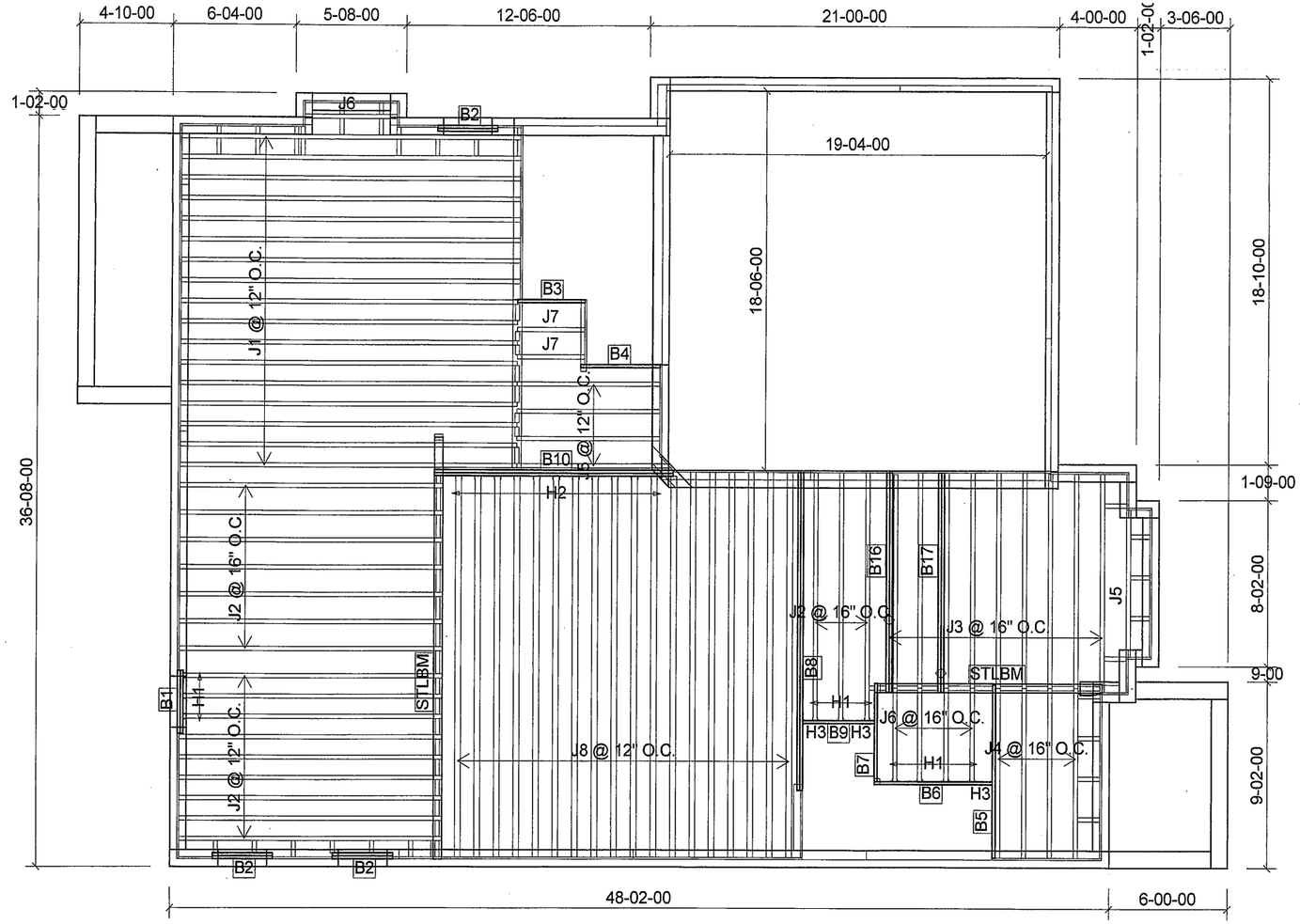


Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	17
J2	14-00-00	11 7/8" NI-40x	1	19
J3	12-00-00	11 7/8" NI-40x	1	9
J4	10-00-00	11 7/8" NI-40x	1	4
J5	8-00-00	11 7/8" NI-40x	1	5
J6	6-00-00	11 7/8" NI-40x	1	5
J7	4-00-00	11 7/8" NI-40x	1	2
J8	20-00-00	11 7/8" NI-80	1	18
B1	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	6
B8	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B10	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B16	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B17	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/11.88
3	H1	IUS2.56/11.88
11	H2	IUS3.56/11.88
2	H3	HUS1.81/10
1	H3	HUS1.81/10

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

TAMARACK LUMBER INC
ALPA LUMBER GROUP

FROM PLAN DATED:
MARCH 2017

BUILDER:
GREENYORK HOMES

SITE:
OSTIENSE

MODEL: AUBURN 4

ELEVATION: 1

LOT:

CITY: BRAMPTON

SALESMAN: R D
DESIGNER: LBV
REVISION:

DATE: 2017-06-08

1st FLOOR

DATE 6/15/17

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, LENGHTS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

DWG# TAM 30851-17 THROUGH DWG# TAM 30862-17 INCLUSIVE DATED 6/15/17

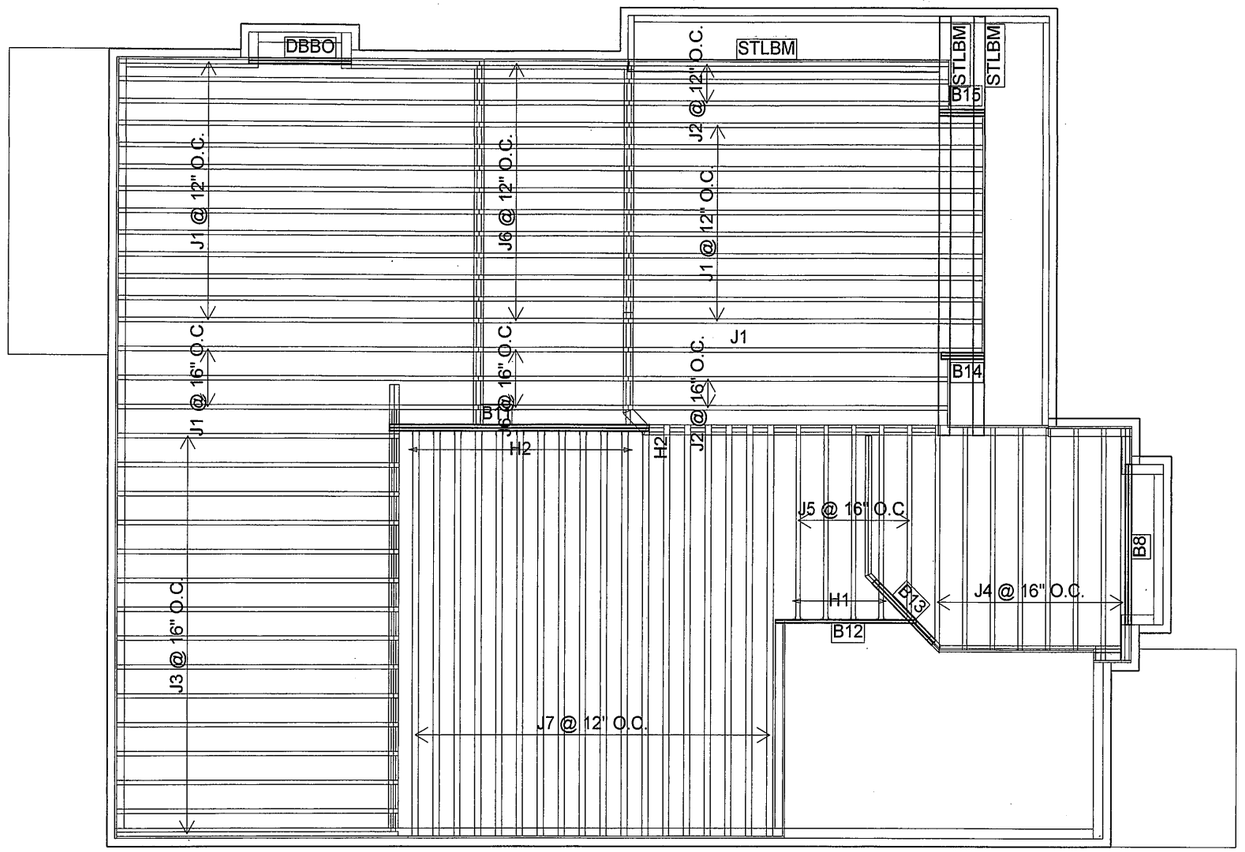
SEALED STRUCTURAL COMPONENTS ONLY:
SEALED, THIRD PARTY LVL TYPE BEAMS, BUILT-UP CONVENTIONAL BEAMS, HEADERS, AND CONCENTRATED LOADED NORDIC WOOD-I JOIST ONLY. 2 X 6 SQUASH BLOCK REQUIRED AT ALL EXTERIOR SUPPORTS OR AS PER PROJECT ENGINEER'S SPECIFICATIONS. WEB FILLER REINFORCEMENT REQUIRED AT ALL HANGER 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 1/16□ DEEPER THAN JOIS DEPTH. SEE NORDIC LITERATURE FOR NAILING REQUIREMENT.

