

FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S48-2

ELEVATION: A

LOT:

CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

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

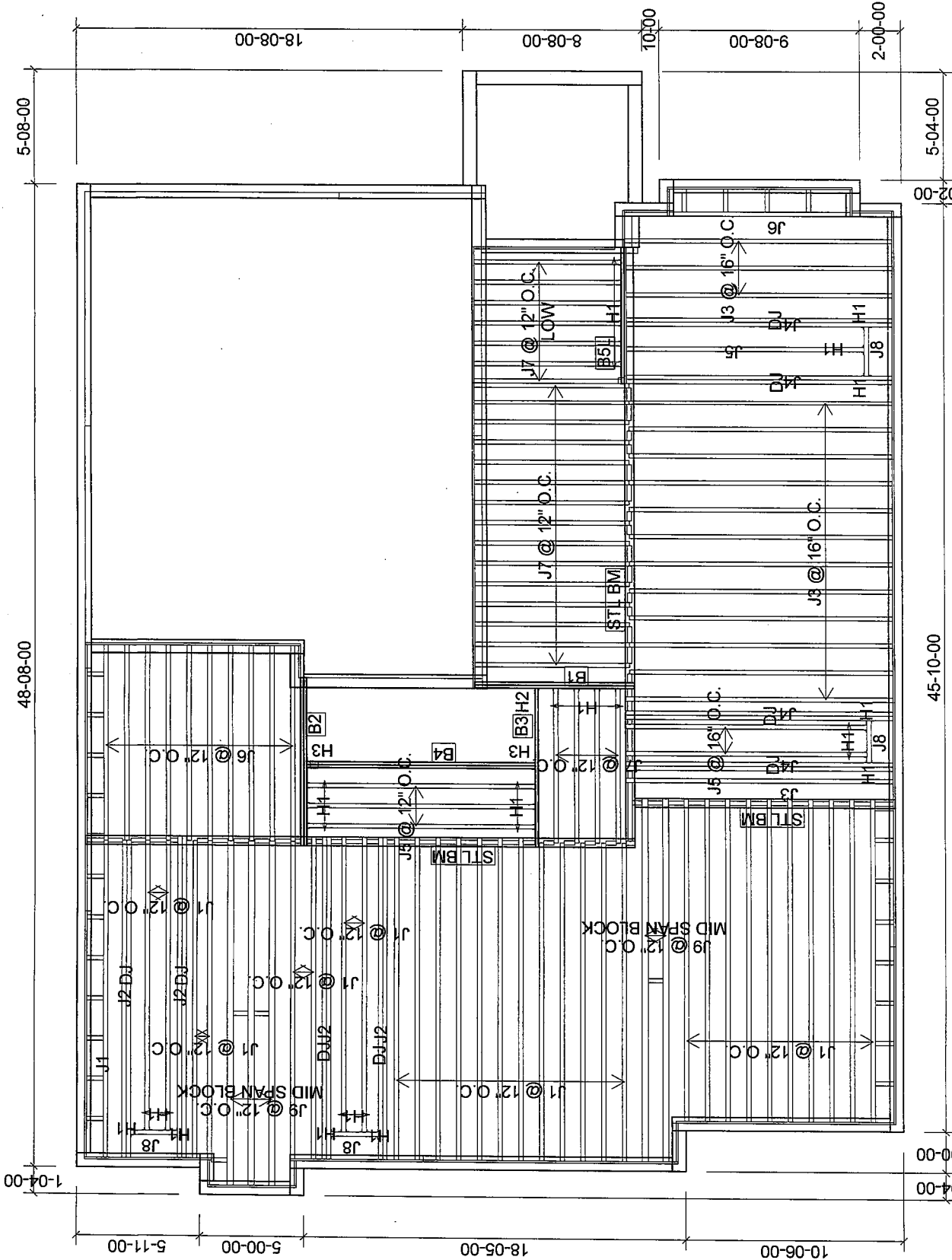
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.

