

		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	17
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	25
J2DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	1
J4	10-00-00	9 1/2" NI-40x	1	15
J5	8-00-00	9 1/2" NI-40x	1	3
J6	6-00-00	9 1/2" NI-40x	1 .	5
J7	4-00-00	9 1/2" NI-40x	1	2
J8:	2-00-00	9 1/2" NI-40x	1 .	4
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1,	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

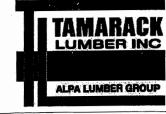
Connector Summary						
Qty Manuf Product						
11	H1	IUS2.56/9.5				
4	H1	IUS2.56/9.5				
9	H1	IUS2.56/9.5				
3	H2	HUS1.81/10				

TOWN OF BRADFORD WEST GWILLIMBURY BUILDING DEPARTMENT PLANS EXAMINED

ONTARIO BUILDING CODE APPLIES DATE: 2018-10-23

INSPECTOR: BG

SITE COPY



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: A,B,C

LOT:

CITY: BRADFORD

SALESMAN: M D DESIGNER: CZ 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: 15.0 fb/ft

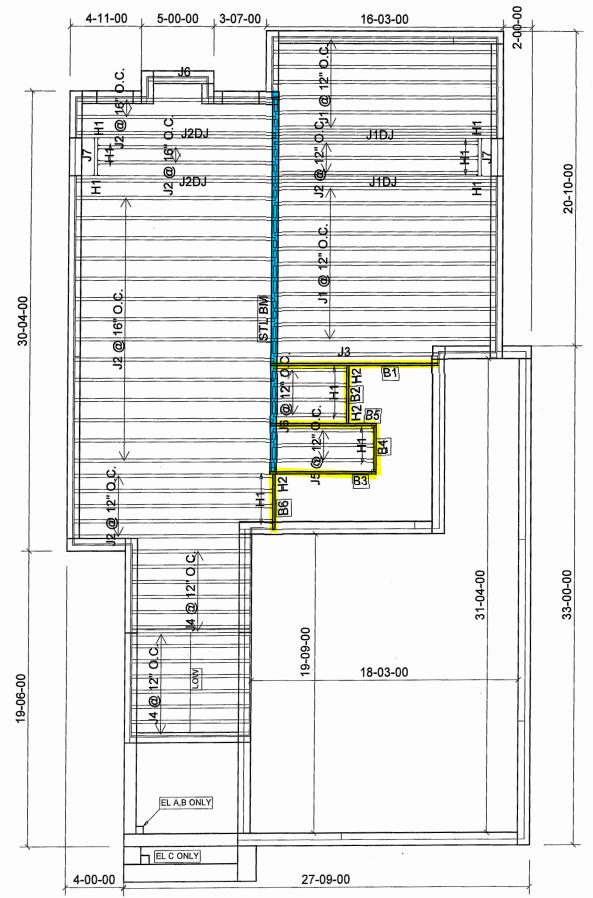
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

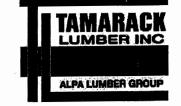
1st FLOOR

STANDARD



Products							
PlotID	Length	Product-	Plies	Net Qty			
J1	16-00-00	9 1/2" NI-40x	1	18			
J1DJ	16-00-00	9 1/2" NI-40x	2	4			
J2	14-00-00	9 1/2" NI-40x	1	26			
J2DJ	14-00-00	9 1/2" NI-40x	2	4			
J3	12-00-00	9 1/2" NI-40x	1	1			
J4	10-00-00	9 1/2" NI-40x	1	15			
J5	8-00-00	9 1/2" NI-40x	1	3			
J6	6-00-00	9 1/2" NI-40x	1	5			
J7	4-00-00	9 1/2" NI-40x	1	2			
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1 .			
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1.			
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			

Connector Summary						
Qty Manuf Product						
H1	IUS2.56/9.5					
H1	IUS2.56/9.5					
H1	IUS2.56/9.5					
H2	HUS1.81/10					
	Manuf H1 H1 H1					



BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: ABC

LOT:

CITY: BRADFORD

SALESMAN: M D DESIGNER: CZ 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:

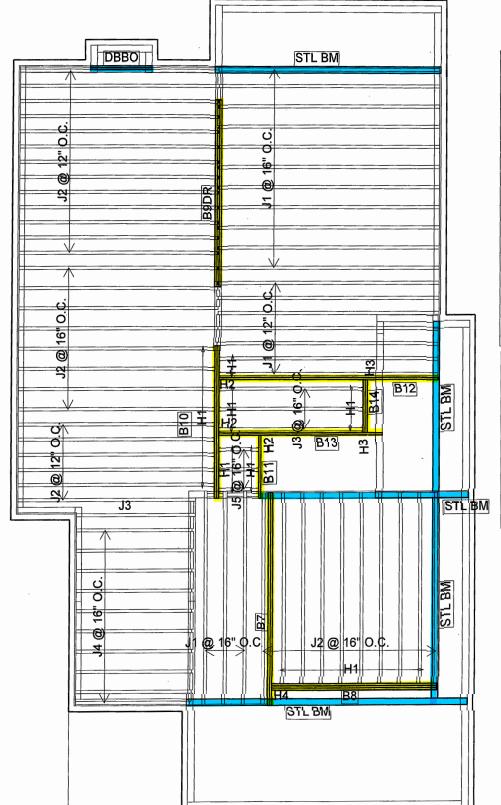
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 fb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

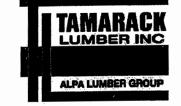
1st FLOOR

STANDARD WITH WOD & WOB



Products						
PlotID	Length	Product	Plies	Net Qty		
J1	16-00-00	9 1/2" NI-40x	1	21		
J2	14-00-00	9 1/2" NI-40x	1	37		
J3	10-00-00	9 1/2" NI-40x	1	4 .		
J4	8-00-00	9 1/2" NI-40x	1	10		
J5	4-00-00	9 1/2" NI-40x	1	3		
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1 .		
B7	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2		
B9DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3		
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1		
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2		
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3		
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1		
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2		

	Connector Summary						
Qty	Qty Manuf Product						
3	H1	IUS2.56/9.5					
20	H1	IUS2.56/9.5					
8	H1	IUS2.56/9.5					
1	H2	HUS1.81/10					
2	H2	HUS1.81/10					
2	H3	HGUS410					
1	H4	HGUS5.50/10					



BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: A

LOT:

CITY: BRADFORD

SALESMAN: M D DESIGNER: CZ REVISION:

NOTES:

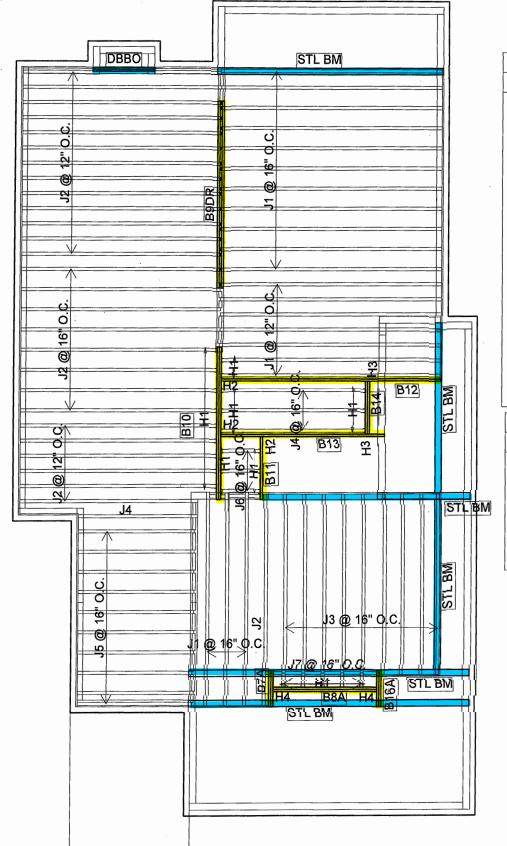
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING 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: 15.0 fb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

2nd FLOOR



Products							
Length	Product	Plies	Net Qty				
16-00-00	9 1/2" NI-40x	1	21				
14-00-00	9 1/2" NI-40x	1	28				
12-00-00	9 1/2" NI-40x	1	9				
10-00-00	9 1/2" NI-40x	1	4				
8-00-00	9 1/2" NI-40x	1	10				
4-00-00	9 1/2" NI-40x	1	3				
2-00-00	9 1/2" NI-40x	1	5				
16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1				
14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3				
12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1				
12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2				
8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2				
6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1				
4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2				
4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2				
4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2				
	16-00-00 14-00-00 12-00-00 10-00-00 8-00-00 4-00-00 16-00-00 14-00-00 12-00-00 8-00-00 6-00-00 4-00-00	Length Product 16-00-00 9 1/2" NI-40x 14-00-00 9 1/2" NI-40x 12-00-00 9 1/2" NI-40x 10-00-00 9 1/2" NI-40x 8-00-00 9 1/2" NI-40x 4-00-00 9 1/2" NI-40x 2-00-00 9 1/2" NI-40x 16-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 14-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 12-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 12-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 8-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 8-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 4-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	Length Product Plies 16-00-00 9 1/2" NI-40x 1 14-00-00 9 1/2" NI-40x 1 12-00-00 9 1/2" NI-40x 1 10-00-00 9 1/2" NI-40x 1 8-00-00 9 1/2" NI-40x 1 4-00-00 9 1/2" NI-40x 1 16-00-00 9 1/2" NI-40x 1 16-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1 12-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 3 12-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2 8-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2 6-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1 4-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2 4-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2 4-00-00 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2				

Connector Summary					
Qty	Manuf	Product			
3	H1	IUS2.56/9.5			
25	H1	IUS2.56/9.5			
1	H2	HUS1.81/10			
2	H2	HUS1.81/10			
2	H3	HGUS410			
2	H4	HGUS410			



BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: B

LOT:

CITY: BRADFORD

SALESMAN: M D DESIGNER: CZ REVISION:

NOTES:

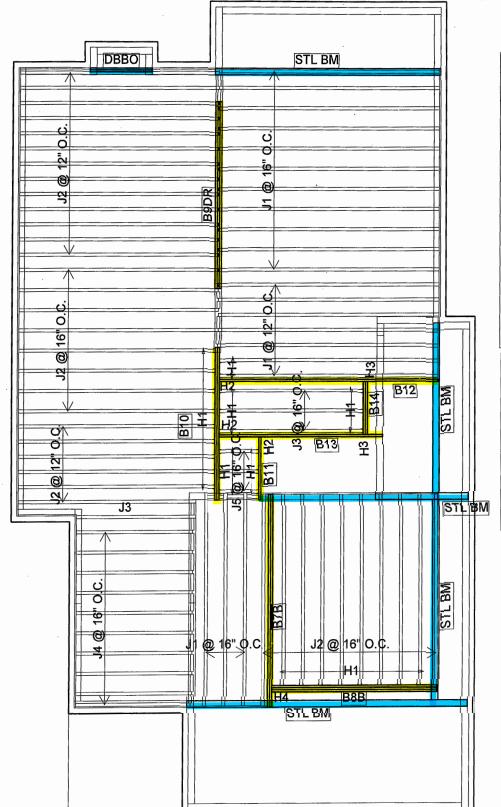
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING 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: 15.0 fb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