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

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 30864-17
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY

LICENSED PROFESSIONAL ENGINEER
G7517
S. KATSOULAKOS
PROVINCE OF ONTARIO



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	27
J2	16-00-00	11 7/8" NI-40x	1	5
J3	14-00-00	11 7/8" NI-40x	1	15
J4	12-00-00	11 7/8" NI-40x	1	8
J5	10-00-00	11 7/8" NI-40x	1	5
J6	8-00-00	11 7/8" NI-40x	1	16
J7	20-00-00	11 7/8" NI-80	1	18
B13	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B12	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B8	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B14	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B15	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
4	H1	IUS2.56/11.88
12	H2	IUS3.56/11.88

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

TAMARACK LUMBER INC
ALPA LUMBER GROUP

FROM PLAN DATED: MARCH 2017

BUILDER: GREENYORK HOMES

SITE: OSTIENSE

MODEL: AUBURN 4

ELEVATION: 1

LOT:

CITY: BRAMPTON

SALESMAN: R D
DESIGNER: LBV
REVISION:

DATE: 2017-06-09

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, LENGHTS, AND DETAILS, REMAINS THE RESPONSIBILITY OF THE FLOOR SYSTEM INSTALLATION CONTRACTOR.

DWG# TAM 308467 THROUGH DWG# TAM 308501 INCLUSIVE DATED 6/5/17

SEALED STRUCTURAL COMPONENTS ONLY: +30863-17
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 PEF 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 1/16□ DEEPER THAN JOIS DEPTH. SEE NORDIC LITERATURE FOR NAILING REQUIREMENT.

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

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 308651?
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
6/5/17
PROVINCE OF ONTARIO

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]

☐ House	☐ HVAC – House	☒ Building Structural
☐ Small Buildings	☐ Building Services	☐ Plumbing – House
☐ Large Buildings	☐ Detection, Lighting and Power	☐ Plumbing – All Buildings
☐ Complex Buildings	☐ Fire Protection	☐ On-site Sewage Systems

Description of designer's work: **GREENYORK HOMES – OSTIENSE – MODEL: AUBURN 4 – 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 #TAM30864-17 DATED 6-15-17).
SUPPORTING STRUCTURE TO BE REVIEWED AND VERIFED BY QUALIFIED BUILDING DESIGNER.

D. Declaration of Designer

I, SAM KATSOULAKOS, P. ENG (print name) declare that (choose one as appropriate):

☒ 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: 26064

Firm BCIN: 29991

☐ 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: _____

☐ The design work is exempt from the registration and qualification requirements of the Building Code.

Basis for exemption from registration and qualification: _____

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 6/15/17 Signature of Designer

NOTE:

1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d).of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
2. 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#TAM30864-17-S
DWG#TAM30866-17-S
6/15/17

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		Firm		
SAM KATSOULAKOS, P. ENG.		**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]

☐ House	☐ HVAC – House	☒ Building Structural
☐ Small Buildings	☐ Building Services	☐ Plumbing – House
☐ Large Buildings	☐ Detection, Lighting and Power	☐ Plumbing – All Buildings
☐ Complex Buildings	☐ Fire Protection	☐ On-site Sewage Systems

Description of designer's work **GREENYORK HOMES – OSTIENSE – MODEL: AUBURN 4 – 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 #TAM30865-17 DATED 6-15-17).
SUPPORTING STRUCTURE TO BE REVIEWED AND VERIFED BY QUALIFIED BUILDING DESIGNER.

D. Declaration of Designer

I, SAM KATSOULAKOS, P. ENG declare that (choose one as appropriate):
(print name)

☒ 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: 26064

Firm BCIN: 29991

☐ 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: _____

☐ The design work is exempt from the registration and qualification requirements of the Building Code.
Basis for exemption from registration and qualification: _____

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 6/15/17 Signature of Designer

NOTE:

1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d).of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
2. 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#TAM 30865-17-S 6/15/17
DWG#TAM 30867-17-S

NORDIC STRUCTURES	COMPANY TAMARACK LUMBER BURLINGTON June 7, 2017 12:50	PROJECT J1 GRD FLR

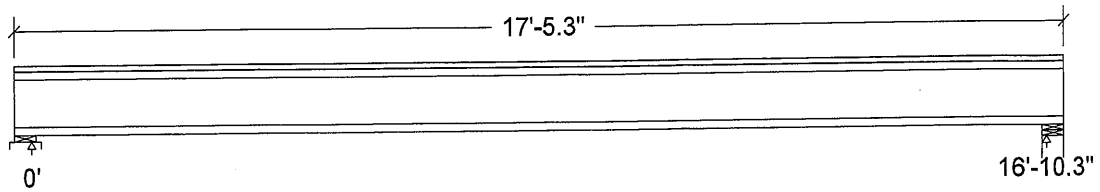
Design Check Calculation Sheet

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	174		174
Live	349		349
Factored:			
Total	741		741
Bearing:			
Resistance			
Joist	2336		2336
Support	6726		7735
Des ratio			
Joist	0.32		0.32
Support	0.11		0.10
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	1.00		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 11-7/8" NI-40x Floor joist @ 12" o.c.

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Lumber Wall, No.1/No.2;
Total length: 17'-5.3"; 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 = 716	Vr = 2336	lbs	Vf/Vr = 0.31
Moment(+)	Mf = 3019	Mr = 6255	lbs-ft	Mf/Mr = 0.48
Perm. Defl'n	0.09 = <L/999	0.56 = L/360	in	0.17
Live Defl'n	0.19 = <L/999	0.42 = L/480	in	0.45
Total Defl'n	0.28 = L/710	0.84 = L/240	in	0.34
Bare Defl'n	0.22 = L/928	0.56 = L/360	in	0.39
Vibration	Lmax = 16'-10	Lv = 18'-4	ft	
Defl'n	= 0.029	= 0.038	in	0.78

LICENSED PROFESSIONAL ENGINEER 61522 S. KATSOULAKOS PROVINCE OF ONTARIO

DWG NO. TAM30841-17
STRUCTURAL COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#2
EI	371.1 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:  EIeff =    433e06 lb-in2  K=  6.18e06 lbs
"Live" deflection = Deflection from all non-dead loads (live, wind, snow…)
```

CONFORMS TO OBC 2012

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
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. TAM30841-17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 7, 2017 15:26

PROJECT
J1 GARAGE

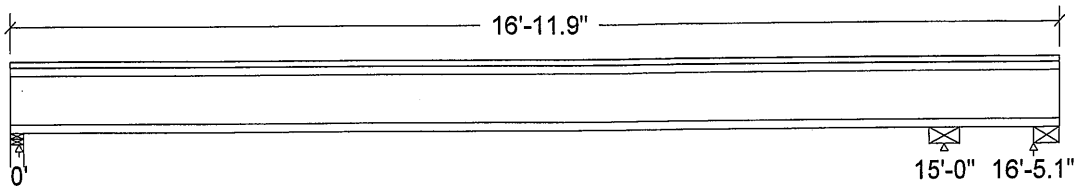
Design Check Calculation Sheet

Nordic Sizer – Canada 6.4

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start	End	Magnitude Start	End	Unit
Load1	Dead	Full Area	No			20.00		psf
Load2	Live	Full Area	Yes			40.00		psf

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



Unfactored:				
Dead	158		745	-450
Live	316		1490	59
Factored:				
Uplift				1969
Total	672		3166	
Bearing:				
Resistance				
Joist	2135		5587	
Support	4490		-	
Des ratio				
Joist	0.31		0.57	
Support	0.15		-	
Load case	#4		#2	
Length	2-5/8		6	
Min req'd	1-3/4		3-1/2	
Stiffener	No		No	
Kd	1.00		1.00	
KB support	1.00		-	
fcp sup	769		-	
Kzcp sup	1.11		-	

*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 11-7/8" NI-40x Floor joist @ 16" o.c.
Supports: 1 - Lumber Wall, No.1/No.2; 2,3 - Steel Beam, W;
Total length: 16'-11.9"; 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 = 2122	Vr = 2336	lbs	Vf/Vr = 0.91
Moment(+)	Mf = 1898	Mr = 6255	lbs-ft	Mf/Mr = 0.30
Moment(-)	Mf = 2913	Mr = 6255	lbs-ft	= 0.47
Perm. Defl'n	0.04 = <L/999	0.50 = L/360	in	0.07
Live Defl'n	0.07 = <L/999	0.38 = L/480	in	.20
Total Defl'n	0.11 = <L/999	0.75 = L/240	in	15
Bare Defl'n	0.09 = <L/999	0.50 = L/360	in	17
Vibration	Lmax = 15'-0	Lv = 18'-9	ft	
Defl'n	= 0.022	= 0.044	in	0 50

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

p6/12

DWG NO. TAM30842-17
STRUCTURAL COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#4
Mr-	6255	1.00	1.00	-	1.000	-	-	-	#2
EI	371.1 million		-	-	-	-	-	-	#4

CRITICAL LOAD COMBINATIONS:

