

FROM PLAN DATED: NOV-2017

BUILDER: GREENYORK HOMES

SITE: TIBURTINO

MODEL: GEORGIAN 4

ELEVATION: B

LOT: 3

CITY: OAKVILLE

SALESMAN: R D

DESIGNER: AJ

REVISION:

NOTES:

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

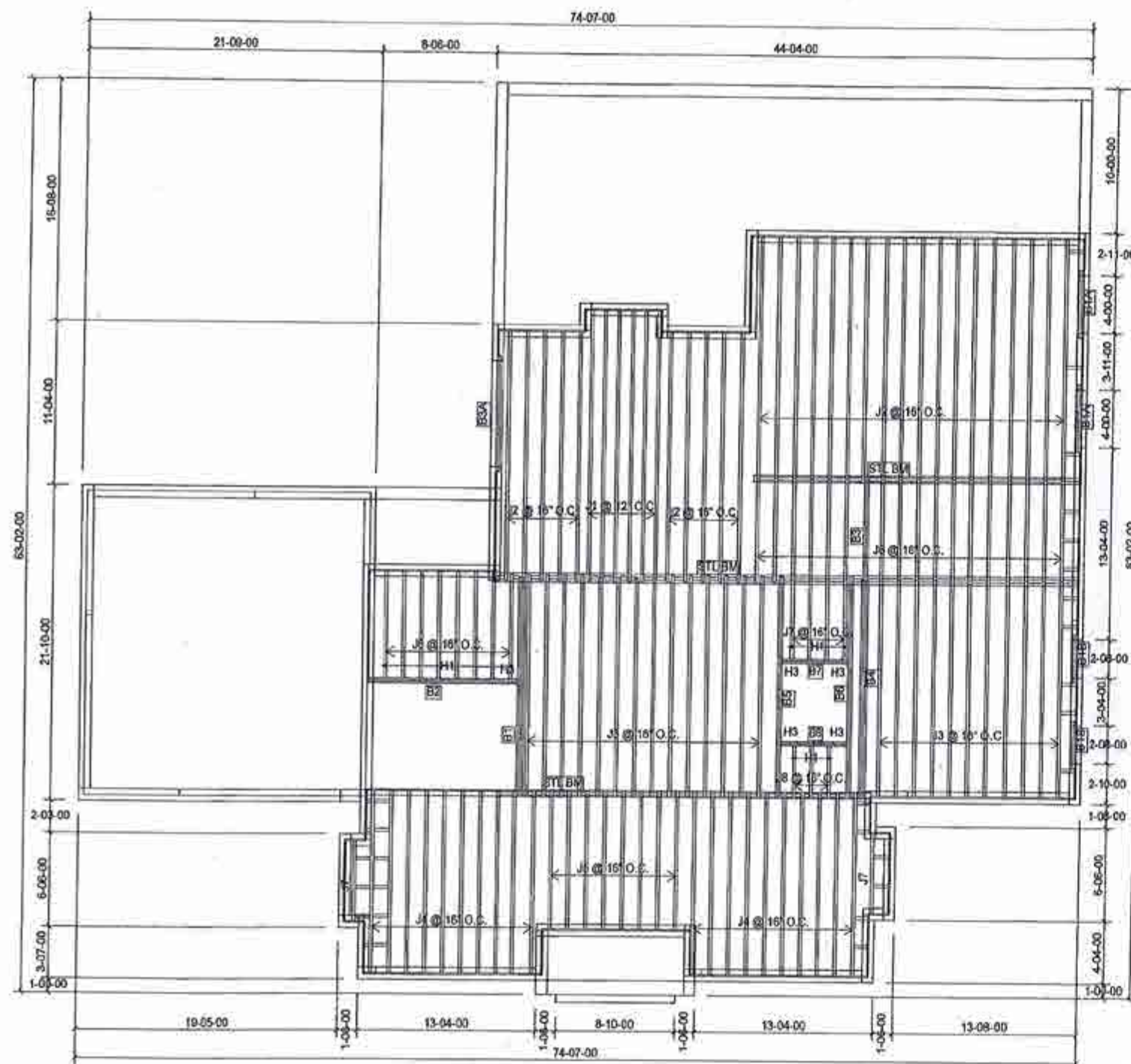
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2/26/2018

1st FLOOR



Products				
PlotID	Length	Product	Piles	Net Qty
J1	20'-00"-00	11 7/8" NI-40x	1	6
J2	18'-00"-00	11 7/8" NI-40x	1	28
J3	16'-00"-00	11 7/8" NI-40x	1	25
J4	14'-00"-00	11 7/8" NI-40x	1	20
J5	10'-00"-00	11 7/8" NI-40x	1	8
J6	8'-00"-00	11 7/8" NI-40x	1	25
J7	6'-00"-00	11 7/8" NI-40x	1	6
J8	4'-00"-00	11 7/8" NI-40x	1	3
B5	16'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6	16'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1	16'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B4	16'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B2	12'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	8'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3A	8'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1A	6'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4
B7	6'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	6'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1B	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	4

Connector Summary		
Qty	Manuf	Product
15	H1	IUS2.56/11.88
4	H3	HGUS410
1	H3	HGUS410

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MAR 12 2019

BUILDING DEPARTMENT
TOWN OF OAKVILLE

OK-DAS
Mar 21/19

SITE COPY

19-0248



FROM PLAN DATED: NOV-2017

BUILDER: GREENYORK HOMES

SITE: TIBURTINO

MODEL: GEORGIAN 4

ELEVATION: B

LOT: 3

CITY: OAKVILLE

SALESMAN: R D

DESIGNER: AJ

REVISION:

NOTES:

REFER TO THE NORDIC
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
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INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

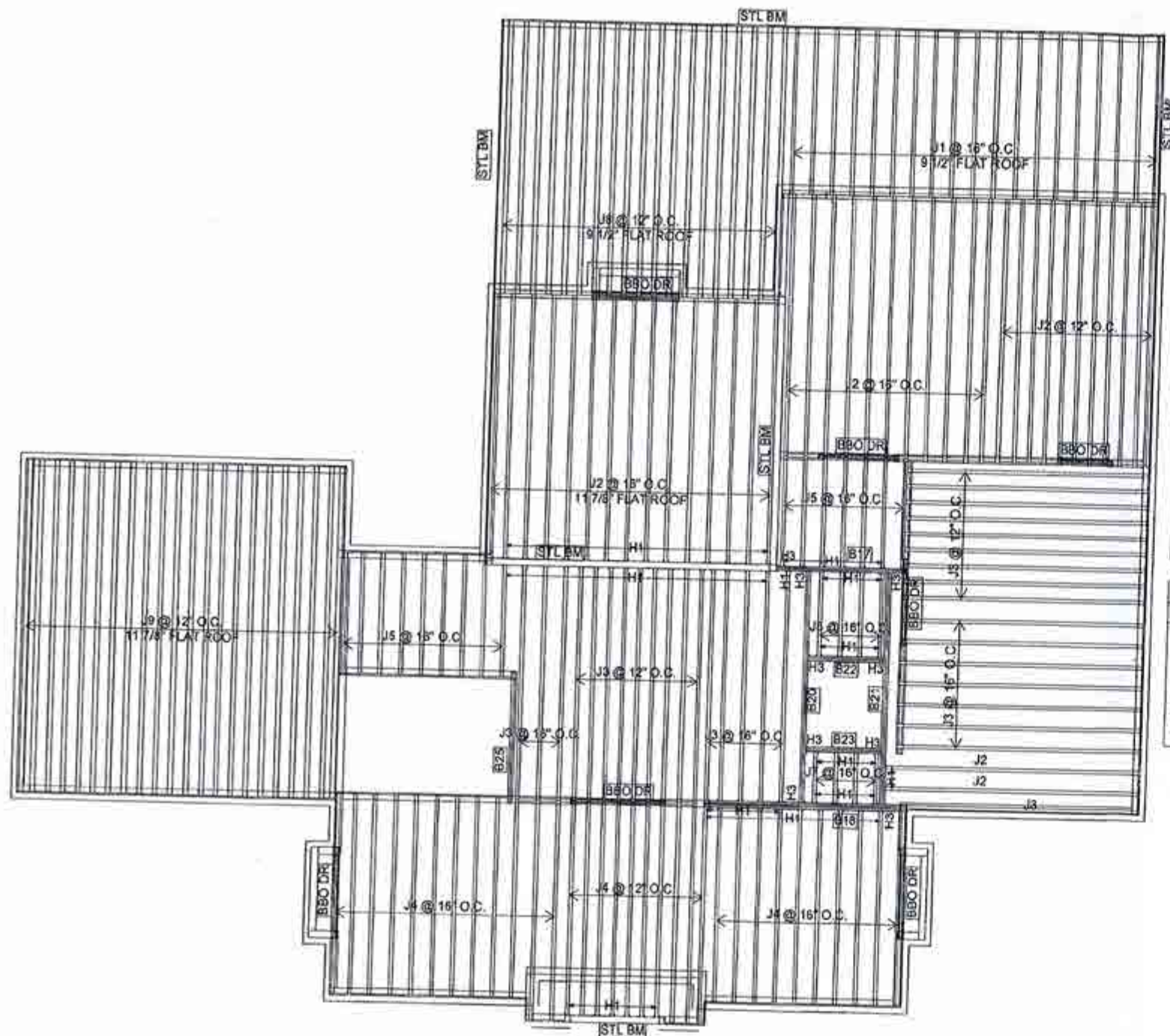
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 6/20/2018

