

FROM PLAN DATED: NOV. 2015

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-10C-15

ELEVATION: A

LOT:

CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
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.

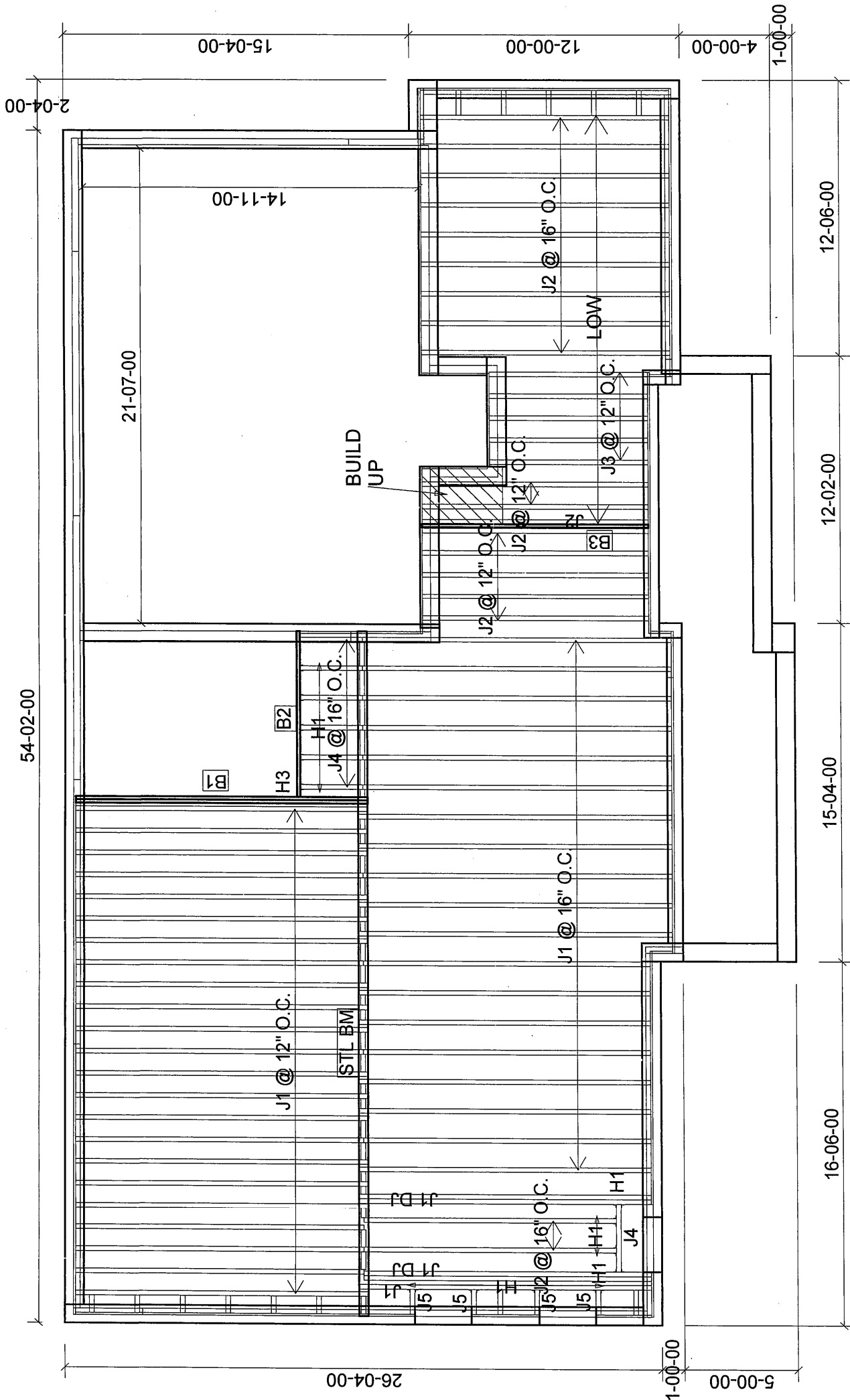
REFER TO THE NORDIC  
INSTALLATION GUIDE FOR PROPER  
STORAGE AND INSTALLATION.

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: 11/09/2017

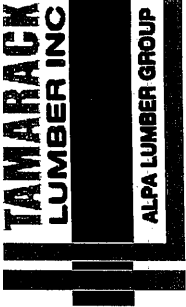
# 1st FLOOR



Products				Connector Summary	
PlotID	Length	Product	Plies	Net Qty	
J1	14-00-00	9 1/2" NI-40x	1	43	Qty
J1 DJ	14-00-00	9 1/2" NI-40x	2	4	Manuf
J2	12-00-00	9 1/2" NI-40x	1	19	Product
J3	8-00-00	9 1/2" NI-40x	1	5	
J4	4-00-00	9 1/2" NI-40x	1	7	
J5	2-00-00	9 1/2" NI-40x	1	4	
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	
B3	12-00-00	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	

Qty	Manuf	Product
5	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H3	HUS1.81/10

Town of Innisfil Certified Model  
15/02/2018 2:24:51 PM kgervais



FROM PLAN DATED: NOV. 2015

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-10C-15

ELEVATION: A

LOT:

CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
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.

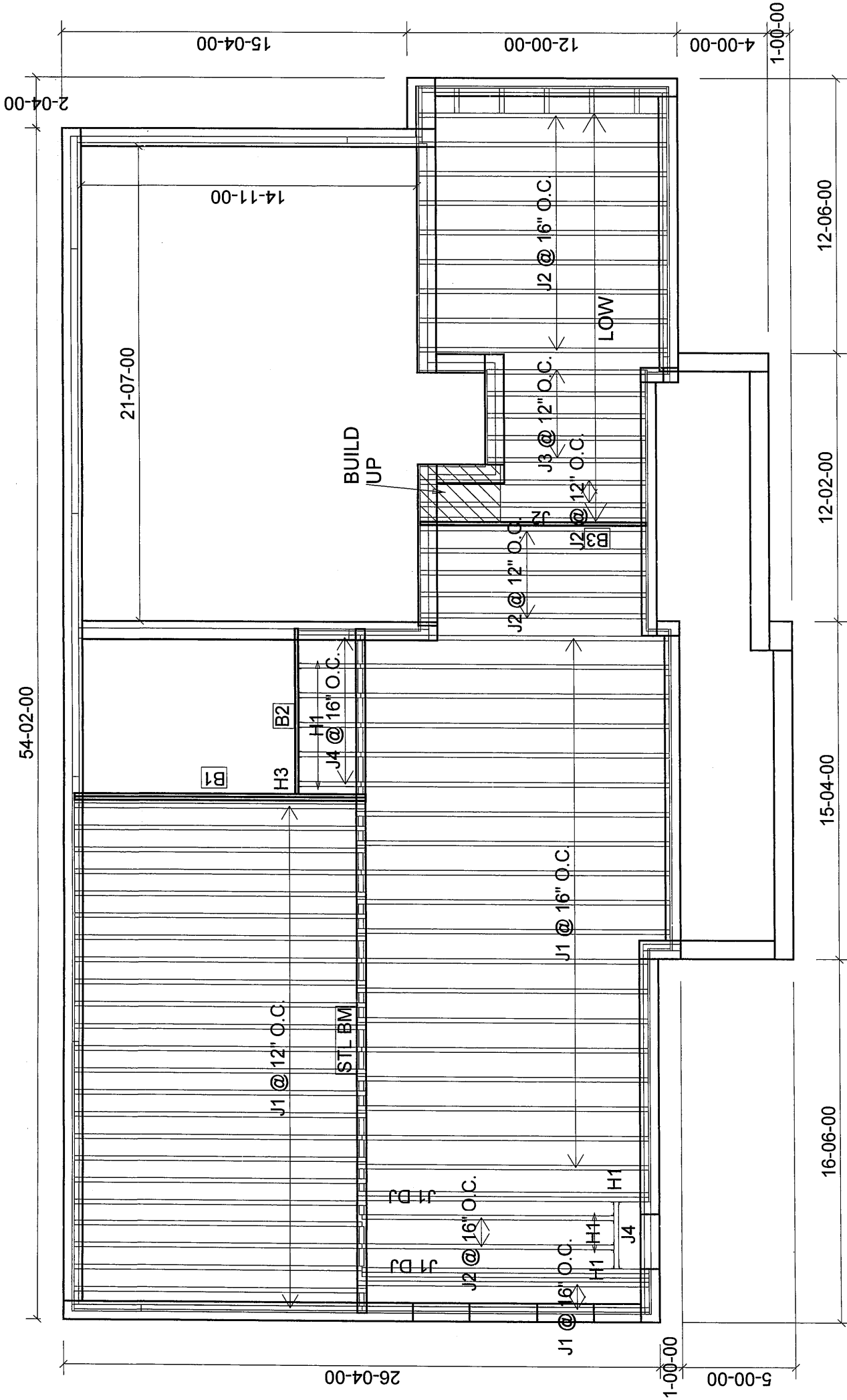
LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft²  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

# 1st FLOOR

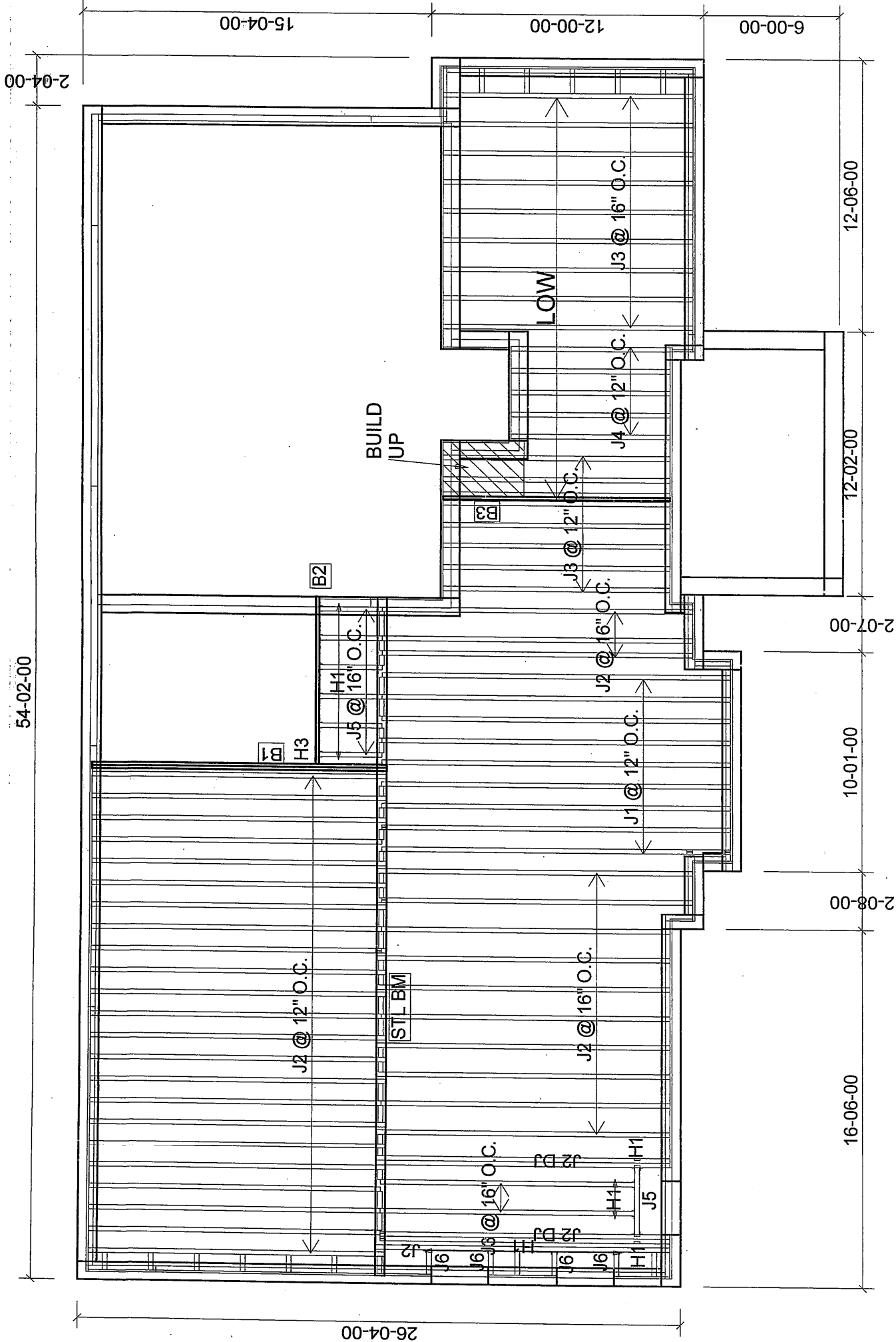
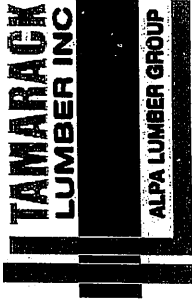
WOD



Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
1	H3	HUS1.81/10

Products			
PlotID	Length	Product	Plies Net Qty
J1	14-00-00	9 1/2" NI-40x	1 45
J1 DJ	14-00-00	9 1/2" NI-40x	2 4
J2	12-00-00	9 1/2" NI-40x	1 19
J3	8-00-00	9 1/2" NI-40x	1 5
J4	4-00-00	9 1/2" NI-40x	1 7
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2 2
B3	12-00-00	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

Town of Innisfil Certified Model  
15/02/2018 2:24:57 PM kgervais



FROM PLAN DATED: NOV. 2015

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-10C-15

ELEVATION: B

LOT:

CITY: INNISFIL, ON

SALESMAN: MARIO

DESIGNER: CZ

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

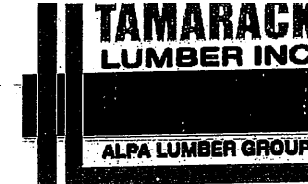
DATE: 07/09/2017

1st FLOOR

Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	9
J2	14-00-00	9 1/2" NI-40x	1	37
J2 DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	19
J4	8-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	7
J6	2-00-00	9 1/2" NI-40x	1	4
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	12-00-00	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

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H3	HUS1.81/10

Town of Innisfil Certified Model  
15/02/2018 2:25:03 PM kgervais



FROM PLAN DATED: NOV. 2015

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-10C-15

ELEVATION: B

LOT:  
CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
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.

