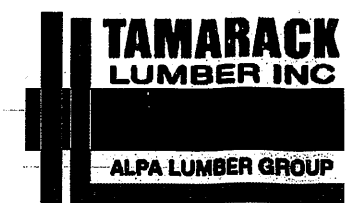


Products					Connector Summary		
PlotID	Length	Product	Plies	Net Qty	Qty	Manuf	Product
J1	22-00-00	9 1/2" NI-40x	1	4	16	H1	IUS2.56/9.5
J2	20-00-00	9 1/2" NI-40x	1	7	2	H4	HGUS410
J3	18-00-00	9 1/2" NI-40x	1	16	1	H9	LS90
J4	16-00-00	9 1/2" NI-40x	1	11	1	H9	LS90
J5	14-00-00	9 1/2" NI-40x	1	31			
J6	10-00-00	9 1/2" NI-40x	1	6			
J7	18-00-00	9 1/2" NI-80	1	11			
B8 ✓	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B10 ✓	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B11 ✓	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B6 ✓	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B7 ✓	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B12 ✓	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B9 ✓	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B13 ✓	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			

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 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT CHASE
AND FIELD CUT OPENINGS SEE
FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. **CERAMIC TILE**
APPLICATION AS PER O.B.C. 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²
TILED AREAS: 20 lb/ft₂

SUBFLOOR: 5/8" GLUED AND NAILED



FROM PLAN DATED:
MARCH 2017

BUILDER:
GREENYORK HOMES

SITE:
OSTIENSE

MODEL: AUBURN 12

ELEVATION: 1

LOT:

CITY: BRAMPTON

SALESMAN: R D
DESIGNER: LBV
REVISION:

DATE: 2017-06-08

2nd FLOOR

DATE 6/5/17
BCIN: 26064; FIRM: 29991

ENGINEERING ONLY - DIMENSIONS TO BE VERIFIED ON SITE SUPPORTING STRUCTURE TO BE VERIFIED BY QUALIFIED BUILDING DESIGNER. ALL CONVENTIONAL FRAMING TO BE SPECIFIED, REVIEWED, AND CONFIRMED BY BUILDING DESIGNER PRIOR TO JOIST(S) AND FLOOR BEAM(S) INSTALLATION. ALL NOTES DESIGNATING MORE OR LESS (AS PER PLAN WORK) DO NOT REPRESENT A PART OF THE SCOPE OF WORK WITHIN THE BOUNDARIES OF THE SEAL. THIS WORK IS DELEGATED TO A QUALIFIED BUILDING DESIGNER HAVING RESPONSIBILITY FOR THIS PROJECT. ALL BEAMS NOT ADDRESSED IN THIS DESCRIPTION AND LABELLED ON THIS LAYOUT ARE BEAMS SPECIFIED BY BUILDING DESIGNER AND/OR PROJECT ENGINEER AND ARE TO BE REVIEWED AND CONFIRMED BY THE SAME DESIGNER(S) PRIOR TO FABRICATION TO ENSURE ADEQUATE LOAD CAPACITY WITH RESPECT TO THE FLOOR SYSTEM COMPONENTS REVIEWED IN THIS SUBMISSION. MUNICIPALITY HAVING JURISDICTION TO OBTAIN LOT SPECIFIC SCHEDULE 1 FORM FROM THIS OFFICE PRIOR TO BUILDING PERMIT APPROVAL. INSTALLERS OF THIS FLOOR SYSTEM AND THEIR COMPANIES HAVE THE RESPONSIBILITY OF ENSURING THEY HAVE A COPY OF THE NORDIC INSTALLATION GUIDE AND ANY OTHER MANUFACTURER'S PRODUCT LITERATURE WHICH WILL AID IN THE OVERALL PROPER INSTALLATION OF THIS FLOOR SYSTEM. INSTALLERS ARE TO READ ALL PRODUCT LITERATURE AND INSTALLATION GUIDELINES BEFORE PROCEEDING. THE SUPPLIER AND SEALING ENGINEER OF THIS FLOOR SYSTEM ARE NOT RESPONSIBLE FOR SURPLUS OR DEFICIT OF PRODUCTS AT PROJECT'S END. THIS LAYOUT IS A GUIDE ONLY. CONFIRMATION OF ALL QUANTITIES, LENGTHS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

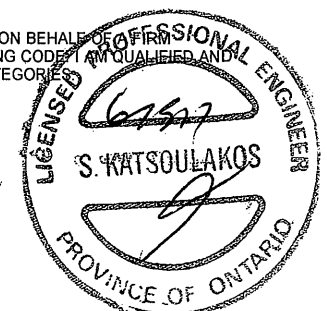
DWG# TAM 3081372 THROUGH DWG# TAM 3080672 INCLUSIVE DATED 6/5/17

SEALED STRUCTURAL COMPONENTS ONLY:
SEALED, THIRD PARTY LVL TYPE BEAMS, BUILT-UP CONVENTIONAL BEAMS, HEADERS, AND CONCENTRATED LOADED NORDIC WOOD-I JOIST ONLY. 2 X 6 SQUASH BLOCK REQUIRED AT ALL EXTERIOR SUPPORTS OR AS PER PROJECT ENGINEER'S SPECIFICATIONS. WEB FILLER REINFORCEMENT REQUIRED AT ALL HANGER SUPPORTED JOIST EXCEEDING A REACTION OF 1500 LBS (FACTORED)-SEE DETAILS. A COMPLETE FRAMING PLAN REQUIRES THE NORDIC PUBLISHED LITERATURE, WHICH INCLUDES INSTALLATION REQUIREMENTS, HANDLING AND STORAGE GUIDELINES, AND FORMS AN INTEGRAL PART OF THIS SEALED DOCUMENT. INSTALL SQUASH BLOCKS FOR TRANSFERRING POINT LOADS FROM GIRDER TRUSSES, HEADERS, AND BEAMS DOWN TO FOUNDATION COMPONENTS. FOR PROPER INSTALLATION, SEE NORDIC LITERATURE. PROVIDE 2 X 4 OR 2 X 6 STUD GRADE OR BETTER SQUASH BLOCKS, MATCHING SUPPORTED WALL WIDTH ABOVE BLOCKS. INSTALL SQUASH BLOCKS ON EACH SIDE OF JOIST. BLOCKING TO BE 1/160 DEEPER THAN JOIS DEPTH. SEE NORDIC LITERATURE FOR NAILING REQUIREMENT.

I REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK ON BEHALF OF THE FIRM. I AM A QUALIFIED AND REGISTERED UNDER SUBSECTION 3.2.5 OF THE ONTARIO BUILDING CODE. MY FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES.

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 3081372
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL
COMPONENTS ONLY



Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information			Application number:	
Building number, street name			Unit no.	Lot/con.
Municipality CITY OF BRAMPTON	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name SAM KATSOULAKOS, P. ENG.		Firm MICRO CITY ENGINEERING SERVICES INC.		
Street address R.R #1, PO BOX 61			Unit no.	Lot/con.
Municipality GLENCOE	Postal code N0L 1M0	Province ONTARIO	E-mail	
Telephone number (519) 287-2242 Business	Fax number (519) 287-5750	Cell number		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]				
<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </div> <div> <input type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection </div> <div> <input checked="" type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems </div> </div>				
Description of designer's work GREENYORK HOMES – OSTIENSE – MODEL: AUBURN 12 – ELEV. 1 1ST FLOOR (SCHEDULE IS NOT ISSUED AS LOT SPECIFIC) REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK ROOF TRUSSES INC. (SEE DWG #TAM30812-17 DATED 6-15-17). SUPPORTING STRUCTURE TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.				
D. Declaration of Designer				
I, <u>SAM KATSOULAKOS, P. ENG</u> declare that (choose one as appropriate): <div style="text-align: center;">(print name)</div> <div> <input checked="" type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: <u>26064</u> Firm BCIN: <u>29991</u> </div> <div> <input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: _____ Basis for exemption from registration: _____ </div> <div> <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ </div>				
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.				
Date		Signature of Designer		

NOTE:

