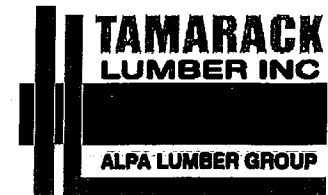


Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
10	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
2	H2	HUS1.81/9.5
1	H2	HUS1.81/9.5

1st FLOOR



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S45-2

ELEVATION: A&B

LOT:
CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.

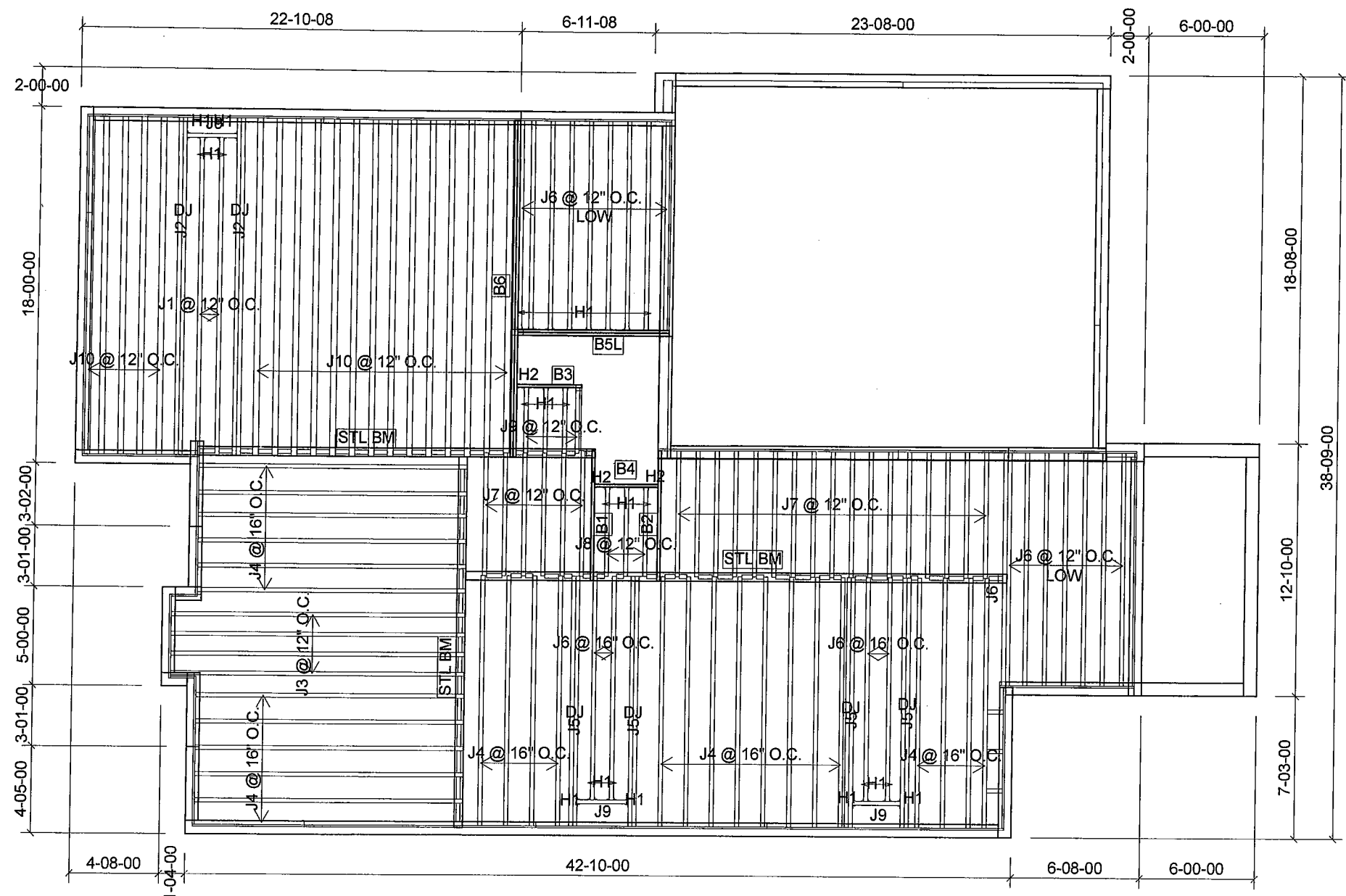
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/1/2017

1st FLOOR

W.O.B & W.O.D



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	2
J2	18-00-00	9 1/2" NI-40x	2	4
J3	16-00-00	9 1/2" NI-40x	1	4
J4	14-00-00	9 1/2" NI-40x	1	28
J5	14-00-00	9 1/2" NI-40x	2	8
J6	12-00-00	9 1/2" NI-40x	1	21
J7	8-00-00	9 1/2" NI-40x	1	23
J8	6-00-00	9 1/2" NI-40x	1	3
J9	4-00-00	9 1/2" NI-40x	1	7
J10	18-00-00	9 1/2" NI-80	1	19
B6	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H2	HUS1.81/9.5
1	H2	HUS1.81/9.5

Town of Innisfil Certified Model
03/01/2018 2:19:47 PM kgervais

FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S45-2

ELEVATION: A

LOT:
CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

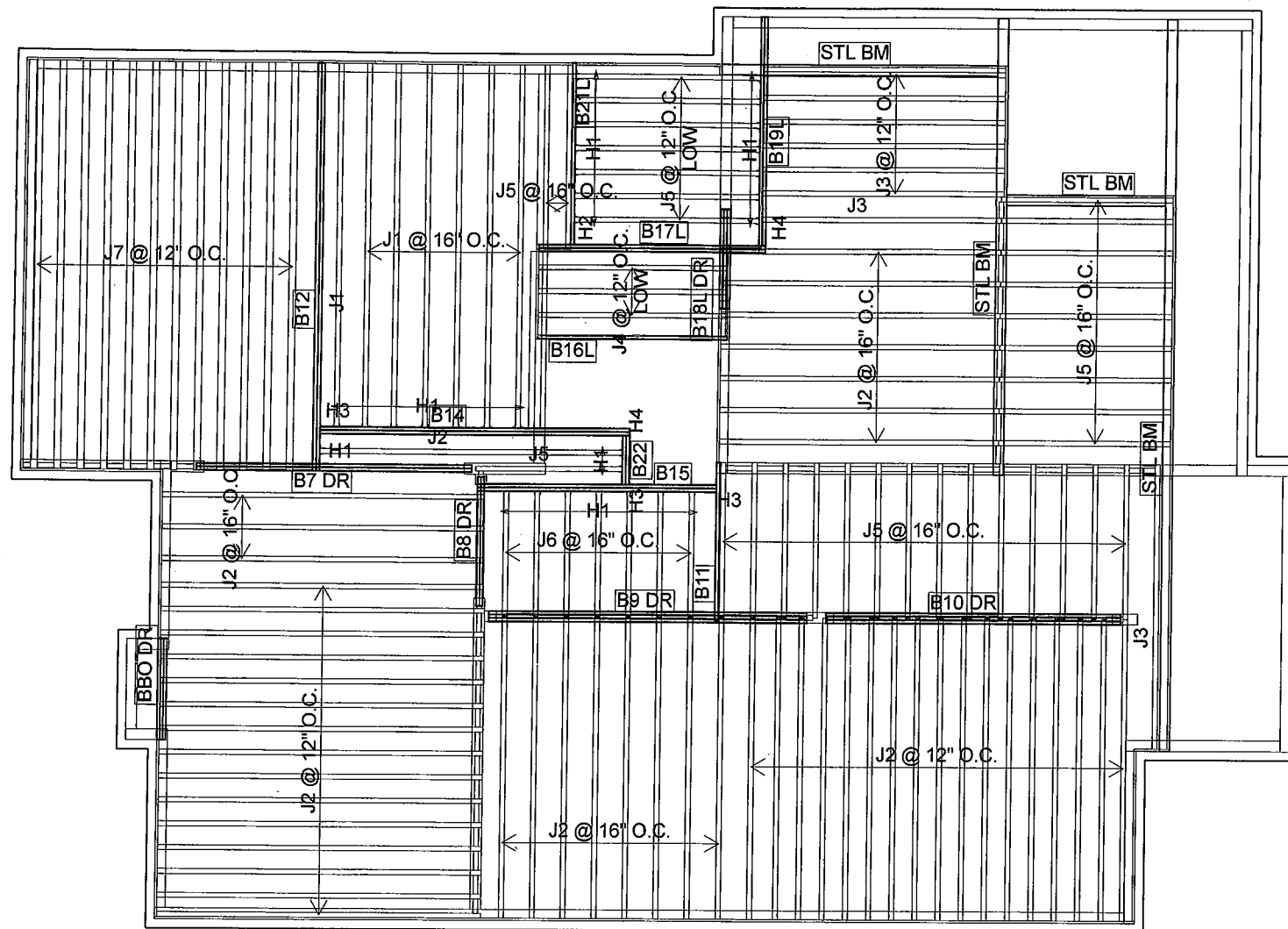
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.

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: 9/1/2017

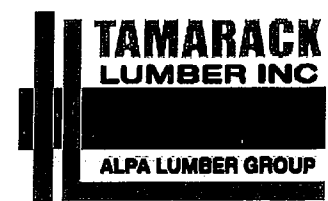
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	7
J2	14-00-00	9 1/2" NI-40x	1	51
J3	12-00-00	9 1/2" NI-40x	1	8
J4	10-00-00	9 1/2" NI-40x	1	3
J5	8-00-00	9 1/2" NI-40x	1	33
J6	6-00-00	9 1/2" NI-40x	1	7
J7	18-00-00	9 1/2" NI-80	1	12
B18L DR	6-00-00	1-3/4" x 7-1/4" VERSA-LAM® 2.0 3100 SP	3	3
B12	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B9 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B15	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16L	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17L	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19L	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B21L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B22	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
24	H1	IUS2.56/9.5
1	H2	HUS1.81/9.5
1	H3	HGUS410
2	H3	HGUS410
2	H4	HUC410

Town of Innisfil Certified Model
03/01/2018 2:19:51 PM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S45-2

ELEVATION: B

LOT:
CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

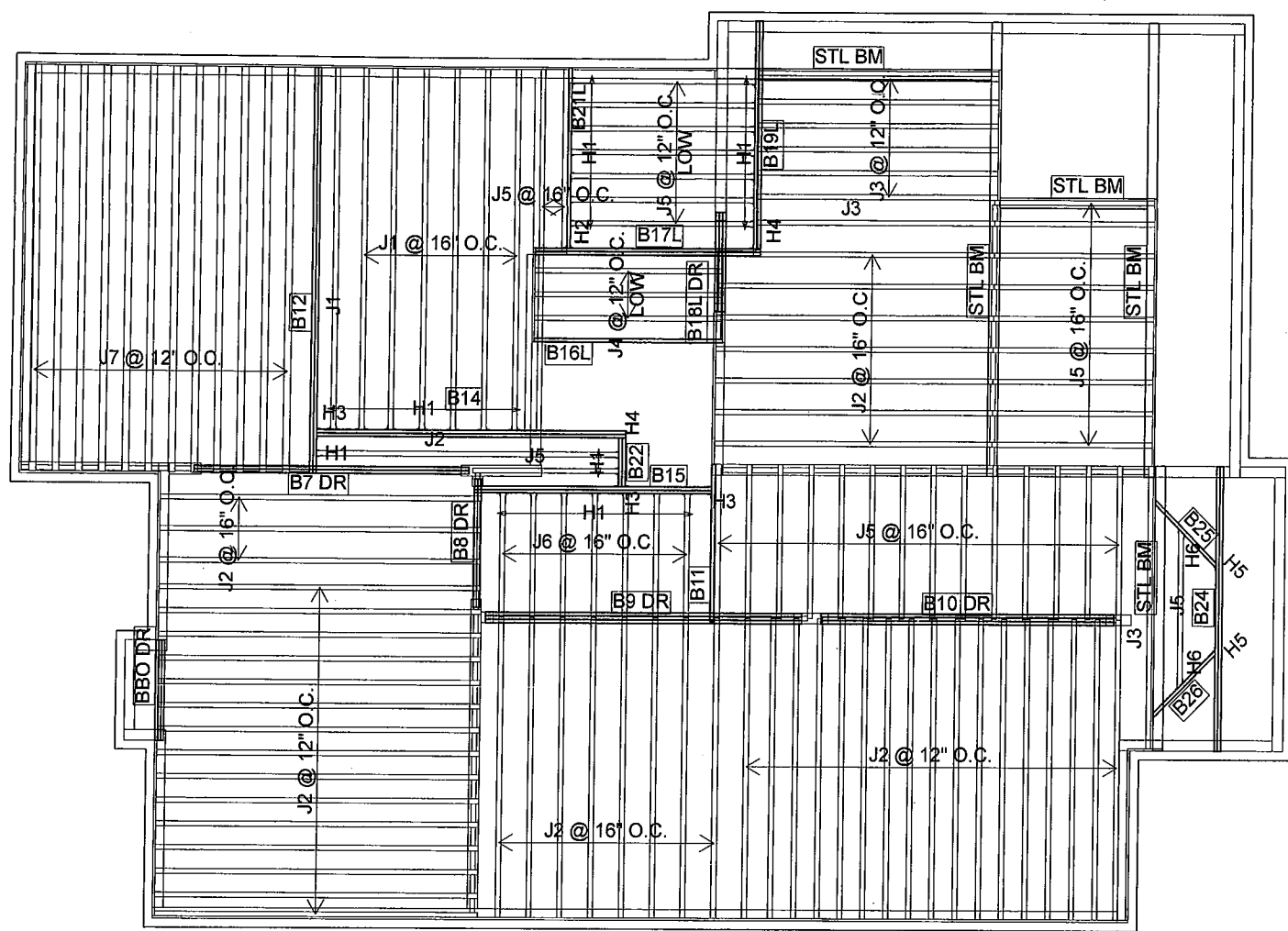
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.