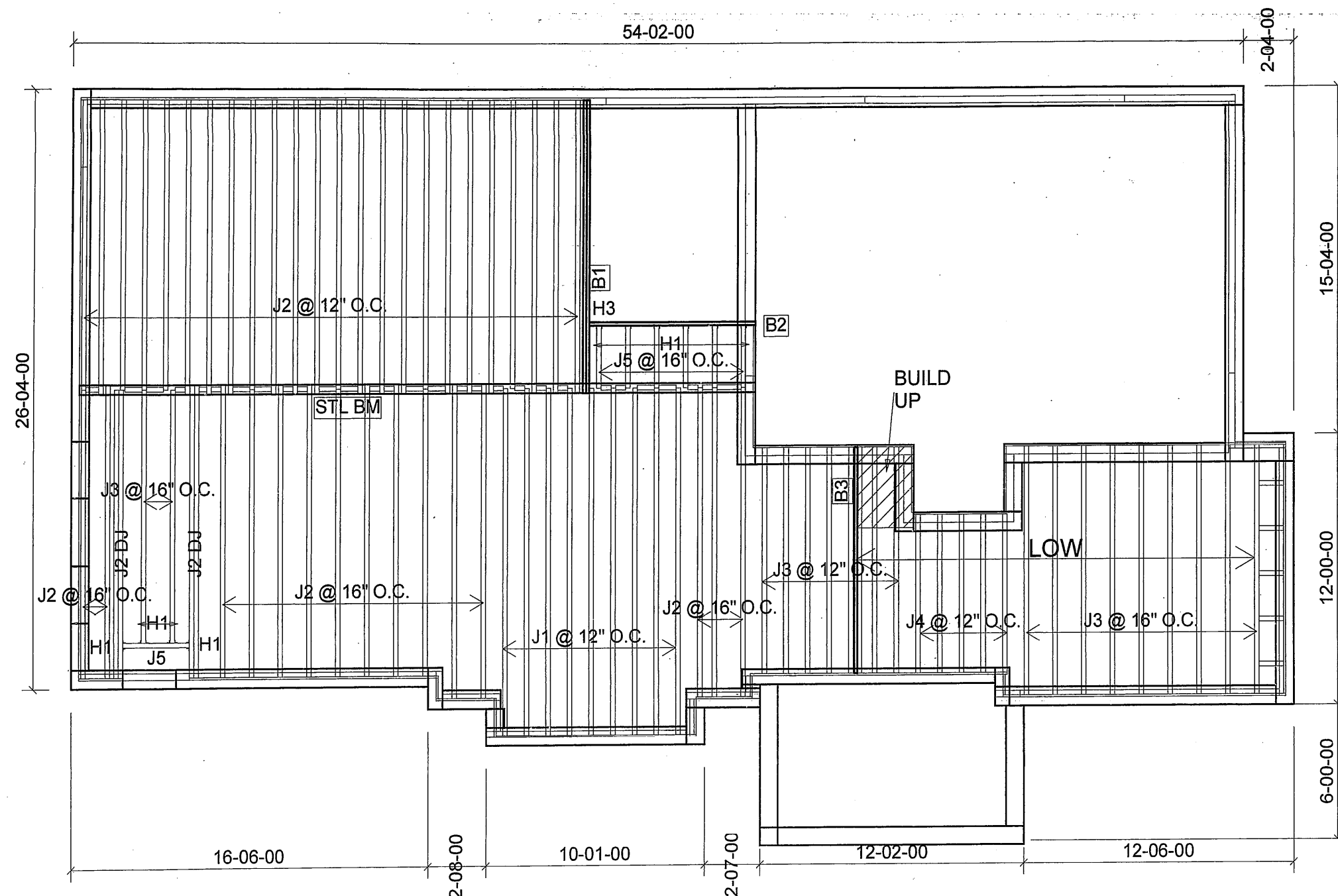
LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

1st FLOOR

WOD

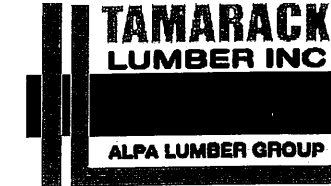


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	9
J2	14-00-00	9 1/2" NI-40x	1	39
J2 DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	19
J4	8-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	7
B1	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	12-00-00	1-3/4" 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

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
1	H3	HUS1.81/10

Town of Innisfil Certified Model  
15/02/2018 2:25:08 PM kgervais





FROM PLAN DATED: NOV. 2015

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-10C-15

ELEVATION: A

LOT:  
CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
REVISION: -

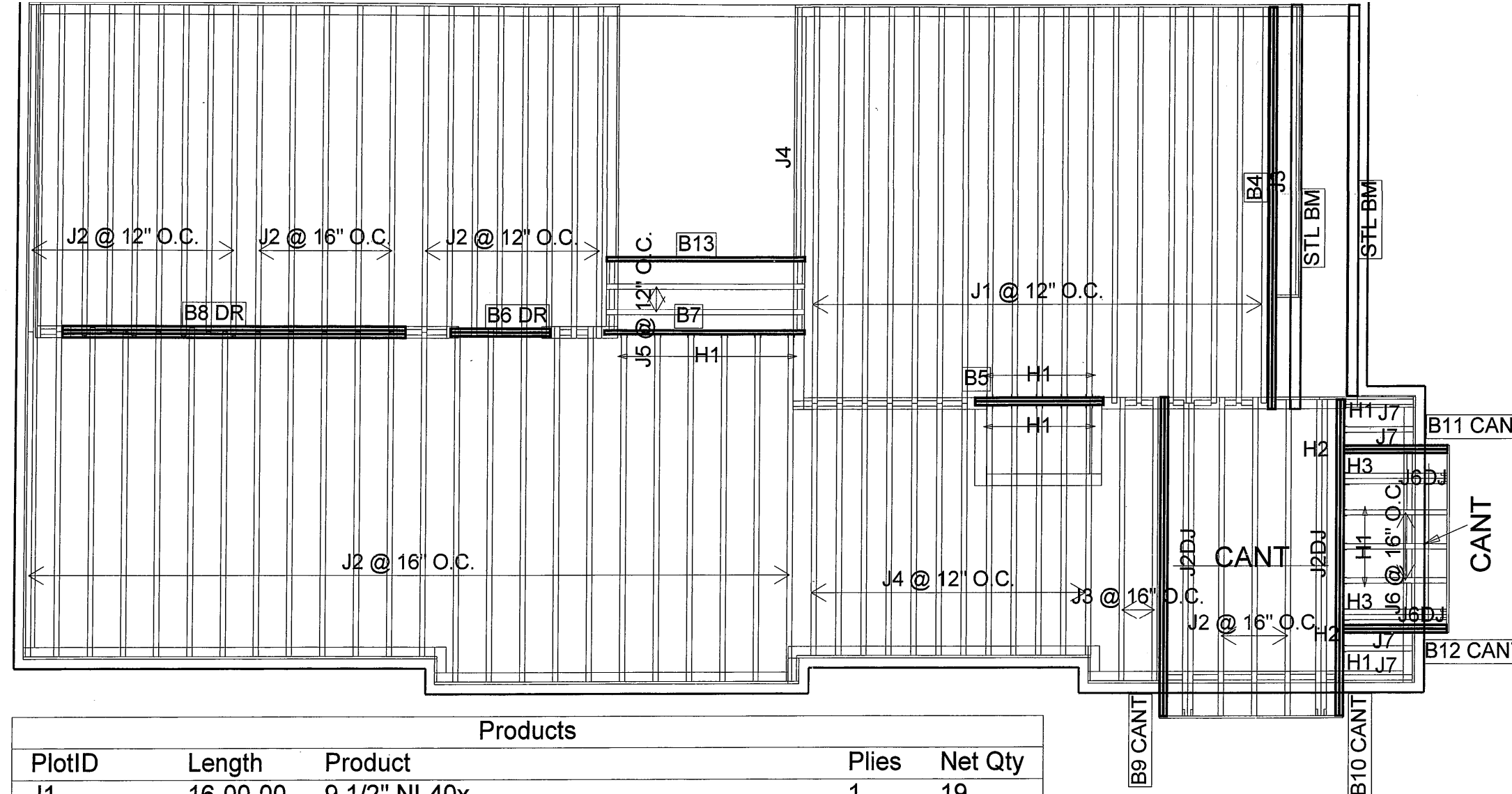
NOTES:  
CERAMIC TILE APPLICATION  
AS PER O.B.C. 9.30.6.  
SQUASH BLOCKS  
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER  
INTERIOR UNIFORM LOAD BEARING  
WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
UNDER CONCENTRATED LOADS.  
CANTILEVERED JOISTS  
REQUIRE I-JOIST BLOCKING ALONG  
BEARING AND RIMBOARD CLOSURE  
AT ENDS.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

LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	19
J2	14-00-00	9 1/2" NI-40x	1	50
J2DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	3
J4	10-00-00	9 1/2" NI-40x	1	13
J5	8-00-00	9 1/2" NI-40x	1	2
J6	6-00-00	9 1/2" NI-40x	1	3
J6DJ	6-00-00	9 1/2" NI-40x	2	4
J7	4-00-00	9 1/2" NI-40x	1	4
B4	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 CANT	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9 CANT	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11 CANT	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12 CANT	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
15	H1	IUS2.56/9.5
2	H2	HGUS410
2	H3	LF359

Town of Innisfil Certified Model  
15/02/2018 2:25:14 PM kgervais

FROM PLAN DATED: NOV. 2015

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-10C-15

ELEVATION: B

LOT:  
CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
REVISION: -

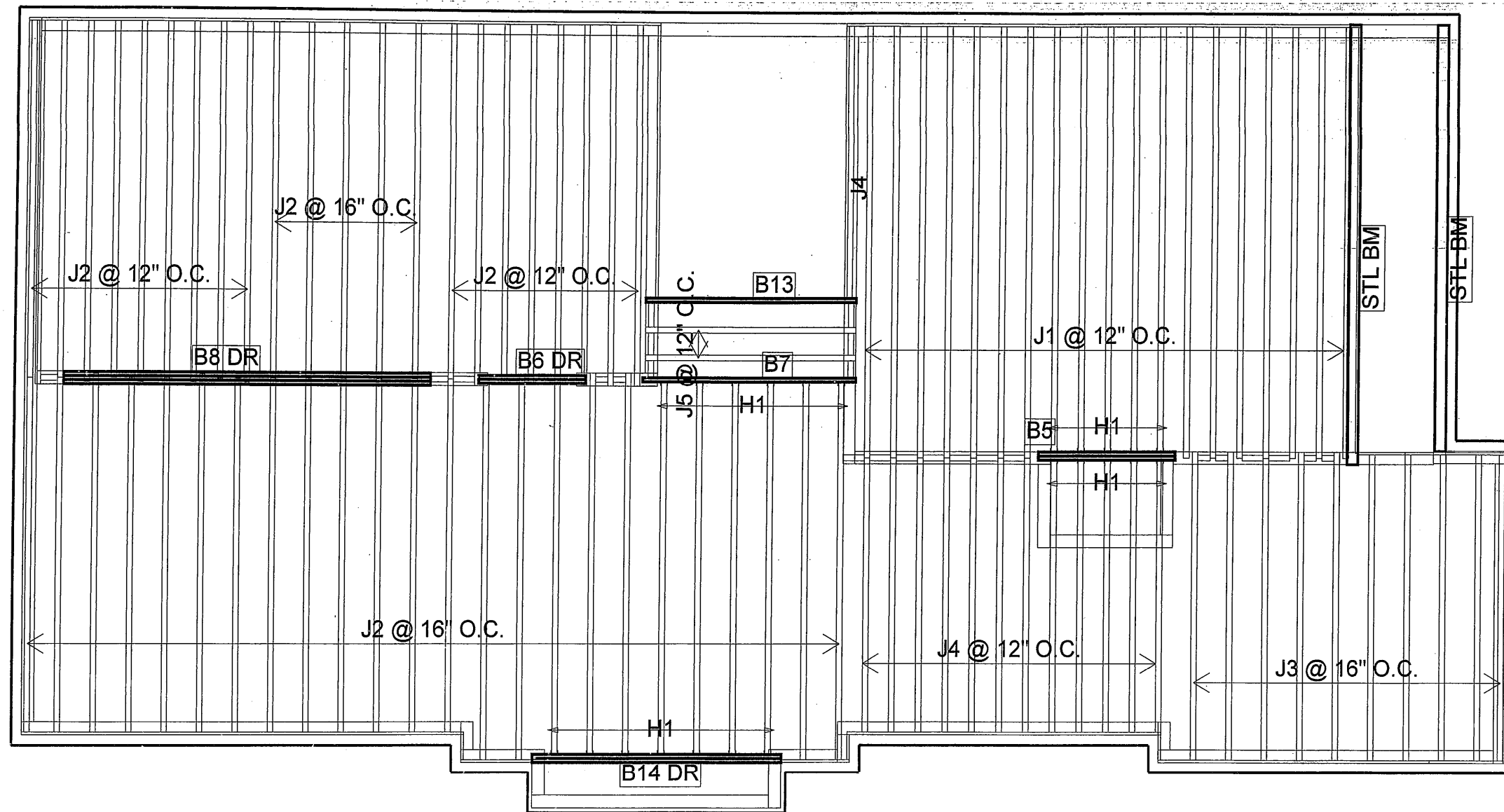
NOTES:  
CERAMIC TILE APPLICATION  
AS PER O.B.C. 9.30.6.  
SQUASH BLOCKS  
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER  
INTERIOR UNIFORM LOAD BEARING  
WALLS.  
MULTIPLE SQUASH BLOCKS REQ'D  
UNDER CONCENTRATED LOADS.  
CANTILEVERED JOISTS  
REQUIRE I-JOIST BLOCKING ALONG  
BEARING AND RIMBOARD CLOSURE  
AT ENDS.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

LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

**2nd FLOOR**



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	19
J2	14-00-00	9 1/2" NI-40x	1	47
J3	12-00-00	9 1/2" NI-40x	1	10
J4	10-00-00	9 1/2" NI-40x	1	13
J5	8-00-00	9 1/2" NI-40x	1	2
B14 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6 DR	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8 DR	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
17	H1	IUS2.56/9.5

**Town of Innisfil Certified Model**  
15/02/2018 2:25:18 PM kgervais



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i1516)**

BC CALC® Design Report



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

August 2, 2016 10:52:01

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i1516)

Specifier:

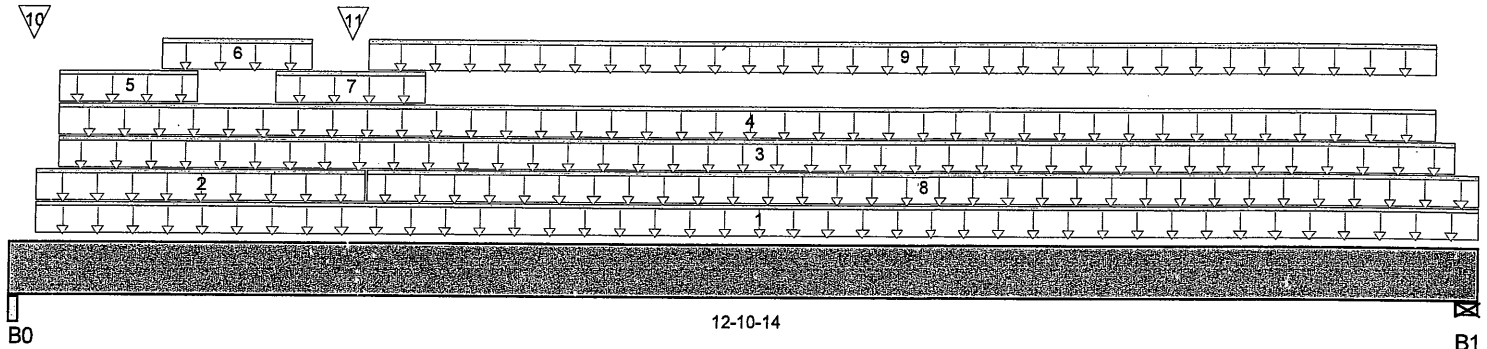
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:25:28 PM kgervais



Total Horizontal Product Length = 12-10-14

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B0, 5"	2,233 / 0	2,151 / 0		
B1, 2-3/8"	498 / 0	1,191 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-11	12-10-14	8	4			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-11	03-01-08	12				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-05-00	12-08-08		60			n/a
4	12(i409)	Unf. Lin. (lb/ft)	L	00-05-00	12-06-08		81			n/a
5	12(i409)	Unf. Lin. (lb/ft)	L	00-05-00	01-07-12	110	54			n/a
6	12(i409)	Unf. Lin. (lb/ft)	L	01-03-12	02-07-12	116	58			n/a
7	12(i409)	Unf. Lin. (lb/ft)	L	02-03-12	03-07-12	219	138			n/a
8	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-01-08	12-10-14	6				n/a
9	12(i409)	Unf. Lin. (lb/ft)	L	03-01-08	12-06-08	15	10			n/a
10	11(i398)	Conc. Pt. (lbs)	L	00-02-04	00-02-04	693	385			n/a
11	B2(i1543)	Conc. Pt. (lbs)	L	02-11-12	02-11-12	1,086	578			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,180 ft-lbs	25,408 ft-lbs	40.1%	1	03-09-12
End Shear	4,135 lbs	11,571 lbs	35.7%	1	01-02-08
Total Load Defl.	L/369 (0.404")	0.621"	65.1%	4	06-04-02
Live Load Defl.	L/945 (0.158")	0.414"	38.1%	5	05-10-01
Max Defl.	0.404"	n/a	n/a	4	06-04-02
Span / Depth	15.7	n/a	n/a		00-00-00

**Bearing Supports**

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



p612

DWG NO. TAM45361-17  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i15

Specifier:

Designer:

Company:

Misc:

B0	Beam	5" x 3-1/2"	6,039 lbs	80.8%	28.3%	Unspecified
B1	Wall/Plate	2-3/8" x 3-1/2"	1,668 lbs	72.3%	25.3%	Unspecified

### Notes

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

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

Calculations assume Member is Fully Braced.