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

DWG#TAM30812-17-S 67577
 DWG#TAM30814-17-S

Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information				Application number:	
Building number, street name				Unit no.	Lot/con.
Municipality CITY OF BRAMPTON		Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities					
Name SAM KATSOULAKOS, P. ENG.			Firm MICRO CITY ENGINEERING SERVICES INC.		
Street address R.R #1, PO BOX 61				Unit no.	Lot/con.
Municipality GLENCOE		Postal code N0L 1M0	Province ONTARIO	E-mail	
Telephone number (519) 287-2242 Business		Fax number (519) 287-5750		Cell number	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]					
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings		<input type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection		<input checked="" type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems	
Description of designer's work GREENYORK HOMES – OSTIENSE – MODEL: AUBURN 12 – ELEV. 1 2ND FLOOR (SCHEDULE IS NOT ISSUED AS LOT SPECIFIC) REVIEW PRE-ENGINEERED FLOOR SYSTEM COMPONENT DRAWINGS AND LAYOUT PLACEMENT PLAN SUPPLIED BY TAMARACK ROOF TRUSSES INC. (SEE DWG #TAM30813-17 DATED 6-15-17). SUPPORTING STRUCTURE TO BE REVIEWED AND VERIFIED BY QUALIFIED BUILDING DESIGNER.					
D. Declaration of Designer					
I, <u>SAM KATSOULAKOS, P. ENG</u> declare that (choose one as appropriate): <div style="text-align: center;">(print name)</div> <div> <input checked="" type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: <u>26064</u> Firm BCIN: <u>29991</u> </div> <div> <input type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: _____ Basis for exemption from registration: _____ </div> <div> <input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ </div>					
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.					
Date		Signature of Designer			

NOTE:

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

DWG#TAM30813-17-S 61517
 DWG#TAM30815-17-S

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 8, 2017 14:48

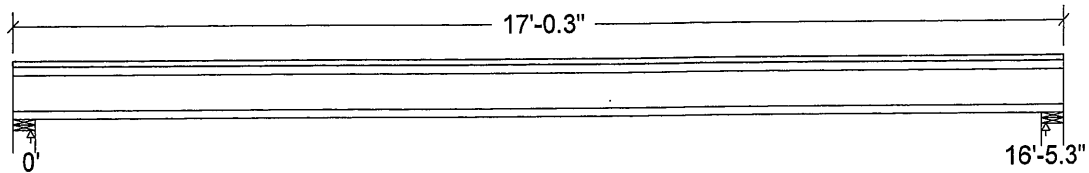
PROJECT
J8 GRD FLR

Design Check Calculation Sheet Nordic Sizer – Canada 6.4

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	170		170
Live	340		340
Factored:			
Total	723		723
Bearing:			
Resistance			
Joist	1893		1893
Support	10829		10829
Des ratio			
Joist	0.38		0.38
Support	0.07		0.07
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.15		1.15

*Minimum bearing length for joists is 2" for exterior supports

Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 9-1/2" NI-80 Floor joist @ 12" o.c.

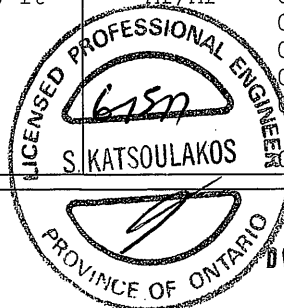
Supports: All - Lumber Wall, No.1/No.2

Total length: 17'-0.3"; 5/8" nailed and glued OSB sheathing

This section **PASSES** the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 699	Vr = 1895	lbs	Vf/Vr = 0.37
Moment (+)	Mf = 2871	Mr = 8958	lbs-ft	Mf/Mr = 0.32
Perm. Defl'n	0.10 = <L/999	0.55 = L/360	in	0.19
Live Defl'n	0.21 = L/961	0.41 = L/480	in	0.50
Total Defl'n	0.31 = L/640	0.82 = L/240	in	0.37
Bare Defl'n	0.23 = L/861	0.55 = L/360	in	0.42
Vibration	Lmax = 16'-5	Lv = 17'-5	ft	
Defl'n	= 0.032	= 0.039	in	0.83



DWG NO. TAM30795-17
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:Deflection: E_Ieff = 367e06 lb-in² K= 4.94e06 lbs

"Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:**CONFORMS TO OBC 2012**

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM30785-17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 8, 2017 14:51

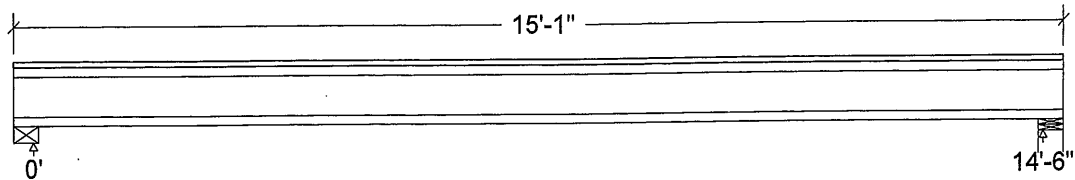
PROJECT
J4 GRD FLR

Design Check Calculation Sheet Nordic Sizer – Canada 6.4

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	201		201
Live	402		402
Factored:			
Total	855		855
Bearing:			
Resistance			
Joist	1893		1893
Support	-		7735
Des ratio			
Joist	0.45		0.45
Support	-		0.11
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	-		1.00
fcp sup	-		769
Kzcp sup	-		1.15

*Minimum bearing length for joists is 2" for exterior supports

Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

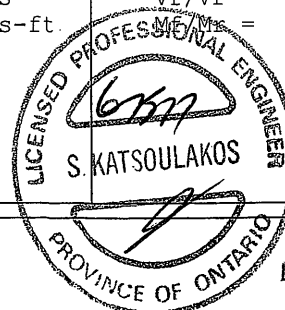
Nordic Joist 9-1/2" NI-40x Floor joist @ 16" o.c.

Supports: 1 - Steel Beam, W; 2 - Lumber Wall, No.1/No.2;
Total length: 15'-1.0"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 822	Vr = 1895	lbs	Vf/Vr = 0.43
Moment (+)	Mf = 2979	Mr = 4824	lbs-ft.	Mf/Mr = 0.62
Perm. Defl'n	0.11 = <L/999	0.48 = L/360	in	0.23
Live Defl'n	0.23 = L/771	0.36 = L/480	in	0.62
Total Defl'n	0.34 = L/514	0.73 = L/240	in	0.47
Bare Defl'n	0.27 = L/643	0.48 = L/360	in	0.56
Vibration	Lmax = 14'-6	Lv = 15'-4	ft	
Defl'n	= 0.038	= 0.046	in	0.83



DWG NO. TAM 30796-17
STRUCTURAL
COMPONENT ONLY

J4 GRD FLR

Nordic Sizer – Canada 6.4

Page 2

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	4824	1.00	1.00	-	1.000	-	-	-	#2
EI	218.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake

L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span

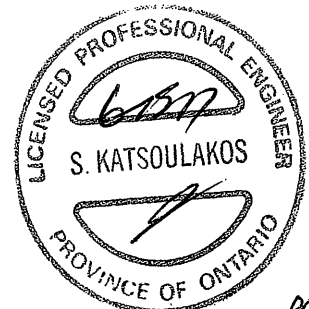
All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:Deflection: E_Ieff = 268e06 lb-in² K= 4.94e06 lbs

"Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:**CONFORMS TO OBC 2012**

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM30796-17
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 8, 2017 14:48

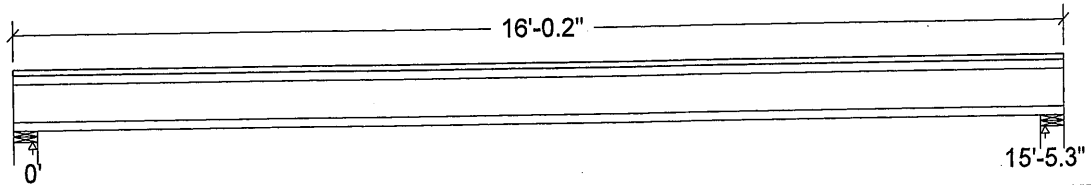
PROJECT
J3 GRD FLR

Design Check Calculation Sheet Nordic Sizer – Canada 6.4

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



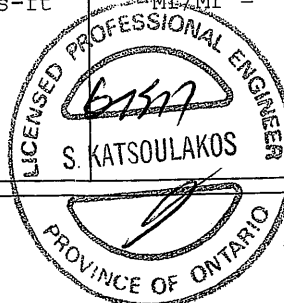
Unfactored:			
Dead	160		160
Live	320		320
Factored:			
Total	681		681
Bearing:			
Resistance			
Joist	1893		1893
Support	7735		7735
Des ratio			
Joist	0.36		0.36
Support	0.09		0.09
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.15		1.15