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: 9/1/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	7
J2	14-00-00	9 1/2" NI-40x	1	51
J3	12-00-00	9 1/2" NI-40x	1	8
J4	10-00-00	9 1/2" NI-40x	1	3
J5	8-00-00	9 1/2" NI-40x	1	34
J6	6-00-00	9 1/2" NI-40x	1	7
J7	18-00-00	9 1/2" NI-80	1	12
B18L DR	6-00-00	1-3/4" x 7-1/4" VERSA-LAM® 2.0 3100 SP	3	3
B12	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B24	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B9 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B15	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16L	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17L	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19L	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B21L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B25	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B26	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B22	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/9.5
24	H1	IUS2.56/9.5
1	H2	HUS1.81/9.5
1	H3	HGUS410
2	H3	HGUS410
2	H4	HUC410
1	H5	LSSUI25
1	H5	LSSUI25
1	H6	LSSUH310
1	H6	LSSUH310

Town of Innisfil Certified Model
03/01/2018 2:22:06 PM kgervais

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
3269 NORTH SERVICE ROAD
BURLINGTON ON
Sep. 22, 2016 12:33

PROJECT
BAYVIEW WELLINGTON
ALCONA SHORES
45-2
J7 2ND FLOOR
Beam1

Design Check Calculation Sheet

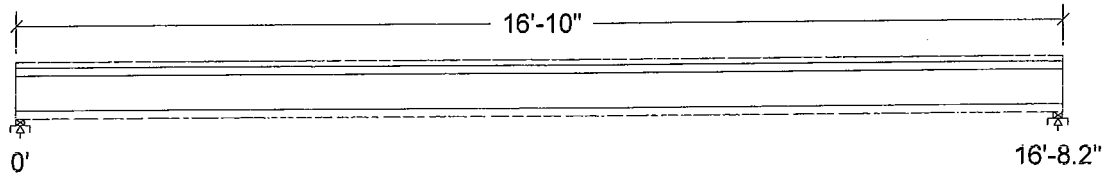
Nordic Sizer – Canada 6.3.1

Town of Innisfil Certified Model
03/01/2018 2:22:21 PM kgervais

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	167		167
Live	334		334
Factored:			
Total	709		709
Bearing:			
Resistance			
Joist	1893		1893
Support	3813		3813
Anal/Des			
Joist	0.37		0.37
Support	0.19		0.19
Load case	#2		#2
Length	1-3/4		1-3/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.00		1.00

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

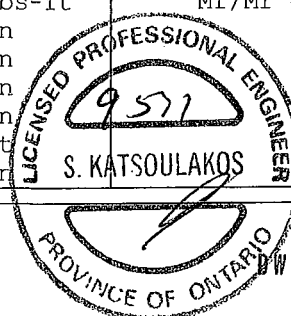
Supports: All - Lumber Sill plate, No.1/No.2

Total length: 16'-10.0"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

Limit States Design using CSA-086-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 709	Vr = 1895	lbs	Vf/Vr = 0.37
Moment (+)	Mf = 2958	Mr = 8958	lbs-ft	Mf/Mr = 0.33
Perm. Defl'n	0.11 = <L/999	0.56 = L/360	in	0.20
Live Defl'n	0.22 = L/922	0.42 = L/480	in	0.52
Total Defl'n	0.33 = L/615	0.83 = L/240	in	0.39
Bare Defl'n	0.24 = L/826	0.56 = L/360	in	0.44
Vibration	Lmax = 16'-8	Lv = 17'-10	ft	
Defl'n	= 0.031	= 0.038	in	0.82



pol
DWG NO. TAM 44700-17
STRUCTURAL
COMPONENT ONLY

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment(+) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)
 Bearing : Support 1 - LC #2 = 1.25D + 1.5L
 Support 2 - LC #2 = 1.25D + 1.5L
 Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
 I=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: EIcomp = 367e06 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 Part 4) and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1. **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 44700-17
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
3269 NORTH SERVICE ROAD
BURLINGTON ON
Sep. 22, 2016 12:35

PROJECT
BAYVIEW WELLINGTON
ALCONA SHORES
45-2
J3 1ST FLOOR
Beam1

Design Check Calculation Sheet

Nordic Sizer – Canada 6.3.1

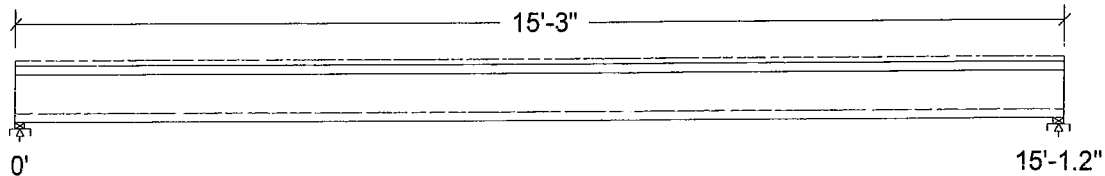
Town of Innisfil Certified Model

03/01/2018 2:22:33 PM kgervais

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	151		151
Live	302		302
Factored:			
Total	642		642
Bearing:			
Resistance			
Joist	1855		1855
Support	2724		2724
Anal/Des			
Joist	0.35		0.35
Support	0.24		0.24
Load case	#2		#2
Length	1-3/4		1-3/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.00		1.00

Nordic Joist 9-1/2" NI-40x Floor joist @ 12" o.c.

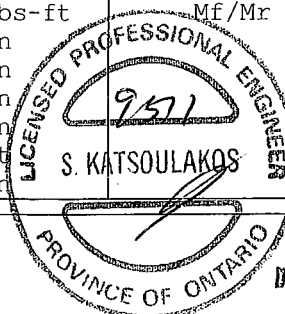
Supports: All - Lumber Sill plate, No.1/No.2

Total length: 15'-3.0"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

Limit States Design using CSA-O86-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 642	Vr = 1895	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 2423	Mr = 4824	lbs-ft	Mf/Mr = 0.50
Perm. Defl'n	0.10 = <L/999	0.50 = L/360	in	0.20
Live Defl'n	0.20 = L/890	0.38 = L/480	in	0.54
Total Defl'n	0.31 = L/593	0.76 = L/240	in	0.40
Bare Defl'n	0.24 = L/765	0.50 = L/360	in	0.47
Vibration	Lmax = 15'-1	Lv = 16'-3	ft	
Defl'n	= 0.034	= 0.043	in	0.79



DWG NO. TAM44701-17
STRUCTURAL
COMPONENT ONLY

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

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

Deflection: LC #1 = 1.0D (permanent)

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

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

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

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

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

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

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

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

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

CALCULATIONS:Deflection: EIcomp = 258e06 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 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.

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 44701-17
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2748)

BC CALC® Design Report



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

September 20, 2016 10:40:45

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2748)

Specifier:

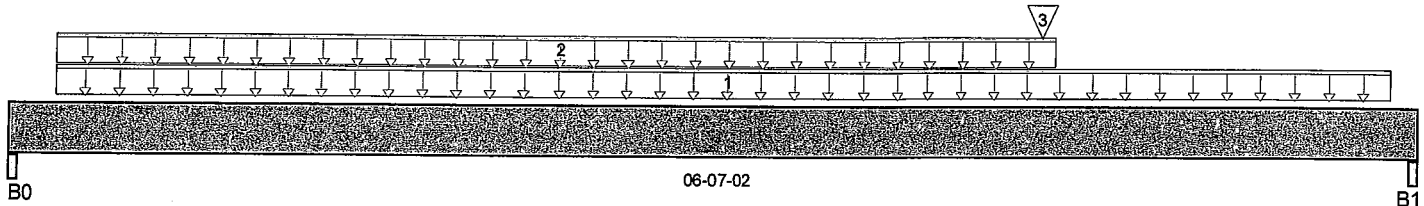
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:22:42 PM kgervais



Total Horizontal Product Length = 06-07-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	210 / 0	109 / 0		
B1, 4-1/8"	460 / 0	231 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	06-05-10	11	4			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	04-10-14	15	6			n/a
3 B4(i2746)	Conc. Pt. (lbs)	L	04-10-00	04-10-00	527	255			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,402 ft-lbs	12,704 ft-lbs	11%	1	04-10-00
End Shear	945 lbs	5,785 lbs	16.3%	1	05-05-08
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	03-07-02
Live Load Defl.	L/999 (0.014")	n/a	n/a	5	03-07-02
Max Defl.	0.021"	n/a	n/a	4	03-07-02
Span / Depth	7.5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 1-3/4"	452 lbs	11.5%	4%	Unspecified
B1 Beam	4-1/8" x 1-3/4"	980 lbs	31.8%	11.1%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

DWUNO.TAM 44702-17
STRUCTURAL
COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i3155)

BC CALC® Design Report



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

September 20, 2016 10:40:45

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i3155)

Specifier:

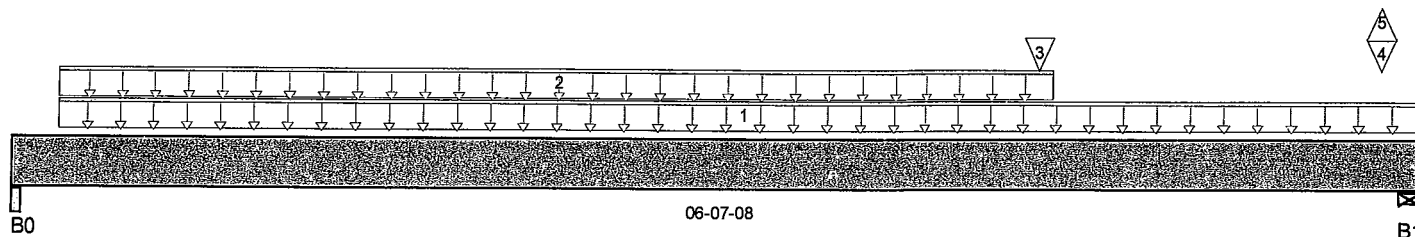
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:22:48 PM kgervais



Total Horizontal Product Length = 06-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	237 / 0	119 / 0		
B1, 4-3/8"	1,175 / 21	588 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	06-07-08	20	7			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	04-10-14	14	5			n/a
3	B4(i2746)	Conc. Pt. (lbs)	L	04-10-00	04-10-00	529	256			n/a
4	2(i1449)	Conc. Pt. (lbs)	L	06-05-05	06-05-05	685	345			n/a
5	2(i1449)	Conc. Pt. (lbs)	L	06-05-05	06-05-05	-21				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,469 ft-lbs	12,704 ft-lbs	11.6%	1	04-10-00
End Shear	981 lbs	5,785 lbs	16.9%	1	05-05-10
Total Load Defl.	L/999 (0.022")	n/a	n/a	6	03-07-02
Live Load Defl.	L/999 (0.015")	n/a	n/a	8	03-07-02
Max Defl.	0.022"	n/a	n/a	6	03-07-02
Span / Depth	7.5	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 1-3/4"	505 lbs	12.9%	4.5%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	2,498 lbs	76.4%	26.7%	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 CSA086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012



PO 14

DWG NO. TAM 44703-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i3155)

BC CALC® Design Report



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

September 20, 2016 10:40:45

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i315

Specifier:

Designer: AJ

Company:

Misc:

Disclosure

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

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



DWG NO. TAM 44703-17
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i2749)

BC CALC® Design Report



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

September 20, 2016 10:40:46

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i2749)

Specifier:

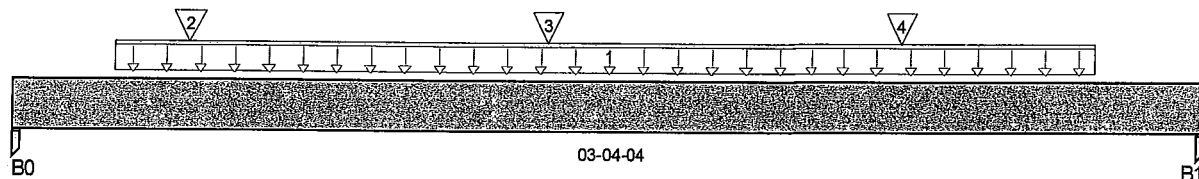
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:22:57 PM kgervais



Total Horizontal Product Length = 03-04-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	448 / 0	217 / 0		
B1, 3-1/2"	412 / 0	204 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 User Load	Unf. Lin. (lb/ft)	L	00-03-08	03-00-10	240	120			n/a
2 J9(i1549)	Conc. Pt. (lbs)	L	00-06-00	00-06-00	70	26			n/a
3 J9(i1549)	Conc. Pt. (lbs)	L	01-06-00	01-06-00	70	26			n/a
4 J9(i1484)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	58	22			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	684 ft-lbs	12,704 ft-lbs	5.4%	1	01-07-03
End Shear	834 lbs	5,785 lbs	14.4%	1	02-03-04
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-08-05
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-08-05
Max Defl.	0.003"	n/a	n/a	4	01-08-05
Span / Depth	3.7	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	943 lbs	23.7%	12.6%	Unspecified
B1 Post	3-1/2" x 1-3/4"	874 lbs	22%	11.7%	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 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Deflections less than 1/8" were ignored in the results.

CONFORMS TO DBC 2012

DWG NO. TAM 44704-17
 STRUCTURAL
 COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i2746)

BC CALC® Design Report



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

September 20, 2016 10:40:46

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i2746)

Specifier:

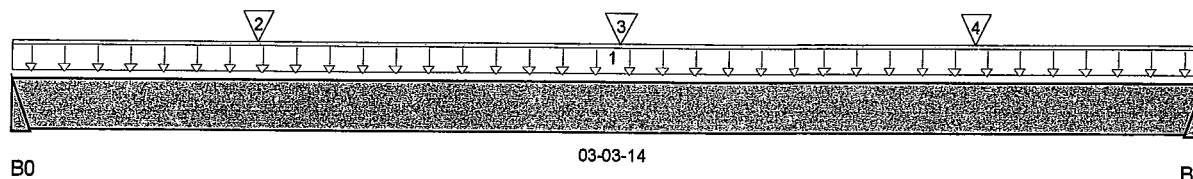
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:23:01 PM kgervais



Total Horizontal Product Length = 03-03-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	526 / 0	255 / 0		
B1	529 / 0	256 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-03-14	240	120			n/a
2 J8(i1564)	Conc. Pt. (lbs)	L	00-08-04	00-08-04	83	31			n/a
3 J8(i1496)	Conc. Pt. (lbs)	L	01-08-04	01-08-04	94	35			n/a
4 J8(i1524)	Conc. Pt. (lbs)	L	02-08-04	02-08-04	81	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	859 ft-lbs	12,704 ft-lbs	6.8%	1	01-08-04
End Shear	557 lbs	5,785 lbs	9.6%	1	00-11-08
Total Load Defl.	L/999 (0.004")	n/a	n/a	4	01-07-11
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-07-11
Max Defl.	0.004"	n/a	n/a	4	01-07-11
Span / Depth	3.9	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,108 lbs	n/a	26%	Hanger
B1 Hanger	2" x 1-3/4"	1,113 lbs	n/a	26.1%	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 CSA086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

DWG NO. TAM 44705-17
STRUCTURAL
COMPONENT ONLY

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basementl...B5L(i2989)

BC CALC® Design Report



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

September 20, 2016 10:40:46

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5L(i2989

Specifier:

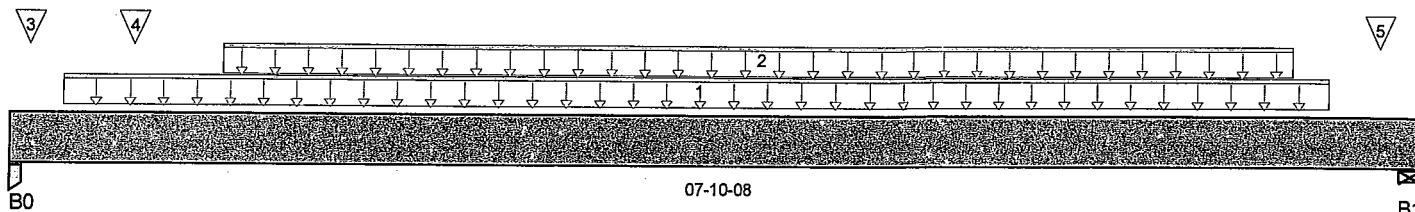
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:23:05 PM kgervais



07-10-08

Total Horizontal Product Length = 07-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,708 / 0	785 / 0		
B1, 5-1/2"	2,910 / 0	1,467 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-03-08	07-04-08	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-02-02	07-02-02	221	83			n/a
3	J6(i2745)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	75	28			n/a
4	J6(i2741)	Conc. Pt. (lbs)	L	00-08-02	00-08-02	186	70			n/a
5	12(i1663)	Conc. Pt. (lbs)	L	07-07-12	07-07-12	1,331	730			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,301 ft-lbs	25,408 ft-lbs	24.8%	1	03-08-02
End Shear	3,245 lbs	11,571 lbs	28%	1	06-07-08
Total Load Defl.	L/999 (0.084")	n/a	n/a	4	03-09-10
Live Load Defl.	L/999 (0.057")	n/a	n/a	5	03-09-10
Max Defl.	0.084"	n/a	n/a	4	03-09-10
Span / Depth	9.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 3-1/2"	3,544 lbs	44.5%	23.7%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	6,198 lbs	75.4%	26.4%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

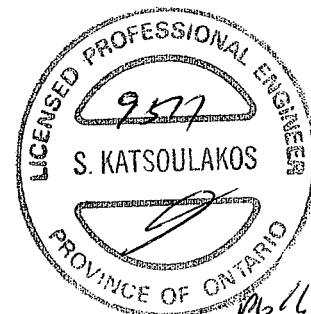
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012



DWG NO. TAM 44706 17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B5L(i2989)

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

September 20, 2016 10:40:46

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5L(i29.