2nd FLOOR



Products						
PlotID	Length	Product	Plies	Net Qty		
J1	16-00-00	9 1/2" NI-40x	1	21		
J2 .	14-00-00	9 1/2" NI-40x	1	37		
J3	10-00-00	9 1/2" NI-40x	1	4		
J4	8-00-00	9 1/2" NI-40x	1	10		
J5	4-00-00	9 1/2" NI-40x	1	3		
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1		
В7В	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2		
B9DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3		
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1		
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2		
B8B	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3		
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1		
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2		

	Connector Summary						
Qty Manuf Product							
3	H1	IUS2.56/9.5					
20	H1	IUS2.56/9.5					
8	H1	IUS2.56/9.5					
1	H2	HUS1.81/10					
2	H2	HUS1.81/10					
2	H3	HGUS410					
1	H4	HGUS5.50/10					



BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: C

LOT:

CITY: BRADFORD

SALESMAN: M D DESIGNER: CZ 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: 15.0 fb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

2nd FLOOR



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i2106)

BC CALC® Design Report



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

September 12, 2017 11:09:34

Build 5033

Job Name:

Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

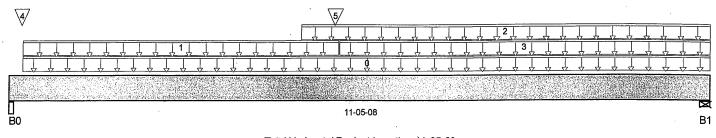
Description: Designs\Flush Beams\Basment\Flush Beams\B1(i2106)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 11-05-08

Reaction Summary (Down / Uplift) (Ibs)								
Bearing	Live	De ad	Snow	Wind				
B0, 5-1/4"	636/0	435/0						
B1, 4-3/8"	390/0	492/0						

Lo	ad Summary					Live		Dead		wina	I FID.
Tag	g Description	Load Type	Re	f. Start	En d	1.00		0.65	1.00	1.15	
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	11-05-08	13		5			n/a
1	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	05-04-10	7		3			n/a
2	Us er Load	Unf. Lin. (lb/ft)	L	04-09-03	11-05-08		£ .	60			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-04-10	11-05-08	3					n/a
4	9(i676)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	180		87			n/a
5	B2(i2149)	Conc. Pt. (lbs)	L	05-03-12	05-03-12	646		309			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,906 ft-lbs	12,704 ft-lbs	38.6%	1	05-03-12
End Shear	1,071 lbs	5,785 lbs	18.5%	1	10-03-10
Total Load Defl.	L/512 (0.253")	0.539"	46.9%	4	05-08-05
Live Load Defl.	L/946 (0.137")	0.359"	38.1%	5	05-08-05
Max Defl.	0.253"	1"	25.3%	4	05-08-05
Span / Depth	13.6	n/a	n/a		00-00-00

				Demand/ Resistance	Demand/ Resistance	
Bea	ring Supports	Dim.(LxW)	De man d	Support	Member	Material
B0	Beam	5-1/4" x 1-3/4"	1,498 lbs	30.5%	13.4%	Unspecified
B1	Wall/Plate	4-3/8" x 1-3/4"	1,200 lbs	29.4%	12.8%	Unspecified

Notes





DWG NO. TAM 9655 STRUCTURAL. **COMPONENT ONLY**



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i2106)

BC CALC® Design Report



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

September 12, 2017 11:09:34

Build 5033

Job Name:

Address: City. Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1(i210

Specifier:

Designer: Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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**

O86.

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



SITE COP

DWG NO. TAM 9 STRUCTURAL **COMPONENT ONLY**



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B2(i2149)

BC CALC® Design Report



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

September 12, 2017 11:09:34

Build 5033

Job Name:

Address:
City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

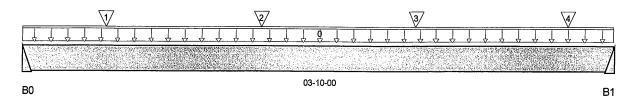
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i2149)

Specifier:

Designer: CZ

Company.

Misc:



Total Horizontal Product Length = 03-10-00

Reaction Summary (Down / Uplift) (Ibs)							
Bearing	Live	De ad	Snow	Wind			
B0	633/0	304/0					
B1	641/0	307/0					

Lo	ad Summary					Live	Dead	Snow	Wind	Trib.
Tag Description		Load Type	Load Type Ref. Start End		En d	rd 1.00	0.65	1.00	1.15	
0	Us er Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	240	120			n/a
1	J6(i2115)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	84	31			n/a
2	J6(i2056)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	103	39			n/a
3	J6(i2055)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	103	39			n/a
4	J6(i2054)	Conc. Pt. (lbs)	L	03-06-08	03-06-08	64	24			n/a

	Factored	Factored	Demand /	Load	Location
Controls Summary	Demand	Resistance	Resistance	Case	
Pos. Moment	1,163 ft-lbs	12,704 ft-lbs	9.2%	1	01-10-04
End Shear	748 lbs	5,785 ibs	12.9%	1	00-11-08
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	01-11-00
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	01-11-00
Max Defl.	0.008"	n/a	n/a	4	01-11-00
Span / Depth	4.6	n/a	n/a		00-00-00

				De m an d/	Demand/	
				Resistance	Resistance	
Bea	ring Supports	Dim.(LxW)	Demand	Support	Member	Material
B0	Hanger	2" x 1-3/4"	1,330 lbs	n/a	31.1%	HUS1.81/10
B1	Hanger	2" x 1-3/4"	1,346 lbs	n/a	31.5%	HUS1.81/10

Notes



SITE COPY

DWG NO. TAM 9656 -18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B2(i2149)

BC CALC® Design Report



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

September 12, 2017 11:09:34

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B2(i214

Specifier:

Designer:

CONFORMS TO OBC 2012

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

Completeness and accuracy of input must be verified by anyone w ho w ould 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.

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DWG NO. TAM 9656-1 STRUCTURAL COMPONENT ONLY

SITE COP'



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B3(i1828)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B3(i1828)

Specifier:

Designer: CZ

Company:

Misc:

<u></u>		
		
D0	07-03-10	D B1

Total Horizontal Product Length = 07-03-10

Reaction Summary (Down / Uplift) (Ibs)					
Bearing	Live	De ad	Snow	Wind	
B0, 5-1/4"	964/0	405/0			
B1 3-1/2"	63 / 0	41 / 0			

1 d Company			L	ive Dea	d Snow Wind	Trib.
Load Summary Tag Description	Load Type	Ref. Start	End 1.	.00 0.65	1.00 1.15	
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L 00-04-06	07-03-10 1	8 7		n/a
1 B6(i2143)	Conc. Pt. (lbs)	L 00-03-08	00-03-08 9	05 365		n/a

	Factored	Factored	Demand/	Load	Location
Controls Summary	Demand	Resistance	Resistance	Case	
Pos. Moment	227 ft-lbs	12,704 ft-lbs	1.8%	1	03-08-11
End Shear	101 lbs	5,785 lbs	1.7%	1	01-02-12
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	03-08-11
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	03-08-11
Max Defl.	0.005"	n/a	n/a	4	03-08-11
Span / Depth	8.5	n/a	n/a		00-00-00

				De mand/ Resistance		
Beari	ng Supports	Dim.(LxW)	Demand	Support	Member	Material
B0	Beam	5-1/4" x 1-3/4"	1,952 lbs	39.8%	17.4%	Unspecified
B1	Post	3-1/2" x 1-3/4"	145 lbs	2.9%	1.9%	Unspecified

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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

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 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.

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Products#

DWG NO. TAM 9657. STRUCTURAL. COMPONENT ONLY

SITE COP

CONFORMS TO OBC 2012



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B4(i1701)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B4(i1701)

Specifier:

Designer: CZ

Company:

Misc:

\	$\overline{\mathbb{V}}$	2
В0	03-00-08	B1

Total Horizontal Product Length = 03-00-08

Reaction Summary (Down	/ Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 1-3/4"	172/0	72 / 0			
B1, 1-3/4"	204/0	84 / 0			

				Live	Dead	Snow Wind	i rib.
Load Summary Tag Description	Load Type	Ref. Start	En d	1.00	0.65	1.00 1.15	
		1 00-08-12	00-08-12	133	50		n/a
0 J5(i2060)	Conc. Pt. (lbs)				53		n/a
1 J5(i2059)	Conc. Pt. (lbs)	_ 0.00					
2 J5(i2058)	Conc. Pt. (lbs)	L 02-08-12	02-08-12	101	38	•	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location	
Pos. Moment	301 ft-lbs	12,704 ft-lbs	2.4%	1	01-08-12	
End Shear	273 lbs	5,785 lbs	4.7%	1	00-11-04	
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-06-06	
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-06-06	
Max Defl.	0.001"	n/a	n/a	4	01-06-06	
Span / Depth	3.6	n/a	n/a		00-00-00	

Reari	ng Supports	Dim . (L x W)	De man d	De mand/ Re s istance Support	De mand/ Resistance Member	Material
B0	Post	1-3/4" x 1-3/4"	347 lbs	14%	9.3%	Unspecified
B1	Post	1-3/4" x 1-3/4"	411 lbs	16.5%	11%	Unspecified

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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

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.

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DWG NO. TAM 9658 . STRUCTURAL. COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B5(i1960)

BC CALC® Design Report



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

September 12, 2017 11:09:34

Build 5033

Job Name:

Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

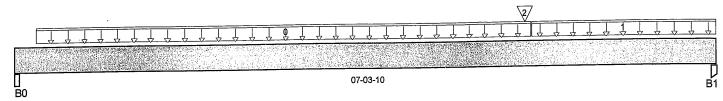
Description: Designs\Flush Beams\Basment\Flush Beams\B5(i1960)

Specifier:

Designer: CZ

Company.

Misc:



Total Horizontal Product Length = 07-03-10

Reaction Summary (Down / Uplift) (lbs)	D. ad	C= a	Wind	
Be aring	Live	De ad	Snow	YVIIIU	
B0, 5-1/4"	234/0	123/0			
B1 3-1/2"	516/0	260/0			

	1.0	•			Live	Dead	Snow	Wind	Trib.
	ad Summary g Description	Load Type	Ref. Start	En d	1.00	0.65	1.00	1.15	
	FC1 Floor Material	Unf. Lin. (lb/ft)	L 00-02-10	05-04-10	20 -	8			n/a
0		Unf. Lin: (lb/ft)	I 05-04-10		9	3			n/a
1	FC1 Floor Material	• •	1 05-03-12			302			n/a
2	B2(i2149)	Conc. Pt. (lbs)	L 00 00 12	00 00 12	5 _ 5				

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,887 ft-lbs	12,704 ft-lbs	14.9%	1	05-03-12
End Shear	1.073 lbs	5,785 lbs	18.5%	1	06-02-10
Total Load Defl.	L/999 (0.035")	n/a	n/a	4	04-00-07
Live Load Defl.	L/999 (0.023")	n/a	n/a	5	04-00-07
Max Defl.	0.035"	n/a	n/a	4	04-00-07
Span / Depth	8.5	n/a	n/a		00-00-00

Do orio	- « Cumporto	Dim . (L × W)	De man d	De mand/ Resistance Support	De mand/ Resistance Member	Material
Bearin B0 B1	n g Supports Beam Post	5-1/4" x 1-3/4" 3-1/2" x 1-3/4"	505 lbs 1,099 lbs	10.3% 22.1%	4.5% 14.7%	Unspecified Unspecified

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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

Disclosure

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DWG NO. TAM STRUCTURAL COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B6(i2143)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B6(i2143)

Specifier:

CZ Designer:

Company: Misc:

0/ 03-08-00 B1 B0

Total Horizontal Product	Length = $03-08-00$
--------------------------	---------------------

Reaction Summary	(Down / Uplift) (lbs)				_		
Bearing	Live	De ad	Snow	Wind	l		
B0, 5-1/2"	1,251 / 0	808/0					
B1	974/0	425/0					
				Live	Dead	Snow Wind	Trib.

