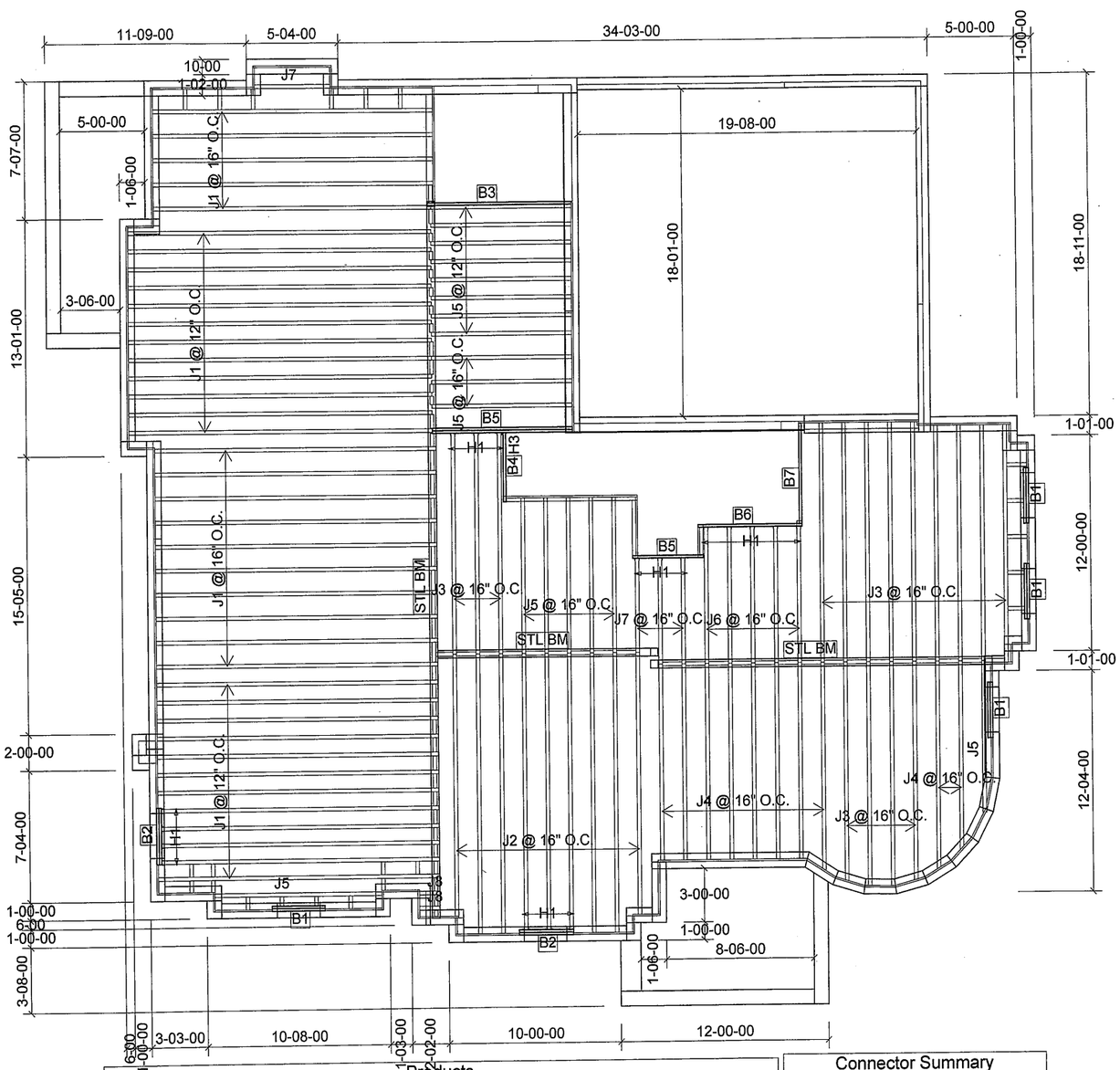


Products

PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	39
J2	16-00-00	11 7/8" NI-40x	1	9
J3	14-00-00	11 7/8" NI-40x	1	16
J4	12-00-00	11 7/8" NI-40x	1	10
J5	10-00-00	11 7/8" NI-40x	1	18
J6	8-00-00	11 7/8" NI-40x	1	5
J7	6-00-00	11 7/8" NI-40x	1	4
J8	2-00-00	11 7/8" NI-40x	1	2
B3	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B5	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	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
B4	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	8
B2	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4

Connector Summary

Qty	Manuf	Product
8	H1	IUS2.56/11.88
10	H1	IUS2.56/11.88
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: DENTON 12

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: R D
DESIGNER: LBV
REVISION:

DATE: 2017-06-09

1st FLOOR

DATE 61517

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 3089017 THROUGH DWG# TAM 3089077 INCLUSIVE DATED 61517

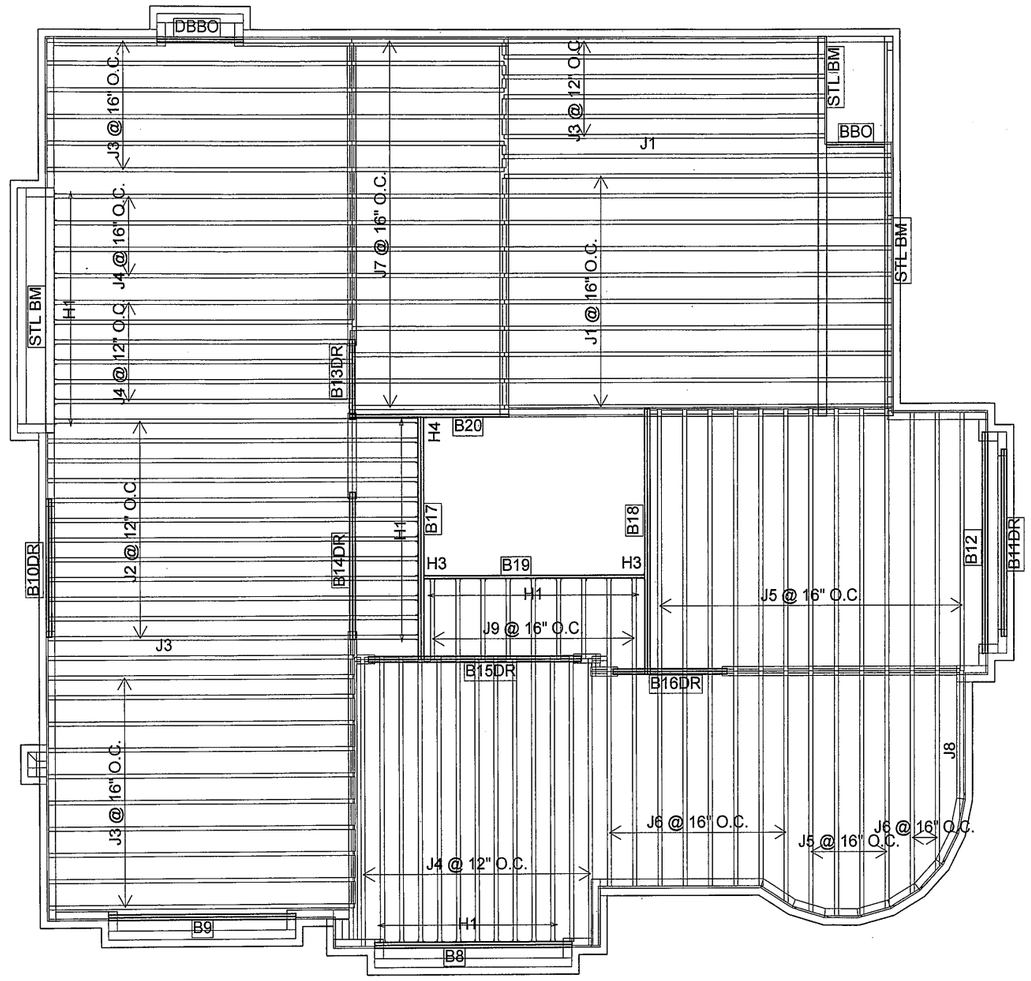
SEALED STRUCTURAL COMPONENTS ONLY:
SEALED, THIRD PARTY LVL TYPE BEAMS, BUILT-UP CONVENTIONAL BEAMS, HEADERS, AND CONCENTRATED LOADED NORDIC WOOD-I JOIST ONLY. 2 X 6 SQUASH BLOCK REQUIRED AT ALL EXTERIOR SUPPORTS OR AS PEF PROJECT ENGINEER'S SPECIFICATIONS. WEB FILLER REINFORCEMENT REQUIRED AT ALL HANGER 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 PROFESSIONAL ENGINEER REGISTERED UNDER SUBSECTION 3.2.5 OF THE ONTARIO BUILDING CODE I AM QUALIFIED AND THE FIRM IS REGISTERED, IN APPROPRIATE CLASSES AND/OR CATEGORIES

REGISTERED FIRM: MICRO CITY ENGINEERING SERVICES INC.