*Minimum bearing length for joists is 2" for exterior supports
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 9-1/2" NI-40x Floor joist @ 12" o.c.
Supports: All - Lumber Wall, No.1/No.2
Total length: 16'-0.2"; 5/8" nailed and glued OSB sheathing
This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 656	Vr = 1895	lbs	Vf/Vr = 0.35
Moment(+)	Mf = 2533	Mr = 4824	lbs-ft	Mf/Mr = 0.53
Perm. Defl'n	0.11 = <L/999	0.51 = L/360	in	0.21
Live Defl'n	0.22 = L/837	0.39 = L/480	in	0.57
Total Defl'n	0.33 = L/558	0.77 = L/240	in	0.43
Bare Defl'n	0.26 = L/719	0.51 = L/360	in	0.50
Vibration	Lmax = 15'-5	Lv = 16'-3	ft	
Defl'n	= 0.036	= 0.042	in	0.84



8612
DWG NO. TAM 30797-17
STRUCTURAL
COMPONENT ONLY

J3 GRD FLR

Nordic Sizer – Canada 6.4

Page 2

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	4824	1.00	1.00	-	1.000	-	-	-	#2
EI	218.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:Deflection: E_Ieff = 258e06 lb-in² K= 4.94e06 lbs

"Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:**CONFORMS TO NBC 2012**

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM 30797-17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 8, 2017 15:09

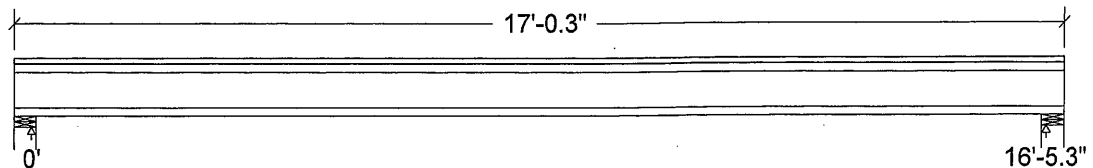
PROJECT
J7 2ND FLR

Design Check Calculation Sheet Nordic Sizer – Canada 6.4

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	170		170
Live	340		340
Factored:			
Total	723		723
Bearing:			
Resistance			
Joist	1893		1893
Support	10829		10829
Des ratio			
Joist	0.38		0.38
Support	0.07		0.07
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.15		1.15

*Minimum bearing length for joists is 2" for exterior supports

Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

Nordic Joist 9-1/2" NI-80 Floor joist @ 12" o.c.

Supports: All - Lumber Wall, No.1/No.2

Total length: 17'-0.3"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 699	Vr = 1895	lbs	Vf/Vr = 0.37
Moment(+)	Mf = 2871	Mr = 8958	lbs-ft	Mf/Mr = 0.32
Perm. Defl'n	0.10 = <L/999	0.55 = L/360	in	0.19
Live Defl'n	0.21 = L/961	0.41 = L/480	in	0.50
Total Defl'n	0.31 = L/640	0.82 = L/240	in	0.37
Bare Defl'n	0.23 = L/861	0.55 = L/360	in	0.42
Vibration	Lmax = 16'-5	Lv = 17'-10	ft	
Defl'n	= 0.030	= 0.039	in	0.78



DWG NO. TAM30798.17
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
 L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

Deflection: E_Ieff = 367e06 lb-in² K= 4.94e06 lbs

"Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:**CONFORMS TO OBC 2012**

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM3079B17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

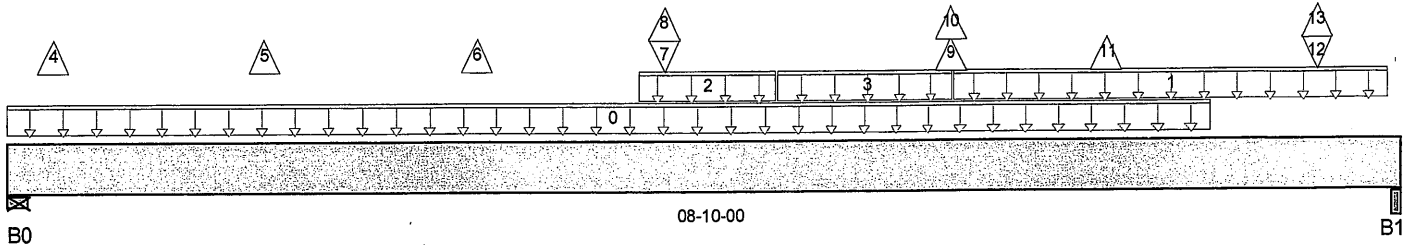
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i3589)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 08-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	917 / 856	91 / 0		
B1, 3-1/4"	996 / 1,372	0 / 111		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	07-07-08	143	36			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-11-12	08-09-00	14	7			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-11-12	04-10-00		3			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-10-00	05-11-12	46	23			n/a
4	J2(i3494)	Conc. Pt. (lbs)	L	00-03-08	00-03-08	-92				n/a
5	J2(i3587)	Conc. Pt. (lbs)	L	01-07-08	01-07-08	-92				n/a
6	J2(i3587)	Conc. Pt. (lbs)	L	02-11-08	02-11-08	-92				n/a
7	-	Conc. Pt. (lbs)	L	04-01-10	04-01-10	63	32			n/a
8	-	Conc. Pt. (lbs)	L	04-01-10	04-01-10	-92				n/a
9	-	Conc. Pt. (lbs)	L	05-11-08	05-11-08	543	-484			n/a
10	-	Conc. Pt. (lbs)	L	05-11-08	05-11-08	-1,707				n/a
11	J2(i3497)	Conc. Pt. (lbs)	L	06-11-08	06-11-08	-92				n/a
12	J2(i3500)	Conc. Pt. (lbs)	L	08-03-08	08-03-08	121	30			n/a
13	J2(i3500)	Conc. Pt. (lbs)	L	08-03-08	08-03-08	-61				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,961 ft-lbs	25,408 ft-lbs	11.7%	3	04-03-08
Neg. Moment	-5,687 ft-lbs	-25,408 ft-lbs	22.4%	2	05-11-12
End Shear	2,161 lbs	11,571 lbs	18.7%	2	07-09-04
Uplift	2,197 lbs	n/a	n/a	2	08-10-00
Total Load Defl.	L/999 (0.046")	n/a	n/a	6	04-06-12
Live Load Defl.	L/999 (-0.068")	n/a	n/a	9	04-10-00
Total Neg. Defl.	L/999 (-0.073")	n/a	n/a	7	04-10-00
Max Defl.	-0.073"	n/a	n/a	7	04-10-00
Span / Depth	10.4	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
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DWG NO. TAM 30799-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i3589)

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

June 8, 2017 16:00:53

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i3589)

Specifier:

Designer: LBV

Company:

Misc:

B0	Wall/Plate	5-1/2" x 3-1/2"	1,490 lbs	14.5%	6.3%	Unspecified
B1	Beam	3-1/4" x 3-1/2"	2,197 lbs	36.2%	15.8%	Unspecified

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.

Cautions

Uplift of 2,197 lbs found at span 1 - Right.

*SIMPSON 1-TS2200-B1***Notes**

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

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

Calculations assume member is fully braced.