		•		Live	Dead	Snow	Wind	irib.
Load Summary Tag Description	Load Type	Ref. Start	En d	1.00	0.65	1.00	1.15	
	Conc. Pt. (lbs)	L 00-04-08	00-04-08	775	592			n/a
4 12(3024)	Conc. Pt. (lbs)	I 01-06-08	01-06-08	514	223			n/a
1 J2(i2024)	Conc. Pt. (lbs)	L 02-06-08	02-06-08		223			n/a
2 J2(i2023) 3 -	Conc. Pt. (lbs)	L 03-06-09	03-06-09		177			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,251 ft-lbs	12,704 ft-lbs	9.8%	1	01-06-08
End Shear	1.131 lbs	5,785 lbs	19.6%	1	02-08-08
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	01-11-12
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	01-11-12
Max Defl.	0.006"	n/a	n/a	4	01-11-12
Span / Depth	4	n/a	n/a		00-00-00

Bearing Supports		Dim.(LxW) Demand		De mand/ Re sistance Support	De mand/ Resistance Member	Material	
B0 Wall/Plate B1 Hanger		5-1/2" x 1-3/4"	2,887 lbs	56.2%	24.6%	Unspecified	
		2" x 1-3/4"	1,992 lbs	n/a	46.6%	HUS1.81/10	

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

Disclosure

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DWG NO. TAM 9660 -18 STRUCTURAL COMPONENT ONLY



CONFORMS TO OBC 2012



Boise Cascade Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i2098)

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

September 12, 2017 11:09:32

BC CALC® Design Report

Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

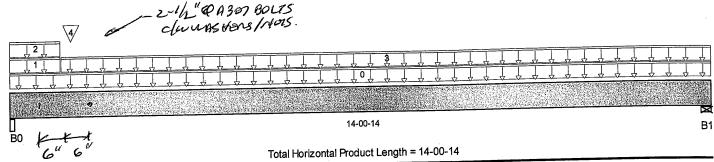
Description: Designs\Flush Beams\1st Floor\Flush Beams\87(i2098)

Specifier:

Designer: CZ

Company:

Misc:



Reaction Summary (Down /	Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 5-1/4" B1, 4-3/8"	2,309 / 0 321 / 0	2,081 / 0 255 / 0			

	ad Summary	Load Type	Ref. Start	E n d	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 1 2 3 4	FC3 Floor Material Us er Load LOW ROOF FC3 Floor Material	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Conc. Pt. (lbs)	L 00-00-00 L 00-00-00 L 00-00-00 L 01-00-00 L 01-02-06	01-00-00 01-00-00 14-00-14	94 33 17	4 180 30 6 1,857		281 99 1,932	n/a n/a n/a n/a n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,733 ft-lbs	25,408 ft-lbs	18.6%	1	01-07-00
	5.665 lbs	11,571 lbs	49%	1	01-02-12
End Shear	L/805 (0.2")	0.67"	29.8%	4	06-04-01
Total Load Defl.	L/999 (0.109")	n/a	n/a	5	06-06-04
Live Load Defl.	•	1"4"	20%	4	06-04-01
Max Defl. Span / Depth	0.2" 16.9	n/a	n/a	·	00-00-00

				Demand/ Resistance		Material
Bearin B0 B1	n g Supports Beam Wall/Plate	Dim . (L x W) 5-1/4" x 3-1/2" 4-3/8" x 3-1/2"	6,065 lbs 801 lbs	Support 61.8% 9.8%	27.1% 4.3%	Unspecified Unspecified

Notes



DWG NO. TAM 9661 - STRUCTURAL **COMPONENT ONLY**



Boise Cascade Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i2098)

BC CALC® Design Report



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

September 12, 2017 11:09:32

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i209\)

Specifier:

Designer: CZ

Company.

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection Diagram

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection. Of well MALLERS

BOLZLAR

Disclosure

Completeness and accuracy of input must be verified by anyone w ho w ould 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.

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PROVIDE 4 ROWS OF 3-1/2" ARDOX SPIRAL NAILS @ 6 "O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. /" LUMBER EDGE / END DISTANCE. DO NOT USE AIR NAILS.

BOLTS .

SITE COP

DWG NO. TAM 466 STRUCTURAL. COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B7A(i1962)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

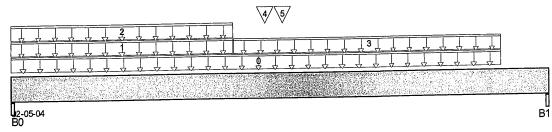
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7A(i1962)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 02-05-04

Reaction Summary (Down	n / Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 5-1/4"	465/0	688/0			
B1, 5-1/4"	318/0	450/0			

	ad Summary Description	Load Type	Re f	. Start	En d	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-02-10	10				n/a
4	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	94	180		281	n/a
. 1 •	LOWROOF	Unf. Lin. (lb/ft)	Ĺ	00-00-00	01-00-00	33	30		99	n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	02-02-10	17				n/a
4		Conc. Pt. (lbs)	L	01-01-11	01-01-11	602	877		1,388	n/a
5	LOWROOF	Conc. Pt. (lbs)	L	01-02-10	01-02-10	13	12		28	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	912 ft-lbs	25,408 ft-lbs	3.6%	1	01-01-12
End Shear	1.098 lbs	11,571 lbs	9.5%	1	01-02-12
	L/999 (0.001")	n/a	n/a	4	01-02-02
Total Load Defl.	L/999 (0")	n/a	n/a	5	01-02-02
Live Load Defl.	0.001"	n/a	n/a	4	01-02-02
Max Defl.	2.1	n/a	n/a		00-00-00

Bearing Supports Bo Beam		Dim . (L x W)	Demand	De mand/ Re sistance Support	Resistance Member	Material	
		5-1/4" x 3-1/2"	1.559 lbs	15.9%	7%	Unspecified	
BU R1	Beam	5-1/4" x 3-1/2"	1,040 lbs	10.6%	4.6%	Unspecified	

Notes







Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B7A(i1962)

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

September 21, 2017 12:04:08

BC CALC® Design Report

Build 5033

Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7A(i196

Specifier:

Designer: Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

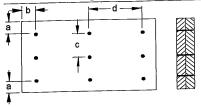
Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA **CONFORMS TO OBC 2012** O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



c = 2-3/4" a minimum = 2" d = 🏈 4. " b minimum = 3"

Calculated Side Load = 458.8 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 Nails

3-1/2" ARDOX SPIRAL

Disclosure

Completeness and accuracy of input must be verified by anyone w ho w ould 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 w ith current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

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DWG NO. TAM 9662 STRUCTURAL



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i2117)

BC CALC® Design Report



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

September 12, 2017 11:09:33

Build 5033 Job Name:

Address: City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

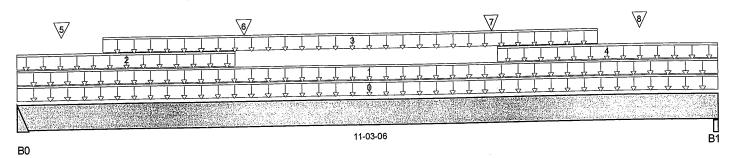
Description: Designs\Flush Beams\1st Floor\Flush Beams\88(i2117)

Specifier:

Designer: CZ

Company.

Misc:



Total Horizontal Product Length = 11-03-06

Reaction Summary (Down	/ Uplift) (lbs)	De ad	Snow	Wind	
Be aring B0	1,851 / 0	1,572 / 0			
B1, 4-1/8"	1,809/0	1,584/0			

						Live	Dead	Snow	Wind	Trib.
	ad Summary	Load Type	Re	f. Start	En d	1.00	0.65	1.00	1.15	
	Description LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06	44	40		96	n/a
0		Unf. Lin. (lb/ft)	Ē	00-00-00	11-03-06		100			n/a
1	User Load	Unf. Lin. (lb/ft)	Ī.	00-00-00	03-06-03	33	30		72	n/a
2	User Load	Unf. Lin. (lb/ft)	ī	01-04-08	09-04-08	265	99			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	ĩ	07-08-15	11-03-06		30		72	n/a
4	Us er Load	Conc. Pt. (lbs)	ī	00-08-08	00-08-08	289	108			n/a
5	J2(i2116)	Conc. Pt. (lbs)	ī	03-07-11	03-07-11		90		216	n/a
6	Us er Load	• •	ī	07-07-11	07-07-11		90		216	n/a
7	Us er Load	Conc. Pt. (lbs)	_	10-00-08	10-00-08		122			n/a
8	J2(i1927)	Conc. Pt. (lbs)	L	10-00-00	.5 55 55					

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,904 ft-lbs	39,636 ft-lbs	32.6%	1	05-10-08
End Shear	4,301 lbs	17.356 lbs	24.8%	1	10-01-12
	L/489 (0.267")	0.545"	49.1%	4	05-06-08
Total Load Defl.	L/896 (0.146")	0.363"	40.2%	5	05-06-08
Live Load Defl.	0.267"	1"	26.7%	4	05-06-08
Max Defl. Span / Depth	13.8	n/a	n/a		00-00-00

Bearing Supports		Dim.(L x W)	De man d	De mand/ Re sistance Support	De mand/ Resistance Member	Material		
B0	Hanger	2" x 5-1/4"	4,742 lbs	n/a	37%	HGUS5.50/10		
B1	Beam	4-1/8" x 5-1/4"	4,694 lbs	40.6%	17.8%	Un specified		

Notes







Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i2117)

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

September 12, 2017 11:09:33

BC CALC® Design Report

Build 5033 Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\88(i211;

Specifier:

Designer:

Company: Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

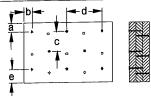
O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Connection Diagram



a minimum = 2" b minimum = 3"

c = 2-1/4" d= *4"

e minimum = 3"

Calculated Side Load = 476.6 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. Nailing schedule applies to both sides of the member.

Connectors are: 16d \(\Lambda\) Nails

3-1/2" ARDOX SPIRAL

Di sclosure

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.

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DWG NO. TAM 9663. COMPONENT ONLY



BC CALC® Design Report

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

PASSED

1st Floor\Flush Beams\B7B(i2153)

Dry | 1 span | No cant.