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

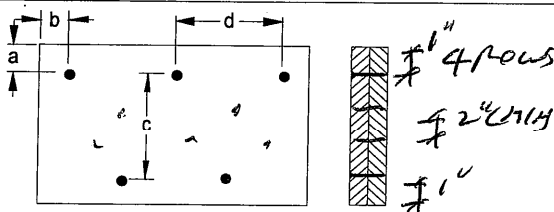
Deflections less than 1/8" were ignored in the results.

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.

### Connection Diagram



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

Calculated Side Load = 188.9 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

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

Town of Innisfil Certified Model

15/02/2018 2:25:32 PM kgervais



DWG NO. TAM 4536-17  
STRUCTURAL  
COMPONENT ONLY



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2405

Specifier:

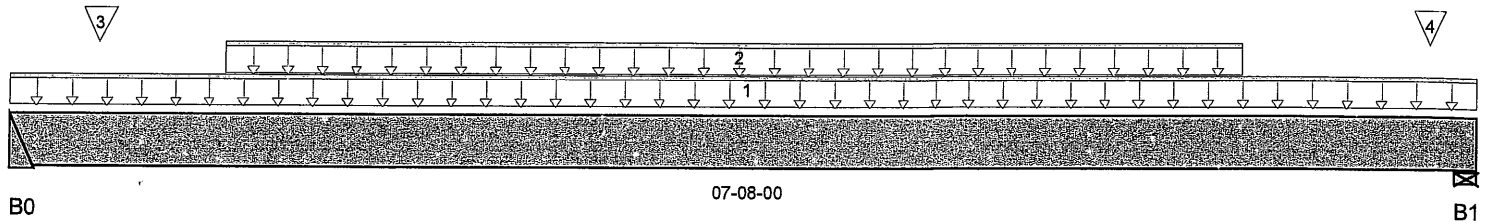
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:25:38 PM kgervais



Total Horizontal Product Length = 07-08-00

## Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,092 / 0	563 / 0		
B1, 5-1/2"	1,779 / 0	1,739 / 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	07-08-00	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-01-08	06-05-08	58	29			n/a
3	J5(i2247)	Conc. Pt. (lbs)	L	00-05-08	00-05-08	57	28			n/a
4	-	Conc. Pt. (lbs)	L	07-05-01	07-05-01	662	1,161			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,088 ft-lbs	12,704 ft-lbs	32.2%	1	03-07-08
End Shear	1,771 lbs	5,785 lbs	30.6%	1	00-11-08
Total Load Defl.	L/999 (0.107")	n/a	n/a	4	03-08-08
Live Load Defl.	L/999 (0.071")	n/a	n/a	5	03-08-08
Max Defl.	0.107"	n/a	n/a	4	03-08-08
Span / Depth	9.1	n/a	n/a		00-00-00

## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	2,342 lbs	n/a	54.8%	HUS1.81/10
B1 Wall/Plate	5-1/2" x 1-3/4"	4,842 lbs	94.2%	41.2%	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.

Hanger Manufacturer: Unassigned

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.

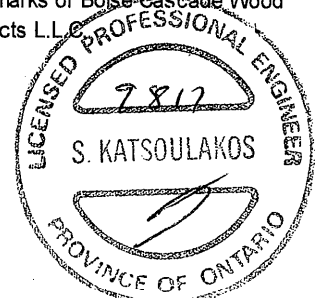
CONFORMS TO OBC 2012

DWG NO. TAM 45362-17  
STRUCTURAL  
COMPONENT ONLY

## Disclosure

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





Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i1540

Specifier:

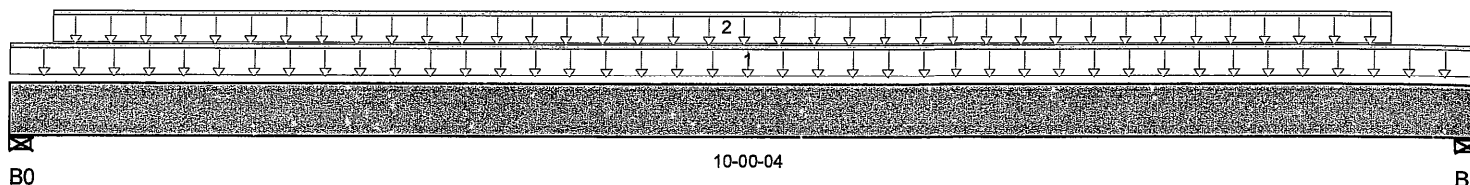
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:25:45 PM kgervais



Total Horizontal Product Length = 10-00-04

## Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	138 / 0	371 / 0		
B1, 4-3/8"	142 / 0	367 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-00-04	28	14			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-03-07	09-05-06		60			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,264 ft-lbs	8,258 ft-lbs	15.3%	0	04-11-02
End Shear	493 lbs	3,761 lbs	13.1%	0	00-11-14
Total Load Defl.	L/999 (0.081")	n/a	n/a	4	04-11-02
Live Load Defl.	L/999 (0.021")	n/a	n/a	5	04-11-02
Max Defl.	0.081"	n/a	n/a	4	04-11-02
Span / Depth	12.1	n/a	n/a		00-00-00

## Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of BOISE 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 2-3/8" x 1-3/4"	519 lbs	45%	15.8%	Unspecified
B1	Wall/Plate 4-3/8" x 1-3/4"	514 lbs	24.2%	8.5%	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

DWG NO. TAM 45363-17  
 STRUCTURAL  
 COMPONENT ONLY





Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B4(i1440)**

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

August 2, 2016 10:52:01

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B4(i1440)

Specifier:

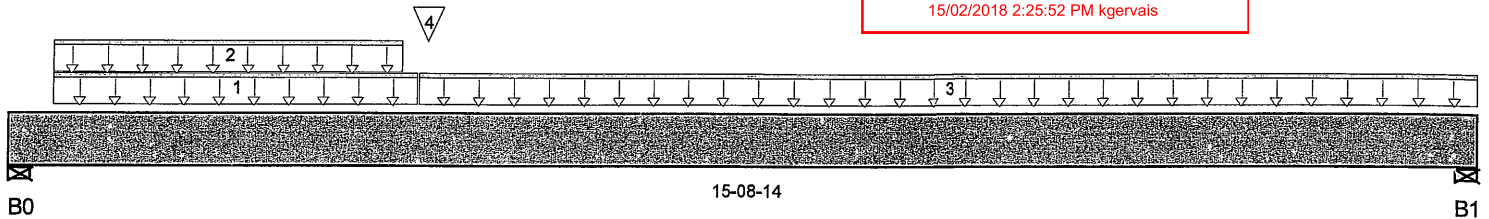
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:25:52 PM kgervais



Total Horizontal Product Length = 15-08-14

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	431 / 0	821 / 0	997 / 0	
B1, 4-3/8"	283 / 0	327 / 0	259 / 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	00-05-08	04-04-08	8	4			n/a
2 User Load	Unf. Lin. (lb/ft)	L	00-05-08	04-02-10	44	140	152		n/a
3 FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-04-08	15-08-14	28	14			n/a
4 User Load	Conc. Pt. (lbs)	L	04-05-10	04-05-10	198	294	684		n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,538 ft-lbs	25,408 ft-lbs	29.7%	13	04-05-10
End Shear	2,375 lbs	11,571 lbs	20.5%	13	01-03-00
Total Load Defl.	L/471 (0.383")	0.752"	51%	45	07-01-14
Live Load Defl.	L/781 (0.231")	0.501"	46.1%	61	07-01-14
Max Defl.	0.383"	n/a	n/a	45	07-01-14
Span / Depth	19	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"	2,737 lbs	33.3%	11.7%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	962 lbs	14.7%	5.2%	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.

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 OBC 2012**

p612

OWNED BY 4536417  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B4(i144

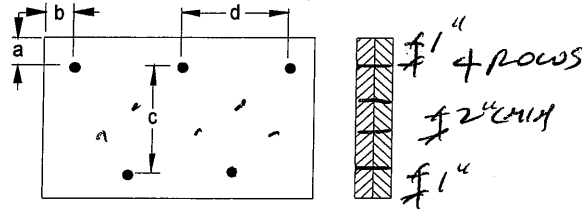
Specifier:

Designer:

Company:

Misc:

### Connection Diagram



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

Calculated Side Load = 0.1 lb/ft

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

Connectors are: 16d 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™, 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.

**Town of Innisfil Certified Model**

15/02/2018 2:25:56 PM kgervais



DWG NO. TAM 4536417  
STRUCTURAL  
COMPONENT ONLY





Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B5(i1651)**

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

August 2, 2016 10:52:02

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B5(i1651)

Specifier:

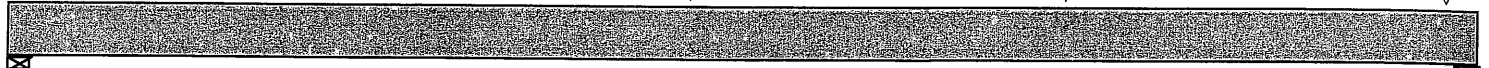
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:26:03 PM kgervais



B0

05-01-12

B1

Total Horizontal Product Length = 05-01-12

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	808 / 125	367 / 0		
B1, 6-1/4"	1,135 / 139	524 / 0		

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	-	Conc. Pt. (lbs)	L	01-00-07	01-00-07	466	204			n/a
2	-	Conc. Pt. (lbs)	L	01-00-07	01-00-07	-51				n/a
3	J5(i1424)	Conc. Pt. (lbs)	L	01-07-00	01-07-00	60				n/a
4	J5(i1424)	Conc. Pt. (lbs)	L	01-07-00	01-07-00	-51				n/a
5	-	Conc. Pt. (lbs)	L	02-04-09	02-04-09	468	204			n/a
6	-	Conc. Pt. (lbs)	L	02-04-09	02-04-09	-51				n/a
7	-	Conc. Pt. (lbs)	L	03-08-08	03-08-08	468	204			n/a
8	-	Conc. Pt. (lbs)	L	03-08-08	03-08-08	-51				n/a
9	-	Conc. Pt. (lbs)	L	05-00-07	05-00-07	477	204			n/a
10	-	Conc. Pt. (lbs)	L	05-00-07	05-00-07	-60				n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,864 ft-lbs	25,408 ft-lbs	7.3%	1	02-04-08
End Shear	1,370 lbs	11,571 lbs	11.8%	1	03-10-00
Total Load Defl.	L/999 (0.008")	n/a	n/a	6	02-06-06
Live Load Defl.	L/999 (0.006")	n/a	n/a	8	02-06-06
Max Defl.	0.008"	n/a	n/a	6	02-06-06
Span / Depth	5.4	n/a	n/a		00-00-00

**Bearing Supports**

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	1,670 lbs	20.3%	7.1%	Unspecified
B1 Wall/Plate	6-1/4" x 3-1/2"	2,358 lbs	25.2%	8.8%	Unspecified

**Notes**

DWG NO. TAM 45365.17  
**STRUCTURAL**  
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B5(i165

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

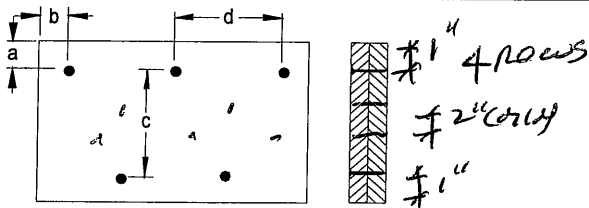
Importance Factor : Normal Part code : Part 9

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™, 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 = 1/2" c = 1 1/2"  
b minimum = 3" d = 6"

Calculated Side Load = 697.7 lb/ft

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

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

**Town of Innisfil Certified Model**

15/02/2018 2:28:38 PM kgervais



DWG NO. TAM 45365-17  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

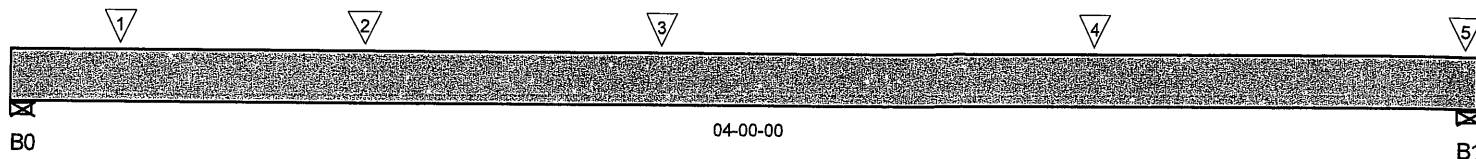
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B6

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 04-00-00

## Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,035 / 0	535 / 0		
B1, 4"	1,035 / 0	535 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	J2(i1216)	Conc. Pt. (lbs)	L	00-03-08	00-03-08	357	178			n/a
2	J2(i1218)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	249	124			n/a
3	-	Conc. Pt. (lbs)	L	01-09-02	01-09-02	606	302			n/a
4	-	Conc. Pt. (lbs)	L	02-11-08	02-11-08	609	304			n/a
5	J2(i1294)	Conc. Pt. (lbs)	L	03-11-08	03-11-08	249	124			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,681 ft-lbs	25,408 ft-lbs	6.6%	1	01-11-08
End Shear	1,544 lbs	11,571 lbs	13.3%	1	02-10-08
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-00-03
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-00-03
Max Defl.	0.005"	n/a	n/a	4	02-00-03
Span / Depth	4.4	n/a	n/a		00-00-00

**Town of Innisfil Certified Model**

15/02/2018 2:28:42 PM kgervais

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	2,221 lbs	24.4%	13%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	2,222 lbs	24.4%	13%	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 OBC 2012**


P61/2

**DWG NO. TAM 45366-17**  
**STRUCTURAL**  
**COMPONENT ONLY**



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

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

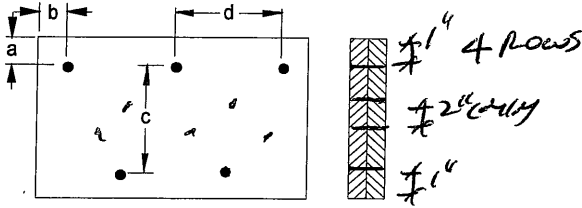
Specifier:

Designer:

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

**Town of Innisfil Certified Model**

15/02/2018 2:28:47 PM kgervais



DWG NO. TAM 45366-17  
STRUCTURAL  
COMPONENT ONLY



## BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i1553)

Specifier:

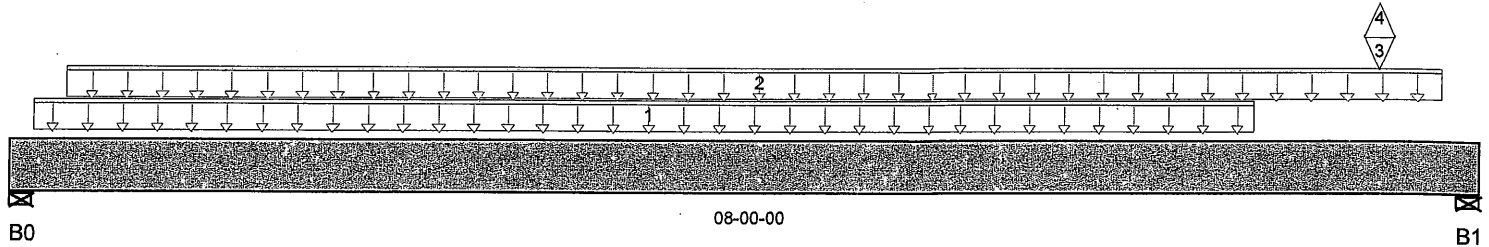
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:28:50 PM kgervais



Total Horizontal Product Length = 08-00-00

### Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 6-1/2"	1,112 / 0	574 / 0		
B1, 5-1/2"	1,102 / 2	568 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-01-08	06-09-08	270	134			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-03-09	07-09-11	16	8			n/a
3	J2(i1529)	Conc. Pt. (lbs)	L	07-05-08	07-05-08	298	148			n/a
4	J2(i1529)	Conc. Pt. (lbs)	L	07-05-08	07-05-08	-2				n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,843 ft-lbs	12,704 ft-lbs	30.2%	1	03-05-08
End Shear	1,818 lbs	5,785 lbs	31.4%	1	01-04-00
Total Load Defl.	L/999 (0.099")	n/a	n/a	6	04-00-08
Live Load Defl.	L/999 (0.066")	n/a	n/a	8	04-00-08
Max Defl.	0.099"	n/a	n/a	6	04-00-08
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	6-1/2" x 1-3/4"	2,386 lbs	49.1%	17.2%	Unspecified
B1	5-1/2" x 1-3/4"	2,363 lbs	57.5%	20.1%	Unspecified

### Notes

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

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

Calculations assume 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.