```
Shear      : LC #2  = 1.25D + 1.5L
Moment(+)  : LC #4  = 1.25D + 1.5L (pattern: L_)
Moment(-)  : LC #2  = 1.25D + 1.5L
Deflection: LC #1  = 1.0D  (permanent)
            LC #4  = 1.0D + 1.0L (pattern: L_)  (live)
            LC #4  = 1.0D + 1.0L (pattern: L_)  (total)
            LC #4  = 1.0D + 1.0L (pattern: L_)  (bare joist)
Bearing    : Support 1 - LC #4 = 1.25D + 1.5L (pattern: L_)
             Support 2 - LC #2 = 1.25D + 1.5L
             Support 3 - LC #1 = 1.4D
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:  EIeff =    448e06 lb-in2  K=  6.18e06 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. TAM 30842-17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 7, 2017 15:03

PROJECT
J7 2ND FLR

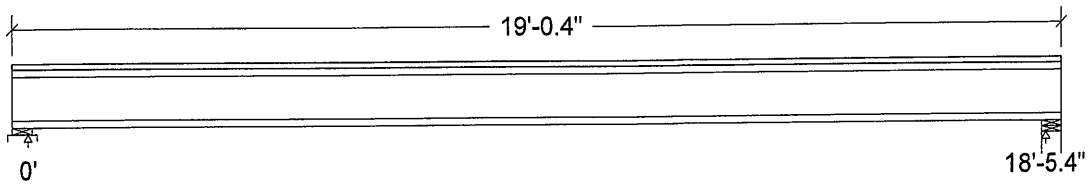
Design Check Calculation Sheet

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	190		190
Live	381		381
Factored:			
Total	809		809
Bearing:			
Resistance			
Joist	2336		2336
Support	10829		10829
Des ratio			
Joist	0.35		0.35
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 11-7/8" NI-80 Floor joist @ 12" o.c.
Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Lumber Wall, No.1/No.2;
Total length: 19'-0.4"; 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 = 784	Vr = 2336	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 3617	Mr = 11609	lbs-ft	Mf/Mr = 0.31
Perm. Defl'n	0.10 = <L/999	0.61 = L/360	in	0.16
Live Defl'n	0.20 = <L/999	0.46 = L/480	in	0.43
Total Defl'n	0.29 = L/751	0.92 = L/240	in	0.32
Bare Defl'n	0.22 = <L/999	0.61 = L/360	in	0.35
Vibration	Lmax = 18'-5	Lv = 20'-6	ft	
Defl'n	= 0.026	= 0.034	in	0.78

LICENSED PROFESSIONAL ENGINEER 61522 S. KATSOULAKOS PROVINCE OF ONTARIO

DWG NO. TAM30643-17
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 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:  EIeff =    613e06 lb-in2  K=  6.18e06 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. TAM30893-17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 7, 2017 12:50

PROJECT
J8 GRD FLR

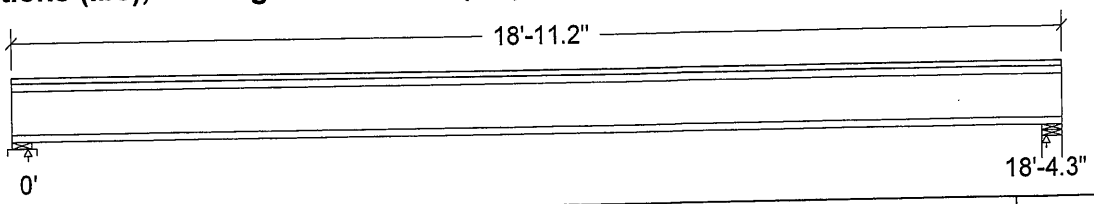
Design Check Calculation Sheet

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	189		189
Live	379		379
Factored:			
Total	805		805
Bearing:			
Resistance			
Joist	2336		2336
Support	10829		10829
Des ratio			
Joist	0.34		0.34
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 11-7/8" NI-80 Floor joist @ 12" o.c.

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Lumber Wall, No.1/No.2;
Total length: 18'-11.2"; 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 = 780	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3580	Mr = 11609	lbs-ft	Mf/Mr = 0.31
Perm. Defl'n	0.10 = <L/999	0.61 = L/360	in	0.16
Live Defl'n	0.19 = <L/999	0.46 = L/480	in	0.42
Total Defl'n	0.29 = L/761	0.92 = L/240	in	0.32
Bare Defl'n	0.21 = <L/999	0.61 = L/360	in	0.35
Vibration	Lmax = 18'-4	Lv = 19'-11	ft	
Defl'n	= 0.028	= 0.034	in	0.82

LICENSED PROFESSIONAL ENGINEER
6127
S. KATSOULAKOS
PROVINCE OF ONTARIO

p6/6

DWG NO. TAM30644-17
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2
EI	547.1 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:  EIeff =    613e06 lb-in2  K=  6.18e06 lbs
"Live" deflection = Deflection from all non-dead loads (live, wind, snow…)
```

CONFORMS TO OBC 2012

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
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. TAM30844-17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 7, 2017 15:27

PROJECT
J1 2ND FLR

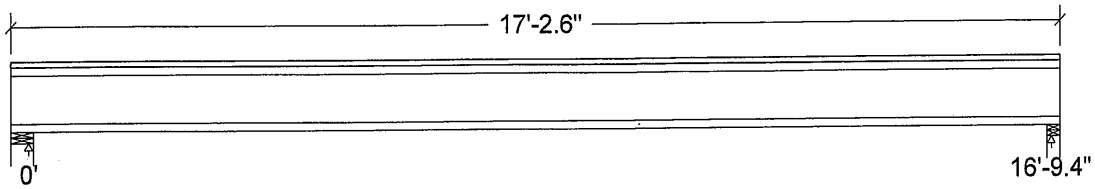
Design Check Calculation Sheet

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	232		228
Live	463		455
Factored:			
Total	984		967
Bearing:			
Resistance			
Joist	2336		2135
Support	7735		4490
Des ratio			
Joist	0.42		0.45
Support	0.13		0.22
Load case	#2		#2
Length	4-3/8		2-5/8
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		1.11

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

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

Total length: 17'-2.6"; 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 = 951	Vr = 2336	lbs	Vf/Vr = 0.41
Moment(+)	Mf = 3990	Mr = 6255	lbs-ft	Mf/Mr = 0.64
Perm. Defl'n	0.12 = <L/999	0.56 = L/360	in	0.22
Live Defl'n	0.24 = L/832	0.42 = L/480	in	0.58
Total Defl'n	0.36 = L/555	0.84 = L/240	in	0.43
Bare Defl'n	0.29 = L/704	0.56 = L/360	in	0.51
Vibration Defl'n	Lmax = 16'-9 = 0.032	Lv = 17'-8 = 0.038	ft in	0.85

LICENSED PROFESSIONAL ENGINEER 61527 S. KATSOULAKOS PROVINCE OF ONTARIO

DWG NO. TAM30845-17
STRUCTURAL COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#2
EI	371.1 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:  EIeff =    448e06 lb-in2  K=  6.18e06 lbs
 "Live" deflection = Deflection from all non-dead loads (live, wind, snow…)
```

CONFORMS TO OBC 2012

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-14 Engineering Design in Wood standard (May 2014 edition).
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. TAM30645-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B15(i2569)

