

		Products		
PiotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	3
J1DJ	18-00-00	11 7/8" NI-40x	2 .	4
J2	16-00-00	11 7/8" NI-40x	1	24 [.]
J2DJ	16-00-00	11 7/8" NI-40x	2 .	· 4
J3	14-00-00	11 7/8" NI-40x	1	17
J4	12-00-00	11 7/8" NI-40x	1	9
J4DJ	12-00-00	11 7/8" N{-40x	2	4
J5	10-00-00	11 7/8" NI-40x	1	6
J6	8-00-00	11 7/8" NI-40x	1	6
J7	4-00-00	11 7/8" NI-40x	1	6
J8	2-00-00	11 7/8" NI-40x	1	2
B1	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	11	. 1.
B4	4-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1

Connector Summary						
Qty	Manuf	Product				
7	H1	IUS2.56/11.88				
6	H1	IUS2.56/11.88				
7	H1	IUS2.56/11.88				
1	H2	HUS1.81/10				
1	H2	HUS1.81/10				

FIRM BCIN 28103 DESIGNER BCIN 239\$1



FROM PLAN DATED:

BUILDER: ROYAL PINE HOMES

SITE: FORESTSIDE ESTATES

MODEL: UNIT 2204 T4

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION, SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS, SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS, SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

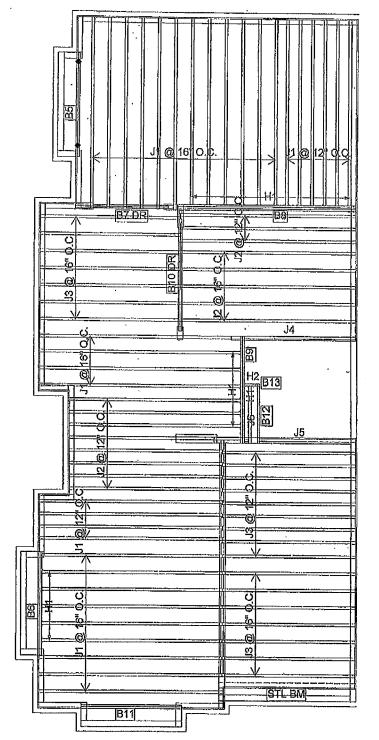
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40,0 lb/ft² DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-04-04

1st FLOOR



•		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	1	35
J2	14-00-00	11 7/8" NI-40x	1	16
J3	12-00-00	11 7/8" NI-40x ·	1	23
J4	10-00-00	11 7/8" NI-40x	1 .	1
J5	8-00-00	11 7/8" Ní-40x	1	1
J6	6-00-00	11 7/8" NI-40x	1	1
B8	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B10 DR	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2 .	2
B6	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2 .	2
B9	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7 DR	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1 .
B13	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

	-		7
	Connecto	r Summary	l
Qty	Manuf	Product	١.
1	H1	IUS2.56/11.88	l
11	H1	IUS2.56/11.88	I
12	H1	IUS2.56/11.88	
1	H2	HUS1.81/10	ŀ

FIRM BCIN 28103 DESIGNER BCIN 23991



FROM PLAN DATED:

BUILDER: ROYAL PINE HOMES

SITE: FORESTSIDE ESTATES

MODEL: UNIT 2204 T4

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN; M D DESIGNER: AJ REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION
GUIDE FOR PROPER STORAGE AND
INSTALLATION. SQUASH BLOCKS OF 2x4,
2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR
UNIFORM LOAD BEARING WALLS. MULTIPLE
SQUASH BLOCKS REQ'D UNDER
CONCENTRATED LOADS. SEE FIGURE 1.
CANTILEVERED JOISTS INCLUDING CANT'
OVER BRICK REQ. I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE AT
ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS. FOR
HOLES INCLUDING DUCT CHASE AND FIELD
CUT OPENINGS SEE FIGURE 7 TABLES 1 & 2
OF THE INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6

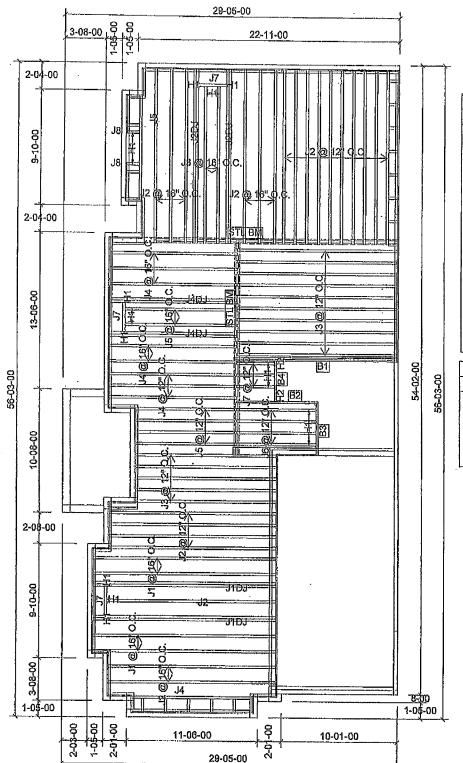
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-04-04

2nd FLOOR



ļ		Products		
PlotID	Length	Product	Plles	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	4
J1DJ	18-00-00	11 7/8" NI-40x	2	4
J2	16-00-00	11 7/8" NI-40x	1	23
J2DJ	16-00-00	11 7/8" NJ-40x	2 .	4
J3	14-00-00	11 7/8" Ni-40x	1	17 ·
J4	12-00-00	11 7/8" NI-40x	1 .	9
J4DJ	12-00-00	11 7/8" NI-40x	2	4
J5	10-00-00	11 7/8" NI-40x	1	7
J6	8-00-00	11 7/8" NI-40x	· i	4
J7	4-00-00	11 7/8" NI-40x	1	6
J8	2-00-00	11 7/8" NI-40x	1.	2 ·
B1	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
·B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	· 1
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	.i	1
84	4-00-00 -	1-3/4" x 11-7/8" VERSA-LAM® 2,0 3100 SP	1.	1

Connector Summary						
Qty	Manuf	Product				
7	H1	IUS2,56/11.88				
6	H1	IUS2.56/11.88				
7	H1	IUS2.56/11.88				
1	H2 .	HUS1.81/10				
1	H2	HUS1.81/10				

FIRM BCIN 28103 DESIGNER BCIN 23991



FROM PLAN DATED:

BUILDER: ROYAL PINE HOMES

SITE: FORESTSIDE ESTATES

MODEL: UNIT 2204 T4

ELEVATION: B

LOT:

CITY: BRAMPTON

SALESMAN: M D DESIGNER: AJ REVISION:

| Notes

REFER TO THE NORDIC INSTALLATION
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F.
REQ'D UNDER INTERIOR UNIFORM LOAD
BEARING WALLS. MULTIPLE SQUASH
BLOCKS REQ'D UNDER CONCENTRATED
LOADS. SEE FIGURE 1. CANTILEVERED
JOISTS INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING AND
RIMBOARD CLOSURE AT ENDS. SEE
FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR HOLES INCLUDING
DUCT CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE
APPLICATION AS PER O.B.C 9.30.6.

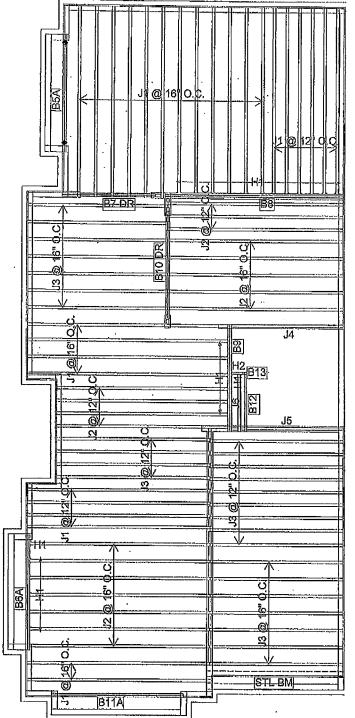
LOADING:

DESIGN LOADS; L/480,000 LIVE LOAD; 40.0 lb/ft² DEAD LOAD; 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-04-04

1st FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	11 7/8" NI-40x	4	28
J2	16-00-00	11 7/8" NĮ-40x	1 .	7:
J2	14-00-00	11 7/8" NI-40x	1 1	12
J3	14-00-00	11 7/8" NI-40x	1	4.
J3	12-00-00	11 7/8" NI-40x	1	23
J4	10-00-00	11 7/8" NI-40x	1.	1
J5	8-00-00	11 7/8" NI-40x	1	1
J6	6-00-00	11 7/8" NI-40x	1	1
B8	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B11A	12-00:00	1-3/4" x 11-7/8" VERSA-LAM® 2,0 3100 SP	2	2
B10 DR	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2,0 3100 SP	2	2
B5A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6A	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	. 2	2
B9	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2 .	2
B7 DR	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1 .	1.
B13	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1 .	1

Connector Summary						
Qty	Manuf	Product				
. 1	H1	IUS2.56/11.88				
12	H1	IUS2.56/11.88				
12	H1	IUS2.56/11.88				
1	H2	HUS1.81/10				

FIRM BCIN 28103 DESIGNER BCIN 23991



FROM PLAN DATED:

BUILDER: ROYAL PINE HOMES

SITE: FORESTSIDE ESTATES

:MODEL: UNIT 2204 T4

ELEVATION: B

LOT:

CITY: BRAMPTON

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION **GUIDE** FOR PROPER STORAGE AND INSTALLATION. SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS, SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD **CUT OPENINGS** SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. CERAMIC TILE APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480,000 LIVE LOAD: 40,0 lb/ft² DEAD LOAD: 20,0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-04-04

2nd FLOOR





Ni-40x OSB 706" OSR 7/14" NI-20 OSB 3/6 S-P-F No.2 1950f MSR 2100f MSR 1950f MSR 2100f MSR 2400f MSR NPG Lumbe 33 pieces 33 pieces 23 pieces 23 pieces 23 pieces 23 pieces

illustrated in Figure 7.

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

WEB HOLE SPECIFICATIONS

Joist Depth

9-1/2"

11-7/8"

NI-20

NILAO.

NI-80

NI-70 NI-80

NI-90

NI-60 NI-70

NI-90x NI-60

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

0'-7" 1'-6" 2'-10" 4'-3" 5'-8" 6'-0"

1'-6" 3'-0" 2'-6" 4'-0" 3'-4" 4'-9"

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

- 5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- 6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the larges square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.

 7. A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be
- ignored for purposes of calculating minimum distances between holes and/or duct se openings
- 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
- 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 provided that it meets the requirements of rule number a above.

 10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as
 - Limit three maximum size holes per span, of which one may be
 - a duct chase opening.

 12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

NI-80

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

tor	Dead	Load	ıs up	10 15	pst a	nd Liv	e Load	ds up	to 40	pst					Simple 3	1
N	inimun	n Distar	nce fro	m Insid	e Face	of Any	Support	to Ce	ntre of	Hole (ft	- in.)			ĺ	·	Τ
				Rou	nd Hole	Diam	eter (in.)						ĺ	Joist Depth	
	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	ĺ	Беріп	
5¤	2'-10"	4'-3"	5'-8"	6'-0"										İ		T
5°	3'-0"	4'-4"	6'-0"	6'-4"										ĺ	1	ı
5°	4'-0"	5'-4"	7'-0"	7'-5"										İ	9-1/2"	ı
4"	4'-9"	6'-3"	8'-0"	8'-4"										İ		ı
5"	5'-0"	6'-6"	8'-2"	8'-8"										İ		1
3"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"							ĺ		1
3"	1'-3"	2'-8"	4'-0"	4'-4"	5'-5"	7'-0"	8'-4"							ŀ		ļ
3"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10'-0"							1		ı
5"	4'-0"	5'-4"	6'-9"	7'-2"	8'-4"	10'-0"	11'-2"							1	11-7/8"	ı
10"	4'-2"	5'-6"	7'-0"	7'-5"	8'-6"	10'-3"	11'-4"						***	1		ı
3"	1'-5"	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"							1		ı
3"	0'-9"	2'-5"	4'-4"	4'-9"	6'-3"									1	L	1.
3"	0'-8"	1'-0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8'-3"	10'-2"				1	1	Ī
3#	1'-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"			•••	1	1	ı
10"	3'-0"	4'-5"	5'-10"	6'-2"	7'-3"	8'-9"	9'-9"	10'-4"		13'-5"				1	14"	ı
)"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10′-0°	10'-8"	12'-4"	13'-9"				1	174	ı
3"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9'-4"	11'-4"	12'-11"				1		ı
3"	0'-8"	2'-0"	3'-9"	4'-2"	5'-5"	7'-3"	8'-5"	9'-2"						1		1
3"	0'-8"	1'-6"	2'-10"		4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"		12'-2"	13'-9"	1	1	ı
)"	2'-3"	3'-6"	4'-10"		6'-3"	7'-8"	8'-6"	9'-2"	10'-8"	12'-0"		14'-0"	15'-6"	1	Ì	ı
3"	2-6"	3'-10"	5'-3"	5'-6"	6'-6"	8'-0"	9'-0"	9'-5"	11'-0"	12'-3"		14'-5"	16'-0"	1	16"	ı
3"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3"		13'-9"	15'-4"	1		
3"	0'-9"	2'-0"	3'-6"	4'-0"	5'-0"	6'-9"	7'-9"	8'-4"	10'-2"	11'-6"	12'-0"			J		1
																Ξ.