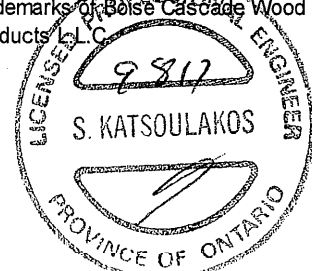
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DWG NO. TAM 45367-17  
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 Ltd. C.



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

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

Specifier:

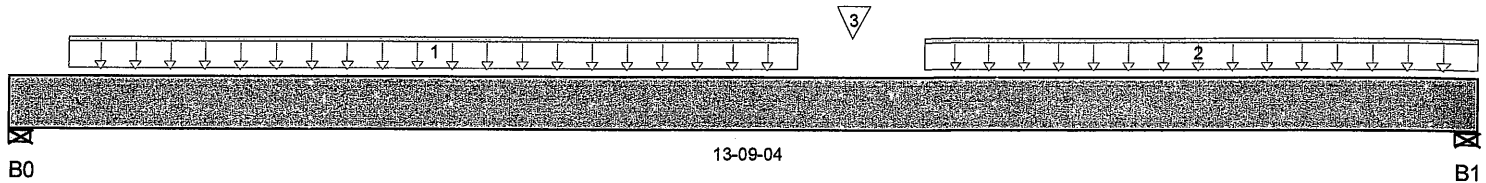
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:28:54 PM kgervais



Total Horizontal Product Length = 13-09-04

**Reaction Summary (Down / Uplift) (lbs)**

Bearing	Live	Dead	Snow	Wind
B0, 4"	3,211 / 0	1,730 / 0		
B1, 4"	3,503 / 0	1,877 / 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	00-06-08	07-04-08	499	250			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	08-06-08	13-09-04	512	256			n/a
3	-	Conc. Pt. (lbs)	L	07-10-08	07-10-08	627	314			n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	23,832 ft-lbs	60,415 ft-lbs	39.4%	1	06-10-08
End Shear	6,630 lbs	21,696 lbs	30.6%	1	01-03-14
Total Load Defl.	L/438 (0.362")	0.661"	54.7%	4	06-10-08
Live Load Defl.	L/674 (0.236")	0.441"	53.4%	5	06-10-08
Max Defl.	0.362"	n/a	n/a	4	06-10-08
Span / Depth	13.4	n/a	n/a		00-00-00

**Bearing Supports**

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 5-1/4"	6,980 lbs	51.2%	27.2%	Unspecified
B1 Wall/Plate	4" x 5-1/4"	7,601 lbs	55.7%	29.7%	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 OBC 2012**


p614

 DWG NO. TAM 4536817  
**STRUCTURAL**  
 COMPONENT ONLY



# BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

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

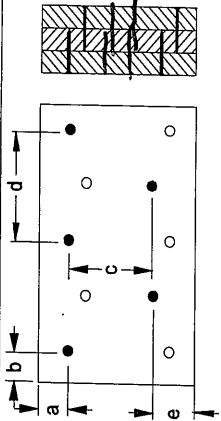
Specifier:

Designer:

Company:

Misc:

## Connection Diagram



4 rows

a minimum = 1"

c = 6-7/8"

b minimum = 3"

d = 6"

e minimum = 3"

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

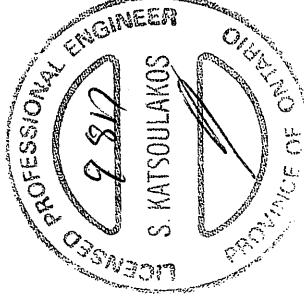
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods.

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.

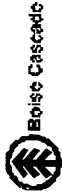
BC CALO®, BC FRAMER®, AUS™, ALLJOIST®, BC RIM BOARD™, BO®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

Town of Innisfil Certified Model

15/02/2018 2:28:59 PM kgervais



page  
DWG NO. YAM 4536217  
STRUCTURAL  
COMPONENT ONLY



# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9 CANT(11642)

BC CALCO® Design Report

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

August 2, 2016 10:52:02



Build 4340

File Name: S32-10C-15.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9 CANT\

Address:

Specifier:

City, Province, Postal Code:

Designer:

Customer:

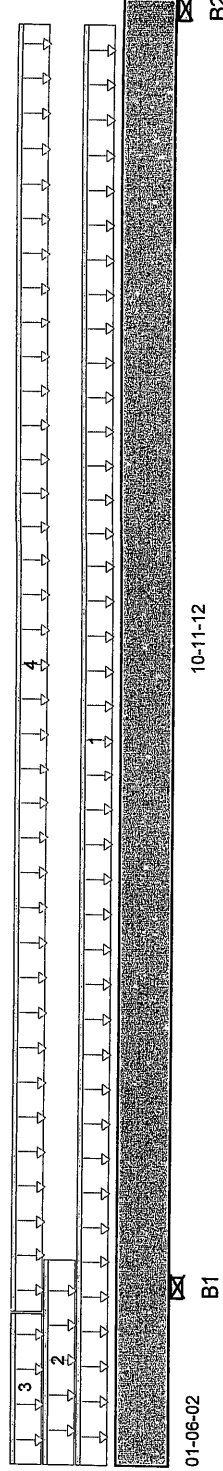
Company:

Code reports:

CCMC 12472-R

Msc:

**Town of Innisfil Certified Model**  
15/02/2018 2:29:04 PM kgervais



01-06-02

B1

10-11-12

B2

Total Horizontal Product Length = 12-05-14

## Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	264 / 0	416 / 0	280 / 0	
B2, 5-1/2"	147 / 7	111 / 0	0 / 16	

## Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-03-04	20	10			n/a
2 User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-08-14	44	140		152	n/a
3 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-03-06	6				n/a
4 FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-03-06	12-03-04	7	4			n/a

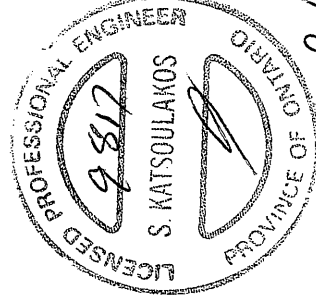
## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	853 ft-lbs	25,408 ft-lbs	3.4%	45	07-01-14
Neg. Moment	-531 ft-lbs	-25,408 ft-lbs	2.1%	49	01-06-02
Neg. Moment	-531 ft-lbs	-25,408 ft-lbs	2.1%	49	01-06-02
End Shear	284 lbs	11,571 lbs	2.5%	45	11-02-14
Cont. Shear	334 lbs	11,571 lbs	2.9%	13	02-06-06
Total Load Defl.	L/999 (0.024")	n/a	n/a	108	06-11-07
Live Load Defl.	L/999 (0.015")	n/a	n/a	160	06-09-13
Total Neg. Defl.	2xL/1,998 (-0.009")	n/a	n/a	108	00-00-00
Max Defl.	0.024"	n/a	n/a	108	06-11-07
Span / Depth	13.4	n/a	n/a		00-00-00

## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Support	Demand / Resistance Member	Material
B1 Wall/Plate	5-1/2" x 3-1/2"	1,073 lbs	13%	4.6%	4.6%	Unspecified
B2 Wall/Plate	5-1/2" x 3-1/2"	359 lbs	4.4%	1.5%	1.5%	Unspecified

## Notes



Po 1/4

DWANO, YAM 45369-17  
STRUCTURAL  
COMPONENT ONLY





Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9 CAN

Specifier:

Designer:

Company:

Msc:

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

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

Calculations assume Member is Fully Braced.

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

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

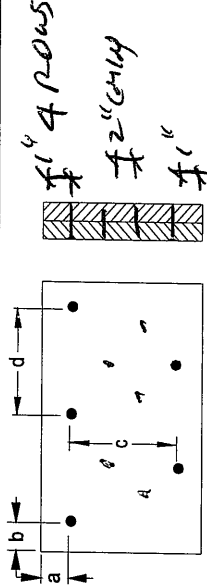
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

### Connection Diagram



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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

### Disclosure

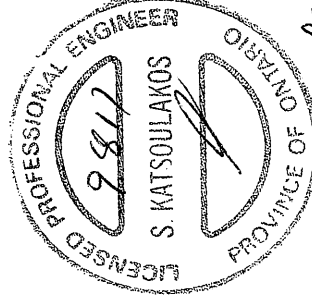
Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods.

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 CALCO®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BOI®, 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.

**Town of Innisfil Certified Model**

15/02/2018 2:29:08 PM kgervais



per  
DWG NO. TAM 45369-17  
STRUCTURAL  
COMPONENT ONLY



Boise Cascade

# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10 CANT(i2441)



BC CALC® Design Report

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

September 12, 2017 15:42:53

Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15 ELA.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10 CANT

Specifier:

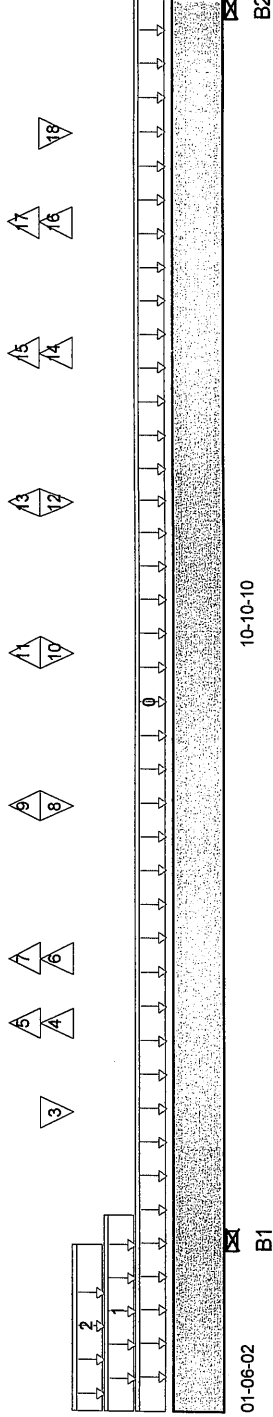
Designer:

Company:

Msc:

**Town of Innisfil Certified Model**

15/02/2018 2:29:11 PM kgervais



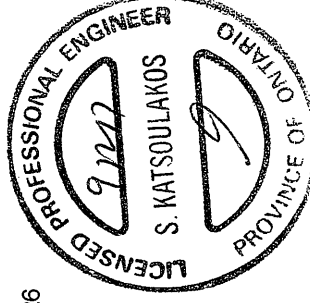
Total Horizontal Product Length = 12-04-12

## Reaction Summary (Down / Uplift) ( lbs )

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	468 / 244	226 / 0	280 / 609	
B2, 4-3/8"	367 / 245	0 / 63	0 / 578	

## Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-04-12	15	7			n/a
1 User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-08-14	44	140	152		n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-05-12	6				n/a
3 J9(i2370)	Conc. Pt. (lbs)	L	02-07-06	02-07-06	53	26			n/a
4 B12 CANT(i2476)	Conc. Pt. (lbs)	L	03-04-10	03-04-10	39	41	-72		n/a
5 B12 CANT(i2476)	Conc. Pt. (lbs)	L	03-04-10	03-04-10	-27				n/a
6 J8(i2462)	Conc. Pt. (lbs)	L	03-11-06	03-11-06	56	-175	-520		n/a
7 J8(i2462)	Conc. Pt. (lbs)	L	03-11-06	03-11-06	-169				n/a
8 J7(i2447)	Conc. Pt. (lbs)	L	05-03-06	05-03-06	78	26			n/a
9 J7(i2447)	Conc. Pt. (lbs)	L	05-03-06	05-03-06	-26				n/a
10 J7(i2439)	Conc. Pt. (lbs)	L	06-07-06	06-07-06	78	26			n/a
11 J7(i2439)	Conc. Pt. (lbs)	L	06-07-06	06-07-06	-26				n/a
12 J7(i2454)	Conc. Pt. (lbs)	L	07-11-06	07-11-06	78	26			n/a
13 J7(i2454)	Conc. Pt. (lbs)	L	07-11-06	07-11-06	-26				n/a
14 J8(i2466)	Conc. Pt. (lbs)	L	09-03-06	09-03-06	73	-170	-520		n/a
15 J8(i2466)	Conc. Pt. (lbs)	L	09-03-06	09-03-06	-175				n/a
16 B11 CANT(i2386)	Conc. Pt. (lbs)	L	10-05-02	10-05-02	56	-39	-75		n/a
17 B11 CANT(i2386)	Conc. Pt. (lbs)	L	10-05-02	10-05-02	-33				n/a
18 J9(i2419)	Conc. Pt. (lbs)	L	11-02-06	11-02-06	51	26			n/a





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10 CANT(i2441)

BC CALC® Design Report



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

September 12, 2017 15:42:53

Build 5033

Job Name:

Address:

City, Province, Postal Code:.

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15 ELA.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10 CAN

Specifier:

Designer:

Company:

Msc:

Controls Summary					Demand / Resistance		Load Case		Location
	Factored Demand	Factored Resistance							
Pos. Moment	1,373 ft-lbs	25,408 ft-lbs		5.4%			104	06-07-06	
Neg. Moment	-2,962 ft-lbs	-25,408 ft-lbs		11.7%			107	09-03-06	
End Shear	1,059 lbs	11,571 lbs		9.2%			107	11-02-14	
Cont. Shear	1,084 lbs	11,571 lbs		9.4%			106	02-06-06	
Uplift	833 lbs	n/a		n/a			154	01-06-02	
Uplift	1,068 lbs	n/a		n/a			107	12-04-12	
Total Load Defl.	2xL1,998 (0.046")			n/a			292	00-00-00	
Live Load Defl.	L/999 (-0.082")			n/a			404	06-09-06	
Total Neg. Defl.	L/999 (-0.092")			n/a			292	06-09-06	
Max Defl.	-0.092"			n/a			292	06-09-06	
Span / Depth	13.4			n/a				00-00-00	

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance		Material
			Support	Member	
B1 Wall/Plate	5-1/2" x 3-1/2"	1,124 lbs	10.9%	4.8%	Unspecified
B2 Wall/Plate	4-3/8" x 3-1/2"	1,068 lbs	13.1%	5.7%	Unspecified

Cautions

Uplift of 833 lbs found at span 1 - Right. *-(Simpson 2-HLST @ 0.31)*  
Uplift of 1,068 lbs found at span 2 - Right. *-(Simpson 2-HLST @ 0.32)*

Notes

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

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

Calculations assume member is fully braced.

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

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

O86.

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

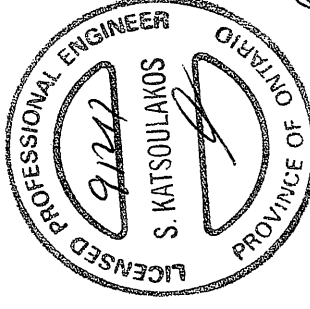
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Town of Innisfil Certified Model

15/02/2018 2:29:15 PM kgervais



10/2/3

DWG NO. TAM 46472-17

STRUCTURAL  
COMPONENT ONLY



Boise Cascade

# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10 CANT(I2441)

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

September 12, 2017 15:42:53

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15 ELA.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10 CAN

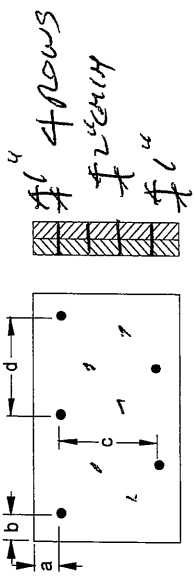
Specifier:

Designer:

Company:

Misc:

## Connection Diagram



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

Calculated Side Load = 131.1 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

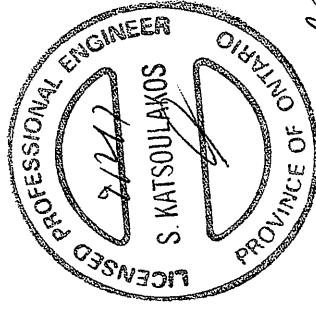
## Disclosure

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

BC CALO®, BC FRAMER®, AUS™, 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.