Boise Cascade

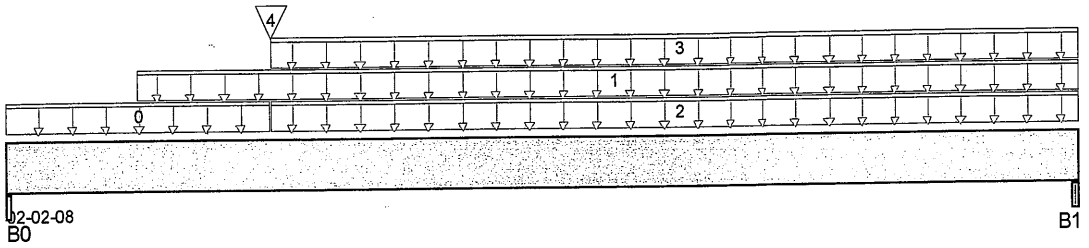
BC CALC® Design Report

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

June 7, 2017 15:44:07

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i2569)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 02-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 6-1/2"	56 / 0	123 / 0	81 / 0	
B1, 6-1/2"	82 / 0	172 / 0	159 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-06-08	5				n/a
1	WALL	Unf. Lin. (lb/ft)	L	00-03-04	02-02-08		80			n/a
2	ROOF	Unf. Lin. (lb/ft)	L	00-06-08	02-02-08	66	60	144		n/a
3	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-06-08	02-02-08	8	4			n/a
4	FC5 Floor Material	Conc. Pt. (lbs)	L	00-06-08	00-06-08	12	6			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	88 ft-lbs	38,727 ft-lbs	0.2%	13	01-01-04
End Shear	205 lbs	14,464 lbs	1.4%	13	01-06-06
Span / Depth	1.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Beam	6-1/2" x 3-1/2"	303 lbs	2.5%	1.1%	Unspecified
B1 Beam	6-1/2" x 3-1/2"	495 lbs	4.1%	1.8%	Unspecified

Notes

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
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

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30846-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B15(i2569)

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

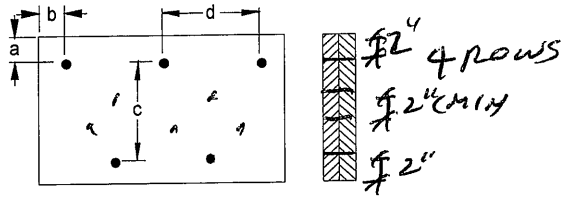
June 7, 2017 15:44:07

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i25
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

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

3½" 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.

LICENSED PROFESSIONAL ENGINEER
6452
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30846-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11(i2740)

Boise Cascade

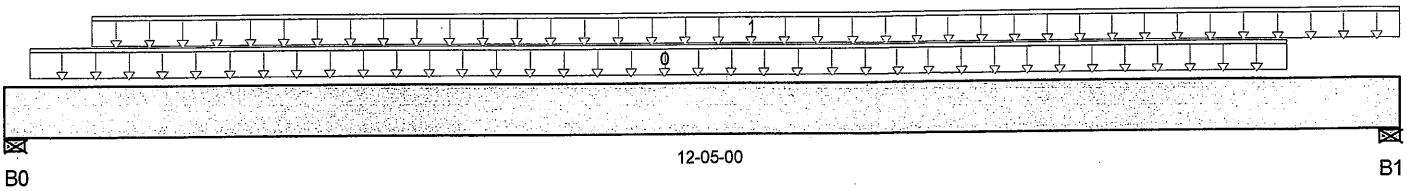
BC CALC® Design Report

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

June 7, 2017 15:44:09

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i2740)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 12-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	2,134 / 0	1,139 / 0		
B1, 6-5/8"	2,582 / 0	1,365 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	11-05-00	19	9			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-04	12-05-00	386	193			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	14,209 ft-lbs	38,727 ft-lbs	36.7%	1	06-03-04
End Shear	4,433 lbs	14,464 lbs	30.6%	1	10-10-08
Total Load Defl.	L/564 (0.245")	0.577"	42.5%	4	06-01-12
Live Load Defl.	L/863 (0.16")	0.384"	41.7%	5	06-01-12
Max Defl.	0.245"	n/a	n/a	4	06-01-12
Span / Depth	11.7	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	5-1/2" x 3-1/2"	4,625 lbs	45%	19.7%	Unspecified
B1	Wall/Plate	6-5/8" x 3-1/2"	5,579 lbs	45%	19.7%	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

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30647-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11(i2740)

Boise Cascade

BC CALC® Design Report

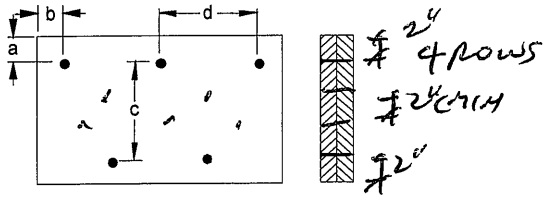
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:09

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i27
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Calculated Side Load = 769.3 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 [illegible] Nails

3½" 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.

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30647-17
STRUCTURAL
COMPONENT ONLY

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12(i2768)

Boise Cascade

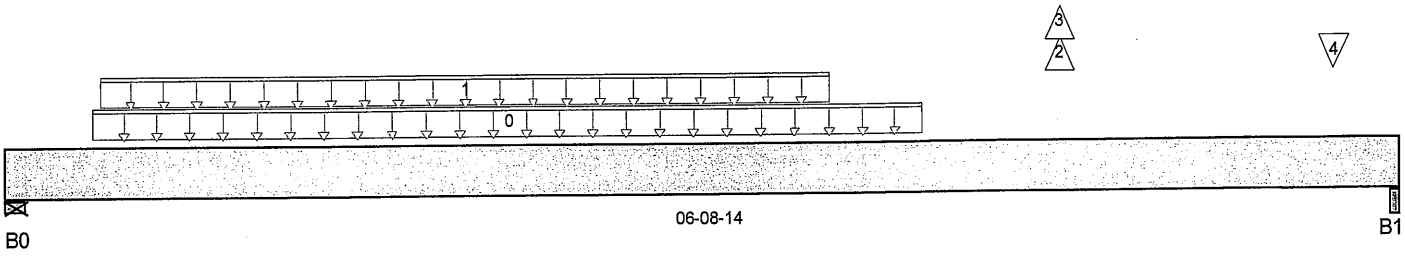
BC CALC® Design Report

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

June 7, 2017 15:44:11

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i2768)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 06-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,088 / 45	542 / 0		
B1, 4-1/16"	766 / 155	325 / 0		

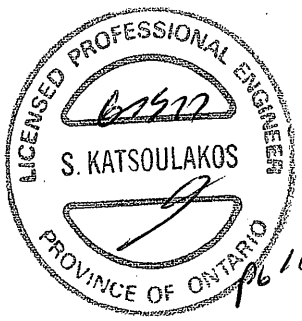
Load Summary

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	00-05-00	04-05-00	181	90			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-05-08	03-11-08	240	120			n/a
2	J5(i2722)	Conc. Pt. (lbs)	L	05-01-00	05-01-00	45	-78			n/a
3	J5(i2722)	Conc. Pt. (lbs)	L	05-01-00	05-01-00	-200				n/a
4	J5(i2747)	Conc. Pt. (lbs)	L	06-05-00	06-05-00	240	120			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,036 ft-lbs	19,364 ft-lbs	15.7%	1	02-11-00
Neg. Moment	-67 ft-lbs	-19,364 ft-lbs	0.3%	4	05-01-00
End Shear	1,600 lbs	7,232 lbs	22.1%	1	01-05-06
Total Load Defl.	L/999 (0.028")	n/a	n/a	6	03-03-00
Live Load Defl.	L/999 (0.019")	n/a	n/a	8	03-04-00
Max Defl.	0.028"	n/a	n/a	6	03-03-00
Span / Depth	6.1	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	5-1/2" x 1-3/4"	2,308 lbs	44.9%	19.7%	Unspecified
B1	Beam	4-1/16" x 1-3/4"	1,556 lbs	20%	17.9%	Unspecified

Notes



DWG NO. TAM-30848.17
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 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i27(
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.
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.

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30848-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8(i2572)