DWG # TAM 30912-17
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY

LICENSED PROFESSIONAL ENGINEER
61517
S. KATSOULAKOS
PROVINCE OF ONTARIO



Products				
PlotID	Length	Product	Plies	Net Qty
J1	22-00-00	11 7/8" NI-40x	1	11
J2	20-00-00	11 7/8" NI-40x	1	12
J3	18-00-00	11 7/8" NI-40x	1	23
J4	16-00-00	11 7/8" NI-40x	1	23
J5	14-00-00	11 7/8" NI-40x	1	17
J6	12-00-00	11 7/8" NI-40x	1	10
J7	10-00-00	11 7/8" NI-40x	1	15
J8	8-00-00	11 7/8" NI-40x	1	1
J9	6-00-00	11 7/8" NI-40x	1	9
B15DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Products				
PlotID	Length	Product	Plies	Net Qty
B18	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B19	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B12	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B20	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B9	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/11.88
22	H1	IUS2.56/11.88
11	H1	IUS2.56/11.88
2	H3	HU1.81/10
1	H4	HGUS410

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: DENTON 12

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: R D
DESIGNER: LBV
REVISION:

DATE: 2017-06-09

2nd 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.
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DWG# TAM 3089717 THROUGH DWG# TAM 3091117, 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 3091317
BCIN: 26064
FIRM: 29991
SEALED STRUCTURAL COMPONENTS ONLY

LICENSED PROFESSIONAL ENGINEER
6150
S. KATSOULAKOS
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: DENTON 12 – ELEV. A
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 #TAM30912-17 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#TAM30912-17-S
DWG#TAM30914-17-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: DENTON 12 – ELEV. A**
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 #TAM30913-17 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#TAM30913-17-S 6/15/17
DWG#TAM30915-17-S

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 9, 2017 11:17

PROJECT
J1 GARAGE

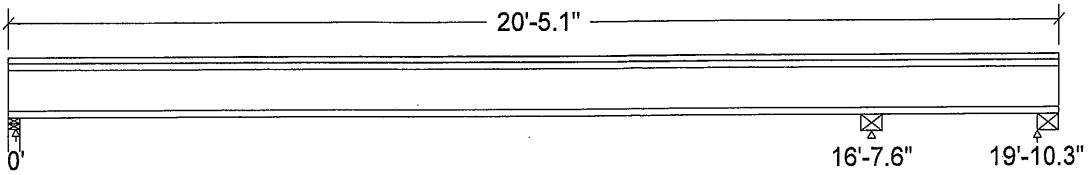
Design Check Calculation Sheet

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	179		553		-188
Live	359		1107		105
Factored:					
Uplift					922
Total	762		2352		
Bearing:					
Resistance					
Joist	2153		5373		
Support	4756		12510		
Des ratio					
Joist	0.35		0.44		
Support	0.16		0.19		
Load case	#4		#2		
Length	2-3/4		5		
Min req'd	1-3/4		3-1/2		
Stiffener	No		No		
Kd	1.00		1.00		
KB support	1.00		1.00		
fcp sup	769		1088		
Kzcp sup	1.13		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 @ 16" o.c.

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Nordic Lam Beam, 24F-1.9E; 3 - Steel Beam, W;
Total length: 20'-5.1"; 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 = 1210	Vr = 2336	lbs	Vf/Vr = 0.52
Moment(+)	Mf = 2448	Mr = 6255	lbs-ft	Mf/Mr = 0.39
Moment(-)	Mf = 3309	Mr = 6255	lbs-ft	Mf/Mr = 0.53
Perm. Defl'n	0.06 = <L/999	0.55 = L/360	in	0.11
Live Defl'n	0.12 = <L/999	0.42 = L/480	in	0.28
Total Defl'n	0.18 = <L/999	0.83 = L/240	in	0.21
Bare Defl'n	0.14 = <L/999	0.55 = L/360	in	0.25
Vibration Defl'n	Lmax = 16'-8 = 0.027	Lv = 18'-9 = 0.038	ft in	.70

LICENSED PROFESSIONAL ENGINEER
6522
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6/6