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

SUBFLOOR: 5/8" GLUED AND NAILED

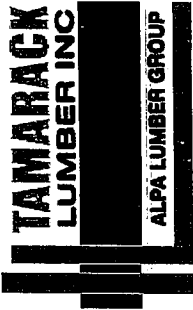
DATE: 9/1/2017

1st FLOOR



Products				Connector Summary			
PlotID	Length	Product	Plies	Net Qty	Qty	Manuf	Product
J1	16-00-00	9 1/2" NI-40x	1	31	9	H1	IUS2.56/9.5
J2	16-00-00	9 1/2" NI-40x	2	8	7	H1	IUS2.56/9.5
J3	14-00-00	9 1/2" NI-40x	1	16	8	H1	IUS2.56/9.5
J4	14-00-00	9 1/2" NI-40x	2	8	7	H1	IUS2.56/9.5
J5	12-00-00	9 1/2" NI-40x	1	6	1	H2	HUS1.81/9.5
J6	10-00-00	9 1/2" NI-40x	1	11	1	H3	HGUS410
J7	8-00-00	9 1/2" NI-40x	1	26	1	H3	HGUS410
J8	4-00-00	9 1/2" NI-40x	1	4			
J9	18-00-00	9 1/2" NI-80	1	5			
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B5L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			

Town of Innisfil Certified Model
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FROM PLAN DATED: NOV 2015

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BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S48-2

ELEVATION: A

LOT:

CITY: INNISFILL

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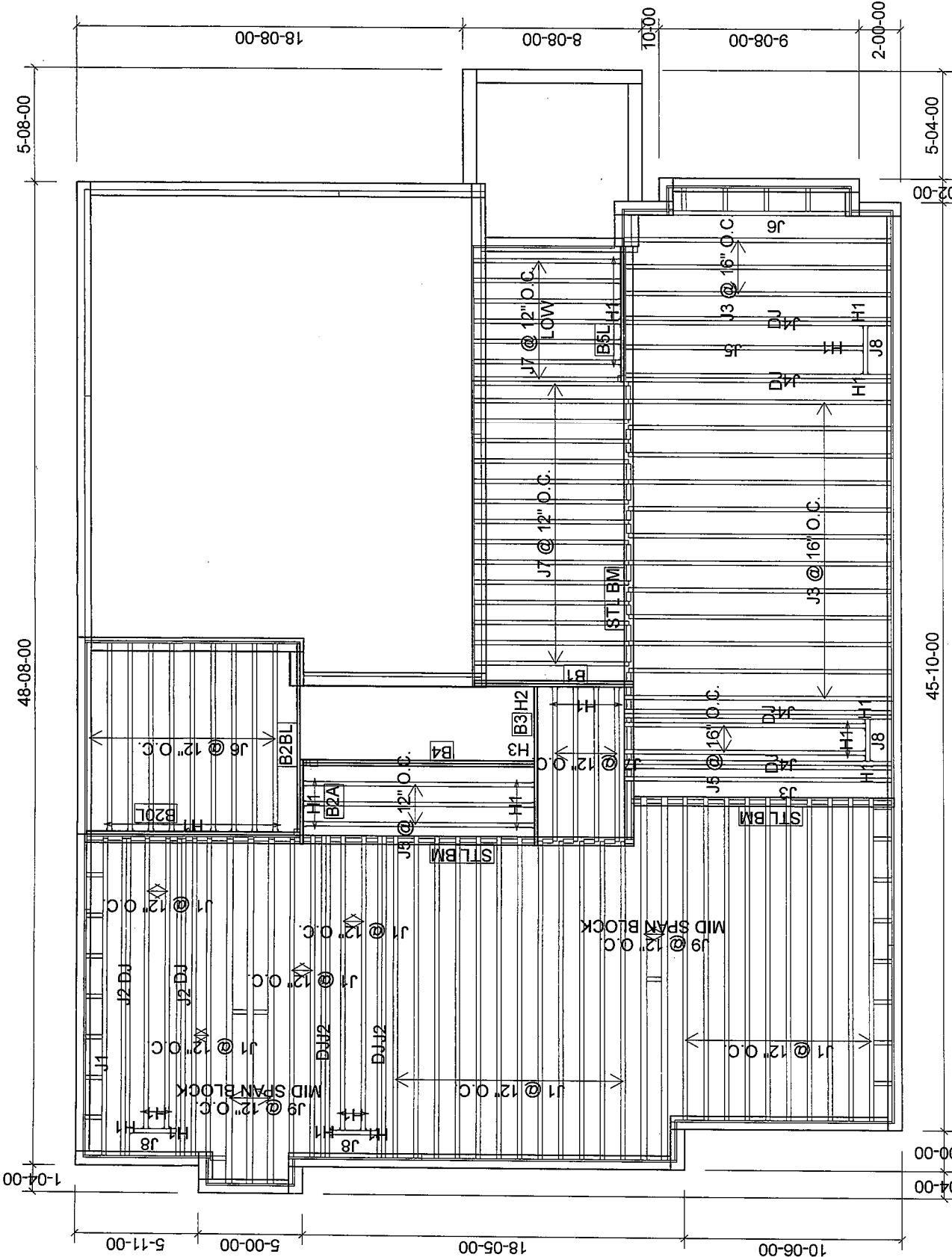
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/1/2017