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

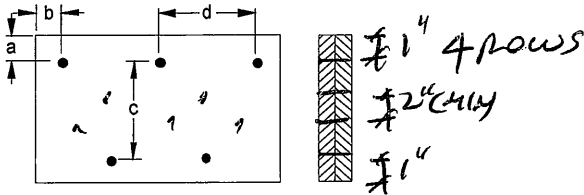
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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

Connection Diagram

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

Calculated Side Load = 380.0 lb/ft

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

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

DWG NO. TAM 30749-17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...B11(i3220)

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

June 8, 2017 16:00:55

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

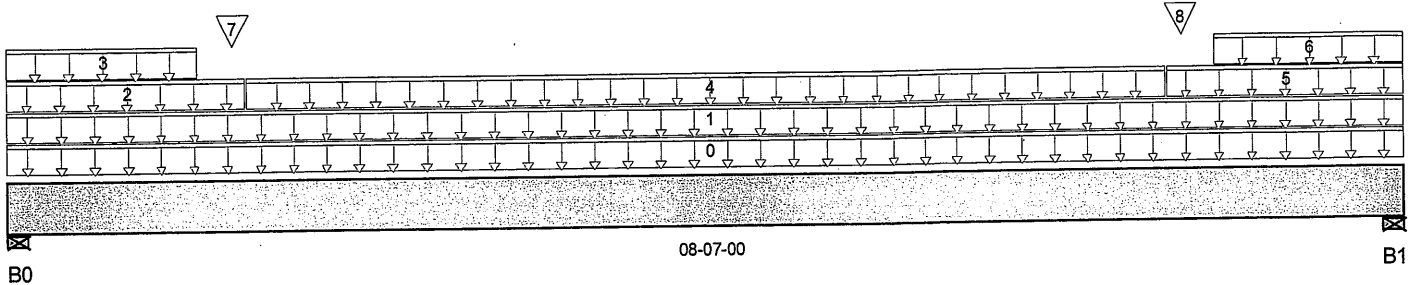
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i3220)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 08-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	220 / 0	507 / 0	459 / 0	
B1, 5-1/2"	220 / 0	507 / 0	460 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	08-07-00	17	15	32		n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-07-00	18	9			n/a
2	E37(i3290)	Unf. Lin. (lb/ft)	L	00-00-00	01-05-08		81			n/a
3	E37(i3290)	Unf. Lin. (lb/ft)	L	00-00-00	01-02-00	16	19	75		n/a
4	E38(i3291)	Unf. Lin. (lb/ft)	L	01-05-08	07-01-08		41			n/a
5	E33(i3137)	Unf. Lin. (lb/ft)	L	07-01-08	08-07-00		81			n/a
6	E33(i3137)	Unf. Lin. (lb/ft)	L	07-05-00	08-07-00	16	19	75		n/a
7	E37(i3290)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	50	106	234		n/a
8	E33(i3137)	Conc. Pt. (lbs)	L	07-02-08	07-02-08	50	106	235		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,776 ft-lbs	25,408 ft-lbs	7%	13	04-03-08
End Shear	1,105 lbs	11,571 lbs	9.6%	13	01-03-00
Total Load Defl.	L/999 (0.031")	n/a	n/a	45	04-03-08
Live Load Defl.	L/999 (0.015")	n/a	n/a	61	04-03-08
Max Defl.	0.031"	n/a	n/a	45	04-03-08
Span / Depth	9.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	1,432 lbs	13.9%	6.1%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	1,433 lbs	13.9%	6.1%	Unspecified

Notes



DWG NO. TAM308002.17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i322

Specifier:

Designer: LBV

Company:

Misc:

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO CBC 2012

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

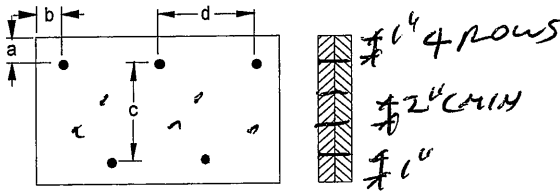
Design based on Dry Service Condition.

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.

Connection Diagram



a minimum = 1" c = 1-1/2"
b minimum = 3" d = 6"

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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

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



Per

DWG NO. TAM30800-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

June 8, 2017 16:00:58

Build 5033

Job Name:

Address:

City, Province, Postal Code:BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

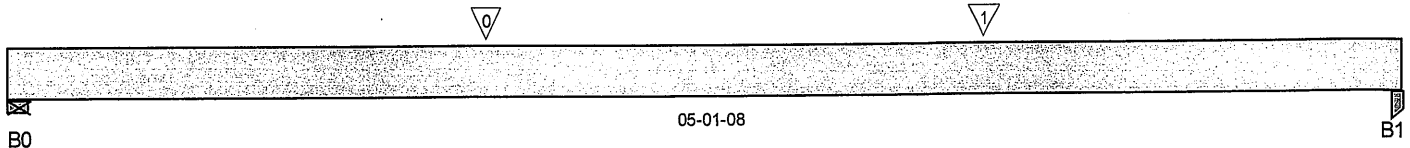
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i3340)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 05-01-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 7-1/16"	609 / 0	330 / 0		
B1, 4-1 1/16"	651 / 0	349 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J1 (i3491)	Conc. Pt. (lbs)	L	01-09-00	01-09-00	582	291			n/a
1	J1 (i3492)	Conc. Pt. (lbs)	L	03-07-00	03-07-00	678	339			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,708 ft-lbs	25,408 ft-lbs	6.7%	1	03-07-00
End Shear	1,400 lbs	11,571 lbs	12.1%	1	03-11-06
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-08-00
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	02-08-00
Max Defl.	0.008"	n/a	n/a	4	02-08-00
Span / Depth	5.4	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	7-1/16" x 3-1/2"	1,325 lbs	6.6%	4.4%	Unspecified
B1 Post	4-1 1/16" x 3-1/2"	1,414 lbs	10.7%	7.1%	Unspecified

Notes

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

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

Calculations assume unbraced length of Top: 01-06-09, Bottom: 01-06-09.

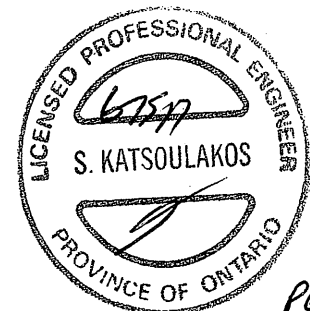
Resistance Factor phi has been applied to all presented results per CSA O86.

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



P614

DWG NO. TAM30801-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B9(i3340)

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

June 8, 2017 16:00:58

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

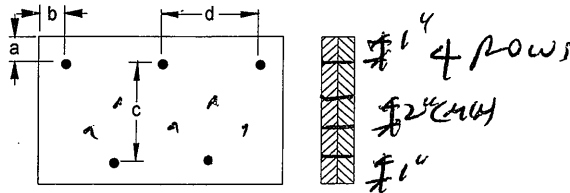
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i3340

Specifier:

Designer: LBV

Company:

Misc:

Connection Diagram

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

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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of 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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per

DWG NO. TAM30801-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

June 8, 2017 16:01:00

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

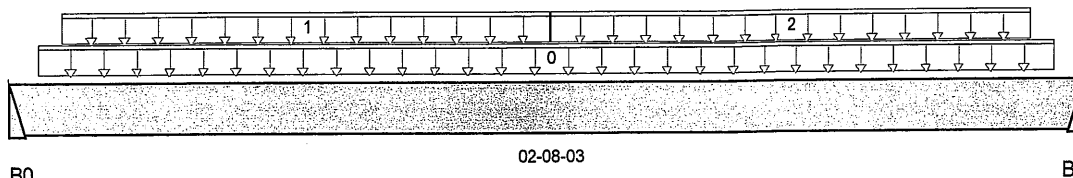
Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i3617;

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 02-08-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	64 / 0	32 / 0		
B1	64 / 0	32 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 ROOF	Unf. Lin. (lb/ft)	L	00-00-14	02-07-05	40	15			n/a
1 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-10	01-04-02	4	2			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-04-02	02-06-09	16	8			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	85 ft-lbs	12,704 ft-lbs	0.7%	1	01-04-01
End Shear	58 lbs	5,785 lbs	1%	1	00-11-08
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-04-01
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-04-01
Max Defl.	0"	n/a	n/a	4	01-04-01
Span / Depth	3.1	n/a	n/a		00-00-00