DWG NO. TAM3088617
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…)
```

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. TAM3080817
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
BURLINGTON
June 9, 2017 11:15

PROJECT
J1 GRD FLR

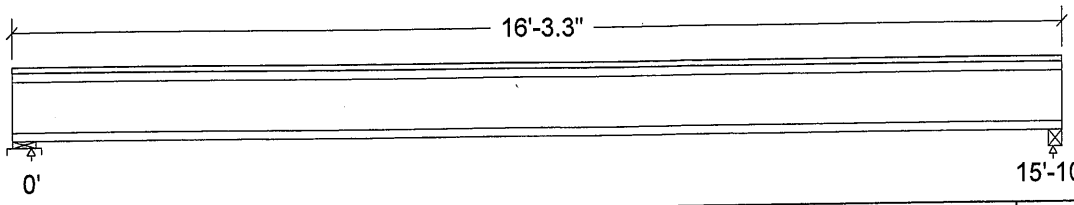
Design Check Calculation Sheet

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	219		215
Live	438		430
Factored:			
Total	930		914
Bearing:			
Resistance			
Joist	2336		2135
Support	6726		-
Des ratio			
Joist	0.40		0.43
Support	0.14		-
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		-
fcp sup	769		-
Kzcp sup	1.00		-

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

Nordic Joist 11-7/8" NI-40x Floor joist @ 16" o.c.
Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 16'-3.3"; 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 = 897	Vr = 2336	lbs	Vf/Vr = 0.38
Moment(+)	Mf = 3552	Mr = 6255	lbs-ft	Mf/Mr = 0.57
Perm. Defl'n	0.10 = <L/999	0.53 = L/360	in	0.18
Live Defl'n	0.19 = L/976	0.40 = L/480	in	0.49
Total Defl'n	0.29 = L/651	0.79 = L/240	in	0.37
Bare Defl'n	0.23 = L/828	0.53 = L/360	in	0.43
Vibration	Lmax = 15'-10	Lv = 17'-2	ft	
Defl'n	= 0.031	= 0.041	in	0.77

LICENSED PROFESSIONAL ENGINEER
6157
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6 14

DWG NO. TAM30809-17
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. TAM3088217
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B4(i3783)

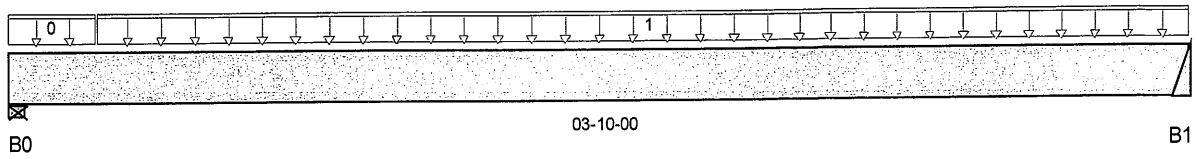
BC CALC® Design Report

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

June 9, 2017 11:55:08

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B4(i3783)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 03-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	14 / 0	19 / 0		
B1	13 / 0	18 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-03-08	6	3			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	03-10-00	7	4			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	35 ft-lbs	19,364 ft-lbs	0.2%	1	01-11-12
End Shear	16 lbs	7,232 lbs	0.2%	1	01-03-06
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-11-12
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-11-12
Max Defl.	0"	n/a	n/a	4	01-11-12
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	Wall/Plate	3-1/2" x 1-3/4"	44 lbs	1.3%	0.6%	Unspecified
B1	Hanger	2" x 1-3/4"	42 lbs	n/a	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

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
6557
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30890-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B5(i3766)

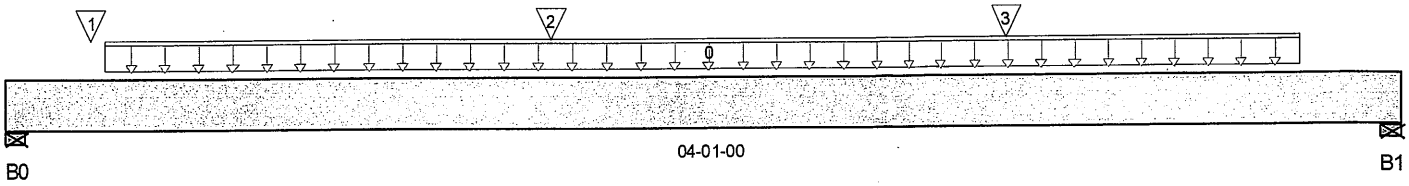
BC CALC® Design Report

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

June 9, 2017 11:55:08

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B5(i3766)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 04-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	694 / 0	356 / 0		
B1, 3-1/2"	602 / 0	313 / 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	00-03-08	03-09-08	240	120			n/a
1	J7(i3898)	Conc. Pt. (lbs)	L	00-03-00	00-03-00	130	62			n/a
2	J7(i3669)	Conc. Pt. (lbs)	L	01-07-00	01-07-00	156	77			n/a
3	J7(i3773)	Conc. Pt. (lbs)	L	02-11-00	02-11-00	160	80			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,241 ft-lbs	19,364 ft-lbs	6.4%	1	01-11-09
End Shear	737 lbs	7,232 lbs	10.2%	1	02-09-10
Total Load Defl.	L/999 (0.004")	n/a	n/a	4	02-00-08
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-00-08
Max Defl.	0.004"	n/a	n/a	4	02-00-08
Span / Depth	3.7	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 1-3/4"	1,485 lbs	45.4%	19.9%	Unspecified
B1	Wall/Plate	3-1/2" x 1-3/4"	1,294 lbs	39.6%	17.3%	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

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
6157
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. YAM30891-17
STRUCTURAL COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B2(i3432)

Boise Cascade

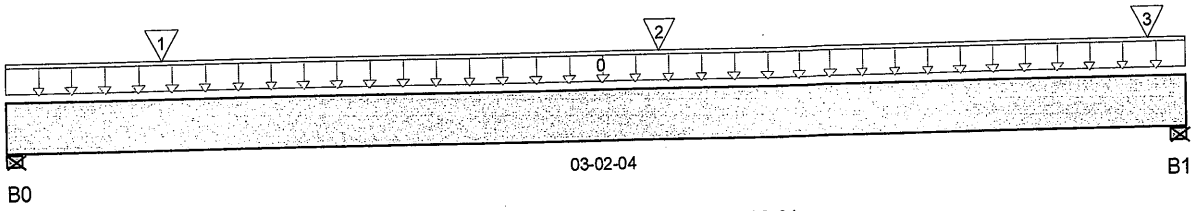
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:08

BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i3432)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 03-02-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	571 / 0	429 / 0		
B1, 4-3/4"	698 / 0	503 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E26(i1623)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-04		81			n/a
1	J2(i3736)	Conc. Pt. (lbs)	L	00-05-00	00-05-00	423	212			n/a
2	J2(i3876)	Conc. Pt. (lbs)	L	01-09-00	01-09-00	423	212			n/a
3	J2(i3431)	Conc. Pt. (lbs)	L	03-01-00	03-01-00	423	212			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	743 ft-lbs	38,727 ft-lbs	1.9%	1	01-09-00
End Shear	616 lbs	14,464 lbs	4.3%	1	01-09-10
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-06-14
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-06-14
Max Defl.	0.001"	n/a	n/a	4	01-06-14
Span / Depth	2.7	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	1,392 lbs	21.3%	9.3%	Unspecified
B1	Wall/Plate	4-3/4" x 3-1/2"	1,676 lbs	18.9%	8.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA 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
90577
S. KATSOULAKOS
PROVINCE OF ONTARIO

p6 16

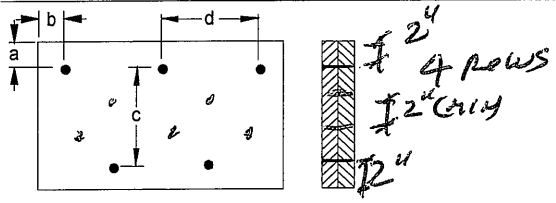
DWG NO. TAM 30092-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i343
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 16"

Calculated Side Load = 846.6 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Connectors are: 16d . 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
61522
S. KATSOULAKOS
PROVINCE OF ONTARIO

P622
DWG NO. TAM3089247
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B5(i3735)

Boise Cascade

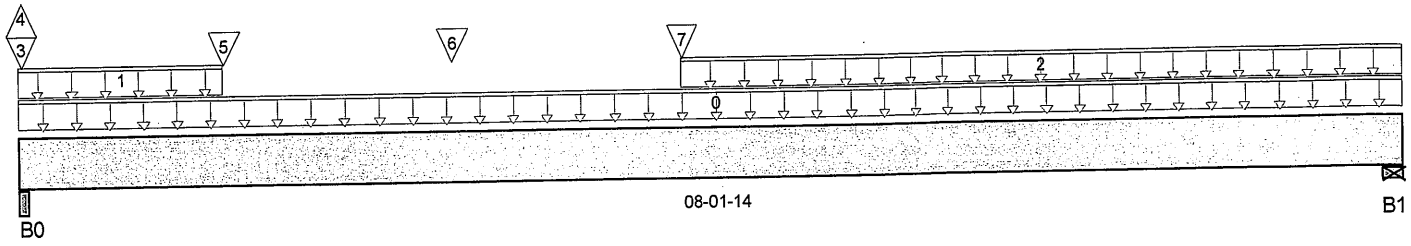
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:08

BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B5(i3735)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 08-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	2,163 / 1,087	700 / 0		
B1, 4-3/8"	419 / 0	265 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-01-14	27	14			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-02-08	39	20			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-10-08	08-01-14		3			n/a
3	8(i1674)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	1,371	251			n/a
4	8(i1674)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	-1,087				n/a
5	J3(i3890)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	293	146			n/a
6	J3(i3856)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	332	166			n/a
7	-	Conc. Pt. (lbs)	L	03-10-10	03-10-10	280	157			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,031 ft-lbs	38,727 ft-lbs	7.8%	1	03-10-08
End Shear	1,560 lbs	14,464 lbs	10.8%	1	01-02-08
Uplift	1,001 lbs	n/a	n/a	4	00-00-00
Total Load Defl.	L/999 (0.022")	n/a	n/a	6	03-09-08
Live Load Defl.	L/999 (0.014")	n/a	n/a	8	03-09-08
Max Defl.	0.022"	n/a	n/a	6	03-09-08
Span / Depth	7.8	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	2-5/8" x 3-1/2"	4,119 lbs	84%	36.7%	Unspecified
B1	Wall/Plate	4-3/8" x 3-1/2"	959 lbs	11.7%	5.1%	Unspecified

Cautions

Uplift of 1,001 lbs found at span 1 - Left. (Simpson 2-H2-5A @ B0)

Notes

