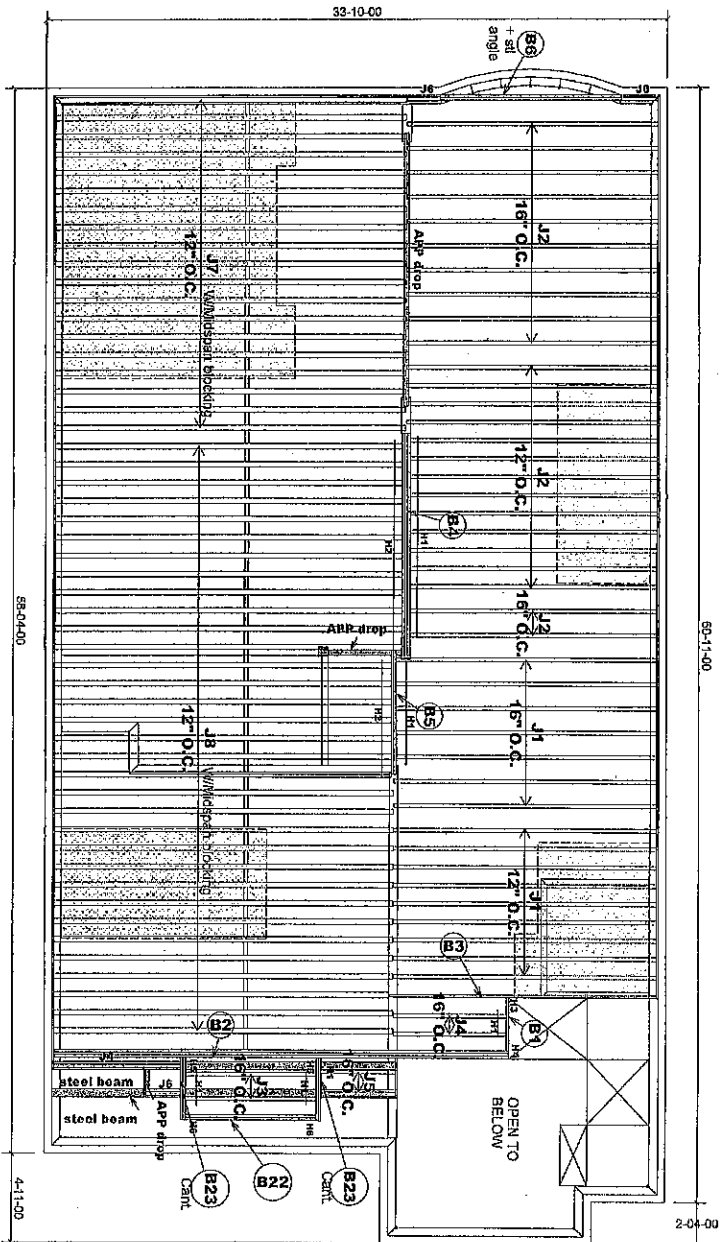
H1	1-T2B9
H2	1-T3B9
H3	HUS1.81/10
H4	HUS1.81/9X
H5	1-SUJH310



TILE AREA

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
Provide I-joist Blocking between cantilevered I-joist (along bearing) and rimboard closure at ends

JT: 40297/79712 Builder: Gold Park Homes Location: Kleinburg Designer: LA Alpha Roof Trusses Inc. Salesperson: Derek
File: 253787 (3) Project: Huntington & Nashville Date: May 07/15 Sheet: 11 of 16 Maple, Ontario Home Lumber



MODEL : 42-5
ELEVATION B
STANDARD GROUND FLOOR
STANDARD SECOND FLOOR

SECOND FLOOR FRAMING

NO.	DATE	PL. NO.
1.	April 1976	5574

Do not scale - refer to architectural plans for dimensions

Product	Length	Product	Piles	Net Qty
J1	15-00-00	9 1/2" N-20	1	16
J2	14-00-00	9 1/2" N-20	1	25
J3	8-00-00	9 1/2" N-20	1	2
J4	7-00-00	9 1/2" N-20	1	3
J5	5-00-00	9 1/2" N-20	1	2
J6	2-00-00	9 1/2" N-20	1	3
J7	20-00-00	9 1/2" N-80	1	19
J8	19-00-00	9 1/2" N-80	1	38
B2	25-00-00	VERSALAM-10 2.0E	3	3
B3	15-00-00	VERSALAM-10 2.0E	1	1
B4	13-00-00	VERSALAM-10 2.0E	3	3
B6	10-00-00	VERSALAM-10 2.0E	2	2
B22	8-00-00	VERSALAM-10 2.0E	2	2
B5	7-00-00	VERSALAM-10 2.0E	2	2
B23	4-00-00	VERSALAM-10 2.0E	2	4
B1	3-00-00	VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING \$4 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

FRANGERS SCHEDULE

H1	LT269
H2	LT369
H3	HUST 81/10
H4	HUGX
H5	HGUS410
H6	HUC410



TILE AREA

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

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

Provide I-Joist blocking between cantilevered I-Joist (along bearing) and rimboard closure at ends

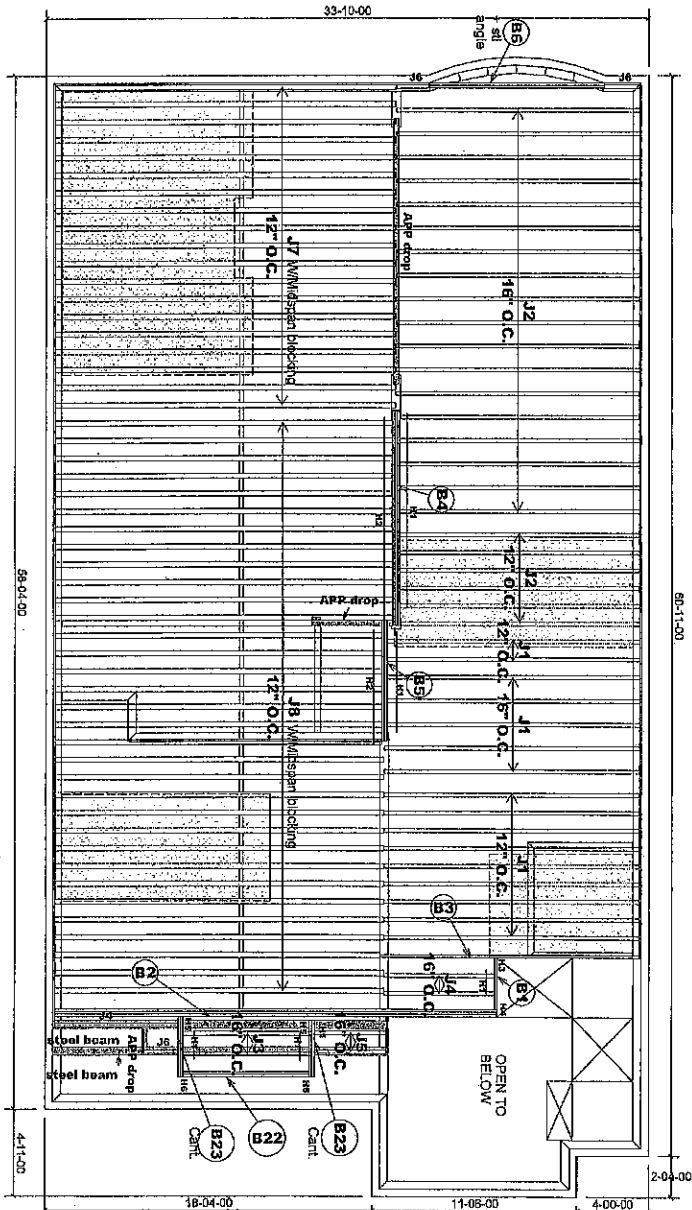
JT: 40297/79/12
File: 253787 (5)

Builder: Gold Park Homes
Project: Huntington & Nashville

Location: Kleinburg
Date: May 01/15

Designer: LA
Sheet 13 of 16

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



MODEL : 42-5
ELEVATION 8
STANDARD GROUND FLOOR
OPT. SECOND FLOOR W/5 BEDROOM

NO.	DATE	PL. NO.
1.	April 1976	88974

SECOND FLOOR FRAMING

Do not scale - refer to architectural plans for dimensions

Product	Length	Product	Pieces	Net Qty
J1	15'-00-00	9 1/2" N-20	1	16
J2	14'-00-00	9 1/2" N-20	1	24
J3	8'-00-00	9 1/2" N-20	1	2
J4	7'-00-00	9 1/2" N-20	1	3
J5	5'-00-00	9 1/2" N-20	1	2
J6	2'-00-00	9 1/2" N-20	1	3
J7	20'-00-00	9 1/2" N-80	1	19
J8	19'-00-00	9 1/2" N-80	1	33
B2	25'-00-00	VERSALAM-10 2.0E	3	1
B3	15'-00-00	VERSALAM-10 2.0E	1	3
B4	13'-00-00	VERSALAM-10 2.0E	3	2
B6	10'-00-00	VERSALAM-10 2.0E	2	2
B22	8'-00-00	VERSALAM-10 2.0E	2	2
B5	7'-00-00	VERSALAM-10 2.0E	2	2
B23	4'-00-00	VERSALAM-10 2.0E	2	4
B1	3'-00-00	VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING 54 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