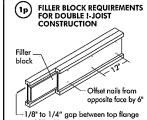
- Above table may be used for I-joist spacing of 24 inches on centre or less
- Hole location distance is measured from inside face of supports to centre of hole.
 Distances in this chart are based on uniformly loaded joists.
 The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

| 3.4" | 4.9" | 6.3" | 8.0" | 8.4" | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

Joist	Joist	Minim	num distar	ice from ii	of supp	supports to centre of opening (ft - in.)					
Depth	Series	Duct Chase Length (in.)									
		8	10	12	14	16	18	20	22	24	
	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"	
9-1/2"	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"	
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"	
	NI-20	5'-9"	6'-2"	6'-6"	7'-1"	7'-5"	7'-9"	8'-3"	81-91	9'-4"	
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-9"	
	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	10'-3"	11'-0"	
11-7/8"	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9'-6"	10'-1"	10'-4"	
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"	
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-11"	
	NI-90x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11'-2"	
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	12'-0"	12'-8"	
	NI-60	8'-9"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0"	
3.40	NI-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	.11'-2"	11'-7"	12'-3"	
14"	NI-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"	
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11'	11'-5"	11'-9"	12'-4"	12'-11"	

- 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 located floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480.
 The above table is based on the I-joist being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

9.2" 9.8" 10.0" 10.4" 10.1" 11.5" 11.9" 12.4" 12.1" 9.9" 10.3" 10.7" 11.1" 11.5" 12.1" 12.



NI blockina

NI or rim board blocking

panel per detail 1a

For 2" thick flanges use net depth minus 4-1/4".

- 2x plate flush with inside face of wall

or beam. 1/8" overhang allowed

past inside face of wall or beam.

NOTE: Unless hange

sides laterally support

the top flange, bearing

installed per manufacturer'

Top-mount hanger

recommendation

l-joist to top plate per detail 1b

Flanae Width

2-1/2"

(1k)

(Id)

or Rim Joist

NI Joists

2x Lumber

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

Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and

ossible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

(1h) Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double Ligits, drive three additional 2" pails the soul of the control of the

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

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.

Material Thickness Required*

1-1/8" Rim Board Plus

(1m)

– Filler

Maximum suppor

detail 1p

capacity = 1,620 lbs.

Provide lateral bracing per detail 1a or 1b

Minimum Depth**

5-1/2"

Support back of I-joist web during nailing to prevent

damage to web/flange connection.

2. Leave a 1/8 to 1/4-inch gap between top of filler block

Maximum Factored Uniform

Vertical Load* (plf)

3.300

Maximum Factored

Vertical Load per Pair of Squash Blocks (lbs

5,500 8,500

4,300 6,600

5-1/2" wide

3-1/2" wide

*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.

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)

- 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"

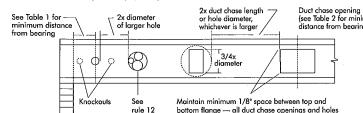
Two 2-1/2" nails from each web to lumber piece └ I-ioist blocking panel 6" o.c. -One 2-1/2" nail one side only In some local codes, blocking is prescriptively required

All nails are common spiral in this detail

END BEARING

All nails shown in the above details are assumed to be common wire nails noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) on wire nails Framina lumber ed to be Spruce-Pine-Fir No. 2 or better. Individual ents not show

FIELD-CUT HOLE LOCATOR





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

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

Holes in webs should be cut with a sharp saw

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

WEB STIFFENERS

RECOMMENDATIONS:

and filler black

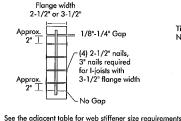
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found of the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at
- A bearing stiffener is required when the I-joist is supported in a hange 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 it ip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

WEB STIFFENER INSTALLATION DETAILS

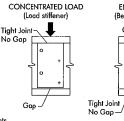
Use pailing

pattern show for Method 1

with opposite



Method 2 -



STIFFFNER SIZE REQUIREMENTS Bearing stiffener Web Stiffener Size Each Side of Web 1" x 2-5/16" 2-1/2 1-1/2" x 2-5/16" 3-1/2"

SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-joists until



over unsheathed I-joists. Once from building materials.

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and nail each I-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 boy.
- 3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging. 4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building
- materials over beams or walls only.
- Never install a damaged 1-joist.

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

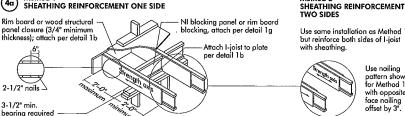


PRODUCT WARRANTY

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

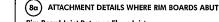
Furthermore, Chantiers Chibougamau warrants that our products, hen utilized in accordance with our handling and installation instructions will meet or exceed our specifications for the lifetime of the structure.

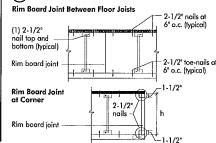
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE



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 flonge. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

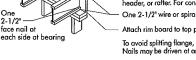
RIM BOARD INSTALLATION DETAILS











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

Blocking Panel

or Rim Joist

1-1/8" Rim Board Plus

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 1-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

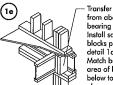
Maximum Factored Uniform

8.090

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based or

Vertical Load* (plf)

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



Top- or face-mount

Filler block

Multiple I-joist header with full depth filler

block shown. Nordic Lam or SCL headers

may also be used. Verify double 1-joist

Backer block attached pe

detail 1h. Nail with twelve 3"

Install hanger per

recommendation:

nails, clinch when possible

manufacture

concentrated loads.

(1n)

2-1/2"

from above to blocks pe Match be area of blocks below to pos

Joist attachment 2-1/2" nails to top plate

Load bearing wall above shall alian vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by Blocking required over all interior supports under load-bearing walls or when floor joists are not

Nordic Lam or

NI blocking panel per detail 1a

Double I-joist header (11) NOTE: Unless hanger sides laterally support the top flang stiffeners shall be used.

Backer block required (both sides for face mount hangers)

For hanger capacity see hanger manufacturer's

inside face

Attach I-iois

per detail 1b

of wall

NOTE: Blocking required at

bearing for lateral support, not

Structural Composite Lumber (SCL) For nailing schedules for multiple beams, see the manufacturer's

Top- or face-mount hange

from each web to lumber piece, alternate

nstalled per manufacturer's

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

(1 - Do not bevel-cut Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails

NI blocking panel

OPTIONAL: Minimum 1x4 inch strar applied to underside of joist at blocking line or 1/2 inch minimum avpsum

ceiling attached to underside of joists. One 2-1/2" nail at top and bottom flange

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.

- Other	uic ii me	or and the same matherials	n with reenact to the	nrojeci.	
Use one form for each individual who review	s and takes res	ponsibility for design activitie	S Will respect to the	DI OLOGO	
A. Project/information		Application/ful	Unit no.	Lot/con.	
Building number, street name			Offiction .	120000111	
OF DEPAMETON	Postal code	Plan number/ other descrip	tion		
Municipality CITY OF BRAMPTON	FOSIEI COUC	Tient Henricon Tare.			
B: Individual who reviews and take	responsibili	ty for design activities			
Name		Firm	رم سرد ا	(1) (A) (
SOWIN C. F	0K	STRACON	ENGINEER	Lot/con.	
Street address	00-0		Unit no.	Lovcon.	
69, GILATION (Postal code	Province	E-mail	<u> </u>	
Municipality DICCHAOLO HILL	LAB3W7	ONTARIO			
Telephone number	Fax number	- 01	Cell number		
1 (Car) 621 975A	(905) 8	3 20286			
© Design activities undertaken by	individual ide	intified in Section B: (E)	illding Code Table	3.5.2.1. ot	
Division Ci					
☐ House	· 🛮 HVAC	House	⊠ Building Stru		•
☐ Small Buildings	☐ Buildir	ng Services	☐ Plumbing – H	louse	
☐ Large Buildings	☐ Detec	tion, Lighting and Power	☐ Plumbing — A		
	F-1 1'		☐ On-site Sewa	age Systems	and the same
THE PARTY OF THE P	<u>NEHOWES - F</u>	OREST SIDE - WODEL: UN	ii zzu4 – is Felev	6	
2ND FLOOR - STANDARD (SCHEDULE REVIEW PRE-ENGINEERED FLOOR SY	IS NOT ISSUE!) AS LOT SPECIFIC) MENTERDAMANIGO AND LAY	OUT PLACEMENT P	LAN SUPPLIED BY	
TAMARACK ROOF TRUSSES INC. (SEE SUPPORTING STRUCTURE TO BE REV	TEMED AND VE	RIFED BY QUALIFIED BUIL	DING DESIGNER.		
SUPPORTING STRUCTURE TO BE REV					
D. Declaration of Designer			THE PROPERTY OF THE PARTY OF TH	and the second s	
I EDW	IN C. FOK	declare that (choose one as a	ppropriate):	,	
/			•	n maa emberten	
1	Miles from the series of	gn work on behalf of a firm re	gistered under subse	ection 3,2,4.of Division	
C. of the Building Code. I an	n qualified, and	the firm is registered, in the a	ppropriate classes/c	ategories.	
			•	•	
	23991	•			Į
***************************************				•	,
Town Politic	8103			• •	
()(1)(1)()(4)E.					1
☐ 1 review and take responsib	ility for the desi	on and am qualified in the ap	propriate category as	s an "other designer"	
under subsection 3.2.5.of D	ivision C. of the	Building Code.			
Individual BCIN:					1
Basis for exemption from	om registration:				1
The design work is exempt	from the regist	ration and qualification require	ements of the Buildin	g Code.	1
Basis for exemption from	om registration :	and qualification:			
1 portific that				•	
4 The information contained in thi	is schedule is tr	ue to the best of my knowled	ge.		
1 have submitted this application	n with the know	ledge and consent of the firm	•	•	
S. I HOAR STINITION THE Abbitograp		-	۸		
4			<u> </u>	0	1
1 - 2 - 3	.0		$Z_{a}(x)$	<i>X.</i> .	\
Date April 17, 20)()	Signature of Designer	72000 x		.

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Use one form for each individual who reviews and takes respo	nsibility for design activities	with respect to the p	roject.
A Projectiinformation Building number, street name	Application multi-	Unit no.	Lot/con.
**	Plan number/ other description	on :	
tentinopality of to be a min			
B: Individual who reviews and takes responsibility	for design activities	\	
Name EDWIN C. FOK	STRACON &	ENGINEERI Unit no.	NG INC-
Street address 69, GRAYOON CRES.			LOVOOTA
Municipality Postal code	rovince ONTARIO	E-mail	
Telephone number Fax number	20096	Cell number	
(905) 881-2250 (905) 93 6. Design activities undertaken by individual iden	ified in Section B. (But	iding Code Table	3521 of
ADMISIONIO)			
☐ House ☐ HVAC - ☐ Building	House Services	☑ Building Struct ☐ Plumbing – He	
☐ Large Buildings ☐ Detection	n, Lighting and Power	☐ Plumbing All	Buildings
☐ Complex Buildings ☐ Fire Prof Description of designer's work KCYAL PINE HOWES - FO	tection RESY SIDE = WODEL: UNIT	☐ On-site Sewa	ge Systems
2NP FLOOR - STANDARD (SCHEDULE IS NOT ISSUED A	S LOT SPECIFIC)	IT DI ACEMENT DI	AM SLIPPLIED BY
REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONE	2.18 DAAWINGS AND LATO		WA OO! I TITED D.
SUPPORTING STRUCTURE TO BE REVIEWED AND VER	IFED BY QUALIFIED BUILD	ING DESIGNER.	
D. Declaration of Designer			
1, EDWINC. FOK de	clare that (choose one as ap	propriate):	, ,
(print name) 区 I review and take responsibility for the design C, of the Building Code. I am qualified, and the	work on behalf of a firm regi e firm is registered, in the ap	stered under subset propriate classes/ca	ction 3.2.4.of Division tegories.
individual BCIN: 23991			· .
Firm BCIN: 28 L03		•	· · ·
THILL DOING.			
☐ I review and take responsibility for the design under subsection 3.2.5.of Division C, of the B Individual BCIN:	and am qualified in the appruilding Code.	opriate category as	an "other designer"
Basis for exemption from registration: The design work is exempt from the registration and Basis for exemption from registration and	ion and qualification requirer d qualification:	nents of the Building	Code.
l certify that: 1. The information contained in this schedule is true	to the best of my knowledge) .	
 The information contained in this schedule is true 1 have submitted this application with the knowled 	ige and consent of the firm.	•	
		7	0
Date April, 2019	Signature of Designer	2000	