February 16, 2018 16:06:19

Build 6215

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

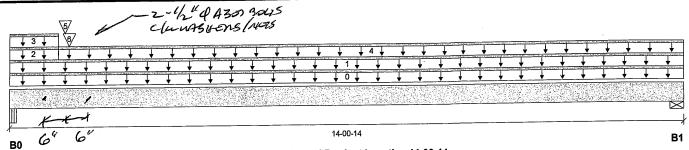
S38-1 BAROSSA 1 EL C-L2.mmdl

File name: 1st Floor\Flush Beams\B7B(i2153) Description:

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 14-00-14

Reaction Sur	ililiary (Down / Op	niit) (ibə)			
Bearing	Live	Dead	Snow	Wind	
B0. 5-1/4"	2,233 / 0	2,024 / 0	2,040 / 0		
B1, 4-3/8"	318 / 0	253 / 0	116 / 0		

اما	ad Summary					Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	14-00-14		10			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	14-00-14	10	4			n\a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	77	170	231		n\a
3	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	33	30	99		n\a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	14-00-14	17	6			n\a
5	bm2	Conc. Pt. (lbs)	L	01-01-10	01-01-10	215	215	646		n\a
6	B8A(i2154)	Conc. Pt. (lbs)	L	01-02-10	01-02-10	1,868	1,592	1,180		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5.346 ft-lbs	23,220 ft-lbs	23.0 %	1	01-02-10
End Shear	6.427 lbs	11,571 lbs	55.5 %	1	01-02-12
Total Load Deflection	L/709 (0.227")	n\a	33.9 %	35	06-04-01
Live Load Deflection	L/1,165 (0.138")	n\a	30.9 %	51	06-04-01
Max Defl.	0.227"	n\a	22.7 %	35	06-04-01
Span / Depth	16.9				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	5-1/4" x 3-1/2"	6,900 lbs	70.3 %	30.8 %	Unspecified
B1	Wall/Plate	4-3/8" x 3-1/2"	850 lbs	10.4 %	4.6 %	Unspecified



DWG NO. TAM 9664-18
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report

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

PASSED

1st Floor\Flush Beams\B7B(i2153)

Dry | 1 span | No cant.

February 16, 2018 16:06:19

Build 6215

Job name:

Address:

Code reports:

Customer:

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

CCMC 12472-R

File name:

S38-1 BAROSSA 1 EL C-L2.mmdl

Description:

1st Floor\Flush Beams\B7B(i2153)

Specifier:

Designer: CZ

Company:

Notes

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

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

Design meets User specified (1") Maximum Total load deflection criteria.

Design meets User specified (0.75") Maximum 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 086.

Unbalanced snow loads determined from building geometry were used in selected product's **CONFORMS TO OBC 2012** verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical

representative or Professional Engineer for the design of the connection. OKMIH

14 Aliento BOUTING

PROVIDE 4: ROWS OF 3-1/2" ARDOX SPIRAL NAILS @ 6 " O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 1"LUMBER EDGE / END DISTANCE. DO NOT USE AIR NAILS.

BOUS

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.

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DWG NO. TAM 9669 STRUCTURAL **COMPONENT ONLY**





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8A(i1964)

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

September 21, 2017 12:04:08

BC CALC® Design Report

Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

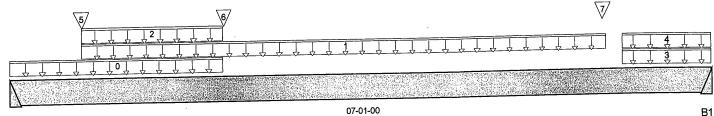
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8A(i1964)

Specifier:

Designer: CZ

Company:

Misc:



07-01-00

B0

Total Horizontal Product Length = 07-01-00

Reaction Summary (Down / Up	lift) (lbs) Live	De ad	Snow	Wind			
B0 B1	290/0 292/0	554/0 580/0		Livo	Dead	Snow Wind	Trib.

				ı	Live	Dead	Snow	Wind	Trib.
	ad Summary	Load Type	Ref. Start	End 1	1.00	0.65	1.00	1.15	
Tag	Description		1 00-00-0	0 02-01-12 3	33	30		72	n/a
0	Us er Load	Unf. Lin. (lb/ft)	L 00-08-0			97			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)		T II II .i .		33		79	n/a
2	LOWROOF	Unf. Lin. (lb/ft)	L 00-08-0			40		96	n/a
3	LOWROOF	Unf. Lin. (lb/ft)	L 06-02-0					72	n/a
4	0	Unf. Lin. (lb/ft)	L 06-02-0			30		40	n/a
5	J7(i1666)	Conc. Pt. (lbs)	L 00-08-0	8 00-08-08	30	63			
-		Conc. Pt. (lbs)	L 02-01-1	2 02-01-12	99	90		216	n/a
6 7	Us er Load -	Conc. Pt. (lbs)	L 06-00-0	0 06-00-00	132	221		216	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,250 ft-lbs	16,515 ft-lbs	7.6%	0	03-04-08
End Shear	783 lbs	7,521 lbs	10.4%	0	06-01-08
Total Load Defl.	L/999 (0.023")	n/a	n/a	4	03-05-08
	L/999 (0.007")	n/a	n/a	5	03-05-08
Live Load Defl.	0.023"	n/a	n/a	4	03-05-08
Max Defl. Span / Depth	8.7	n/a	n/a		00-00-00

_	. Our and a	Dim . (L x W)	De man d	De mand/ Resistance Support	Demand/ Resistance Member	Material
	ring Supports		1.128 lbs	n/a	14%	HGUS410
B0	Hanger	2" x 3-1/2"	.,	•	14.6%	HGUS410
B1	Hanger	2" x 3-1/2"	1,163 lbs	n/a	14.070	11000410

Notes



SITE COPY

DWG NO. TAM 9665.18 STRUCTURAL **COMPONENT ONLY**



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8A(i1964)

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

September 21, 2017 12:04:08

BC CALC® Design Report

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8A(i196

Specifier:

Misc:

CONFORMS TO OBC 2012

Designer: Company.

Customer:

Build 5033 Job Name:

Address:

Code reports:

CCMC 12472-R

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

City, Province, Postal Code: BRADFORD,

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

O86.

Design based on Dry Service Condition.

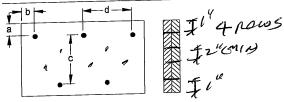
Importance Factor: Normal Part code: Part 9

Di sclosure

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Connection Diagram



a minimum = 🎾 b minimum = 3"

Calculated Side Load = 47.6 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:

Nails

3-1/2" ARDOX SPIRAL

DWG NO. TAM 966

STRUCTURAL COMPONENT ONLY



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

PASSED

1st Floor\Flush Beams\B8B(i2154)

BC CALC® Design Report

Dry | 1 span | No cant.

February 16, 2018 16:06:19

Build 6215

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: BRA...RD

CCMC 12472-R

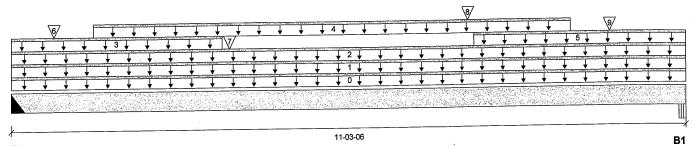
S38-1 BAROSSA 1 EL C-L2.mmdl File name:

1st Floor\Flush Beams\B8B(i2154) Description:

Specifier:

CZ

Designer: Company:



ВО

Total Horizontal Product Length = 11-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B0, 2"	1,889 / 0	1,606 / 0	1,191 / 0
B1, 4-1/8"	1,848 / 0	1,620 / 0	1,229 / 0

						Live	Dead	Snow	Wind	Tributary
	ad Summary Description	Load Type	Ref.	Start	End	1.00	0.65	1.00	1.15	
	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06		14			00-00-00
0	LOW ROOF	Unf. Lin. (lb/ft)	Ĺ	00-00-00	11-03-06	44	40	132		n\a
1		Unf. Lin. (lb/ft)	L	00-00-00	11-03-06		100			n\a
3	User Load User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-03	44	40	132		n\a
3 4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	09-04-08	265	99			n\a
5	User Load	Unf. Lin. (lb/ft)	L	07-08-15	11-03-06	44	40	132		n\a
6	J2(i2116)	Conc. Pt. (lbs)	L	80-80-00	00-08-08	289	108			n\a
7	User Load	Conc. Pt. (lbs)	L	03-07-11	03-07-11	99	90			n\a
8	User Load	Conc. Pt. (lbs)	L	07-07-11	07-07-11	99	90			n∖a
a	J2(i1927)	Conc. Pt. (lbs)	L	10-00-08	10-00-08	326	122			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	14,406 ft-lbs	36,222 ft-lbs	39.8 %	1	05-10-08
End Shear	4.837 lbs	17,356 lbs	27.9 %	1	10-01-12
Total Load Deflection	L/421 (0.311")	n\a	57.0 %	35	05-06-08
Live Load Deflection	L/697 (0.187")	n\a	51.6 %	51	05-06-08
Max Defl.	0.311"	n\a	31.1 %	35	05-06-08
Span / Depth	13.8				

Rearing	ı Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Hanger	2" x 5-1/4"	5,437 lbs	n\a	42.4 %	HGUS5.50/10
B1	Beam	4-1/8" x 5-1/4"	5,412 lbs	46.8 %	20.5 %	Unspecified

Cautions

Hanger model HGUS5.50/10 and seat length were input by the user. Hanger has not been analyzed for OUP adequate capacity.



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DWG NO. TAM 9666-18 STRUCTURAL **COMPONENT ONLY**





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

PASSED

1st Floor\Flush Beams\B8B(i2154)

Dry | 1 span | No cant. **BC CALC® Design Report**

February 16, 2018 16:06:19

Build 6215

Job name:

Address:

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

Customer: CCMC 12472-R Code reports:

File name: Description:

S38-1 BAROSSA 1 EL C-L2.mmdl 1st Floor\Flush Beams\B8B(i2154)

Specifier:

ÇΖ Designer:

Company:

Notes

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

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

Design meets User specified (1") Maximum Total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

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.

Unbalanced snow loads determined from building geometry were used in selected product's

verification.

CONFORMS TO OBC 2012

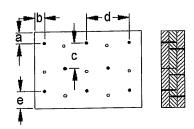
Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

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.

Nailing schedule applies to both sides of the member.

Connection Diagram



a minimum = 2" b minimum = 3" c = 2-1/4" d= 4 e minimum = 3"

Calculated Side Load = 476.6 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.

Nailing schedule applies to both sides of the member.

Connectors are: 16d

3-1/2" ARDOX SPIRAL

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.

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DWG NO. TAM 9666 STRUCTURAL COMPONENT ONLY





Build 5033

Job Name:

Address:

Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9DR(i1672)

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

September 12, 2017 11:09:33

BC CALC® Design Report

City, Province, Postal Code: BRADFORD,

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B9D

Specifier:

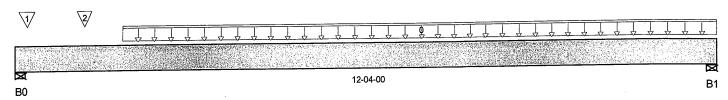
Designer: CZ

Company:

Customer: Code reports:

CCMC 12472-R

Misc:



Total Horizontal Product Length = 12-04-00

Reaction Summary (Down / Uplift) (lbs)		_		
Be aring	Live	De ad	Snow	Wind	
B0, 4"	3,456 / 0	1,383 / 0		•	
B1.4"	3,680 / 0	1,467 / 0			

La sal Osmano ma				Live	Dead	Snow Wind	Trib.
Load Summary Tag Description	Load Type	Ref. Start	En d	1.00	0.65	1.00 1.15	
0 Smoothed Load	Unf. Lin. (lb/ft)	L 01-10-08	12-04-00	590	221		n/a
1 J1(i1798)	Conc. Pt. (lbs)	L 00-02-08	00-02-08	300	112		n/a
2 -	Conc. Pt. (lbs)	L 01-02-08	01-02-08	666	249		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	19,821 ft-lbs	39,636 ft-lbs	50%	1	06-02-08
End Shear	6.302 lbs	17,356 lbs	36.3%	1	01-01-08
Total Load Defl.	L/306 (0.462")	0.59"	78. 4 %	4	06-02-08
Live Load Defl.	L/429 (0.33")	0.393"	84%	5	06-02-08
Max Defl.	0.462"	1"	46.2%	4	06-02-08
Span / Depth	14.9	n/a	n/a		00-00-00

				Demand/ Resistance	Demand/ Resistance	
Beau	ring Supports	Dim.(L x W)	Demand	Support	Member	Material
B0	Wall/Plate	4" x 5-1/4"	6,913 lbs	40.5%	27%	Unspecified
B1	Wall/Plate	4" x 5-1/4"	7,354 lbs	4 3.1%	28.7%	Unspecified

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume unbraced length of Top: 00-03-02, Bottom: 00-03-02.