FINGERS SCHEDULE

H1	L 1259
H2	L 7359
H3	HUS1, 84/10
H4	HUSX
H5	HGUS410
H6	HUC410



TILE AREA

7-2x6 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. 9.30.8

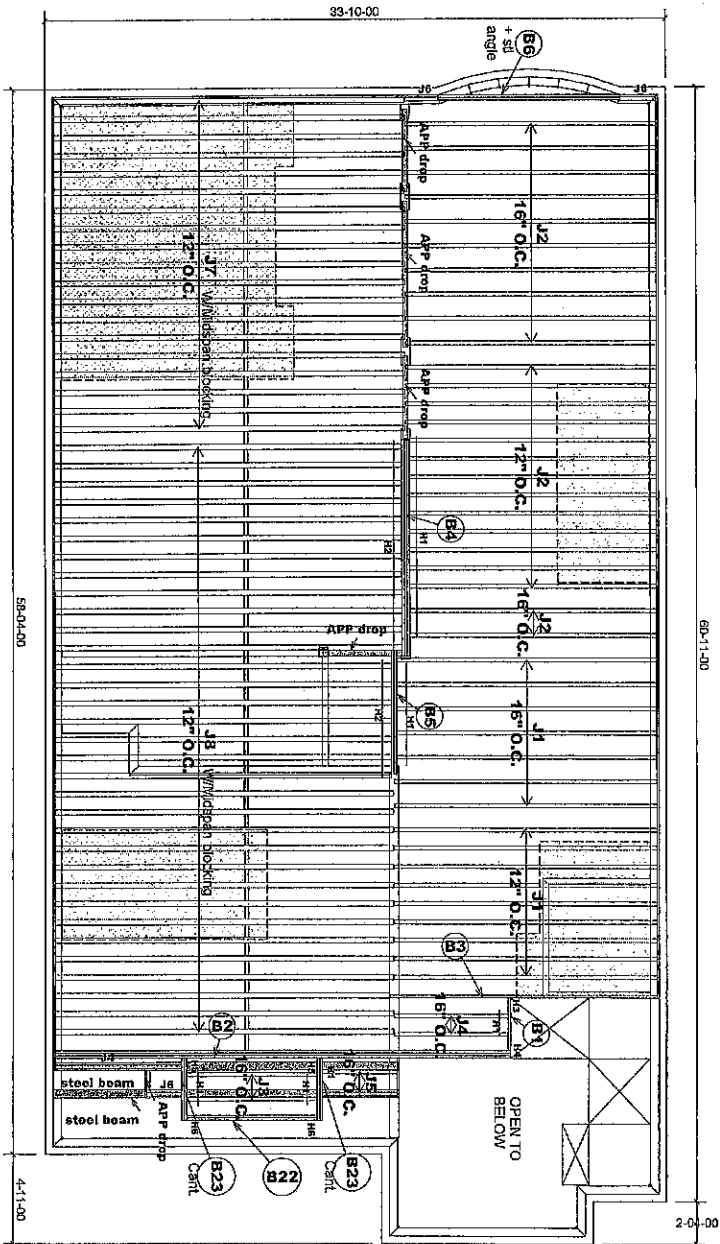
Provide 1x10" Blocking between cantilevered joist (along bearing) and rimboard closure at ends

JT: 40297179712
File: 253787 (6) Project: Huntington & Nashville

Builder: Gold Park Homes
Location: Kleinburg
Date: May 01/15

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

Sheet: 14 of 16



MODEL: 42-5
ELEVATION B
OPT. GROUND FLOOR
STANDARD SECOND FLOOR

REVISION		
NO.	DATE	PL. NO.
1.	April 1976	5574

SECOND FLOOR FRAMING

Do not scale - refer to architectural plans for dimensions

Product	Piles	Net Qty
J1 15'-00-00 9 1/2" NL-20	1	16
J2 14'-00-00 9 1/2" NL-20	1	25
J3 8'-00-00 9 1/2" NL-20	1	2
J4 7'-00-00 9 1/2" NL-20	1	3
J5 5'-00-00 9 1/2" NL-20	1	2
J6 2'-00-00 9 1/2" NL-20	1	3
J7 20'-00-00 9 1/2" NL-80	1	19
J8 19'-00-00 9 1/2" NL-80	1	33
B2 25'-00-00 VERSALAM-10 2.0E	3	3
B3 15'-00-00 VERSALAM-10 2.0E	1	1
B4 12'-00-00 VERSALAM-10 2.0E	3	3
B5 10'-00-00 VERSALAM-10 2.0E	2	2
B22 8'-00-00 VERSALAM-10 2.0E	2	2
B5 7'-00-00 VERSALAM-10 2.0E	2	2
B23 4'-00-00 VERSALAM-10 2.0E	2	4
B1 3'-00-00 VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING \$4 LF

APP - AS PER PLAN
SBO - BEAM BY OTHERS

SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

HANGERS SCHEDULE

H1	1T259
H2	1T359
H3	HUS1.81/10
H4	HUGX
H5	HGUS410
H6	HUC410



TILE AREA

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

Provide 1-joist Blocking between cantilevered 1-joist (along bearing) and rimboard closure at ends

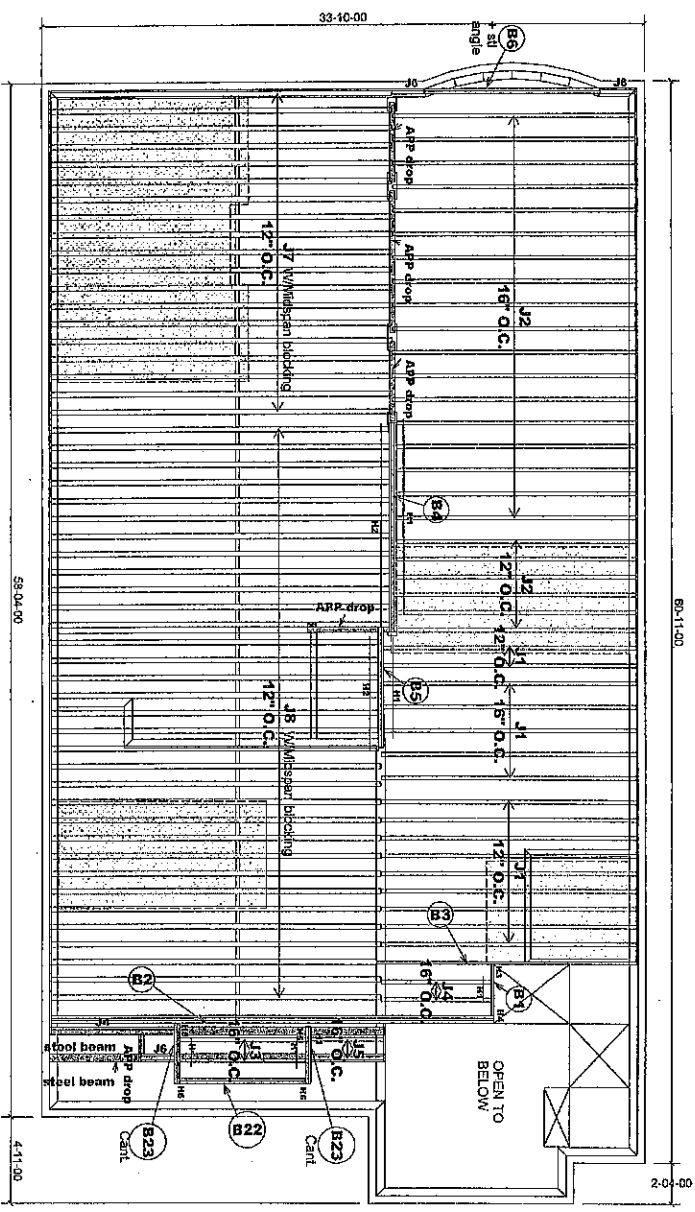
JT: 40297/79712
File: 253787 (7)

Builder: Gold Park Homes
Project: Huntington & Nashville

Location: Kleinburg
Date: May 01/15

Designer: LA
Sheet: 15 of 16

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



MODEL : 425
ELEVATION B
OPT. GROUND FLOOR
OPT. SECOND FLOOR W/5 BEDROOM

SECOND FLOOR FRAMING

NO	DATE	PL. NO.
1.	April 1976	887X

Do not scale - refer to architectural plans for dimensions

Product	Length	Product	Piles	Nat Qty
J1	15'-00-00	9 1/2" N-20	1	16
J2	14'-00-00	9 1/2" N-20	1	24
J3	8'-00-00	9 1/2" N-20	1	2
J4	7'-00-00	9 1/2" N-20	1	3
J5	6'-00-00	9 1/2" N-20	1	2
J6	2'-00-00	9 1/2" N-20	1	3
J7	20'-00-00	9 1/2" N-80	1	19
J8	19'-00-00	9 1/2" N-80	1	33
B2	25'-00-00	VERSALAM-10 2.0E	3	1
B3	15'-00-00	VERSALAM-10 2.0E	1	3
B4	12'-00-00	VERSALAM-10 2.0E	3	3
B6	10'-00-00	VERSALAM-10 2.0E	2	2
B22	8'-00-00	VERSALAM-10 2.0E	2	2
B5	7'-00-00	VERSALAM-10 2.0E	2	2
B3	4'-00-00	VERSALAM-10 2.0E	2	4
B1	3'-00-00	VERSALAM-10 2.0E	1	1

9 1/2" BLOCKING 54 LF

APP - AS PER PLAN
BBO - BEAM BY OTHERS

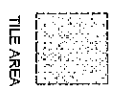
SUBFLOOR - 5/8" NAILED & GLUED

RIMBOARD

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

FANGERS SCHEDULE

H1	1-7289
H2	1-7289
H3	HUS1, 8/1/10
H4	HUSX
H5	HUS410
H6	HUS410



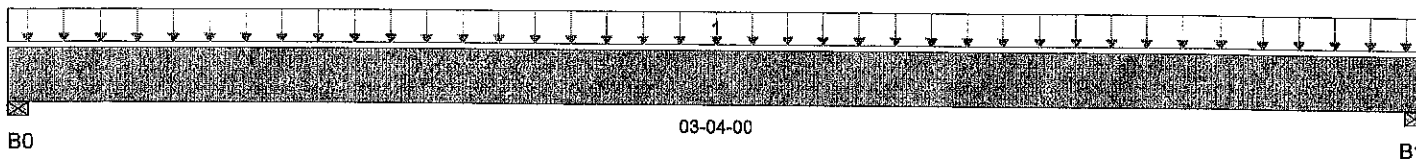
TILE AREA

1-2x6 SPT-42 Squash Block nail 6 on one side of joist 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
Provide 1" Joist Blocking between cantilevered Joist (along bearing) and rimboard closure at ends