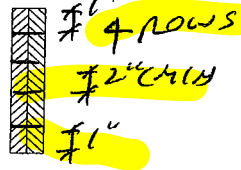
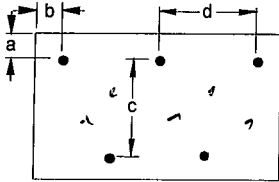
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 408.2 lb/ft

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

Connectors are: 16d Nails 3-1/2 in.

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

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



DWG NO. TAM 4470617
STRUCTURAL
COMPONENT ONLY

Build 5033

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

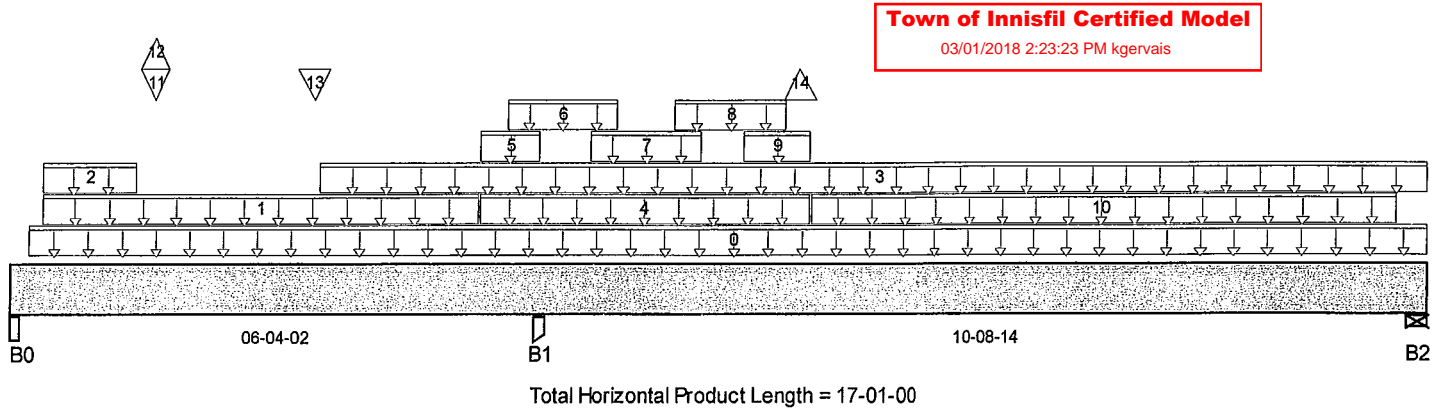
Description: Designs\Flush Beams\Basement\Flush Beams\B6(i3394)

Specifier:

Designer: AJ

Company:

Misc:

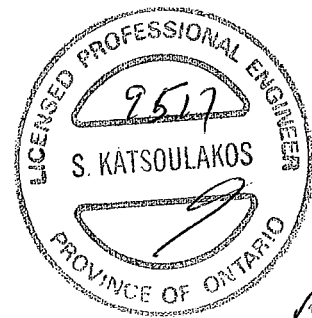


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	2,707 / 286	1,234 / 0		
B1, 3-1/2"	3,408 / 330	2,402 / 0		
B2, 2-3/8"	346 / 144	462 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	17-01-00	7	3			n/a
1	11 (i1662)	Unf. Lin. (lb/ft)	L	00-04-10	05-07-06		81			n/a
2	11 (i1662)	Unf. Lin. (lb/ft)	L	00-04-10	01-06-02	395	148			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-08-06	17-01-00	6				n/a
4	13 (i1665)	Unf. Lin. (lb/ft)	L	05-07-06	09-06-14		61			n/a
5	13 (i1665)	Unf. Lin. (lb/ft)	L	05-07-06	06-04-04	1,316	671			n/a
6	13 (i1665)	Unf. Lin. (lb/ft)	L	05-11-06	07-03-06	125	47			n/a
7	13 (i1665)	Unf. Lin. (lb/ft)	L	06-11-06	08-03-06	125	47			n/a
8	13 (i1665)	Unf. Lin. (lb/ft)	L	07-11-06	09-03-06	113	43			n/a
9	13 (i1665)	Unf. Lin. (lb/ft)	L	08-09-02	09-06-14	651	217			n/a
10	5 (i1481)	Unf. Lin. (lb/ft)	L	09-06-14	16-08-10	43	100			n/a
11	11 (i1662)	Conc. Pt. (lbs)	L	01-08-10	01-08-10	2,688	1,211			n/a
12	11 (i1662)	Conc. Pt. (lbs)	L	01-08-10	01-08-10	-92				n/a
13	B3 (i3438)	Conc. Pt. (lbs)	L	03-07-08	03-07-08	395	194			n/a
14	13 (i1665)	Conc. Pt. (lbs)	L	09-05-02	09-05-02	-297				n/a



DWGNO.YAM 44702-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B6(i3394)

BC CALC® Design Report



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

September 1, 2017 08:43:24

Build 5033

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B6(i339

Specifier:

Designer: AJ

Company:

Misc:

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location	Disclosure
Pos. Moment	6,586 ft-lbs	25,408 ft-lbs	25.9%	3	01-08-10	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.
Neg. Moment	-5,690 ft-lbs	-25,408 ft-lbs	22.4%	1	06-04-02	
End Shear	4,717 lbs	11,571 lbs	40.8%	3	01-02-12	
Cont. Shear	4,678 lbs	11,571 lbs	40.4%	1	05-04-14	
Total Load Defl.	L/999 (0.075")	n/a	n/a	13	11-11-00	
Live Load Defl.	L/999 (0.043")	n/a	n/a	17	11-07-05	
Total Neg. Defl.	L/999 (-0.012")	n/a	n/a	12	08-06-04	
Max Defl.	0.075"	n/a	n/a	13	11-11-00	
Span / Depth	13.4	n/a	n/a		00-00-00	

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	5,603 lbs	57.1%	25%	Unspecified
B1 Post	3-1/2" x 3-1/2"	8,114 lbs	81.6%	54.3%	Unspecified
B2 Wall/Plate	2-3/8" x 3-1/2"	1,096 lbs	24.7%	10.8%	Unspecified

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

Notes

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

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

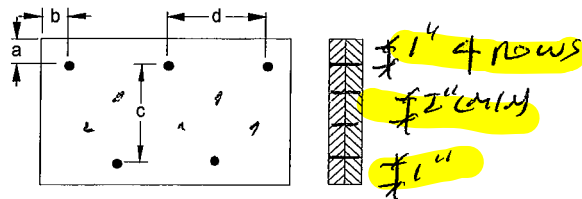
Calculations assume member is fully braced.

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**Connection Diagram**

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

Calculated Side Load = 48.9 lb/ft

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

Connectors are: Nails

3 1/2" ARDOX SPIRAL

DWEN, YAM 44707-17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B7 DR(i3184)

BC CALC® Design Report



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

September 20, 2016 10:40:46

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B7 D

Specifier:

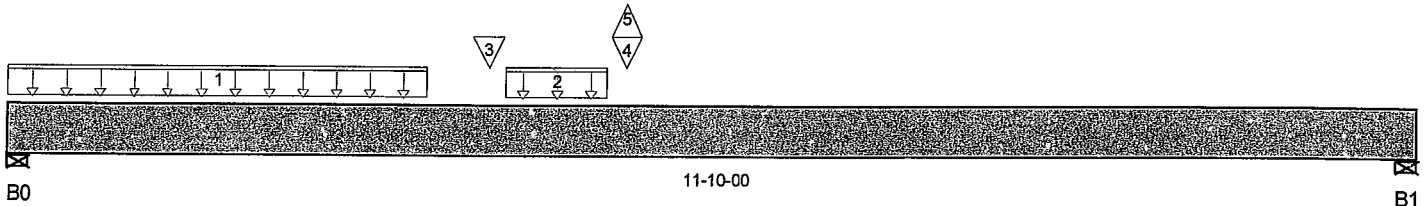
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:23:49 PM kgervais



Total Horizontal Product Length = 11-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,509 / 118	1,010 / 0		
B1, 4"	1,098 / 90	478 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-04	378	142			n/a
2	Bk1(i3119)	Unf. Lin. (lb/ft)	L	04-02-00	05-00-04	114	43			n/a
3	J7(i2792)	Conc. Pt. (lbs)	L	04-00-04	04-00-04	357	134			n/a
4	B12(i3152)	Conc. Pt. (lbs)	L	05-02-00	05-02-00	1,787	692			n/a
5	B12(i3152)	Conc. Pt. (lbs)	L	05-02-00	05-02-00	-208				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	14,094 ft-lbs	22,080 ft-lbs	63.8%	1	05-02-00
End Shear	4,271 lbs	11,571 lbs	36.9%	1	01-01-08
Total Load Defl.	L/355 (0.382")	0.565"	67.7%	6	05-06-03
Live Load Defl.	L/499 (0.271")	0.376"	72.1%	8	05-06-03
Max Defl.	0.382"	n/a	n/a	6	05-06-03
Span / Depth	14.3	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	5,026 lbs	55.3%	29.4%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	2,245 lbs	24.7%	13.1%	Unspecified

Notes

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

Resistance Factor phi has been applied to all presented results per CSA086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO QBC 2012



pe 1/2

DWG NO. TAM 4470317
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B7

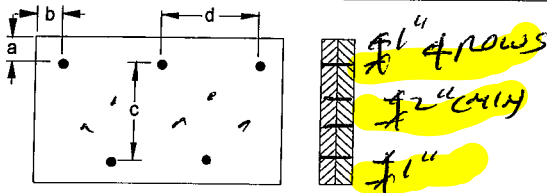
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



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

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Member has no side loads.

Connectors are: 16d 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 engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

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



DWG NO. TAM 44708.17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8 DR(i3188)

BC CALC® Design Report



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

September 20, 2016 10:40:47

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B8 D

Specifier:

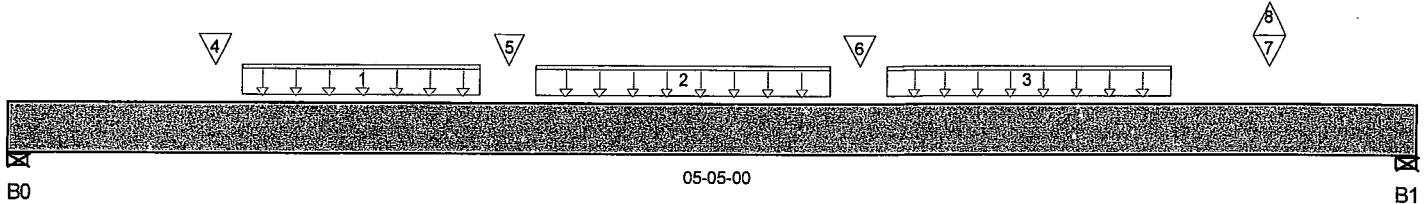
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:26:05 PM kgervais



Total Horizontal Product Length = 05-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	722 / 0	299 / 0		
B1, 4"	1,218 / 13	531 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Bk1(i2924)	Unf. Lin. (lb/ft)	L	00-10-12	01-09-12	22				n/a
2	Bk1(i2956)	Unf. Lin. (lb/ft)	L	02-00-04	03-01-12	22	8			n/a
3	Bk1(i2956)	Unf. Lin. (lb/ft)	L	03-04-04	04-05-12	22	8			n/a
4	J2(i2960)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	284	107			n/a
5	J2(i2974)	Conc. Pt. (lbs)	L	01-11-00	01-11-00	329	123			n/a
6	J2(i3027)	Conc. Pt. (lbs)	L	03-03-00	03-03-00	357	134			n/a
7	-	Conc. Pt. (lbs)	L	04-10-03	04-10-03	871	376			n/a
8	-	Conc. Pt. (lbs)	L	04-10-03	04-10-03	-13				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,815 ft-lbs	25,408 ft-lbs	7.1%	1	03-03-00
End Shear	1,222 lbs	11,571 lbs	10.6%	1	04-03-08
Total Load Defl.	L/999 (0.011")	n/a	n/a	6	02-08-11
Live Load Defl.	L/999 (0.008")	n/a	n/a	8	02-08-11
Max Defl.	0.011"	n/a	n/a	6	02-08-11
Span / Depth	6.2	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"	1,457 lbs	16%	8.5%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	2,491 lbs	27.4%	14.6%	Unspecified

Notes



DWG NO. TAM 4420917
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8 DR(i3188)

BC CALC® Design Report



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

September 20, 2016 10:40:47

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B8

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

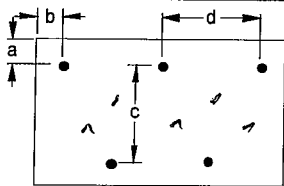
CONFORMS TO OBC 2012

Disclosure

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

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

Connection Diagram



Handwritten notes on the diagram: 4 rows, 2" min, 1"

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

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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 4470917
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9 DR(i3171)

BC CALC® Design Report



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

September 20, 2016 10:40:47

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B9 D

Specifier:

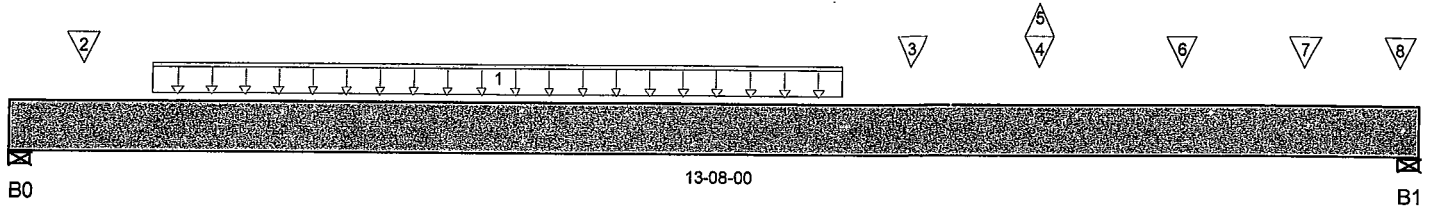
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:26:26 PM kgervais



Total Horizontal Product Length = 13-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,423 / 1	1,012 / 0		
B1, 4"	2,602 / 1	1,089 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-06	08-00-06	358	134			n/a
2	-	Conc. Pt. (lbs)	L	00-08-06	00-08-06	437	164			n/a
3	-	Conc. Pt. (lbs)	L	08-08-06	08-08-06	466	175			n/a
4	-	Conc. Pt. (lbs)	L	09-11-11	09-11-11	569	234			n/a
5	-	Conc. Pt. (lbs)	L	09-11-11	09-11-11	-2				n/a
6	-	Conc. Pt. (lbs)	L	11-04-06	11-04-06	477	179			n/a
7	-	Conc. Pt. (lbs)	L	12-06-11	12-06-11	435	163			n/a
8	J2(i3058)	Conc. Pt. (lbs)	L	13-05-10	13-05-10	251	94			n/a

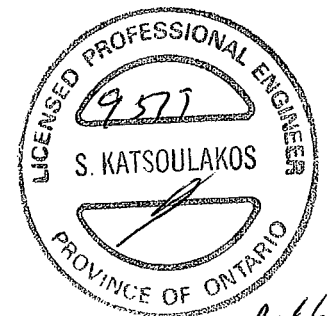
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	15,992 ft-lbs	39,636 ft-lbs	40.3%	1	07-04-06
End Shear	4,683 lbs	17,356 lbs	27%	1	12-06-08
Total Load Defl.	L/340 (0.464")	0.656"	70.6%	6	06-10-06
Live Load Defl.	L/482 (0.327")	0.438"	74.7%	8	06-10-06
Max Defl.	0.464"	n/a	n/a	6	06-10-06
Span / Depth	16.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	Wall/Plate 4" x 5-1/4"	4,900 lbs	35.9%	19.1%	Unspecified
B1	Wall/Plate 4" x 5-1/4"	5,264 lbs	38.6%	20.5%	Unspecified

Notes



DWG NO. YAM 4471017
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B9

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Deflections less than 1/8" were ignored in the results.