Boise Cascade

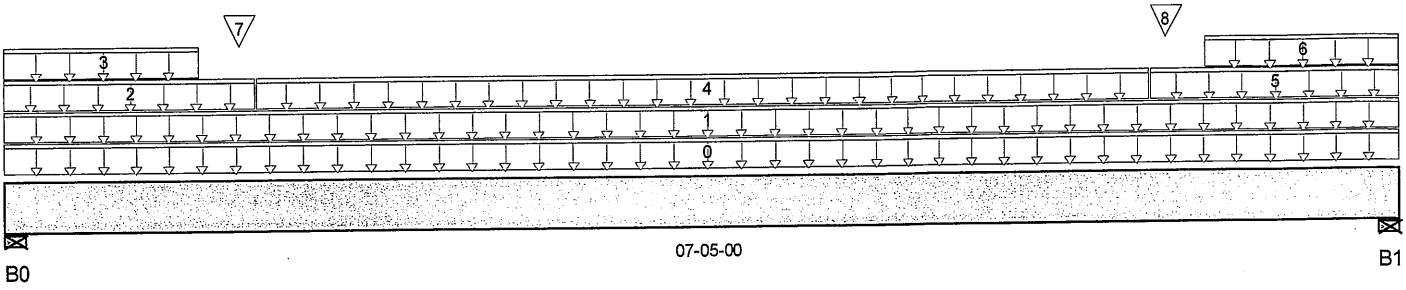
BC CALC® Design Report

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

June 7, 2017 15:44:11

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2572)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 07-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	273 / 0	502 / 0	412 / 0	
B1, 5-1/2"	273 / 0	502 / 0	411 / 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	07-05-00	11	10	24		n/a
1	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-05-00	27	13			n/a
2	E22(i2779)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-00		81			n/a
3	E22(i2779)	Unf. Lin. (lb/ft)	L	00-00-00	01-00-08	36	34	87		n/a
4	E21(i2778)	Unf. Lin. (lb/ft)	L	01-04-00	06-01-00		41			n/a
5	E20(i2777)	Unf. Lin. (lb/ft)	L	06-01-00	07-05-00		81			n/a
6	E20(i2777)	Unf. Lin. (lb/ft)	L	06-04-08	07-05-00	36	34	87		n/a
7	E22(i2779)	Conc. Pt. (lbs)	L	01-03-00	01-03-00	96	131	233		n/a
8	E20(i2777)	Conc. Pt. (lbs)	L	06-02-00	06-02-00	96	130	231		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,363 ft-lbs	38,727 ft-lbs	3.5%	13	03-08-08
End Shear	994 lbs	14,464 lbs	6.9%	13	01-05-06
Total Load Defl.	L/999 (0.009")	n/a	n/a	45	03-08-08
Live Load Defl.	L/999 (0.004")	n/a	n/a	61	03-08-08
Max Defl.	0.009"	n/a	n/a	45	03-08-08
Span / Depth	6.7	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	5-1/2" x 3-1/2"	1,383 lbs	13.5%	5.9%	Unspecified
B1	Wall/Plate	5-1/2" x 3-1/2"	1,380 lbs	13.4%	5.9%	Unspecified

Notes

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30849-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8(i2572)

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

June 7, 2017 15:44:11

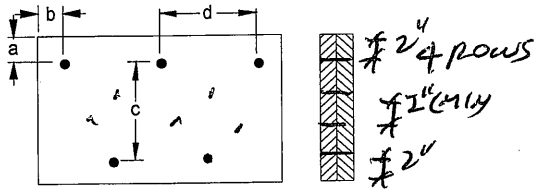
BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i257
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
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

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

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

Disclosure

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LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30849-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B13(i2978)

Boise Cascade

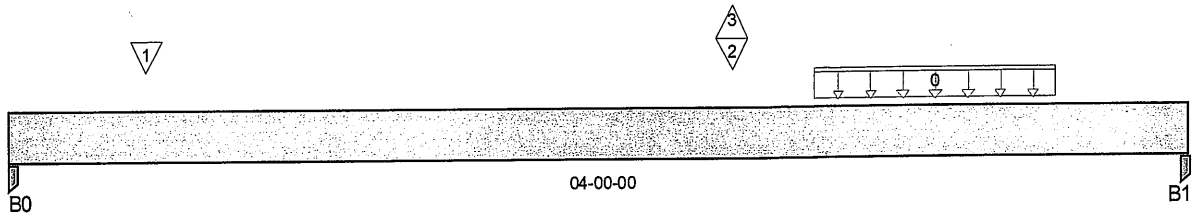
BC CALC® Design Report

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

June 9, 2017 12:07:48

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B13(
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	732 / 53	365 / 0		
B1, 3-1/2"	534 / 101	248 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	R1(i2833)	Unf. Lin. (lb/ft)	L	02-08-11	03-06-11	0	0			n/a
1	J5(i3282)	Conc. Pt. (lbs)	L	00-05-11	00-05-11	477	238			n/a
2	-	Conc. Pt. (lbs)	L	02-05-04	02-05-04	770	327			n/a
3	-	Conc. Pt. (lbs)	L	02-05-04	02-05-04	-154				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,321 ft-lbs	25,408 ft-lbs	5.2%	1	02-03-04
End Shear	1,092 lbs	11,571 lbs	9.4%	1	02-11-00
Total Load Defl.	L/999 (0.004")	n/a	n/a	6	02-01-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	8	02-01-00
Max Defl.	0.004"	n/a	n/a	6	02-01-00
Span / Depth	4.5	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Post	3-1/2" x 3-1/2"	1,554 lbs	15.6%	10.4%	Unspecified
B1	Post	3-1/2" x 3-1/2"	1,111 lbs	11.2%	7.4%	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: 01-06-11, Bottom: 01-06-11
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

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

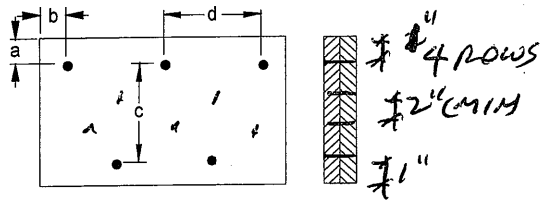
DWG NO. TAM 30850-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 0" c = 3-1/2"
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 Common Nails
3½" 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.

LICENSED PROFESSIONAL ENGINEER
6877
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. PAM 30850.17
STRUCTURAL
COMPONENT ONLY

Boise Cascade Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B2(i2578)

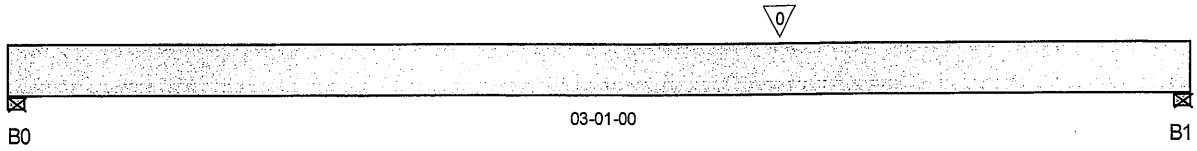
BC CALC® Design Report

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

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i2578)
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"	16 / 0	69 / 0		
B1, 3-1/2"	32 / 0	128 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Bk1(i2436)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	48	167			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	145 ft-lbs	16,515 ft-lbs	0.9%	0	02-00-00
End Shear	164 lbs	7,521 lbs	2.2%	0	02-00-00
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-07-14
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-07-14
Max Defl.	0"	n/a	n/a	4	01-07-14
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"	97 lbs	2.3%	1%	Unspecified
B1	Wall/Plate	3-1/2" x 3-1/2"	179 lbs	4.2%	1.8%	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: 01-07-04, Bottom: 01-07-04.
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

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30651-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B2(i2578)

BC CALC® Design Report

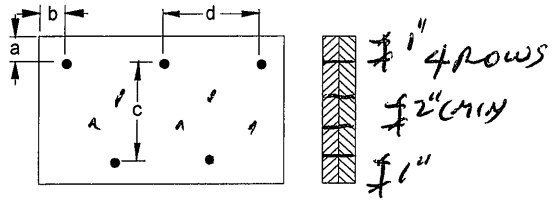
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i257
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 1" c = 7-1/2"
b minimum = 3" d = 6"

Calculated Side Load = 91.1 lb/ft

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

Connectors are: [illegible] Nails

3½" 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.

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. FAM 30851-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i2576)

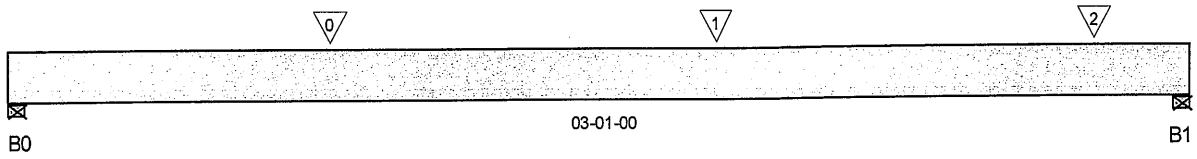
BC CALC® Design Report

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

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B1(i2576)
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"	633 / 0	423 / 0		
B1, 3-1/2"	960 / 0	617 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J2(i2509)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	540	348			n/a
1	J2(i2368)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	548	355			n/a
2	J2(i2426)	Conc. Pt. (lbs)	L	02-10-00	02-10-00	505	307			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,106 ft-lbs	25,408 ft-lbs	4.4%	1	01-10-00
End Shear	1,072 lbs	11,571 lbs	9.3%	1	01-01-00
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-06-05
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-06-05
Max Defl.	0.002"	n/a	n/a	4	01-06-05
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"	1,478 lbs	22.6%	9.9%	Unspecified
B1	Wall/Plate	3-1/2" x 3-1/2"	2,211 lbs	33.8%	14.8%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-09-08, Bottom: 00-09-08.
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

LICENSED PROFESSIONAL ENGINEER
6552
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30052-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B1(i2576)

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

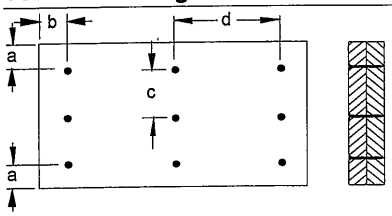
June 7, 2017 15:44:12

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B1(i257
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 2-3/4"
b minimum = 3" d = 6"

Calculated Side Load = 1,184.4 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: 16d [illegible] Nails
3½" TARDOX 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.