JT: 40297/79712 Builder: Gold Park Homes Location: Kleinburg Designer: LA Salesperson: Derek
File: 253787 (8) Project: Huntington & Nashville Date: May 01/15 Sheet: 16 of 16 Maple, Ontario Home Lumber

Build 3272
 Job Name: 40297
 Address: Huntington & Nashville
 City, Province, Postal Code: Kleinburg, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 253787.bcc
 Description: Designs\01
 Specifier: 42-5
 Designer: LA
 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"	344 / 0	137 / 0		
B1, 3-1/2"	344 / 0	137 / 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	03-04-00	40	15	1.00	1.15	05-02-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	427 ft-lbs	12,704 ft-lbs	0.03	1	01-08-00
End Shear	241 lbs	5,785 lbs	0.04	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-08-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-08-00
Max Defl.	0.002"	n/a	n/a	4	01-08-00
Span / Depth	3.6	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	688 lbs	0.18	0.09	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	688 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
 @ 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. In BC, CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.





Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

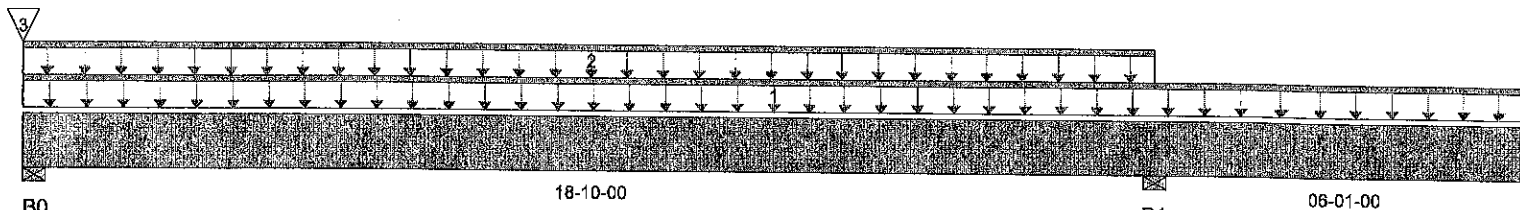
Description: Designs\02

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



Total Horizontal Product Length = 24-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	859 / 27	441 / 0		
B1, 3-1/2"	693 / 0	493 / 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	24-11-00	27	10			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	18-10-00	27	10			n/a
3		Conc. Pt. (lbs)	R	24-11-00	24-11-00	344	137			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,088 ft-lbs	39,636 ft-lbs	0.13	2	09-02-12
Neg. Moment	-1,315 ft-lbs	-39,636 ft-lbs	0.03	1	18-10-00
End Shear	1,018 lbs	17,356 lbs	0.06	2	01-01-00
Cont. Shear	1,108 lbs	17,356 lbs	0.06	1	17-10-12
Total Load Defl.	L/756 (0.295")	0.93"	0.32	9	09-05-14
Live Load Defl.	2xL/719 (-0.203")	-0.406"	0.5	12	24-11-00
Total Neg. Defl.	2xL/515 (-0.284")	-0.608"	0.47	9	24-11-00
Max Defl.	0.295"	1"	0.3	9	09-05-14
Cant. Max Defl.	-0.284"	-1"	0.28	9	24-11-00
Span / Depth	23.5	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 5-1/4"	1,839 lbs	0.16	0.08	Spruce Pine Fir	
B1	Wall/Plate	3-1/2" x 5-1/4"	1,657 lbs	0.15	0.07	Spruce Pine Fir	

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets User specified (2xL/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets arbitrary (1") Cantilever 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" SPACED NAILS @ 12" O.C..
 Page 1 of 2 STRUTTED IN 2 ROWS

S.129652

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: 253787.bcc

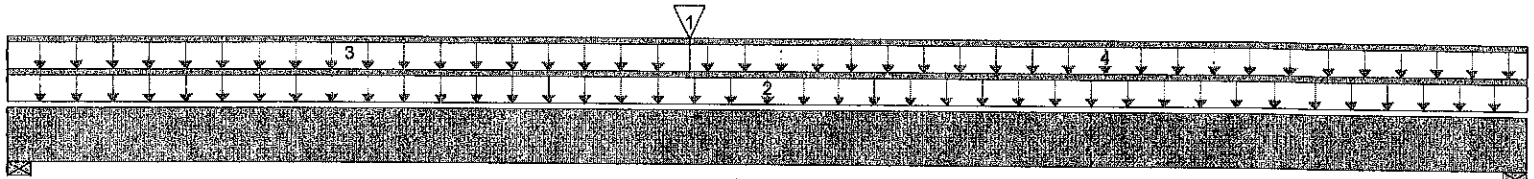
Description: Designs\03

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



B0 14-08-00

B1

Total Horizontal Product Length = 14-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	476 / 0	366 / 0		
B1, 3-1/2"	339 / 0	539 / 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	06-07-00	06-07-00	344	137			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	14-08-00	20	10			n/a
3		Unf. Lin. (lb/ft)	L	00-00-00	06-07-00	27	10			n/a
4		Unf. Lin. (lb/ft)	L	06-07-00	14-08-00	0	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,251 ft-lbs	12,704 ft-lbs	0.41	1	06-07-00
End Shear	1,062 lbs	5,785 lbs	0.18	1	01-01-00
Total Load Defl.	L/336 (0.508")	0.71"	0.72	4	07-02-14
Live Load Defl.	L/670 (0.255")	0.474"	0.54	5	07-01-09
Max Defl.	0.508"	1"	0.51	4	07-02-14
Span / Depth	17.9	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"	1,172 lbs	0.31	0.16	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,182 lbs	0.31	0.16	Spruce Pine Fir

Notes

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

User Notes

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

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation. \n\nBC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



BC CALC® Design Report



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

May-05-15

Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

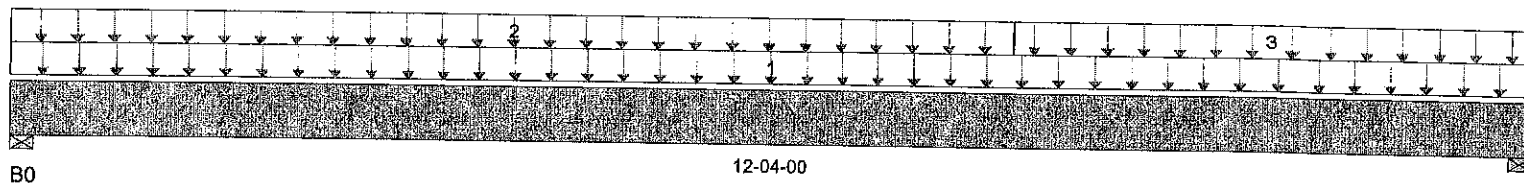
Description: Designs\04

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



B0

12-04-00

B1

Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	4,008 / 0	1,778 / 0		
B1, 3-1/2"	4,008 / 0	1,682 / 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	12-04-00	40	15	1.00	1.15	09-06-00
2		Unf. Area (lb/ft^2)	L	00-00-00	08-02-00	40	20			06-09-00
3		Unf. Area (lb/ft^2)	L	08-02-00	12-04-00	40	15			06-09-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	23,455 ft-lbs	39,636 ft-lbs	0.59	1	06-02-01
End Shear	6,784 lbs	17,356 lbs	0.39	1	01-01-00
Total Load Defl.	L/256 (0.557")	0.594"	0.94	4	06-02-01
Live Load Defl.	L/368 (0.388")	0.396"	0.98	5	06-02-01
Max Defl.	0.557"	1"	0.56	4	06-02-01
Span / Depth	15	n/a	n/a		00-00-00

Bearing Supports

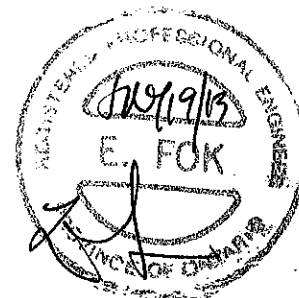
	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 5-1/4"	8,235 lbs	0.73	0.37	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 5-1/4"	8,115 lbs	0.72	0.36	Spruce Pine Fir

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.129654

BC CALC® Design Report



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

May-05-15

Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

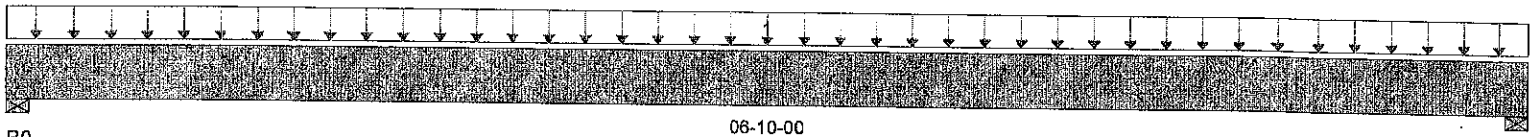
Description: Designs\05

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



B0

06-10-00

B1

Total Horizontal Product Length = 06-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	2,221 / 0	866 / 0		
B1, 3-1/2"	2,221 / 0	866 / 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	06-10-00	40	15	1.00	1.15	16-03-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,562 ft-lbs	25,408 ft-lbs	0.26	1	03-05-00
End Shear	3,014 lbs	11,571 lbs	0.26	1	01-01-00
Total Load Defl.	L/999 (0.067")	n/a	n/a	4	03-05-00
Live Load Defl.	L/999 (0.048")	n/a	n/a	5	03-05-00
Max Defl.	0.067"	n/a	n/a	4	03-05-00
Span / Depth	8.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	4,413 lbs	0.59	0.3	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	4,413 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
 @ 9" O.C., STAGGERED IN TWO ROWS