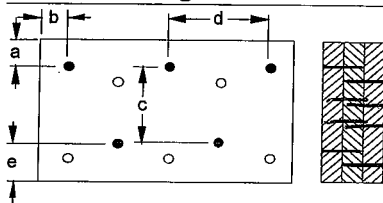
CONFORMS TO OBC 2012

Disclosure

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

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

Connection Diagram



4 rows

a minimum = 2" c = 6 1/2"
b minimum = 3" d = 6"
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. TAN 44710.17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10 DR(i3055)

BC CALC® Design Report



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

September 20, 2016 10:40:47

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

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

Specifier:

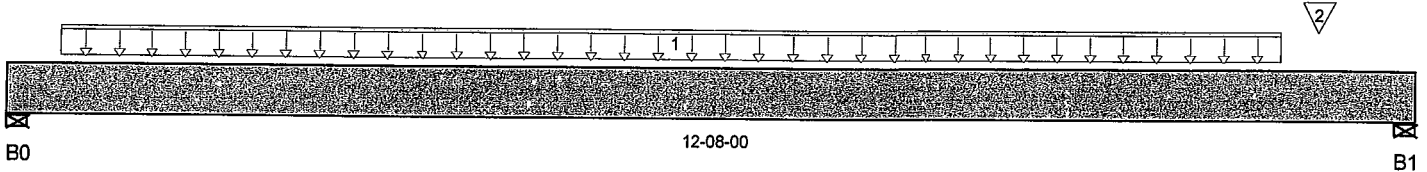
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:26:49 PM kgervais



Total Horizontal Product Length = 12-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,259 / 0	937 / 0		
B1, 4"	2,279 / 0	945 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-10	11-05-10	375	141			n/a
2	-	Conc. Pt. (lbs)	L	11-09-07	11-09-07	409	153			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	14,101 ft-lbs	39,636 ft-lbs	35.6%	1	06-02-06
End Shear	4,331 lbs	17,356 lbs	25%	1	01-01-08
Total Load Defl.	L/418 (0.348")	0.606"	57.4%	4	06-04-11
Live Load Defl.	L/591 (0.246")	0.404"	61%	5	06-04-11
Max Defl.	0.348"	n/a	n/a	4	06-04-11
Span / Depth	15.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 5-1/4"	4,559 lbs	33.4%	17.8%	Unspecified
B1 Wall/Plate	4" x 5-1/4"	4,600 lbs	33.7%	18%	Unspecified

Notes

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO UBC 2012



PO 1/2

DWG NO. YAM 44711-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

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

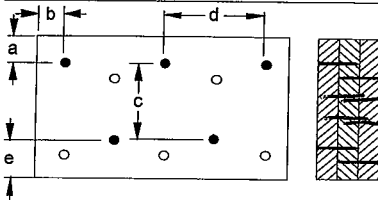
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



4 rows

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

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

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



DWG NO. YAM 44711-17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 7-1/4" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B18L DR(i3007)

BC CALC® Design Report



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

September 20, 2016 10:40:47

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B18L

Specifier:

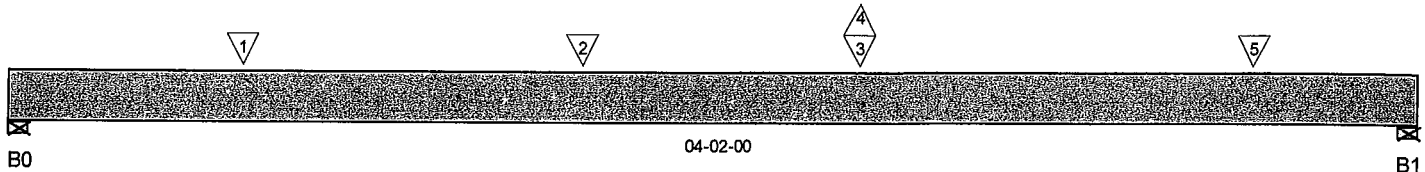
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:26:58 PM kgervais



Total Horizontal Product Length = 04-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,295 / 224	499 / 0		
B1, 4"	1,645 / 357	610 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	J4(i3043)	Conc. Pt. (lbs)	L	00-08-04	00-08-04	410	163			n/a
2	J4(i3016)	Conc. Pt. (lbs)	L	01-08-04	01-08-04	309	121			n/a
3	B17L(i3044)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	1,880	651			n/a
4	B17L(i3044)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	-581				n/a
5	J5(i1708)	Conc. Pt. (lbs)	L	03-08-04	03-08-04	341	128			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,693 ft-lbs	23,788 ft-lbs	15.5%	1	02-06-00
Neg. Moment	-132 ft-lbs	-23,788 ft-lbs	0.6%	4	02-06-00
Neg. Moment	-132 ft-lbs	-23,788 ft-lbs	0.6%	4	02-06-00
End Shear	2,707 lbs	13,246 lbs	20.4%	1	03-02-12
Total Load Defl.	L/999 (0.016")	n/a	n/a	6	02-01-12
Live Load Defl.	L/999 (0.011")	n/a	n/a	8	02-01-12
Max Defl.	0.016"	n/a	n/a	6	02-01-12
Span / Depth	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	4" x 5-1/4"	2,567 lbs	18.8%	10%	Unspecified
B1 Wall/Plate	4" x 5-1/4"	3,229 lbs	23.7%	12.6%	Unspecified

Notes



DWG NO. TAM 44712-17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 7-1/4" VERSA-LAM® 2.0 3100 SP 1st Floor...\B18L DR(i3007)

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

September 20, 2016 10:40:47

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

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

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Deflections less than 1/8" were ignored in the results.

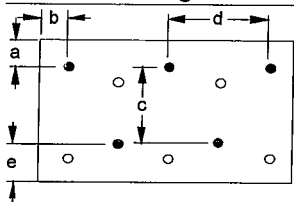
CONFORMS TO OBC 2012

Disclosure

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

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

Connection Diagram



4 ROWS

a minimum = 1 1/2" c = 2 1/4"
b minimum = 3" d = 6"
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



DWNO.TAM 44712-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

September 20, 2016 10:40:47

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i3181)

Specifier:

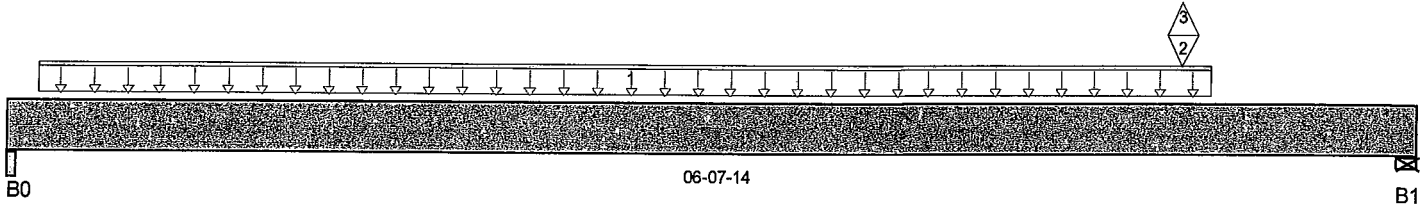
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:04 PM kgervais



Total Horizontal Product Length = 06-07-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	151 / 3	78 / 0		
B1, 5-1/2"	573 / 20	271 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	05-08-06	27	10			n/a
2	B15(i3132)	Conc. Pt. (lbs)	L	05-06-10	05-06-10	572	260			n/a
3	B15(i3132)	Conc. Pt. (lbs)	L	05-06-10	05-06-10	-23				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	842 ft-lbs	12,704 ft-lbs	6.6%	1	05-06-10
End Shear	971 lbs	5,785 lbs	16.8%	1	05-04-14
Total Load Defl.	L/999 (0.014")	n/a	n/a	6	03-06-09
Live Load Defl.	L/999 (0.009")	n/a	n/a	8	03-06-09
Max Defl.	0.014"	n/a	n/a	6	03-06-09
Span / Depth	7.5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	4-3/8" x 1-3/4"	324 lbs	4.9%	3.5%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	1,199 lbs	29.2%	10.2%	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 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

DWG NO. TAM 44713-17
 STRUCTURAL
 COMPONENT ONLY

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...B12(i3152)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3152)

Specifier:

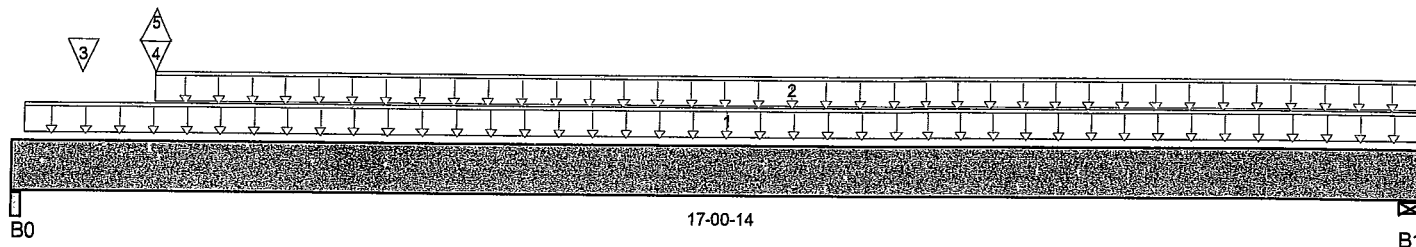
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:10 PM kgervais



Total Horizontal Product Length = 17'-0" x 14"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,789 / 209	693 / 0		
B1, 4-3/8"	477 / 20	256 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	17-00-14	23	9			n/a
2	FC5 Floor Material	Unf. Lin. (lb/ft)	L	01-08-08	17-00-14	17	6			n/a
3	J2(i3157)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	178	66			n/a
4	B14(i3185)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	1,437	474			n/a
5	B14(i3185)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	-227				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,587 ft-lbs	25,408 ft-lbs	22%	1	05-08-07
End Shear	3,383 lbs	11,571 lbs	29.2%	1	01-01-00
Total Load Defl.	L/506 (0.392")	0.827"	47.4%	6	07-11-02
Live Load Defl.	L/747 (0.266")	0.551"	48.2%	8	07-11-02
Max Defl.	0.392"	n/a	n/a	6	07-11-02
Span / Depth	20.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	3-1/2" x 3-1/2"	3,549 lbs	33.2%	23.7%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	1,035 lbs	15.8%	5.5%	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 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012



DWONG.TAN 4471417
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor... \B12(i3152)

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

September 20, 2016 10:40:48

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3152)

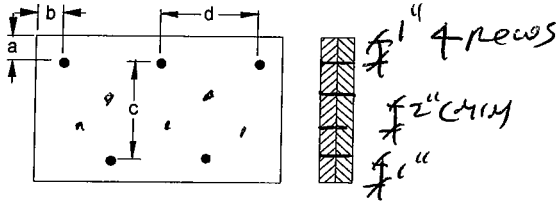
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 166.1 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: 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 engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

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



DWONG.TAM 4471417
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...\B14(i3185)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i3185;

Specifier:

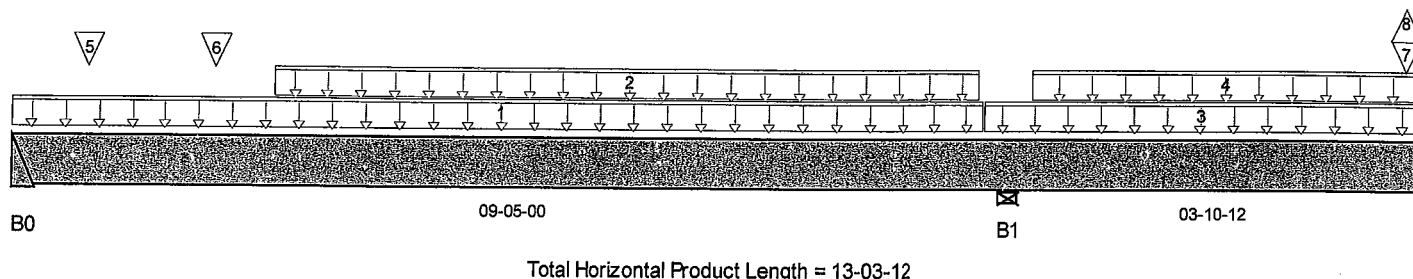
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:16 PM kgervais



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,477 / 240	473 / 0		
B1, 5-1/2"	2,683 / 91	1,210 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-02-04	18	7			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-05-12	09-01-12	302	113			n/a
3	FC5 Floor Material	Unf. Lin. (lb/ft)	L	09-02-04	13-03-12	20	8			n/a
4	User Load	Unf. Lin. (lb/ft)	L	09-07-12	13-03-12	240	120			n/a
5	J1(i2872)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	314	118			n/a
6	J1(i3130)	Conc. Pt. (lbs)	L	01-11-00	01-11-00	371	139			n/a
7	B22(i3143)	Conc. Pt. (lbs)	L	13-02-00	13-02-00	70				n/a
8	B22(i3143)	Conc. Pt. (lbs)	L	13-02-00	13-02-00	-65				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,584 ft-lbs	25,408 ft-lbs	25.9%	3	04-05-12
Neg. Moment	-4,703 ft-lbs	-25,408 ft-lbs	18.5%	1	09-05-00
Neg. Moment	-4,703 ft-lbs	-25,408 ft-lbs	18.5%	1	09-05-00
End Shear	2,566 lbs	11,571 lbs	22.2%	3	00-11-08
Cont. Shear	3,213 lbs	11,571 lbs	27.8%	1	08-04-12
Total Load Defl.	L/815 (0.137")	0.466"	29.4%	12	04-07-12
Live Load Defl.	2xL/584 (-0.16")	-0.26"	61.7%	16	13-03-12
Total Neg. Defl.	2xL/587 (-0.159")	-0.39"	40.9%	12	13-03-12
Max Defl.	0.137"	n/a	n/a	12	04-07-12
Span / Depth	11.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	2" x 3-1/2"	2,807 lbs	n/a	32.9%	Hanger
B1	5-1/2" x 3-1/2"	5,538 lbs	67.3%	23.6%	Unspecified

Notes



DWG NO. TAM 44715-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i3185)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i3185)

Specifier:

Designer: AJ

Company:

Misc:

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

Design meets User specified (2xL/360) Live load deflection criteria.