Town of Innisfil Certified Model

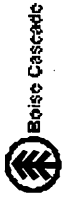
15/02/2018 2:29:19 PM kgervais



12/3/17

DWG NO. TAM 46402-17

STRUCTURAL  
COMPONENT ONLY



# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B11 CANT(H1619)



BC CALCO® Design Report

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

August 2, 2016 10:52:02

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11 CAN

Specifier:

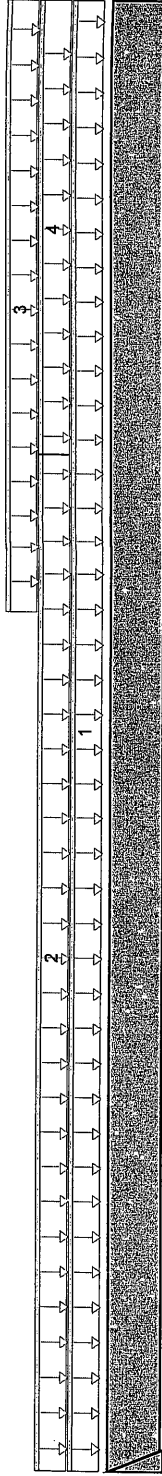
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:29:23 PM kgervais



02-07-12

B0

B1

01-06-02

Total Horizontal Product Length = 04-01-14

## Reaction Summary (Down / Uplift) (lbs )

Bearing	Live	Dead	Snow	Wind
B0	53 / 33	0 / 33	0 / 67	
B1, 5-1/2"	203 / 0	390 / 0	331 / 0	

## Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-01-14	23	11			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-10-08	15	8			n/a
3 User Load	Unf. Lin. (lb/ft)	L	02-05-00	04-01-14	44	140	152		n/a
4 FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-10-08	04-01-14	6	3			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10 ft-lbs	n/a	n/a	47	00-07-05
Neg. Moment	-536 ft-lbs	-25,408 ft-lbs	2.1%	49	02-07-12
Neg. Moment	-536 ft-lbs	-25,408 ft-lbs	2.1%	49	02-07-12
End Shear	136 lbs	11,571 lbs	1.2%	66	00-11-08
Cont. Shear	230 lbs	11,571 lbs	2%	49	03-08-00
Uplift	158 lbs	n/a	n/a	66	00-00-00
Total Load Defl.	2xL/1,998 (0.002")	n/a	n/a	154	04-01-14
Live Load Defl.	2xL/1,998 (0.001")	n/a	n/a	206	04-01-14
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	154	01-07-00
Max Defl.	-0.001"	n/a	n/a	154	01-07-00
Span / Depth	3.2	n/a	n/a		00-00-00

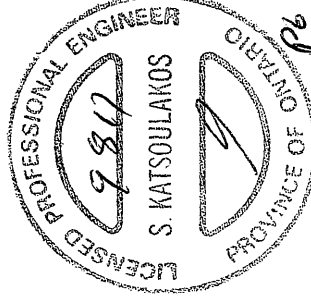
## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Resistance Member	Material
B0 Hanger	2" x 3-1/2"	50 lbs	n/a	1.9%	HGUS410
B0 Hanger Uplift	2" x 3-1/2"	158 lbs	n/a	0.01	HGUS410
B1 Wall/Plate	5-1/2" x 3-1/2"	1,085 lbs	13.2%	4.6%	Unspecified

## Cautions

Uplift of 158 lbs found at span 1 - Left.  
Hanger B0 cannot handle uplift of ~158 lbs.

## Notes



DWG NO. TAM 45371-17

STRUCTURAL

COMPONENT ONLY





Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11 CA

Specifier:

Designer:

Company:

Misc:

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.

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.

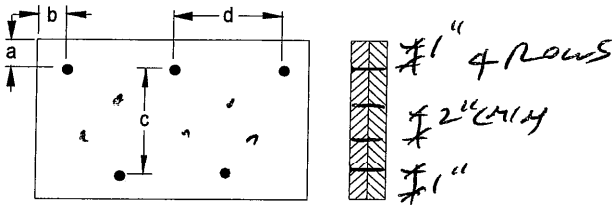
Importance Factor : Normal Part code : Part 9

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

**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™, 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"

Member has no side loads.

Connectors are: 16d Nails  
3 1/2" ARDOX SPIRAL

**Town of Innisfil Certified Model**

15/02/2018 2:29:28 PM kgervais



DWONG, TAM 45371-17  
STRUCTURAL  
COMPONENT ONLY



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

August 2, 2016 10:52:02

BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12 CAN

Specifier:

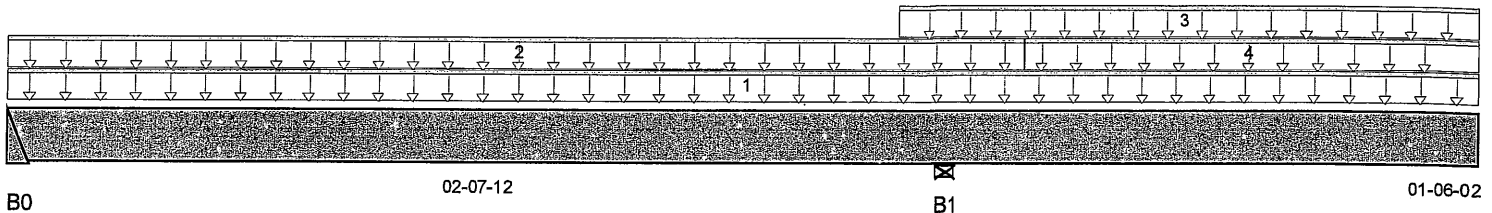
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:29:32 PM kgervais



Total Horizontal Product Length = 04-01-14

## Reaction Summary (Down / Uplift) ( lbs )

Bearing	Live	Dead	Snow	Wind
B0	37 / 28	0 / 39	0 / 68	
B1, 5-1/2"	162 / 0	359 / 0	319 / 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	00-00-00	04-01-14	11	6			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-10-08	15	8			n/a
3 User Load	Unf. Lin. (lb/ft)	L	02-06-01	04-01-14	44	140	152		n/a
4 FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-10-08	04-01-14	6	3			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2 ft-lbs	n/a	n/a	47	00-04-01
Neg. Moment	-521 ft-lbs	-25,408 ft-lbs	2%	49	02-07-12
Neg. Moment	-521 ft-lbs	-25,408 ft-lbs	2%	49	02-07-12
End Shear	146 lbs	11,571 lbs	1.3%	51	00-11-08
Cont. Shear	223 lbs	11,571 lbs	1.9%	49	03-08-00
Uplift	164 lbs	n/a	n/a	56	00-00-00
Total Load Defl.	2xL/1,998 (0.002")	n/a	n/a	154	04-01-14
Live Load Defl.	2xL/1,998 (0.001")	n/a	n/a	206	04-01-14
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	154	01-07-00
Max Defl.	-0.001"	n/a	n/a	154	01-07-00
Span / Depth	3.2	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	20 lbs	n/a	1.9%	HGUS410
B0 Hanger Uplift	2" x 3-1/2"	164 lbs	n/a	0.02	HGUS410
B1 Wall/Plate	5-1/2" x 3-1/2"	1,008 lbs	12.3%	4.3%	Unspecified

## Cautions

Uplift of 164 lbs found at span 1 - Left.  
Hanger B0 cannot handle uplift of -164 lbs. ) - (SIMPSON 1-H605410 (B0))

## Notes



OWU NO. TAM 4537217  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12 CA

Specifier:

Designer:

Company:

Misc:

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.

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.

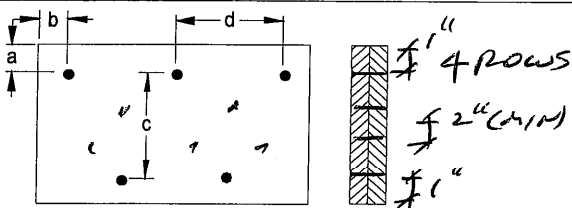
Importance Factor : Normal Part code : Part 9

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

**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™, 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"

Member has no side loads.

Connectors are: 16d Nails

**3 1/2" ARDOX SPIRAL****Town of Innisfil Certified Model**

15/02/2018 2:29:36 PM kgervais



**DWNO.TAM45372-17**  
**STRUCTURAL**  
**COMPONENT ONLY**



Boise Cascade

## Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i2368)

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

August 4, 2016 10:09:55

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i2368)

Specifier:

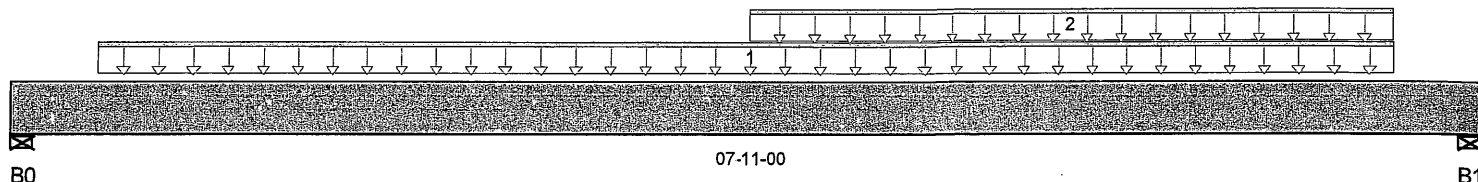
Designer:

Company:

Misc:

Town of Innisfil Certified Model

15/02/2018 2:29:40 PM kgervais



Total Horizontal Product Length = 07-11-00

## Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	295 / 0	167 / 0		
B1, 5-1/2"	707 / 0	373 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	07-05-08	23	11			n/a
2	User Load	Unf. Lin. (lb/ft)	L	03-11-07	07-05-07	240	120			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,149 ft-lbs	12,704 ft-lbs	16.9%	1	04-09-10
End Shear	1,074 lbs	5,785 lbs	18.6%	1	06-08-00
Total Load Defl.	L/999 (0.051")	n/a	n/a	4	04-02-08
Live Load Defl.	L/999 (0.033")	n/a	n/a	5	04-02-08
Max Defl.	0.051"	n/a	n/a	4	04-02-08
Span / Depth	9	n/a	n/a		00-00-00

## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 1-3/4"	651 lbs	12.7%	5.5%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	1,526 lbs	29.7%	13%	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

## 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 Ltd.



DWG NO. TAM 45373-17  
STRUCTURAL  
COMPONENT ONLY

**BC CALC® Design Report**


Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-10C-15 EL B-WOD.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i2732)

Specifier:

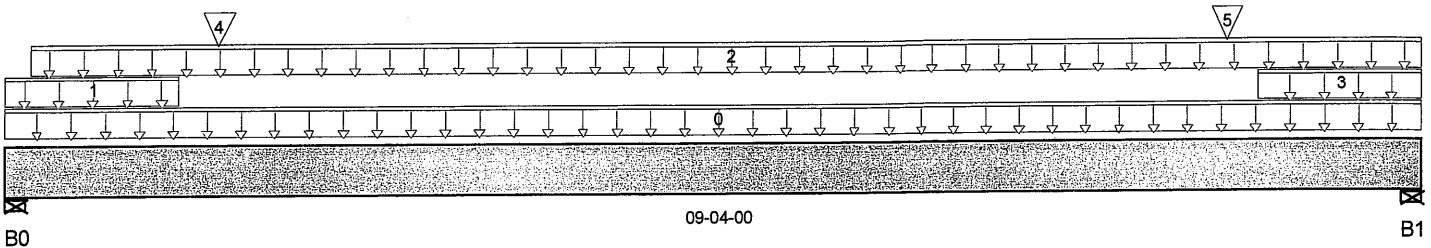
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

15/02/2018 2:29:44 PM kgervais



Total Horizontal Product Length = 09-04-00

**Reaction Summary (Down / Uplift) ( lbs )**

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,836 / 0	1,413 / 0	1,976 / 0	
B1, 5-1/2"	1,936 / 0	1,460 / 0	1,973 / 0	

**Load Summary**

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	09-04-00	33	30	111		n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-01-12	146	232	489		n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-00	09-04-00	285	143			n/a
3	User Load	Unf. Lin. (lb/ft)	L	08-03-00	09-04-00	146	232	489		n/a
4	User Load	Conc. Pt. (lbs)	L	01-04-12	01-04-12	264	340	912		n/a
5	User Load	Conc. Pt. (lbs)	L	08-00-10	08-00-10	264	340	912		n/a

**Controls Summary**

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,282 ft-lbs	25,408 ft-lbs	32.6%	1	04-10-00
End Shear	4,634 lbs	11,571 lbs	40%	13	01-03-00
Total Load Defl.	L/614 (0.167")	0.427"	39.1%	35	04-08-00
Live Load Defl.	L/999 (0.112")	n/a	n/a	51	04-08-00
Max Defl.	0.167"	n/a	n/a	35	04-08-00
Span / Depth	10.8	n/a	n/a		00-00-00

**Bearing Supports**

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	5,648 lbs	54.9%	24%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	5,753 lbs	56%	24.5%	Unspecified

**Notes**




BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-10C-15 EL B-WOD.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i2732)

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume member is fully braced.

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

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

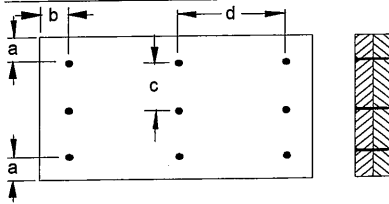
**CONFORMS TO CBC 2012**

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

**Connection Diagram**



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

Calculated Side Load = 594.5 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: 16d Nails

3 1/2" ARDOX SPIRAL

**Disclosure**

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

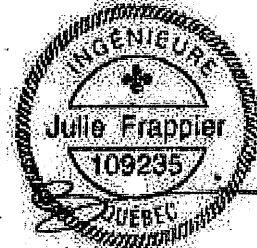
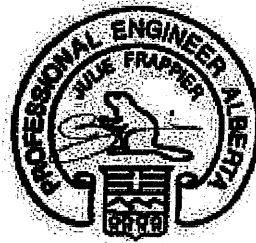
BC CALO®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.

**Town of Innisfil Certified Model**

15/02/2018 2:29:48 PM kgervais



DWG NO. TAM 45374-17  
STRUCTURAL  
COMPONENT ONLY



## Maximum Floor Spans

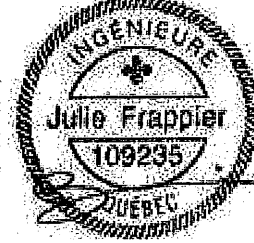
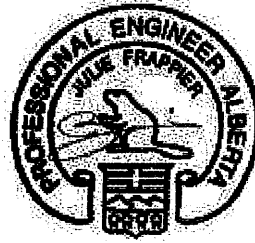
Live Load = 40 psf, Dead Load = 15 psf  
Simple Spans, L/480 Deflection Limit  
5/8" OSB G&N Sheathing

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
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	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
14"	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	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
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"	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.



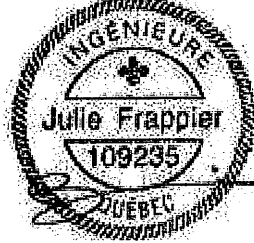
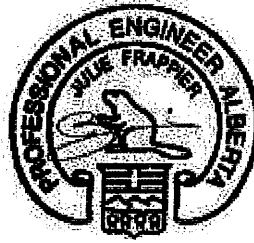
## Maximum Floor Spans

Live Load = 40 psf, Dead Load = 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"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
14"	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"
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
16"	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"
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
14"	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"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
16"	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.