LICENSED PROFESSIONAL ENGINEER
62517
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6/6

DWG NO. TAM3089317
STRUCTURAL
COMPONENT ONLY

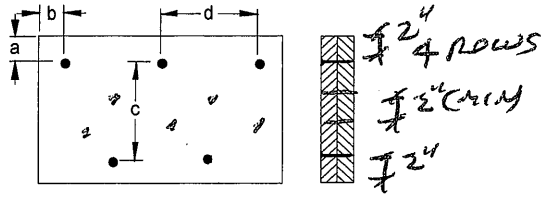
BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B5(i373
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 = 240.5 lb/ft

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Connectors are: 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. YAM 3089311
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B1(i3861)

Boise Cascade

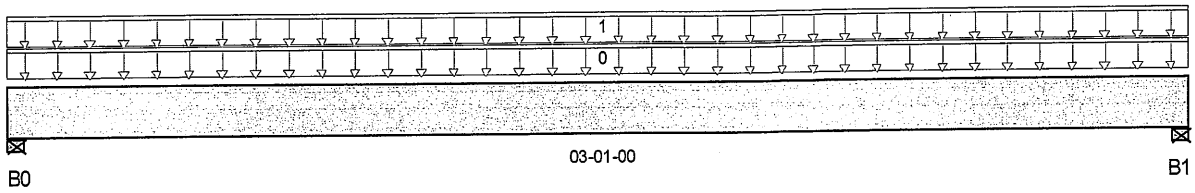
BC CALC® Design Report

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

June 9, 2017 11:55:08

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B1(i3861)
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"	71 / 0	312 / 0		
B1, 3-1/2"	71 / 0	312 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E37(i1662)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	36	186			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	10	5			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	244 ft-lbs	25,173 ft-lbs	1%	0	01-06-08
End Shear	74 lbs	9,401 lbs	0.8%	0	01-03-06
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-06-08
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-06-08
Max Defl.	0"	n/a	n/a	4	01-06-08
Span / Depth	2.7	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3-1/2" x 3-1/2"	437 lbs	10.3%	4.5%	Unspecified
B1	Wall/Plate	3-1/2" x 3-1/2"	437 lbs	10.3%	4.5%	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: 00-00-00, Bottom: 00-00-00.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA 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

P6 / 12

DWG NO. TAM30094-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B1(i3861)

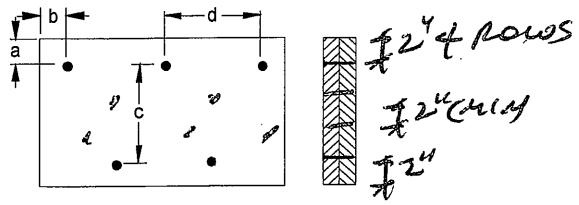
Dry | 1 span | No cantilevers | 0/12 slope (deg) June 9, 2017 11:55:08

BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B1(i386
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



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

Member has no side loads.
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
6157
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM3008917
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B7(i3452)

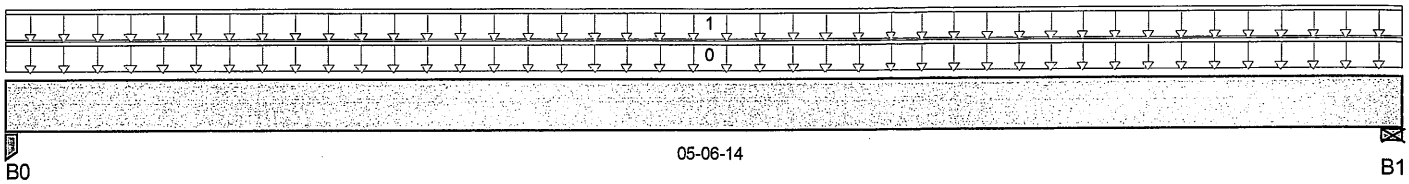
BC CALC® Design Report

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

June 9, 2017 11:55:08

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B7(i3452)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 05-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	69 / 0	211 / 0		
B1, 4-3/8"	75 / 0	229 / 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	05-06-14		60			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-06-14	26	13			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	372 ft-lbs	12,586 ft-lbs	3%	0	02-08-02
End Shear	170 lbs	4,701 lbs	3.6%	0	01-01-10
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	02-08-02
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-08-02
Max Defl.	0.003"	n/a	n/a	4	02-08-02
Span / Depth	5.2	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"	296 lbs	18.3%	12.2%	Unspecified
B1	Wall/Plate	4-3/8" x 1-3/4"	320 lbs	12%	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

CONFORMS TO OBC 2012

LICENSED PROFESSIONAL ENGINEER
6757
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 306895-17
STRUCTURAL
COMPONENT ONLY

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.

Boise Cascade Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B3(i3893)

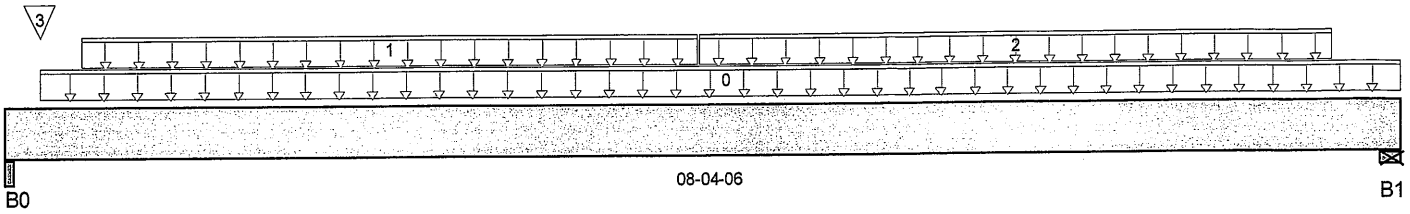
BC CALC® Design Report

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

June 9, 2017 11:55:10

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B3(i3893)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 08-04-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/8"	755 / 0	475 / 0		
B1, 4-3/8"	247 / 0	318 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	08-04-06	7	3			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-05-08	04-01-08	240	120			n/a
2	User Load	Unf. Lin. (lb/ft)	L	04-01-08	07-11-08		60			n/a
3	9(i1672)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	70	47			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,428 ft-lbs	19,364 ft-lbs	12.5%	1	03-04-06
End Shear	1,542 lbs	7,232 lbs	21.3%	1	01-05-00
Total Load Defl.	L/999 (0.036")	n/a	n/a	4	04-00-08
Live Load Defl.	L/999 (0.02")	n/a	n/a	5	03-10-07
Max Defl.	0.036"	n/a	n/a	4	04-00-08
Span / Depth	7.8	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	5-1/8" x 1-3/4"	1,727 lbs	36.1%	15.8%	Unspecified
B1	Wall/Plate	4-3/8" x 1-3/4"	768 lbs	18.8%	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
6512
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30896-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B2(i3435)

Boise Cascade

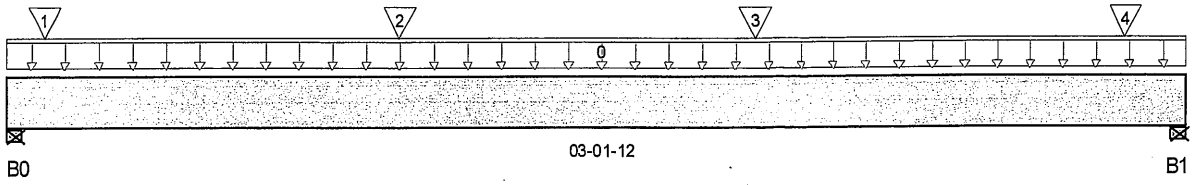
BC CALC® Design Report

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

June 9, 2017 11:55:12

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i3435)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 03-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-1/4"	1,244 / 0	932 / 0	173 / 0	
B1, 3-1/2"	1,202 / 0	900 / 0	166 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E13(i1637)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-12	375	369	108		n/a
1	J1(i3433)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	307	153			n/a
2	J1(i3806)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	309	155			n/a
3	J1(i3913)	Conc. Pt. (lbs)	L	01-11-12	01-11-12	320	160			n/a
4	J1(i3434)	Conc. Pt. (lbs)	L	02-11-12	02-11-12	330	165			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,509 ft-lbs	38,727 ft-lbs	3.9%	1	01-08-00
End Shear	1,844 lbs	14,464 lbs	12.8%	1	01-10-06
Total Load Defl.	L/999 (0.001")	n/a	n/a	35	01-07-04
Live Load Defl.	L/999 (0.001")	n/a	n/a	51	01-07-04
Max Defl.	0.001"	n/a	n/a	35	01-07-04
Span / Depth	2.7	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	4-1/4" x 3-1/2"	3,117 lbs	39.2%	17.2%	Unspecified
B1	Wall/Plate	3-1/2" x 3-1/2"	3,011 lbs	46%	20.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA 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
61577
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30697-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\...\B2(i3435)

BC CALC® Design Report

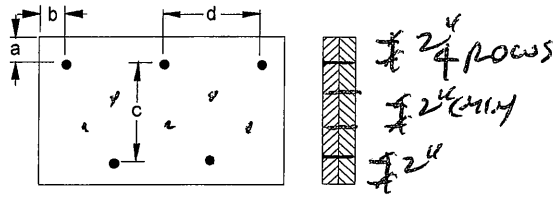
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:12

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B2(i343
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



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

Calculated Side Load = 855.2 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" CARDOX 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
6152
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6 4/4

DWG NO. TAM3089217
STRUCTURAL
COMPONENT ONLY

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B6(i14)

Boise Cascade

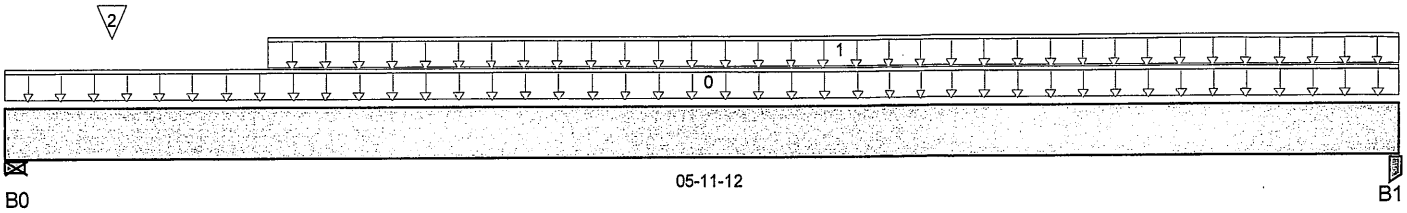
BC CALC® Design Report

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

June 9, 2017 11:55:14