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.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9





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DWG NO. TAM 9667 . STRUCTURAL COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9DR(i1672)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

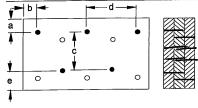
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B\\$

Specifier:

Designer: CZ Company.

Misc:

Connection Diagram



4 pous

a minimum = 2" b minimum = 3" d= 🎒 💪

e minimum = 2"

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. Nailing schedule applies to both sides of the member.

Member has 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 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.

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DWG NO. TAM 966 COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i1621)

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

September 12, 2017 11:29:23

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

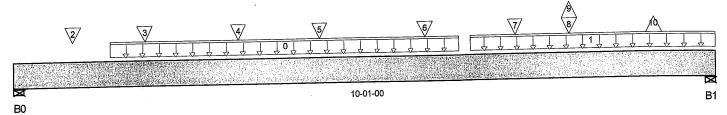
Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i1621)

Specifier:

CZ Designer:

Company:

Misc:



Total Horizontal Product Length = 10-01-00

Reaction Summary (Down / Bearing	Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 5-1/2" B1, 4"	1,953 / 0 2,423 / 3	832/0 1,080/0			

_						Live	Dead	Snow	Wind	Trib.
	ad Summary	Load Type	Ref	. Start	En d	1.00	0.65	1.00	1.15	· · · · · · · · · · · · · · · · · · ·
	Description	Unf. Lin. (lb/ft)	L	01-04-08	06-04-08	297	110			n/a
0	Smoothed Load	Unf. Lin. (lb/ft)	ī	06-06-08	10-01-00	332	122			n/a
1	Smoothed Load	- · · · · · · · · · · · · · · · · · · ·	ī	00-09-15	00-09-15		138			n/a
2		Conc. Pt. (lbs)	L	01-10-08	01-10-08		30		•	n/a
3	J6 (i1845)	Conc. Pt. (lbs)	-	03-02-08	03-02-08		27			n/a
4	J6 (i1699)	Conc. Pt. (lbs)	L	04-04-06	04-04-06		182			n/a
5	-	Conc. Pt. (lbs)	Ŀ		05-10-08		118			n/a
6	J2(i1696)	Conc. Pt. (lbs)	L	05-10-08	•		78			n/a
7	J4 (i1826)	Conc. Pt. (lbs)	L	07-02-08	07-02-08		262			n/a
8	-	Conc. Pt. (lbs)	L	07-11-15	07-11-15		202			n/a
9	-	Conc. Pt. (lbs)	L	07-11-15	07-11-15					n/a
10	J1 (i1831)	Conc. Pt. (lbs)	L	09-02-08	09-02-08	-2				IVa

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
	10,382 ft-lbs	25,408 ft-lbs	40.9%	1	04-10-08
Pos. Moment	4,128 lbs	11.571 lbs	35.7%	1	08-11-08
End Shear	L/488 (0.232")		49.2%	6	05-01-08
Total Load Defl.		• • • • • • • • • • • • • • • • • • • •	51.2%	8	05-01-08
Live Load Defl.	L/703 (0.161")	1"	23.2%	6	05-01-08
Max Defl. Span / Depth	0.232" 11.9	n/a	n/a		00-00-00

D. anin	- « Cumporto	Dim.(L x W)	De man d	De man d/ Re sistance Su pport	Demand/ Resistance Member	Material
Bearir B0 B1	n g Supports Wall/Plate Wall/Plate	5-1/2" x 3-1/2" 4" x 3-1/2"	3,969 lbs 4,985 lbs	38.6% 66.7%	16.9% 29.2%	Unspecified Unspecified

Notes

96th

DWG NO. TAM 9668 STRUCTURAL **COMPONENT ONLY**





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i1621)

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

September 12, 2017 11:29:23

BC CALC® Design Report



Build 5033 Job Name:

Address: City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i162

Specifier:

CZ Designer: Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

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

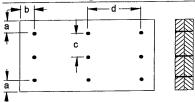
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA **CONFORMS TO OBC 2012**

O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



a minimum = 2" c = 2-3/4" b minimum = 3"

Calculated Side Load = 546.3 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

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DWG NO. TAM 966.18 STRUCTURAL **COMPONENT ONLY**



Boise Cascade Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B11(i1651)

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

September 12, 2017 11:09:33

BC CALC® Design Report

Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

B0

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i1651)

Specifier:

Designer: CZ

Company:

Misc:

•	$\overline{\mathbf{V}}$	
Because and a second se	04-02-00	B1

Total Horizontal Product Length = 04-02-00

Reaction Summary (Dov	vn / Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 5-1/2"	113/0	53 / 0			
B1	89 / 0	43 / 0			

				Live	Dead	Snow Wind	i rib.
Load Summary Tag Description	Load Type	Ref. Start	En d	1.00	0.65	1.00 1.15	
		I 00-06-08	00-06-08	50	19		n/a
0 J5(i2093)	Conc. Pt. (lbs)		01-10-08		30		n/a
1 J5(i2148)	Conc. Pt. (lbs)	L 01-10-08	• • • • • • •				n/a
2 J5(i1714)	Conc. Pt. (lbs)	L 03-02-08	03-02-08	/1	27		TI/C

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	207 ft-lbs	12,704 ft-lbs	1.6%	1	01-10-08
End Shear	182 lbs	5.785 lbs	3.1%	1	03-02-08
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	02-02-08
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-02-08
	0.001"	n/a	n/a	4	02-02-08
Max Defl. Span / Depth	4.6	n/a	n/a		00-00-00

Po orio	ng Supports	Dim. (L x W)	Demand	De mand/ Re sistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	5-1/2" x 1-3/4"	236 lbs	4.6%	2%	Unspecified
B1	Hanger	2" x 1-3/4"	187 lbs	n/a	4.4%	HUS1.81/10

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

O86.

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 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.

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CONFORMS TO OBC 2012

DWG NO. TAM 9669 STRUCTURAL COMPONENT ONLY



Boise Cascade Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i1956)

BC CALC® Design Report



Dry | 2 spans | No cantile vers | 0/12 slope (deg)

September 12, 2017 11:09:33

Build 5033

Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

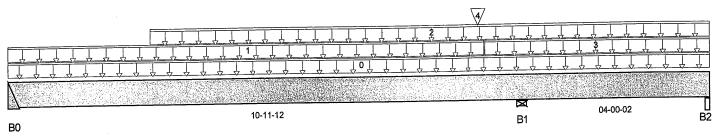
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i1956)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 14-11-14

Reaction Summary (Dow	n / Uplift) (lbs) Live	De ad	Snow	Wind	,	
Bearing	113/0	186/0				
B0 B1, 5-1/2"	1.016/0	1,145/0				
B2. 4-1/8"	18 / 178	0 / 107				

				Live	e Dead	Snow Wind	Trib.
	oad Summary og Description	Load Type	Ref. Start	En d 1.00	0.65	1.00 1.15	
	FC3 Floor Material	Unf. Lin. (lb/ft)	L 00-00-00	14-11-14 6	2		n/a
U			1 00-00-00		5		n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	2 00 00		60		n/a
2	Us er Load	Unf. Lin. (lb/ft)	L 03-00-01		00		
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L 10-02-02	14-11-14 3			n/a
		Conc. Pt. (lbs)	I 10-00-06	10-00-06 722	341		n/a
4	B14(i1875)	COHC. Ft. (IDS)	L 10 00 00	.0 00 00	-		

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	895 ft-lbs	8,258 ft-lbs	10.8%	0	05-00-14
Neg. Moment	-2,183 ft-lbs	-12,704 ft-lbs	17.2%	1	10-11-12
End Shear	244 lbs	3,761 lbs	6.5%	0	00-11-08
Cont. Shear	1.954 lbs	5,785 lbs	33.8%	1	09-11-08
	401 lbs	n/a	n/a	2	14-11-14
Uplift Tatal Load Dof	L/999 (0.073")	n/a	n/a	9	05-03-07
Total Load Defl.	L/999 (0.026")	n/a	n/a	12	05-06-01
Live Load Defl.	L/999 (-0.009")		n/a	9	12-06-04
Total Neg. Defl.	• •	n/a	n/a	9	05-03-07
Max Defl. Span / Depth	0.073" 13.7	n/a	n/a	Ū	00-00-00

Poor	ing Supports	Dim . (L × W)	De man d	De mand/ Resistance Support	De mand/ Resistance Member	Material
		2" x 1-3/4"	402 lbs	n/a	9.4%	IUS2.56/9.5
B0	Hanger	5-1/2" x 1-3/4"	2.956 lbs	57.5%	25.2%	Unspecified
B1	Wall/Plate	•	_,	•	4.6%	Unspecified
B2	Beam	4-1/8" x 1-3/4"	401 lbs	10.4%	4.0 70	Olispediled

Cautions

Notes

Uplift of 401 lbs found at span 2 - Right.

(SIMPSON 1-HUST @ 17-BZ)



DWG NO. TAM 9670 STRUCTURAL COMPONENT ONLY



Boise Cascade Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i1956)

BC CALC® Design Report



Dry | 2 spans | No cantile vers | 0/12 slope (deg)

September 12, 2017 11:09:33

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i19t

Specifier:

Designer: Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria. Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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.

CONFORMS TO OBC 2012

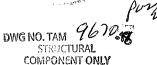
Importance Factor: Normal Part code: Part 9

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of 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 w ith 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™, $\mathsf{ALLJOIST} \mathsf{@} \ , \ \mathsf{BC} \ \mathsf{RIM} \ \mathsf{BOARD}^\mathsf{TM}, \ \mathsf{BC} \mathsf{I} \! \mathsf{@} \ ,$ ${\sf BOISEGLULAM^{TM},\,SIMPLE\,FRAMING}$ SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.







Boise Cascade Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i1649)

BC CALC® Design Report



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

September 12, 2017 11:09:33

Build 5033

Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

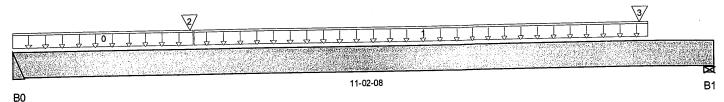
File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i1649)

Specifier:

CZ Designer: Company:

Misc:



Total Horizontal Product Length = 11-02-08

		,			
Reaction Summary (Dov	wn / Uplift) (Ibs) Live	De ad	Snow	Wind	
B0	211/0	117/0			
B1, 5-1/2"	800/0	395/0			

					Live	Dead	Snow	Wind	Trib.
	oad Summary	Load Type	Ref. Start	En d	1.00	0.65	1.00	1.15	
Ta	g Description	Unf. Lin. (lb/ft)		02-10-08	27	10			n/a
0	FC3 Floor Material	, ,	1 02-10-08	10-02-02		3			n/a
1	FC3 Floor Material	Unf. Lin. (lb <i>l</i> ft)				41			n/a
2	B11(i1651)	Conc. Pt. (lbs)	L 02-09-10	02-09-10					n/a
3	B14(i1875)	Conc. Pt. (lbs)	L 10-00-06	10-00-06	794	368			II/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,349 ft-lbs	12,704 ft-lbs	10.6%	1	08-04-14
	1,536 lbs	5,785 lbs	26.6%	1	09-11-08
End Shear	L/999 (0.083")	n/a	n/a	4	05-09-01
Total Load Defl.	L/999 (0.053")	n/a	n/a	5	05-09-01
Live Load Defl.	, ,	n/a	n/a	4	05-09-01
MaxDefl.	0.083"	n/a	n/a	•	00-00-00
Span / Depth	13.5	11/a	11/0		00 00 00

			Resistance				
Bearin B0 B1	n g Supports Hanger Wall/Plate	Dim. (L x W) 2" x 1-3/4" 5-1/2" x 1-3/4"	463 lbs 1,693 lbs	Support n/a 32.9%	10.8% 14.4%	HUS1.81/10 Unspecified	

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume unbraced length of Top: 01-00-06, Bottom: 01-00-06.