Calculations assume Member is Fully Braced.

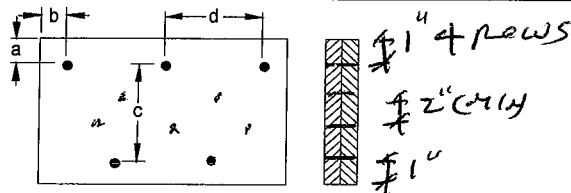
Resistance Factor phi has been applied to all presented results per CSA 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012**Connection Diagram**

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

Calculated Side Load = 409.9 lb/ft

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

Connectors are: 16d Nails 3-1/2 in.

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

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



DWG NO. TAM 4471517
 STRUCTURAL
 COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...B15(i3132)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i3132;

Specifier:

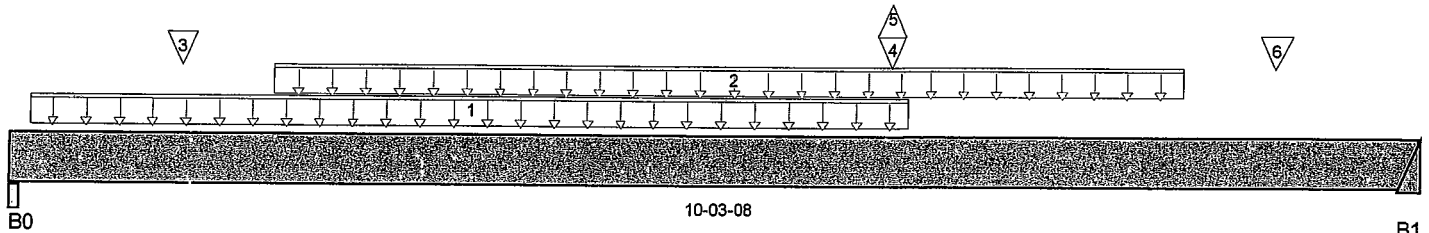
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:24 PM kgervais



Total Horizontal Product Length = 10-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	574 / 14	264 / 0		
B1	575 / 22	262 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC5 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	06-06-08	16	6			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-11-00	08-07-00	110	42			n/a
3	J6(i3047)	Conc. Pt. (lbs)	L	01-03-00	01-03-00	124	46			n/a
4	B22(i3143)	Conc. Pt. (lbs)	L	06-04-12	06-04-12	52	16			n/a
5	B22(i3143)	Conc. Pt. (lbs)	L	06-04-12	06-04-12	-36				n/a
6	J6(i3031)	Conc. Pt. (lbs)	L	09-03-00	09-03-00	140	52			n/a

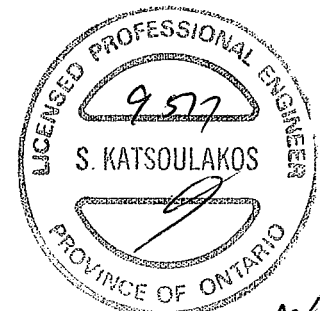
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,300 ft-lbs	25,408 ft-lbs	13%	1	05-03-00
End Shear	1,179 lbs	11,571 lbs	10.2%	1	09-04-00
Total Load Defl.	L/999 (0.082")	n/a	n/a	6	05-03-00
Live Load Defl.	L/999 (0.056")	n/a	n/a	8	05-03-00
Max Defl.	0.082"	n/a	n/a	6	05-03-00
Span / Depth	12.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	3-1/2" x 3-1/2"	1,191 lbs	11.1%	8%	Unspecified
B1 Hanger	2" x 3-1/2"	1,191 lbs	n/a	13.9%	Hanger

Notes



DWG NO. TAM 4471617
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i3132)

Specifier:

Designer: AJ

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 086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

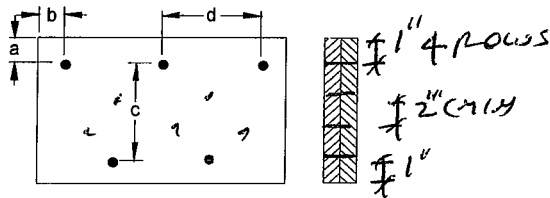
CONFORMS TO OBC 2012

Disclosure

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

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

Connection Diagram



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

Calculated Side Load = 195.9 lb/ft

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

Connectors are: Nails 12"
3 1/2" ARDOX SPIRAL



DWG NO. TAM 4471617
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16L(i2656)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16L(i2656)

Specifier:

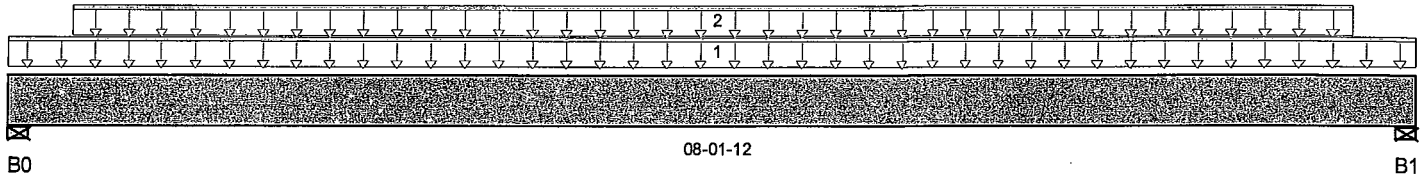
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:33 PM kgervais



Total Horizontal Product Length = 08-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	971 / 0	495 / 0		
B1, 4-3/8"	972 / 0	495 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-01-12	20	7			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-04-06	07-09-06	240	120			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,948 ft-lbs	12,704 ft-lbs	31.1%	1	04-00-14
End Shear	1,619 lbs	5,785 lbs	28%	1	01-01-14
Total Load Defl.	L/999 (0.114")	n/a	n/a	4	04-00-14
Live Load Defl.	L/999 (0.076")	n/a	n/a	5	04-00-14
Max Defl.	0.114"	n/a	n/a	4	04-00-14
Span / Depth	9.5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 1-3/4"	2,076 lbs	63.5%	22.2%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	2,077 lbs	63.5%	22.2%	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 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9
 Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

DWG NO. TAM 4471717
 STRUCTURAL
 COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...B17L(i3044)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17L(i304

Specifier:

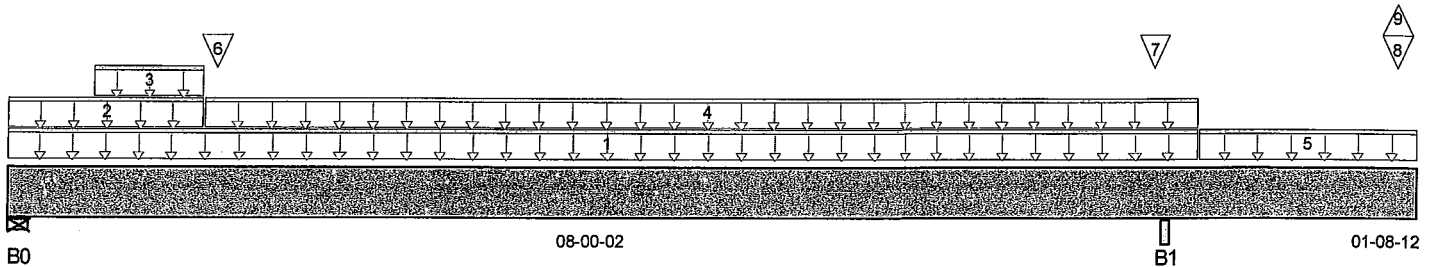
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:49 PM kgervais



Total Horizontal Product Length = 09-08-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	622 / 274	179 / 0		
B1, 5-1/4"	1,863 / 573	647 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-02-14	16	6			n/a
2 16(i1675)	Unf. Lin. (lb/ft)	L	-00-00-00	01-04-06		10			n/a
3 16(i1675)	Unf. Lin. (lb/ft)	L	00-07-02	01-04-06	109	42			n/a
4 FC4 Floor Material	Unf. Lin. (lb/ft)	L	01-04-06	08-02-14	24	9			n/a
5 FC4 Floor Material	Unf. Lin. (lb/ft)	L	08-02-14	09-08-14	27	10			n/a
6 B21L(i1671)	Conc. Pt. (lbs)	L	01-05-04	01-05-04	344	146			n/a
7 19(i2108)	Conc. Pt. (lbs)	L	07-11-02	07-11-02	23				n/a
8 -	Conc. Pt. (lbs)	L	09-07-02	09-07-02	1,306	400			n/a
9 -	Conc. Pt. (lbs)	L	09-07-02	09-07-02	-475				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,307 ft-lbs	25,408 ft-lbs	5.1%	3	03-04-03
Neg. Moment	-3,994 ft-lbs	-25,408 ft-lbs	15.7%	1	08-00-02
Neg. Moment	-3,994 ft-lbs	-25,408 ft-lbs	15.7%	1	08-00-02
End Shear	1,069 lbs	11,571 lbs	9.2%	3	01-01-14
Cont. Shear	2,547 lbs	11,571 lbs	22%	1	09-00-04
Uplift	277 lbs	n/a	n/a	6	08-00-02
Uplift	277 lbs	n/a	n/a	6	08-00-02
Total Load Defl.	2xL/1,998 (0.047")	n/a	n/a	13	09-08-14
Live Load Defl.	2xL/1,998 (0.039")	n/a	n/a	17	09-08-14
Total Neg. Defl.	L/999 (-0.031")	n/a	n/a	13	04-10-15
Max Defl.	-0.031"	n/a	n/a	13	04-10-15
Span / Depth	9.7	n/a	n/a		00-00-00

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



9612

DWG NO. TAM 4471817
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...\B17L(i3044)

BC CALC® Design Report



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

September 20, 2016 10:40:48

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17L(i3044)

Specifier:

Designer: AJ

Company:

Misc:

B0	Wall/Plate	4-3/8" x 3-1/2"	1,156 lbs	17.7%	6.2%	Unspecified
B1	Beam	5-1/4" x 3-1/2"	3,603 lbs	22.5%	16.1%	Unspecified

Disclosure

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

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

Cautions

Uplift of 277 lbs found at span 1 - Right.

Uplift of 277 lbs found at span 2 - Left.

(SIMPSON 1-HL-SA @ 31)

Notes

Design meets User specified (2xL/240) Total load deflection criteria.

Design meets User specified (2xL/360) Live load deflection criteria.

Calculations assume Member is Fully Braced.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

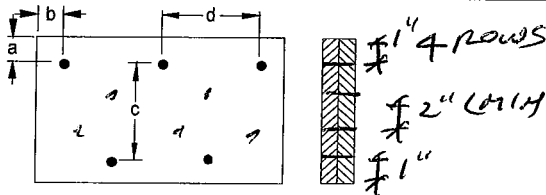
Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

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

Connection Diagram



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

Calculated Side Load = 230.9 lb/ft

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

Connectors are:

Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 4471B17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B19L(i3114)

BC CALC® Design Report



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

September 20, 2016 10:40:49

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B19L(i3114

Specifier:

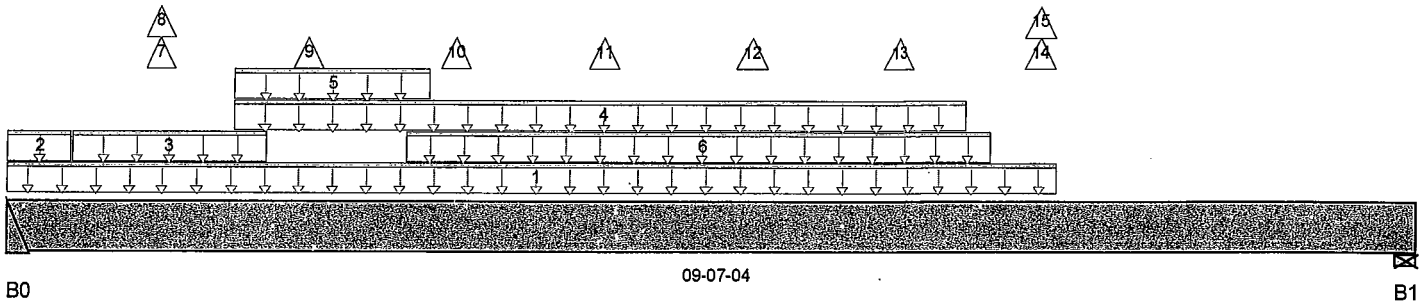
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:27:59 PM kgervais



B0

09-07-04

B1

Total Horizontal Product Length = 09-07-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,173 / 481	347 / 0		
B1, 5-1/2"	619 / 344	178 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	17(i1699)	Unf. Lin. (lb/ft)	L	-00-00-00	07-02-00		10			n/a
2	17(i1699)	Unf. Lin. (lb/ft)	L	-00-00-00	00-05-04	458	171			n/a
3	17(i1699)	Unf. Lin. (lb/ft)	L	00-05-04	01-09-04	193	72			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-08	06-06-08	39				n/a
5	17(i1699)	Unf. Lin. (lb/ft)	L	01-06-08	02-10-08	166	62			n/a
6	17(i1699)	Unf. Lin. (lb/ft)	L	02-08-08	06-08-08	211	79			n/a
7	J5(i1708)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	43	-34			n/a
8	J5(i1708)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	-132				n/a
9	J5(i1703)	Conc. Pt. (lbs)	L	02-00-08	02-00-08	-120	-30			n/a
10	J5(i1703)	Conc. Pt. (lbs)	L	03-00-08	03-00-08	-120	-30			n/a
11	J5(i1703)	Conc. Pt. (lbs)	L	04-00-08	04-00-08	-120	-30			n/a
12	J5(i1703)	Conc. Pt. (lbs)	L	05-00-08	05-00-08	-120	-30			n/a
13	J5(i1703)	Conc. Pt. (lbs)	L	06-00-08	06-00-08	-120	-30			n/a
14	J5(i1705)	Conc. Pt. (lbs)	L	07-00-08	07-00-08	24	-25			n/a
15	J5(i1705)	Conc. Pt. (lbs)	L	07-00-08	07-00-08	-93				n/a



pg 12

DWG NO. TAM 4471917
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B19L(i3114)

Specifier:

Designer: AJ

Company:

Misc:

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location	Disclosure
Pos. Moment	4,144 ft-lbs	25,408 ft-lbs	16.3%	1	04-03-08	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 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.
Neg. Moment	-1,162 ft-lbs	-25,408 ft-lbs	4.6%	4	04-00-08	
Neg. Moment	-1,162 ft-lbs	-25,408 ft-lbs	4.6%	4	04-00-08	
End Shear	2,018 lbs	11,571 lbs	17.4%	1	00-11-08	
Uplift	409 lbs	n/a	n/a	4	00-00-00	
Total Load Defl.	L/999 (0.083")	n/a	n/a	6	04-06-08	
Live Load Defl.	L/999 (0.065")	n/a	n/a	8	04-06-08	
Total Neg. Defl.	L/999 (-0.016")	n/a	n/a	7	04-08-00	
Max Defl.	0.083"	n/a	n/a	6	04-06-08	
Span / Depth	11.5	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"	2,193 lbs	n/a	25.7%	Hanger
B0 Hanger Uplift	2" x 3-1/2"	410 lbs	n/a	0.04	Hanger
B1 Wall/Plate	5-1/2" x 3-1/2"	1,151 lbs	9.2%	4.9%	Unspecified

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

Cautions

Uplift of 409 lbs found at span 1 - Left. *SIMPSON HUC410 @ 0-B0*

Notes

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

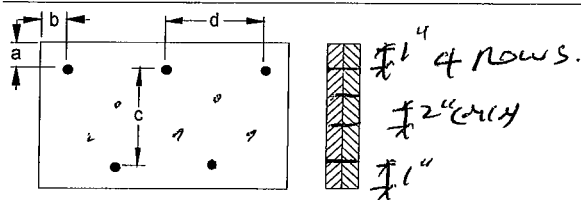
Importance Factor : Normal Part code : Part 9

Deflections less than 1/8" were ignored in the results.