1st FLOOR

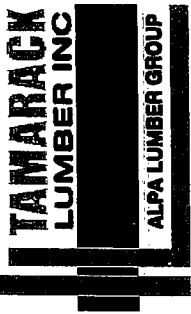
SUNKEN



Products				Piles		Net Qty	
PlotID	Length	Product					
J1	16-00-00	9 1/2" NI-40x		1	31		
J2	16-00-00	9 1/2" NI-40x		2	8		
J3	14-00-00	9 1/2" NI-40x		1	16		
J4	14-00-00	9 1/2" NI-40x		2	8		
J5	12-00-00	9 1/2" NI-40x		1	6		
J6	10-00-00	9 1/2" NI-40x		1	11		
J7	8-00-00	9 1/2" NI-40x		1	26		
J8	4-00-00	9 1/2" NI-40x		1	4		
J9	18-00-00	9 1/2" NI-80		1	5		
B20L	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		1	1		
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		2	2		
B2BL	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		1	1		
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		1	1		
B5L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		1	1		
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		2	2		
B2A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP		1	1		

Connector Summary		
Qty	Manuf	Product
21	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
1	H2	HUS1.81/9.5
1	H3	HGUS410

Town of Innisfil Certified Model
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FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S48-2

ELEVATION: A

LOT:

CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

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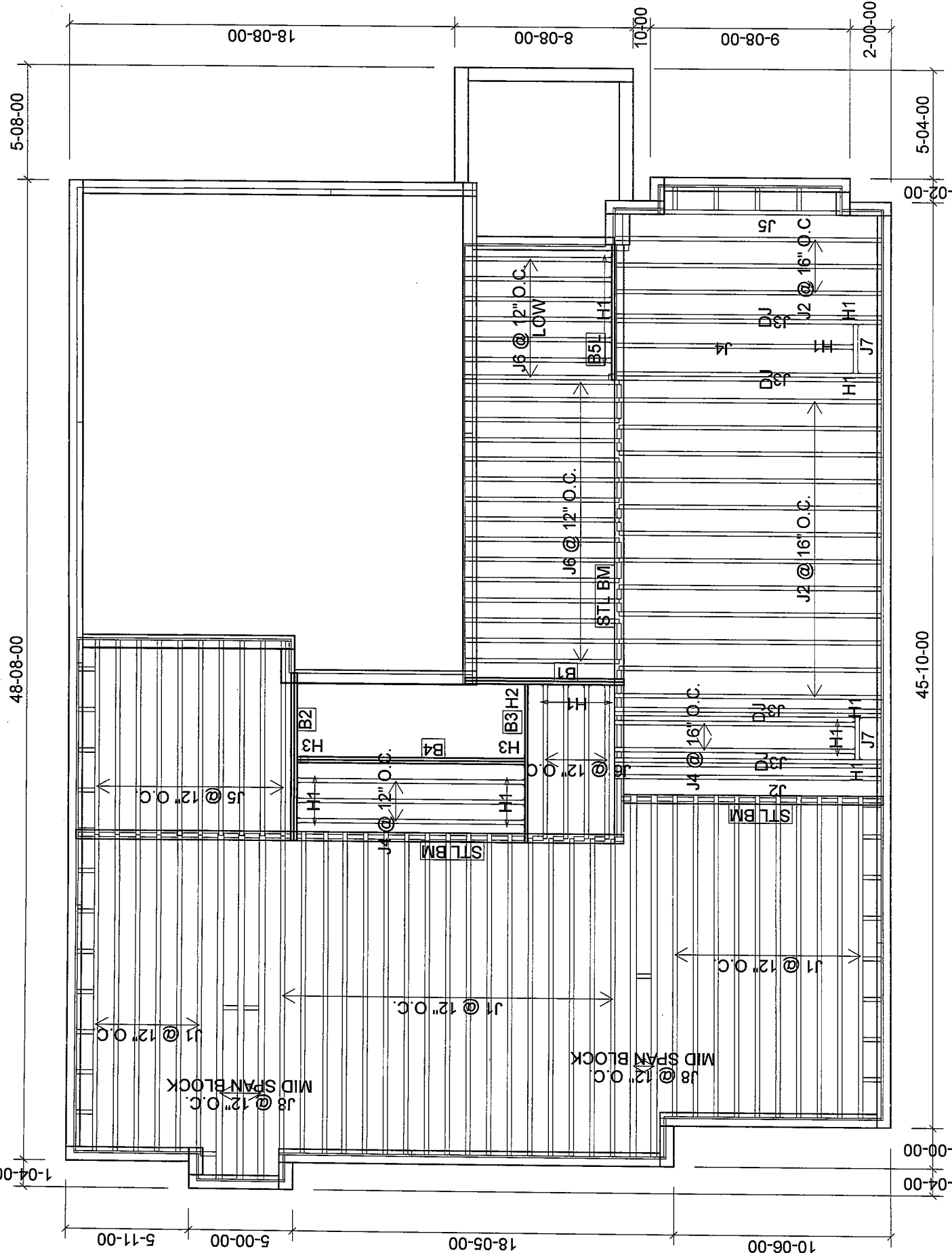
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/1/2017

1st FLOOR

WITH DECK



Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H1	IUS2.56/9.5
1	H2	HUS1.81/9.5
1	H3	HGUS410
1	H3	HGUS410

Products			
PlotID	Length	Product	Plies Net Qty
J1	16-00-00	9 1/2" NI-40x	1 33
J2	14-00-00	9 1/2" NI-40x	1 16
J3	14-00-00	9 1/2" NI-40x	2 8
J4	12-00-00	9 1/2" NI-40x	1 6
J5	10-00-00	9 1/2" NI-40x	1 11
J6	8-00-00	9 1/2" NI-40x	1 26
J7	4-00-00	9 1/2" NI-40x	1 2
J8	18-00-00	9 1/2" NI-80	1 5
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2 2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2 2
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1
B5L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2 2

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BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S48-2