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B6(i14)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 05-11-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	466 / 0	430 / 0		
B1, 3-1/2"	537 / 0	464 / 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	05-11-12		60			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-01-08	05-11-12	170	84			n/a
2	J6(i3895)	Conc. Pt. (lbs)	L	00-05-08	00-05-08	179	90			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,581 ft-lbs	19,364 ft-lbs	8.2%	1	03-01-08
End Shear	845 lbs	7,232 lbs	11.7%	1	04-08-06
Total Load Defl.	L/999 (0.012")	n/a	n/a	4	02-11-08
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-11-08
Max Defl.	0.012"	n/a	n/a	4	02-11-08
Span / Depth	5.6	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"	1,237 lbs	37.8%	16.6%	Unspecified
B1	Post	3-1/2" x 1-3/4"	1,386 lbs	27.9%	18.5%	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

DWG NO. TAM 300518 17
STRUCTURAL
COMPONENT ONLY

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.

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B17(i3237)

Boise Cascade

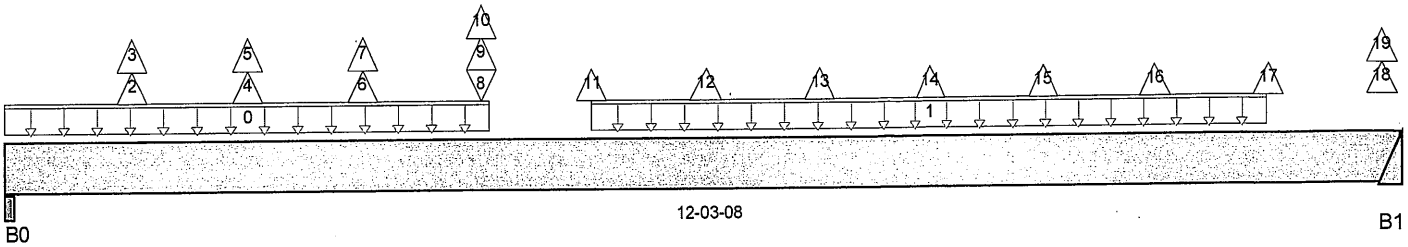
BC CALC® Design Report

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

June 9, 2017 11:55:16

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i3237)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 12-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	925 / 1,667	0 / 275		
B1	707 / 1,944	0 / 535		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-03-00	12	6			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	05-01-08	11-01-08	90				n/a
2	J2(i3160)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	108	-95			n/a
3	J2(i3160)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	-297				n/a
4	J2(i3153)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	72	-116			n/a
5	J2(i3153)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	-304				n/a
6	J2(i3153)	Conc. Pt. (lbs)	L	03-01-08	03-01-08	72	-116			n/a
7	J2(i3153)	Conc. Pt. (lbs)	L	03-01-08	03-01-08	-304				n/a
8	-	Conc. Pt. (lbs)	L	04-01-15	04-01-15	732	365			n/a
9	-	Conc. Pt. (lbs)	L	04-01-15	04-01-15		-116			n/a
10	-	Conc. Pt. (lbs)	L	04-01-15	04-01-15	-304				n/a
11	J2(i3217)	Conc. Pt. (lbs)	L	05-01-08	05-01-08	-304	-115			n/a
12	J2(i3173)	Conc. Pt. (lbs)	L	06-01-08	06-01-08	-304	-113			n/a
13	J2(i3173)	Conc. Pt. (lbs)	L	07-01-08	07-01-08	-304	-113			n/a
14	J2(i3123)	Conc. Pt. (lbs)	L	08-01-08	08-01-08	-305	-114			n/a
15	J2(i2904)	Conc. Pt. (lbs)	L	09-01-08	09-01-08	-297	-110			n/a
16	J2(i2904)	Conc. Pt. (lbs)	L	10-01-08	10-01-08	-297	-110			n/a
17	J2(i2904)	Conc. Pt. (lbs)	L	11-01-08	11-01-08	-297	-110			n/a
18	J2(i3263)	Conc. Pt. (lbs)	L	12-01-08	12-01-08	48	-123			n/a
19	J2(i3263)	Conc. Pt. (lbs)	L	12-01-08	12-01-08	-294				n/a

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30899-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B17(i3237)

Boise Cascade

BC CALC® Design Report

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

June 9, 2017 11:55:16

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i32
Specifier:
Designer: LBV
Company:
Misc:

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,121 ft-lbs	38,727 ft-lbs	10.6%	3	04-02-02
Neg. Moment	-9,657 ft-lbs	-38,727 ft-lbs	24.9%	2	06-01-08
End Shear	3,572 lbs	14,464 lbs	24.7%	2	11-01-10
Uplift	3,584 lbs	n/a	n/a	2	12-03-08
Total Load Defl.	L/999 (0.049")	n/a	n/a	6	05-06-00
Live Load Defl.	L/976 (-0.149")	-0.403"	36.9%	9	06-01-08
Total Neg. Defl.	L/821 (-0.177")	-0.605"	29.2%	7	06-03-00
Max Defl.	-0.177"	n/a	n/a	7	06-03-00
Span / Depth	12.2	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	1-3/4" x 3-1/2"	2,845 lbs	42.6%	38.1%	Unspecified
B1	Hanger	2" x 3-1/2"	579 lbs	n/a	42%	HGUS410
B1	Hanger Uplift	2" x 3-1/2"	3,585 lbs	n/a	0.34	HGUS410

Disclosure

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

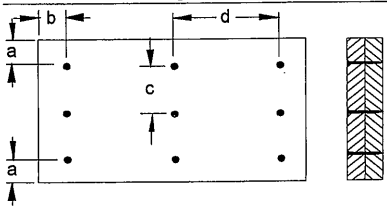
Cautions

Uplift of 3,584 lbs found at span 1 - Right.
Hanger B1 cannot handle uplift of -3,584 lbs.) – (SIMPSON I-HGUS410 @ B1)

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
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.
CONFORMS TO OBC 2012
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

Connection Diagram



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

Calculated Side Load = 584.1 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: 16d Common Nails

3½" ARDOX SPIRAL

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30899-17
STRUCTURAL
COMPONENT ONLY

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B20(i3238)

Boise Cascade

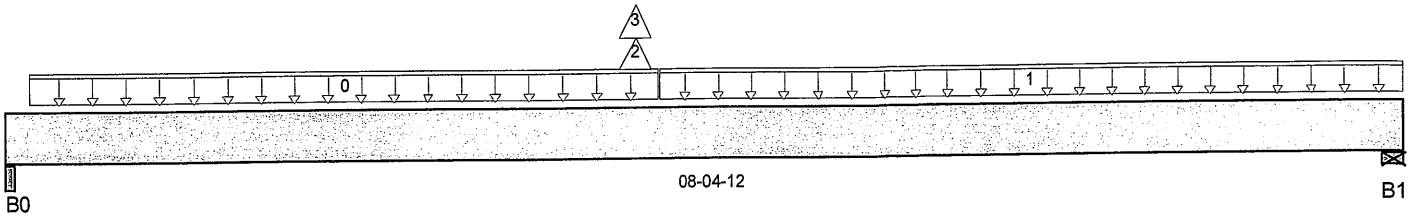
BC CALC® Design Report

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

June 9, 2017 11:55:19

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B20(i3238)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 08-04-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	439 / 1,064	0 / 242		
B1, 5-1/2"	368 / 882	0 / 193		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	03-10-12	13	7			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-10-12	08-04-12	10	5			n/a
2	B17(i3237)	Conc. Pt. (lbs)	L	03-09-00	03-09-00	712	-533			n/a
3	B17(i3237)	Conc. Pt. (lbs)	L	03-09-00	03-09-00	-1,946				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,343 ft-lbs	19,364 ft-lbs	6.9%	3	03-09-00
Neg. Moment	-6,792 ft-lbs	-19,364 ft-lbs	35.1%	2	03-09-00
End Shear	1,887 lbs	7,232 lbs	26.1%	2	01-03-06
Uplift	1,899 lbs	n/a	n/a	2	00-00-00
Total Load Defl.	L/999 (0.01")	n/a	n/a	6	03-11-14
Live Load Defl.	L/999 (-0.067")	n/a	n/a	9	03-11-14
Total Neg. Defl.	L/999 (-0.083")	n/a	n/a	7	03-11-14
Max Defl.	-0.083"	n/a	n/a	7	03-11-14
Span / Depth	7.9	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	3-1/2" x 1-3/4"	1,899 lbs	28.4%	25.4%	Unspecified
B1	Wall/Plate	5-1/2" x 1-3/4"	1,563 lbs	30.4%	13.3%	Unspecified

Cautions

Uplift of 1,899 lbs found at span 1 - Left. (SIMPSON A-HTS22 CO. 30)

Notes

LICENSED PROFESSIONAL ENGINEER
6052
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6 1E

DWG NO. TAM30900-17
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: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B20(i32
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. TAM30900-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9(i2856)

Boise Cascade

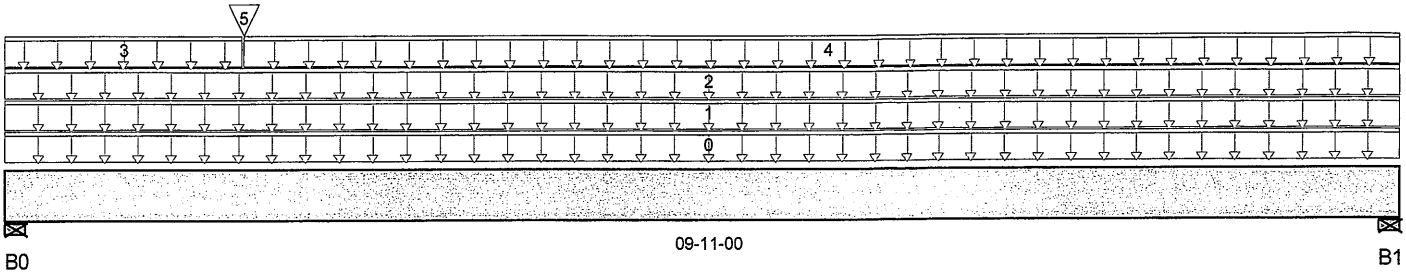
BC CALC® Design Report

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

June 9, 2017 11:55:21

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i2856)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 09-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,040 / 0	1,420 / 0	2,358 / 0	
B1, 5-1/2"	885 / 0	1,272 / 0	1,983 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E76(i2584)	Unf. Lin. (lb/ft)	L	00-00-00	09-11-00		81			n/a
1	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-11-00	11	10	24		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-11-00	13	7			n/a
3	E76(i2584)	Unf. Lin. (lb/ft)	L	00-00-00	01-08-04	46	43	108		n/a
4	E76(i2584)	Unf. Lin. (lb/ft)	L	01-08-04	09-11-00	144	137	351		n/a
5	E76(i2584)	Conc. Pt. (lbs)	L	01-08-04	01-08-04	422	405	1,033		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,221 ft-lbs	38,727 ft-lbs	29%	13	04-07-14