THE PROPERTY OF THE PROPERTY OF

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Use one form for each individual who review	e and takes res	ponsibility for design activities	with respect to the	project.
A. Project information Building number, street name		Application nul	Unit no.	Lot/con.
Municipality CITY OF BRAMPTON	Postal code	Plan number/ other descript	ion	
B: dhdividualwho reviews and take	s responsibili	tysfor design activities		
Name SPWIN C. F			eng netr	
Street address . GRAYON (CRES.,		Unit no.	Lot/con.
Municipality RICHMOND HIM	Postal code	Province ONTARIO	E-mail	
Telephone number	Fax number	3 20286	Cell number	
C, Design activities undertaken by	individual ide	entified in Section B. (Bu	iiding Gode Table	35,21,161
DIVISION DI	☐ HVAC	- House	Building Stru	
☐ Small Buildings ☐ Large Buildings	☐ Buildir ☐ Detec	ng Services tion, Lighting and Power	☐ Plumbing – H ☐ Plumbing – Al	
☐ Complex Buildings ☐ Sescription of designer's work <u>ROYAL PI</u>	THE CHARLES	ratastian	Con-site Sewa	nge Systems
REVIEW PRE-ENGINEERED FLOOR SY	STEM COMPU	NENT DRAWINGS AND LATE 118-18 DATED 11-12-18).		TW// OOL 1 FIED D1
SUPPORTING STRUCTURE TO BE REV	IEWED AND VE	ERIFED BY QUALIFIED BUILI	DING DESIGNER.	
D. Declaration of Designer	WC FOK	declare that (choose one as a	poropriate):	MASSESSIES DESCRIPTION OF THE PROPERTY OF THE PERSON OF TH
			•	
(pnm. na I review and take responsib C of the Building Code, I are	ility for the design and aualified, and	gn work on behalf of a firm reg the firm is registered, in the ap	istered under subse propriate classes/ca	ction 3.2.4.01 Division ategories.
			•	
Individual BCIN:		•		
Firm BCIN: 2	8103			•.•
☐ I review and take responsib	ility for the desi	gn and am qualified in the app	ropriate category as	an "other designer"
under subsection 3.2.5.of D	ivision C, of the	Building Code.	•	
Davis for assessation for	m registration:	· · · · · · · · · · · · · · · · · · ·		
☐ The design work is exempt	from the registr	ration and qualification require and qualification:	ments of the Building	g Code.
1 certify that:				
The information contained in this	s schedule is tr	ue to the best of my knowledg	e.	
2. I have submitted this application	I MINI DIG VIOW	londo ente optionir as mo justic	\ .	
		•	7 . 7	Q
Date April, 20	17	Signature of Designer	2000 F	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d), of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the
 Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to
 practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Use one form for each individual who review	ws and takes re	sponsibility for design activitie	s with respect to the	project.
A Project information		Application nu	m ber- Unit no.	Lot/con.
Building number, street name	•			
Municipality CITY OF BRAMPTON	Postal code	Plan number/ other descrip	tion	
∉B: ⊪individual who reviews and take		ty for design activities		
Nome		Firm		
EDWIN C. F	OK	STRACON	ENGINEER	Lot/con.
Street address . G. GRAYDON	COER.		Unit no.	LOVCOII.
Municipality 1	Postal code	Province	E-mail	
RICHMOND HTM	[AB3W]	ONTARIO	Cell number	
Telephone number (905) 881-2250	Fax number	3 20286	Contraction	
C Design activities undertaken by	าลสเบลเลเลเ	entified in Section B. (Bu	ilding Code labi	3.5.2.1. of
Division(0)				
☐ House	· 🗖 HVAC		Building Strug Buil	
☐ Small Buildings	☐ Buildir	ng Services	☐ Plumbing — I-☐ Plumbing — A	
☐ Large Buildings	☐ Fire P	tion, Lighting and Power	☐ On-site Sew	
Complex Buildings Description of designer's work <u>ROYAL PI</u>	NE HOWES - F	orest side - wodel: Uni	17 2204 T4 ELEV	Ar ex same against the graph
THE PART OF A STANDARD CONTROLLER	IC MATICULE	1 A G I A H SUFE 3 FR 3		
DEVIEW DRE-ENGINEERED FLOOR SY	STEM COMPU	NEW LORAWINGS AND DATE	JUT PLACEMENT F	LAN SUPPLIED DI
TAMARACK ROOF TRUSSES INC. (SEE SUPPORTING STRUCTURE TO BE REV	DVVG #TANOTO	RIFED BY QUALIFIED BUIL	DING DESIGNER.	
D. Declaration of Designer.				
- Zoul	ule tok	leclare that (choose one as a	nnronriate):	
f,(print ne		teciale flat (cilooge olio as a	ppropriatoy.	
1577 Leaders and take remoneth	lity for the desir	n work on behalf of a firm reg	gistered under subse	ction 3.2.4.of Division
C, of the Building Code. I an	n qualified, and	the firm is registered, in the a	ppropriate classes/c	ategories.
Individual BCIN:	13991			
			• •	• .
Firm BCIN: 2	8103			
☐ I review and take responsib	ility for the desig	on and am qualified in the app	ropriate category as	an "other designer"
under subsection 3.2.5.of D	ivision C, of the	Building Code.		
Individual BCIN:				
Basis for exemption from	m registration			
☐ The design work is exempt	from the registr	ation and qualification require	ments of the Building	Code.
Basis for exemption from	m registration a	nd qualification:		
I certify that:				• •
1 The information contained in this	s schedule is tru	e to the best of my knowledg	₽.	
I have submitted this application	with the knowle	edge and consent of the firm.	•	
			N	0
		41	アル・ヘ	()
Date April 17, 20	15	Signature of Designer	Zami	<u>. </u>

NOTE:

- 1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d).of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the
 Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to
 practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

NORDIC STRUCTURES

COMPANY TAMARACK LUMBER INC. 3269 NORTH SERVICE ROAD BURLIGTON ONTARIO Apr. 26, 2017 09:54 PROJECT
J4 2ND FLOOR
J1 1ST FLOOR END

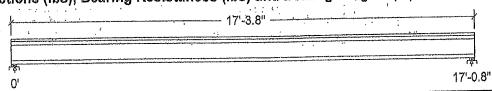
Design Check Calculation Sheet

Nordic Sizer - Canada 6.4

Loads:

ł							
1	Load	Туре	Distribution	Pat-	Location [ft]	Magnitude	Unit
1	Tioaca ,	1.290		tern	Start End	Start End	
ı						20.00	psf
1	Loadl .	I Dead	Full Area				4
L		173	Full Area	:		l 40.00	psf
ı	Load2	Live *	Trure Mrea			L	I

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in):



	0'		
Unfactored: Dead Live	171 341		171 341
Factored: ;	725		725
Bearing:	: 		
Resistance			1893
Joist	1893	. To the second	5112
Support	5112		
Des ratio	^ ^	Commence of the second second	0.38
Joist	0.38	PHOFESSION	0.14
Support	0.14		#2
Load case		S Carlotte &	2-3/8
Length	2-3/8	Carry Dover 100 18	1-3/4
Min req'd	1-3/4	13 - chk 1	1 11
Stiffener	No		1.00
Kd	1.00	The state of the s	1.00
KB support	1.00	Contraction of the state of the	769
fcp sup	. 769		1.00
Kzcp sup	1.00	The state of the s	M.1-1

Nordic Joist 9-1/2" NI-80 Floor joist @ 12" o.c. Supports: All - Lumber Skil plate, No.1/No.2

Supports: All - Lumber Sill plate, No.1/No.2

Total length: 17'-3.8"; 3/4" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

Limit States Design using CSA O86-14 and Vibration Criterion:

	M M			
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear Moment (+)	Vf = 725 Mf = 3094	Vr = 1895 Mr = 8958	lbs lbs-ft	Vf/Vr = 0.38 Mf/Mr = 0.35 0.20
Perm. Defl'n Live Defl'n	$0.12 = \langle L/999 \rangle$ 0.23 = L/884	0.57 = L/360 0.43 = L/480	in in	0.54
Total Defl'n Bare Defl'n	0.35 = L/589 0.26 = L/776	0.85 = L/240 0.57 = L/360	in in ft	0.46
Vibration Defl'n	$L_{max} = 17'-1$ $= 0.028$	Lv = 18'-10 = 0.037	in.	0.76

OVENO. TAN 8570.184 p6 14 STRUCTURAL COMPONENT ONLY

T- UM356

J1 1ST FLOOR END

Nordic Sizer - Canada 6.4

Page 2

Additional FACTORS: Vr Mr+	Data:	KD	кн	KZ	KL	KT	KS	ĭ	ΚN	LC#
Vr	1895	1.00	1.00	-		h-m			_	₩ 4 # 0
Mr+	8958	1.00	1.00	." 🕶	1.000			• .	**	#2 #2
CRITICAL LO	DAD COMB	INATIONS	6;	•				٠,	•	
Chann	• T.C. #2	m 1.25	5D + 1:5)L						
Moment(+). : LC #2	= 125	5D + 1.5	iL .						•
Deflection	on: LC #1	, = 1.0I) (peri	nanent)	Jan Garage					
	LC #2	= 1.01) + 1.01	live) ر	`) _,					
	LC #2	= 1.01	0 + 1.01	. (tota	T)	en en en en en en en en en en en en en e	F. 11	•;		
	LC #2	= 1.01	0 + 1.01	, (bare	joist)					•
Bearing	: Suppo	ort 1 - 1	LC #2 =	1.25D +	1.5L		• •			
Load Typ	es: D=dea	ad W=wi	nd S=si	low H=e	arth, grou	JIIUWA LI	idoment.	urc⊲ I f≕	fire	
	L≔li≀	re (use, o	ccupanc	λ) re=r	ive(stora	age, eq	TTDWelle	, -	# # M M	
Load Pat	terns: s=	=S/2 L=:	L+Ls _	≃no patt	ern load	TH CH.	ro ontoni.	+ .		
		cions (Lo	Cs) are	listea	in the A	at Asr	5 Ծանքա			
CALCULATI	IONS:		00		** 4 04	. 06 lh	•			
Deflecti	on: Elei	f.f =	3/5e06	LD-1NZ	K= 4.94	SOO ID	e /live	. win	d. s	now)
"Live" d	leflection	n = Defl	ection	rrom all	non-dead	u roau	9 /11/0		·~, ~.	

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition). CONFORMS TO OBC 2012

2. Please verify that the default deflection limits are appropriate for your application.

Refer to technical documentation for installation guidelines and construction details.
 Nordic I-joists are listed in CCMC evaluation report 13032-R.
 Joists shall be laterally supported at supports and continuously along the compression edge.

6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building area, suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequage based on the design criteria and loadings shown.

> STRUCTURAL COMPONENT ONLY

-c-l81356(N)

NORDIC

STRUCTURES

COMPANY Apr. 26, 2017 09:55 PROJECT
J1 2nd FLOOR
NORDIC SIZER

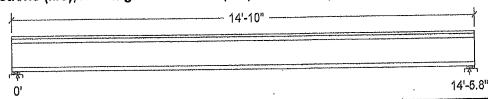
Design Check Calculation Sheet

Nordic Sizer - Canada 6.4

Loads:

Load	Type	Distribution	Pat- tern	Location Start	[ft] End	Magnitude Start End	
Loadl	Dead	Full Area				20.00	psf
Load2	Live	Full Area				40.00	psf
Self-weight	Dead	Full UDL				2.9	plf

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in):



	0, اسلام	·	14'-5.8"
Unfactored: Dead Live	214		214 386
Factored: Total	846		846
Bearing: Resistance Joist Support	2189 5304	and the second s	2189 5304
Des ratio Joist Support Load case	0.39 0.16 #2	ONOFESS.CWA	0.39
Length Min req'd Stiffener	3 1-3/4 No	E. FOK	1-3/4 No 1.00
Kd KB support fcp sup Kzcp sup	1.00 1.00 769 1.15		1.00 76:

Nordic 11-7/8" NI-40x Floor joist @ 16" o.c.

Supports: All - Lumber Sill plate, No.1/No.2

Total length: 14'-10.0"; 5/8" nailed and glued OSB sheating with 1/2" gypsum celling

This section PASSES the design code check.

Limit States Design using CSA-O86-09 and Vibration Criterion:

WHILLIAM OF AND AND AND AND AND AND AND AND AND AND	J			
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 846	. Vr = 2336	lbs	Vf/Vr = 0.36
Moment (+)	Mf = 3064	Mr = 6255	lbs-ft	Mf/Mr = 0.49
Perm, Defl'n	$0.08 = \langle L/999 \rangle$	0.48 = L/360	i.n	0,16
Live Defl'n	$0.14 = \langle L/999$	0.36 = L/480	in	0.39
Total Defl'n	0.22 = L/801	0.72 = L/240	in	0.30
Bare Defl'n	$0.16 = \langle L/999$	0.48 = L/360	in	0.34
Vibration	Lmax = 14'-6	Lv = 17'-8	ft	
Deflin	= 0.024	= 0.046	in	0.53

DWG NO. TAM 857 /- 18 G /6 / /2 STRUGTURAL COMPONENT ONLY

NORDIC SIZER

Nordic Sizer - Canada 6.4

Page 2

Additional		KD	кн	KZ	ΚĽ	KT	KS	KN	LC#	
Vr	2336		1.00	~	 .			-	#2 #2	
Mrt	6255	1.00	1.00			. -	-	-	#2 #2	
EI	371.1 m	illion	_					. ***	17 4	
						• :				
		1 2	3N 4 1 5T	4 ,				•		
Moment(+)	; LC #2	= 1.25	5D + 1.5I							
Shear Moment(+) Deflection	n: LC #1	= 1.01	D (perma	inent)		•				
	LC #2	= 1.01	D + 1.0L	(live	e)					
	T.C. #2	== 1.0±	D + T'OT	(tota	3 L J					
	T.C. #2	= 1.0	D + 1.0L	(pare	e Joraci			• •		
Bearing	: Suppo	rt 1 - :	LC #2 = :	1.25D	+ 1.5F					
	/1	~+ ′O '	T.C 11:0 = 1	1.250 •	+ 1.Эь	andust o	r Empar	-thouake		
Load Type	s: D≂dea	d W=wi	nd S=sn	ow H≕	eartn, gro	unawate	ilomenti	f=fire	· !	
	7 1 -1 77	0 / 110 B . O	CCUDANCV.) LS≕.	TIAGIRCON	age, equ	(TDMC110)	24 AL 24 40 CF	•	
All Load	Combinat	ions (L	Cs) are .	listed	In the A	narlare	oucpuc			
CALCULATIO	DNS:				W. C 10	and 1h	,			
		f =	448e06 1	p-in2	V= 0.18	SAD TOP) /1 ve=	wind, s	inow)	
Deflectio "Live" de	flection	ı = Defl	ection f	rom al	r non-dea	u Loads) /TT / ()	.,		

Design Notes:

- 1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1.