Hanger Manufacturer: Unassigned

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

O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012





DWG NO. TAM 9671 STRUCTURAL. COMPONENT ONLY



Boise Cascade Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i1649)

BC CALC® Design Report



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

September 12, 2017 11:09:33

Build 5033

Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i16

Specifier:

Designer:

Company. Misc:

Disclosure

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DWG NO. TAM 9671 STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i1875)

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

September 12, 2017 11:09:32

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdi

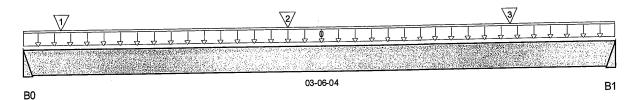
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i1875)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-06-04

Reaction Summary (D	own / Uplift) (lbs)			Mind	
Be aring	Live	De ad	Snow	Wind	
B0	783/0	364/0			
B1	732/0	344/0			•

				Live	Dead	Snow	wina	i rib.
Load Summary Tag Description	Load Type	Ref. Start	En d	1.00	0.65	1.00	1.15	
	Unf. Lin. (lb/ft)	L 00-00-00	03-06-04	240	120			n/a
0 User Load	•		00-02-12		67			n/a
1 J3(i2126)	Conc. Pt. (lbs)	_ 00 0= :=	01-06-12		105			n/a
2 J3(i2108)	Conc. Pt. (lbs)	L 0.00						n/a
3 .13(i1955)	Conc. Pt. (lbs)	L 02-10-12	02-10-12	213	80			TITA

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1.275 ft-lbs	25,408 ft-lbs	5%	1	01-06-12
End Shear	851 lbs	11.571 lbs	7.4%	1	02-06-12
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-09-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-09-00
Max Defl.	0.003"	n/a	n/a	4	01-09-00
Span / Depth	4.2	n/a	n/a		00-00-00

Bearing Supports		Dim . (L x W)	De man d	Resistance Support	Resistance Member	Material
B0	Hanger	2" x3-1/2"	1,630 lbs	n/a	19.1%	HGUS410
B1	Hanger	2" x3-1/2"	1,528 lbs	n/a	17.9%	HGUS410

Notes

O86.

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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







Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i1875)

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

September 12, 2017 11:09:32

BC CALC® Design Report



Build 5033

Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

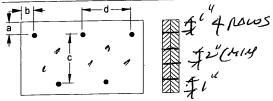
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i187

Specifier:

CZ Designer: Company.

Misc:

Connection Diagram



a minimum = 🗗 b minimum = 3"

Calculated Side Load = 374.9 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

3-1/2" ARDOX SPIRAL

Nails

Di sclosure

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DWG NO. TAM STRUCTURAL COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16A(i1963)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code:BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

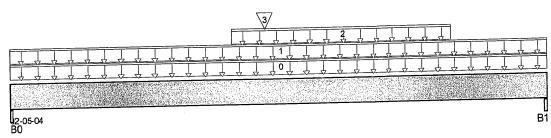
Description: Designs\Flush Beams\1st Floor\Flush Beams\B16A(i196:

Specifier:

CZ Designer:

Company:

Misc:



Total Horizontal Product Length = 02-05-04

		. 0.0			
Reaction Summary (Down /	Uplift) (lbs) Live	De ad	Snow	Wind	
B0, 5-1/4" B1, 5-1/4"	215/0 194/0	509/0 459/0			

					Live	Dead	Snow	Wind	Trib.
	ad Summary	Load Type	Ref. Start	En d	1.00	0.65	1.00	1.15	
Ta	g Description			02-05-04	33	130		216	n/a
0	ROOF	Unf. Lin. (lb/ft)	_ 00 00 00					24	n/a
•		Unf. Lin. (lb/ft)	L 00-00-00	02-05-04	11	10		24	
1	LOWROOF	• •	I 01-00-00	02-00-00	6				n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)				000		440	n/a
_		Conc. Pt. (lbs)	L 01-01-12	01-01-12	294	600		770	1#4

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
	426 ft-lbs	16,515 ft-lbs	2.6%	0	01-01-12
Pos. Moment	382 lbs	7.521 lbs	5.1%	0	01-02-08
End Shear		n/a	n/a	4	01-02-05
Total Load Defl.	L/999 (0")	n/a	n/a	5	01-02-05
Live Load Defl.	Ľ/999 (0'')	n/a	n/a	4	01-02-05
Max Defl.	0"		n/a	•	00-00-00
Span / Depth	2.1	n/a	II/a		00 00 00

	Cummarto	Dim . (L x W)	De man d	De mand/ Re sistance Support	De mand/ Resistance Member	Material
Be ari	n g Supports Beam	5-1/4" x 3-1/2"	712 lbs	11.2%	4.9%	Unspecified
B1	Beam	5-1/4" x 3-1/2"	642 lbs	10.1%	4.4%	Unspecified

Notes



DWG NO. TAM 9673 .8 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16A(i1963)

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

September 21, 2017 12:04:08

BC CALC® Design Report

Build 5033

Job Name: Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16A(i1\)

Specifier:

Designer: Company.

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume unbraced length of Top: 00-08-08, Bottom: 00-08-08.

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

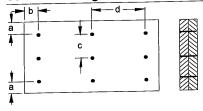
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA **CONFORMS TO OBC 2012**

O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



c = 2-3/4" a minimum = 2" b minimum = 3"

Calculated Side Load = 480.9 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

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DWG NO. TAM 9673 STRUCTURAL COMPONENT ONLY

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\...\B1A(i1291)

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

September 21, 2017 12:03:10

BC CALC® Design Report



Build 5033 Job Name: Address:

City, Province, Postal Code:WATERDOWN,

Customer:

Code reports:

CCMC 12472-R

File Name: HIGHGROVE 2 EL-1,3 DECK.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B1A(i1291

Specifier:

Designer: AJ Company.

Misc:

V	. 27	-
		z
Sept.		×
⊠ B0	03-02-00	B1

Total Horizontal Product Length = 03-02-00

Reaction Summary (Down /	Uplift) (lbs) Live	De ad	Snow	Wind
B0, 4"	327/0	299/0		
B1,4"	253/0	262/0		

_		•	Live	Dead	Snow Wind	i rib.
Load Summary	Load Type	Ref. Start	End 1.00	0.65	1.00 1.15	
Tag Description		1 00-00-00	03-02-00	81		n/a
0 E1 (i275)	Unf. Lin. (lb/ft)		00-09-00 290	I		n/a
1 J3(i1263)	Conc. Pt. (lbs)	L 00-09-00				n/a
2 J3(i1285)	Conc. Pt. (lbs)	L 02-01-00	02-01-00 290	145		! I/ CI

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	516 ft-lbs	12,704 ft-lbs	4.1%	1	02-01-00
End Shear	554 lbs	5,785 lbs	9.6%	1	02-00-08
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-07-00
	L/999 (0.001")	n/a	n/a	5	01-07-05
Live Load Defl.	0.002"	n/a	n/a	4	01 <i>-</i> 07-00
Max Defl. Span / Depth	3.3	n/a	n/a		00-00-00

		Disc. (1 as 181)	De man d	De mand/ Resistance Support	Demand/ Resistance Member	Material
Bear	ing Supports	Dim.(LxW)				
B0	Wall/Plate	4" x 1-3/4"	865 lbs	23.1%	10.1%	Unspecified
B1	Wall/Plate	4" x 1-3/4"	707 lbs	18.9%	8.3%	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 086.

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

Disclosure

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DWG NO. TAM 967 STRUCTURAL COMPONENT ONLY



Live Load = 40 psf, Dead Load = 15 psf Simple Spans, L/480 Deflection Limit 5/8" OSB G&N Sheathing







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

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

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/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 based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and 0BC 2012.

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Live Load = 40 psf, Dead Load = 15 psf Simple Spans, L/480 Deflection Limit 3/4" OSB G&N Sheathing







			Е	are		1	1/2" Gypsum Ceiling				
Depth	Series		On Cent	re Spacing			On Cen	tre Spacing			
		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"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"		
9-1/2"	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"		
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"		
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"		
	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"		
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17' - 0"		
11-7/8"	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"		
11-//8	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"		
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"		
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"		
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"		
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"		
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"		
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"		
	NI-90x	24'-1"	22' - 3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"		
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"		
16"	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"		
10	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"		
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"		

			Mid-Spa	n Blocking		Mid-S	pan Blocking ar	nd 1/2" Gypsum	Ceiling
Depth	Series		On Cent	re Spacing			On Cent	re Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
9-1/2"	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	Ni-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
11-7/8"	NI-60	22'-1"	20'-7"	19'-7"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
11-//0	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22' - 3"	21'-2"	19'-9"
	Ni-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22 '- 6"	21'-5"	20'-0"
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23 '- 8"	22' - 4"	20'-10"
14"	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-80	26' - 6"	24'-7"	23'-5"	22' - 2"	27'-1"	25 '- 3"	24'-1"	22' - 9"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23' - 4"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
16"	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
10	NI-80 .	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26' - 6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

^{1.} Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/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 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. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

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

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

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

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Live Load = 40 psf, Dead Load = 30 psf Simple Spans, L/480 Deflection Limit 5/8" OSB G&N Sheathing







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

			Mid-Spa	n Blocking		Mid-S	pan Blocking ar	nd 1/2" Gypsum	Ceiling
Depth	Series		On Cent	re Spacing			On Cent	re Spacing	
		12"	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
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
9-1/2"	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18' - 3"	17'-1"	N/A
	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
11-7/8"	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
11-7/0	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22' - 9"	21'-1"	20'-1"	N/A	23 '- 3"	21'-7"	20' - 5"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
16"	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
10	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27' - 5"	26'-2"	N/A

^{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.