Disclosure

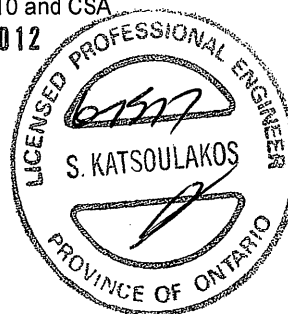
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	135 lbs	n/a	3.2%	LS90
B1 Hanger	2" x 1-3/4"	135 lbs	n/a	3.2%	LS90

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-01-12, Bottom: 00-01-12.
 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 O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



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

DWG NO. TAM30807-17
 STRUCTURAL
 COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12(i3737)

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

June 8, 2017 16:01:01

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

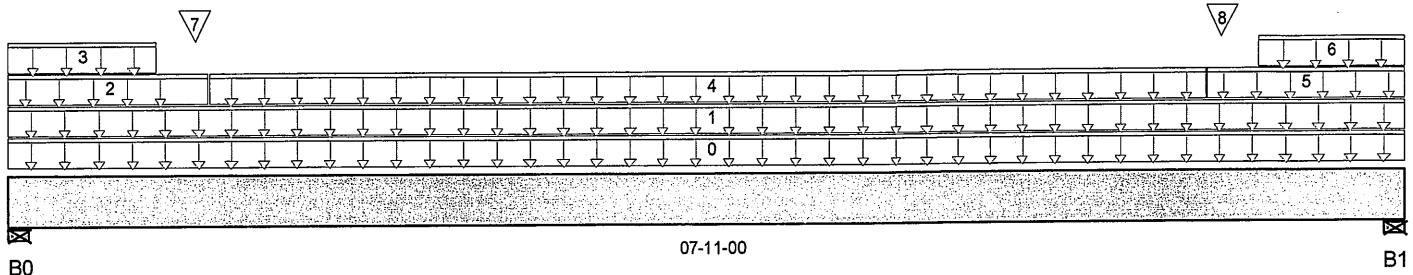
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3737)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 07-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	178 / 0	433 / 0	253 / 0	
B1, 5-1/2"	178 / 0	433 / 0	253 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	07-11-00	17	15	32		n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-11-00	11	6			n/a
2	E35(i3287)	Unf. Lin. (lb/ft)	L	00-00-00	01-01-08		81			n/a
3	E35(i3287)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-00	17	15	32		n/a
4	E36(i3288)	Unf. Lin. (lb/ft)	L	01-01-08	06-09-08		41			n/a
5	E34(i3281)	Unf. Lin. (lb/ft)	L	06-09-08	07-11-00		81			n/a
6	E34(i3281)	Unf. Lin. (lb/ft)	L	07-01-00	07-11-00	17	15	32		n/a
7	E35(i3287)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	53	94	100		n/a
8	E34(i3281)	Conc. Pt. (lbs)	L	06-10-08	06-10-08	53	94	100		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,168 ft-lbs	25,408 ft-lbs	4.6%	13	03-11-08
End Shear	727 lbs	11,571 lbs	6.3%	13	01-03-00
Total Load Defl.	L/999 (0.017")	n/a	n/a	45	03-11-08
Live Load Defl.	L/999 (0.007")	n/a	n/a	61	03-11-08
Max Defl.	0.017"	n/a	n/a	45	03-11-08
Span / Depth	9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	Wall/Plate 5-1/2" x 3-1/2"	1,010 lbs	9.8%	4.3%	Unspecified
B1	Wall/Plate 5-1/2" x 3-1/2"	1,010 lbs	9.8%	4.3%	Unspecified

Notes



P614

DWG NO. TAM 3080311
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 5033
Job Name:
Address:
City, Province, Postal Code: BRAMPTON,
Customer:
Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3737)
Specifier:
Designer: LBV
Company:
Misc:

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Unbalanced snow loads determined from building geometry were used in selected product's verification.
Design based on Dry Service Condition.
Importance Factor: Normal Part code: Part 9

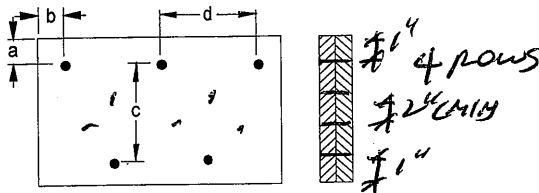
CONFORMS TO OBC 2012

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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Connection Diagram



a minimum = 1" c = 1-1/2"
b minimum = 3" d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.
Connectors are: 16d 1 r Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 3080317
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

June 8, 2017 16:01:03

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

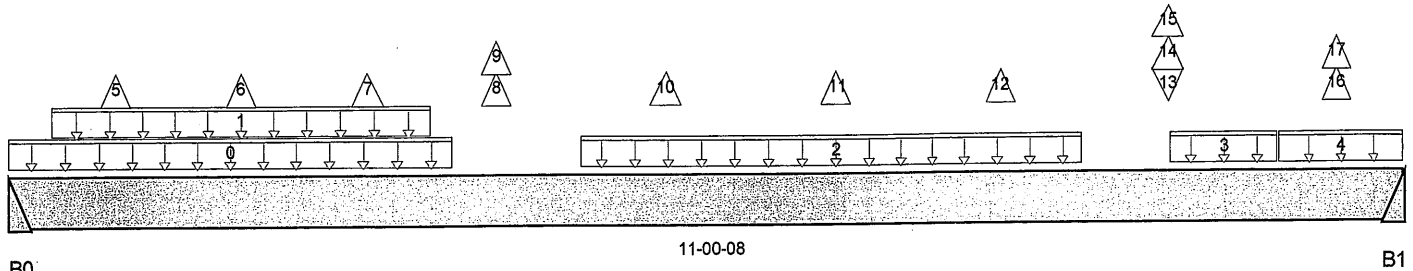
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i3598)

Specifier:

Designer: LBV

Company:

Misc:



B0

B1

Total Horizontal Product Length = 11-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,045 / 1,490	0 / 169		
B1	535 / 1,615	0 / 488		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	240	120			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-00	03-04-00	62				n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-06-00	08-06-00	62				n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	09-02-04	10-00-08		3			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	10-00-08	11-00-08	46	23			n/a
5	J3(i3544)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	-287	-113			n/a
6	J3(i3547)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	-287	-112			n/a
7	J3(i3547)	Conc. Pt. (lbs)	L	02-10-00	02-10-00	-287	-112			n/a
8	J3(i3549)	Conc. Pt. (lbs)	L	03-10-00	03-10-00	72	-131			n/a
9	J3(i3549)	Conc. Pt. (lbs)	L	03-10-00	03-10-00	-334				n/a
10	J3(i3545)	Conc. Pt. (lbs)	L	05-02-00	05-02-00	-382	-150			n/a
11	J3(i3546)	Conc. Pt. (lbs)	L	06-06-00	06-06-00	-382	-150			n/a
12	J3(i3445)	Conc. Pt. (lbs)	L	07-10-00	07-10-00	-382	-152			n/a
13	-	Conc. Pt. (lbs)	L	09-02-01	09-02-01	138	32			n/a
14	-	Conc. Pt. (lbs)	L	09-02-01	09-02-01		-154			n/a
15	-	Conc. Pt. (lbs)	L	09-02-01	09-02-01	-382				n/a
16	J3(i3447)	Conc. Pt. (lbs)	L	10-06-00	10-06-00	57	-163			n/a
17	J3(i3447)	Conc. Pt. (lbs)	L	10-06-00	10-06-00	-382				n/a



P6163

BC CALC® Design Report



Build 5033
Job Name:
Address:
City, Province, Postal Code:BRAMPTON,
Customer:
Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i3598)
Specifier:
Designer: LBV
Company:
Misc:

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,987 ft-lbs	25,408 ft-lbs	7.8%	3	03-00-00
Neg. Moment	-7,742 ft-lbs	-25,408 ft-lbs	30.5%	2	05-02-00
End Shear	3,026 lbs	11,571 lbs	26.1%	2	10-01-00
Uplift	3,033 lbs	n/a	n/a	2	11-00-08
Total Load Defl.	L/999 (0.03")	n/a	n/a	6	04-06-00
Live Load Defl.	L/731 (-0.178")	-0.361"	49.2%	9	05-06-00
Total Neg. Defl.	L/581 (-0.224")	-0.542"	41.3%	7	05-06-00
Max Defl.	-0.224"	n/a	n/a	7	05-06-00
Span / Depth	13.7	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	Hanger	2" x 3-1/2"	1,415 lbs	n/a	28.6%	HGUS410
B0	Hanger Uplift	2" x 3-1/2"	2,447 lbs	n/a	0.23	HGUS410
B1	Hanger	2" x 3-1/2"	363 lbs	n/a	35.5%	HGUS410
B1	Hanger Uplift	2" x 3-1/2"	3,033 lbs	n/a	0.28	HGUS410

Cautions

Uplift of 3,033 lbs found at span 1 - Right.
Hanger B1 cannot handle uplift of -3,033 lbs.) - (SIMPSON HGUS410 ER-31)

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.
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 O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



DWG NO. TAM 30004-17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i3598)

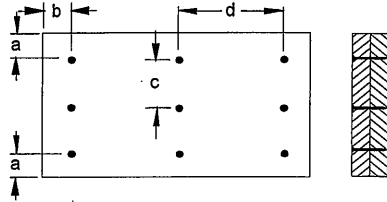
Specifier:

Designer: LBV

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 487.9 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 Common Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

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P6 3/3

DWG NO. TAM30804-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

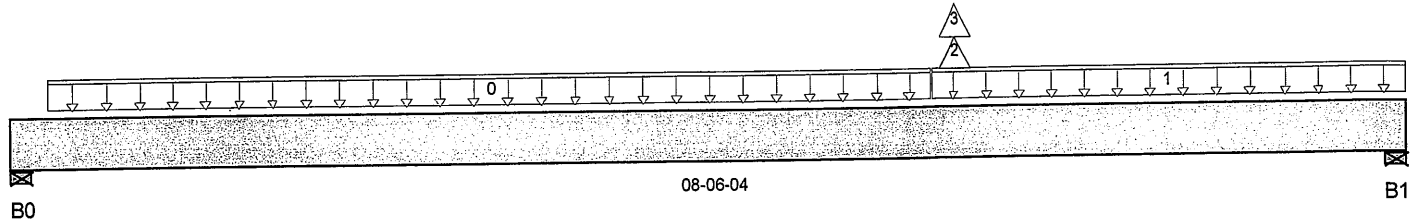
Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i3616)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 08-06-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/4"	461 / 474	51 / 0		
B1, 2-3/4"	878 / 1,016	8 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	05-07-04	30	15			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-07-04	08-06-04	47	23			n/a
2	B8(i3598)	Conc. Pt. (lbs)	L	05-09-00	05-09-00	1,040	-172			n/a
3	B8(i3598)	Conc. Pt. (lbs)	L	05-09-00	05-09-00	-1,490				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,067 ft-lbs	25,408 ft-lbs	12.1%	3	05-09-00
Neg. Moment	-4,100 ft-lbs	-25,408 ft-lbs	16.1%	2	05-09-00
End Shear	1,500 lbs	11,571 lbs	13%	4	07-06-00
Uplift	1,517 lbs	n/a	n/a	4	08-06-04
Total Load Defl.	L/999 (0.041")	n/a	n/a	6	04-07-03
Live Load Defl.	L/999 (-0.049")	n/a	n/a	9	04-08-01
Total Neg. Defl.	L/999 (-0.049")	n/a	n/a	7	04-08-01
Max Defl.	-0.049"	n/a	n/a	7	04-08-01
Span / Depth	10.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/4" x 3-1/2"	755 lbs	14.7%	6.4%	Unspecified
B1 Wall/Plate	2-3/4" x 3-1/2"	1,517 lbs	29.5%	12.9%	Unspecified

Cautions

Uplift of 1,517 lbs found at span 1 - Right.

(SIMPSON 2 HZSA + 3-3/4" COMMON TOE NAILS @ B1)

Notes



P616

DWG NO. TAM3085-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i3616)

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

June 8, 2017 16:01:06

BC CALC® Design Report

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i3616

Specifier:

Designer: LBV

Company:

Misc:

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

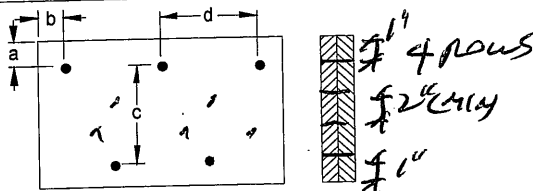
Design based on Dry Service Condition.

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.

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

Connection Diagram

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

Calculated Side Load = 104.4 lb/ft

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

Connectors are: 3 1/2" ARDOX SPIRAL

3 1/2" ARDOX SPIRAL

DWG NO. TAM 30805-17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i3410)

BC CALC® Design Report



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

June 8, 2017 16:01:09

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

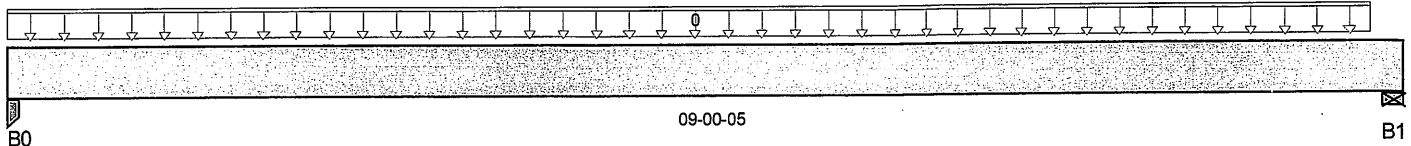
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B10(

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 09-00-05

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-5/16"	2,671 / 0	1,380 / 0		
B1, 3"	2,178 / 0	1,132 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	08-09-13	550	275			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,040 ft-lbs	25,408 ft-lbs	39.5%	1	04-01-13
End Shear	4,360 lbs	11,571 lbs	37.7%	1	07-11-13
Total Load Defl.	L/557 (0.182")	0.423"	43.1%	4	04-07-13
Live Load Defl.	L/999 (0.12")	n/a	n/a	5	04-07-13
Max Defl.	0.182"	n/a	n/a	4	04-07-13
Span / Depth	10.7	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	5-5/16" x 3-1/2"	5,731 lbs	37.8%	25.2%	Unspecified
B1 Wall/Plate	3" x 3-1/2"	4,682 lbs	54.9%	36.6%	Unspecified

Notes

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

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

Calculations assume unbraced length of Top: 01-01-08, Bottom: 01-01-08.

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.

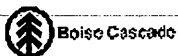
CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DWG NO. TAM 30806 17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1

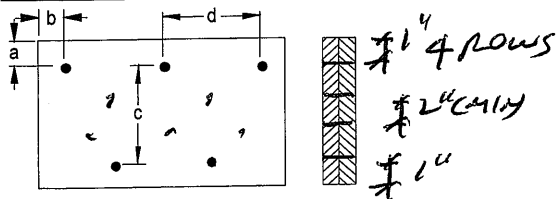
Specifier:

Designer: LBV

Company:

Misc:

Connection Diagram



a minimum = 1" c = 1-1/2"
b minimum = 3" d = 6"

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

Member has no side loads.