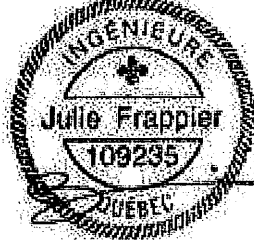
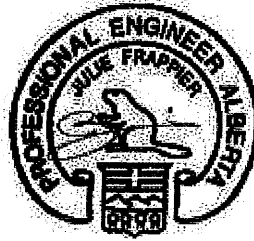
## Maximum Floor Spans

Live Load = 40 psf, Dead Load = 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
	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	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
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
14"	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
	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"	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

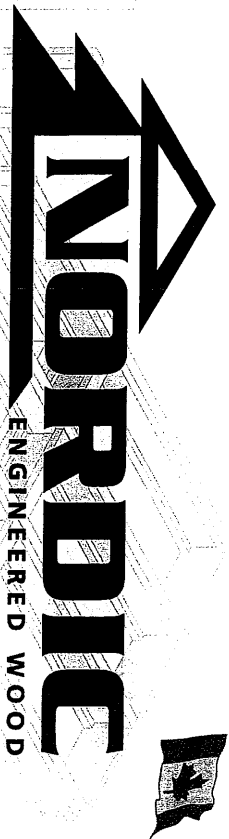
Live Load = 40 psf, Dead Load = 30 psf  
Simple Spans, L/480 Deflection Limit  
3/4" OSB G&N Sheathing

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"
11-7/8"	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
	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'-10"
	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'-3"	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	23'-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"

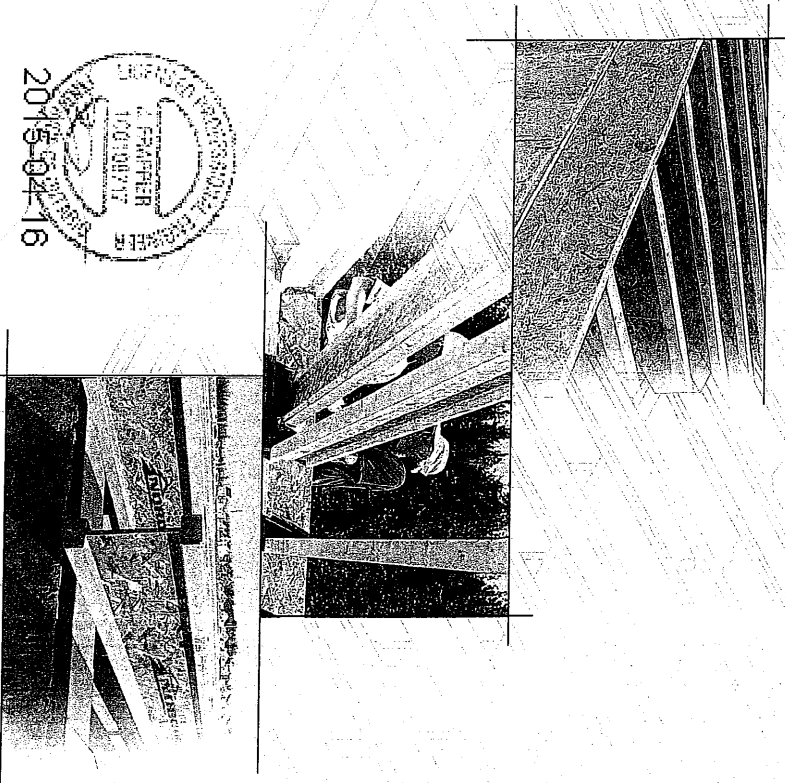
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60	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"
11-7/8"	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"
	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.



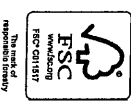


# INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



2015-04-16

Distributed by:



N-C301 / November 2014

## SAFETY AND CONSTRUCTION PRECAUTIONS



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.

### WARNING

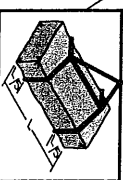
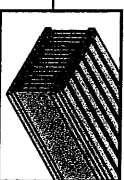
I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

### 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.
- 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.



## MAXIMUM FLOOR SPANS

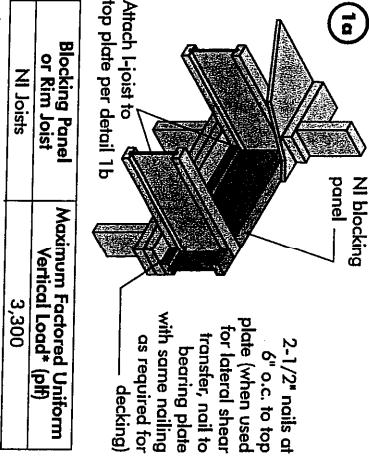
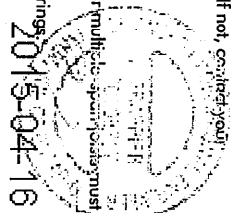
1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. 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, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm  
1 foot = 0.305 m

### MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
NL-20x		15.1'	14.2'	13.9'	13.5'	16.5'	15.4'	15.1'	14.7'
NL-24x		16.1'	15.2'	14.8'	14.4'	17.5'	16.5'	16.2'	15.8'
NL-30x		17.1'	16.1'	15.6'	15.2'	18.5'	17.4'	17.1'	16.7'
NL-36x		18.1'	17.0'	16.5'	16.1'	19.5'	18.4'	18.1'	17.7'
NL-42x		19.1'	17.9'	17.3'	16.9'	20.5'	19.4'	19.1'	18.7'
NL-48x		20.1'	18.7'	18.1'	17.7'	21.5'	20.4'	20.1'	19.7'
NL-54x		21.1'	19.5'	18.9'	18.5'	22.5'	21.4'	21.1'	20.7'
NL-60x		22.1'	20.3'	19.7'	19.3'	23.5'	22.4'	22.1'	21.7'
NL-66x		23.1'	21.1'	20.5'	20.1'	24.5'	23.4'	23.1'	22.7'
NL-72x		24.1'	21.9'	21.3'	20.9'	25.5'	24.4'	24.1'	23.7'
NL-78x		25.1'	22.7'	22.1'	21.7'	26.5'	25.4'	25.1'	24.7'
NL-84x		26.1'	23.5'	22.9'	22.5'	27.5'	26.4'	26.1'	25.7'
NL-90x		27.1'	24.3'	23.7'	23.3'	28.5'	27.4'	27.1'	26.7'
NL-96x		28.1'	25.1'	24.5'	24.1'	29.5'	28.4'	28.1'	27.7'
NL-102x		29.1'	25.9'	25.3'	24.9'	30.5'	29.4'	29.1'	28.7'
NL-108x		30.1'	26.7'	26.1'	25.7'	31.5'	30.4'	30.1'	29.7'
NL-114x		31.1'	27.5'	26.9'	26.5'	32.5'	31.4'	31.1'	30.7'
NL-120x		32.1'	28.3'	27.7'	27.3'	33.5'	32.4'	32.1'	31.7'
NL-126x		33.1'	29.1'	28.5'	28.1'	34.5'	33.4'	33.1'	32.7'
NL-132x		34.1'	29.9'	29.3'	28.9'	35.5'	34.4'	34.1'	33.7'
NL-138x		35.1'	30.7'	30.1'	29.7'	36.5'	35.4'	35.1'	34.7'
NL-144x		36.1'	31.5'	30.9'	30.5'	37.5'	36.4'	36.1'	35.7'
NL-150x		37.1'	32.3'	31.7'	31.3'	38.5'	37.4'	37.1'	36.7'
NL-156x		38.1'	33.1'	32.5'	32.1'	39.5'	38.4'	38.1'	37.7'
NL-162x		39.1'	33.9'	33.3'	32.9'	40.5'	39.4'	39.1'	38.7'
NL-168x		40.1'	34.7'	34.1'	33.7'	41.5'	40.4'	40.1'	39.7'
NL-174x		41.1'	35.5'	34.9'	34.5'	42.5'	41.4'	41.1'	40.7'
NL-180x		42.1'	36.3'	35.7'	35.3'	43.5'	42.4'	42.1'	41.7'
NL-186x		43.1'	37.1'	36.5'	36.1'	44.5'	43.4'	43.1'	42.7'
NL-192x		44.1'	37.9'	37.3'	36.9'	45.5'	44.4'	44.1'	43.7'
NL-198x		45.1'	38.7'	38.1'	37.7'	46.5'	45.4'	45.1'	44.7'
NL-204x		46.1'	39.5'	38.9'	38.5'	47.5'	46.4'	46.1'	45.7'
NL-210x		47.1'	40.3'	39.7'	39.3'	48.5'	47.4'	47.1'	46.7'
NL-216x		48.1'	41.1'	40.5'	40.1'	49.5'	48.4'	48.1'	47.7'
NL-222x		49.1'	41.9'	41.3'	40.9'	50.5'	49.4'	49.1'	48.7'
NL-228x		50.1'	42.7'	42.1'	41.7'	51.5'	50.4'	50.1'	49.7'
NL-234x		51.1'	43.5'	42.9'	42.5'	52.5'	51.4'	51.1'	50.7'
NL-240x		52.1'	44.3'	43.7'	43.3'	53.5'	52.4'	52.1'	51.7'
NL-246x		53.1'	45.1'	44.5'	44.1'	54.5'	53.4'	53.1'	52.7'
NL-252x		54.1'	45.9'	45.3'	44.9'	55.5'	54.4'	54.1'	53.7'
NL-258x		55.1'	46.7'	46.1'	45.7'	56.5'	55.4'	55.1'	54.7'
NL-264x		56.1'	47.5'	46.9'	46.5'	57.5'	56.4'	56.1'	55.7'
NL-270x		57.1'	48.3'	47.7'	47.3'	58.5'	57.4'	57.1'	56.7'
NL-276x		58.1'	49.1'	48.5'	48.1'	59.5'	58.4'	58.1'	57.7'
NL-282x		59.1'	49.9'	49.3'	48.9'	60.5'	59.4'	59.1'	58.7'
NL-288x		60.1'	50.7'	50.1'	49.7'	61.5'	60.4'	60.1'	59.7'
NL-294x		61.1'	51.5'	50.9'	50.5'	62.5'	61.4'	61.1'	60.7'
NL-300x		62.1'	52.3'	51.7'	51.3'	63.5'	62.4'	62.1'	61.7'
NL-306x		63.1'	53.1'	52.5'	52.1'	64.5'	63.4'	63.1'	62.7'
NL-312x		64.1'	53.9'	53.3'	52.9'	65.5'	64.4'	64.1'	63.7'
NL-318x		65.1'	54.7'	54.1'	53.7'	66.5'	65.4'	65.1'	64.7'
NL-324x		66.1'	55.5'	54.9'	54.5'	67.5'	66.4'	66.1'	65.7'
NL-330x		67.1'	56.3'	55.7'	55.3'	68.5'	67.4'	67.1'	66.7'
NL-336x		68.1'	57.1'	56.5'	56.1'	69.5'	68.4'	68.1'	67.7'
NL-342x		69.1'	57.9'	57.3'	56.9'	70.5'	69.4'	69.1'	68.7'
NL-348x		70.1'	58.7'	58.1'	57.7'	71.5'	70.4'	70.1'	69.7'
NL-354x		71.1'	59.5'	58.9'	58.5'	72.5'	71.4'	71.1'	70.7'
NL-360x		72.1'	60.3'	59.7'	59.3'	73.5'	72.4'	72.1'	71.7'
NL-366x		73.1'	61.1'	60.5'	60.1'	74.5'	73.4'	73.1'	72.7'
NL-372x		74.1'	61.9'	61.3'	60.9'	75.5'	74.4'	74.1'	73.7'
NL-378x		75.1'	62.7'	62.1'	61.7'	76.5'	75.4'	75.1'	74.7'
NL-384x		76.1'	63.5'	62.9'	62.5'	77.5'	76.4'	76.1'	75.7'
NL-390x		77.1'	64.3'	63.7'	63.3'	78.5'	77.4'	77.1'	76.7'
NL-396x		78.1'	65.1'	64.5'	64.1'	79.5'	78.4'	78.1'	77.7'
NL-402x		79.1'	65.9'	65.3'	64.9'	80.5'	79.4'	79.1'	78.7'
NL-408x		80.1'	66.7'	66.1'	65.7'	81.5'	80.4'	80.1'	79.7'
NL-414x		81.1'	67.5'	66.9'	66.5'	82.5'	81.4'	81.1'	80.7'
NL-420x		82.1'	68.3'	67.7'	67.3'	83.5'	82.4'	82.1'	81.7'
NL-426x		83.1'	69.1'	68.5'	68.1'	84.5'	83.4'	83.1'	82.7'
NL-432x		84.1'	69.9'	69.3'	68.9'	85.5'	84.4'	84.1'	83.7'
NL-438x		85.1'	70.7'	70.1'	69.7'	86.5'	85.4'	85.1'	84.7'
NL-444x		86.1'	71.5'	70.9'	70.5'	87.5'	86.4'	86.1'	85.7'
NL-450x		87.1'	72.3'	71.7'	71.3'	88.5'	87.4'	87.1'	86.7'
NL-456x		88.1'	73.1'	72.5'	72.1'	89.5'	88.4'	88.1'	87.7'
NL-462x		89.1'	73.9'	73.3'	72.9'	90.5'	89.4'	89.1'	88.7'
NL-468x		90.1'	74.7'	74.1'	73.7'	91.5'	90.4'	90.1'	89.7'
NL-474x		91.1'	75.5'	74.9'	74.5'	92.5'	91.4'	91.1'	90.7'
NL-480x		92.1'	76.3'	75.7'	75.3'	93.5'	92.4'	92.1'	91.7'
NL-486x		93.1'	77.1'	76.5'	76.1'	94.5'	93.4'	93.1'	92.7'
NL-492x		94.1'	77.9'	77.3'	76.9'	95.5'	94.4'	94.1'	93.7'
NL-498x		95.1'	78.7'	78.1'	77.7'	96.5'	95.4'	95.1'	94.7'
NL-504x		96.1'	79.5'	78.9'	78.5'	97.5'	96.4'	96.1'	95.7'
NL-510x		97.1'	80.3'	79.7'	79.3'	98.5'	97.4'	97.1'	96.7'
NL-516x		98.1'	81.1'	80.5'	80.1'	99.5'	98.4'	98.1'	97.7'
NL-522x		99.1'	81.9'	81.3'	80.9'	100.5'	99.4'	99.1'	98.7'
NL-528x		100.1'	82.7'	82.1'	81.7'	101.5'	100.4'	100.1'	99.7'
NL-534x		101.1'	83.5'	82.9'	82.5'	102.5'	101.4'	101.1'	100.7'
NL-540x		102.1'	84.3'	83.7'	83.3'	103.5'	102.4'	102.1'	101.7'
NL-546x		103.1'	85.1'	84.5'	84.1'	104.5'	103.4'	103.1'	102.7'
NL-552x		104.1'	85.9'	85.3'	84.9'	105.5'	104.4'	104.1'	103.7'
NL-558x		105.1'	86.7'	86.1'	85.7'	106.5'	105.4'	105.1'	104.7'
NL-564x		106.1'	87.5'	86.9'	86.5'	107.5'	106.4'	106.1'	105.7'
NL-570x		107.1'	88.3'	87.7'	87.3'	108.5'	107.4'	107.1'	106.7'
NL-576x		108.1'	89.1'	88.5'	88.1'	109.5'	108.4'	108.1'	107.7'
NL-582x		109.1'	89.9'	89.3'	88.9'	110.5'	109.4'	109.1'	108.7'
NL-588x		110.1'	90.7'	90.1'	89.7'	111.5'	110.4'	110.1'	109.7'
NL-594x		111.1'	91.5'	90.9'	90.5'	112.5'	111.4'	111.1'	110.7'
NL-600x		112.1'	92.3'	91.7'	91.3'	113.5'	112.4'	112.1'	111.7'
NL-606x		113.1'	93.1'	92.5'	92.1'	114.5'	113.4'	113.1'	112.7'
NL-612x		114.1'	93.9'	93.3'	92.9'	115.5'	114.4'	114.1'	113.7'
NL-618x		115.1'	94.7'	94.1'	93.7'	116.5'	115.4'	115.1'	114.7'
NL-624x		116.1'	95.5'	94.9'	94.5'	117.5'	116.4'	116.1'	115.7'
NL-630x		117.1'	96.3'	95.7'	95.3'	118.5'	117.4'	117.1'	116.7'
NL-636x		118.1'	97.1'	96.5'	96.1'	119.5'	118.4'	118.1'	117.7'
NL-642x		119.1'	97.9'	97.3'	96.9'	120.5'	119.4'	119.1'	118.7'
NL-648x		120.1'	98.7'	98.1'	97.7'	121.5'	120.4'	120.1'	119.7'
NL-654x		121.1'	99.5'	98.9'	98.5'	122.5'	121.4'	121.1'	120.7'
NL-660x		122.1'	100.3'	99.7'	99.3'	123.5'	122.4'	122.1'	121.7'
NL-666x		123.1'	101.1'	100.5'	100.1'	124.5'	123.4'	123.1'	122.7'
NL-672x		124.1'	101.9'	101.3'	100.9'	125.5'	124.4'	124.1'	123.7'
NL-678x		125.1'	102.7'	102.1'	101.7'	126.5'	125.4'	125.1'	124.7'
NL-684x		126.1'	103.5'	102.9'	102.5'	127.5'	126.4'	126.1'	125.7'
NL-690x		127.1'	104.3'	103.7'	103.3'	128.5'	127.4'	127.1'	126.7'
NL-696x		128.1'	105.1'	104.5'	104.1'	129.5'	128.4'	128.1'	127.7'
NL-702x		129.1'	105.9'	105.3'	104.9'	130.5'	129.4'	129.1'	128.7'
NL-708x		130.1'	106.7'	106.1'	105.7'	131.5'	130.4'	130.1'	129.7'
NL-714x		131.1'	107.5'	106.9'	106.5'	132.5'	131.4'	131.1'	130.7'
NL-720x		132.1'	108.3'	107.7'	107.3'	133.5'	132.4'	132.1'	131.7'
NL-726x		133.1'	109.1'	108.5'	108.1'	134.5'	133.4'	133.1'	132.7'
NL-732x		134.1'	109.9'	109.3'	108.9'	135.5'	134.4'	134.1'	133.7'
NL-738x		135.1'	110.7'	110.1'	109.7'	136.5'	135.4'	135.1'	134.7'
NL-744x		136.1'	111.5'	110.9'	110.5'	137.5'	136.4'	136.1'	135.7'
NL-750x		137.1'	112.3'	111.7'	111.3'	138.5'	137.4'	137.1'	136.7'
NL-756x		138.1'	113.1'	112.5'	112.1'	139.5'	138.4'	138.1'	137.7'
NL-762x		139.1'	113.9'	113.3'	112.9'	140.5'	139.4'	139.1'	138.7'
NL-768x		140.1'	114.7'	114.1'	113.7'	141.5'	140.4'	140.1'	139.7'
NL-774x		141.1'	115.5'	114.9'	114.5'	142.5'	141.4'	141.1'	140.7'
NL-780x		142.1'	116.3'	115.7'	115.3'	143.5'	142.4'	142.1'	141.7'
NL-786x		143.1'	117.1'	116.5'	116.1'	144.5'	143.4'	143.1'	142.7'
NL-792x		144.1'	117.9'	117.3'	116.9'	145.5'	144.4'	144.1'	143.7'
NL-798x		145.1'	118.7'	118.1'	117.7'	146.5'	145.4'	145.1'	144.7'
NL-804x									