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM3085-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B7(i2570)

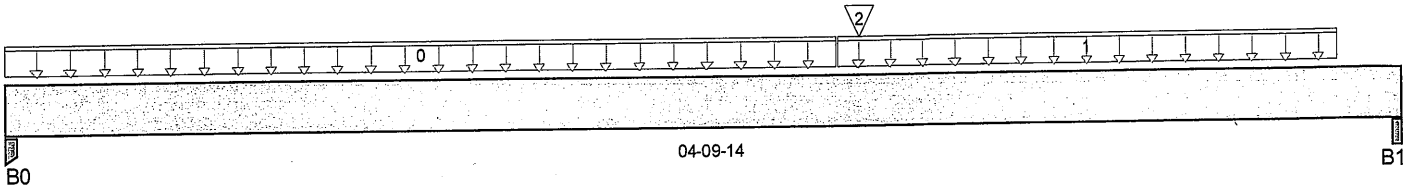
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:12

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B7(i2570)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 04-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	364 / 0	214 / 0		
B1, 5-1/4"	649 / 0	373 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-10-04	21	10			n/a
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	02-10-04	04-07-04	28	14			n/a
2	B9(i2567)	Conc. Pt. (lbs)	L	02-11-02	02-11-02	904	503			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,091 ft-lbs	19,364 ft-lbs	10.8%	1	02-11-02
End Shear	1,356 lbs	7,232 lbs	18.8%	1	03-04-12
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	02-05-01
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	02-05-01
Max Defl.	0.008"	n/a	n/a	4	02-05-01
Span / Depth	4.4	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Post	1-3/4" x 1-3/4"	813 lbs	32.7%	21.8%	Unspecified
B1	Beam	5-1/4" x 1-3/4"	1,440 lbs	29.3%	12.8%	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

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.

CONFORMS TO OBC 2012

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30853-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B10(i2761)

Boise Cascade

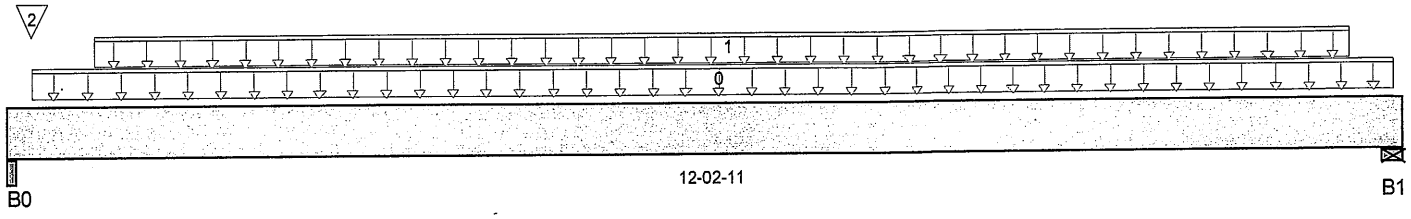
BC CALC® Design Report

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

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B10(i2761
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 12-02-11

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	4,219 / 0	2,279 / 0		
B1, 7-7/8"	2,204 / 0	1,175 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	12-01-12	7	4			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-02	11-09-02	374	186			n/a
2	15(i1134)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	2,189	1,194			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	13,132 ft-lbs	38,727 ft-lbs	33.9%	1	06-03-02
End Shear	4,217 lbs	14,464 lbs	29.2%	1	01-05-02
Total Load Defl.	L/625 (0.216")	0.563"	38.4%	4	06-00-02
Live Load Defl.	L/956 (0.141")	0.375"	37.7%	5	06-00-02
Max Defl.	0.216"	n/a	n/a	4	06-00-02
Span / Depth	11.4	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	5-1/4" x 3-1/2"	9,177 lbs	93.5%	40.9%	Unspecified
B1	Wall/Plate	7-7/8" x 3-1/2"	4,774 lbs	32.5%	14.2%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA 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

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30854-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B10(i2761)

BC CALC® Design Report

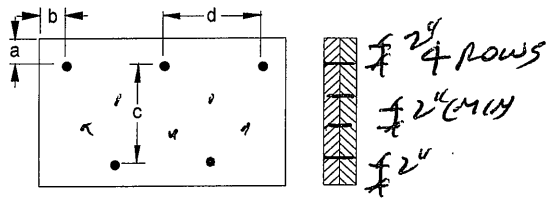
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B10(i27
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Calculated Side Load = 715.2 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 [illegible] Nails
3½" ARDOX SPIRAL

Disclosure

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LICENSED PROFESSIONAL ENGINEER
6977
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30654-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B6(i2749)

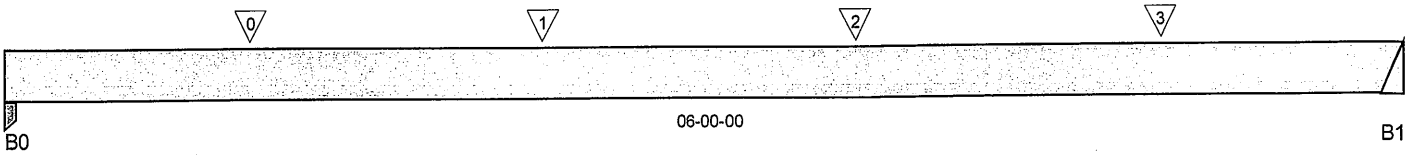
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:12

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B6(i2749)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	242 / 0	138 / 0		
B1	233 / 0	134 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J6(i2554)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	109	54			n/a
1	J6(i2542)	Conc. Pt. (lbs)	L	02-03-08	02-03-08	123	61			n/a
2	J6(i2551)	Conc. Pt. (lbs)	L	03-07-08	03-07-08	127	63			n/a
3	J6(i2358)	Conc. Pt. (lbs)	L	04-11-08	04-11-08	116	58			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	825 ft-lbs	19,364 ft-lbs	4.3%	1	03-07-08
End Shear	480 lbs	7,232 lbs	6.6%	1	04-10-02
Total Load Defl.	L/999 (0.007")	n/a	n/a	4	03-00-08
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	03-00-08
Max Defl.	0.007"	n/a	n/a	4	03-00-08
Span / Depth	5.7	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Post	3-1/2" x 1-3/4"	535 lbs	10.8%	7.2%	Unspecified
B1	Hanger	2" x 1-3/4"	517 lbs	n/a	12.1%	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

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.

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30855-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B9(i2567)

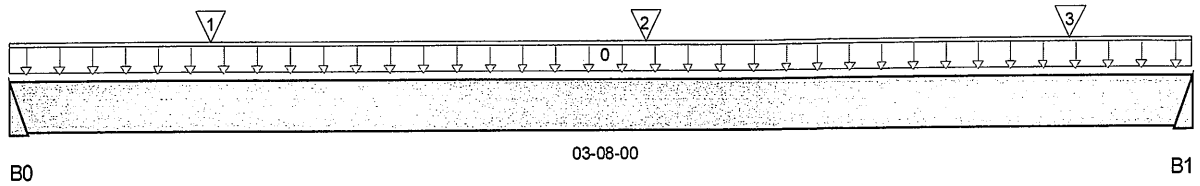
BC CALC® Design Report

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

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B9(i2567)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 03-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	830 / 0	429 / 0		
B1	906 / 0	505 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-08-00	240	120			n/a
1	J2(i2351)	Conc. Pt. (lbs)	L	00-07-08	00-07-08	256	128			n/a
2	J2(i2418)	Conc. Pt. (lbs)	L	01-11-08	01-11-08	325	162			n/a
3	J2(i2562)	Conc. Pt. (lbs)	L	03-03-08	03-03-08	275	182			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,587 ft-lbs	19,364 ft-lbs	8.2%	1	01-11-08
End Shear	890 lbs	7,232 lbs	12.3%	1	01-01-14
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	01-10-05
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-10-05
Max Defl.	0.005"	n/a	n/a	4	01-10-05
Span / Depth	3.5	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Hanger	2" x 1-3/4"	1,781 lbs	n/a	41.7%	HUS1.81/10
B1	Hanger	2" x 1-3/4"	1,991 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.
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

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.