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

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

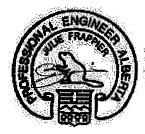
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

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

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Live Load = 40 psf, Dead Load = 30 psf Simple Spans, L/480 Deflection Limit 3/4" OSB G&N Sheathing







			В	are			1/2" Gyp	sum Ceiling	
Depth	Series		On Cent	re Spacing		7	On Cent	re Spacing	
		12"	16"	19.2"	24"	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	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
9-1/2"	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15' - 10"
11-7/8"	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
11-7/6	NI-70	20' -9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90x	21' - 8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"
	NI-90x	24'-1"	22 '- 3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"
16"	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25' - 9"	23'-10"	22'-9"	21'-6"
10	NI-80	25' - 6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"

			Mid-Spa	n Blocking		Mid-S	pan Blocking ar	nd 1/2" Gypsum	Ceiling
Depth	Series		On Cent	re Spacing			On Cent	re Spacing	
		12"	16"	19.2"	24"	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	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11'
9-1/2"	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-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
11-7/8"	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
11-//0	NI-70	23'-4"	21' - 5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11
	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22' - 5"	21'-0"	19'-6"
Ĺ4"	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	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"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
.6"	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
.0	NI-80	29'-1"	27'-0"	25' - 9"	23'-10"	29 '- 8"	27'-6"	25'-10"	23'-10"
	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 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.

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. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
 Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

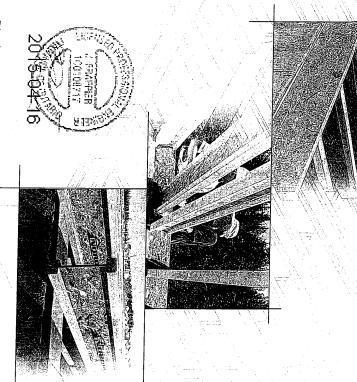
^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



NSTALLATION GUIDE

FOR RESIDENTIAL FLOORS



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-joists





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

- 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.

braced and sheathed.

N-C301 / November 2014

l-joists are not stable until completely installed, and will not carry any load until fully

Avoid Accidents by Following these Important Guidelines:

- Brace and nail each Lipist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When Lipists 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 l-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 tastened to the top surface of each Hjoist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
- Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- 3. For cantilevered Lioists, brace top and bottom flanges, and brace ends with
- Never install a damaged I-joist.

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate or more of the adjacent span. For multiple-span applications, the end spans shall be 40% 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. limit states are based on the factored loads of 1.50L +
- 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 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blocking at mid-span. less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGBS-71.26
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate 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 be required based on the use of the design properties. with other than uniform loads, an engineering analysis may
- 6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mmfoot = 0.305 m

SIMPLE AND MULTIPLE SPANS MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

I-JOIST HANGERS

Hangers shown illustrate the three

most commonly used metal hangers

to support 1-joists.

2. All nailing must meet the hanger

manufacturer's recommendations.

Hangers should be selected based

Joist Depth	Joist		Simple On centre	spans spacing			Multiple	e spans	
		12"	16"	19.2	240	12"	16°	19.2"	24"
		0.0	15:2"	13.9	14.9	200	15:4	14/10	1417
			641	41-10's	14411		1657	6.0	100
		333	16:3	15-8	15.9	18-10"	17.6	16-11	0.70
			770	16-5	16.6		18:6"	16.8	1697
			6. /	16:7	100	2013	11.0	18.0	18:1
	- - - - - -			17-6" 17-10"		20.8	2012	19-35	100
		1020-11	1819	17.11	18:0	22.5	20.9	19:10	1901
				18-1-0		200	10-60	20-0°	1914
				19-4	1985		22.5	214)	21-2 21-6
		2007	20-11	19-11	20:01	25.0	23:10	21 10 22 0	201-10
		200	2130	20.9	20110	24-7		21.9	21510
		2015	22.5	21-1* in 21-5"	2112	2645	24.5	23 3	234
A CONTRACTOR OF STATE	THE PERSON NAMED IN	24.85	1221.91	~21'-9" W	21510	27'3'	25:2	54-0	24.7

CCMC EVALUATION REPORT 13032-R

Fries 12" 16" 19.2 24" 12" 18" 1892 1892 1892 1892 1892 1892 1892 1892	16" 19.2 2.4° 110" 19.2 2.4° 15.27 18.86 15.27 14.10" 4.11"
2.010 2.05.012 2.05.012 2.05.0	44 1877 1017 1751 1950
	14-10" J4-11" J4-11"



4. Web stiffeners are required when the

sides of the hangers do not laterally

maximum spans.

and load capacity based on the on the joist depth, flange width

brace the top flange of the I-joist.







Face Mount

Е

WEB STIFFENERS

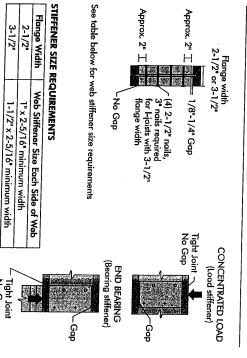
RECOMMENDATIONS:

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

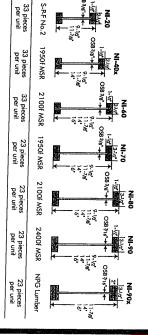
SI units conversion: 1 inch = 25.4 mm

FIGURE 2

WEB STIFFENER INSTALLATION DETAILS



NORDIC I-JOIST SERIES



products to adhere to strict quality control procedures throughout the Chantiers Chibougamau Ltd. harvests its own trees, which enables Northic finished product, reflects our commitment to quality. manufacturing process. Every phase of the operation, from forest to the --

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

2015-04-16

INSTALLING NORDIC I-JOISTS

- . Before laying out floor system components, verify that L-joist flange widths match hanger widths. If not, contact you
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- 3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings 2015-04-16 4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple
- 6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement
- 7. Leave a 1/16-inch gap between the I-joist end and a header
- 8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to concentrated loads from the top of the Lioist. Or, attach the load to blocking that has been securely fastened to the the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the Ljoist's bottom flange. Whenever possible, suspend all
- 9. Never install Lioists where they will be permanently exposed to weather, or where they will remain in direct contact with
- 10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- 11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- 12. Due to shrinkage, common framing lumber set on edge **may never** be used as blocking or rim boards. Hoist blocking l-joist-compatible depth selected. panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and an
- 13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used
- 14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to underlayment layer is installed minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate
- 15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

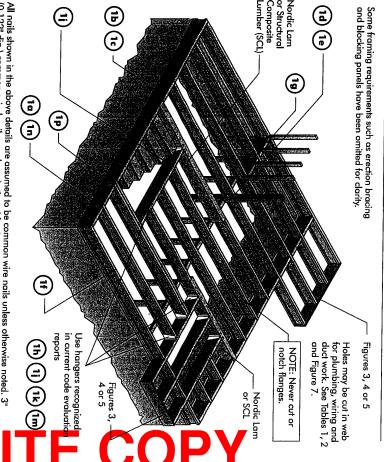
One 2-1/2"

Attach rim board to top

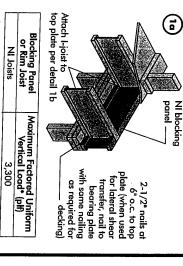
€

Attach rim joist to floor joist with one nail at top and bottom. Nail

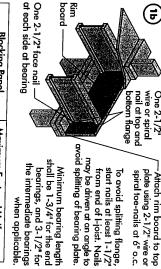
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



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

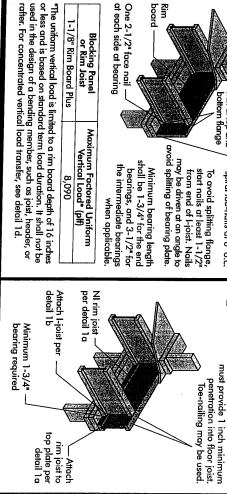


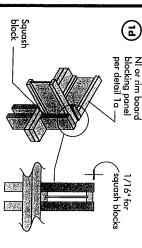
load transfer, see detail 1d. such as joist, header, or rafter. For concentrated vertical It shall not be used in the design of a bending member, inches or less and is based on standard term load duration *The uniform vertical load is limited to a joist depth of 16



· The uniform	1-1/8" Ri	Block or R
vertical load is limi	1-1/8" Rim Board Plus	Blocking Panel or Rim Joist
The uniform vertical load is limited to a rim board depth of 16 inches	8,090	Maximum Factored Uniform Vertical Load (plf)

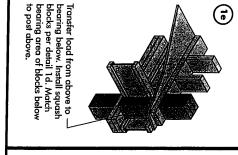
rafter. For concentrated vertical load transfer, see detail



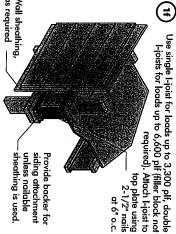


 Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)	red Vertical per h Blocks (lbs)
	3-1/2" wide	5-1/2" wide
 2x Lumber	5,500	8,500
1-1/8" Rim Board Plus	4.300	6 600

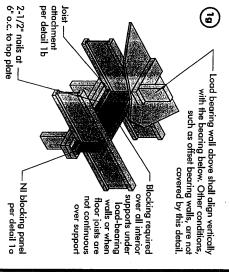
Provide lateral bracing per detail 1a, 1b, . 악 근

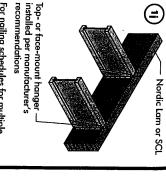


Wall sheathing, as required



Rim board may be used in lieu of Ljoists. Backer is not carried to the toundation. required when rim board is used. Bracing per code shall be





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

recommendations.

manufacturer's recommendations Top-mount hanger installed per _ € beam. 1/8" overhang inside face of wall or tace of wall or beam. allowed past inside 2x plate flush with

detail 1p

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

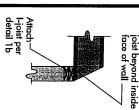
stiffeners shall be used. support the top flange, bearing Note: Unless hanger sides laterally

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

> > \blacksquare

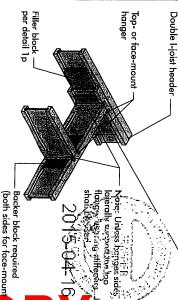
Do not bevel-cut

1



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

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



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

hangers)

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

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

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



€

Filler block

- Leave a 1/8 to 1/4-inch gap between to of filler block and bottom of top I-joist prevent damage to web/flange connection
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" can be clinched, only two nails per toot possible) on each side of the double I-jo Total of four nails per foot required. If no are required. nails at 12 inches o.c. (clinched when

 Offset nails from opposite face by 6"

The maximum factored load that may be using this detail is 860 lbf/ft. Verify double applied to one side of the double joist

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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Maximum support capacity = 1,620 lbs

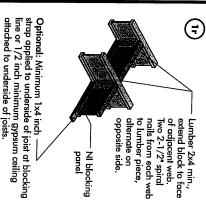
clinch when possible.