Connectors are: 16d Staker Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

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DWG NO. TAM 3080617
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i3667)

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

June 8, 2017 16:01:14

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

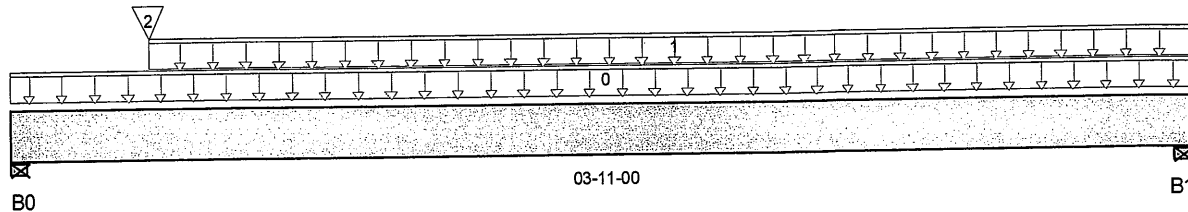
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i3667)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 03-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	53 / 0	204 / 0		
B1, 3-1/2"	53 / 0	204 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E6(i800)	Unf. Lin. (lb/ft)	L	00-00-00	03-11-00		81			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	03-11-00	27	13			n/a
2	Bk1(i3702)	Conc. Pt. (lbs)	L	00-05-08	00-05-08	14	7			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	218 ft-lbs	16,515 ft-lbs	1.3%	0	01-11-05
End Shear	140 lbs	7,521 lbs	1.9%	0	01-01-00
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-11-05
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-11-05
Max Defl.	0.001"	n/a	n/a	4	01-11-05
Span / Depth	4.4	n/a	n/a		00-00-00

Bearing Supports

Beam Supports						
B0	Wall/Plate	3-1/2" x 3-1/2"	285 lbs	6.7%	2.9%	Unspecified
B1	Wall/Plate	3-1/2" x 3-1/2"	285 lbs	6.7%	2.9%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DWG NO. TAM30807-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement Flush Beams B1(i3667)

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

June 8, 2017 16:01:14

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

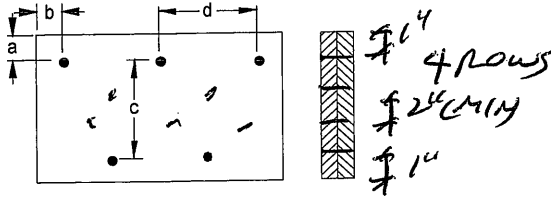
Description: Designs\Flush Beams\Basement\Flush Beams B1(i3667

Specifier:

Designer: LBV

Company:

Misc:

Connection Diagram

a minimum = 1" c = 1-1/2"
 b minimum = 3" d = 6"

Calculated Side Load = 7.6 lb/ft

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

Connectors are: 3/4" ARDOX SPIRAL Nails

3/4" ARDOX SPIRAL**Disclosure**

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

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P62

DWG NO. TAM3000-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

June 8, 2017 16:01:14

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

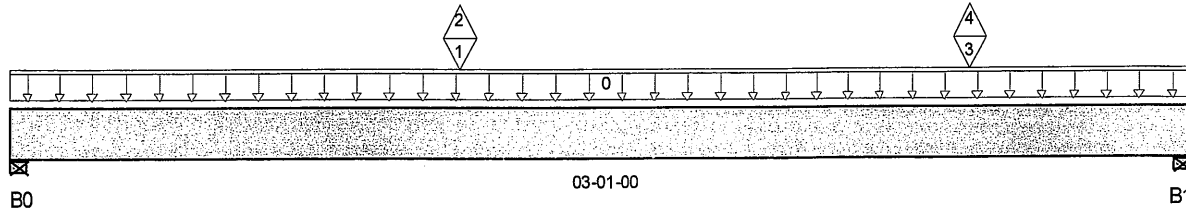
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i3688)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 03-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	573 / 12	418 / 0		
B1, 3-1/2"	703 / 20	481 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E15(i818)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	224	189			n/a
1	-	Conc. Pt. (lbs)	L	01-02-00	01-02-00	292	143			n/a
2	-	Conc. Pt. (lbs)	L	01-02-00	01-02-00	-16				n/a
3	-	Conc. Pt. (lbs)	L	02-06-00	02-06-00	292	143			n/a
4	-	Conc. Pt. (lbs)	L	02-06-00	02-06-00	-16				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	919 ft-lbs	25,408 ft-lbs	3.6%	1	01-03-09
End Shear	1,202 lbs	11,571 lbs	10.4%	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	6	01-06-06
Live Load Defl.	L/999 (0.001")	n/a	n/a	8	01-06-06
Max Defl.	0.002"	n/a	n/a	6	01-06-06
Span / Depth	3.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,382 lbs	21.1%	9.2%	Unspecified
B1 Wall/Plate	3-1/2" x 3-1/2"	1,655 lbs	25.3%	11.1%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO QBC 2012



P816

DWG NO. TAM3080817
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement Flush Beams B2(i3688)

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

June 8, 2017 16:01:14

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

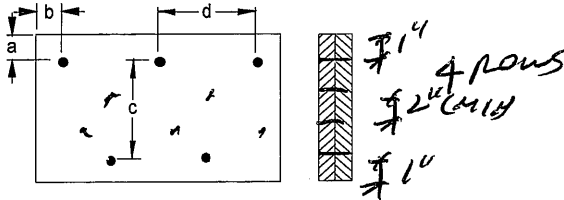
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i368.

Specifier:

Designer: LBV

Company:

Misc:

Connection Diagram

a minimum = 1" c = 3-1/2"
 b minimum = 3" d = 6"

Calculated Side Load = 394.2 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 Common Nails

3 1/2" ARDOX SPIRAL**Disclosure**

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

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DWG NO. TAM 300017
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i3596)

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

June 8, 2017 16:01:15

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

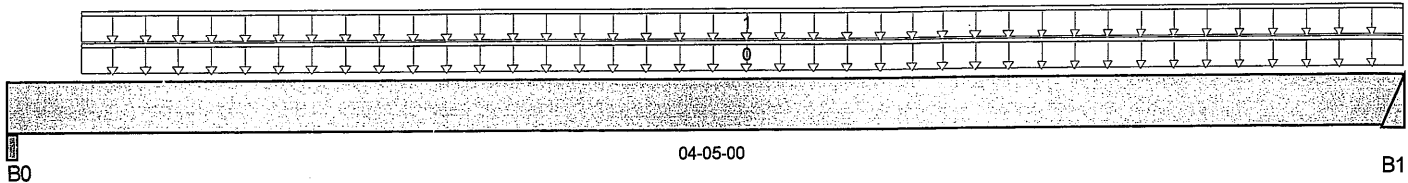
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i3596)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 04-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	523 / 0	272 / 0		
B1	569 / 0	295 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	ROOF	Unf. Lin. (lb/ft)	L	00-02-12	04-05-00	240	120			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	04-05-00	21	10			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,209 ft-lbs	12,704 ft-lbs	9.5%	1	02-02-13
End Shear	1,120 lbs	5,785 lbs	19.4%	1	01-00-02
Total Load Defl.	L/999 (0.011")	n/a	n/a	4	02-02-13
Live Load Defl.	L/999 (0.007")	n/a	n/a	5	02-02-13
Max Defl.	0.011"	n/a	n/a	4	02-02-13
Span / Depth	5.3	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise 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.

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-5/8" x 1-3/4"	1,126 lbs	45.9%	20.1%	Unspecified
B1 Hanger	2" x 1-3/4"	1,222 lbs	n/a	28.6%	HUS1.81/10

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

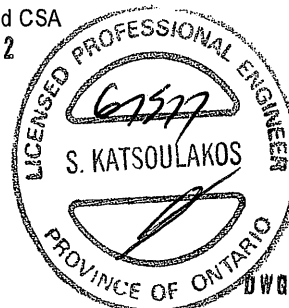
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCK®, 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.