 2. Please verify that the default deflection limits are appropriate for your application.

 3. Refer to technical documentation for installation guidelines and construction details.

 4. Nordic I-joists are listed in CCMC evaluation report 13032-R.

 5. Joists shall be laterally supported at supports and continuously along the compression edge. CONFORMS TO OBC 2012

- 6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty of incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of the compenent based on the design criteria and loadings shown.

STRUCTURAL. COMPONERT ONLY



Basment\...\B1(i1466) Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

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

April 26, 2017 09:35:23

BC CALC® Design Report

Bulld 5033 Job Name:

Address: City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

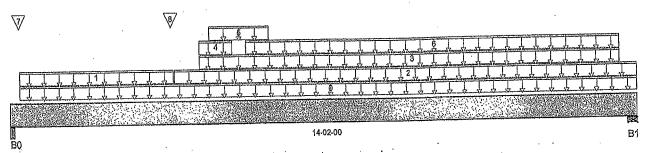
CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1(i1466)

Designer: AJ Company.

Misc:



Total Horizontal Product Length = 14-02-00

Reaction Summary (Do	own / Uplift) (lbs) Live	De ad	Snow	VVind			
B0, 5-1/4"	1,744 / 0	1,224/0					
B1,2-3/8"	904/0	959/0	45	; .			•
				Live	Dead	Snow Wind	Trib.
Load Summary Tag Description	Load Type	Rof, Start	End	1.00	0.65	1.00 / 1.15	
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L 00-02-1			4	The second second	n/a n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L 00-02-1			_	PHOFESSION A	n/e
2 FC1 Floor Material	Unf. Lln. (lb/ft)	L 03-08-0			3		n/a
3 8(1917)	Unf. Lln. (lb/ft)	L 04-03-0			65	E. FOK	n/a
4 8(i917)	Unf. Lln. (lb/ft)	L 04-03-0)4 05-00-04	189		E COMMENTER	n/a
	Unf. Lin. (lb/ft)	L 04-05-1	4 05-09-14	957	516	E. FOK	1.
5 8(1917)	Unf. Lin. (lb/ft)	L 05-03-1	0 13-09-10	35	23 🕻 🖁	A. A. A. A. A. A. A. A. A. A. A. A. A. A	n/a
6 8(1917)	Conc. Pt. (lbs)	L 00-02-0	8 00-02-08	3 241	150 🐧	(X)	n/a
7 6(1914) 8 B4(11467)	Conc. Pt. (lbs)	L 03-07-0		3 492	255		n/a
	, Footowo	a Damand/	Load	Location ·			

Controls Summary	Factore d Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	14,435 ft-lbs	38,727 ft-lbs	37.3%	1	05-03-10
End Shear	3.5341bs	14,464 lbs	24.4%	1.	01-05-02
Total Load Defl.	L/509 (0,322")	0,683"	47.2%	. 4	06-10-02
Live Load Defl.	L/918 (0.178")	0.456"	39,2%	5	06-07-08
Max Defl.	0,322"	n/a	n/a	4	06-10-02
Span / Depth	13.8	n/a	n/a	international La companyation	00-00-00

· · · · · · · · · · · · · · · · · · ·	•			Də mand <i>i</i> Rəsistancə	De mand/ Resistance	• • • • •
Bearing St	upports	Dim.(LxW)	Domand .	Support	Member	Material
BO Bea	m I/Plate	5-1/4" x 3-1/2" 2-3/8" x 3-1/2"	4,146 lbs 2,554 lbs	52.8% 71.9%	18.5% 25.2%	Unspecified Unspecified

Notes

STRUCTURAL COMPONENT ONLY



Basment\...\B1(i1466) Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

April 26, 2017 09:35:23

BC CALC® Design Report



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

Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

GCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1(1148)

Specifier:

Designer: AJ

Company:

Misc:

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

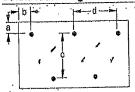
O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection Diagram



a minimum = 2"

d= 100 6

b minimum #3"· Calculated Side Load = 74.6 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Connectors are.

3-1/2" ARDOX SPIRAI

Disclosure

Completeness and accuracy of Input must be verified by anyone who would rely on output as evidence of sultability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-984-6999 before Installation.

BC CALOR, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISEGLULAMM, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIMD, VERSA-STRAND®, VERSA-STUD® are trademarks of Bolse Cascade Wood Products L.L.C.



DWBNO. YAM 857 27 BH STRUCTURAL COMPONENT ONLY

7-1843586N



(இ) Bolso Castedo Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B2(i1468)

BC CALC® Design Report



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

April 26, 2017 09:35:24

Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

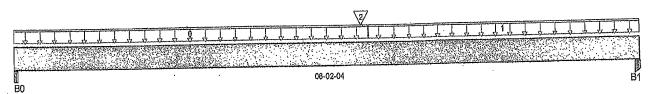
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i1468)

Specifier:

Designer: AJ

Company:

Misc:



Total Horizontal Product Length = 06-02-04

		I DIGITI NI LE DINGITI LE	GROT HOUSE.	THE RESERVE THE PERSON NAMED AND ADDRESS OF THE PERSON NAMED A			Robert John
Reaction Summary (Dow	n / Uplift) (lbs) Live	De ad	Snow	Wind		:	
BO, 2-5/8" B1, 1-3/4"	321/0 332/0	184/0 190/0		,	1	and the second section of	
	70 - 130 40 - 15 - 15			Live	Dead	STOWE WINT	rlb.
Load Summary Tag Description	Load Type	Ref. Sta		1.00	. 0.65	S 1.00 115 74	n/a
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L 00-0	· , p	12 40	20	er Ar landidil X 3 32 1	n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L 03-04 L 03-04		14 456	238	F FOK	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
	1.777 ft-lbs	19,364 ft-lbs	9.2%	1	03-04-14
Pos. Moment	675 ibs	7.232 lbs	9.3%	1	05-00-10
End Shear	L/999 (0.014")		n/a	4	03-02-06
Total Load Defl.			n/a	8	03-02-06
Live Load Defl. Max Defl.	L/999 (0.009") 0.014"	n/a	n/a	. 4	•
Span / Depth	6	. n/a	n/a		00-00-00

Conc. Pt. (lbs)

		e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co		De man d/ Re s is tance	Resistance	
Roarir	ng Supports	Dim. (L x W)	Demand	Support	Member	Material
BO	Beam	2-5/8" x 1-3/4"	712 lbs	36.3% 36.9%	12.7% 19.7%	Unspecified Unspecified
B1	Post	1-3/4" x 1-3/4"	735 lbs	30,970	19.170	Ottopoonloa

B4 (11467)

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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

EC 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.

DWGNO. TAM 85733181+ STRUGTURAL COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B3(i1469)

BC CALC® Design Report



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

April 26, 2017 09:35:24

Bulld 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

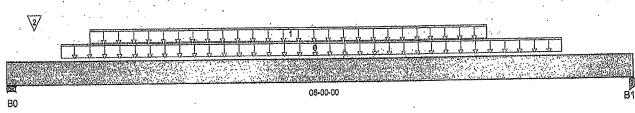
Description: Designs\Flush Beams\Basment\Flush Beams\B3(i1469)

Specifier:

Designer: A.

Company.

Msc:



Total Horizontal Product Length = 05-00-00

						CONTRACTOR OF THE PARTY OF THE	COOPING-
Reaction Summary (Do	wn / Uplift) (lbs) Live	De ad	Snow .	Wind	<u> </u>		
B0; 5-1/2" B1, 3-1/2"	913/0 561/0	1,112/0 295/0				سيمين معرف و	· .
Load Summarv	· ·			Live	Dead	Snow Wind	Trib.

Load Summary Tag Description	Load Type	Ref. Start	End .	Live 1.00	0.65
0 Smoothed Load	Unf. Lin. (lb/ft)	L 00-05-04	04-05-04	240	63
1 Us er Load	Unf. Lin. (lb/ft)	L 00-08-00	03-10-00		120
2 2(1905)	Conc. Pt. (lbs)	L 00-02-12	00-02-12		744

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1.757 ft-lbs	19,364 ft-lbs	9.1%	1	02-06-12
End Shear	1,373 lbs	7,2321bs	19%	1	01 - 05-06
Total Load Defl.	L/999 (0.009")	n/a	n/a	4	02-06-12
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-06-12
Max Defi.	0.009"	n/a	n/a	4	02-06-12
Span / Depth	4.4	n/a	n/a		. 00-00-00

	•		Də man d/ Resistance	De man d/ Resistance	
Bearing Supports	Dim. (L x W)	,De man d	Support	Member	Material
BO Wall/Plate	5-1/2" x 1-3/4"	2,760 lbs	67.1%	23.5%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,209 lbs	30.4%	16.2%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 088.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Disclosure at Completeness and securary or insumust be verified by an arriving by a would by an output as evidences of suitability for particular application. Output design properties and analysis methods. Installation of Bolse Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain installation Guide or ask questions, please call 1-800-964-6999 before installation.

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

OWG NO. TAM 057418H
STRUCTURAL
COMPONENT UNLY



Bolso Cascado Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B4(i1467)

BC CALC® Design Report



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

April 26, 2017 09:35:24

Bulld 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

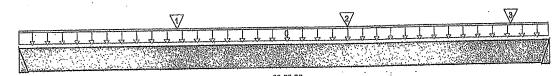
Description: Designs\Fiush Beams\Basment\Fiush Beams\B4(i1467)

Specifier:

Designer: AJ

Company

Misc:



B0

Reaction Summary (Down	/ Uplift) (lbs) Live	De ad	Snow	Wind	
B0 B1	459/0 489/0	239/0 254/0			

,			Liv	re Dead	Show wind	()))01
Load Summary Tag Description	Load Type	Ref. Start	End 1.0	0.66	1.00 1.15	
	Unf. Lin. (lb/ft)	00-00-00	03-02-00 24	0 120		n/a
O User Load	Conc. Pt. (lbs)	1. 00-11-04	00-11-04 70	35	•	n/a
1 J6(l1184)	Conc. Pt. (lbs)	I. 01-11-04	01-11-04 70	. 35		n/a
2 J6(11184)	Conc. Pt. (lbs)	1. 02-11-04	02-11-04 48			n/a
3 J6(i1163)	Cotto, Lr (ins)	F 05 1101	O			

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	718 ft-lbs	19,364 ft-lbs	3.7%	1	01-07-02
	357 lbs	7,232 lbs	4.9%	1	02-00-02
End Shear	L/999 (0.002")	n/a	n/a	4	01-07-02
Total Load Dell.	L/999 (0.001")	n/a	n/a	5	01-07-02
Live Load Defl.	0.002"	n/a	n/a	4	01-07-02
Max Defl. Span / Depth	3	n/a	n/a		00-00-00

Daaring Sunnorte	Dim, (L x W)	De man d	Resistance Support	Resistance Member	Material
Bo Hanger	2" x 1-3/4"	987 lbs	n/a	23.1%	Hanger
B1 Hanger	2" x 1-3/4"	1,051 lbs	n/a	24.6%	Hanger

Notes

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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

BC CALC®, BO FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GEULAMIM, SAMPLE FRAMING WOOVERSAGAMB VERSA-RIM JD® are

Nood

STRUGTURAL COMPONENT ONLY

T. 1811361



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B5(i1465)

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

April 26, 2017 09:35:24

BC CALC® Design Report

Build 5033 Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:.

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

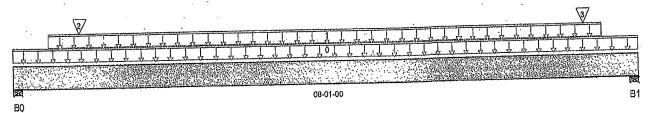
Description: Designs\Flush Beams\1st Floor\Flush Beams\85(i1465)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-01-00

			(1.00) 1.00	CORP. SEC.			
Reaction Summary (Down	n / Uplift) (lbs) Live	De ad	Snow	Wind			
B0, 5-1/2"	1,197/0	1,165 / 0 1,457 / 0	1,496 / 0 1,240 / 0		•	, .	
B1, 5-1/2"	70470 	1,40170	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Dod	Snow Wind	Trib.