2nd FLOOR



Products				
PlotID	Length	Product	Piles	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	19
J2	18-00-00	11 7/8" NI-40x	1	39
J3	16-00-00	11 7/8" NI-40x	1	34
J4	14-00-00	11 7/8" NI-40x	1	32
J5	8-00-00	11 7/8" NI-40x	1	16
J6	6-00-00	11 7/8" NI-40x	1	4
J7	4-00-00	11 7/8" NI-40x	1	4
J8	18-00-00	9 1/2" NI-80	1	19
J9	22-00-00	11 7/8" NI-80	1	22
B20	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B21	16-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B18	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B17	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B25	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B22	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B23	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf.	Product
21	H1	IUS2.56/11.88
19	H1	IUS2.56/11.88
38	H1	IUS2.56/11.88
6	H3	HGUS410
2	H3	HGUS410
1	H3	HGUS410

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
Feb. 26, 2018 11:32

PROJECT
J1 FLAT ROOF
J1 FLAT ROOF

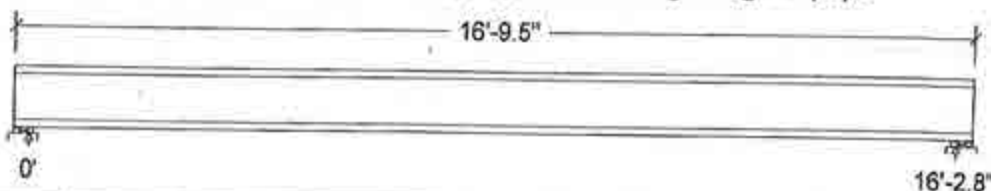
Design Check Calculation Sheet Nordic Sizer - Canada 6.4

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Live	Full Area			11.00	psf
Load2	Dead	Full Area			10.00	psf
Load3	Snow	Full Area			63.00	psf

Load magnitude does not include Normal Importance factor from O86 Table 5.2.3.2, which is applied during analysis.

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



Unfactored:			
Dead	108		108
Live	119		119
Snow	682		682
Factored:			
Total	1277		1277
Bearing:			
Resistance			
Joist	2336		2336
Support	5229		5546
Des ratio			
Joist	0.55		0.55
Support	0.24		0.23
Load case	#5		#5
Length	4-1/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	1.00		1.00
fcp sup	551		551
Kzcp sup	1.15		1.15

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BUILDING DEPARTMENT
TOWN OF OAKVILLE

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

Supports: All - Nordic Lam Sill plate, 24F-1.9E

Total length: 16'-9.5"

This section PASSES the design code check.

Limit States Design using CSA O86-14:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 1277	Vr = 2336	lbs	Vf/Vr = 0.55
Moment (+)	Mf = 5181	Mr = 6255	lb-ft	Mf/Mr = 0.83
Perm. Defl'n	0.06 = < L/999	0.54 = L/360	in	0.12
Live Defl'n	0.39 = L/497	0.54 = L/360	in	0.72
Total Defl'n	0.45 = L/428	1.08 = L/180	in	0.42



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STRUCTURAL
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J1 FLAT ROOF

Nordic Sizer - Canada 6.4

Page 2

Additional Data:

FACTORS:	F/B	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#5
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#5
EI	371.1 million	-	-	-	-	-	-	-	#5

CRITICAL LOAD COMBINATIONS:Shear : LC #5 = $1.25D + (1.0)1.5S + 1.0L$ Moment(+) : LC #5 = $1.25D + (1.0)1.5S + 1.0L$

Deflection: LC #1 = 1.0D (permanent)

LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (live)LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (total)Bearing : Support 1 - LC #5 = $1.25D + (1.0)1.5S + 1.0L$ Support 2 - LC #5 = $1.25D + (1.0)1.5S + 1.0L$

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

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

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

CALCULATIONS:Deflection: EI = 371e06 lb-in² K= 6.18e06 lbs

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

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.

CONFORMS TO OBC 2012



DWG NO. TAM / 0382-18
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
Feb. 26, 2018 11:33

PROJECT
J7 FLAT ROOF
J7 FLAT ROOF

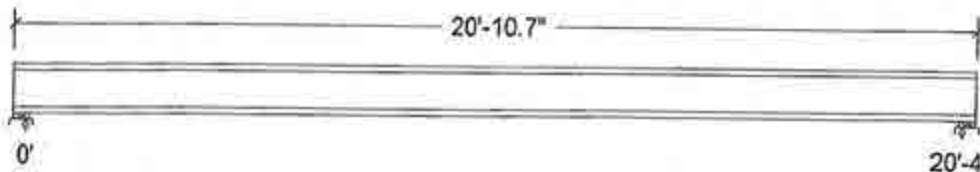
Design Check Calculation Sheet Nordic Sizer - Canada 6.4

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Live	Full Area			11.00	psf
Load2	Dead	Full Area			10.00	psf
Load3	Snow	Full Area			63.00	psf

Load magnitude does not include Normal Importance factor from O86 Table 5.2.3.2, which is applied during analysis.

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



Unfactored:		
Dead	102	102
Live	112	112
Snow	641	641
Factored:		
Total	1200	1200
Bearing:		
Resistance		
Joist	2336	2336
Support	7321	7764
Des ratio		
Joist	0.51	0.51
Support	0.16	0.15
Load case	#5	#5
Length	4-1/8	4-3/8
Min req'd	1-3/4	1-3/4
Stiffener	No	No
Kd	1.00	1.00
KB support	1.00	1.00
fcp sup	551	551
Kzcp sup	1.15	1.15

Nordic Joist 11-7/8" NI-80 Roof joist @ 12" o.c.

Supports: All - Nordic Lam Sill plate, 24F-1.9E

Total length: 20'-10.7"

This section PASSES the design code check.

Limit States Design using CSA O86-14:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 1200$	$V_r = 2336$	lbs	$V_f/V_r = 0.51$
Moment (+)	$M_f = 6099$	$M_r = 11609$	lb-ft	$M_f/M_r = 0.53$
Perm. Defl'n	$0.08 = < L/999$	$0.68 = L/360$	in	0.12
Live Defl'n	$0.49 = L/500$	$0.68 = L/360$	in	0.72
Total Defl'n	$0.57 = L/431$	$1.36 = L/180$	in	0.42



DWG NO. TAM 103638
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#5
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#5
EI	547.1 million	-	-	-	-	-	-	-	#5

CRITICAL LOAD COMBINATIONS:

Shear : LC #5 = 1.25D + (1.0)1.5S + 1.0L

Moment(+) : LC #5 = 1.25D + (1.0)1.5S + 1.0L

Deflection: LC #1 = 1.0D (permanent)

LC #5 = 1.0D + (0.9)1.0S + 0.5L (live)

LC #5 = 1.0D + (0.9)1.0S + 0.5L (total)

Bearing : Support 1 - LC #5 = 1.25D + (1.0)1.5S + 1.0L

Support 2 - LC #5 = 1.25D + (1.0)1.5S + 1.0L

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

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

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

CALCULATIONS:

Deflection: EI = 547e06 lb-in² K= 6.18e06 lbs

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

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. CONFORMS TO OBC 2012
3. Refer to technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM 10383-18
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
Dec. 18, 2017 10:35

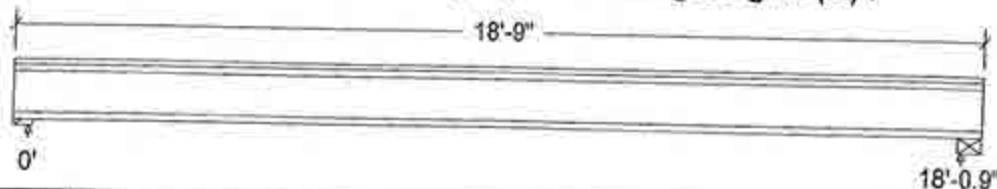
PROJECT
J1 1ST FLOOR
J1 1ST FLOOR

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	181		181
Live	361		361
Factored:			
Total	768		768
Bearing:			
Resistance			
Joist	2336		2336
Support	-		-
Des ratio			
Joist	0.33		0.33
Support	-		-
Load case	#2		#2
Length	4-3/8		5-1/2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	-		-
fcp sup	-		-
Kzcp sup	-		-

Nordic Joist 11-7/8" NI-40x Floor joist @ 12" o.c.
 Supports: 1 - Non-wood; 2 - Steel Beam, W;
 Total length: 18'-9.0"; 3/4" 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 = 768	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3471	Mr = 6255	lbs	Mf/Mr = 0.55
Perm. Defl'n	0.12 = <L/999	0.60 = L/360	in	0.20
Live Defl'n	0.24 = L/896	0.45 = L/480	in	0.54
Total Defl'n	0.36 = L/597	0.90 = L/240	in	0.40
Bare Defl'n	0.28 = L/763	0.60 = L/360	in	0.47
Vibration	Lmax = 18'-1	Lv = 19'-6	ft	0.83
Defl'n	= 0.028	= 0.034		



DWG NO. TAM 10364-18
 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: $EI_{eff} = 443e06 \text{ lb-in}^2$ $K = 6.18e06 \text{ lbs}$

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

Design Notes:

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

CONFORMS TO OBC 2012

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

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

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

5. Joists shall be laterally supported at supports and continuously along the compression edge.

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



DWG NO. TAM/0384-18
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
Dec. 18, 2017 10:37

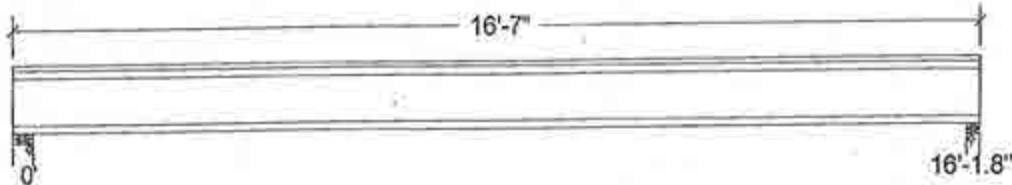
PROJECT
J1 2ND FLOOR
J1 2ND FLOOR

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	215		215
Live	431		431
Factored:			
Total	915		915
Bearing:			
Resistance			
Joist	2336		2135
Support	7735		4490
Des ratio			
Joist	0.39		0.43
Support	0.12		0.20
Load case	#2		#2
Length	4-3/8		2-5/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
Kd	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.15		1.11

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

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

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

Total length: 16'-7.0"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 915	Vr = 2336	lbs	Mr = 0.39
Moment (+)	Mf = 3694	Mr = 6255	lbs	Mr = 0.59
Perm. Defl'n	0.10 = <L/999	0.54 = L/360	in	0.19
Live Defl'n	0.21 = L/925	0.40 = L/480	in	0.52
Total Defl'n	0.31 = L/617	0.81 = L/240	in	0.39
Bare Defl'n	0.25 = L/784	0.54 = L/360	in	0.46
Vibration	Lmax = 16'-2	Lv = 17'-8	ft	
Defl'n	= 0.030	= 0.040	in	0.75



DWG NO. TAM 10385-18
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	E/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: E_Ieff = 448e06 lb-in² K= 6.18e06 lbs

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

Design Notes:

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

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

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

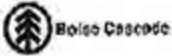
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.