End Shear	5,219 lbs	14,464 lbs	36.1%	13	01-05-06
Total Load Defl.	L/849 (0.129")	0.456"	28.3%	45	04-10-06
Live Load Defl.	L/999 (0.086")	n/a	n/a	61	04-10-06
Max Defl.	0.129"	n/a	n/a	45	04-10-06
Span / Depth	9.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	5,832 lbs	56.7%	24.8%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	5,007 lbs	48.7%	21.3%	Unspecified

Notes

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. YAM 30901-17
STRUCTURAL
COMPONENT ONLY

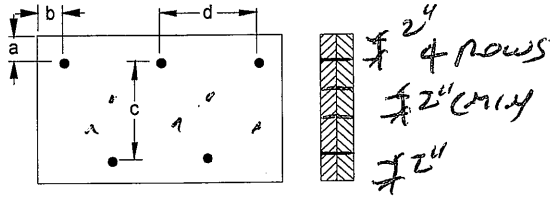
BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i285
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 [illegible] Nails

3½" ARDQX 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
100127
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6

DWG NO. TAM30901-17
STRUCTURAL
COMPONENT ONLY

Boise Cascade

Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B19(i2828)

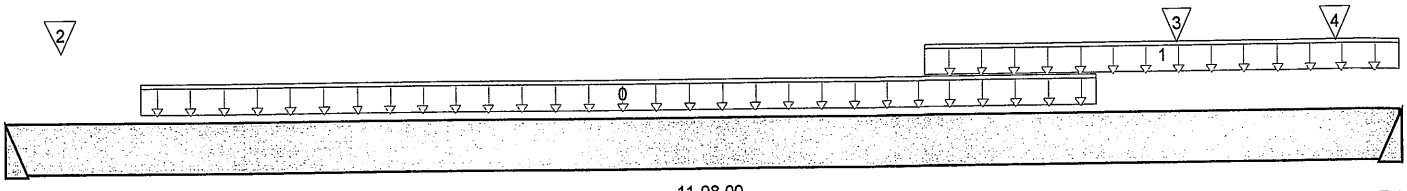
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:24

BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B19(i2828)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 11-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	655 / 0	363 / 0		
B1	1,314 / 0	693 / 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	01-01-08	09-01-08	86	44			n/a
1	LOWROOF	Unf. Lin. (lb/ft)	L	07-08-00	11-08-00	240	120			n/a
2	J9(i2982)	Conc. Pt. (lbs)	L	00-05-08	00-05-08	84	42			n/a
3	J9(i2951)	Conc. Pt. (lbs)	L	09-09-08	09-09-08	130	65			n/a
4	J9(i2957)	Conc. Pt. (lbs)	L	11-01-08	11-01-08	101	51			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,407 ft-lbs	19,364 ft-lbs	27.9%	1	07-01-08
End Shear	2,104 lbs	7,232 lbs	29.1%	1	10-06-02
Total Load Defl.	L/754 (0.182")	0.573"	31.8%	4	06-01-08
Live Load Defl.	L/999 (0.118")	n/a	n/a	5	06-01-08
Max Defl.	0.182"	n/a	n/a	4	06-01-08
Span / Depth	11.6	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"	1,435 lbs	n/a	33.6%	HU1.81/10
B1 Hanger	2" x 1-3/4"	2,836 lbs	n/a	66.4%	HU1.81/10

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.
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. TAM30902-17
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: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B19(i28
Specifier:
Designer: LBV
Company:
Misc:

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
6752
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30902-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12 (i2799)

Boise Cascade

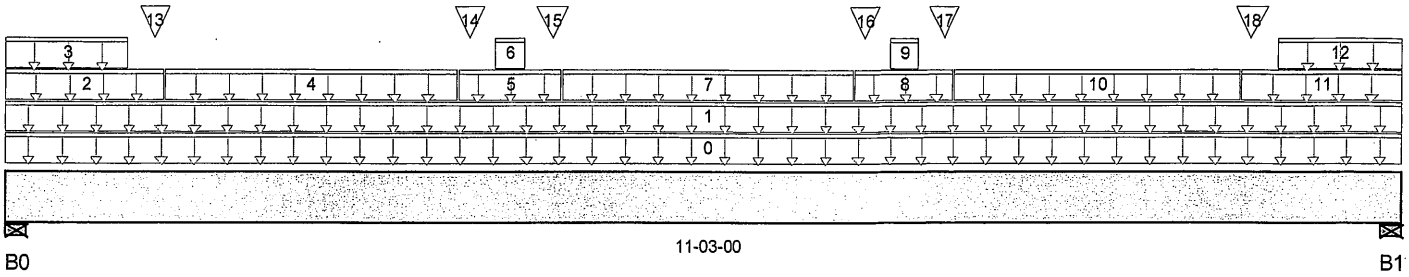
BC CALC® Design Report

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

June 9, 2017 11:55:26

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12 (i2799
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 11-03-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	432 / 0	788 / 0	660 / 0	
B1, 5-1/2"	431 / 0	787 / 0	656 / 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	11-03-00	11	10	24		n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-03-00	27	13			n/a
2	E90(i3103)	Unf. Lin. (lb/ft)	L	00-00-00	01-03-04		81			n/a
3	E90(i3103)	Unf. Lin. (lb/ft)	L	00-00-00	00-11-12	39	37	93		n/a
4	E89(i3102)	Unf. Lin. (lb/ft)	L	01-03-04	03-07-08		41			n/a
5	E88(i3101)	Unf. Lin. (lb/ft)	L	03-07-08	04-05-08		81			n/a
6	E88(i3101)	Unf. Lin. (lb/ft)	L	03-11-00	04-02-00	39		93		n/a
7	E87(i3100)	Unf. Lin. (lb/ft)	L	04-05-08	06-09-08		41			n/a
8	E86(i3099)	Unf. Lin. (lb/ft)	L	06-09-08	07-07-08		81			n/a
9	E86(i3099)	Unf. Lin. (lb/ft)	L	07-01-00	07-04-00	39		93		n/a
10	E85(i3098)	Unf. Lin. (lb/ft)	L	07-07-08	09-11-08		41			n/a
11	E64(i2579)	Unf. Lin. (lb/ft)	L	09-11-08	11-03-00		81			n/a
12	E64(i2579)	Unf. Lin. (lb/ft)	L	10-03-00	11-03-00	39	37	93		n/a
13	E90(i3103)	Conc. Pt. (lbs)	L	01-02-04	01-02-04	58	77	139		n/a
14	E88(i3101)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	56	75	134		n/a
15	E88(i3101)	Conc. Pt. (lbs)	L	04-04-08	04-04-08	58	77	138		n/a
16	E86(i3099)	Conc. Pt. (lbs)	L	06-10-08	06-10-08	56	75	133		n/a
17	E86(i3099)	Conc. Pt. (lbs)	L	07-06-08	07-06-08	58	77	138		n/a
18	E64(i2579)	Conc. Pt. (lbs)	L	10-00-08	10-00-08	56	75	133		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,094 ft-lbs	38,727 ft-lbs	13.2%	13	05-07-08
End Shear	1,821 lbs	14,464 lbs	12.6%	13	09-09-10
Total Load Defl.	L/999 (0.079")	n/a	n/a	45	05-07-08
Live Load Defl.	L/999 (0.042")	n/a	n/a	61	05-07-08
Max Defl.	0.079"	n/a	n/a	45	05-07-08
Span / Depth	10.6	n/a	n/a		00-00-00

LICENSED PROFESSIONAL ENGINEER
6457
S. KATSOULAKOS
PROVINCE OF ONTARIO

p6 12

DWG NO. TAM30903-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12 (i2799)

BC CALC® Design Report

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

June 9, 2017 11:55:26

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

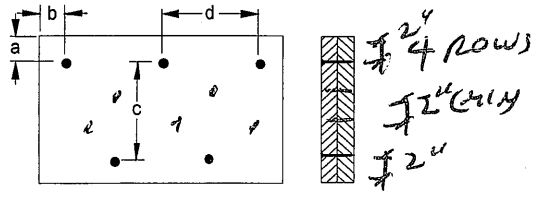
File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12 (i27
Specifier:
Designer: LBV
Company:
Misc:

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	5-1/2" x 3-1/2"	2,190 lbs	21.3%	9.3%	Unspecified
B1	Wall/Plate	5-1/2" x 3-1/2"	2,183 lbs	21.2%	9.3%	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.
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 [illegible] Nails
3½" PAROX 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
6457
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30903-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B18(i2988)

Boise Cascade

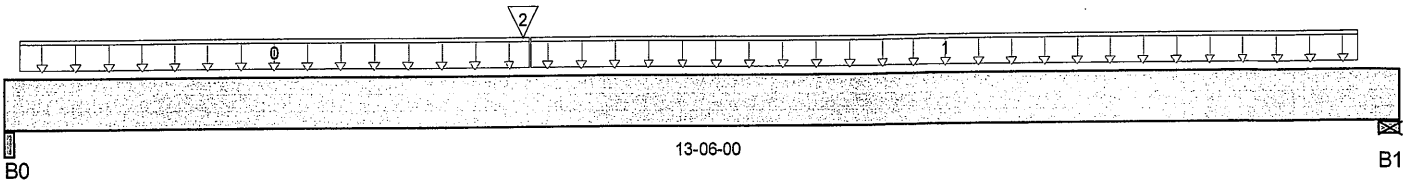
BC CALC® Design Report

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

June 9, 2017 11:55:28

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i2988)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 13-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	974 / 0	590 / 0		
B1, 4-3/4"	595 / 0	399 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	05-00-12	27	13			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-00-12	13-01-04	16	8			n/a
2	B19(i2828)	Conc. Pt. (lbs)	L	04-11-14	04-11-14	1,308	690			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,616 ft-lbs	38,727 ft-lbs	24.8%	1	04-11-14
End Shear	2,115 lbs	14,464 lbs	14.6%	1	01-03-06
Total Load Defl.	L/906 (0.171")	0.647"	26.5%	4	06-04-10
Live Load Defl.	L/999 (0.107")	n/a	n/a	5	06-02-00
Max Defl.	0.171"	n/a	n/a	4	06-04-10
Span / Depth	13.1	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Beam	3-1/2" x 3-1/2"	2,199 lbs	16.5%	14.7%	Unspecified
B1	Wall/Plate	4-3/4" x 3-1/2"	1,392 lbs	15.7%	6.9%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
CONFORMS TO OBC 2012
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

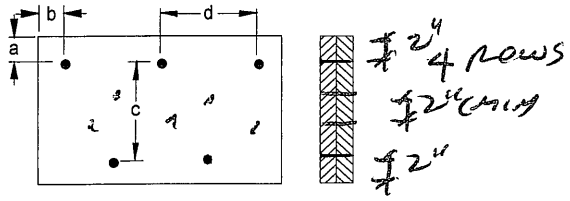
P6 / 6

DWG NO. TAM30904-17
STRUCTURAL
COMPONENT ONLY

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i29
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



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

Calculated Side Load = 209.2 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: [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
90512
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. YAM30904-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8(i3024)

Boise Cascade

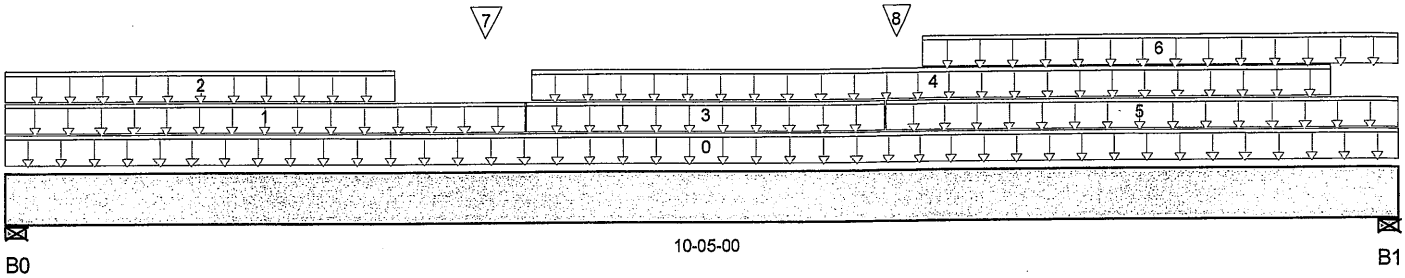