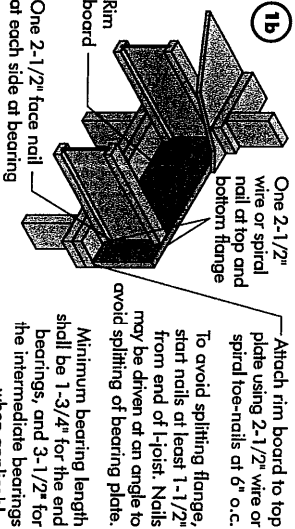
# INSTALLING NORDIC I-JOISTS

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 spans 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 an 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.



Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
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.

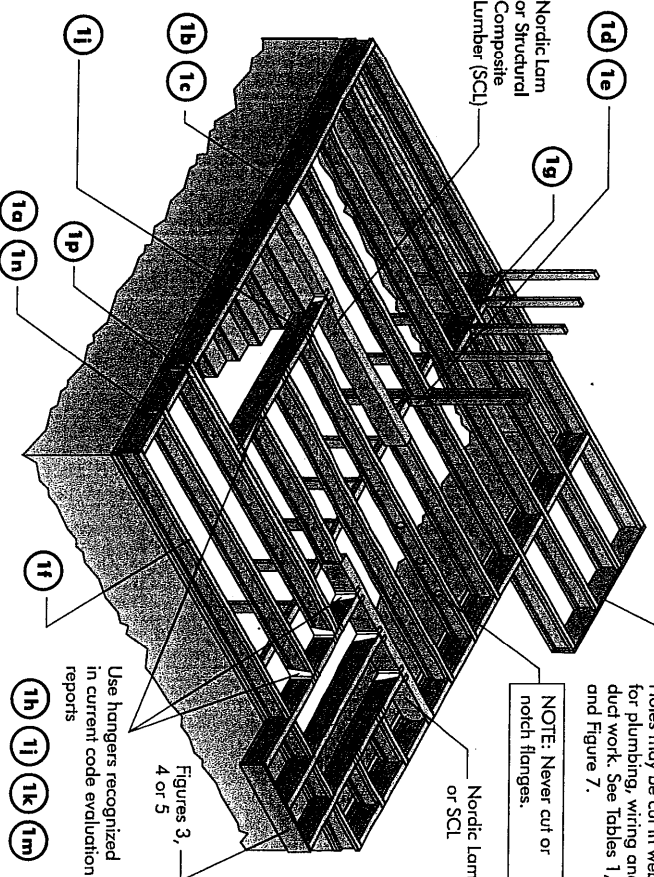


Blocking Panel or Rim Board Plus	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

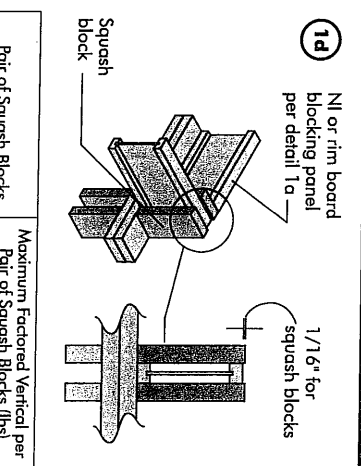
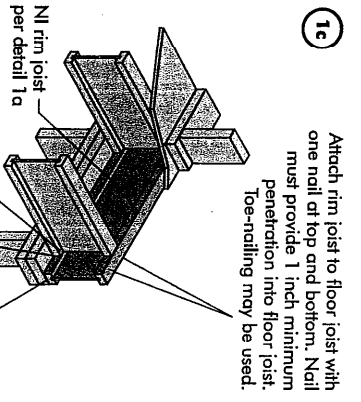
\*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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.

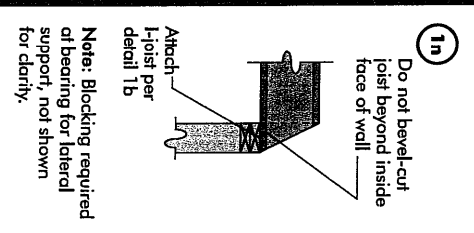
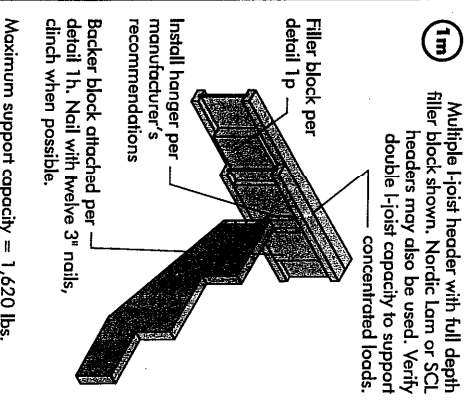
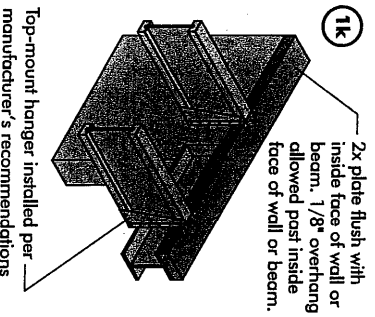
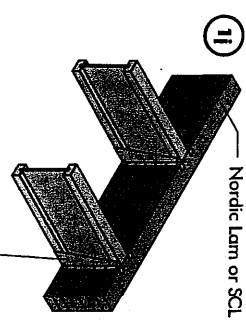
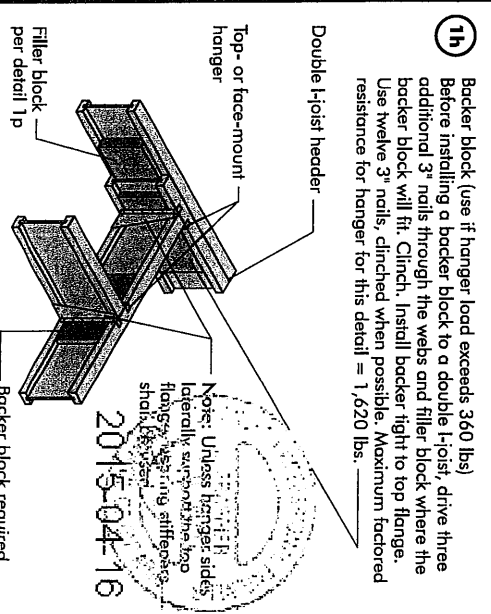
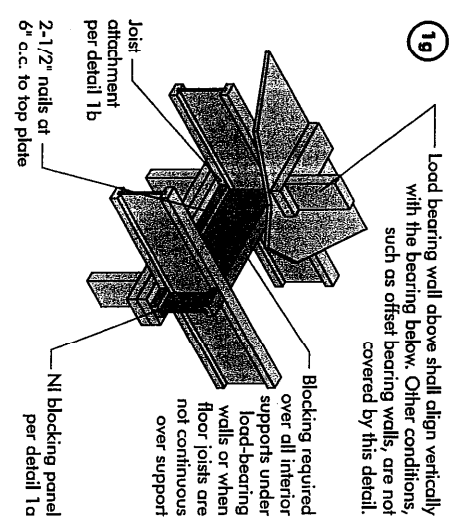
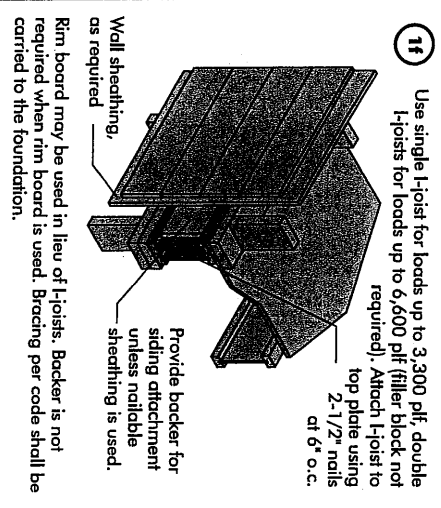
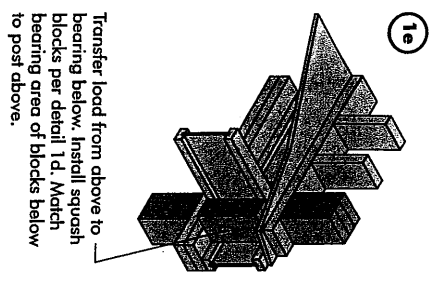


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



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

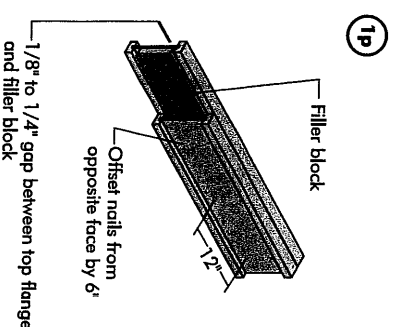
Provide lateral bracing per detail 1a, 1b, or 1c



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-Q325 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".

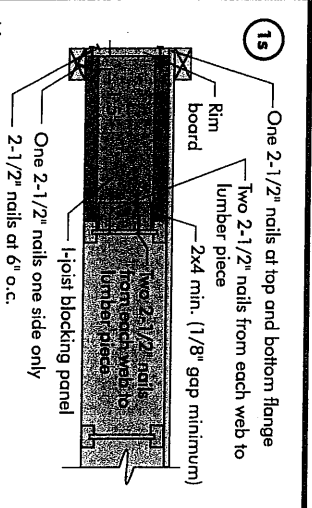
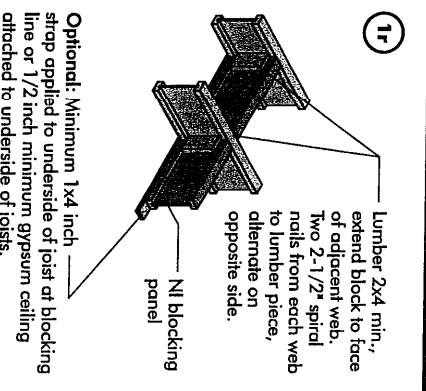
**BACKER BLOCKS** (Blocks must be long enough to permit required nailing without splitting)



- 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.

**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"	2-1/8" x 6"
2-1/2" x 1-1/2"	11-7/8"	2-1/8" x 8"
3-1/2" x 1-1/2"	14"	2-1/8" x 10"
3-1/2" x 1-1/2"	16"	2-1/8" x 12"
3-1/2" x 1-1/2"	11-7/8"	3" x 6"
3-1/2" x 1-1/2"	14"	3" x 8"
3-1/2" x 1-1/2"	16"	3" x 10"
3-1/2" x 1-1/2"	11-7/8"	3" x 7"
3-1/2" x 1-1/2"	14"	3" x 9"
3-1/2" x 1-1/2"	16"	3" x 11"

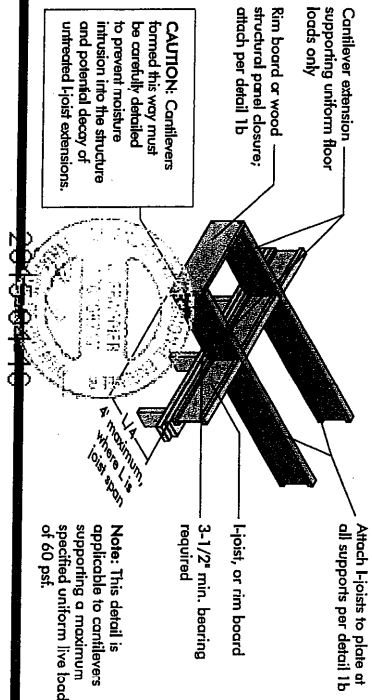


**Notes:**

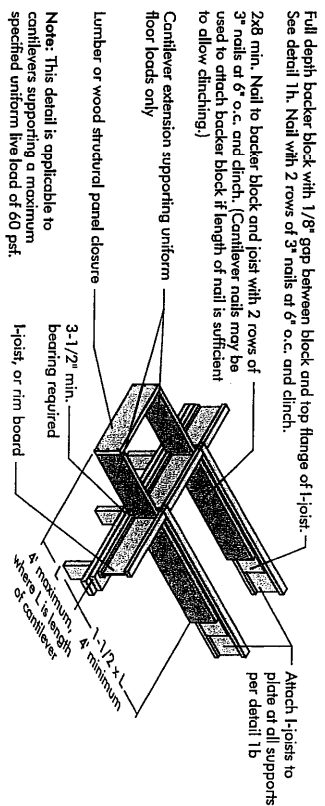
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spread in this detail.

## CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

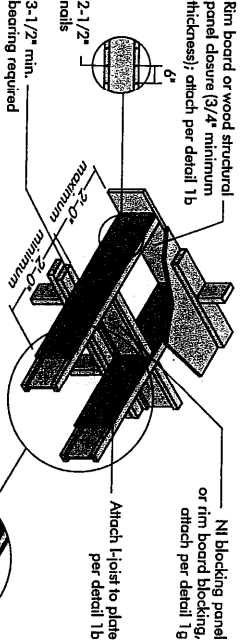


### 3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



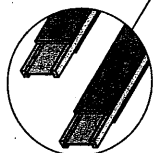
## CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

### 4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



### Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- Use same installation as Method 1 but reinforce both sides of I-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

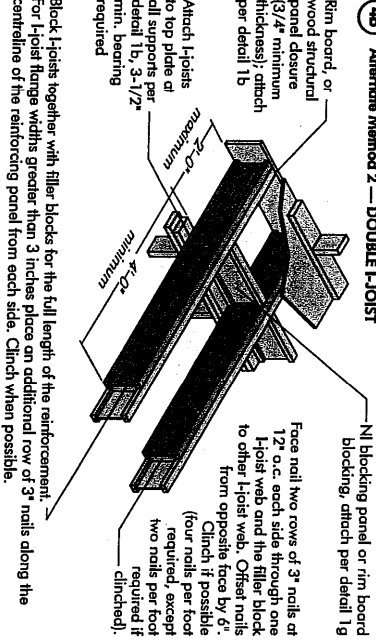
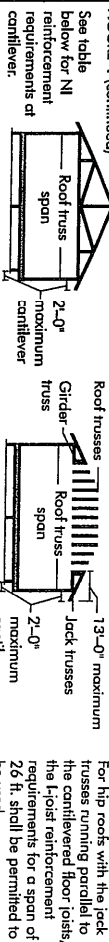


FIGURE 4 (continued)



### CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (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
		JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)	JOIST SPACING (in.)
11 7/8	24	24	24	24	24
12	24	24	24	24	24
12 1/2	24	24	24	24	24
13	24	24	24	24	24
13 1/2	24	24	24	24	24
14	24	24	24	24	24
14 1/2	24	24	24	24	24
15	24	24	24	24	24
15 1/2	24	24	24	24	24
16	24	24	24	24	24
16 1/2	24	24	24	24	24
17	24	24	24	24	24
17 1/2	24	24	24	24	24
18	24	24	24	24	24
18 1/2	24	24	24	24	24
19	24	24	24	24	24
19 1/2	24	24	24	24	24
20	24	24	24	24	24
20 1/2	24	24	24	24	24
21	24	24	24	24	24
21 1/2	24	24	24	24	24
22	24	24	24	24	24
22 1/2	24	24	24	24	24
23	24	24	24	24	24
23 1/2	24	24	24	24	24
24	24	24	24	24	24
24 1/2	24	24	24	24	24
25	24	24	24	24	24
25 1/2	24	24	24	24	24
26	24	24	24	24	24
26 1/2	24	24	24	24	24
27	24	24	24	24	24
27 1/2	24	24	24	24	24
28	24	24	24	24	24
28 1/2	24	24	24	24	24
29	24	24	24	24	24
29 1/2	24	24	24	24	24
30	24	24	24	24	24
30 1/2	24	24	24	24	24
31	24	24	24	24	24
31 1/2	24	24	24	24	24
32	24	24	24	24	24
32 1/2	24	24	24	24	24
33	24	24	24	24	24
33 1/2	24	24	24	24	24
34	24	24	24	24	24
34 1/2	24	24	24	24	24
35	24	24	24	24	24
35 1/2	24	24	24	24	24
36	24	24	24	24	24
36 1/2	24	24	24	24	24
37	24	24	24	24	24
37 1/2	24	24	24	24	24
38	24	24	24	24	24
38 1/2	24	24	24	24	24
39	24	24	24	24	24
39 1/2	24	24	24	24	24
40	24	24	24	24	24
40 1/2	24	24	24	24	24
41	24	24	24	24	24
41 1/2	24	24	24	24	24
42	24	24	24	24	24
42 1/2	24	24	24	24	24
43	24	24	24	24	24
43 1/2	24	24	24	24	24
44	24	24	24	24	24
44 1/2	24	24	24	24	24
45	24	24	24	24	24
45 1/2	24	24	24	24	24
46	24	24	24	24	24
46 1/2	24	24	24	24	24
47	24	24	24	24	24
47 1/2	24	24	24	24	24
48	24	24	24	24	24
48 1/2	24	24	24	24	24
49	24	24	24	24	24
49 1/2	24	24	24	24	24
50	24	24	24	24	24
50 1/2	24	24	24	24	24
51	24	24	24	24	24
51 1/2	24	24	24	24	24
52	24	24	24	24	24
52 1/2	24	24	24	24	24
53	24	24	24	24	24
53 1/2	24	24	24	24	24
54	24	24	24	24	24
54 1/2	24	24	24	24	24
55	24	24	24	24	24
55 1/2	24	24	24	24	24
56	24	24	24	24	24
56 1/2	24	24	24	24	24
57	24	24	24	24	24
57 1/2	24	24	24	24	24
58	24	24	24	24	24
58 1/2	24	24	24	24	24
59	24	24	24	24	24
59 1/2	24	24	24	24	24
60	24	24	24	24	24
60 1/2	24	24	24	24	24
61	24	24	24	24	24
61 1/2	24	24	24	24	24
62	24	24	24	24	24
62 1/2	24	24	24	24	24
63	24	24	24	24	24
63 1/2	24	24	24	24	24
64	24	24	24	24	24
64 1/2	24	24	24	24	24
65	24	24	24	24	24
65 1/2	24	24	24	24	24
66	24	24	24	24	24
66 1/2	24	24	24	24	24
67	24	24	24	24	24
67 1/2	24	24	24	24	24
68	24	24	24	24	24
68 1/2	24	24	24	24	24
69	24	24	24	24	24
69 1/2	24	24	24	24	24
70	24	24	24	24	24
70 1/2	24	24	24	24	24
71	24	24	24	24	24
71 1/2	24	24	24	24	24
72	24	24	24	24	24
72 1/2	24	24	24	24	24
73	24	24	24	24	24
73 1/2	24	24	24	24	24
74	24	24	24	24	24
74 1/2	24	24	24	24	24
75	24	24	24	24	24
75 1/2	24	24	24	24	24
76	24	24	24	24	24
76 1/2	24	24	24	24	24
77	24	24	24	24	24
77 1/2	24	24	24	24	24
78	24	24	24	24	24
78 1/2	24	24	24	24	24
79	24	24	24	24	24
79 1/2	24	24	24	24	24
80	24	24	24	24	24
80 1/2	24	24	24	24	24
81	24	24	24	24	24
81 1/2	24	24	24	24	24
82	24	24	24	24	24
82 1/2	24	24	24	24	24
83	24	24	24	24	24
83 1/2	24	24	24	24	24
84	24	24	24	24	24
84 1/2	24	24	24	24	24
85	24	24	24	24	24
85 1/2	24	24	24	24	24
86	24	24	24	24	24
86 1/2	24	24	24	24	24
87	24	24	24	24	24
87 1/2	24	24	24	24	24
88	24	24	24	24	24
88 1/2	24	24	24	24	24
89	24	24	24	24	24
89 1/2	24	24	24	24	24
90	24	24	24	24	24
90 1/2	24	24	24	24	24
91	24	24	24	24	24
91 1/2	24	24	24	24	24
92	24	24	24	24	24
92 1/2	24	24	24	24	24
93	24	24	24	24	24
93 1/2	24	24	24	24	24
94	24	24	24	24	24
94 1/2	24	24	24	24	24
95	24	24	24	24	24
95 1/2	24	24	24	24	24
96	24	24	24	24	24
96 1/2	24	24	24	24	24
97	24	24	24	24	24
97 1/2	24	24	24	24	24
98	24	24	24	24	24
98 1/2	24	24	24	24	24
99	24	24	24	24	24
99 1/2	24	24	24	24	24
100	24	24	24	24	24

1. N = No reinforcement required.

2. = N1 reinforced with 3/4" wood structural panel on one side only.

3. = N2 reinforced with 3/4" wood structural panel on both sides, or double I-joist.

4. = N3 reinforced with 3/4" wood structural panel on one side, or double I-joist.

5. = N4 reinforced with 3/4" wood structural panel on one side, or double I-joist.

6. = N5 reinforced with 3/4" wood structural panel on one side, or double I-joist.

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.

3. 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 maximum width window or door openings.

4. 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 beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.

5. Cantilevered joist supporting girder trusses or roof beams may require additional reinforcing.



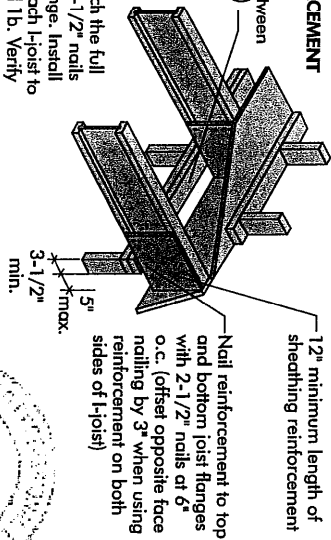


# BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

## 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.

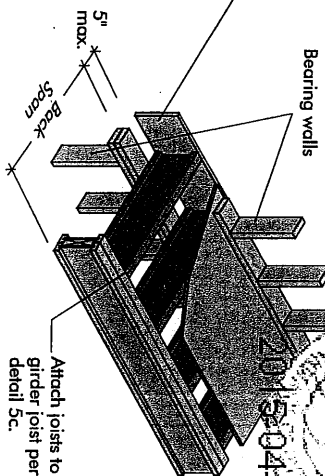


## 5b SET-BACK DETAIL

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.

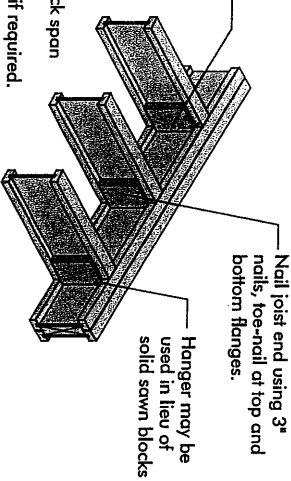
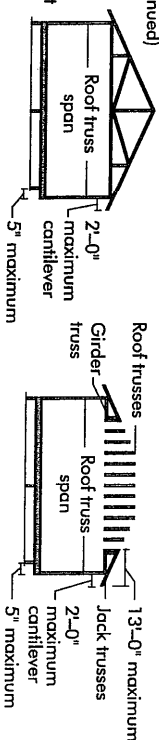


FIGURE 5 (continued)  
See table below for NI reinforcement requirements of cantilever.



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.

## BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS		ROOF LOADING (UNFACTORED)							
	SPAN (ft)	LL = 30 psf, DL = 15 psf	JOIST SPACING (in.)				JOIST SPACING (in.)			
8-1/2"	26	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	28	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	30	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	32	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	34	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	36	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	38	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	40	1	12	16	19.2	24	12	16	19.2	24
8-1/2"	42	1	12	16	19.2	24	12	16	19.2	24
12"	26	1	12	16	19.2	24	12	16	19.2	24
12"	28	1	12	16	19.2	24	12	16	19.2	24
12"	30	1	12	16	19.2	24	12	16	19.2	24
12"	32	1	12	16	19.2	24	12	16	19.2	24
12"	34	1	12	16	19.2	24	12	16	19.2	24
12"	36	1	12	16	19.2	24	12	16	19.2	24
12"	38	1	12	16	19.2	24	12	16	19.2	24
12"	40	1	12	16	19.2	24	12	16	19.2	24
12"	42	1	12	16	19.2	24	12	16	19.2	24
16"	26	1	12	16	19.2	24	12	16	19.2	24
16"	28	1	12	16	19.2	24	12	16	19.2	24
16"	30	1	12	16	19.2	24	12	16	19.2	24
16"	32	1	12	16	19.2	24	12	16	19.2	24
16"	34	1	12	16	19.2	24	12	16	19.2	24
16"	36	1	12	16	19.2	24	12	16	19.2	24
16"	38	1	12	16	19.2	24	12	16	19.2	24
16"	40	1	12	16	19.2	24	12	16	19.2	24
16"	42	1	12	16	19.2	24	12	16	19.2	24

1. N = No reinforcement required.  
1 = NI reinforced with 3/4" wood structural panel on one side only.
- 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.  
X = Try a deeper joist or closer spacing.
3. 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.
4. 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.
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 joist supporting girder trusses or roof beams may require additional reinforcing.

# INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
2. Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
4. Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when topped into place with a block and sledgehammer.
5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger and joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2" common nail to assure accurate and consistent spacing.)
10. **Complete all nailing of each panel before glue sets.** Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

## FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Maximum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Common Wire or Spiral Nails	Nail Size and Type	Maximum Spacing of Fasteners
16	5/8	2"	1-3/4"	2"
20	5/8	2"	1-3/4"	2"
24	3/4	2"	1-3/4"	2"

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.

Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

**IMPORTANT NOTE:**  
Floor 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.

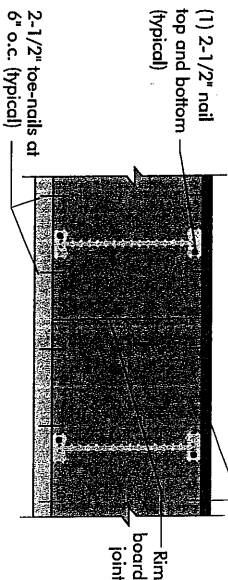
# RIM BOARD INSTALLATION DETAILS

## 8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

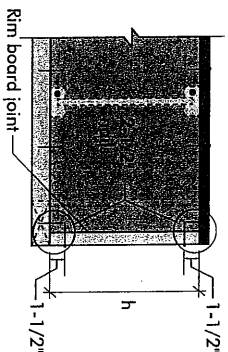
Rim board Joint Between Floor Joists

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

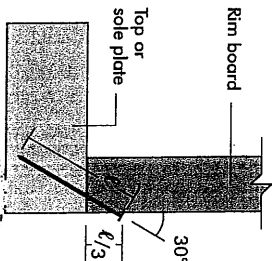
(1) 2-1/2" nail top and bottom (typical)



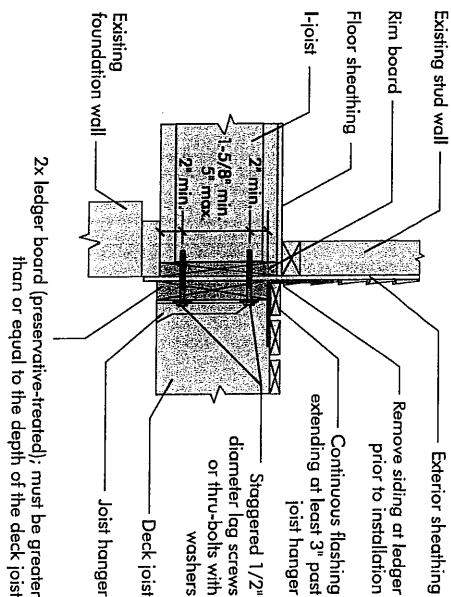
Rim board Joint at Corner



## 8b TOE-NAIL CONNECTION AT RIM BOARD



## 8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

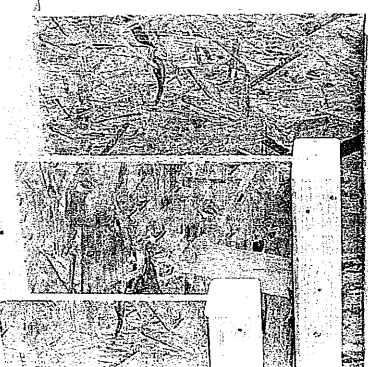


2015-04-16

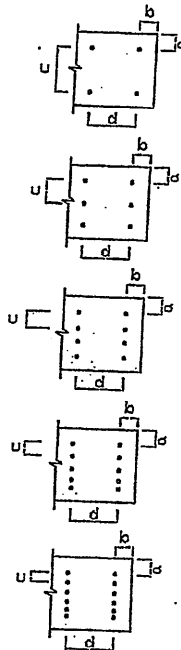
## PRODUCT WARRANTY

*Champion's performance guarantee is in accordance with our specifications. Notes: products are free from manufacturing defects in material and workmanship.*

*Furthermore, Champion's performance guarantee is not valid unless the product is installed in accordance with our handling and installation instructions. We warrant or accept our specifications for the lifetime of the structure.*

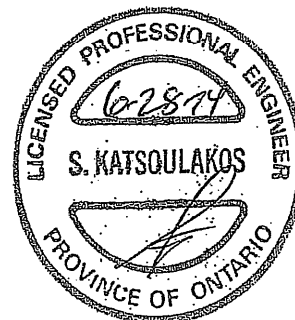


LVL HEADER AND CONVENTIONAL LUMBER NAILING DETAILS		
DETAIL NUMBER	NUMBER OF ROWS	SPACING (INCHES o/c) "d"
A	2	12
B	2	8
C	2	6
D	2	4
1A	3	12
1B	3	8
1C	3	6
1D	3	4
2A	4	12
2B	4	8
2C	4	6
2D	4	4
3A	5	12
3B	5	8
3C	5	6
3D	5	4
4A	6	12
4B	6	8
4C	6	6
4D	6	4



### 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 TAMN1001.14

STRUCTURAL  
COMPONENT ONLY

TO BE USED ONLY  
WITH BEAM CALCS  
BEARING THE  
STAMP BELOW

PROVIDE NAILING  
DETAIL NO X SEE  
DWG #TAMN1001-14