	•		Live	Dead	Show white	11111
Load Summary	Load Type	Ref. Start End,	1.00	0.65	1.00 1.15	n/o
Tag Description	Unf, Lin. (lb/ft)	1. 00-00-00 08-01-00	27	13		n/a
FC2 Floor Material	Unf. Lin. (lb/ft)	1 00-05-08 07-07-08		100		n/a
1 User Load	Conc. Pt. (lbs)	1 00-10-08 00-10-08	1,141	708	1,546	n/a
2 User Load		1 07-04-08 07-04-08		992	1,190	. n/a
3 User Load	Conc. Pt (lbs)	m 0, 4, 04 4, 1			A CONTRACTOR OF THE PARTY OF TH	

Controls Summary	Factore d Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment End Shear Total Load Defl. Live Load Defl. Max Defl. Span / Depth	2,584 ft-lbs 1,924 lbs L/999 (0.021") L/999 (0.01") 0.021" 7.4	38,727 ft-lbs 14,464 lbs n/a n/a n/a n/a	6,7% 13,3% n/a n/a n/a n/a	13 13 45 61 45	01-05-06 03-11-08 03-10-09

			De mandi Resistanco	Demand/ Resistance	
Bearing Support	g Dim.(LxW)	Domand	Support	Member	Material
BO Wall/Plate	6-1/2" x 3-1/2" 5-1/2" x 3-1/2"	4,298 lbs 4,034 lbs	52.3% 49%	18.3% 17.2%	Unspecified Unspecified

Notes

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA Q86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA CONFORMS TO OBC 2012

086. Unbalanced snow loads determined from building geometry were used in selected products verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

STRUCTURAL COMPONENT UNLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B5(i1465)

April 26, 2017 09:35:24

BC CALC® Design Report



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

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\fst Floor\Flush Beams\B5(I146t

Specifier:

Designer: AJ Company.

Misc.

Build 5033 Job Name:

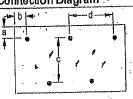
Address: City, Province, Postal Code; BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

Connection Diagram



a mlnimum = 2" b minimum = 3"

 $c = 7-7/8^{\circ}$ d=10 6

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Member has no side loads.

A: Nalls Connectors are: 16d

3-1/2" ARDOX SPIRAL

Disclosure

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

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



OVE NO. TAM 65767817672 STRUCTURAL COMPONENT ONLY COMPENENT ONLY

T-1811362(5)



1st Floor\...\B6(i1445) Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

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

April 26, 2017 09:35:25

BC CALC® Design Report

Bulld 5033 Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\86(i1445)

Specifier:

Designer: AJ Company:

Misc:

		•
	The standard of the standard o	1
	<u> </u>	J Royangeri
	08-01-00	B1
RO.		

Total Horizontal	Product	Length	= 08-01-00
------------------	---------	--------	------------

	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.		NAMES OF TAXABLE PARTY OF TAXABLE PARTY.	ACCUSED 1			
Reaction Summary (Down	/ Uplift) (lbs) Live	De ad	Snow	Wind			
B0, 5-1/2" B1, 5-1/2"	1,012/0 903/0	914/0 859/0			: .	٠.	

			Live	e Dead	200M Anua	11167
Load Summary	Land Tions	Rof. Start	End 1.0	0 0,65	1,00 1,15	
Tag Description	Load Type			100		n/a
O User Load	Unf. Lin. (lb/ft)	L 00-05-08	07-07-08		and the second	n/a
		L 00-06-00	07-02-00 28	7 144	136.	100
1 Smoothed Load	Unf. Lin. (lb/ft)	L 00-00-00	01 01- 00	,	. 71	

Location
03-10-00
01-05-06
04-00-00
• • • • • •
.00-00-00

			De mand/	De mand/	
garage and the property			Resistance	Resistance	
Dendun Ormania	Dim, (L x W)	Demand	Support	Member	Material
Bearing Supports	5-1/2" x 3-1/2"	2.661 lbs	32.4%	11.3%	Unspecified
BO Wall/Plate	5-1/2" x 3-1/2"	2,429 lbs	29.5%	10.3%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

importance Factor: Normal Part code: Part 9

DWGNO. TAM 85 STRUCTURAL COMPONENT ONLY



1st Floor\...\B6(i1445) Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

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

April 26, 2017 09:35:25

BC CALC® Design Report

Build 5033

Job Name: Address:

City, Province, Postal Code:BRAMPTON,

Customer: ...

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\fst Floor\Flush Beams\B6(i144\f

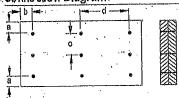
Specifier:

Designer: AJ

Company.

Misc:

Connection Diagram



a minimum = 2" b minimum ≈ 3"

c=3-15/16" d = 200 6

Calculated Side Load = 503.8 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d / Nalls

3-1/2" ARDOX SPIRAL

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 Bolse Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

BC CALO®, BC FRAMER®, AJS™, ALLJOIST®, BCRIMBOARD™, BC®, BOISE GLULAMM, SIMPLE FRAMING SYSTEMO, VERSA-LAMO, VERSA-RIM PLUSO, VERSA-RIMO, VERSA-STRAND®, VERSA-STUD® are trademarks of Bolse Cascade Wood Products L.L.C.



DWO NO . TAM & \$77 - 1014 STRUCTURAL COMPONENT ONLY



(\$) Bolso Cascado Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i961)

BC CALC® Design Report



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

April 26, 2017 09:35:25

Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdi

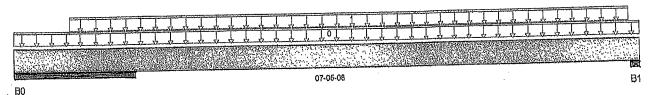
Description: Designs\Flush Beams\1st Floor\Flush Beams\87(1961)

Specifier:

Designer: AJ

Company:

Misc:



Total Horizontal Product Length = 07-05-08

	Total Control by the same of t	and the state of t	THE RESIDENCE OF THE PARTY OF T	**************************************	
Reaction Summary (De	own / Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 17-1/2"	1,218/0	659/0			
B1,4"	990/0	532/0			

			Live) Dead	Snow Wind	Trib.
Load Summary	Load Type	Ref. Start	End 1.00	0.65	1.00 1.15	1.
Tag Description O FC2 Floor Material	Unf, Lin. (lb/ft)	L 00-00-00	07-05-08 37	18	and the second	n/a
1 Smoothed Load	Unf. Lin. (lb/ft)	L 00-08-00	07-04-00 290) 145	age of the control of	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3.014 ft-lbs	38,727 ft-lbs	7.8%	1	04-00-00 02-05-06
End Shear	1,602 lbs	14,464 lbs	11.1%	1	02-05-06
Total Load Dell.	L/999 (0.013")	n/a	n/a	4	04-04-09
Live Load Defi.	L/999 (0.008")	n/a	n/a	5	04-04-00 (
	0.013"	n/a	n/a	4	04-04-00 1
Max Defl.	5.9	n/a	n/a		00-00-00
Span / Depth	78 lb/ft	57,645 lb/ft	0.1%	0	n/a
Distributed Load(B0) Concentrated Load(B0)	822 lbs	16,813 lbs		. 0	n/a

.:			•		Demand/ Resistance		88 - 4 l - l
Bearin	ng Suppor	is	Dim.(LxW)	Demand	Support	Member 3.5%	Material Unspecified
B0 B1	Wall/Plate Wall/Plate		17-1/2" x3-1/2" 4" x3-1/2"	2,650 lbs 2,150 lbs	10.1% 35.9%	12.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Design based on Dry Service Condition:

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

OWENE. TAN 057818 H STRUGTURAL COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i961)

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

April 26, 2017 09:35:25

BC CALC® Design Report

Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

COMC 12472-R

File Name: UNIT 2204 T4.mmdl

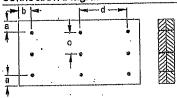
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(1961)

Spedfler:

Designer: AJ Company.

Msc:

Connection Diagram



c=3-15/16",, a minimum = 2" b minimum = 3" d = 200 6

Calculated Side Load = 650.9 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 16d / Nails

3-1/2" ARDOX SPIRAL

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of sultability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Bolse Cascade engineered w ood 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 CALO®, 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 Bolse Cascade Wood Products L.L.C.



ONG NO. TAM 857818 H STRUCTURAL COMPONENT ORLY

T-1811864(1)



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i945)

BC CALC® Design Report



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

April 26, 2017 09:35:25

Bulld 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\88(1945)

Specifier:

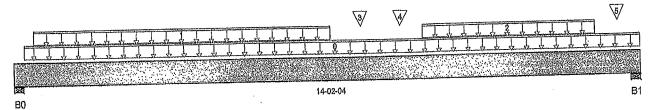
Designer: AJ Company.

Misc.

1.15

n/a n/a n/a n/a n/a n/a

1.00



Total Horizontal Product Length = 14-02-04

	CONTRACTOR OF THE PROPERTY OF	ing to distribute the Constant of the Constant and the Constant of the Constan	And in column 2 is not as a second of the last of the				
Reaction Summary	Down / Uplift) (lbs)	Dead	Snow	VVinc	1	·;	
B0, 5-1/2" B1, 4-3/8"	2,028 / 0 2,080 / 0	1,143 / 0 1,169 / 0	• • • •		·	•	
	4313131			Lhio	Doad	Snow Wind	Trib.

	•			Live	Dead
Load Summary	Load Type	Ref. Start	En d	1.00	0.65
Tag Description O FC2 Floor Material 1 Smoothed Load 2 Smoothed Load 3 J1 (1986) 4 J1 (11313) 5 J1 (11295)	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Conc. Pt. (lbs) Conc. Pt. (lbs) Conc. Pt. (lbs)	L 00-02-12 L 00-05-06 L 09-02-02 L 07-09-06 L 08-08-02 L 13-08-02	14-02-04 07-01-06 13-02-02 07-09-06 08-08-02 13-08-02	291 291 325 276	6 146 146 162 - 138 117

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment End Shear Total Load Dell. Live Load Dell. Max Dell. Span/ Depth	15,114 ft-lbs 4,128 lbs L/673 (0.241") L/1,050 (0.154") 0.241" 13.6	60,415 ft-lbs 21,696 lbs 0,674" 0,45" n/a n/a	25% 19% 35,7% 34,3% n/a n/a	1 1 4 5	07-03-06 01-05-06 07-01-06 07-01-06 07-01-06 00-00-00

المراجعة المراجعة المراجعة	Dim. (L'xW)	Demand	Demand/ Resistance Support		Material' · · ·
Bearing Supports BO Wall/Plate B1 Wall/Plate	5-1/2" x 5-1/4" 4-3/8" x 5-1/4"	4,470 lbs	36.2% 46.7%	12.7%	Unspecified Unspecified

Notes

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

Design meets, Code minimum (L/360) Live load deflection criteria,

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA CONFORMS TO OBC 2012

·086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

DWONG. TAM 85% STRUGTURAL COMPONENT ONLY



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i945)

April 26, 2017 09:35:25

BC CALC® Design Report



Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

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

File Name: UNIT 2204 T4.mmdl Description: Designs\Flush Beams\fist Floor\Flush Beams\B8(1945)

Specifier:

Designer: AJ

Company.

Misc:

Connection Diagram

a minimum =#"

c = 8-7/8" d= @ /2_

.b mlnimum ≈3"

e minimum = 🐉

Calculated Side Load = 590.1 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Nalling schedule applies to both sides of the member.

Connectors are: \...

A .i Nalls

3-1/2" ARDOX SPIRAL

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 Bolse Cascade engineered w ood 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 CALO®, BC FRANER® , AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAMIM, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Casoade Wood Products L.L.C.



DVANO. FAM 85 STRUCTURAL COMPONENT ONLY



1st Floor\...\B9(i1426) Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

BC CALC® Design Report



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

April 26, 2017 09:35:25

Build 5033

Job Name: Address:

City, Province, Postal Code:BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(11426)

1.00

MOFESS, CA

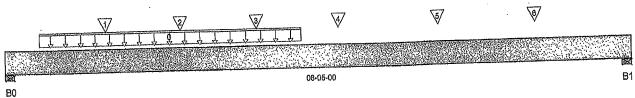
n/a n/a n/a n/a n/a n/a

n/a

Specifier:

Designer: AJ Company:

Misc:



Total Horizontal	Product	Length	≃ 08-	05-	00)

		Name and Address of the Party o	- Carlotte Control of the Control of			•	
Reaction Summary (Down	/ Uplift) (lbs)	De ad	Snow	Wind			,
B0, 5-1/2", B1, 3-1/2"	1,662 / 0 1,276 / 0	883/0 688/0					
				Live	Dead	Snow Wind	Trib.

			Live	Dead	1
Load Summary	Load Type	Ref. Start Er	nd 1.00	0.65	
Tag Description O User Load 1 J2(11391) 2 J2(11379) 3 J2(11392) 4 J1(1210)	Load Type Unf. Lin. (lb/ft) Conc. Pt. (lbs) Conc. Pt. (lbs) Conc. Pt. (lbs) Conc. Pt. (lbs) Conc. Pt. (lbs)	L 00-05-08 03 L 01-04-04 03 L 02-04-04 03 L 03-04-04 0 L 04-05-08 0 L 05-09-08 0	3-11-08 240 1-04-04 276 2-04-04 279 3-04-04 294 4-05-08 395 5-09-08 434	120 138 139 147 198	gerene de la companya de la companya de la companya de la companya de la companya de la companya de la companya
6 J1(1195)	Conc. Pt. (lbs)	L 07-01-08 0	7-01-08 407	204	N. C. S.

a to Comment	Factore d Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Controls Summary Pos, Moment End Shear Total Load Defl. Live Load Defl. Max Defl. Span / Depth	6,681 ft-lbs 3,012 lbs L/999 (0.053") L/999 (0.034") 0.053" 7.9	38,727 ft-lbs 14,464 lbs		1 1 4 5 4	03-09-11 01-05-06 04-02-08 04-02-08 04-02-08 00-00-00

			De man d/ Resistance	De mand/ Résistance	
Bearing Supports BO Wall/Plate B1 Wall/Plate	Dim. (L x W) 5-1/2" x 3-1/2" 3-1/2" x 3-1/2"	3,597 lbs 2,775 lbs	Support 43.7% 53%	Member 15.3% 18.6%	Unspecified Unspecified Unspecified

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Q86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code; Part 9

CONFORMS TO OBC 2012

OWE NO. TAM BSBORE H STRUCTURAL COMPONENT ONLY

-T-1811861



1st Floor\...\B9(i1426) Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

April 26, 2017 09:35:25

BC CALC® Design Report



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

Flie Name: UNIT 2204 T4.mmdl

Description: Designs\Flush Beams\1st Floor\Flush.Beams\B9(11426

Specifier:

Designer: AJ Company.