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

LIC NO. TAM30035617
STRUCTURAL
COMPONENT ONLY

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B5(i2615)

Boise Cascade

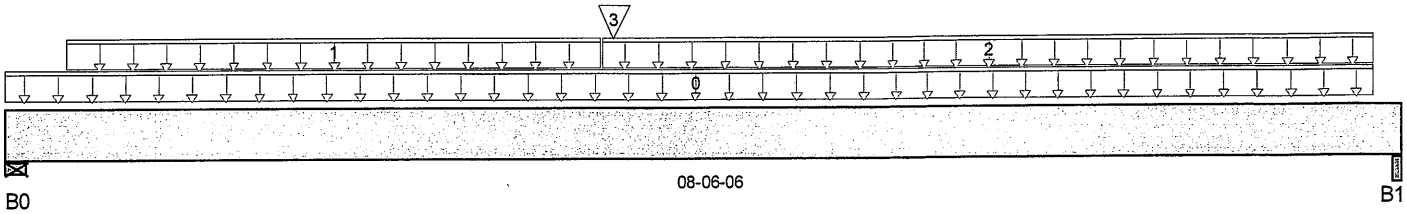
BC CALC® Design Report

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

June 7, 2017 15:44:12

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B5(i2615)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 08-06-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	802 / 0	436 / 0		
B1, 4-5/8"	361 / 0	214 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-04-06	4	2			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-04-06	03-07-06	240	120			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	03-07-06	08-04-06	22	11			n/a
3	B6(i2749)	Conc. Pt. (lbs)	L	03-08-04	03-08-04	230	132			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,950 ft-lbs	19,364 ft-lbs	15.2%	1	03-08-04
End Shear	1,213 lbs	7,232 lbs	16.8%	1	01-04-04
Total Load Defl.	L/999 (0.043")	n/a	n/a	4	04-00-03
Live Load Defl.	L/999 (0.028")	n/a	n/a	5	04-00-03
Max Defl.	0.043"	n/a	n/a	4	04-00-03
Span / Depth	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	4-3/8" x 1-3/4"	1,749 lbs	42.8%	18.7%	Unspecified
B1	Beam	4-5/8" x 1-3/4"	809 lbs	18.7%	8.2%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

Disclosure

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.

CONFORMS TO OBC 2012

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30852 17
STRUCTURAL COMPONENT ONLY

Boise Cascade

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B8(i2568)

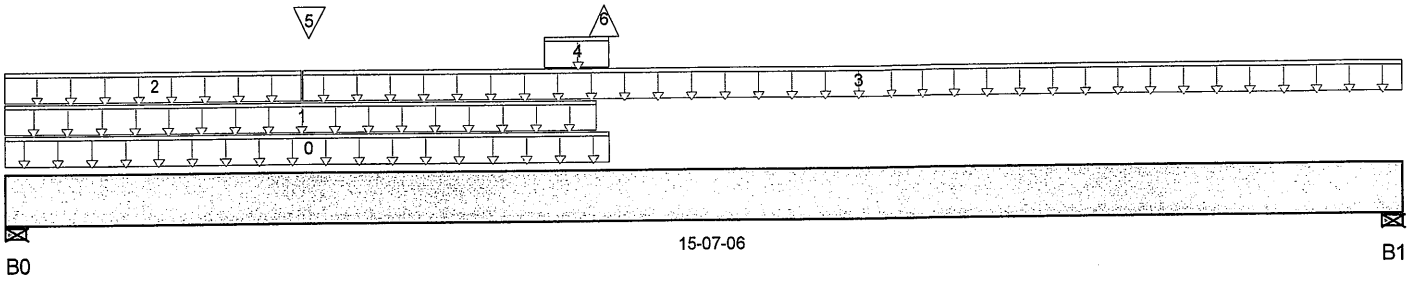
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:13

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B8(i2568)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 15-07-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,554 / 26	1,326 / 0		
B1, 4-3/8"	840 / 20	633 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	18(i1137)	Unf. Lin. (lb/ft)	L	00-00-00	06-08-08		81			n/a
1	18(i1137)	Unf. Lin. (lb/ft)	L	00-00-00	06-06-12	14	10			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-03-08	14	7			n/a
3	FC4 Floor Material	Unf. Lin. (lb/ft)	L	03-03-08	15-07-06	27	13			n/a
4	18(i1137)	Unf. Lin. (lb/ft)	L	05-11-10	06-08-08	1,475	734			n/a
5	B9(i2567)	Conc. Pt. (lbs)	L	03-04-06	03-04-06	832	431			n/a
6	18(i1137)	Conc. Pt. (lbs)	L	06-07-10	06-07-10	-46				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	15,110 ft-lbs	38,727 ft-lbs	39%	1	06-03-03
End Shear	3,758 lbs	14,464 lbs	26%	1	01-03-06
Total Load Defl.	L/452 (0.401")	0.754"	53.1%	6	07-02-03
Live Load Defl.	L/784 (0.231")	0.503"	45.9%	8	07-02-03
Max Defl.	0.401"	n/a	n/a	6	07-02-03
Span / Depth	15.2	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	3,989 lbs	61%	26.7%	Unspecified
B1	Wall/Plate	4-3/8" x 3-1/2"	2,052 lbs	25.1%	11%	Unspecified

Notes

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30859 17
STRUCTURAL
COMPONENT ONLY

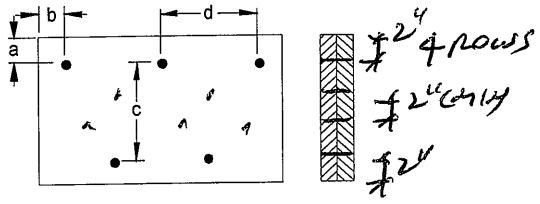
BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B8(i256
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

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Calculated Side Load = 114.4 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: ... Nails

3½" ARDOX SPIRAL

Disclosure

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LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30850-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B16(i2566)

Boise Cascade

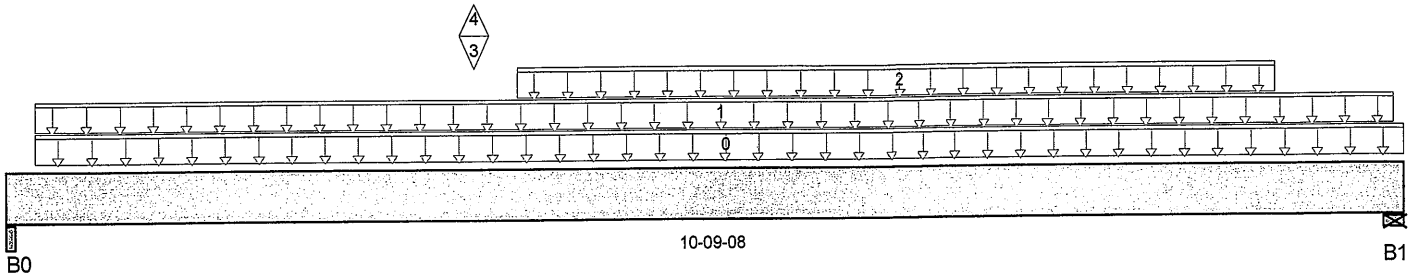
BC CALC® Design Report

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

June 7, 2017 15:44:13

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B16(i2566
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 10-09-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	631 / 31	539 / 0		
B1, 4-3/8"	374 / 15	442 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	10-09-08	22	11			n/a
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	10-08-09	6	3			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	03-10-13	09-09-08		42			n/a
3	-	Conc. Pt. (lbs)	L	03-06-14	03-06-14	706	457			n/a
4	-	Conc. Pt. (lbs)	L	03-06-14	03-06-14	-46				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,742 ft-lbs	38,727 ft-lbs	12.2%	1	03-06-13
End Shear	1,526 lbs	14,464 lbs	10.6%	1	01-05-02
Total Load Defl.	L/999 (0.057")	n/a	n/a	6	05-01-06
Live Load Defl.	L/999 (0.029")	n/a	n/a	8	05-01-06
Max Defl.	0.057"	n/a	n/a	6	05-01-06
Span / Depth	10.2	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	5-1/4" x 3-1/2"	1,621 lbs	16.5%	7.2%	Unspecified
B1	Wall/Plate	4-3/8" x 3-1/2"	1,113 lbs	13.6%	6%	Unspecified

Notes

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30859-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B16(i2566)

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

June 7, 2017 15:44:13

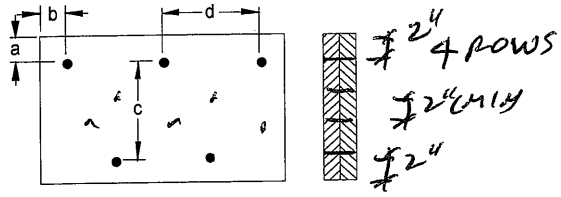
BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B16(i25
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

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.
Connectors are: 16d [illegible] Nails
3½" ARDOX SPIRAL

Disclosure

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LICENSED PROFESSIONAL ENGINEER
6452
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM3065417
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B17(i2565)