5. Joists shall be laterally supported at supports and continuously along the compression edge.

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



DWG NO. TAM 10385-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basementl...B3(I3077)

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

December 18, 2017 10:15:26

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mxd

Description: Designs\Flush Beams\Basement\Flush Beams\B3(I3077)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 07-03-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	3,139 / 0	2,349 / 0		
B1, 5-1/4"	1,554 / 0	1,143 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 FC 1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-10	07-00-10	53	27			n/a
1 7(i 1304)	Unf. Lin. (lb/ft)	L	00-05-10	06-11-02	27	97			n/a
2 7(i 1304)	Unf. Lin. (lb/ft)	L	00-10-10	05-10-10	312	156			n/a
3 7(i 1304)	Unf. Lin. (lb/ft)	L	05-08-10	06-11-02	323	161			n/a
4 7(i 1304)	Conc. Pl. (lbs)	L	00-06-10	00-06-10	2,055	1,519			n/a
5 5(i 1301)	Conc. Pl. (lbs)	L	07-01-14	07-01-14	97	72			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,908 ft-lbs	38,727 ft-lbs	15.3%	1	03-05-14
End Shear	3,437 lbs	14,464 lbs	23.8%	1	01-04-04
Total Load Defl.	L/999 (0.035")	n/a	n/a	4	03-05-14
Live Load Defl.	L/999 (0.02")	n/a	n/a	5	03-05-14
Max Defl.	0.035"	n/a	n/a	4	03-05-14
Span / Depth	6.7	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	4-3/8" x 3-1/2"	7,644 lbs	93.4%	40.9%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	3,760 lbs	38.3%	16.8%	Unspecified

Notes



OWG NO. TAM/2306-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B3(i3077)

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

December 18, 2017 10:15:26

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmd

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i3077

Specifier:

Designer:

Company:

Msc:

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

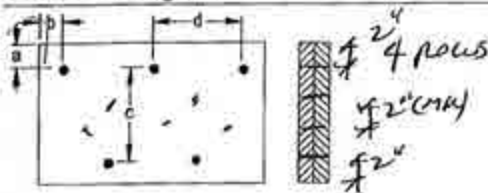
CONFORMS TO OBC 2012

Disclosure

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Connection Diagram



a minimum = 2" c = 7-7/8" 4"
b minimum = 3" d = 4"

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

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 10306.8
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(13096)

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

December 18, 2017 10:15:27

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mxd

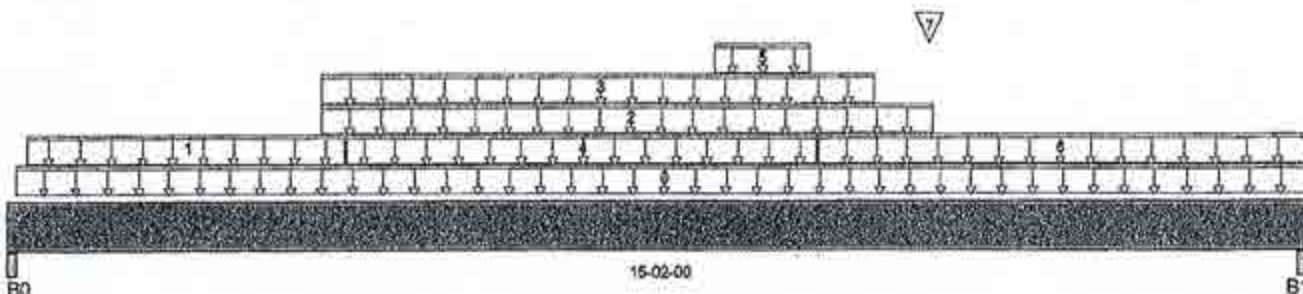
Description: Designs\Flush Beams\Basement\Flush Beams\B4(13096)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 15-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	1,998 / 0	1,460 / 0		
B1, 3-1/8"	2,314 / 0	1,807 / 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	00-01-02	15-02-00	24	12			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	03-11-06	20	10			n/a
2	8(i1306)	Unf. Lin. (lb/ft)	L	03-07-14	10-09-10		81			n/a
3	8(i1306)	Unf. Lin. (lb/ft)	L	03-07-14	10-01-02	308	154			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-11-06	09-04-14	23	11			n/a
5	8(i1306)	Unf. Lin. (lb/ft)	L	08-02-06	09-03-14	404	202			n/a
6	FC1 Floor Material	Unf. Lin. (lb/ft)	L	09-04-14	15-02-00	20	10			n/a
7	8(i1306)	Conc. PL (lbs)	L	10-08-10	10-08-10	1,105	615			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	26,021 ft-lbs	60,415 ft-lbs	43.1%	1	08-05-02
End Shear	5,335 lbs	21,696 lbs	24.6%	1	13-11-00
Total Load Defl.	L/376 (0.465")	0.73"	63.8%	4	07-10-06
Live Load Defl.	L/841 (0.273")	0.486"	56.2%	5	07-10-06
Max Defl.	0.465"	n/a	n/a	4	07-10-06
Span / Depth	14.7	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 5-1/4"	4,819 lbs	32.7%	14.3%	Unspecified
B1 Beam	3-1/8" x 5-1/4"	5,480 lbs	62.6%	27.4%	Unspecified

Notes



DWG NO. TAM 10387-18
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(I3096)

BC CALC® Design Report



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

December 18, 2017 10:15:27

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(I309

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

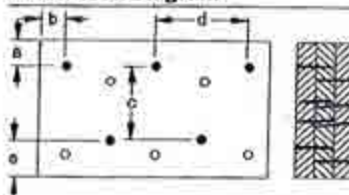
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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Connection Diagram

a minimum = 2"

c = 6-7/8"

b minimum = 3"

d = 4"

e minimum = 2"

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

Nailing schedule applies to both sides of the member.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

DWG NO. TAM/2387-18
STRUCTURAL
COMPONENT ONLY



BC CALCO Design Report

Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2618)

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

December 18, 2017 10:08:34

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mxd

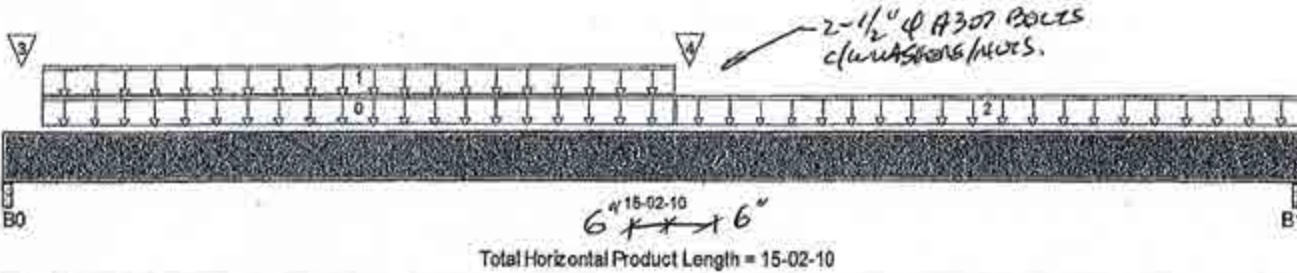
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2618)

Specifier:

Designer:

Company:

Msc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	3,069 / 0	2,016 / 0		
B1, 3-1/2"	1,665 / 0	1,271 / 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	00-05-04	07-10-02	240	120			n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	07-10-02	15	8			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	07-10-02	15-02-10	27	13			n/a
3 2(i1293)	Conc. Pl. (lbs)	L	00-02-08	00-02-08	671	401			n/a
4 -	Conc. Pl. (lbs)	L	08-00-00	08-00-00	1,970	1,665			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	26,492 ft-lbs	60,415 ft-lbs	43.8%	1	07-11-14
End Shear	5,035 lbs	21,696 lbs	23.2%	1	01-05-02
Total Load Defl.	L/403 (0.435")	0.731"	59.6%	4	07-07-11
Live Load Defl.	L/695 (0.252")	0.487"	51.8%	5	07-07-11
Max Defl.	0.435"	n/a	n/a	4	07-07-11
Span / Depth	14.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 5-1/4"	7,124 lbs	60.5%	21.2%	Unspecified
B1 Beam	3-1/2" x 5-1/4"	4,086 lbs	52.1%	18.2%	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 CALCO 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/10300.18
 STRUCTURAL
 COMPONENT ONLY



Boise Cascade

Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2618)

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

December 18, 2017 10:08:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i261-

Specifier:

Designer:

Company:

Misc:

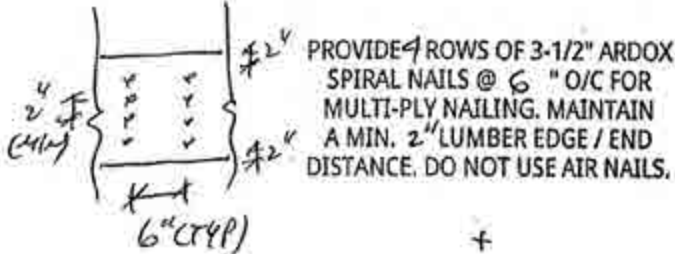
Connection Diagram

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

Disclosure

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+
BOLTS



DWG NO. TAM 1030028
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basementl... \B2(i2696)

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

December 18, 2017 10:08:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

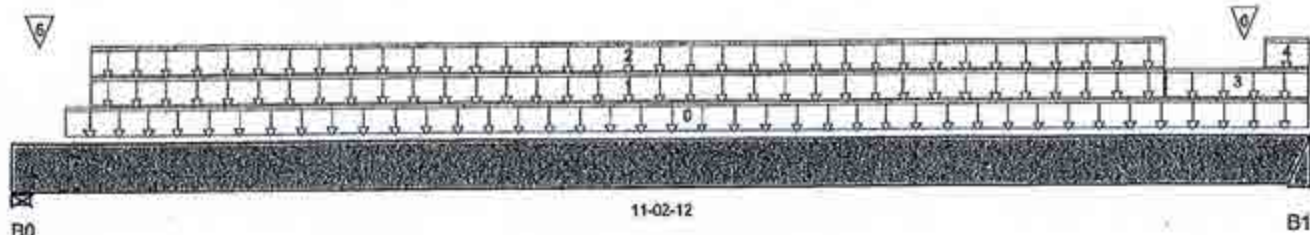
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2696)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 11-02-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,595 / 0	1,822 / 0		
B1	1,777 / 0	1,421 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 9(i1339)	Unf. Lin. (lb/ft)	L	00-05-08	11-02-12		81			n/a
1 9(i1339)	Unf. Lin. (lb/ft)	L	00-08-00	10-00-00	156	78			n/a
2 Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-00	10-00-00	154	78			n/a
3 9(i1339)	Unf. Lin. (lb/ft)	L	10-00-00	11-02-12	142	71			n/a
4 9(i1339)	Unf. Lin. (lb/ft)	L	10-10-04	11-02-12	306	215			n/a
5 1(i1291)	Conc. Pl. (lbs)	L	00-02-12	00-02-12		329			n/a
6 J6(i2604)	Conc. Pl. (lbs)	L	10-08-00	10-08-00	162	81			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,153 ft-lbs	38,727 ft-lbs	28.8%	1	05-08-00
End Shear	3,820 lbs	14,484 lbs	26.4%	1	01-05-06
Total Load Defl.	L/756 (0.17")	0.536"	31.8%	4	05-10-00
Live Load Defl.	L/999 (0.095")	n/a	n/a	5	05-10-00
Max Defl.	0.17"	n/a	n/a	4	05-10-00
Span / Depth	10.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	4,419 lbs	53.7%	18.8%	Unspecified
B1 Hanger	2" x 3-1/2"	4,442 lbs	n/a	52%	Hanger

Notes





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B2(i2696)

BC CALC® Design Report



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

December 18, 2017 10:08:34

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2696)

Specifier:

Designer:

Company:

Msc:

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

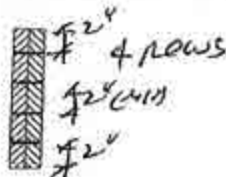
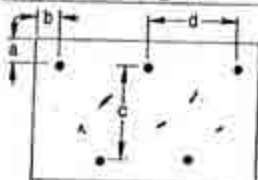
CONFORMS TO OBC 2012

Disclosure

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Connection Diagram



a minimum = 2" c = 7-7/8" 4"
b minimum = 3" d = 4"

Calculated Side Load = 303.0 lb/ft

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

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 10389-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basementl...B5(i2613)

BC CALCO Design Report



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

December 18, 2017 10:08:34

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mmdl

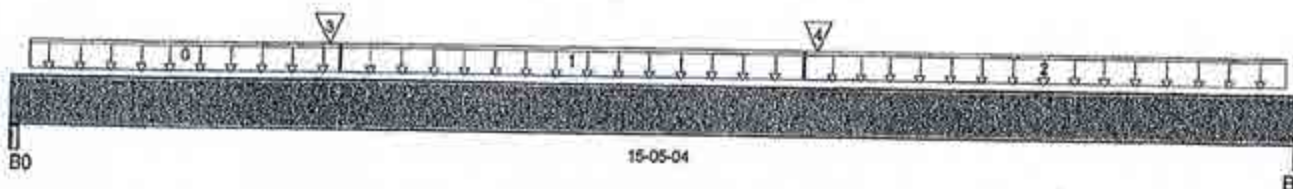
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i2613)

Specifier:

Designer:

Company:

Msc:



Total Horizontal Product Length = 15-05-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	536 / 0	395 / 0		
B1, 6-1/8"	511 / 0	375 / 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	00-02-10	03-11-06	51	26			n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-11-06	09-04-14	30	15			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	09-04-14	15-02-10	45	22			n/a
3 B8(i2836)	Conc. Pl. (lbs)	L	03-09-10	03-09-10	167	114			n/a
4 B7(i2816)	Conc. Pl. (lbs)	L	09-08-10	09-08-10	262	161			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,927 ft-lbs	38,727 ft-lbs	12.7%	1	09-04-14
End Shear	1,146 lbs	14,464 lbs	7.9%	1	01-05-02
Total Load Defl.	L/1,273 (0.138")	0.731"	18.9%	4	07-08-06
Live Load Defl.	L/999 (0.08")	n/a	n/a	5	07-08-06
Max Defl.	0.138"	n/a	n/a	4	07-08-06
Span / Depth	14.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	1,289 lbs	16.5%	5.8%	Unspecified
B1 Beam	6-1/8" x 3-1/2"	1,236 lbs	13.5%	4.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

Importance Factor: Normal Part code: Part 9





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B5(i2613)

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

December 18, 2017 10:08:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mxd

Description: Designs\Flush Beams\Basement\Flush Beams\B5(i261

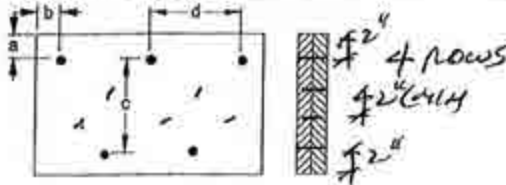
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 4"

Calculated Side Load = 64.0 lb/ft

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

Connectors are: Nails

3-1/2" ARDOX SPIRAL

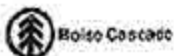
Disclosure

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

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DWG NO. TAM/0390-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement...B6(i2639)

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

December 18, 2017 10:08:35

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mmdl

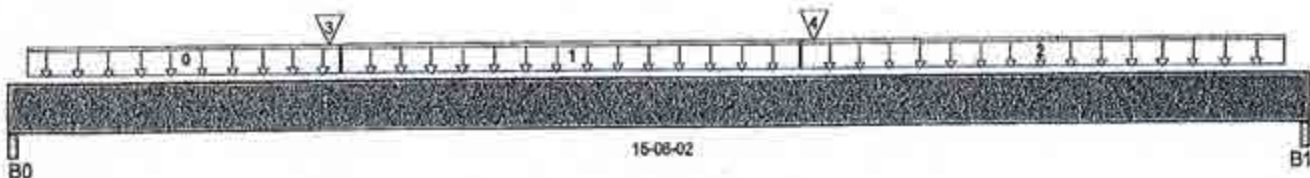
Description: Designs\Flush Beams\Basement\Flush Beams\B6(i2639)

Specifier:

Designer:

Company:

Msc:



Total Horizontal Product Length = 15-06-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	490 / 0	373 / 0		
B1, 7"	430 / 0	335 / 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	00-02-10	03-11-06	50	25			n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-11-06	09-04-14	23	11			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	09-04-14	15-02-10	29	15			n/a
3 B8(i2836)	Conc. Pt. (lbs)	L	03-09-10	03-09-10	154	108			n/a
4 B7(i2616)	Conc. Pt. (lbs)	L	09-06-10	09-06-10	287	174			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,534 ft-lbs	38,727 ft-lbs	11.7%	1	09-06-10
End Shear	1,052 lbs	14,464 lbs	7.3%	1	01-05-02
Total Load Defl.	L/1,396 (0.126")	0.731"	17.2%	4	07-08-06
Live Load Defl.	L/999 (0.072")	n/a	n/a	5	07-08-06
Max Defl.	0.126"	n/a	n/a	4	07-08-06
Span / Depth	14.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	1,201 lbs	15.3%	5.4%	Unspecified
B1 Beam	7" x 3-1/2"	1,064 lbs	10.2%	3.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DWG NO. TAM 10391-8
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B6(i2639)

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

December 18, 2017 10:08:35

BC CALCO® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B6(i263

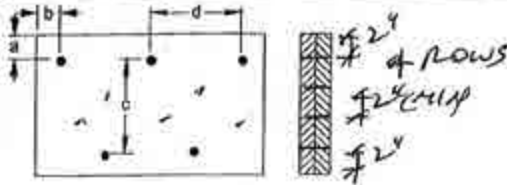
Specifier:

Designer:

Company:

Mso:

Connection Diagram



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

Calculated Side Load = 65.4 lb/ft

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

Connectors are: 3-1/2" ARDOX SPIRAL Nails

3-1/2" ARDOX SPIRAL

Disclosure

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OWG NO. TAM/0391-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B7(i2616)

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

December 18, 2017 10:08:35

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B7(i2616)

Specifier:

Designer:

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	261 / 0	181 / 0		
B1	288 / 0	175 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J7(i2870)	Conc. Pl. (lbs)	L	00-08-12	00-08-12	130	65			n/a
1	J7(i2878)	Conc. Pl. (lbs)	L	02-00-12	02-00-12	157	79			n/a
2	J7(i2737)	Conc. Pl. (lbs)	L	03-04-12	03-04-12	157	78			n/a
3	J7(i2605)	Conc. Pl. (lbs)	L	04-08-12	04-08-12	105	53			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	762 ft-lbs	38,727 ft-lbs	2%	1	02-00-12
End Shear	456 lbs	14,464 lbs	3.2%	1	01-01-14
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	02-06-04
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-06-04
Max Defl.	0.002"	n/a	n/a	4	02-06-04
Span / Depth	4.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	593 lbs	n/a	6.9%	Hanger
B1 Hanger	2" x 3-1/2"	650 lbs	n/a	7.6%	Hanger

Notes

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

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

Calculations assume member is fully braced.