S. 129655

BC CALC® Design Report



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

May-05-15

Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

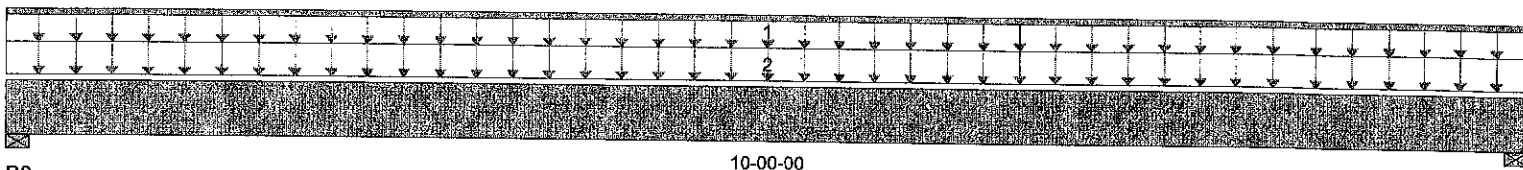
Description: Designs\06

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



Total Horizontal Product Length = 10-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	397 / 0	848 / 0	525 / 0	
B1, 3-1/2"	398 / 0	848 / 0	525 / 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	10-00-00	27	110			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	10-00-00	11	10	21		05-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,658 ft-lbs	25,408 ft-lbs	0.18	5	05-00-00
End Shear	1,603 lbs	11,571 lbs	0.14	5	01-01-00
Total Load Defl.	L/999 (0.113")	n/a	n/a	13	05-00-00
Live Load Defl.	L/999 (0.05")	n/a	n/a	17	05-00-00
Max Defl.	0.113"	n/a	n/a	13	05-00-00
Span / Depth	12.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	2,046 lbs	0.27	0.14	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,046 lbs	0.27	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
 @ 12" O.C., STAGGERED IN TWO ROWS



S.129656

BC CALC® Design Report


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

May-05-15

Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

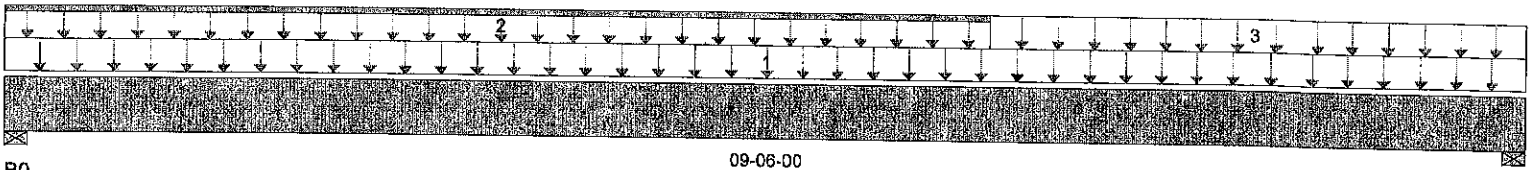
Description: Designs\10

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



Total Horizontal Product Length = 09-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	831 / 0	688 / 0		
B1, 3-1/2"	929 / 0	589 / 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	09-06-00	40	20			04-03-00
2		Unf. Lin. (lb/ft)	L	00-00-00	06-02-00	0	60			n/a
3		Unf. Area (lb/ft ²)	L	06-02-00	09-06-00	40	15			01-01-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,544 ft-lbs	12,704 ft-lbs	0.36	1	04-08-13
End Shear	1,639 lbs	5,785 lbs	0.28	1	08-05-00
Total Load Defl.	L/564 (0.192")	0.452"	0.43	4	04-08-13
Live Load Defl.	L/999 (0.109")	n/a	n/a	5	04-09-13
Max Defl.	0.192"	1"	0.19	4	04-08-13
Span / Depth	11.4	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.

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

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	2,106 lbs	0.56	0.28	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	2,130 lbs	0.57	0.28	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



S.129657



Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

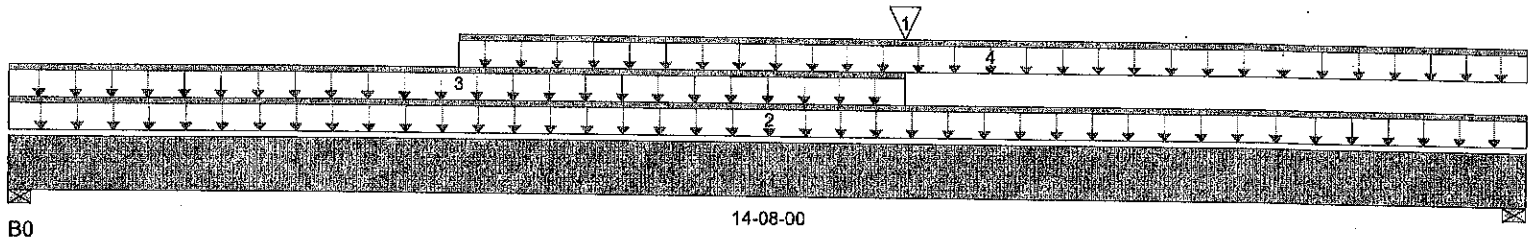
Description: Designs\11

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



Total Horizontal Product Length = 14-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	659 / 0	701 / 0		
B1, 3-1/2"	742 / 0	982 / 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	08-08-00	08-08-00	831	688			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	14-08-00	27	10			n/a
3		Unf. Lin. (lb/ft)	L	00-00-00	08-08-00	20	10			n/a
4		Unf. Lin. (lb/ft)	L	04-04-00	14-08-00	0	60			n/a

Controls Summary

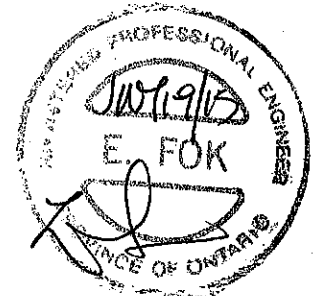
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,985 ft-lbs	25,408 ft-lbs	0.43	1	08-08-00
End Shear	2,188 lbs	11,571 lbs	0.19	1	13-07-00
Total Load Defl.	L/335 (0.509")	0.71"	0.72	4	07-07-00
Live Load Defl.	L/720 (0.237")	0.474"	0.5	5	07-07-00
Max Defl.	0.509"	1"	0.51	4	07-07-00
Span / Depth	17.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,864 lbs	0.25	0.12	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,340 lbs	0.31	0.16	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 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 3/8" SPIRAL NAILS
 @ 12" O.C., STAGGERED IN 2 ROWS

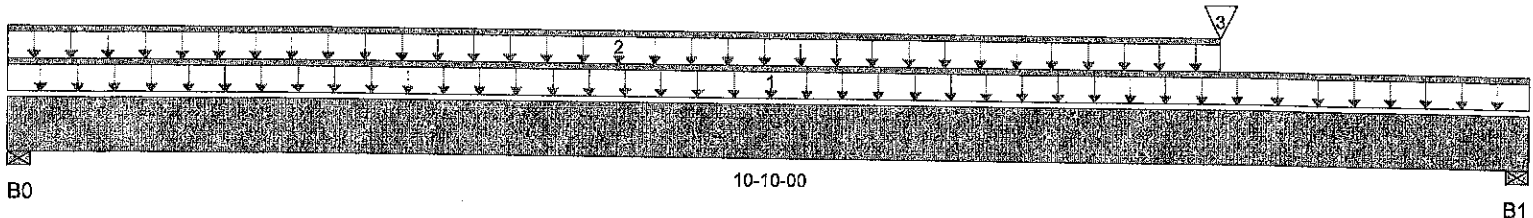


S129658



Build 3272
 Job Name: 40297
 Address: Huntington & Nashville
 City, Province, Postal Code: Kleinburg, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 253787.bcc
 Description: Designs\12
 Specifier: 42-5
 Designer: LA
 Company: ALPA ROOF TRUSSES INC
 Misc:



Total Horizontal Product Length = 10-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	386 / 0	243 / 0		
B1, 3-1/2"	933 / 0	594 / 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	10-10-00	20	10			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	08-08-00	20	10			n/a
3		Conc. Pt. (lbs)	L	08-08-00	08-08-00	929	589			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,034 ft-lbs	12,704 ft-lbs	0.32	1	08-08-00
End Shear	2,088 lbs	5,785 lbs	0.36	1	09-09-00
Total Load Defl.	L/632 (0.197")	0.519"	0.38	4	05-09-14
Live Load Defl.	L/999 (0.121")	n/a	n/a	5	05-09-14
Max Defl.	0.197"	1"	0.2	4	05-09-14
Span / Depth	13.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	Wall/Plate 3-1/2" x 1-3/4"	883 lbs	0.23	0.12	Spruce Pine Fir
B1	Wall/Plate 3-1/2" x 1-3/4"	2,141 lbs	0.57	0.29	Spruce Pine Fir

Notes

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

User Notes

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

Disclosure

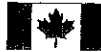
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Dry | 1 span | No cantilevers | 0/12 slope (deg)