BC CALC® Design Report

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

June 9, 2017 11:55:31

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i3024)
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 10-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,845 / 0	1,490 / 0	671 / 0	
B1, 5-1/2"	1,662 / 0	1,398 / 0	664 / 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	10-05-00	11	10	24		n/a
1	E91(i3107)	Unf. Lin. (lb/ft)	L	00-00-00	03-10-08	35	114	93		n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	02-11-00	308	153			n/a
3	E92(i3108)	Unf. Lin. (lb/ft)	L	03-10-08	06-06-08		41			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	03-11-00	09-11-00	299	149			n/a
5	E74(i2587)	Unf. Lin. (lb/ft)	L	06-06-08	10-05-00		81			n/a
6	E74(i2587)	Unf. Lin. (lb/ft)	L	06-10-00	10-05-00	35	33	93		n/a
7	-	Conc. Pt. (lbs)	L	03-07-00	03-07-00	368	241	193		n/a
8	E74(i2587)	Conc. Pt. (lbs)	L	06-07-08	06-07-08	72	95	198		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,786 ft-lbs	38,727 ft-lbs	27.9%	1	05-05-00
End Shear	3,880 lbs	14,464 lbs	26.8%	1	01-05-06
Total Load Defl.	L/843 (0.137")	0.481"	28.5%	35	05-02-00
Live Load Defl.	L/999 (0.082")	n/a	n/a	51	05-02-00
Max Defl.	0.137"	n/a	n/a	35	05-02-00
Span / Depth	9.7	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"	4,966 lbs	48.3%	21.1%	Unspecified
B1	Wall/Plate	5-1/2" x 3-1/2"	4,572 lbs	44.5%	19.5%	Unspecified

Notes

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30905-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8(i3024)

Boise Cascade

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

June 9, 2017 11:55:31

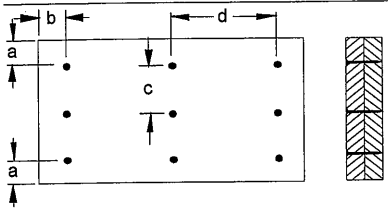
BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i302
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 = 3-15/16"
b minimum = 3" d = 6"

Calculated Side Load = 609.4 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" 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. TAM30905-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10DR(i3134)

Boise Cascade

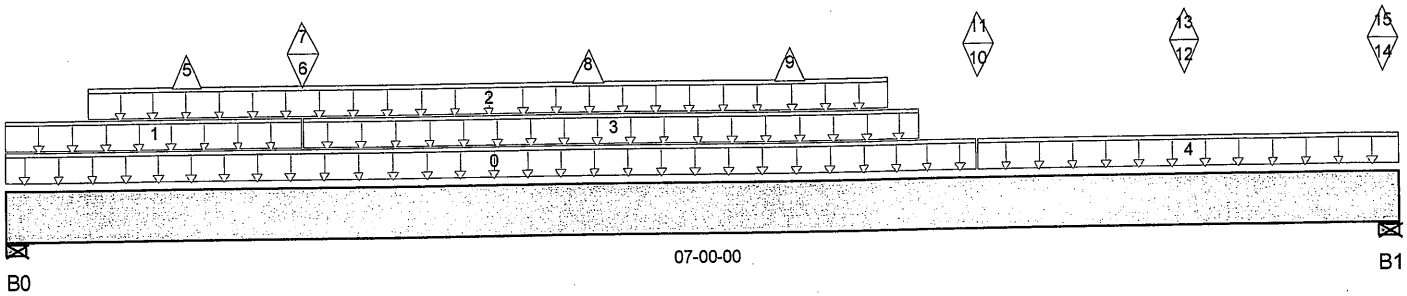
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:33

BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B10I
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 07-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	974 / 2	868 / 0	344 / 0	
B1, 4-1/2"	1,102 / 3	846 / 0	122 / 0	

Load Summary

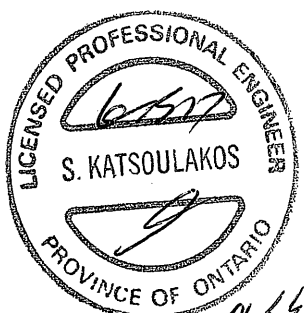
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	R1(i3185)	Unf. Lin. (lb/ft)	L	00-00-00	04-10-08		81			n/a
1	R1(i3185)	Unf. Lin. (lb/ft)	L	00-00-00	01-06-00	46	43	108		n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-00	04-05-00	263	131			n/a
3	R1(i3185)	Unf. Lin. (lb/ft)	L	01-06-00	04-07-00	11	10	24		n/a
4	R1(i3185)	Unf. Lin. (lb/ft)	L	04-10-08	07-00-00		41			n/a
5	J2(i3221)	Conc. Pt. (lbs)	L	00-11-00	00-11-00	-1				n/a
6	-	Conc. Pt. (lbs)	L	01-06-00	01-06-00	105	90	169		n/a
7	-	Conc. Pt. (lbs)	L	01-06-00	01-06-00	-1				n/a
8	J2(i3153)	Conc. Pt. (lbs)	L	02-11-00	02-11-00	-1				n/a
9	J2(i3217)	Conc. Pt. (lbs)	L	03-11-00	03-11-00	-1				n/a
10	-	Conc. Pt. (lbs)	L	04-10-09	04-10-09	291	195	61		n/a
11	-	Conc. Pt. (lbs)	L	04-10-09	04-10-09	-1				n/a
12	J2(i3173)	Conc. Pt. (lbs)	L	05-11-00	05-11-00	263	131			n/a
13	J2(i3173)	Conc. Pt. (lbs)	L	05-11-00	05-11-00	-1				n/a
14	J2(i3123)	Conc. Pt. (lbs)	L	06-11-00	06-11-00	262	131			n/a
15	J2(i3123)	Conc. Pt. (lbs)	L	06-11-00	06-11-00	-1				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,044 ft-lbs	25,408 ft-lbs	15.9%	1	03-02-00
End Shear	2,287 lbs	11,571 lbs	19.8%	1	01-01-00
Total Load Defl.	L/999 (0.045")	n/a	n/a	58	03-05-00
Live Load Defl.	L/999 (0.026")	n/a	n/a	85	03-05-00
Max Defl.	0.045"	n/a	n/a	58	03-05-00
Span / Depth	8.2	n/a	n/a		00-00-00

Bearing Supports

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



DWG NO. TAM3040617
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10DR(i3134)

Boise Cascade

BC CALC® Design Report

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

June 9, 2017 11:55:33

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

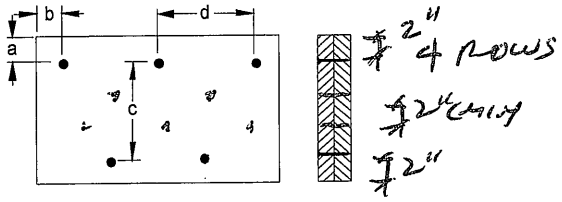
File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
Specifier:
Designer: LBV
Company:
Misc:

B0	Wall/Plate	3-1/2" x 3-1/2"	2,719 lbs	27.3%	18.2%	Unspecified
B1	Wall/Plate	4-1/2" x 3-1/2"	2,772 lbs	21.7%	14.4%	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
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 = 5-1/2"
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 Sinker Nails
3½" PARDOX 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. TAM 30906-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B13DR(i3280)

Boise Cascade

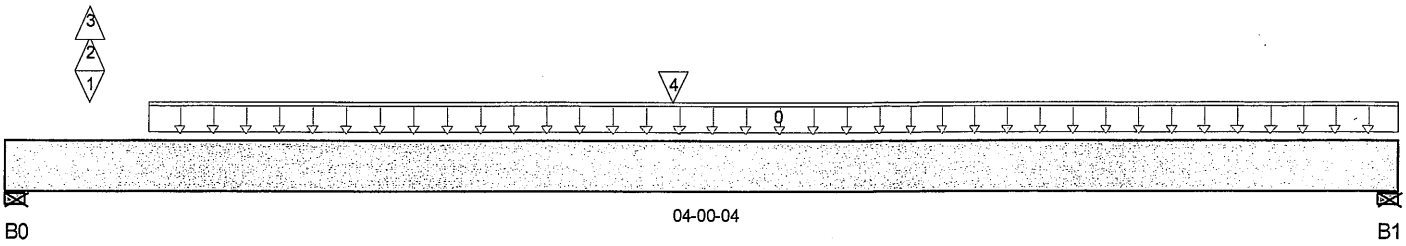
BC CALC® Design Report

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

June 9, 2017 11:55:36

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B13[
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 04-00-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,190 / 1,027	170 / 0		
B1, 3-3/4"	1,064 / 0	551 / 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	04-00-04	410	205			n/a
1	-	Conc. Pt. (lbs)	L	00-02-15	00-02-15	566	70			n/a
2	-	Conc. Pt. (lbs)	L	00-02-15	00-02-15		-232			n/a
3	-	Conc. Pt. (lbs)	L	00-02-15	00-02-15	-1,027				n/a
4	J7(i3265)	Conc. Pt. (lbs)	L	01-11-00	01-11-00	212	106			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,692 ft-lbs	25,408 ft-lbs	6.7%	1	01-11-00
End Shear	1,410 lbs	11,571 lbs	12.2%	1	02-11-00
Uplift	1,388 lbs	n/a	n/a	4	00-00-00
Total Load Defl.	L/999 (0.005")	n/a	n/a	6	02-00-02
Live Load Defl.	L/999 (0.003")	n/a	n/a	8	02-00-02
Max Defl.	0.005"	n/a	n/a	6	02-00-02
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	Wall/Plate	3-1/2" x 3-1/2"	1,997 lbs	20.1%	13.4%	Unspecified
B1	Wall/Plate	3-3/4" x 3-1/2"	2,284 lbs	21.4%	14.3%	Unspecified

Cautions

Uplift of 1,388 lbs found at span 1 - Left. (SIMPSON 2-HL-54 @ B0)

Notes

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

p6/12

DWG NO. TAM30907-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B13DR(i3280)

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

June 9, 2017 11:55:36

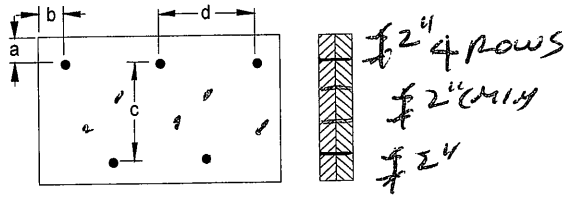
BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
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 unbraced length of Top: 00-02-12, Bottom: 00-02-12.
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 = 5-1/2"
b minimum = 3" d = 4"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.
Connectors are: 16d Nails
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. TAM30907-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B15DR(i3279)

Boise Cascade

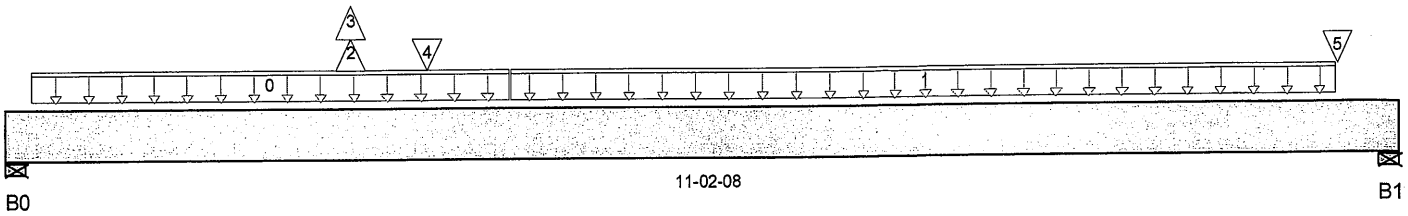
BC CALC® Design Report

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

June 9, 2017 11:55:38

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B15[
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 11-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,518 / 1,273	750 / 0		
B1, 4-1/2"	2,243 / 392	1,004 / 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	00-02-08	04-00-08	286	143			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	04-00-08	10-08-08	354	178			n/a