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

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

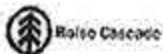
CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DWG NO. TAM 10391238
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B7(i2616)

BC CALC® Design Report



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

December 18, 2017 10:08:35

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B7(i2616)

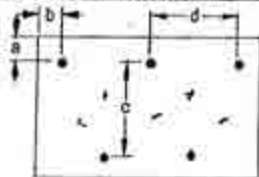
Specifier:

Designer:

Company:

Msc:

Connection Diagram



2" 4 rows
2" 4 rows
2"

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

Calculated Side Load = 231.5 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: 3-1/2" ARDOX SPIRAL Nails

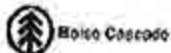
3-1/2" ARDOX SPIRAL

Disclosure

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Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basementl...B8(i2836)

BC CALC® Design Report



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

December 18, 2017 10:08:35

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

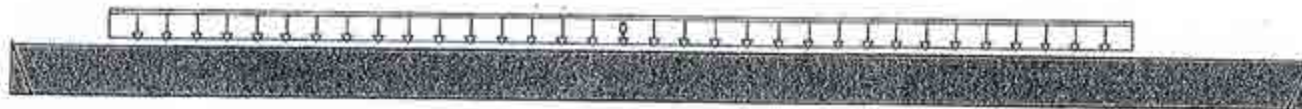
Description: Designs\Flush Beams\Basement\Flush Beams\B8(i2836)

Specifier:

Designer:

Company:

Misc:



B0

05-00-08

B1

Total Horizontal Product Length = 05-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	187 / 0	115 / 0		
B1	154 / 0	108 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0 Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-08	04-04-08	74	37	1.00	1.15	n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	584 ft-lbs	38,727 ft-lbs	1.5%	1	02-04-08
End Shear	351 lbs	14,464 lbs	2.4%	1	01-01-14
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	02-06-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-06-00
Max Defl.	0.002"	n/a	n/a	4	02-06-00
Span / Depth	4.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	393 lbs	n/a	4.6%	Hanger
B1 Hanger	2" x 3-1/2"	366 lbs	n/a	4.3%	Hanger

Notes

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

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

Calculations assume member is fully braced.

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

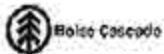
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B8(i2836)

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

December 18, 2017 10:08:35

BC CALCO® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mxd

Description: Designs\Flush Beams\Basement\Flush Beams\B8(i2836)

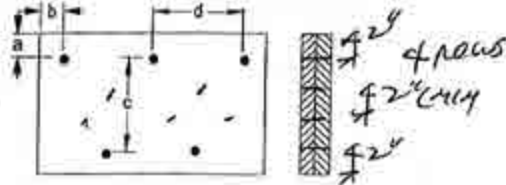
Specifier:

Designer:

Company:

Msc:

Connection Diagram



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

Calculated Side Load = 135.7 lb/ft

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

Connectors are: Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 10393-8
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement...IB1B(i2716)

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

December 18, 2017 10:08:35

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mmd

Description: Designs\Flush Beams\Basement\Flush Beams\IB1B(i2716

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 03-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	317 / 0	247 / 0		
B1, 4"	319 / 0	248 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E19(1083)	Unf. Lin. (lb/ft)	L	00-00-00	03-04-00	164	123			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-04-00	27	13			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	460 ft-lbs	38,727 ft-lbs	1.2%	1	01-08-00
End Shear	559 lbs	14,464 lbs	3.9%	1	02-00-02
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-08-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-08-00
Max Defl.	0"	n/a	n/a	4	01-08-00
Span / Depth	2.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	784 lbs	13.1%	4.6%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	789 lbs	13.2%	4.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

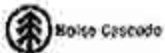
CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



DWG NO. TAM 10394-13
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...B1B(i2716)

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

December 18, 2017 10:08:35

BC CALO® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mxd

Description: Designs\Flush Beams\Basement\Flush Beams\B1B(i27

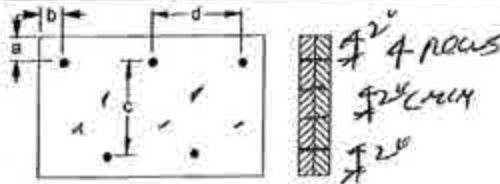
Specifier:

Designer:

Company:

Msc:

Connection Diagram



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

Member has no side loads.

Connectors are: 16d Nails

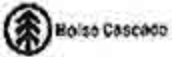
3-1/2" ARDOX SPIRAL

Disclosure

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Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basementl...B1A(i2705)

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

December 18, 2017 10:08:36

BC CALCO Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mxd

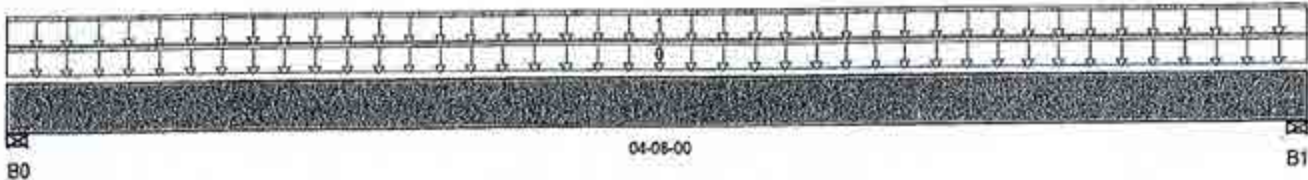
Description: Designs/Flush Beams/Basement/Flush Beams/B1A(i2705)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 04-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	90 / 0	171 / 0		
B1, 4"	90 / 0	171 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 E19(i1083)	Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	12	48			n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	27	13			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	218 ft-lbs	25,173 ft-lbs	0.9%	0	02-04-00
End Shear	104 lbs	9,401 lbs	1.1%	0	01-03-14
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	02-04-00
Live Load Defl.	L/999 (0")	n/a	n/a	5	02-04-00
Max Defl.	0.001"	n/a	n/a	4	02-04-00
Span / Depth	4.2	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	239 lbs	6.2%	2.2%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	239 lbs	6.2%	2.2%	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.

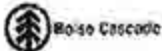
BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2017

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP Basement\...\B1A(i2705)

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

December 18, 2017 10:08:36

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1A(i27

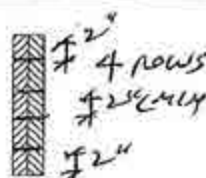
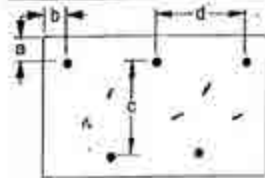
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Member has no side loads.

Connectors are: 16d ^{5/16"} Nails

3-1/2" ARDOX SPIRAL

Disclosure

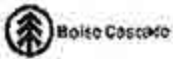
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods.

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

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DWG NO. TAM 10395-78
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...\B17(i2452)

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

December 18, 2017 10:08:36

BC CAL.C® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mxd

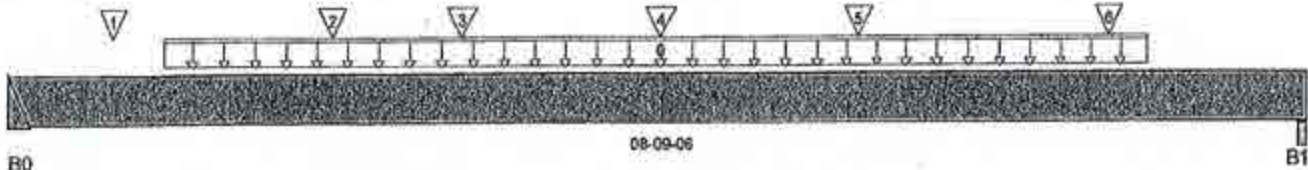
Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i2452)

Specifier:

Designer:

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,618 / 0	1,204 / 0		
B1, 4-1/2"	1,293 / 0	1,147 / 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	01-00-10	07-08-10	144	72			n/a
1 -	Conc. Pt. (lbs)	L	00-08-06	00-08-06	549	274			n/a
2 B20(i2470)	Conc. Pt. (lbs)	L	02-02-02	02-02-02	505	848			n/a
3 J6(i1393)	Conc. Pt. (lbs)	L	03-00-10	03-00-10	124	62			n/a
4 J6(i1392)	Conc. Pt. (lbs)	L	04-04-10	04-04-10	150	75			n/a
5 J6(i1392)	Conc. Pt. (lbs)	L	05-08-10	05-08-10	150	75			n/a
6 -	Conc. Pt. (lbs)	L	07-05-06	07-05-06	479	832			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,962 ft-lbs	38,727 ft-lbs	18%	1	04-04-10
End Shear	3,374 lbs	14,464 lbs	23.3%	1	01-01-14
Total Load Defl.	L/999 (0.066")	n/a	n/a	4	04-02-10
Live Load Defl.	L/999 (0.038")	n/a	n/a	5	04-02-10
Max Defl.	0.066"	n/a	n/a	4	04-02-10
Span / Depth	8.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	3,933 lbs	n/a	46%	Hanger
B1 Beam	4-1/2" x 3-1/2"	3,373 lbs	50.1%	17.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