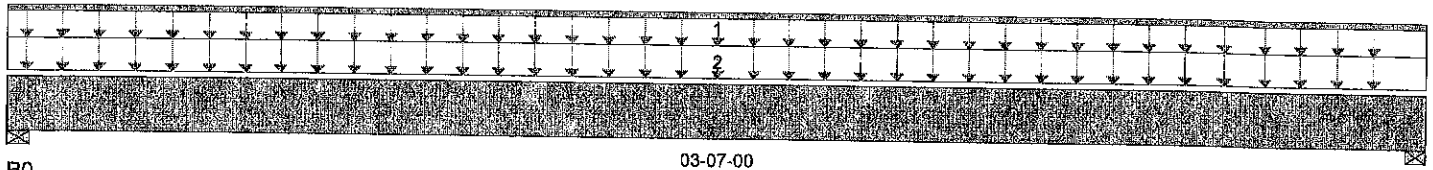
May-05-15

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: 253787.bcc
Description: Designs\13
Specifier: 42-5
Designer: LA
Company: ALPA ROOF TRUSSES INC
Misc:



B0

03-07-00

B1

Total Horizontal Product Length = 03-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	388 / 0	310 / 0		
B1, 3-1/2"	388 / 0	310 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1		Unf. Lin. (lb/ft)	L	00-00-00	03-07-00	0	60			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	03-07-00	40	20			05-05-00

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	661 ft-lbs	12,704 ft-lbs	0.05	1	01-09-08
End Shear	384 lbs	5,785 lbs	0.07	1	01-01-00
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-09-08
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-09-08
Max Defl.	0.003"	n/a	n/a	4	01-09-08
Span / Depth	3.9	n/a	n/a		00-00-00

Disclosure

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

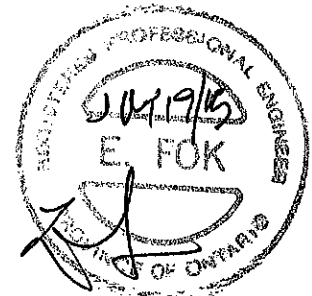
	Support Plate	Dim. (L x W)	Demand	Support	Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	970 lbs	0.26	0.13	Spruce Pine Fir
B1	Wall/Plate	3-1/2" x 1-3/4"	970 lbs	0.26	0.13	Spruce Pine Fir

Notes

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

User Notes

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



S.129660

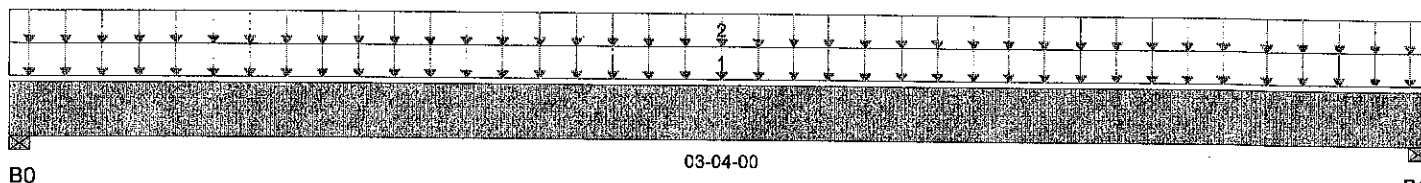
BC CALC® Design Report


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

May-05-15

Build 3272
 Job Name: 40297
 Address: Huntington & Nashville
 City, Province, Postal Code: Kleinburg, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 253787.bcc
 Description: Designs\14
 Specifier: 42-5
 Designer: LA
 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"	361 / 0	183 / 0		
B1, 3-1/2"	361 / 0	183 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Area (lb/ft^2)	L	00-00-00	03-04-00	40	15			00-08-08
2		Unf. Area (lb/ft^2)	L	00-00-00	03-04-00	40	20			04-08-08

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	477 ft-lbs	12,704 ft-lbs	0.04	1	01-08-00
End Shear	270 lbs	5,785 lbs	0.05	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-08-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-08-00
Max Defl.	0.002"	n/a	n/a	4	01-08-00
Span / Depth	3.6	n/a	n/a		00-00-00

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"	770 lbs	0.2	0.1	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	770 lbs	0.2	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

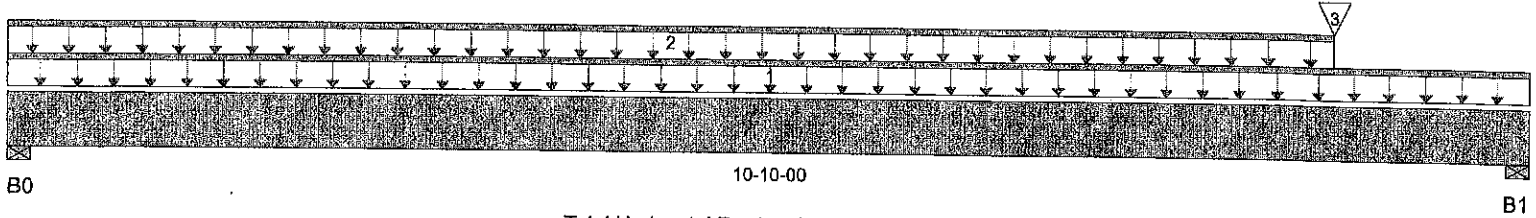
NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ O.C., STAGGERED IN TWO ROWS





Build 3272
 Job Name: 40297
 Address: Huntington & Nashville
 City, Province, Postal Code: Kleinburg, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 253787.bcc
 Description: Designs\15
 Specifier: 42-5
 Designer: LA
 Company: ALPA ROOF TRUSSES INC
 Misc:



Total Horizontal Product Length = 10-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	257 / 0	155 / 0		
B1, 3-1/2"	509 / 0	283 / 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	10-10-00	20	10			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	09-05-00	20	10			n/a
3		Conc. Pt. (lbs)	L	09-05-00	09-05-00	361	183			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,707 ft-lbs	12,704 ft-lbs	0.13	1	06-03-08
End Shear	1,065 lbs	5,785 lbs	0.18	1	09-09-00
Total Load Defl.	L/999 (0.096")	n/a	n/a	4	05-07-11
Live Load Defl.	L/999 (0.061")	n/a	n/a	5	05-07-11
Max Defl.	0.096"	n/a	n/a	4	05-07-11
Span / Depth	13.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	578 lbs	0.15	0.08	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,118 lbs	0.3	0.15	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®, 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.

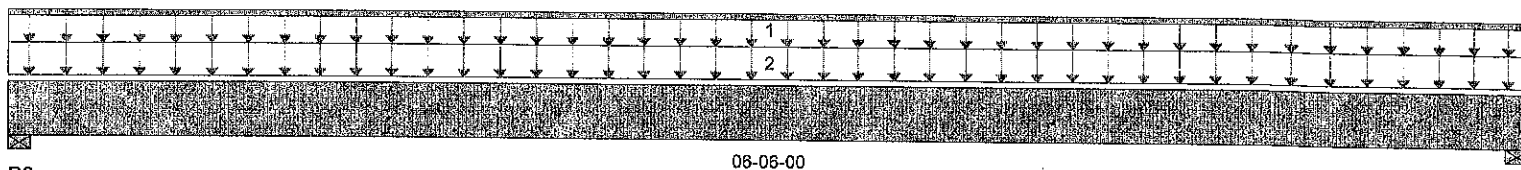


S-129662



Build 3272
 Job Name: 40297
 Address: Huntington & Nashville
 City, Province, Postal Code: Kleinburg, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 253787.bcc
 Description: Designs\16
 Specifier: 42-5
 Designer: LA
 Company: ALPA ROOF TRUSSES INC
 Misc:



B0

06-06-00

B1

Total Horizontal Product Length = 06-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	292 / 0	320 / 0		
B1, 3-1/2"	292 / 0	320 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1		Unf. Lin. (lb/ft)	L	00-00-00	06-06-00	0	60	1.00	1.15	n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	06-06-00	40	15			02-03-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,178 ft-lbs	12,704 ft-lbs	0.09	1	03-03-00
End Shear	559 lbs	5,785 lbs	0.1	1	01-01-00
Total Load Defl.	L/999 (0.023")	n/a	n/a	4	03-03-00
Live Load Defl.	L/999 (0.011")	n/a	n/a	5	03-03-00
Max Defl.	0.023"	n/a	n/a	4	03-03-00
Span / Depth	7.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	839 lbs	0.22	0.11	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	839 lbs	0.22	0.11	Spruce Pine Fir

Notes

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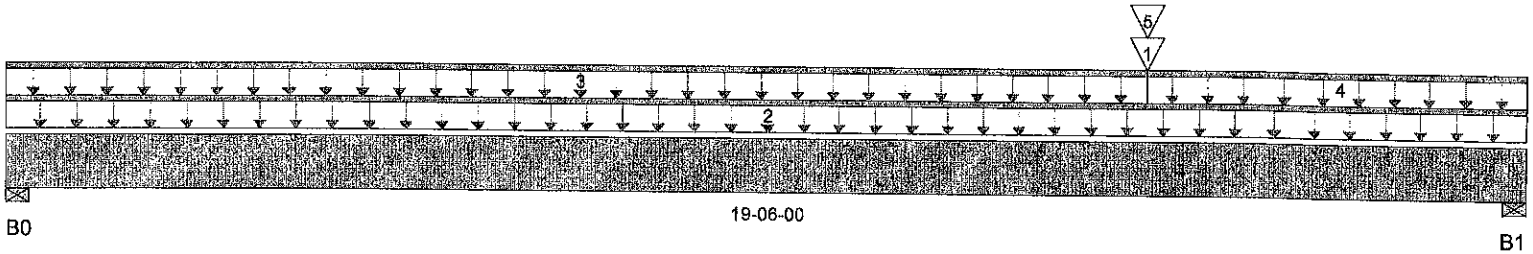


BC CALC® Design Report



Build 3272
Job Name: 40297
Address: Huntington & Nashville
City, Province, Postal Code: Kleinburg, ON
Customer: Gold Park
Code reports: CCMC 12472-R