Town of Innisfil Certified Model

03/01/2018 2:28:03 PM kgervais

Connection Diagram



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

Calculated Side Load = 118.4 lb/ft

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

Connectors are: Nails
3 1/2" ARDOX SPIRAL



DWG NO. YAM 4471917
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B21L(i1671)

BC CALC® Design Report



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

September 20, 2016 10:40:49

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B21L(i1671

Specifier:

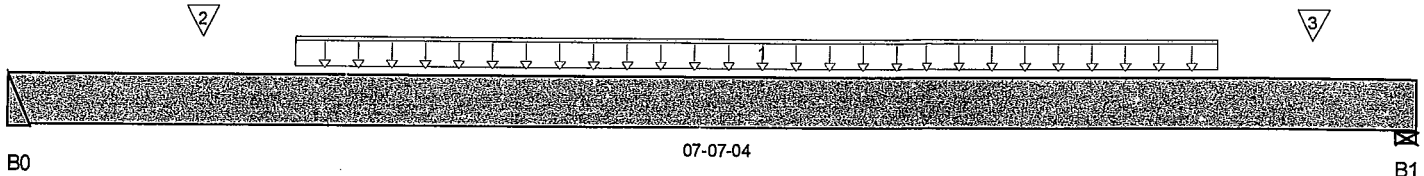
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:28:08 PM kgervais



Total Horizontal Product Length = 07-07-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	350 / 1	149 / 0		
B1, 5-1/2"	400 / 1	170 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-08	06-06-08	109	41			n/a
2 J6(i1708)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	121	45			n/a
3 J6(i1705)	Conc. Pt. (lbs)	L	07-00-08	07-00-08	84	32			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,392 ft-lbs	12,704 ft-lbs	11%	1	04-00-08
End Shear	705 lbs	5,785 lbs	12.2%	1	00-11-08
Total Load Defl.	L/999 (0.035")	n/a	n/a	6	03-08-00
Live Load Defl.	L/999 (0.025")	n/a	n/a	8	03-08-00
Max Defl.	0.035"	n/a	n/a	6	03-08-00
Span / Depth	9	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	711 lbs	n/a	16.6%	Hanger
B1 Wall/Plate	5-1/2" x 1-3/4"	812 lbs	19.8%	6.9%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

CONFORMS TO DBC 2012

DWG NO. TAM 442017
STRUCTURAL
COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...\B22(i3143)

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

September 20, 2016 10:40:49

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B22(i3143)

Specifier:

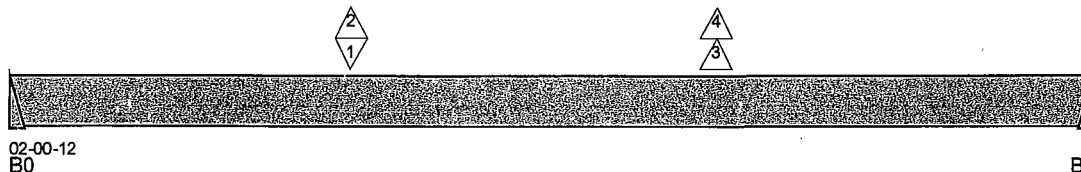
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:28:17 PM kgervais



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	51 / 35	17 / 0		
B1	71 / 66	12 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	J5(i3196)	Conc. Pt. (lbs)	L	00-07-12	00-07-12	28	10			n/a
2	J5(i3196)	Conc. Pt. (lbs)	L	00-07-12	00-07-12	-2				n/a
3	J2(i3157)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	94	-1			n/a
4	J2(i3157)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	-99				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	72 ft-lbs	25,408 ft-lbs	0.3%	1	01-04-00
Neg. Moment	-57 ft-lbs	-25,408 ft-lbs	0.2%	4	01-04-00
Neg. Moment	-57 ft-lbs	-25,408 ft-lbs	0.2%	4	01-04-00
End Shear	83 lbs	11,571 lbs	0.7%	4	01-01-04
Uplift	88 lbs	n/a	n/a	4	02-00-12
Total Load Defl.	L/999 (0")	n/a	n/a	6	01-00-13
Live Load Defl.	L/999 (0")	n/a	n/a	8	01-01-00
Max Defl.	0"	n/a	n/a	6	01-00-13
Span / Depth	2.3	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"	98 lbs	n/a	1.1%	Hanger
B0 Hanger Uplift	2" x 3-1/2"	37 lbs	n/a	0.00	Hanger
B1 Hanger	2" x 3-1/2"	121 lbs	n/a	1.4%	Hanger
B1 Hanger Uplift	2" x 3-1/2"	88 lbs	n/a	0.01	Hanger

Cautions

Uplift of 88 lbs found at span 1 - Right. *(Simpson 1-H20541000-B0)*

Notes



pc 11
DWGNO.TAM 4472-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B22(i314

Specifier:

Designer: AJ

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 CSA086.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Deflections less than 1/8" were ignored in the results.

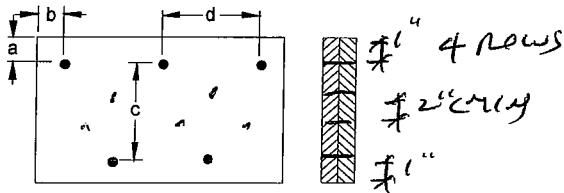
CONFORMS TO OBC 2012

Disclosure

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

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

Connection Diagram



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

Calculated Side Load = 21.4 lb/ft

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

Connectors are: Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 4472417
STRUCTURAL
COMPONENT ONLY

Boise Cascade Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B25(i3739)

BC CALC® Design Report



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

September 20, 2016 11:08:36

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B25(i3739)

Specifier:

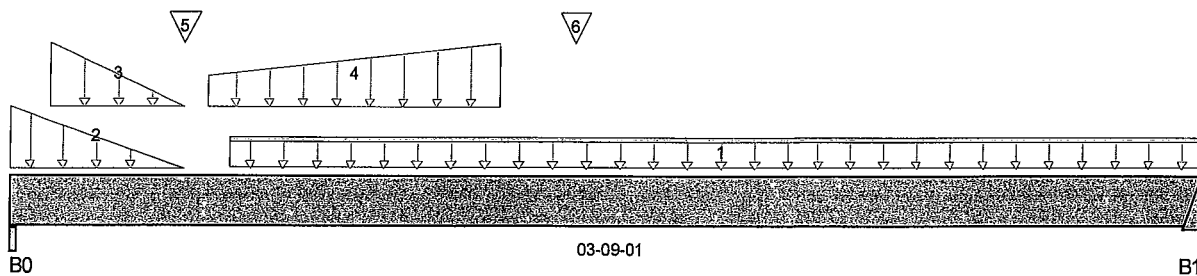
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:30:59 PM kgervais



Total Horizontal Product Length = 03-09-01

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 7-7/16"	166 / 0	106 / 0	221 / 0	
B1	111 / 0	89 / 0	257 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-08-05	03-09-01	44	40	156		n/a
2	FC5 Floor Material	Trapezoidal (lb/ft)	L	00-00-00	00-06-09	22	8			n/a
					00-06-09	0	0			n/a
3	FC5 Floor Material	Trapezoidal (lb/ft)	L	00-01-10	00-06-09	17				n/a
					00-06-09	0				n/a
4	FC5 Floor Material	Trapezoidal (lb/ft)	L	00-07-07	01-06-06	10	4			n/a
					01-06-06	19	7			n/a
5	FC5 Floor Material	Conc. Pt. (lbs)	L	00-06-09	00-06-09	24	9			n/a
6	J5(i3742)	Conc. Pt. (lbs)	L	01-09-03	01-09-03	92	35			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	433 ft-lbs	12,704 ft-lbs	3.4%	13	01-11-15
End Shear	503 lbs	5,785 lbs	8.7%	13	01-04-15
Total Load Defl.	L/999 (0.002")	n/a	n/a	45	02-01-01
Live Load Defl.	L/999 (0.002")	n/a	n/a	61	02-01-01
Max Defl.	0.002"	n/a	n/a	45	02-01-01
Span / Depth	3.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	7-7/16" x 1-3/4"	547 lbs	7.9%	3.4%	Unspecified
B1 Hanger	2" x 1-3/4"	552 lbs	n/a	12.9%	LSSUI25

Notes



DWG NO. YAM 4422217
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B25(i3739)

BC CALC® Design Report



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

September 20, 2016 11:08:36

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B25(i3739)

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

Hanger Manufacturer: Unassigned

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

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

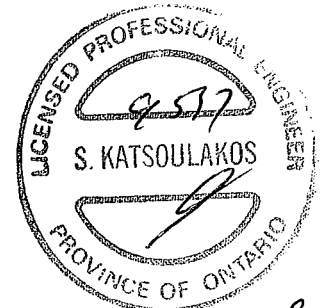
Deflections less than 1/8" were ignored in the results.

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

CONFORMS TO OBC 2012

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



DWG NO. YAM 4422297
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B24(i3738)

BC CALC® Design Report



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

September 20, 2016 11:08:37

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B24(i3738)

Specifier:

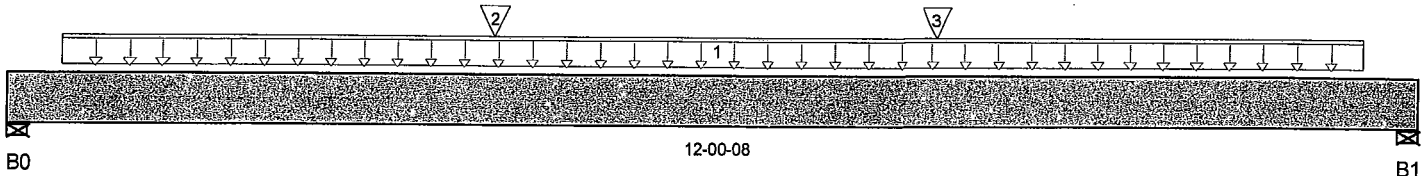
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:31:13 PM kgervais



Total Horizontal Product Length = 12-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	356 / 0	369 / 0	1,129 / 0	
B1, 5-1/2"	356 / 0	369 / 0	1,129 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-05-08	11-07-00	44	40	156		n/a
2	B26(i3740)	Conc. Pt. (lbs)	L	04-01-10	04-01-10	112	89	261		n/a
3	B25(i3739)	Conc. Pt. (lbs)	L	07-10-14	07-10-14	111	89	261		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,118 ft-lbs	24,271 ft-lbs	29.3%	13	06-00-04
End Shear	2,076 lbs	11,571 lbs	17.9%	13	01-03-00
Total Load Defl.	L/575 (0.235")	0.563"	41.7%	45	06-00-04
Live Load Defl.	L/736 (0.183")	0.375"	48.9%	61	06-00-04
Max Defl.	0.235"	n/a	n/a	45	06-00-04
Span / Depth	14.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	2,333 lbs	22.7%	9.9%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	2,333 lbs	22.7%	9.9%	Unspecified

Notes

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

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

Deflections less than 1/8" were ignored in the results.

CONFORMS TO UBC 2012



DWG NO. TAM 4472317
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B24(i3738)

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

September 20, 2016 11:08:37

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B24(i3738)

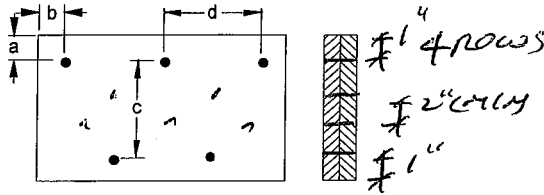
Specifier:

Designer: AJ

Company:

Msc:

Connection Diagram



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

Calculated Side Load = 113.5 lb/ft

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

Connectors are: Nails

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

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



DW 4400 .YAM 44723-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

September 20, 2016 11:08:37

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B26(i3740)

Specifier:

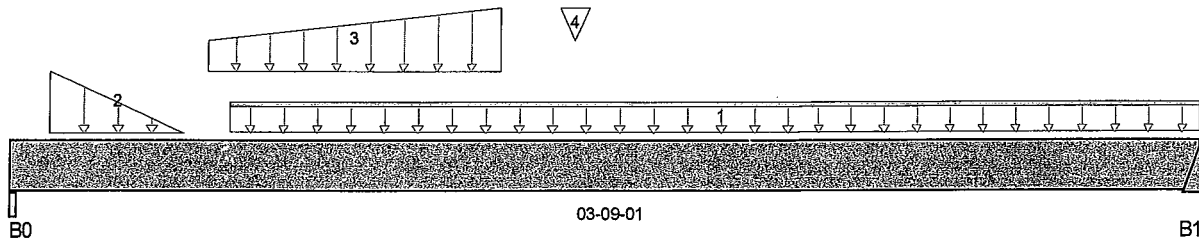
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 2:31:23 PM kgervais



Total Horizontal Product Length = 03-09-01

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 7-7/16"	138 / 0	95 / 0	221 / 0	
B1	111 / 0	89 / 0	257 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-08-05	03-09-01	44	40	156		n/a
2	FC5 Floor Material	Trapezoidal (lb/ft)	L	00-01-10	00-06-09	17	0			n/a
3	FC5 Floor Material	Trapezoidal (lb/ft)	L	00-07-07	01-06-06	10	4			n/a
4	J5(i3742)	Conc. Pt. (lbs)	L	01-09-03	01-09-03	93	35			n/a

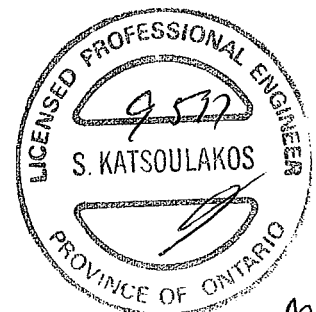
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	433 ft-lbs	12,704 ft-lbs	3.4%	13	01-11-15
End Shear	503 lbs	5,785 lbs	8.7%	13	01-04-15
Total Load Defl.	L/999 (0.002")	n/a	n/a	45	02-01-01
Live Load Defl.	L/999 (0.002")	n/a	n/a	61	02-01-01
Max Defl.	0.002"	n/a	n/a	45	02-01-01
Span / Depth	3.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	7-7/16" x 1-3/4"	519 lbs	7.5%	3.3%	Unspecified
B1 Hanger	2" x 1-3/4"	552 lbs	n/a	12.9%	LSSUI25

Notes



DWG NO. TAN 4472417
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B26(i3740)

BC CALC® Design Report



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

September 20, 2016 11:08:37

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S45-2 EL-B.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B26(i374

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculation assumes member is partially braced. See engineering report for the unbraced length.