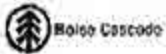
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



DWG NO. TAM/10396-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B17(i2452)

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

December 18, 2017 10:08:36

BC CALCO® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmd

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i2452)

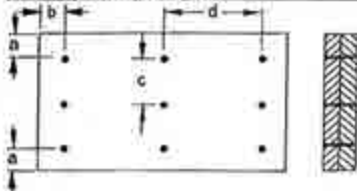
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 552.3 lb/ft

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

Connectors are: 16d ^{1/2"} Nails

3-1/2" ARDOX SPIRAL

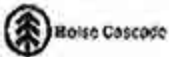
Disclosure

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DWG NO. YAM 1039618
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...B18(12460)

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

December 18, 2017 10:08:36

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

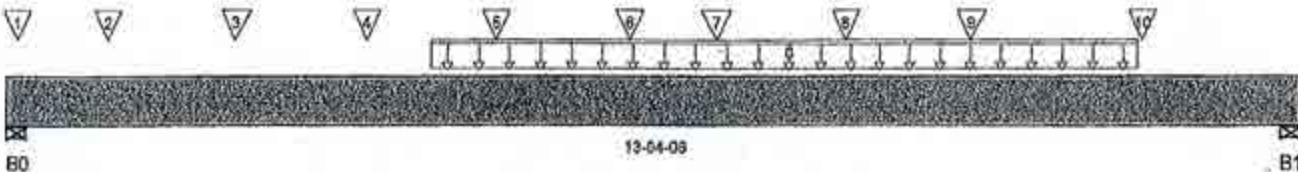
Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(12460)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 13-04-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	3,640 / 0	2,249 / 0		
B1, 4-3/8"	3,240 / 0	2,427 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Trib.
0 Smoothed Load	Unf. Lin. (lb/ft)	L	04-04-08	11-08-08	226	113			n/a
1 -	Conc. Pl. (lbs)	L	00-01-04	00-01-04	431	216			n/a
2 -	Conc. Pl. (lbs)	L	01-00-08	01-00-08	624	311			n/a
3 -	Conc. Pl. (lbs)	L	02-04-08	02-04-08	732	366			n/a
4 -	Conc. Pl. (lbs)	L	03-08-08	03-08-08	732	366			n/a
5 J2(i1377)	Conc. Pl. (lbs)	L	05-00-08	05-00-08	417	208			n/a
6 B20(i2470)	Conc. Pl. (lbs)	L	06-05-00	06-05-00	524	758			n/a
7 J7(i1354)	Conc. Pl. (lbs)	L	07-03-08	07-03-08	81				n/a
8 J7(i1350)	Conc. Pl. (lbs)	L	08-07-08	08-07-08	98	49			n/a
9 J7(i1350)	Conc. Pl. (lbs)	L	09-11-08	09-11-08	98	49			n/a
10 -	Conc. Pl. (lbs)	L	11-08-14	11-08-14	1,378	1,189			n/a

Controls Summary

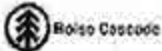
	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	24,900 ft-lbs	60,415 ft-lbs	41.2%	1	06-05-00
End Shear	7,793 lbs	21,696 lbs	35.9%	1	12-00-02
Total Load Defl.	L/439 (0.349")	0.64"	54.6%	4	06-07-10
Live Load Defl.	L/746 (0.206")	0.426"	48.3%	5	06-07-10
Max Defl.	0.349"	n/a	n/a	4	06-07-10
Span / Depth	12.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 5-1/4"	8,271 lbs	92.2%	32.3%	Unspecified
B1 Wall/Plate	4-3/8" x 5-1/4"	7,894 lbs	80.5%	28.2%	Unspecified

Notes





Triple 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B18(i2460)

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

December 18, 2017 10:08:36

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmd

Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i2460)

Specifier:

Designer:

Company:

Msc:

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

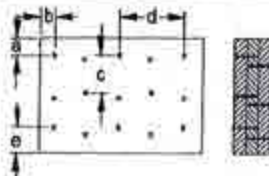
CONFORMS TO OBC 2012

Disclosure

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Connection Diagram



a minimum = 2" c = 3-7/16"
b minimum = 3" d = 6"
e minimum = 3"

Calculated Side Load = 684.7 lb/ft

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

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 10397-B
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...B20(i2470)

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

December 18, 2017 10:08:38

BC CALCO Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmd

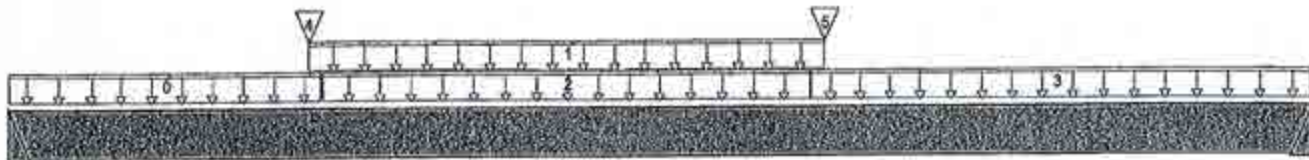
Description: Designs\Flush Beams\1st Floor\Flush Beams\B20(i2470)

Specifier:

Designer:

Company:

Msc:



B0 14-07-08 B1

Total Horizontal Product Length = 14-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	513 / 0	753 / 0		
B1	499 / 0	645 / 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	00-00-00	03-06-04	45	23			n/a
1 User Load	Unf. Lin. (lb/ft)	L	03-04-08	09-01-08		60			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-06-04	08-11-12	30	15			n/a
3 FC2 Floor Material	Unf. Lin. (lb/ft)	L	08-11-12	14-07-08	45	22			n/a
4 B23(i2486)	Conc. Pl. (lbs)	L	03-04-08	03-04-08	170	266			n/a
5 B22(i2446)	Conc. Pl. (lbs)	L	09-01-08	09-01-08	264	313			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,768 ft-lbs	38,727 ft-lbs	17.5%	1	08-01-08
End Shear	1,584 lbs	14,464 lbs	10.9%	1	01-01-14
Total Load Defl.	L907 (0.191")	0.72"	26.5%	4	07-03-04
Live Load Defl.	L999 (0.075")	n/a	n/a	5	07-05-05
Max Defl.	0.191"	n/a	n/a	4	07-03-04
Span / Depth	14.6	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 3-1/2"	1,712 lbs	n/a	20%	Hanger
B1 Hanger	2" x 3-1/2"	1,554 lbs	n/a	18.2%	Hanger

Notes

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

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

Calculations assume member is fully braced.

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

BC CALCO 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



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...\B20(i2470)

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

December 18, 2017 10:08:36

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE.

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B20(I24:

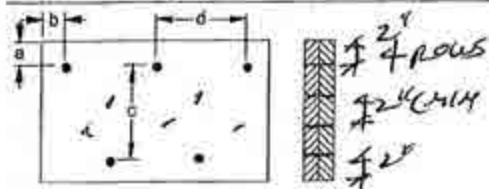
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = ~~6~~ 4"

Calculated Side Load = 94.1 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: 3-1/4" Fire and Gun Nails

3-1/2" ARDOX SPIRAL

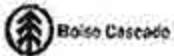
Disclosure

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Products LLC.



OWG NO. TAM 10398.18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B21(i2448)

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

December 18, 2017 10:08:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

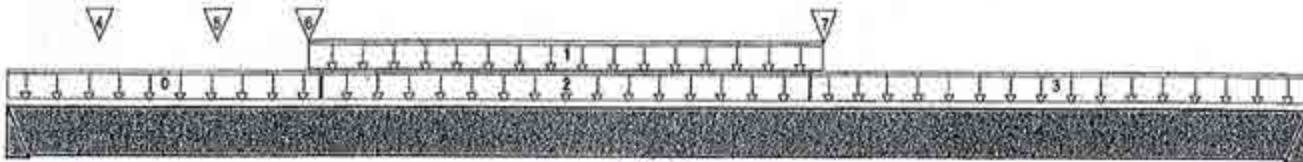
Description: Designs\Flush Beams\1st Floor\Flush Beams\B21(i2448)

Specifier:

Designer:

Company:

Msc:



B0

14-07-06

B1

Total Horizontal Product Length = 14-07-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,047 / 0	1,025 / 0		
B1	372 / 0	578 / 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	00-00-00	03-06-04	9	5			n/a
1 User Load	Unf. Lin. (lb/ft)	L	03-04-08	09-01-08		60			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-08-04	08-11-12	6	3			n/a
3 FC2 Floor Material	Unf. Lin. (lb/ft)	L	08-11-12	14-07-06	9	5			n/a
4 J1(i1395)	Conc. Pl. (lbs)	L	01-00-00	01-00-00	413	207			n/a
5 J1(i1404)	Conc. Pl. (lbs)	L	02-04-00	02-04-00	416	208			n/a
6 B23(i2486)	Conc. Pl. (lbs)	L	03-04-08	03-04-08	186	275			n/a
7 B22(i2446)	Conc. Pl. (lbs)	L	09-01-08	09-01-08	289	326			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,687 ft-lbs	39,727 ft-lbs	17.3%	1	06-09-02
End Shear	2,674 lbs	14,464 lbs	18.5%	1	01-01-14
Total Load Defl.	L/884 (0.196")	0.72"	27.2%	4	07-01-04
Live Load Defl.	L/999 (0.079")	n/a	n/a	5	06-11-03
Max Defl.	0.196"	n/a	n/a	4	07-01-04
Span / Depth	14.6	n/a	n/a		00-00-00

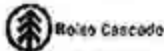
Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	2,853 lbs	n/a	33.4%	Hanger
B1 Hanger	2" x 3-1/2"	1,282 lbs	n/a	15%	Hanger

Notes



DWG NO. TAM 10399-R
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...B21(i2448)