ELEVATION: A

LOT:
CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

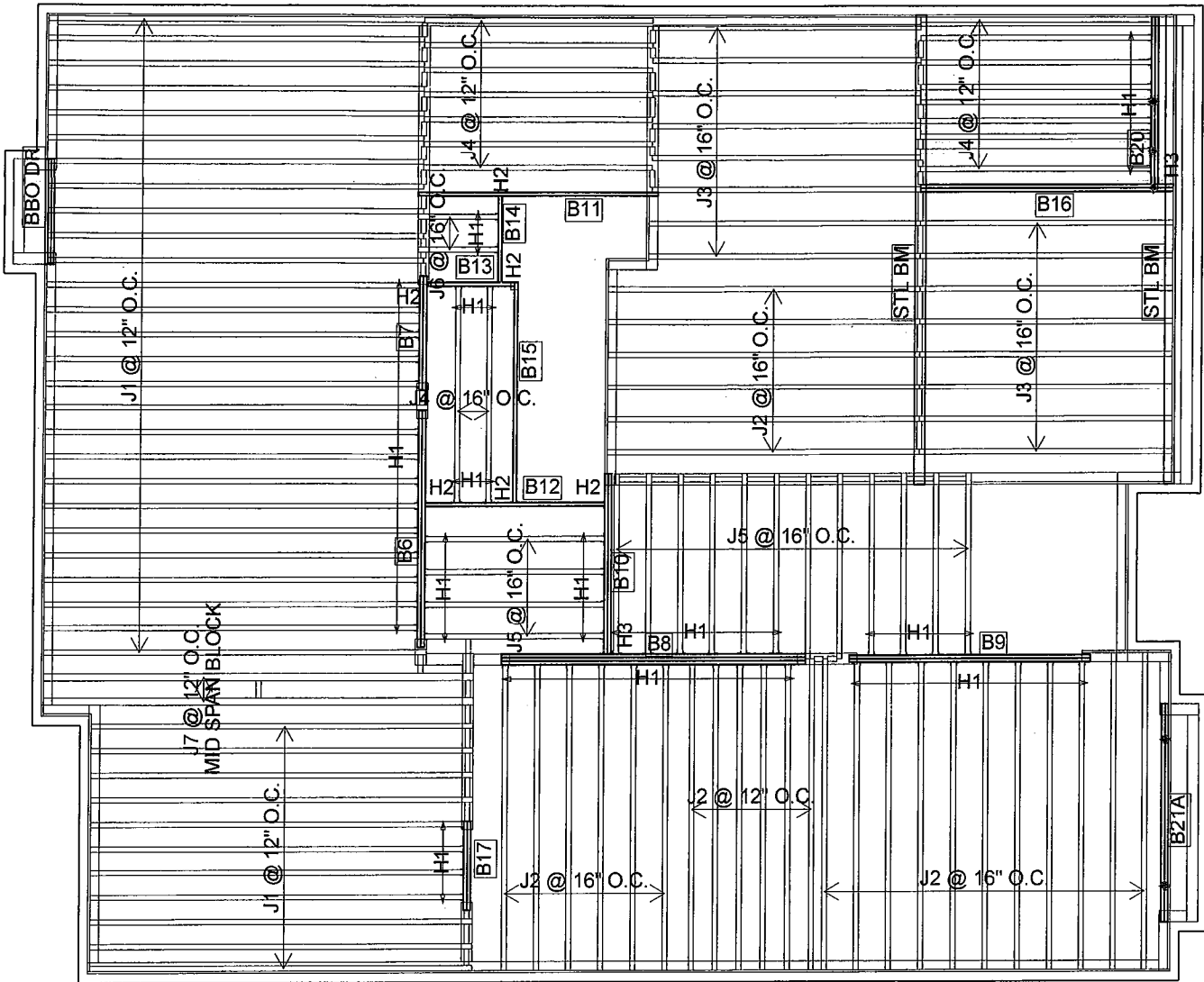
NOTES:
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LOADING:
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LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/1/2017

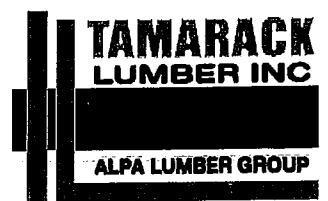
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	38
J2	14-00-00	9 1/2" NI-40x	1	29
J3	12-00-00	9 1/2" NI-40x	1	16
J4	10-00-00	9 1/2" NI-40x	1	18
J5	8-00-00	9 1/2" NI-40x	1	16
J6	4-00-00	9 1/2" NI-40x	1	2
J7	18-00-00	9 1/2" NI-80	1	2
B8	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
46	H1	IUS2.56/9.5
17	H1	IUS2.56/9.5
3	H2	HUS1.81/9.5
3	H2	HUS1.81/9.5
1	H3	HGUS410
1	H3	HGUS410

Town of Innisfil Certified Model
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FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S48-2