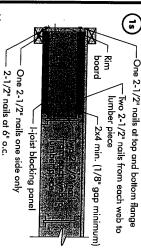
detail 1h. Nail with twelve 3" nails,

Backer block attached per

recommendations manufacturer's Install hanger per

Ċ.		4.	ω		?	-
are required. 5. The maximum factored load that may be applied to one side of the Janub. :::-	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	4. Nail joists together with two rows of ?"	Filler block is required between joists for full length of span.	flange.	Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of ton Liniet	 Support back of I-joist web during nailing to prevent damage to web/flange connection.
3-1/2"× 2"	3-1/2"× 1-1/2"		2-1/2"× 1-1/2"		Flange	DOUBLE
11-7/8" 14" 16"	9-1/2" 11-7/8" 14" 16"	16"	11-7/8" 14"	9-1/2"	Joist Depth	-JOIST CO
3" × 7" 3" × 9"	3" × 6" 3" × 8" 3" × 10"	2-1/8" x 12"	2-1/8" x 8" 2-1/8" x 10"	2-1/8" × 6"	Filler Block Size	DOUBLE I-JOIST CONSTRUCTION





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



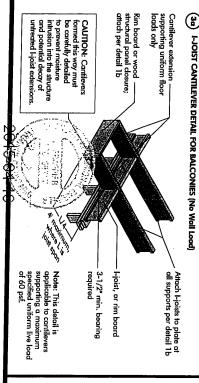
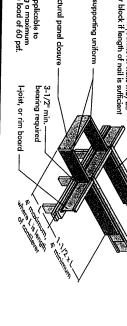


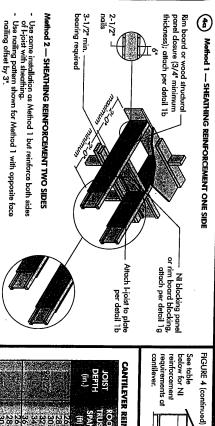


plate at all supports per detail 1b Attach I-joists to

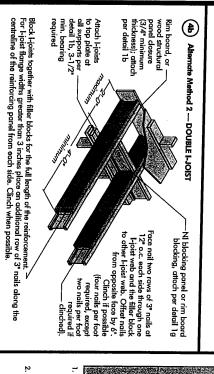




CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



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



- N = No reinforcement required.
 N = No reinforcement required.
 N einforced with 3/4* wood structural panel on one side only.
 N einforced with 3/4* wood structural panel on both sides, or double I-joist.
 N = Try a deeper joist or, or double I-joist.
 X = Try a deeper joist or closure spacing.
 Modimum design load shall be: 15 psf roof deed load, 35 psf floor thot load, and 80 per load. Wall load is based on 3-0.

Roof truss . span

7 25-0" cantilever

truss

span

Roof trusses

____13'-0" maximum Jack trusses -2<u>-</u>0 cantilever

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

MIJEV	ER REINFO	RCEMENT METHODS ALLOWED	WED					
JOIST DEPTH (in.)	ROOF TRUSS SPAN (#)	LL = 30 psf, DL = 15 ps JOIST SPACING (in.) 12 16 19.2	.f RC	00F LOADING LL = 40 psf, I JOIST SPAC 12 16	(UNFACTORED))L = 15 psf ;ING (in.) 19.2 24	.:= 11	50 psf, DL = 1 IST SPACING (i	5 psf
	28 30 30 30 30 30		××××2	2.5.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2	8.05	112X		××××
	0.34322 0.42086	ZZZZZZ ZZZZZZZ Z 152 ZZZ Z 152 ZZZ				ZZZZZ		*****
	226 228 320 34 36 40		1zzz		TELEXZZZ NOCZ	ZZZZZZZ		×==מממט×
	36 36 36 36 37 36 36 37					7777777		×=-ב-מממט
			SURING SUBSECTION	10000	AND ADDRESS OF THE	2		×

- studs may be required.

 3. Toble applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psi and dead load of 15 psf, and a five load deflection limit of L/480, Use 12" o.c. requirements for lesser spacing. For larger openings, or multiple 3*.0" width openings spaced less than 6*.0" o.c., additional joists beneath the opening's cripple strict may be required.
- 4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, in the Roof Truss Span is equivalent to the richerone beament the research th distance between the supporting walls as if a
- truss is used.

 Cantilevered joists supporting girder trusses or roof beams may require additional

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

- Hole location distance is measured from inside face of supports to centre of hole. Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

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

Where: Dreduced = <u>SAF</u>

Dreduced =

Lactual Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications (fit. The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.

Span Adjustment Factor given in this table. The actual measured span distance between the inside faces of supports (ft).

The minimum distance from the inside face of any support to centre of hole from this table actual is greater than 1, use 1 in the above calculation for Lactual.

0/5-04-16

electrical or small plumbing lines. They for the contractor's convenience to instal Knockouts are prescored holes provided /2 inches in diameter, and are



bearing for minimum See Table 1

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

from bearing) minimum distance (see Table 2 for

spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of

distance from

2x diameter of larger hole

Duct chase opening

are 1-1

FIELD-CUT HOLE LOCATOR

FIGURE 7

Holes in webs over-cut the web.

notch the flange, or Never drill, cut or

sharp saw. should be cut with a

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

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

Knockouts

See rule 12

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

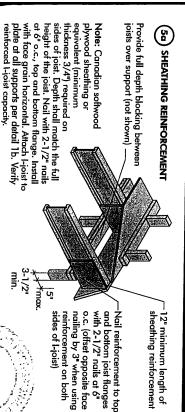
TABLE 2

DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

	7				Depth	Joist
	14. en 17. en 17				ı Serie	Joist
			1	in era	Š	
αωσι				0.88 225	12	
				165 (16	14	
	H0010		61.7		nase leng	
60 KK 60 KG				12 16 -16 16 16 16 16 16 16 16	gth (in.) 18	
			0.08		20	cernie
	3125 NA 376			882 832	22	i obeniu
1441 1490	12.4 12.4 12.4 12.4	10.4		7.5 8.6 8.9	24) (mem)

- 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 distribution.
 Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. For other applications, contact your local distributor.

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



(F)

SET-BACK DETAIL

attach per detail 1b. structural panel closure (3/4" minimum thickness),

Provide full depth blocking

between joists over support (not shown for clarity)

Rim board or wood

Bearing walls

FIGURE 5 (continued) See table requirements at cantilever. below for NI reinforcement Roof truss span 2'-0" ∟ maximum cantilever

SSUT Roof trusses Roof truss span Д 13′-0" maximum maximum cantilever Jack trusses 2-0 5" maximum

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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

-5" maximum

JOIST DEPTH (in.)	9.170		14 (1) 14 (1) 14 (1)	
SPAN (#)	28 30 32 34 34	228 32 34 38	33 32 33 34 34 34 34 34 34 34 34 34 34 34 34	228 3228 323 342 400
ιί. = . jo . 12	115 115 115 115 115 115 115 115 115 115	10000 =================================		-zzzzzzz
30 psf, DI IST SPACII				ニュニー くくくんい
L = 15 ps NG (in.) 19.2				
.f RC	*****			
OF LOAD LL = 40 JOIST 2 1				
ING (UNFA psf, DL = 1 SPACING (X X X X X X X	Assacian Liberary		*********
ACTORED 15 psf (in.)	*****	The American	××××××	
12 L	X X X X 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		10000	NN
= 50 psf, IOIST SPA	X X X X X	A CONTRACTOR	****	×××××
DL = 15 p CING (in.)	<>	***	×××××××	××××××*
osf 24	·×××××	*****	******	*****

Hanger may be used in lieu of solid sawn blocks

bottom flanges. nails, toe-nail at top and Nail joist end using 3"

through joist web and web of girder using 2-1/2" nails. Vertical solid sawn blocks _____(2x6 S-P-F No. 2 or better) nailed

(5c) SET-BACK CONNECTION

supports per detail 1b.

3-1/2" minimum I-joist Attach I-joist to plate at all

bearing required.

girder joist per detail 5c. Attach joists to

Alternate for opposite side.

Attach double I-joist per detail 1p, if required Verify girder joist capacity if the back span

exceeds the joist spacing.

- N = No reinforcement required.
 N reinforced with 3/4" wood structural
- panel on both sides, or double I-joist.

 X = Try a deeper joist or closer spacing.

 2. Maximum design load shall be: 15 psf roof panel on one side only.

 2 = NI reinforced with 3/4" wood structural
- dead load, 55 psf floor total load, and 80 plf maximum width window or door openings. wall load. Wall load is based on 3'-0"
- For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- ω the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use Table applies to joists 12" to 24" o.c. that meet 12" o.c. requirements for lesser spacing.
 - 4. For conventional roof construction using a ridge beam, the Roof Truss Span column When the roof is framed using a ridge board, truss is used distance between the supporting walls as if a the Roof Truss Span is equivalent to the the supporting wall and the ridge beam. above is equivalent to the distance between
- Cantilevered joists supporting girder trusses or oof beams may require additional reinforcing.

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

24	20	16 4	Maximum Joist Spacing (in.)
3/4	15/8	5/8	Minimum Panel Thickness (in.)
2	2"	2"	Common Wire or Spiral Nails
1-3/4"	1-3/4"	1-3/4"	ail Size and Ty Ring Thread Nails or Screws
2	2	2"	ype Staples
6,	6"	6"	Maximum of Fast Edges
12"	12"	12"	n Spacing teners Interm. Supports

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

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

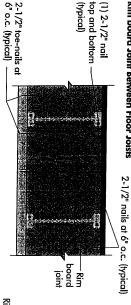
IMPORTANT NOTE:

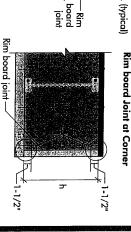
Floor sheathing must be field glued to the L-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, L-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

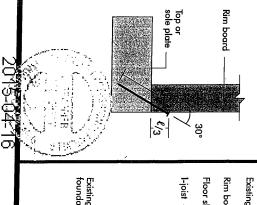
(8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim board Joint Between Floor Joists

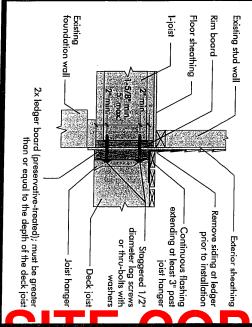


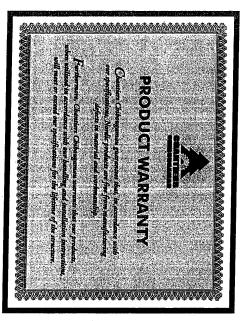


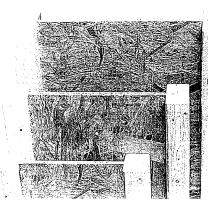
(F TOE-NAIL CONNECTION AT RIM BOARD



8 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL







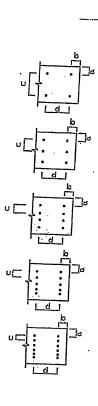
MICRO CITY

Engineering services inc.

TEL: (519) 287 - 2242

R.R. #1, P.O. BOX 61, GLENCOE, ONTARIO, NOL 1MO

	LVL HEADER AND CONVENTIONAL					
		LVE HEADER AND CONVENTIONAL LUMBER NAILING DETAILS				
	DETAIL NUMBER	NUMBER OF ROWS	SPACING (INCHES o/c			
	. A	2	12			
	В	2	. 8			
	С	2	6			
	D	2	4			
	1A	3	12			
	1B	3	8			
	1C	3	. 6			
	1D	- 3	4 .			
	2A	4	12			
-	2B	4	8			
1	2C	4	6			
L	2D	4	4			
1	3A	5	12			
L	3B	5	. 8			
ŀ	3C	5	.6			
L	3D	5.	4			
L	4A	6	12			
Ŀ	4B	6	8			
Ŀ	4C	6	6			
L.	4D	6	4			



NOTES:

- (1) MINIMUM LUMBER EDGE DISTANCE "a" = 1"
 - (2) MINIMUM LUMBER END DISTANCE "b" = 2"
 - (3) MINIMUM NAIL ROW SPACING "c" = 2"
 - (4) STAGGER NAILS "d/2" BETWEEN PLIES FOR MULTI-PLY MEMBERS (3 PLY OR MORE)
- (5) ALL NAILS ARE 3-1/2" ARDOX SPIRAL NAILS
- (6) DO NOT USE AIR-DRIVEN NAILS



DWG NO TÄNNLOOT. 14

STRUCTURAL

GONPONENT ONLY

TO BE USED ONLY

WITH BEAM CALCS

BEARING THE

STAMP BELOWS

PROVICE NATLING
DETAIL № × SEE
OWG #TAMN1001-14

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