File Name: 253787.bcc
Description: Designs\17
Specifier: 42-5
Designer: LA
Company: ALPA ROOF TRUSSES INC
Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	386 / 0	920 / 0		
B1, 3-1/2"	862 / 0	999 / 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	14-08-00	14-08-00	292	320			n/a
2		Unf. Lin. (lb/ft)	L	00-00-00	19-06-00	20	10			n/a
3		Unf. Lin. (lb/ft)	L	00-00-00	14-08-00	0	60			n/a
4		Unf. Lin. (lb/ft)	L	14-08-00	19-06-00	27	10			n/a
5		Conc. Pt. (lbs)	L	14-08-00	14-08-00	436	193			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,626 ft-lbs	39,636 ft-lbs	0.27	1	12-09-01
End Shear	2,419 lbs	17,356 lbs	0.14	1	18-05-00
Total Load Defl.	L/338 (0.676")	0.952"	0.71	4	10-02-08
Live Load Defl.	L/891 (0.257")	0.635"	0.4	5	10-07-10
Max Defl.	0.676"	1"	0.68	4	10-02-08
Span / Depth	24.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 5-1/4"	1,287 lbs	0.18	0.09	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 5-1/4"	2,542 lbs	0.22	0.11	Spruce Pine Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
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., STAGGERED IN 2 ROWS



Build 3272

Job Name:

40297

Address:

Huntington & Nashville

City, Province, Postal Code: Kleinburg, ON

Customer:

Gold Park

Code reports:

CCMC 12472-R

File Name: 253787.bcc

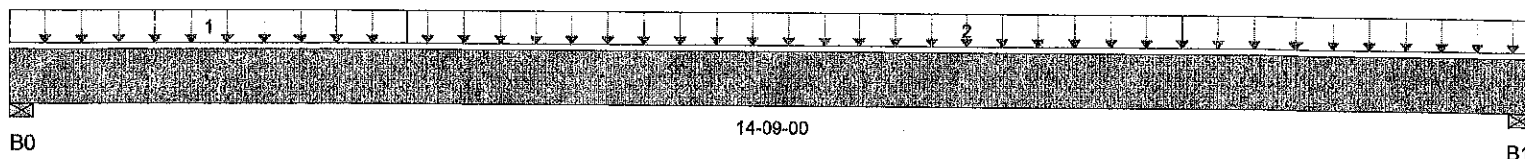
Description: Designs\18

Specifier: 42-5

Designer: LA

Company: ALPA ROOF TRUSSES INC

Misc:



B0

14-09-00

B1

Total Horizontal Product Length = 14-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	776 / 0	459 / 0		
B1, 3-1/2"	913 / 0	527 / 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	03-10-00	40	20			02-00-00
2		Unf. Area (lb/ft ²)	L	03-10-00	14-09-00	40	20			03-02-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,861 ft-lbs	25,408 ft-lbs	0.27	1	07-06-04
End Shear	1,724 lbs	11,571 lbs	0.15	1	13-08-00
Total Load Defl.	L/482 (0.355")	0.715"	0.5	4	07-04-07
Live Load Defl.	L/763 (0.225")	0.476"	0.47	5	07-04-07
Max Defl.	0.355"	1"	0.36	4	07-04-07
Span / Depth	18.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,739 lbs	0.23	0.12	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 3-1/2"	2,029 lbs	0.27	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

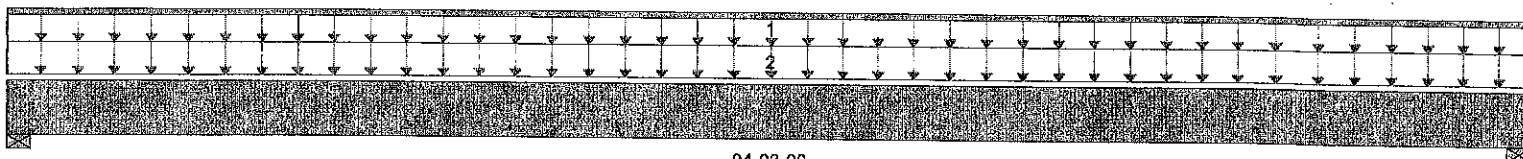
NAIL ONE PLY TO ANOTHER WITH 3 1/2" SPIRAL NAILS
 @ 12" O.C., STAGGERED IN TWO ROWS



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: 253787.bcc
 Description: Designs\19
 Specifier: 42-5
 Designer: LA
 Company: ALPA ROOF TRUSSES INC
 Misc:



B0

04-03-00

B1

Total Horizontal Product Length = 04-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	631 / 0	247 / 0		
B1, 3-1/2"	631 / 0	247 / 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	04-03-00	27	10			n/a
2		Unf. Area (lb/ft^2)	L	00-00-00	04-03-00	40	15			06-09-00

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,061 ft-lbs	12,704 ft-lbs	0.08	1	02-01-08
End Shear	615 lbs	5,785 lbs	0.11	1	01-01-00
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-01-08
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-01-08
Max Defl.	0.008"	n/a	n/a	4	02-01-08
Span / Depth	4.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,255 lbs	0.33	0.17	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,255 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 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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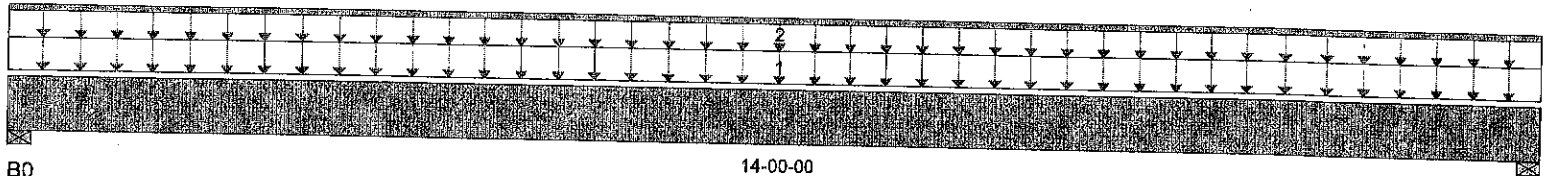
BC CALC® Design Report


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

May-05-15

Build 3272
 Job Name: 40297
 Address: Huntington & Nashville
 City, Province, Postal Code: Kleinburg, ON
 Customer: Gold Park
 Code reports: CCMC 12472-R

File Name: 253787.bcc
 Description: Designs\20
 Specifier: 42-5
 Designer: LA
 Company: ALPA ROOF TRUSSES INC
 Misc:



Total Horizontal Product Length = 14-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	516 / 0	226 / 0		
B1, 3-1/2"	516 / 0	226 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1		Unf. Area (lb/ft^2)	L	00-00-00	14-00-00	40	15			
2		Unf. Lin. (lb/ft)	L	00-00-00	14-00-00	27	10			01-02-00 n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,459 ft-lbs	12,704 ft-lbs	0.27	1	07-00-00
End Shear	893 lbs	5,785 lbs	0.15	1	01-01-00
Total Load Defl.	L/507 (0.321")	0.677"	0.47	4	07-00-00
Live Load Defl.	L/729 (0.223")	0.451"	0.49	5	07-00-00
Max Defl.	0.321"	1"	0.32	4	07-00-00
Span / Depth	17.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	1,056 lbs	0.28	0.14	Spruce Pine Fir
B1 Wall/Plate	3-1/2" x 1-3/4"	1,056 lbs	0.28	0.14	Spruce Pine Fir

Notes

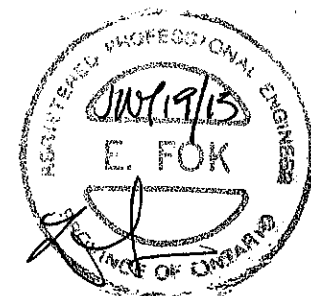
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented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

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

Floor Beam\23

May-06-15

BC CALC® Design Report



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

Build 3272

Job Name:

40297

File Name: 253787.bcc

Description: Designs\23

Address:

Huntington & Nashville

Specifier: 42-5

City, Province, Postal Code: Kleinburg, ON

Designer: LA

Customer:

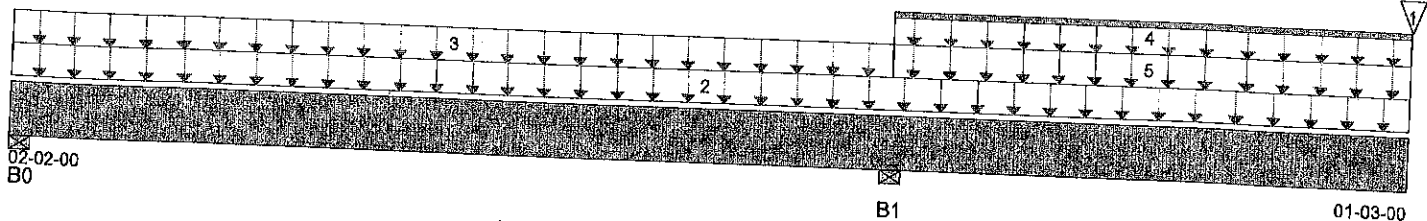
Gold Park

Company: ALPA ROOF TRUSSES INC

Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 03-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	268 / 296	0 / 300	0 / 56	
B1, 3-1/2"	1,068 / 0	1,249 / 0	156 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1		Conc. Pt. (lbs)	L	03-05-00	03-05-00	363	530	74	1.00 1.15	
2		Unf. Area (lb/ft^2)	L	00-00-00	03-05-00	40	15			n/a
3		Unf. Area (lb/ft^2)	L	00-00-00	02-02-00	40	15			03-07-00
4		Unf. Lin. (lb/ft)	L	02-02-00	03-05-00	0	100			02-00-00
5		Unf. Area (lb/ft^2)	L	02-02-00	03-05-00	11	10	21		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1 ft-lbs	n/a	n/a	11	00-03-13
Neg. Moment	-1,913 ft-lbs	-25,408 ft-lbs	0.08	3	02-02-00
End Shear	789 lbs	11,571 lbs	0.07	3	01-01-00
Cont. Shear	1,387 lbs	11,571 lbs	0.12	1	03-01-04
Uplift	847 lbs	n/a	n/a	3	00-00-00
Total Load Defl.	2xL/1,998 (0.006")	n/a	n/a	27	03-05-00
Live Load Defl.	2xL/1,998 (0.003")	n/a	n/a	37	03-05-00
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	27	01-04-04
Max Defl.	-0.001"	n/a	n/a	27	01-04-04
Cant. Max Defl.	0.006"	n/a	n/a	27	03-05-00
Span / Depth	2.4	n/a	n/a		00-00-00