Boise Cascade

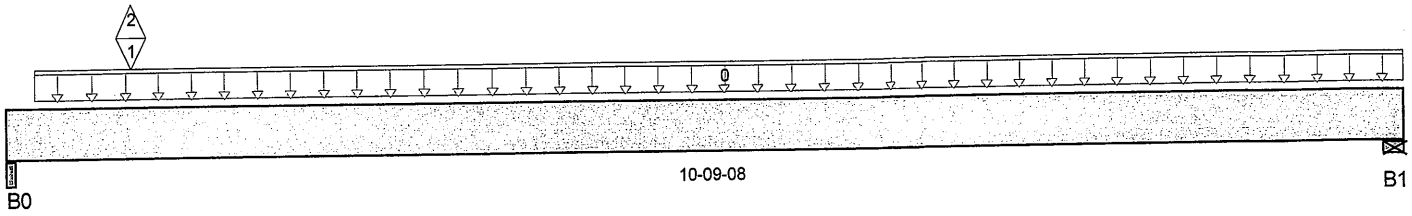
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:13

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B17(i2565
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 10-09-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	656 / 100	444 / 0		
B1, 4-3/8"	174 / 6	154 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	10-09-08	27	13			n/a
1	PBO10(i1545)	Conc. Pt. (lbs)	L	00-11-06	00-11-06	548	328			n/a
2	PBO10(i1545)	Conc. Pt. (lbs)	L	00-11-06	00-11-06	-106				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,302 ft-lbs	38,727 ft-lbs	3.4%	1	04-05-03
End Shear	851 lbs	14,464 lbs	5.9%	1	01-05-02
Total Load Defl.	L/999 (0.018")	n/a	n/a	6	05-02-03
Live Load Defl.	L/999 (0.01")	n/a	n/a	8	05-02-03
Max Defl.	0.018"	n/a	n/a	6	05-02-03
Span / Depth	10.2	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	5-1/4" x 3-1/2"	1,540 lbs	15.7%	6.9%	Unspecified
B1	Wall/Plate	4-3/8" x 3-1/2"	454 lbs	5.6%	2.4%	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

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

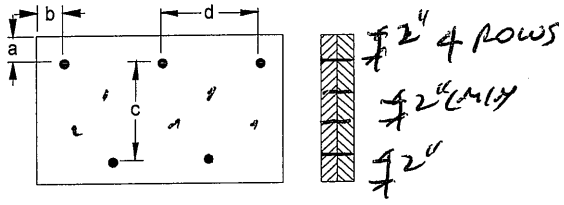
DWG NO. TAM30860-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B17(i25
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.
Connectors are: 16d [illegible] Nails
3½" ARDOX SPIRAL

Disclosure

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LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM3006617
STRUCTURAL
COMPONENT ONLY

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B4(i2738)

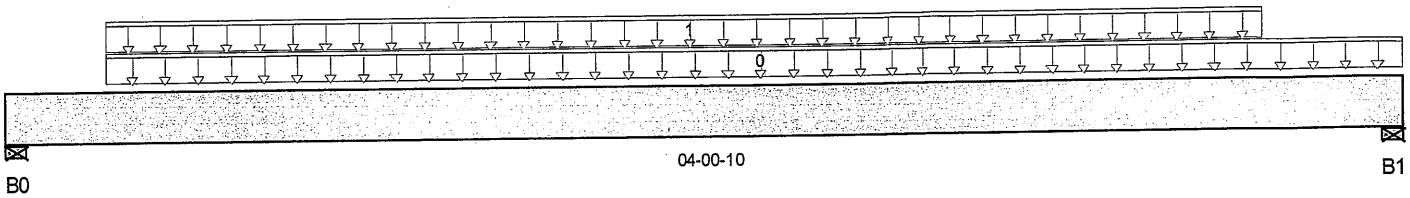
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:13

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B4(i2738)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 04-00-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	440 / 0	232 / 0		
B1, 4-3/8"	437 / 0	231 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	04-00-10	19	10			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-03-08	03-07-12	240	120			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	863 ft-lbs	19,364 ft-lbs	4.5%	1	01-11-14
End Shear	879 lbs	7,232 lbs	12.2%	1	02-08-06
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-11-14
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-11-14
Max Defl.	0.003"	n/a	n/a	4	01-11-14
Span / Depth	3.6	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	950 lbs	29%	12.7%	Unspecified
B1	Wall/Plate	4-3/8" x 1-3/4"	944 lbs	23.1%	10.1%	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 OBC 2012

Disclosure

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LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

9
DWG NO. TAM30861-17
STRUCTURAL COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B3(i2608)

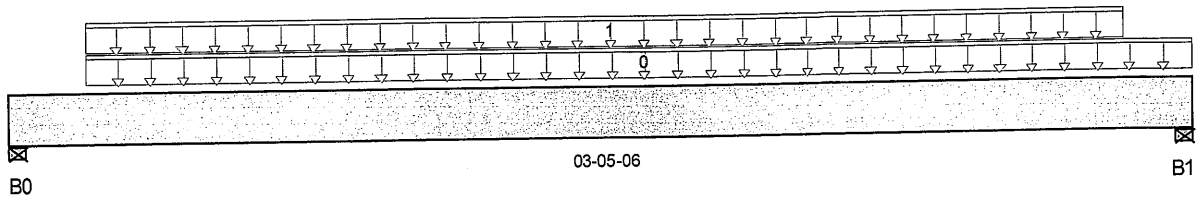
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:13

BC CALC® Design Report

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B3(i2608)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 03-05-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/4"	44 / 0	123 / 0		
B1, 2-3/8"	50 / 0	126 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	03-05-06	29	15			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-02-12	03-03-00		60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	139 ft-lbs	12,586 ft-lbs	1.1%	0	01-08-14
End Shear	59 lbs	4,701 lbs	1.2%	0	01-02-10
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-08-14
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-08-14
Max Defl.	0"	n/a	n/a	4	01-08-14
Span / Depth	3.2	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	2-3/4" x 1-3/4"	172 lbs	10.3%	4.5%	Unspecified
B1	Wall/Plate	2-3/8" x 1-3/4"	176 lbs	12.2%	5.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA 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.

CONFORMS TO OBC 2012

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM3086-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i2571)

Boise Cascade

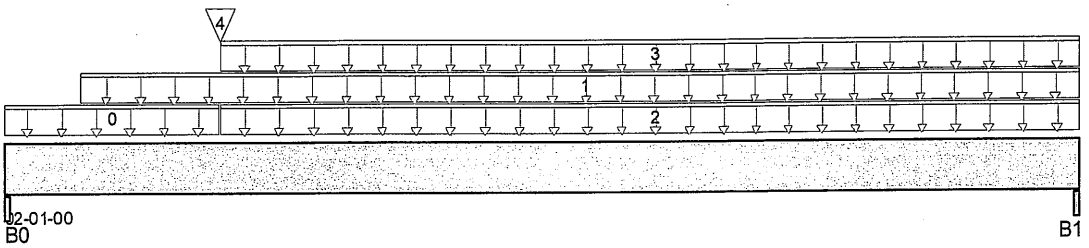
BC CALC® Design Report

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

June 7, 2017 15:44:04

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i2571)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 02-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5"	52 / 0	120 / 0	81 / 0	
B1, 6-1/2"	82 / 0	172 / 0	159 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-00	5				n/a
1	WALL	Unf. Lin. (lb/ft)	L	00-01-12	02-01-00		80			n/a
2	ROOF	Unf. Lin. (lb/ft)	L	00-05-00	02-01-00	66	60	144		n/a
3	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-05-00	02-01-00	8	4			n/a
4	FC5 Floor Material	Conc. Pt. (lbs)	L	00-05-00	00-05-00	9	4			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	87 ft-lbs	38,727 ft-lbs	0.2%	13	00-11-12
End Shear	191 lbs	14,464 lbs	1.3%	13	01-04-14
Span / Depth	1.3	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	5" x 3-1/2"	298 lbs	3.2%	1.4%	Unspecified
B1	Beam	6-1/2" x 3-1/2"	495 lbs	4.1%	1.8%	Unspecified

Notes

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
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

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P6 14

DWG NO. TAM 3096317
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Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i2571)

Boise Cascade

BC CALC® Design Report

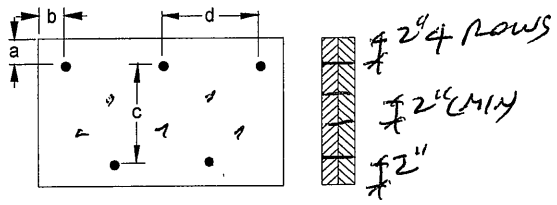
Dry| 1 span | No cantilevers | 0/12 slope (deg)

June 7, 2017 15:44:04

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

File Name: AUBURN 4 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i257
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 6"

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