BC CALCO® Design Report



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

December 18, 2017 10:08:37

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mxd

Description: Designs\Flush Beams\1st Floor\Flush Beams\B21(i2448)

Specifier:

Designer:

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

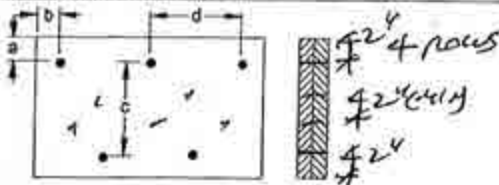
CONFORMS TO OBC 2012

Disclosure

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Connection Diagram



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

Calculated Side Load = 120.6 lb/ft

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

Connectors are: 3-1/4" ARDOX SPIRAL Nails

3-1/2" ARDOX SPIRAL



OWG NO. TAM 10344-88
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...B22(i2446)

BC CALC® Design Report



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

December 18, 2017 10:08:37

Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

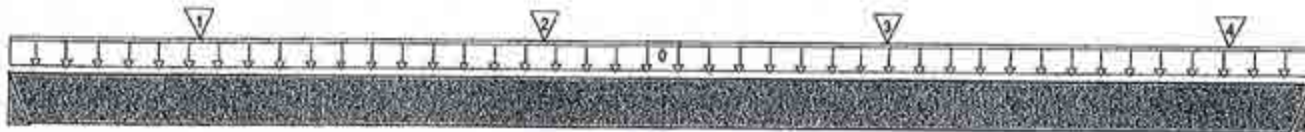
Description: Designs\Flush Beams\1st Floor\Flush Beams\B22(i2446)

Specifier:

Designer:

Company:

Msc:



B0

05-00-08

B1

Total Horizontal Product Length = 05-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	263 / 0	313 / 0		
B1	290 / 0	327 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	05-00-08	1.00	0.65	1.00	1.15	n/a
1	J6(i1393)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	131	65			n/a
2	J6(i1392)	Conc. Pt. (lbs)	L	02-00-12	02-00-12	158	79			n/a
3	J6(i1392)	Conc. Pt. (lbs)	L	03-04-12	03-04-12	158	79			n/a
4	J6(i1390)	Conc. Pt. (lbs)	L	04-08-12	04-08-12	106	53			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	977 ft-lbs	38,727 ft-lbs	2.5%	1	02-00-12
End Shear	561 lbs	14,464 lbs	3.9%	1	01-01-14
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	02-06-04
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-06-04
Max Defl.	0.003"	n/a	n/a	4	02-06-04
Span / Depth	4.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	785 lbs	n/a	9.2%	Hanger
B1 Hanger	2" x 3-1/2"	843 lbs	n/a	9.9%	Hanger

Notes

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

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

Calculations assume member is fully braced.

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

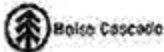
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...B22(i2446)

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

December 18, 2017 10:08:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mrdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B22(i2446)

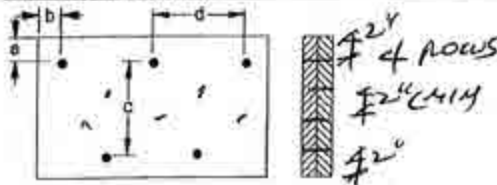
Specifier:

Designer:

Company:

Msc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 12"

Calculated Side Load = 233.0 lb/ft

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

Connectors are: 3-1/4" Pine-Gum Mic Gur Nails

3-1/2" ARDOX SPIRAL

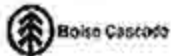
Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-8999 before installation.

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AWG NO. TAM/0400-38
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor L...B23(I2486)

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

December 18, 2017 10:08:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports:

CCMC 12472-R

File Name: GEORGIAN 4.mxd

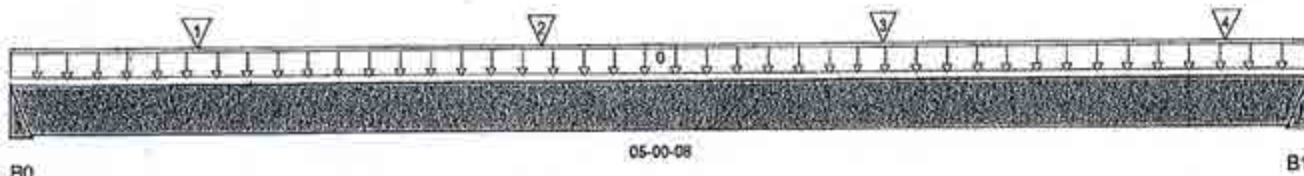
Description: Designs\Flush Beams\1st Floor\Flush Beams\B23(I2486)

Specifier:

Designer:

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	169 / 0	266 / 0		
B1	187 / 0	275 / 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	05-00-08		60			n/a
1	J7(I1354)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	84	42			n/a
2	J7(I1350)	Conc. Pt. (lbs)	L	02-00-12	02-00-12	102	51			n/a
3	J7(I1350)	Conc. Pt. (lbs)	L	03-04-12	03-04-12	102	51			n/a
4	J7(I1362)	Conc. Pt. (lbs)	L	04-08-12	04-08-12	68	34			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	720 ft-lbs	38,727 ft-lbs	1.9%	1	02-01-04
End Shear	405 lbs	14,464 lbs	2.8%	1	01-01-14
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	02-06-04
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-06-04
Max Defl.	0.002"	n/a	n/a	4	02-06-04
Span / Depth	4.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	587 lbs	n/a	6.9%	Hanger
B1 Hanger	2" x 3-1/2"	624 lbs	n/a	7.3%	Hanger

Notes

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

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

Calculations assume member is fully braced.

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

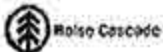
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B23(i2486)

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

December 18, 2017 10:08:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B23(i24

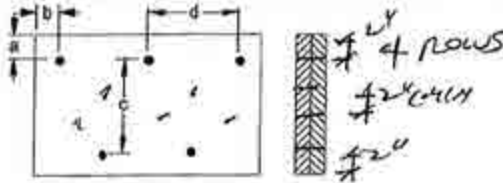
Specifier:

Designer:

Company:

Msc:

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 12"

Calculated Side Load = 150.0 lb/ft

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

Connectors are: 3-1/8" Pneumatic Gun Nails

3-1/2" ARDOX SPIRAL

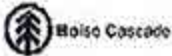
Disclosure

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DWG NO. TAM 10401.8
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B25(i2412)

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

December 18, 2017 10:08:37

BCALC@ Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.mmdl

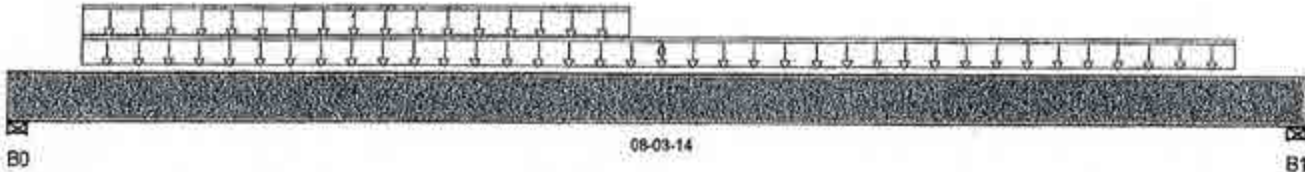
Description: Designs\Flush Beams\1st Floor\Flush Beams\B25(i2412)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 08-03-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	689 / 0	394 / 0		
B1, 5-1/2"	253 / 0	177 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.16	Trib.
0 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	07-10-08	13	6			n/a
1 User Load	Unf. Lin. (lb/ft)	L	00-05-08	03-11-08	240	120			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,160 ft-lbs	38,727 ft-lbs	5.6%	1	03-02-01
End Shear	963 lbs	14,464 lbs	6.7%	1	01-05-06
Total Load Defl.	L/999 (0.015")	n/a	n/a	4	03-10-09
Live Load Defl.	L/999 (0.009")	n/a	n/a	5	03-10-09
Max Defl.	0.015"	n/a	n/a	4	03-10-09
Span / Depth	7.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	1,526 lbs	18.6%	6.5%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	600 lbs	7.3%	2.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

BCALC@ 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





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1st Floor...(2412)

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

December 18, 2017 10:08:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: OAKVILLE,

Customer:

Code reports: CCMC 12472-R

File Name: GEORGIAN 4.nmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B25(124

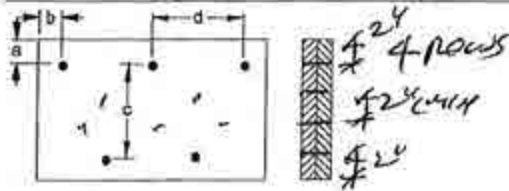
Specifier:

Designer:

Company:

Msc:

Connection Diagram



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

Member has no side loads.

Connectors are: 16d Sinker Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

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BC CALC® Design Report
Basement Flush Beams B3A(i3173)

Dry | 1 span | No cant.

February 26, 2018 11:29:33

Build 6215

Job name:

File name: GEORGIAN 4.mmdl

Address:

Description: Basement Flush Beams B3A(i3173)

City, Province, Postal Code: OAKVILLE

Specifier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	235 / 0	555 / 0	308 / 0	
B1, 4"	235 / 0	555 / 0	308 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00		12			00-00-00
1	E11(i1095)	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00		81			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00	18	9			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-00	07-08-00	44	40	84		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,328 ft-lbs	35,392 ft-lbs	6.6%	13	04-00-00
End Shear	896 lbs	14,464 lbs	6.2%	13	01-03-14
Total Load Deflection	L/999 (0.018")	n/a	n/a	45	04-00-00
Live Load Deflection	L/999 (0.008")	n/a	n/a	61	04-00-00
Max Defl.	0.018"	n/a	n/a	45	04-00-00
Span / Depth	7.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 4" x 3-1/2"	1,273 lbs	17.0%	7.5%	Unspecified
B1	Wall/Plate 4" x 3-1/2"	1,273 lbs	17.0%	7.5%	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.