Misc:

Build 5033

Job Name: Address:

City, Province, Postal Code:BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

Conn	10 cuo r	ı Diagran	1	
a	•	¢	d — p=	
A	٠.			100

c=3-15/16" // a minimum = 2" .d≃ 🍩 b minimum = 3"

Calculated Side Load = 526.5 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. → r Nails

Connectors are:

3-1/2" ARDOX SPIRAL

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 Bolse Cascade engineered w ood 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 CALO®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAMIM, SIMPLE FRAMING SYSTEM®, VERSA-LAMB, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Bolse Cascade Wood Products L.L.C.



DWG NO. TAN 8500-1814 STRUCTURAL COMPONENT ONLY

T-1811366(N)



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11(i1436)

BC CALC® Design Report

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

April 26, 2017 09:35:26

Trib.

n/a n/a

Bulld 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

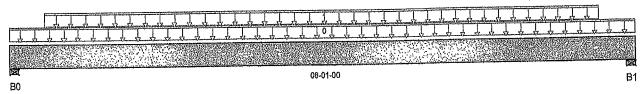
Description: Designs/Fiush Beams/1st Floor/Flush Beams/B11(i1436)

Specifier:

Designer: AJ

Company.

Misc:



Reaction Summary (Down	/n / Uplift) (lbs)	De ad	Snow	Wind			
BO, 5-1/2"	108/0	461/0				•	
B1, 5-1/2"	108/0	461/0				•	

		•		Live	Dead	Snow Wind
Load Summary Tag Description	Load Type	Ref. Start	En d	1.00	0.66	1.00 1.16
0 FC2 Floor Material 1 Us er Load	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft)	L 00-00-00 L 00-05-08	08-01-00 .07-07-08	27	13 100	COPESS

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,166 ft-lbs	25,173 ft-lbs	4.6%	0	04-00-08
	455 lbs	9,401 lbs	4.8%	0	01-05-06
End Shear	L/999 (0.01")	n/a	n/a	4	04-00-08
Total Load Defl.		n/a	n/a	5	04-00-08
Live Load Defl.	L/999 (0.002")	n/a	n/a	4	04-00-08
Max Defl.	0.01"	•	n/a	•	00-00-00
Span / Depth	7.4	n/a	11/4		00 00 00

Bo orig	ng Supports	Dim. (L.x W)	Demand	De mand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	5-1/2" x 3-1/2" 5-1/2" x 3-1/2"	645 lbs 645 lbs	12.1% 12.1%	4.2% 4.2%	Unspecified Unspecified
B1	Wall/Plate	0-112 X 34112	Q+Q 100	1441179		

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAW® 2,0 3100 SP 1st Floor\...\B11(i1436)

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

April 26, 2017 09:35:26

BC CALC® Design Report

Bulld 5033 Job Name:

Address: City, Province, Postal Code; BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

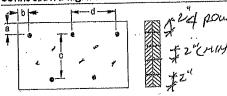
Description: Designs/Flush Beams/1st Floor/Flush Beams/B11(I14;

Specifier:

Designer: Company.

Misc:

Connection Diagram



a minimum = 2" b minimum = 3" c = 7-7/8"

d = 🐠

Memberhas no side loads. Connectors are:

A Nails

3-1/2" ARDOX SPIRAL

Disclosure

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



OWONO. TAM BSBOIGH STRUCTURAL COMPONENT ONLY

T-1811367(4



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10 DR(i1046)

BC CALC® Design Report



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

April 26, 2017 09:35:26

n/a n/a n/a n/a

Bulld 5033 Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B10

Specifier:

Designer: AJ

Company:

Misc:

	∇	2	3
08-05-08		4	B1
B0 Total Horizontal Product Length ≈ 08-05-08			
The Comment (Down / Inliff) (the)			

Reaction Summary	Down / Uplift) (lbs)	De ad	Snow	Wind			
B0,4" B1,4"	1,988 / 0 2,141 / 0	1,045 / 0 1,122 / 0			**.		
Land Company	A Company			Live	Dead	Snow Wind	Trib.

	1. 3. 4.			Live	Dead	Snow Wind
Load Summary	Load Type	Ref, Start	En d	1.00	0.66	1.00 1.15
Tag Description	Unf. Lin. (lb/ft)		05-06-04	493	246	W. W. W. W.
O Smoothed Load	Conc. Pt. (lbs)	L 06-02-04	06-02-04	598	299	advisor de trade.
1	. Conc. Pt. (lbs)	L 07-03-12	07-03-12	552	276	La commence
2 -	Conc. Pt. (lbs)	L 08-01-00	08-01-00	349	175	OROFESS, CA
3 J2(l1330)	Edition in Quarty			A		Les Land

A	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Controls Summary		38,727 ft-lbs	21.5%	1	04-10-04
Pos. Moment	8,309 ft-lbs 3,642 lbs	14,464 lbs	25.2%	1	07-01-10
End Shear	L/999 (0.068")		n/a	4	04-02-04
Total Load Defi.	L/999 (0.045")	n/a	n/a	5	04-02-04
Live Load Defl. Max Defl.	0.068"	n/a	n/a	. 4	04-02-04
Span / Depth	8	n/a	n/a		00-00-00

	Dim. (L x W)	De man d	. Domana		Material
Bearing Supports B0 Wall/Plate B1 Wall/Plate	4" x3-1/2"	4,2881bs	47.1%	25.1%	Unspecified
	4" x3-1/2"	4,6141bs	50.7%	27%	Unspecified

Notes

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

Calculations assume unbraced length of Top: 00-04-00, Bottom: 00-04-00.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA CONFORMS TO OBC 2012

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

DVENE, TAM 856 18 STRUCTURAL COMPONENT ONLY

-T-L81368



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10 DR(I1046)

April 26, 2017 09:35:26

BC CALC® Design Report



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

File Name: UNIT 2204 T4.mmdl Description: Designa \Dropped Beams\1st Floor\Dropped Beams\B1

Specifier:

Designer: AJ Company

Misc.

Customer:

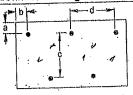
Bulld 5033 Job Name:

Address:

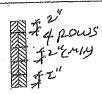
Code reports:

CCMC 12472-R

Connection Diagram



City, Province, Postal Code: BRAMPTON,



o = 7-7/8" a minimum ≈2" d = 幽 b minimum ≈ 3"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Member has no side loads.

Connectors are: . A Nails

3-1/2" ARDOX SPIRAL

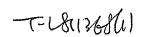
Disclosure

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



BWO NO. TAM 888218 H STRUCTURAL COMPERENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B5A(i1877)

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

April 26, 2017 09:53:39

BC CALC® Design Report

Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4 EL-B.mmdl

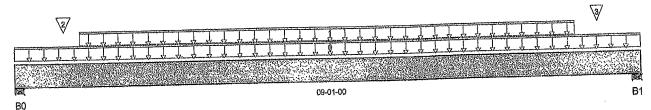
Description: Designs\Flush Beams\1st Floor\Flush Beams\B5A(11877)

Specifier:

Designer: AJ

Company.

Misc:



Total Horizontal Product Length = 09-01-00

		and the supplication of the latest con-	Service Delice and polices of the control of the co	THE RESERVE AND A SECOND			
Reaction Summary (I	Down / Uplift) (lbs)	De ad	Snow	Wind	1		
B0, 5-1/2" B1, 5-1/2"	1,233/0 695/0	1,183 / 0 1,465 / 0	1,520 / 0 1,216 / 0				
					Donal	Snow Wind	Trib.

			Live	Dead	Snow Wind
Load Summary	Load Type	Ref. Start	End 1.00	0,65	1.00 1.15
Tag Description	*	L 00-00-00	.09-01-00 27	13	مهمهم المعالم والمالية
0 FC2 Floor Material	Unf. Lln. (lb/ft)	1. 00-11-08	08-01-08	100	d
1 User Load	Unf, Lln. (lb/ft)				4546
2 User Load	Conc. Pt. (lbs)	L 00-08-10	00-08-10 1,14	•	A COLESSIO
	Conc. Pt. (lbs)	L 08-05-06	08-05-06 545	992	190
3 User Load	CO110' L. (109)				W. Carlot

	Factored	Factored Resistance	Demand / Resistance	Load Case	Location
Controls Summary	Demand			0	04-06-08
Pos. Moment	1,810 ft-lbs	25,173 ft-lbs		13	
End Shear	1,521 lbs	14,464 lbs	10.5%	• • •	
Total Load Defl.	L/999 (0.027")	n/a	n/a	35	
	L/999 (0.01")	n/a	n/a	. 51	
Live Load Defl.	0.027"	n/a	n/a		04-05-05
Max Defl.		n/a	. n/a	. :	00-00-00
Snan / Depth	8.4	, Tira	,,,,		

en en en en en en en en en en en en en e			Resistance	Resistance	
Bearing Supports	Dim. (LxW)	Da m an d	Support	Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"		53.2% 48.7%	18.6% 17%	Unspecified Unspecified
R1 Wall/Plate	5-1/2" x 3-1/2"	4,002 lbs	40.170	37 70	Onopositos

Notes

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA CONFORMS TO OBC 2012

Unbalanced snow loads determined from building geometry were used in selected products verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

n/a n/a n/a n/a

DUGNO. TAM 858278 H STRUGTURAL COMPENSEY ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B5A(i1877)

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

April 26, 2017 09:53:39

BC CALC® Design Report



Build 5033

Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4 EL-B.mmdl

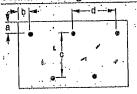
Description: Designs/Flush Beams/ist Floor/Flush Beams/B5A(i18;

Specifier:

Designer:

Company. Misc:

Connection Diagram



a minimum ¤2"∴

c = 7 - 7/8"

b minimum = 3"

d= 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Memberhas no side loads.

Connectors are: 16d >

3-1/2" ARDOX SPIRAL

Disclosure

Completeness and accuracy of Input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-984-6999 before installation.

BC CALO®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARO™, BCI®, BOISE GLULAMIM, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Bolse Cascade Wood Products L.L.C.



DVG NO. TAM 8583TB STRUCTURAL CEMPCHERY ONLY

T-1811369/U



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B6A(i1845)

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

April 26, 2017 09:53:40

BC CALC® Design Report

Build 5033 Job Name:

Address: City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4 EL-B.mmdl

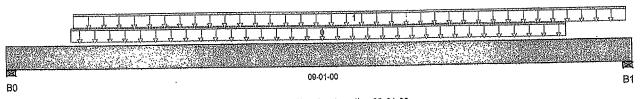
Description: Designs\Flush Beams\1st Floor\Flush Beams\86A(11845)

Specifier:

Designer: AJ

Company

Misc:



Total Horizonta	l Product	Length	≈ 09-01-00
-----------------	-----------	--------	------------

		- Problem a single de marie de marie de marie de marie de marie de marie de marie de marie de marie de marie d	Charles and the second second	China de la constitución de la c	
Reaction Summary (Dov	vn / Uplift) (ibs)				
Bearing	Live	De ad	Snow	Wind	
B0, 5-1/2"	1,022 / 0	925/0		i	
B1, 5-1/2"	1,276/0	1,053/0			•

	. · · ·		Live	Dead	Snow wind	1111/2
Load Summary Tag Description	Load Type	Ref. Start	End 1.00	0.65	1.00 1.15	
0 User Load	Unf. Lin. (lb/ft)	L 00-11-08	08-01-08	100		n/a
1 Smoothed Load	Unf. Lin. (lb/ft)	L 01-00-00	09-00-00 287	144		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment End Shear Total Load Defl. Live Load Defl. Max Defl. Span / Depth	6,480 ft-lbs 2,668 lbs L/999 (0.059") L/999 (0.031") 0.059" 8.4	38,727 ft-lbs 14,464 lbs n/a n/a n/a n/a	16.7% 18.4% n/a n/a n/a n/a	1 4 5 4	04-04-00 01-05-06 04-06-00 04-06-00 04-06-00 00-00-00

•.			De mand/ Resistance	De man d <i>i</i> Resistance	
Bearing Suppo	rts Dim. (L x W)	De man d	Support	Member	Material
B0 Wall/Plate		2,690 lbs	32.7%	11.5%	Unspecified
B1 Wall/Plate	e 5-1/2" x 3-1/2"	3,230 lbs	39,3%	13.8%	Unspecified

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

DWG NO . FAM 8382 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAW® 2.0 3100 SP 1st Floor\...\B6A(i1845)

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

April 26, 2017 09;53:40

BC CALC® Design Report

Bulld 5033

Job Name: Address:

City, Province, Postal Code:BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4 EL-B,mmdl

Description: Designs/Flush Beams/1st Floor/Flush Beams/86A(1184

Specifier:

Designer: AJ Company.