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i3597)

BC CALC® Design Report



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

June 8, 2017 16:01:15

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

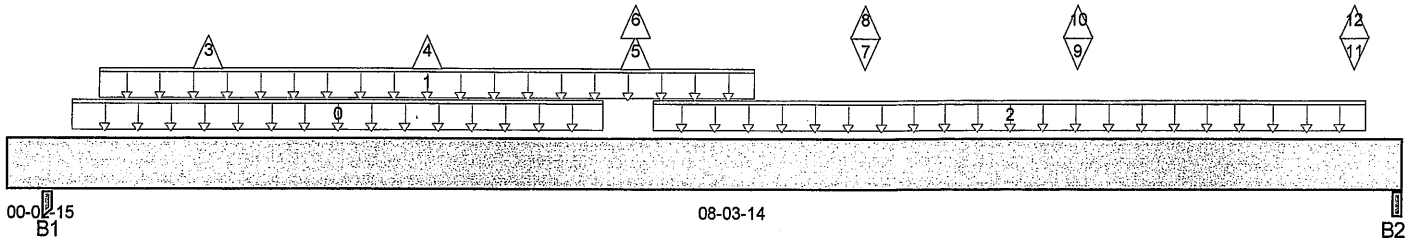
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i3597)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 08-06-13

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,274 / 670	346 / 0		
B2, 5-1/4"	899 / 627	207 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	ROOF	Unf. Lin. (lb/ft)	L	00-04-11	03-07-11	240	120			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-11	04-06-11	112	10			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-11-03	08-04-03	16	8			n/a
3	J2(i3645)	Conc. Pt. (lbs)	L	01-02-11	01-02-11	-123				n/a
4	J2(i3631)	Conc. Pt. (lbs)	L	02-06-11	02-06-11	-123				n/a
5	-	Conc. Pt. (lbs)	L	03-09-14	03-09-14	439	-39			n/a
6	-	Conc. Pt. (lbs)	L	03-09-14	03-09-14	-728				n/a
7	J2(i3647)	Conc. Pt. (lbs)	L	05-02-11	05-02-11	146	12			n/a
8	J2(i3647)	Conc. Pt. (lbs)	L	05-02-11	05-02-11	-121				n/a
9	J2(i3662)	Conc. Pt. (lbs)	L	06-06-11	06-06-11	146	12			n/a
10	J2(i3662)	Conc. Pt. (lbs)	L	06-06-11	06-06-11	-121				n/a
11	-	Conc. Pt. (lbs)	L	08-03-02	08-03-02	145	63			n/a
12	-	Conc. Pt. (lbs)	L	08-03-02	08-03-02	-81				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,403 ft-lbs	12,704 ft-lbs	34.7%	1	03-09-07
Neg. Moment	-2,456 ft-lbs	-12,704 ft-lbs	19.3%	4	03-09-07
End Shear	1,318 lbs	5,785 lbs	22.8%	1	07-04-01
Cont. Shear	1,932 lbs	5,785 lbs	33.4%	1	01-02-03
Uplift	694 lbs	n/a	n/a	4	00-02-15
Uplift	754 lbs	n/a	n/a	4	08-06-13
Total Load Defl.	L/747 (0.128")	0.397"	32.1%	6	04-01-02
Live Load Defl.	L/999 (0.107")	n/a	n/a	8	04-01-02
Total Neg. Defl.	L/999 (-0.055")	n/a	n/a	7	04-03-01
Max Defl.	0.128"	n/a	n/a	6	04-01-02
Span / Depth	10	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
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P614

DWG NO. TAM30810-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i3597)

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

June 8, 2017 16:01:15

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i3597

Specifier:

Designer: LBV

Company:

Misc:

B1	Post	3-1/2" x 1-3/4"	2,343 lbs	47.1%	31.4%	Unspecified
B2	Beam	5-1/4" x 1-3/4"	1,608 lbs	32.8%	14.3%	Unspecified

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.

Cautions

Uplift of 694 lbs found at span 1 - Right.

Uplift of 754 lbs found at span 2 - Right.

) - (2 - SAMPSON W-5A-085 B1
9/12)

Notes

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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p62

DWG NO. TAM 3081017
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

June 8, 2017 16:01:15

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

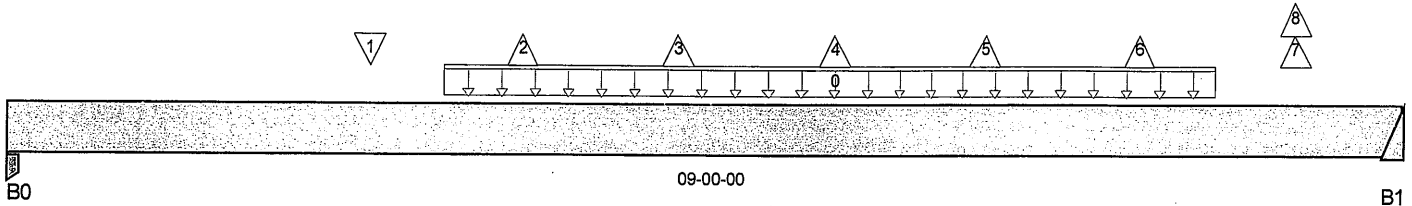
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i3591)

Specifier:

Designer: LBV

Company:

Misc:



Total Horizontal Product Length = 09-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	591 / 331	182 / 0		
B1	443 / 613	0 / 40		

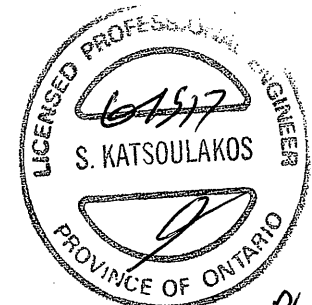
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	02-09-08	07-09-08	82				n/a
1	B5(i3596)	Conc. Pt. (lbs)	L	02-03-14	02-03-14	546	283			n/a
2	J2(i3605)	Conc. Pt. (lbs)	L	03-03-08	03-03-08	-153	-35			n/a
3	J2(i3653)	Conc. Pt. (lbs)	L	04-03-08	04-03-08	-153	-35			n/a
4	J2(i3699)	Conc. Pt. (lbs)	L	05-03-08	05-03-08	-153	-35			n/a
5	J2(i3648)	Conc. Pt. (lbs)	L	06-03-08	06-03-08	-153	-35			n/a
6	J2(i3719)	Conc. Pt. (lbs)	L	07-03-08	07-03-08	-153	-35			n/a
7	J2(i3613)	Conc. Pt. (lbs)	L	08-03-08	08-03-08	74	-52			n/a
8	J2(i3613)	Conc. Pt. (lbs)	L	08-03-08	08-03-08	-179				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,301 ft-lbs	25,408 ft-lbs	9.1%	1	02-03-14
Neg. Moment	-1,775 ft-lbs	-25,408 ft-lbs	7%	4	05-03-08
End Shear	1,102 lbs	11,571 lbs	9.5%	1	01-01-00
Uplift	969 lbs	n/a	n/a	2	09-00-00
Total Load Defl.	L/999 (0.038")	n/a	n/a	6	04-03-08
Live Load Defl.	L/999 (0.034")	n/a	n/a	8	04-05-00
Total Neg. Defl.	L/999 (-0.028")	n/a	n/a	7	04-11-00
Max Defl.	0.038"	n/a	n/a	6	04-03-08
Span / Depth	10.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 3-1/2"	1,115 lbs	11.2%	7.5%	Unspecified
B1 Hanger	2" x 3-1/2"	629 lbs	n/a	11.4%	HGUS410
B1 Hanger Uplift	2" x 3-1/2"	969 lbs	n/a	0.09	HGUS410

Cautions



PL 1/2

DWG NO. TAM 30811-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i3591)

BC CALC® Design Report



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

June 8, 2017 16:01:15

Build 5033

Job Name:

Address:

City, Province, Postal Code: BRAMPTON,

Customer:

Code reports: CCMC 12472-R

File Name: AUBURN 12 EL 1.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i359

Specifier:

Designer: LBV

Company:

Misc:

Uplift of 969 lbs found at span 1 - Right.
Hanger B1 cannot handle uplift of -969 lbs.

) - (SIMPSON H60541020.B1)

Notes

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

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

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

Hanger Manufacturer: Unassigned

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

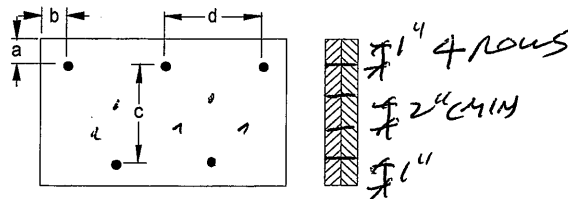
BC CALC® analysis is based on Canadian Limit States Design, as per NBC 2010 and CSA O86.

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 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.

Connection Diagram

a minimum = 1 1/2" c = 1 1/2"
b minimum = 3" d = 6"

Calculated Side Load = 22.8 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: 3/4" x 3" x 3" Nails

1 3 1/2" ARDOX SPIRAL

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