2	B17(i3237)	Conc. Pt. (lbs)	L	02-09-04	02-09-04	919	-277			n/a
3	B17(i3237)	Conc. Pt. (lbs)	L	02-09-04	02-09-04	-1,665				n/a
4	J9(i2982)	Conc. Pt. (lbs)	L	03-04-08	03-04-08	81	40			n/a
5	J4(i2685)	Conc. Pt. (lbs)	L	10-08-08	10-08-08	288	144			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,354 ft-lbs	25,408 ft-lbs	48.6%	1	05-08-08
Neg. Moment	-3,549 ft-lbs	-25,408 ft-lbs	14%	4	02-09-04
End Shear	4,375 lbs	11,571 lbs	37.8%	1	01-01-08
Uplift	1,235 lbs	n/a	n/a	4	00-00-00
Total Load Defl.	L/362 (0.352")	0.531"	66.3%	6	05-05-08
Live Load Defl.	L/492 (0.259")	0.354"	73.1%	8	05-05-08
Total Neg. Defl.	L/999 (-0.013")	n/a	n/a	7	02-09-04
Max Defl.	0.352"	n/a	n/a	6	05-05-08
Span / Depth	13.4	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	4" x 3-1/2"	4,715 lbs	41.5%	27.6%	Unspecified
B1	Wall/Plate	4-1/2" x 3-1/2"	4,620 lbs	36.1%	24%	Unspecified

Cautions

Uplift of 1,235 lbs found at span 1 - Left. (SIMPSON 2-HL54 @ 17.30)

Notes

LICENSED PROFESSIONAL ENGINEER
6557
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30902-17
STRUCTURAL
COMPONENT ONLY

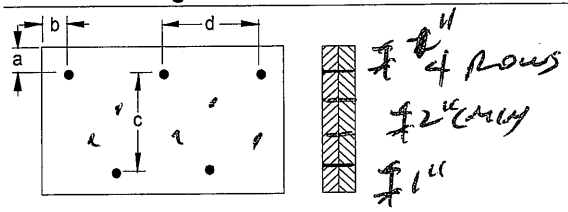
BC CALC® Design Report

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
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 unbraced length of Top: 00-02-12, Bottom: 00-02-12.
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 = 3" 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" HARDOX 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. TAM 30902 17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14DR(i3166)

Boise Cascade

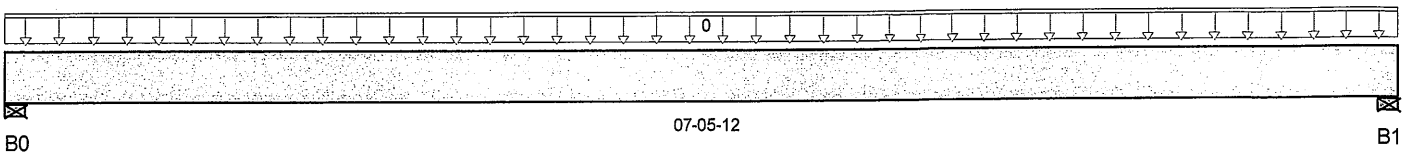
BC CALC® Design Report

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

June 9, 2017 11:55:41

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B14[
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 07-05-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/4"	3,199 / 0	1,634 / 0		
B1, 4"	2,931 / 0	1,500 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	07-05-12	820	410			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,664 ft-lbs	25,408 ft-lbs	38%	1	04-01-04
End Shear	4,983 lbs	11,571 lbs	43.1%	1	01-02-04
Total Load Defl.	L/999 (0.116")	n/a	n/a	4	03-09-08
Live Load Defl.	L/999 (0.076")	n/a	n/a	5	03-09-08
Max Defl.	0.116"	n/a	n/a	4	03-09-08
Span / Depth	8.7	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	4-3/4" x 3-1/2"	6,842 lbs	50.7%	33.7%	Unspecified
B1	Wall/Plate	4" x 3-1/2"	6,271 lbs	55.2%	36.7%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume 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.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

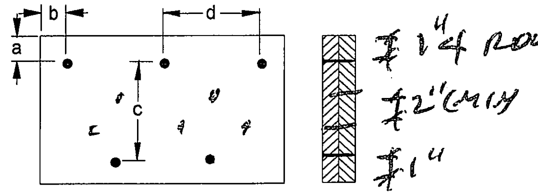
LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

P6 / 4

DWG NO. TAM 30809-17
STRUCTURAL
COMPONENT ONLY

Build 5033	File Name: DENTON 12 EL 1.mmdl
Job Name:	Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
Address:	Specifier:
City, Province, Postal Code: BRAMPTON,	Designer: LBV
Customer:	Company:
Code reports: CCMC 12472-R	Misc:

Connection Diagram



a minimum = 2" 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 [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

P62/2

DWG NO. TAM30909-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16DR(i2693)

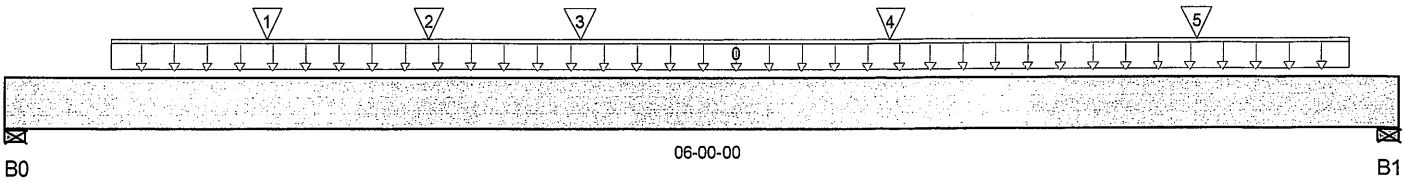
BC CALC® Design Report

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

June 9, 2017 11:55:43

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B16[
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3"	1,644 / 0	924 / 0		
B1, 3"	1,536 / 0	828 / 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	00-05-08	05-09-08	214	107			n/a
1	J9(i2957)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	98	49			n/a
2	B18(i2988)	Conc. Pt. (lbs)	L	01-09-12	01-09-12	965	586			n/a
3	J5(i2726)	Conc. Pt. (lbs)	L	02-05-08	02-05-08	267	133			n/a
4	J5(i2677)	Conc. Pt. (lbs)	L	03-09-08	03-09-08	353	177			n/a
5	J5(i3027)	Conc. Pt. (lbs)	L	05-01-08	05-01-08	353	177			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,688 ft-lbs	25,408 ft-lbs	22.4%	1	02-05-08
End Shear	3,608 lbs	11,571 lbs	31.2%	1	01-00-08
Total Load Defl.	L/999 (0.045")	n/a	n/a	4	02-11-08
Live Load Defl.	L/999 (0.029")	n/a	n/a	5	02-11-08
Max Defl.	0.045"	n/a	n/a	4	02-11-08
Span / Depth	7.1	n/a	n/a		00-00-00

Bearing Supports		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	3" x 3-1/2"	3,621 lbs	42.5%	28.3%	Unspecified
B1	Wall/Plate	3" x 3-1/2"	3,339 lbs	39.2%	26.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-04-02, Bottom: 00-04-02.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
CONFORMS TO OBC 2012
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 309/0-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16DR(i2693)

BC CALC® Design Report

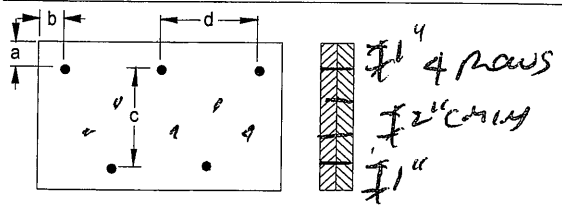
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:43

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 2" 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 SIMPSON 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
6157
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM 30910-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11DR(i3097)

Boise Cascade

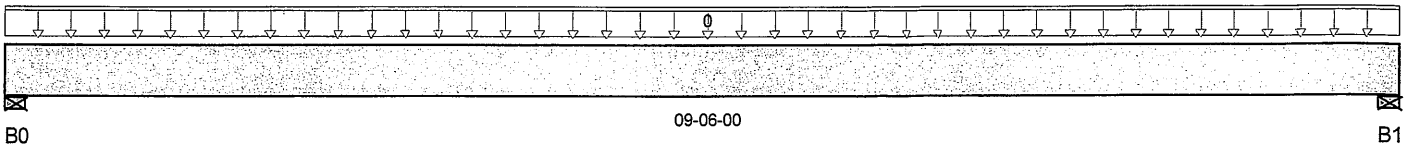
BC CALC® Design Report

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

June 9, 2017 11:55:46

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B11[
Specifier:
Designer: LBV
Company:
Misc:



Total Horizontal Product Length = 09-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	52 / 0	93 / 0	114 / 0	
B1, 4"	52 / 0	93 / 0	114 / 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	09-06-00	11	10	24		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	662 ft-lbs	18,625 ft-lbs	3.6%	13	04-09-00
End Shear	239 lbs	11,571 lbs	2.1%	13	01-01-08
Total Load Defl.	L/999 (0.014")	n/a	n/a	45	04-09-00
Live Load Defl.	L/999 (0.009")	n/a	n/a	61	04-09-00
Max Defl.	0.014"	n/a	n/a	45	04-09-00
Span / Depth	11.3	n/a	n/a		00-00-00

Bearing Supports

		Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0	Wall/Plate	4" x 3-1/2"	314 lbs	2.8%	1.8%	Unspecified
B1	Wall/Plate	4" x 3-1/2"	314 lbs	2.8%	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: 08-10-00, Bottom: 08-10-00.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA 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. TAM 30911-17
STRUCTURAL
COMPONENT ONLY

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11DR(i3097)

Boise Cascade

BC CALC® Design Report

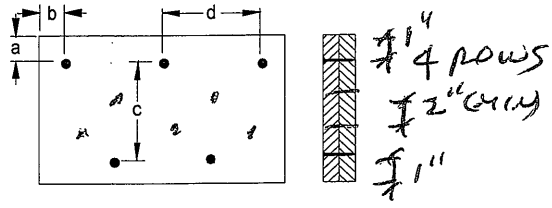
Dry | 1 span | No cantilevers | 0/12 slope (deg)

June 9, 2017 11:55:46

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

File Name: DENTON 12 EL 1.mmdl
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B1
Specifier:
Designer: LBV
Company:
Misc:

Connection Diagram



a minimum = 1" c = 1 1/2"
b minimum = 3" d = 12"

Member has no side loads.
Connectors are: 16d Sinker Nails
3½" ARDOX SPIRAL

Disclosure

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LICENSED PROFESSIONAL ENGINEER
S. KATSOULAKOS
PROVINCE OF ONTARIO

DWG NO. TAM30911-17
STRUCTURAL
COMPONENT ONLY