Misc:

Connection Diagram

a minimum = 2"

c = 3-15/16"

d= @ @ M b minimum = 3"

Calculated Side Load = 538.0 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

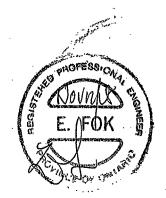
Connectors are: A Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

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



DWO NO . TAM BSBARH ". STRUGTURAL COMPONERY BRLY

T-1811370W



Double 1-3/4" x 11-7/8" VERSA-LAN® 2.0 3100 SP 1st Floor\...\B11A(i1772)

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

April 26, 2017 09:53:40

BC CALC® Design Report

Bulld 5033 Job Name: Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4 EL-B.mmdl

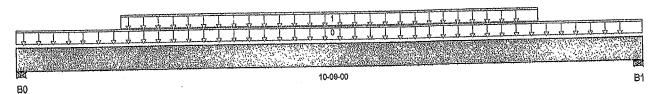
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11A(i177;

Specifier:

Designer: AJ

Company.

Msc.



Total Horizontal Product Length = 10-09-00

Control of the Contro	Carlo between National Control of		This Probabilist of the Colonial September 1997 (1997) and the Colonial September 1997 (1997) an			
Reaction Summary (Down / I	Jplift) (lbs) Live	De ad	Snow	Wind		
B0, 5-1/2" B1, 6-1/2"	143/0 143/0	495/0 495/0			₽.	

	100 运输	•	Live	Dead	Snow Wind	Trip,
Load Summary	Load Type	Ref. Start End	1,00	0.65	1.00 1.15	
Tag Description O FC2 Floor Material	Unf. Lin. (lb/ft)	L 00-00-00 10-09	00 27	13		.n/a n/a
1 User Load	Unf. Lin. (lb/ft)	L 01-09-08 08-11	-08	100		1110

Controle Summary	Factore d Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Controls Summary Pos. Moment End Shear Total Load Defl. Live Load Defl. Max Defl. Span / Depth	2,040 ft-lbs 641 lbs L/999 (0.032") L/999 (0.006") 0.032" 10.1	25,173 ft-lbs 9,401 lbs n/a n/a n/a n/a	8.1% 6.8% n/a n/a n/a n/a	0 0 4 5 4	05-04-08 01-05-06 05-04-08 05-04-08 05-04-08 00-00-00
ahann - ahan					

				200111011111	De mand/ Resistance	**	
Bear	ing Supports	Dlm , (L x W)	Demand	Support	Member	Material	10 . 4
BO	Wall/Plate	5-1/2" x 3-1/2"	693 lbs	13%	4.5%	Unspec	
B1		5-1/2" x 3-1/2"	693 lbs	13%	4.5%	Unspe	ulleu

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

Design meets Code minimum (L/360) Live load deflection critéria.

Calculations assume member is fully braced.

Resistance Factor phl has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

OWO NO. TAM 8583-10H STRUCTURAL COMPORERY SMLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11A(i1772)

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

April 26, 2017 09:53:40

BC CALC® Design Report

Bulld 5 033

Job Name: Address:

City, Province, Postal Code:BRAMPTON,

Customer:

Code reports:

CCMC 12472-R

File Name: UNIT 2204 T4 EL-B.mmdl

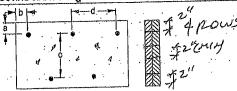
Description: Designs/Flush Beams/1st Floor/Flush Beams/B11A(i1;

Specifier: Designer: AJ

Company:

Msc:

Connection Diagram



c=7-7/8" /2 a minimum ≠2" b minimum = 3"

Memberhas no side loads. Connectors are:

3-1/2" ARDOX SPIRAL

Disclosure

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

BC CALO®, BC FRAMER® , AJS $^{\text{\tiny{M}}}$, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Bolse Cascade Wood Products L.L.C.



DWG NO. TAM 858 \$18 H STRUCTURAL CEMPONENT TORLY

T-18 1371(4



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

PASSED

1st Floor\Flush Beams\B12(i2483)

Dry | 1 span | No cant.

April 4, 2019 10:50:27

BC CALC® Member Report Build 6766

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

UNIT 2204 T4 EL-B.mmdl File name:

Description: 1st Floor\Flush Beams\B12(i2483)

Specifier:

Designer:

Company:

	 	+ + + +	↓ 2 ↓ ↓ ↓ ↓ ↓ ↓ ↓ 0 ↓	1		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	+ + +
<u> </u>	+ + + +					j <u></u>	
k		•	04-08-00				B2
B1		Total Hariza	ntal Product Le	nath = 04-08-0	0		

Total Horizontal Product Length = 04-08-00

Reaction Summary (Down / Uplift) (lbs)

Dead Live Bearing 265/0 501/0 B1, 5-1/2" 208/0 389 / 0 B2, 1-3/4"

,	• *						Live	Dead	Snow	Wind	Tributary
	d Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	00-00-00
Tag	Description	Unf. Lin. (lb/ft)	L.	00-00-00	04-08-00	Top		6 .		٠,٨,٠	
0	Self-Weight	Unf. Lin. (lb/ft)	Ĺ	00-05-08	04-08-00	Тор	12	6			n\a ~\a
1	FC2 Floor Material	•	F	00-05-08	03-11-08	Top	240	120	- 50	1 1940	n\a
2	Hear Load	Unf. Lin. (lb/ft)	_	00 00 0-		•			وبعد للتنظف	~eòn [™]	•

	m 4 1 Damand	Factored Resistance	Demand/ Resistance	Case	Location
Controls Summary	Factored Demand	17,696 ft-lbs	6.4%	1	02-05-02
Pos. Moment	1,139 ft-lbs	7.232 lbs	11.2%	1	03-06-06
End Shear	806 lbs L/999 (0.005")	nla	n\a	4	02-05-14
Total Load Deflection	[7888 (0.003")	n\a	n\a	5	02-05-14
Live Load Deflection	0.005"	n\a	n\a	4	02-05-14
Max Defl. Span / Depth	4.2				

n da	. C. mnorte	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing	Supports	Diffi. (LXVV)	1.083 lbs	21.1%	9.2%	Unspecified
B1	Wall/Plate	5-1/2" x 1-3/4"	• • • -	33.9%	22.6%	Unspecified
B2	Column	1-3/4" x 1-3/4"	843 lbs	33.970	22.070	Onopount

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

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

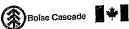
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER® , AJS™, ALLJOIST® , BC RIM BOARD™, BCI® , BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



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

PASSED

April 4, 2019 10:50:27

1st Floor\Flush Beams\B13(i2437)

BC CALC® Member Report

Build 6766 Job name: Address:

Dry | 1 span | No cant.

UNIT 2204 T4 EL-B.mmdl

File name: 1st Floor\Flush Beams\B13(i2437) Description:

Wind

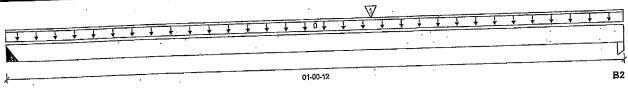
Specifier:

Company:

ΑJ Designer:

City, Province, Postal Code: BRA...ON Customer: Code reports:

CCMC 12472-R



Total Horizontal Product Length = 01-00-12 Snow

Reaction Summary (Down / Uplift) (lbs) Live

15/0 25/0 B1, 2" 21/0 36/0 B2, 1-3/4"

Tributary Wind Snow Live Dead **Load Summary** 1.00 0.65 1.00 End Loc. Start Ref. Load Type 00-00-00 6 Tag Description 01-00-12 Top 00-00-00 L Unf. Lin. (lb/ft) nla Self-Weight 30 00-07-08 00-07-08 61 0 L Conc. Pt. (lbs) J6(i2398)

Demand/ Factored Location Case Resistance Resistance **Factored Demand Controls Summary** 00-07-08 17,696 ft-lbs 0.2% 28 ft-lbs Pos. Moment 01-01-14 1 0.2% 7,232 lbs 14 lbs **End Shear** 0.9 Span / Depth

Demand/ Demand Resistance Resistance Material Member Support Demand Bearing Supports Dim. (LxW) 1.3% HUS1.81/10 n\a 56 lbs 2" x 1-3/4" B1 Hanger Unspecified 2.2% 3.3% 81 lbs 1-3/4" x 1-3/4" Column **B2**

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF.

Notes

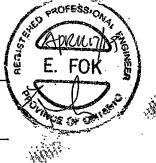
Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA 086.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9



Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS® ,











Series		On Centr							
20102	On Centre Spacing				On Centre Spacing				
NI 20	12"	16"	19.2"	24"	12"	16 ⁴	19.2"	24"	
ML-20		14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"	
		16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"	
		16'-2"	15'-5"	14'-3"	17'-6"	16'5"	15'-5"	141-3"	
-		16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"	
		17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15*-10"	
		16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"	
-		17'-11"	17'-3"	15'-10"	19'-11"	18¹-6"	17'-9"	15'-10"	
•		18'-2"	17'-5"	16'-9"	20'-2"	18 ¹ .9"	17'-11"	17'-1"	
			18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"	
-			18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18°-0"	
		20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"	
		19'-10"	18 ^r -11"	17'-5"	22'-1"	20°-6"	19'-6"	17 ^r -5"	
		20'-2"	19'-3"	18'-2"	2255"	20°-10"	19"-11"	18°-10"	
		21'-3"	20'-3"	19'-2"	23'-8"	21-11	20°-10°	195-91	
		21'-7"	20'-7"	19'-5"	24°-0"	2253"	. 21'-2"	20°-0"	
		22'-3"	21-2"	20'-0"	24'-8"	22'-10"	21-9"	20'-7"	
		22"-0"	20'-11"	19'-10"	24-6"	22'-9"	21'-8"	20'-6"	
		23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22¹-9"	21'-5"	
		23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"-	21'-10"	
		24'-3"	23'-1"	21'-10"	26'-11"	24°-11"	23'-8"	22'-5"	
	NI-20 NI-40x NI-60 NI-70 NI-80 NI-20 NI-40x NI-60 NI-70 NI-80 NI-90x NI-60 NI-70 NI-80 NI-90x NI-60 NI-70 NI-80 NI-90x NI-60	NI-20 15'-7" NI-40x 17'-0" NI-60 17'-2" NI-70 18'-0" NI-80 18'-3" NI-20 17'-10" NI-40x 19'-4" NI-60 19'-7" NI-70 20'-9" NI-80 21'-1" NI-90x 21'-8" NI-90x 21'-5" NI-60 23'-5" NI-70 23'-0" NI-80 23'-5" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 24'-1" NI-90x 25'-6"	NI-20 15'-7" 14'-2" NI-40x 17'-0" 16'-0" NI-60 17'-2" 16'-2" NI-70 18'-0" 16'-11" NI-80 18'-3" 17'-11" NI-80 17'-40" 16'-10" NI-40x 19'-4" 17'-11" NI-60 19'-7" 18'-2" NI-70 20'-9" 19'-2" NI-70 21'-14" 19'-5" NI-90x 21'-8" 20'-0" NI-90x 21'-8" 20'-0" NI-70 23'-0" 21'-3" NI-80 23'-5" 21'-7" NI-80 23'-5" 21'-7" NI-80 23'-5" 21'-7" NI-80 23'-5" 21'-7" NI-90x 24'-1" 22'-3" NI-50 23'-9" 23'-6" NI-70 25'-6" 23'-6"	NI-20 15'-7" 14'-2" 13'-4" NI-40x 17'-0" 16'-0" 15'-1" NI-60 17'-2" 16'-2" 15'-5" NI-70 18'-0" 16'-11" 16'-3" NI-80 18'-3" 17'-1" 16'-5" NI-20 17'-10" 16'-10" 16'-0" NI-40x 19'-4" 17'-11" 17'-3" NI-60 19'-7" 18'-2" 17'-5" NI-70 20'-9" 19'-2" 18'-3" NI-80 21'-1" 19'-5" 18'-6" NI-90x 21'-8" 20'-0" 19'-1" NI-60 21'-10" 20'-2" 19'-3" NI-60 21'-10" 20'-2" 19'-3" NI-70 23'-0" 21'-3" 20'-3" NI-80 23'-5" 21'-7" 20'-7" NI-80 23'-5" 22'-0" 20'-7" NI-80 23'-9" 22'-0" 20'-511" NI-60 23'-9" 23'-2" 22'-0" NI-70 25'-1" 23'-2" 22'-0" NI-70 25'-1" 23'-2" 22'-0" NI-70 25'-6" 23'-6" 22'-6"	NI-20	NI-20	NI-20	NI-20	

_			Mid-Span	Blocking		Mid-S	pan Blocking ar	nd 1/2" Gypsun	n Ceiling
	Series _		On Centre				On Cent	re Spacing	
Depth	Jenes -	12"	16"	19.2"	2411	12"	16"	19.2"	24"
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17¹-9¹¹	16 '- 1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1" -	13'-11"
	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
9-1/2"	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	VI-80 ·	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15¹-10"
	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
	NI-40X NI-60	211-911	19¹-8¹¹	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
11-7/8"	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
77.1		23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21¹-10°	20'-5"	18'-11"
	NI-80 NI-90x	24'-3"	221-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	241-211	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
•	M-40x M-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	NI-80 NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21 ¹ -0"
14"	NI-70	261-611	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
•	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	221-411
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
-		28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
16"	NI-70	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27°-6°	25'-10"	23'-10"
10	NI-80 NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The 1. Maximum crear span application to simple-span residential moor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

a live load deflection limit or 1/480 and a color load deflection limit or 1/480.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. spacing of 24 incress or less. The composite noon may moose at 2 minimum caning almost one row or processing at mid-span with strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists. Strapping shall be minimum to the increase of population of populations of populations and specing time of a partial gypoint ceiling attached to joists.