Hanger Manufacturer: Unassigned

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

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

Deflections less than 1/8" were ignored in the results.

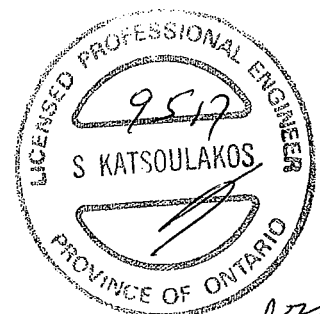
Disclosure

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.

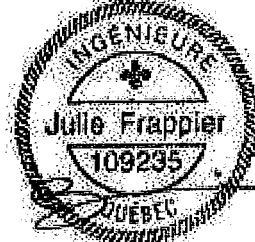
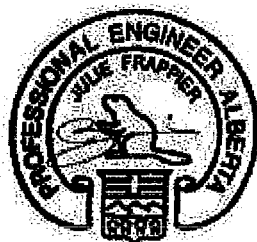
Installation of BOISE engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call 1-800-964-6999 before installation.

CONFORMS TO CBC 2012

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



DWG NO. TAM 442417
STRUCTURAL 724
COMPONENT ONLY



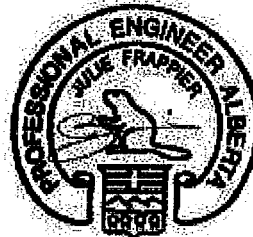
Maximum Floor Spans

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

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

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
11-7/8"	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-60	22'-1"	20'-7"	19'-7"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
14"	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



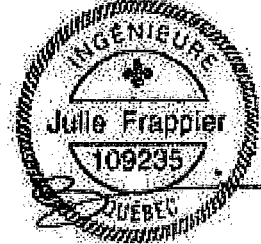
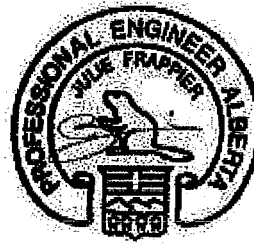
Maximum Floor Spans

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

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
14"	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
16"	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



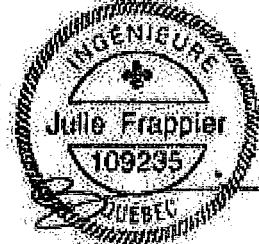
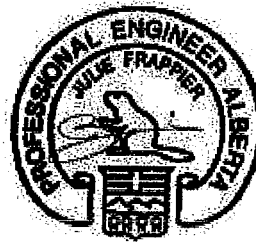
Maximum Floor Spans

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

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
11-7/8"	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
	NI-70	19'-2"	17'-10"	16'-9"	N/A	19'-7"	17'-10"	16'-9"	N/A
	NI-80	19'-5"	18'-0"	17'-1"	N/A	19'-10"	18'-3"	17'-1"	N/A
11-7/8"	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
16"	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

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

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

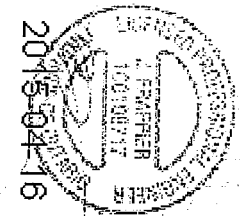
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"
11-7/8"	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
14"	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
16"	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

NORDIC

ENGINEERED WOOD

INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



2015-04-16

Distributed by:



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. Never install a damaged I-joist.



Do not walk on I-joists until fully fastened and braced, or serious injuries can result.

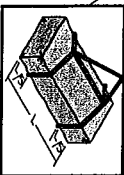
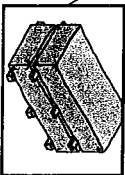
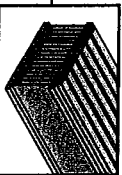


Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

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

STORAGE AND HANDLING GUIDELINES

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



101ST HANGERS

1. Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
2. All nailing must meet the hanger manufacturer's recommendations.
3. Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.

I-JOIST HANGERS

ECMC EVALUATION REPORT 13032-R

NORDIC I-JOIST SERIES

NORDIC I-JOIST SERIES

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

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

2015-04-16

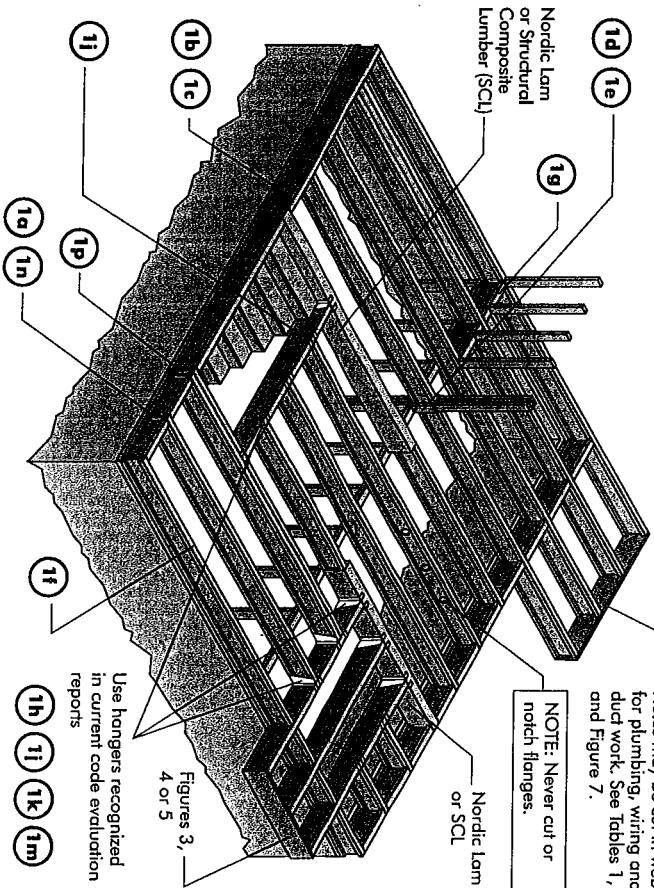
INSTALLING NORDIC I-JOISTS

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

2015-04-16

FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

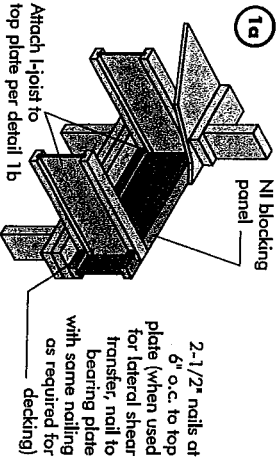
Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.



Figures 3, 4 or 5
Holes may be cut in web for plumbing, wiring and duct work. See Tables 1, 2 and Figure 7.
NOTE: Never cut or notch flanges.

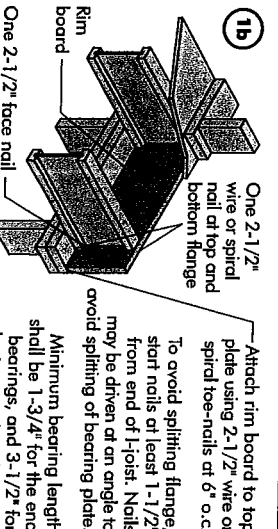
Figures 3, 4 or 5
Use hangers recognized in current code evaluation reports

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



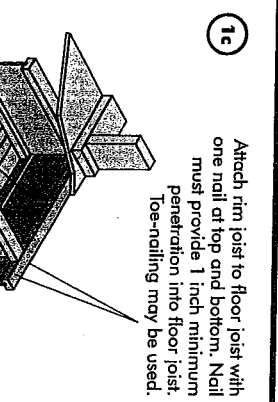
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pH)
NI Joists	3,300

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



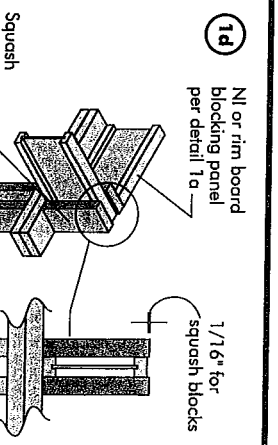
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pH)
1-1/8" Rim Board Plus	8,090

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



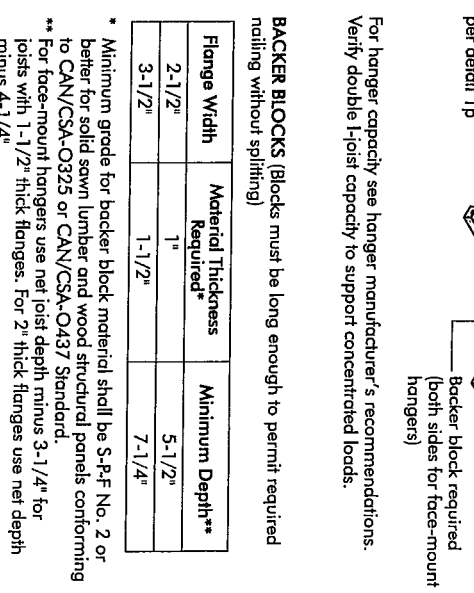
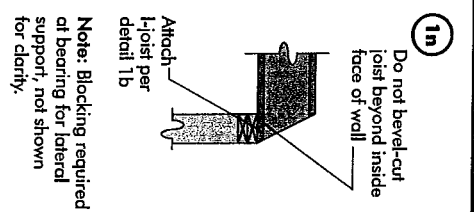
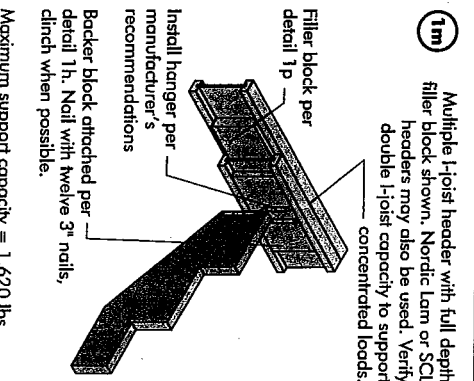
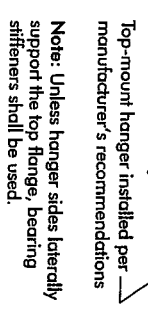
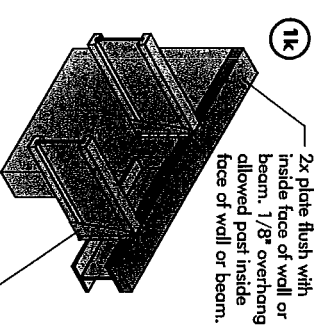
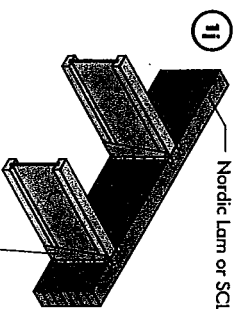
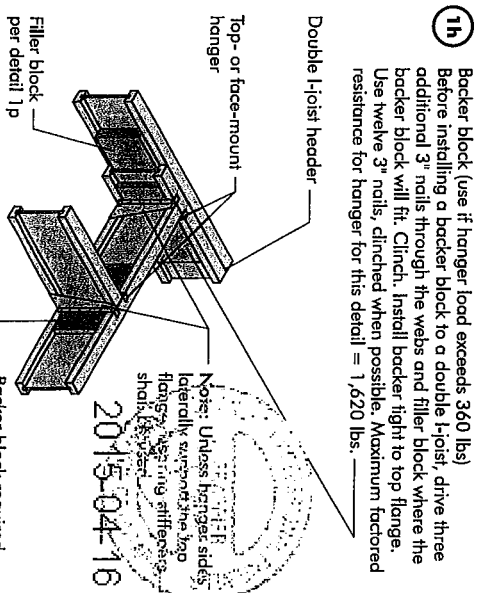
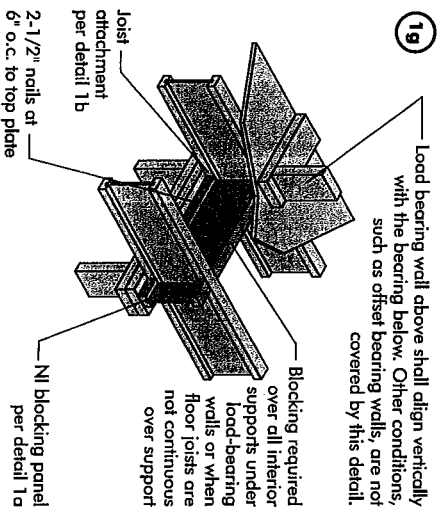
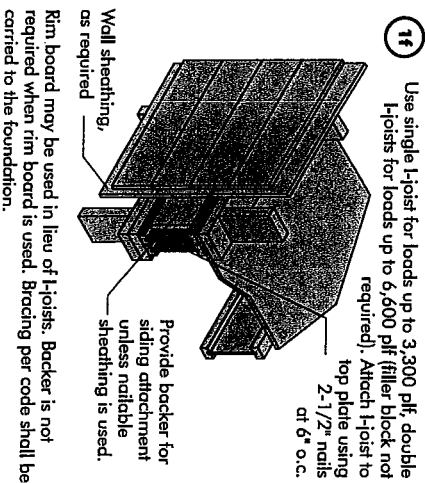
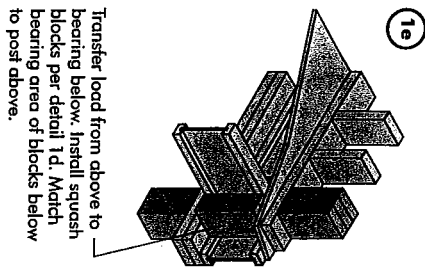
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pH)
NI rim joist per detail 1a	Minimum 1-3/4"

Attach I-joist per detail 1b
Minimum 1-3/4" bearing required



Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

Provide lateral bracing per detail 1a, 1b, or 1c



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

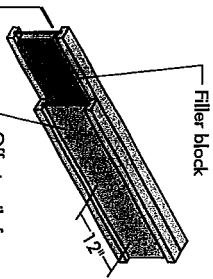
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-Q437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

Notes:

- Support back of I-joist web during nailing to prevent damage to web/flange connection.
- Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

1p

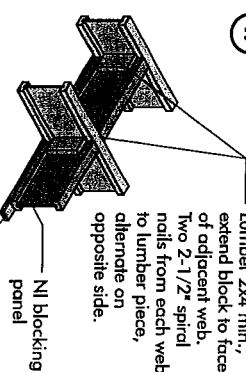


1/8" to 1/4" gap between top flange and filler block

FILLER BLOCK REQUIREMENTS FOR DOUBLE-I-JOIST CONSTRUCTION

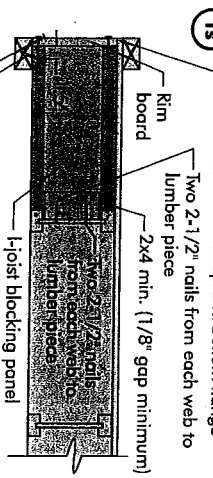
Flange Size	Joist Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2" x 11-7/8" x 14"	2-1/8" x 6" x 2-1/8" x 8" x 2-1/8" x 10" x 2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2" x 11-7/8" x 14"	3" x 6" x 3" x 8" x 3" x 10" x 3" x 12"
3-1/2" x 2"	11-7/8" x 14" x 16"	3" x 7" x 3" x 9" x 3" x 11"