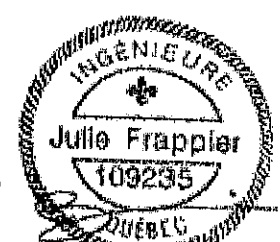
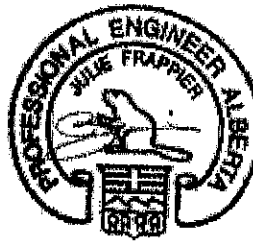
Bearing Supports

Bearing Supports			Demand/Resistance Support	Demand/Resistance Member	Material
	Dim. (L x W)	Demand			
B0	Wall/Plate	3-1/2" x 3-1/2"	847 lbs	0.11	0.06
B1	Wall/Plate	3-1/2" x 3-1/2"	3,241 lbs	0.43	0.22
					Spruce Pine Fir
					Spruce Pine Fir



Notes: NAIL ONG PUT TO ANOTHER WITH 3/8" SPIRAL NAILS
 User Notes: @12" O.C., STRENGTHENED IN 2 ROWS

S-129670



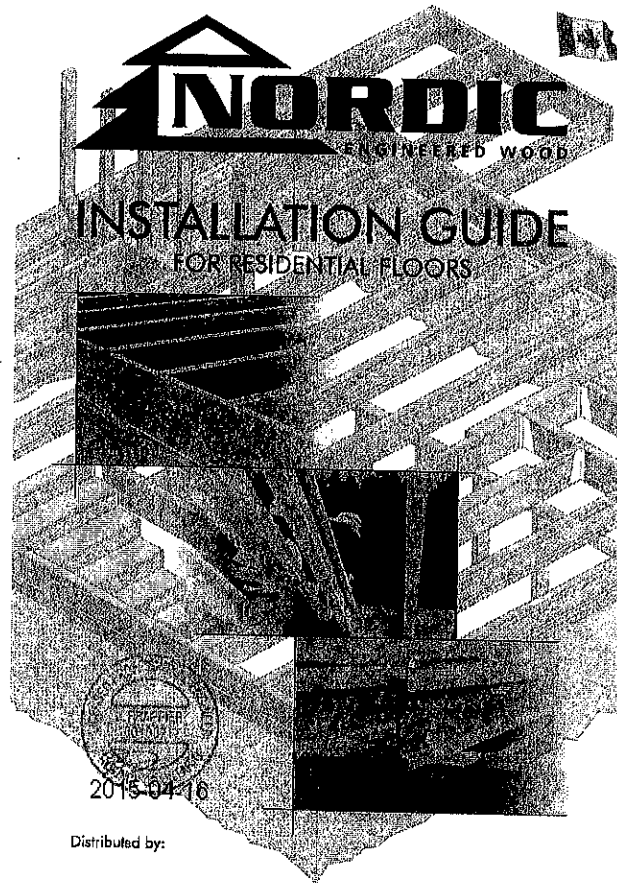
Maximum Floor Spans

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

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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

STORAGE AND HANDLING GUIDELINES

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

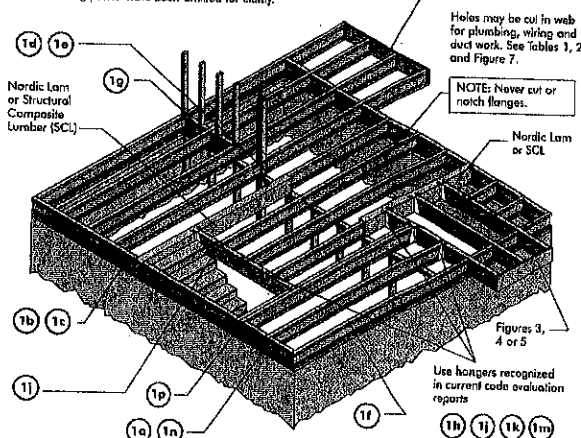


INSTALLING NORDIC I-JOISTS

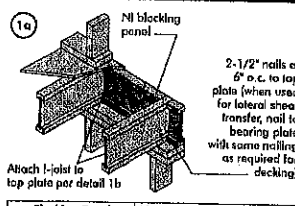
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact the supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true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

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

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

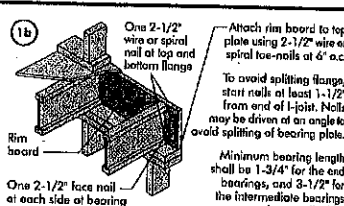


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



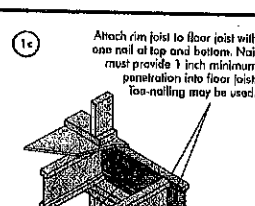
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NJ Joists	3,300

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



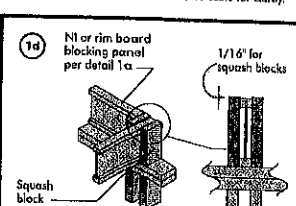
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*The uniform vertical load is limited to a rim board depth of 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.



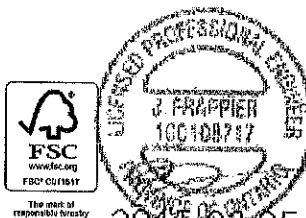
Pair of Squash Blocks	Maximum Factored Uniform Vertical Load* (plf)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

*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.



Pair of Squash Blocks	Maximum Factored Uniform Vertical Load* (plf)
2x Lumber	5,500
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" x 11-7/8"	1-1/2" x 2-1/2" x 11-7/8"	1-1/2" x 2-1/2" x 11-7/8"	1-1/2" x 2-1/2" x 11-7/8"	1-1/2" x 2-1/2" x 11-7/8"	1-1/2" x 2-1/2" x 11-7/8"	1-1/2" x 2-1/2" x 11-7/8"
1950f MSR	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
2100f MSR	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
1950f MSR	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
2100f MSR	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
2400f MSR	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
NPG Lumber	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

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.
- I-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 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.
- 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
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-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"	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---
14"	NI-20	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---
	NI-40x	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-60	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---
	NI-70	0-7"	0-8"	0-8"	1-0"	2-4"	2-9"	3-9"	5-2"	6-0"	6-6"	8-3"	10-2"
16"	NI-20	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-40x	0-7"	0-8"	1-10"	3-0"	4-5"	5-10"	6-2"	7-3"	8-9"	9-9"	10-4"	12-0"
	NI-60	0-7"	0-8"	1-0"	2-0"	3-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-0"	12-4"
	NI-70	0-7"	0-8"	0-10"	2-5"	4-0"	4-5"	5-9"	7-5"	8-8"	9-4"	11-4"	12-11"

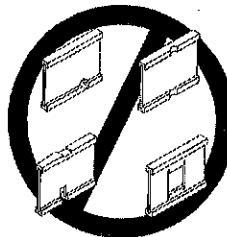
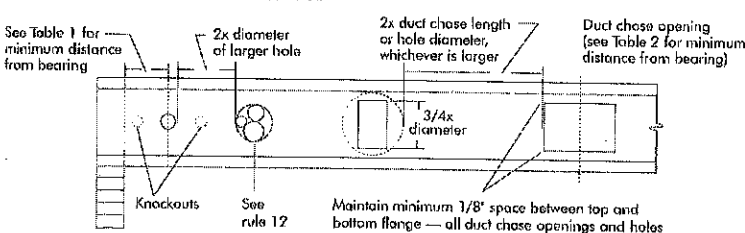
- Above table may be used for I-joist spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joists being used at their maximum spans. 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
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-20	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	---	---	---
	NI-40x	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"	---	---	---
	NI-60	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-9"	---	---	---
	NI-70	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"	---	---	---
14"	NI-20	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-4"	---	---	---
	NI-40x	7-1"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"	---	---	---
	NI-60	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	10-11"	---	---	---
	NI-70	7-7"	8-1"	8-5"	8-10"	9-4"	9-8"	10-2"	10-8"	11-2"	---	---	---
16"	NI-20	8-1"	8-7"	9-0"	9-6"	10-1"	10-6"	11-1"	11-6"	12-0"	12-8"	---	---
	NI-40x	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"	13-0"	---	---
	NI-60	8-9"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-1"	12-3"	---	---
	NI-70	9-0"	9-3"	9-9"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"	13-0"	---	---

- 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/80.
- 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 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.

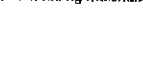
AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging 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-bridging.
- 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 unbraced 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 NI blocking panel

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

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

Attach I-joist to top plate per detail 1b

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

1b Rim board

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

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

One 2-1/2" 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.

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

+ 1/16" for squash blocks

Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)
3-1/2" wide	5,100
5-1/2" wide	8,500
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

Provide lateral bracing per detail 1a or 1b

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

1g Joist attachment per detail 1b

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, 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

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

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

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

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

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)

Filler block per detail 1p

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

1i Nordic Lam or Structural Composite Lumber (SCL)

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

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

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

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

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

Top-mount hanger installed per manufacturer's recommendations

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

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

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

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

Attach I-joist per detail 1b

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

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

NI blocking panel

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

1p FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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

NOTES:

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

Rim board

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

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

1-1/2" gap between joists

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.