3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

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

^{4.} Bearing stitteners are not required when riposo are used and the spans one specing great in this case, except as required for hangers.

5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required. 5. This span unal is used on a morning country and properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012.

based on the use or the use of the design properties. Total and continuously along the compression edge. Refer to technical documentation for installation 6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation 6. Joists shall be laterally approved a cooperation and all an experiments and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C, guidelines and construction details.



Maximum Floor Spans







			Ba	ıre		1/2" Gypsum Ceiling				
	Cadea		On Centr	e Spacing				tre Spacing ·		
Depth	Series	12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	· 16'-4"	15'-5"	14'-6"	13'-5"	
	NI-40x	17'-0"	16¹-0"	15'-5"	14' - 9"	17'-5"	16'5"	15'-10"	15'-2"	
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"	
9-1/2"		18'-0"	16'-11"	16' - 3"	15 '-7 "	18'-5"	17 ¹ -3"	16'-7"	15'-11"	
	NI-70	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-S"	16' - 9"	16'-1'°	
	NI-80 NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"	
	• • • •	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"	
	NI-40x	19'-7"	18'-2"	17'-5"	16¹-9"	20'-2"	18¹-9°	17'-11"	17'-2"	
11-7/8"	NI-60	20'-9"	19'-2"	18'-3"	17'-5"	215-4"	19'-9"	18'-10"	17°-10°	
132//0	NI-70	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18°-0"	
	N1-80	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18 ^r -6"	
	NI-90x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18°-7"	
	NI-40x	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"	
	NI-60	23'-0"	21'-3"	20°-3"	19'-2"	23'-8"	21 ¹ -11 ¹¹	20°-10°	19'-9"	
14"	NI-70	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	215-216	2050"	
	NI-80	24'-1"	22'-3"	21-2"	20'-0"	24°-8"	22'-10"	21-9"	20°-7"	
	N1-90x	23°-9"	22'-0"	20°-£1"	19-10-	24º-6"	22'-9"	21*-8**	20'-6"	
	NI-60	25-1"	23*-2"	22'-0"	20°-10°	25-9"	23'-10"	22'-9"	21'-6"	
16"	NI-70	25'-6"	23'-6"	22 4"	21-2"	26'-1"	24'-2"	23'-1"	21'-10"	
70	MI-80	26 ¹ -4 ¹¹	24"-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22°-5"	
	NI-90x	E0.4								

			Mid-Span	Blocking		-Mid-s	pan Blocking ar	id 1/2" Gypsum	Ceiling
			On Centre					re Spacing	
Depth	Series .	12"	16"	19.2"	24"	12"	16"	19.2"	24"
	n# 20	16'-10"	151-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-20	18'-8"	17'-2"	16¹-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-40x	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'·6"	16'-6"	15'-5"
9-1/2"	NI-60	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17¹-10"	16'-7"
	NI-70	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
	NI-80	20'-1"	18¹-5"	17'-5"	16¹-2"	20'-1"	18'-5"	17 ¹ -5 ¹¹	16'-2"
	NI-20	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-40x	22'-1"	20'-7"	19'-7"	18 ¹ -4"	22'-8"	20'-10"	19'-8"	18'-4"
11-7/8"	NI-60	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
11-110	NI-70	23'-7"	21'-11"	20'-11"	191-9"	24'-1" ·	22'-6"	21'-5"	20'-0"
	NI-80	24'-3"	22'-6"	21'-6"	201-411	24'-8"	23'-0"	22'-0"	20'-9"
	NI-90x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-40x	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-60	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23¹-9"	22'-4"
14"	NI-70	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	251-3"	24'-1"	22'-9"
	NI-80	. 27'-3"	25'-4"	24¹-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-90x	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-60	27-5 28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
. ell	NI-70	28-8 29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
16 ¹	NI-80	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"
	NI-90x	73.77	E1 3.0			,			

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and deadload 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/240 and a total load deflection limit of L/240.

a live load detlection limit or 1/400 and a Standard market 1/200 and a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist 2. Spans are based on a composite floor may include 1/2 inch gypsum celling and/or one row of blocking at mid-span with strapping spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum celling 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 celling attached to joists. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum celling attached to joists.

^{3.} Minimum bearing length shall be 1-3/4 Inches for the end bearings.
3. Minimum bearing length shall be 1-3/4 Inches for the end bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required.

^{5.} This span chart is based on unnorm roads. For approached with other trian unnormly distributed roads, an engineering analysis may be require based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and 0BC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and 0BC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and 0BC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012, based on Limit States



Maximum Floor Spans Live toda = 20 ps; Dead toda = 90 ps; Simple Spans, 17480 perfection timit 5/8" oss G&N sheatning.







			Ba	are		_{	1/2" Gyp	sum Ceiling	
Danih	Series		On Centr	e Spacing				re Spacing	
Depth	501125	12"	16"	19.2"	24"	12"	16 ¹¹	19,2"	24"
	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14¹-8"	n/a	16'-7"	15'-7"	15'-1"	N/A
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
5-1/2	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17 ¹ -3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16 ^t -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.
11-7/8"	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20°-4°	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18"5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18°-6°	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19-7"	18 9"	N/A
14"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22°-3°	20'-7"	19t-8ic	N/A
2.4	N1-80	21'-11"	20'-3"	19 ^r .4"	N/A	221-7"	20-11"	20'-0"	N/A
	N1-90x	22'-7"	20'-11"	19¹-11¹¹	N/A.	23 ^t -3 ^{tt}	21'-6"	20°-6"	N/A
	NI-60	22'-3"	20'-8"	191.9"	N/A	23 ^r -1 ^m -	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22-5"	21'-5"	N/A
16"	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 ¹ -4 ⁿ	23'-5"	22'-4"	N/A

			Mid-Span		··	Mid-S	ipan Blockingar	nd 1/ 2" Gypsun	1 Ceiling
- : 45	Series		On Centro				On Cent	reSpacing	
Depth	acres _	32 ⁿ	16"	19.2"	24"	12"	16"	19.2"	24"
	:NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	.w-20 NI-40x	17'-9"	16¹-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
o 4 fall	NI-40X	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
9-1/2"	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19¹-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
	NI-20	18'-9"	17'-0"	3.6'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
11-7/8"	NI-20 NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-40X	21'-4"	19'-8"	18'-5"	N/A	211-8"	19¹-8"	181-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20¹-0¹¹	N/A
	NI-80	221-911	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
	NI-90x	231-411	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19¹-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
11	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
14"	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	231-2"	N/A
	NI-90x	26¹-4"	24¹-4"	23'-3"	N/A	26'-10"	24'-11"	231-9"	N/A
	NI-60	26 ¹ -5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
16"	. NI-70	271-911	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"	261-911	25'-6"	N/A
	NI-90x.	29'-0".	26'-10"	25'-7"	N/A	29"-7"	27'-5"	26'-2"	N/A

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

a live load deflection limit of L/480 and a total load deflection limit of L/240.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a Joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of Joists at blocking line or 1/2 inch gypsum ceiling attached to Joists.

3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required beared on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

^{5.} This span chart is based on unincontrollogous to approximate the second manufacturing undindred roads, an engineering analybased on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012.

based on the use of the design properties, reports and continuously along the compression edge. Refer to technical documentation for installation 6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation 6. Joists snail de l'autreur support de la s

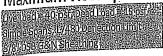


Maximum Floor Spans









- Charles										
			Ba	are			1/2" Gy	osum Celling		
- 44-	Series		On Centr	e Spacing		On Centre Spacing				
Depth	Dellas	. 12"	16"	19.2"	24"	12"	16"	19.2"	24 ^{tr}	
	NJ-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	
a a fall	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A	
9-1/2"	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	
	NI-20	16'-11"	16'-0"	15'-S"	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'-1 <i>i</i> "	N/A	
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'.8"	17'-1"	N/A	
11-7/8"	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	201-411	18'-10"	17'-11"	N/A	
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	1953"	18*-5"	N/A	
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	10;4;	18°-6"	N/A	
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'7"	18 ^t -9 ⁿ	N/A	
	NI-70	21'-7"	20'-0"	19'-1"	n <i>f</i> a.	22 ^t -3 ⁿ	2017"	19 ^r -8 ^r	N/A	
14"	NI-80	21 ¹ -11 ⁿ	20'-3"	19'-4"	N/A	22'-7"	20'11"	20°-0"	N/A	
	NI-80 NI-90x	22'-7"	20'-11"	19¹-11"	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 ¹ -6 ¹¹	211-9"	20"-9"	N/A	24'-3"	22'5"	21'-5"	N/A	
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24°-8°	22,10,	21'-9"	N/A	
	NI-90x	24 ^r -8 ⁿ	22'-9"	211-9"	N/A	25'-4"	23'5"	22'-4"	N/A	
	141-207									

	Series	Mid-Span Blocking On Centre Spacing				Mid-Span Blocking and 1/2" Gypsum Celling On Centre Spacing			
Depth									
		12"	16"	19.2"	24"	12"	26"	19,2"	24"
	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'3"	14'-5"	N/A
9-1/2"	NI-40x	17'-11"	. 16 ^t -11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	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
	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21¹-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
14"	NI-70	22'-6"	20 '-1 0"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22¹-2"	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	251-311	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23 ¹ -9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
16"	NI-70	27'-9"	25¹+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	29¹-7"	27'-5 ⁿ	26¹-2¹¹	N/A

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The 1. Maximum clear span applicable to simple upon the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, 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/480 and a total load deflection limit of L/240.

a live load detrection innic or 1940 and a local load oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist 2. Spans are based on a composite floor with glued-nalled oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist 2. Spans are used on a composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping, spading of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists. 3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

^{3.} Minimum Dearing rengui and the 1-10-lists are used with the spans and spacings given in this table, except as required for hangers.

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

 ^{4.} Bearing stimeners are not required which i place of a policiations with other than uniformly distributed loads, an engineering analysis may be required
 5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

based on the use of the usegin properties. Tools and solutions and continuously along the compression edge. Refer to technical documentation for installation 6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation 6. Joists snail de la teleany supported acceptant and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C, guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

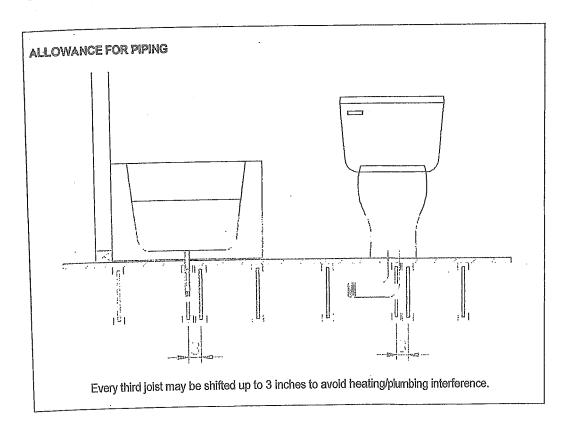


Allowance for Piping (Installation Notes)

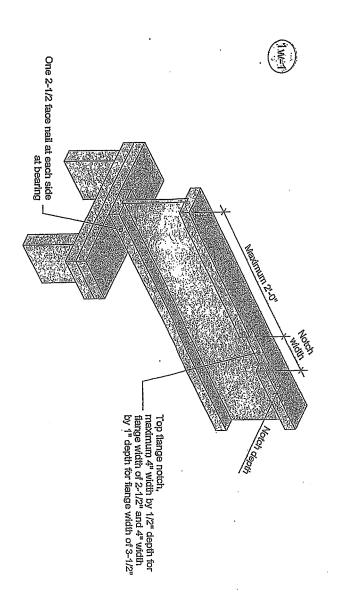
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.

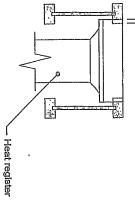
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced for shorter spans; contact your distributor for additional information.

The detail below shows the 3-inch allowance for piping. Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference. For other applications, please contact your distributor.



Revised April 12, 2012





Maximum 1/2" depth for flange width of 2-1/2" and 1" depth for flange width of 3-1/2"

Blocking required at bearing for lateral support, not shown for clarity.
 The maximum dimensions for a notch on the side of the top flange 4-funch width by 1/2-fuch depth for flange width 2-1/2 inches, and 4-funch width by 1-funch depth for flange width 63-1/2 inches.
 This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
 For other applications, contact Nordic Structures.

Notch in I-joist for Heat Register

This document supersedes all previous versions. If the document has been in effect for more than one year, consult nordic a or contact Nordic Structures.

All nalls shown in the details are assumed to be common nalls unless otherwise noted. Nalls shall have a diameter not less than 0.128 lnch for 2-1/2-inch nalls, or 0.144 lnch for 3-inch nalls. Individual components not shown to scale for plainty.

CATEGORY

Ljoist - Typical Floor Framing and Construction Details

2018-04-10

] W-1 NUMBER

STRUCTURES

T 514-871-8526 1 866 817-3418

nordic.ca