1t



Optional: Minimum 1x4 inch strip applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

1s

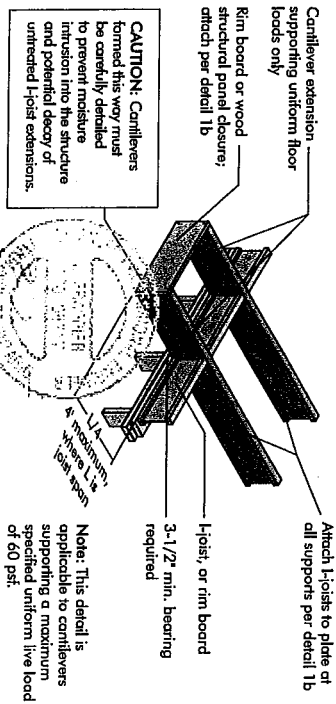


Notes:

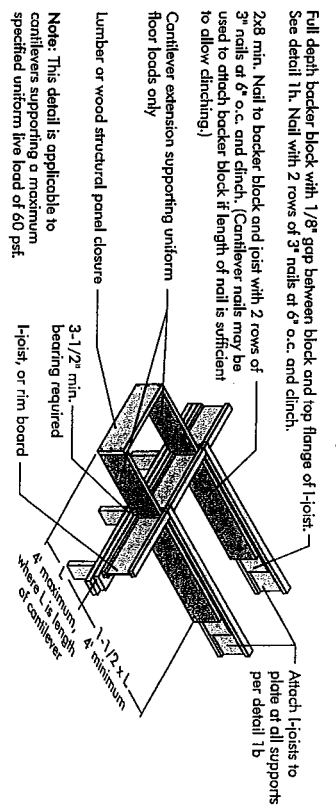
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a) I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

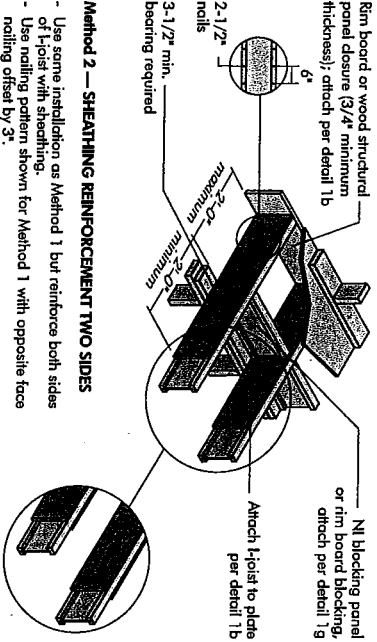


3b) LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

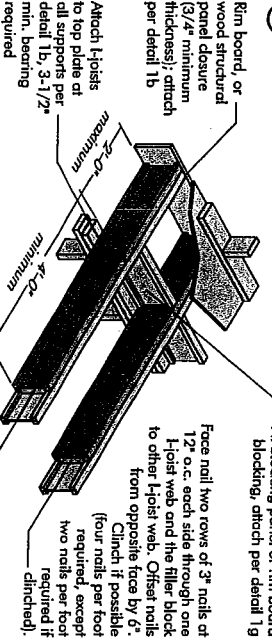


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of joist with sheathing.
- Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

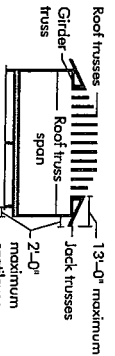
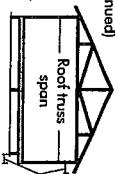
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

4b) Alternate Method 2 — DOUBLE I-JOIST



Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange widths greater than 3 inches place an additional row of 3" nails along the centreline of the reinforcing panel from each side. Clinch when possible.

FIGURE 4 (continued)
See table below for NI reinforcement requirements of cantilever.



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

CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS				ROOF JOINTING (UNFACTORED)				ROOF JOINTING (UNFACTORED)			
	LL = 30 psf, DL = 15 psf	LL = 40 psf, DL = 15 psf	LL = 50 psf, DL = 15 psf	LL = 60 psf, DL = 15 psf	LL = 30 psf, DL = 15 psf	LL = 40 psf, DL = 15 psf	LL = 50 psf, DL = 15 psf	LL = 60 psf, DL = 15 psf	LL = 30 psf, DL = 15 psf	LL = 40 psf, DL = 15 psf	LL = 50 psf, DL = 15 psf	LL = 60 psf, DL = 15 psf
JOIST SPACING (in.)	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
24	N	N	N	N	N	N	N	N	N	N	N	N
20	N	N	N	N	N	N	N	N	N	N	N	N
18	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N	N	N	N	N
12	N	N	N	N	N	N	N	N	N	N	N	N
10	N	N	N	N	N	N	N	N	N	N	N	N
8	N	N	N	N	N	N	N	N	N	N	N	N
6	N	N	N	N	N	N	N	N	N	N	N	N
4	N	N	N	N	N	N	N	N	N	N	N	N
2	N	N	N	N	N	N	N	N	N	N	N	N

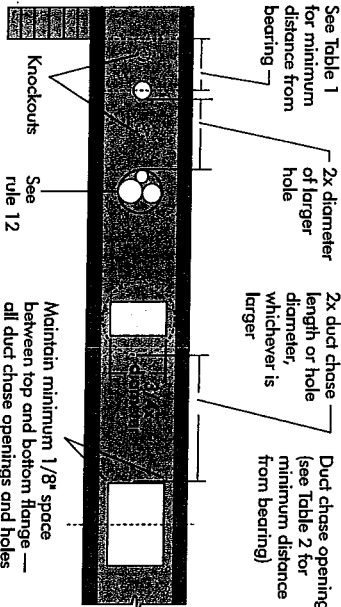
1. N = No reinforcement required.
2. NI = NI reinforced with 3/4" wood structural panel on one side only.
3. NI = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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



Knockouts are prescored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on center along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut the web.
Holes in webs should be cut with a sharp saw.

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

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

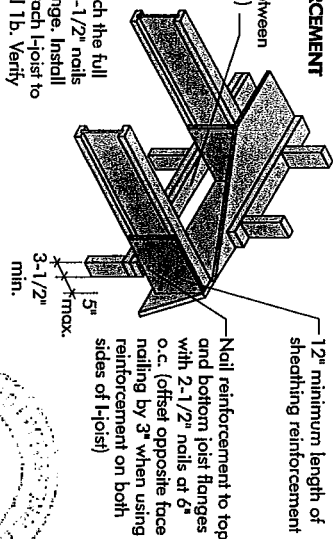
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in.)												Span adjustment Factor		
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4		11	12
10	2	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1
12	2	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
14	2	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
16	2	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
18	2	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
20	2	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6
22	2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
24	2	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
26	2	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
28	2	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0
30	2	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1
32	2	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
34	2	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3
36	2	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
38	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5
40	2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6
42	2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7
44	2	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
46	2	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
48	2	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
50	2	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1
52	2	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2
54	2	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3
56	2	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4
58	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5
60	2	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6
62	2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7
64	2	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8
66	2	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9
68	2	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
70	2	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1
72	2	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
74	2	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3
76	2	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4
78	2	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5
80	2	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6
82	2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7
84	2	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8
86	2	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
88	2	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
90	2	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1
92	2	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2
94	2	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3
96	2	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4
98	2	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5
100	2	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6
102	2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7
104	2	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8
106	2	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9
108	2	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0
110	2	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1
112	2	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2
114	2	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3
116	2	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4
118	2	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5
120	2	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6
122	2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7
124	2	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8
126	2	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9
128	2	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0
130	2	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1
132	2	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2
134	2	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3
136	2	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4
138	2	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5
140	2	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6
142	2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7
144	2	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8
146	2	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9
148	2	7.6	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0
150	2	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1
152	2	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2
154	2	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3
156	2	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4
158	2	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5
160	2	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6
162	2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7
164	2	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8
166	2	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9
168	2	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0
170	2	8.7	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1
172	2	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2
174	2	8.9	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3
176	2	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4
178	2	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5
180	2	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6
182	2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7
184	2	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8
186	2	9.5	9.6	9.7	9.8	9.9	10.									

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

5a SHEATHING REINFORCEMENT

Provide full depth blocking between joists over support (not shown)

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

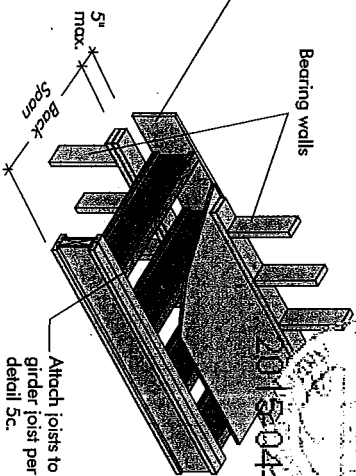


5b SET-BACK DETAIL

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

Notes:

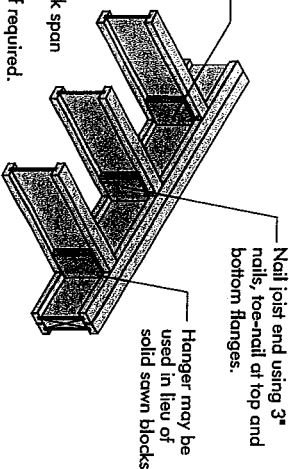
- Provide full depth blocking between joists over support (not shown for clarity)
- Attach I-joist to plate at all supports per detail 1b.
- 3-1/2" minimum I-joist bearing required.



5c SET-BACK CONNECTION

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

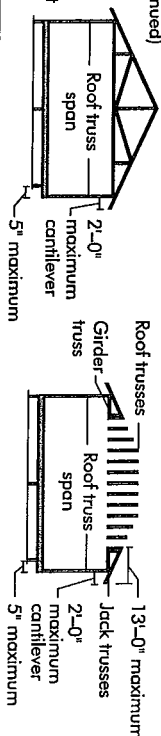
Alternate for opposite side.



- Notes:
- Verify girder joist capacity if the back span exceeds the joist spacing.
 - Attach double I-joist per detail 1p, if required.

FIGURE 5 (continued)

See table below for NI reinforcement requirements at cantilever.



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				LL = 50 psf, DL = 15 psf			
		LL = 30 psf, DL = 15 psf				JOIST SPACING (in.)			
		12	16	19.2	24	12	16	19.2	24
12	24	X	X	X	X	X	X	X	X
12	30	X	X	X	X	X	X	X	X
12	36	X	X	X	X	X	X	X	X
12	42	X	X	X	X	X	X	X	X
14	24	X	X	X	X	X	X	X	X
14	30	X	X	X	X	X	X	X	X
14	36	X	X	X	X	X	X	X	X
14	42	X	X	X	X	X	X	X	X
16	24	X	X	X	X	X	X	X	X
16	30	X	X	X	X	X	X	X	X
16	36	X	X	X	X	X	X	X	X
16	42	X	X	X	X	X	X	X	X

1. N = No reinforcement required.
2. NI = NI reinforced with 3/4" wood structural panel on one side only.
3. NI = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. Try a deeper joist or closer spacing.
5. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
6. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
7. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
8. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
9. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

RIM BOARD INSTALLATION DETAILS

- ## FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

IMPORTANT NOTE:

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

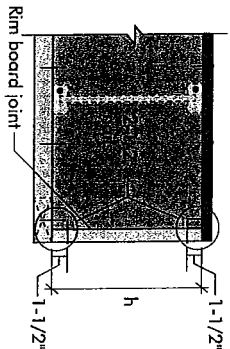
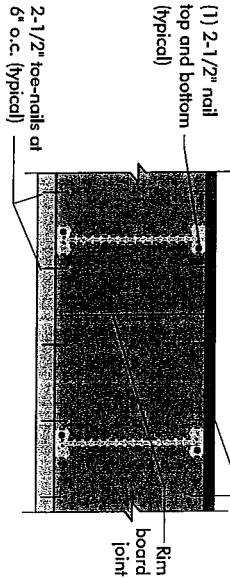
RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

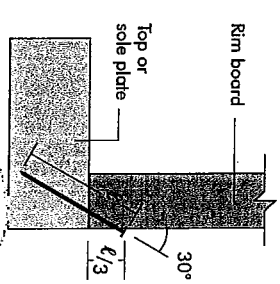
Rim board Joint Between Floor Joists

2-1/2" nails at 6" o.c. (typical)

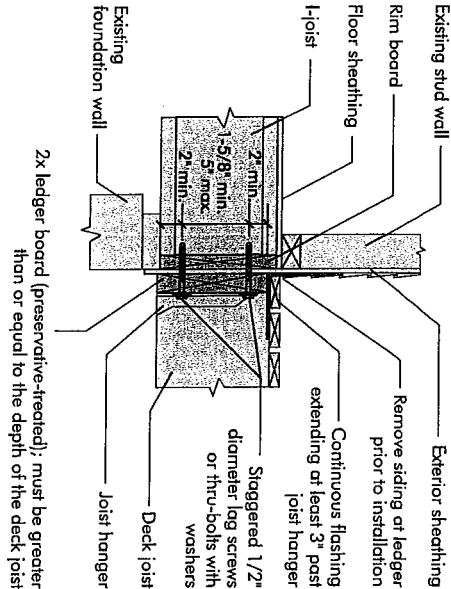
Rim board joint at Corner



**8b TOE-NAIL CONNECTION
AT RIM BOARD**



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



2x ledger board (preservative-treated); must be greater than or equal to the depth of the deck joist

2019-04-16

PRODUCT WARRANTY

Chemtaro Chlorbromane guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Chemtron Chibogmas warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

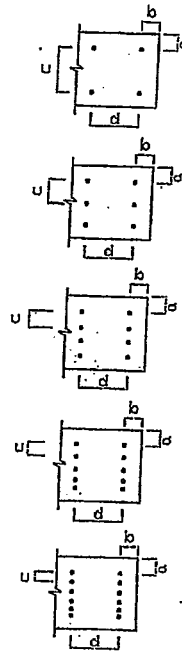


MICRO CITY ENGINEERING SERVICES INC.

TEL: (519) 287 - 2242

R.R. #1, P.O. BOX 61, GLENCOE, ONTARIO, N0L 1M0

LVL HEADER AND CONVENTIONAL LUMBER NAILING DETAILS		
DETAIL NUMBER	NUMBER OF ROWS	SPACING (INCHES o/c) "d"
A	2	12
B	2	8
C	2	6
D	2	4
1A	3	12
1B	3	8
1C	3	6
1D	3	4
2A	4	12
2B	4	8
2C	4	6
2D	4	4
3A	5	12
3B	5	8
3C	5	6
3D	5	4
4A	6	12
4B	6	8
4C	6	6
4D	6	4



NOTES:

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



DWG NO TAMN/1001.14

STRUCTURAL
COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING
DETAIL # X SEE
DWG #TAMN1001-14