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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.

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

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

Approx. 2" 1/8" 1/4" Gap

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

No Gap

CONCENTRATED LOAD (Load stiffener)

Tight Joint No Gap

END BEARING (Bearing stiffener)

Gap

Tight Joint No Gap

STIFFENER SIZE REQUIREMENTS

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

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

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

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

Rim board joint

Rim Board Joint at Corner

2-1/2" nails

1-1/2"

1-1/2"

Rim board

Top or sole plate

30°

4/3

WEB HOLES

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.
- I-joint 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-joint web shall equal the clear distance between the flanges of the I-joint minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joint flange.
- 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 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.
- 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 shall be 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 center of hole (ft-in)																								Span adjustment factor																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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- Above table may be used for I-joint spacing of 24 inches on center or less.
- Hole location distance is measured from inside face of supports to center of hole.
- Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

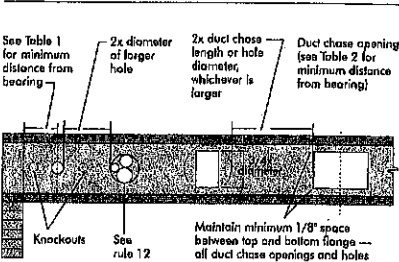
The above table is based on the I-joint used of their maximum span. If the I-joints are placed at less than their full maximum span less than the minimum distance from the centerline of the hole to the face of any support (D) as given above may be reduced as follows:

$$D_{\text{reduced}} = \frac{\text{Actual} \times D}{\text{Span}}$$

Where:

- D_{reduced} = Distance from the inside face of any support to center of hole, reduced for less-than-maximum span applications. Distance shall not be less than 6 inches from the face of the support to edge of the hole.
- Actual = The actual measured span distance between the inside faces of supports (ft).
- Span = Span Adjustment Factor given in this table.
- D = The minimum distance from the inside face of any support to center of hole from this table. If D_{reduced} is greater than 1, use 1 in the above calculation for D_{reduced} .

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are predrilled 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 center along the length of the I-joint. 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-joint.

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.

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) Duct chase length (in.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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- Above table may be used for I-joint spacing of 24 inches on center or less.
- Duct chase opening location distance is measured from inside face of supports to center 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. For other applications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

- Wipe any mud, dirt, water, or ice from I-joint flanges before gluing.
- Snap a chalk line across the I-joints four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joint. Apply glue in a winding pattern on wide areas, such as with double I-joints.
- Apply two lines of glue on I-joints where panel ends butt to assure proper gluing of each end.
- After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joint flanges.
- Tap the second row of panels into place, using a block to protect groove edges.
- 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 1-1/2" common nail to assure accurate and consistent spacing.)
- Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Minimum fastener spacing (in.)	Minimum Panel Thickness (in.)	Common Nail or Spiral Nails	Ring Threaded Nails or Screws	Staples	Edge Nails	Minimum Spacing of Fasteners (in.)
20	3/4	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"

- Fasteners of sheathing and subflooring shall conform to the above table.
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
- Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
- Use only adhesives conforming to CAN/CGS8-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.

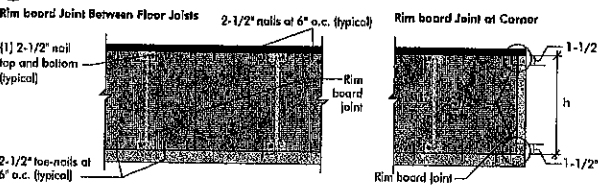
Ref: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

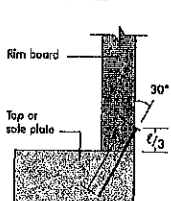
Floor sheathing must be field glued to the I-joint flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joint spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

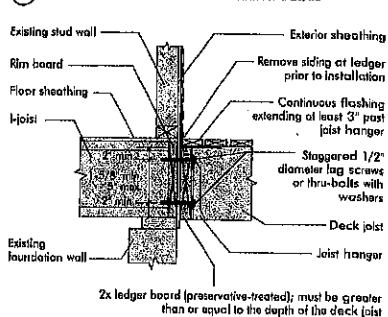
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



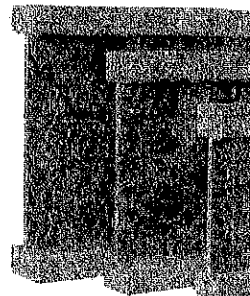
8b TOP-NAIL CONNECTION AT RIM BOARD



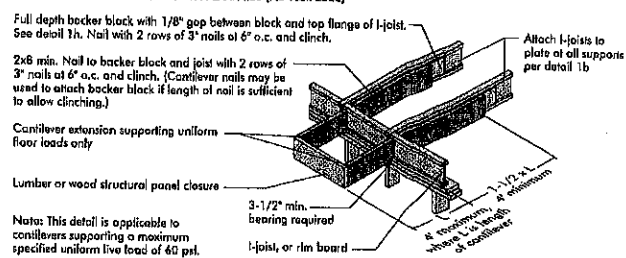
8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



2015-04-16



(3a) 1-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



- (4b) Alternate Method 2 — DOUBLE I-JOIST**

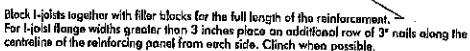
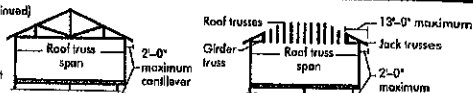


FIGURE 4 (continued)



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

[illegible]

- | | | |
|--|--|---|
| 1. N = No reinforcement required. | For larger openings, or multiple 3'-0" walls, openings spaced less than 6'-0" on center, additional joints beneath the opening's cripple studs are required. | 4. For conventional roof construction using a ridge beam, the 12" U/L roof truss spans columns which are equivalent to the distance between supporting wall and the ridge beam. |
| 2. N reinforced with 3/4" wood structural post and one side only. | 3. Table applies to joints 12" to 24" on center that meet the floor span requirements for a design live load of 40 psf and dead load of 10 psf and a live load deflection limit of L/480. Use 12" U/L requirements for larger spacing. | When the roof is finished with joists, the floor truss span is equivalent to the distance between the supporting walls if a beam is used. |
| 3. N reinforced with 3/4" wood structural post on both sides, or double 1x4s. | | 5. Conventional joists supporting ridge trusses or beams may require additional reinforcement. |
| 4. X = deeper joist or steel decking. | | |
| 5. Maximum depth of floor joist is 13'-0" for 2x12, 15'-0" for 2x14, and 16'-0" for 2x16. All wall loads be based on 3'-0" maximum width, window or door openings. | | |

5a SHEATHING REINFORCEMENT

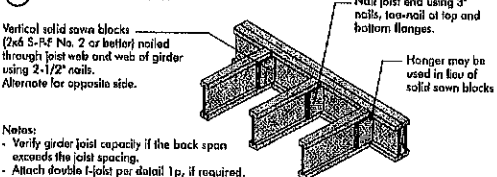
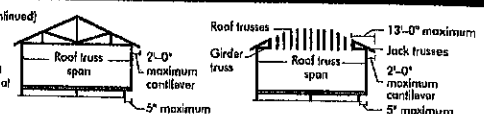


FIGURE 5 (continued)



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.

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

[illegible]

- | | | |
|--|--|---|
| <p>1. N = No reinforcement required.</p> <p>1. N1 reinforced with 3/4" wood structural panel on one side only.</p> <p>1. N2 reinforced with 3/4" wood structural panel on both sides.</p> <p>1. N3 Try a deeper joist or closer spacing.</p> <p>2. Maximum design load shall be: 15 psf roof load, 25 psf floor load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.</p> | <p>For larger openings, or multiple 3'-0" width openings, see load table for additional design requirements. Additional joists beneath the opening's scribe walls may be required.</p> <p>3. This table is based on 12" o.c. joists. It does not meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, per Section 1603 of the IBC/UBO. Use 12" o.c. requirements for lesser spacing.</p> | <p>4. For conventional roof construction using a ridge beam, the Roof Truss Span column shows the joist-to-joist distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Ridge Span is the distance between the supporting walls as if a riss is used.</p> <p>5. Gateded joists supporting additional loads or roof beams may require additional bracing.</p> |
|--|--|---|

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 CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for 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 C86-09 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 Series	Simple spans				Multiple spans			
		On center spacing				On center spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
12"	NI-20	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20S	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20B	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20C	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20D	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20E	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20F	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20G	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20H	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20I	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20J	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20K	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20L	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20M	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20N	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20O	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20P	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20Q	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20R	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20S	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20T	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20U	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20V	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20W	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20X	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20Y	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20Z	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AA	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AB	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AC	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AD	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AE	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AF	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AG	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AH	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AI	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AJ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AK	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AL	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AM	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AN	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AO	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AP	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AQ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AR	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AS	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AT	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AU	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AV	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AW	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AX	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AY	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20AZ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BA	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BB	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BC	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BD	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BE	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BF	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BG	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BH	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BI	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BJ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BK	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BL	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BM	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BN	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BO	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BP	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BQ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BR	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BS	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BT	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BU	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BV	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BW	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BX	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BY	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20BZ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CA	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CB	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CC	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CD	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CE	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CF	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CG	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CH	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CI	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CJ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CK	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CL	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CM	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CN	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CO	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CP	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CQ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CR	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CS	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CT	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CU	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CV	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CW	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CX	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CY	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20CZ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DA	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DB	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DC	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DD	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DE	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DF	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DG	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DH	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DI	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DJ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DK	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DL	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DM	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DN	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DO	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DP	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DQ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DR	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DS	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DT	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DU	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DV	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DW	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DX	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DY	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20DZ	10.0'	12.0'	13.0'	14.0'	10.0'	12.0'	13.0'	14.0'
12"	NI-20EA	10.0'	12.0'	13.0'	1				