CONFORMS TO OBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Member has no side loads.


 DWG NO. TAM/10403.18
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

Basement/Flush Beams/B3A(i3173)

Dry | 1 span | No cant.

February 26, 2018 11:29:33

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: OAKVILLE

Customer:

Code reports: CCMC 12472-R

File name: GEORGIAN 4.mmdl

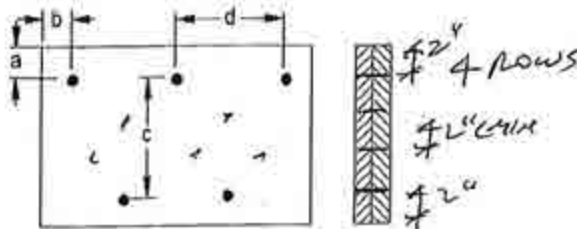
Description: Basement/Flush Beams/B3A(i3173)

Specifier:

Designer:

Company:

Connection Diagram



a minimum = 2"

b minimum = 3"

c = 7-7/8"

d = 6"

Member has no side loads.

Connectors are: 16d Sinker Nails

3-1/2" ARDOX SPIRAL

Disclosure

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STRUCTURAL COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
June 19, 2018 16:16

PROJECT
NORDIC
J9 FLAT ROOF

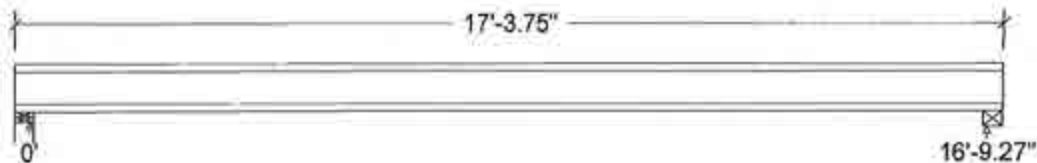
Design Check Calculation Sheet Nordic Sizer - Canada 7.0

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			10.00	psf
Load2	Live	Full Area			11.00	psf
Load3	Snow	Full Area			63.00	psf

Load magnitude does not include Normal Importance factor from O86 Table 4.2.3.2, which is applied during analysis.

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



Unfactored:			
Dead	84		84
Live	92		92
Snow	528		528
Factored:			
Total	943		943
Bearing:			
Resistance			
Joist	1893		1893
Support	10210		-
Des ratio			
Joist	0.50		0.50
Support	0.09		-
Load case	#5		#5
Length	4-1/8		4-1/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.15		-

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

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

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W;

Total length: 17'-3.75"; Clear span: 16'-7.49"

This section PASSES the design code check.

Limit States Design using CSA-O86-09:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 943	Vr = 1895	lbs	Vf/Vr = 0.50
Moment(+)	Mf = 3956	Mr = 8958	lbs-ft	Mf/Mr = 0.44
Perm. Defl'n	0.06 = < L/999	0.56 = L/360	in	0.11
Live Defl'n	0.38 = L/523	0.56 = L/360	in	0.69
Total Defl'n	0.45 = L/451	1.12 = L/180	in	0.40

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#5
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#5
EI	324.1 million	-	-	-	-	-	-	-	#5

CRITICAL LOAD COMBINATIONS:

Shear : LC #5 = $1.25D + (1.0)1.5S + 0.5L$
 Moment(+) : LC #5 = $1.25D + (1.0)1.5S + 0.5L$
 Deflection: LC #1 = 1.0D (permanent)
 LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (live)
 LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (total)
 Bearing : Support 1 - LC #5 = $1.25D + (1.0)1.5S + 0.5L$
 Support 2 - LC #5 = $1.25D + (1.0)1.5S + 0.5L$
 Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake
 L=live(use, occupancy) Ls=live(storage, equipment) f=fire
 All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

Deflection: EI = 324e06 lb-in² K= 4.94e06 lbs
 "Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures 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.

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
June 20, 2018 08:19

PROJECT
J9 FLAT ROOF EL B
J9 FLAT ROOF EL B

Design Check Calculation Sheet

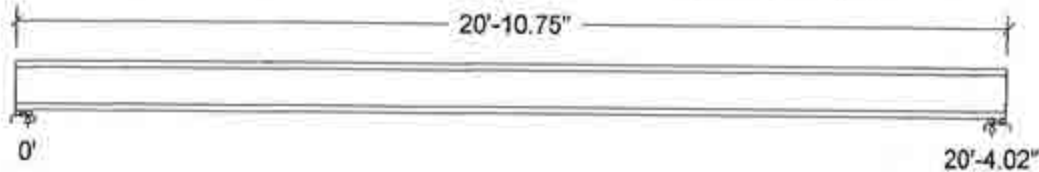
Nordic Sizer - Canada 7.0

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Live	Full Area			11.00	psf
Load2	Dead	Full Area			10.00	psf
Load3	Snow	Full Area			63.00	psf

Load magnitude does not include Normal Importance factor from O86 Table 5.2.3.2, which is applied during analysis.

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



Unfactored:			
Dead	102		102
Live	112		112
Snow	641		641
Factored:			
Total	1200		1200
Bearing:			
Resistance			
Joist	2336		2336
Support	14448		15324
Des ratio			
Joist	0.51		0.51
Support	0.08		0.08
Load case	#5		#5
Length	4-1/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	1088		1088
Kzcp sup	1.15		1.15

Nordic 11-7/8" NI-80 Roof Joist @ 12" o.c.

Supports: All - Nordic Lam Sill plate, 24F-1.9E

Total length: 20'-10.75"; Clear span: 20'-2.24"

This section PASSES the design code check.

Limit States Design using CSA O86-14:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 1200$	$V_r = 2336$	lbs	$V_f/V_r = 0.51$
Moment(+)	$M_f = 6099$	$M_r = 11609$	lbs-ft	$M_f/M_r = 0.53$
Perm. Defl'n	$0.08 = < L/999$	$0.68 = L/360$	in	0.12
Live Defl'n	$0.49 = L/500$	$0.68 = L/360$	in	0.72
Total Defl'n	$0.57 = L/431$	$1.36 = L/180$	in	0.42

Additional Data:

FACTORS:	F/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#5
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#5
EI	547.1 million	-	-	-	-	-	-	-	#5

CRITICAL LOAD COMBINATIONS:

Shear : LC #5 = $1.25D + (1.0)1.5S + 1.0L$

Moment(+): LC #5 = $1.25D + (1.0)1.5S + 1.0L$

Deflection: LC #1 = 1.0D (permanent)

LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (live)

LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (total)

Bearing : Support 1 - LC #5 = $1.25D + (1.0)1.5S + 1.0L$

Support 2 - LC #5 = $1.25D + (1.0)1.5S + 1.0L$

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

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

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

CALCULATIONS:

Deflection: EI = 547e06 lb-in² K= 6.18e06 lbs

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

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures 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.

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
June 20, 2018 08:17

PROJECT
J8 FLAT ROOF EL B
J9 FLAT ROOF EL A
ROOF

Design Check Calculation Sheet

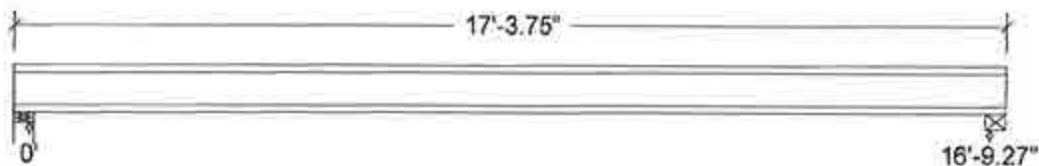
Nordic Sizer – Canada 7.0

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area			10.00	psf
Load2	Live	Full Area			11.00	psf
Load3	Snow	Full Area			63.00	psf

Load magnitude does not include Normal Importance factor from O86 Table 4.2.3.2, which is applied during analysis.

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



Unfactored:			
Dead	84		84
Live	92		92
Snow	528		528
Factored:			
Total	943		943
Bearing:			
Resistance			
Joist	1893		1893
Support	10210		-
Des ratio			
Joist	0.50		0.50
Support	0.09		-
Load case	#5		#5
Length	4-1/8		4-1/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.15		-

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

Nordic 9-1/2" NI-80 Roof joist @ 12" o.c.
 Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W;
 Total length: 17'-3.75"; Clear span: 16'-7.49"
This section PASSES the design code check.

Limit States Design using CSA-O86-09:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 943$	$V_r = 1895$	lbs	$V_f/V_r = 0.50$
Moment(+)	$M_f = 3956$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.44$
Perm. Defl'n	$0.06 = < L/999$	$0.56 = L/360$	in	0.11
Live Defl'n	$0.38 = L/523$	$0.56 = L/360$	in	0.69
Total Defl'n	$0.45 = L/451$	$1.12 = L/180$	in	0.40

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#5
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#5
EI	324.1 million	-	-	-	-	-	-	-	#5

CRITICAL LOAD COMBINATIONS:

Shear : LC #5 = $1.25D + (1.0)1.5S + 0.5L$

Moment(+) : LC #5 = $1.25D + (1.0)1.5S + 0.5L$

Deflection: LC #1 = 1.0D (permanent)

LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (live)

LC #5 = $1.0D + (0.9)1.0S + 0.5L$ (total)

Bearing : Support 1 - LC #5 = $1.25D + (1.0)1.5S + 0.5L$

Support 2 - LC #5 = $1.25D + (1.0)1.5S + 0.5L$

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

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

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

CALCULATIONS:

Deflection: EI = 324e06 lb-in² K= 4.94e06 lbs

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

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-09 Engineering Design in Wood standard, which includes Update No. 1
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures 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.