ELEVATION: B

LOT:
CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

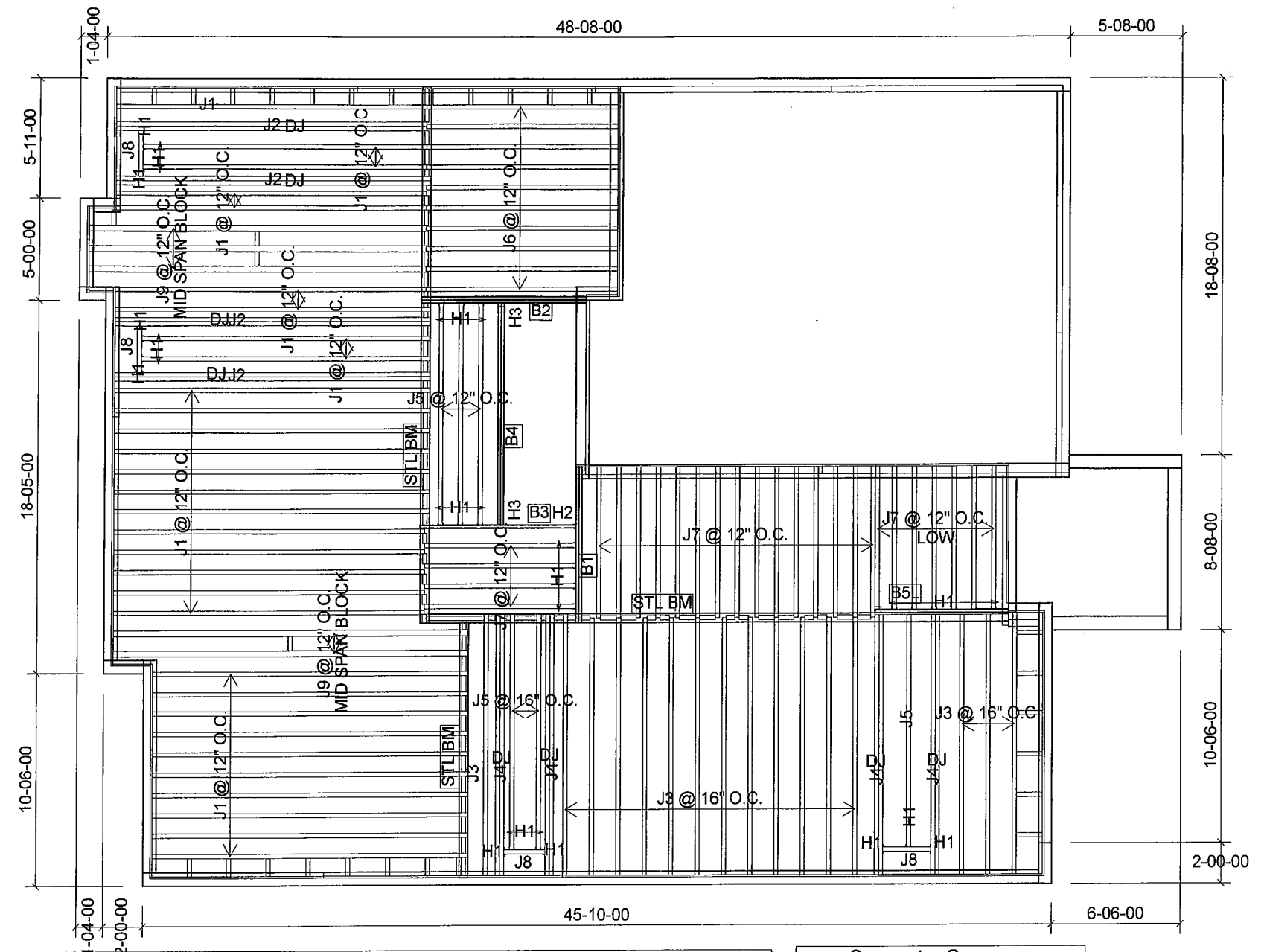
NOTES:
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2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
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LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/1/2017

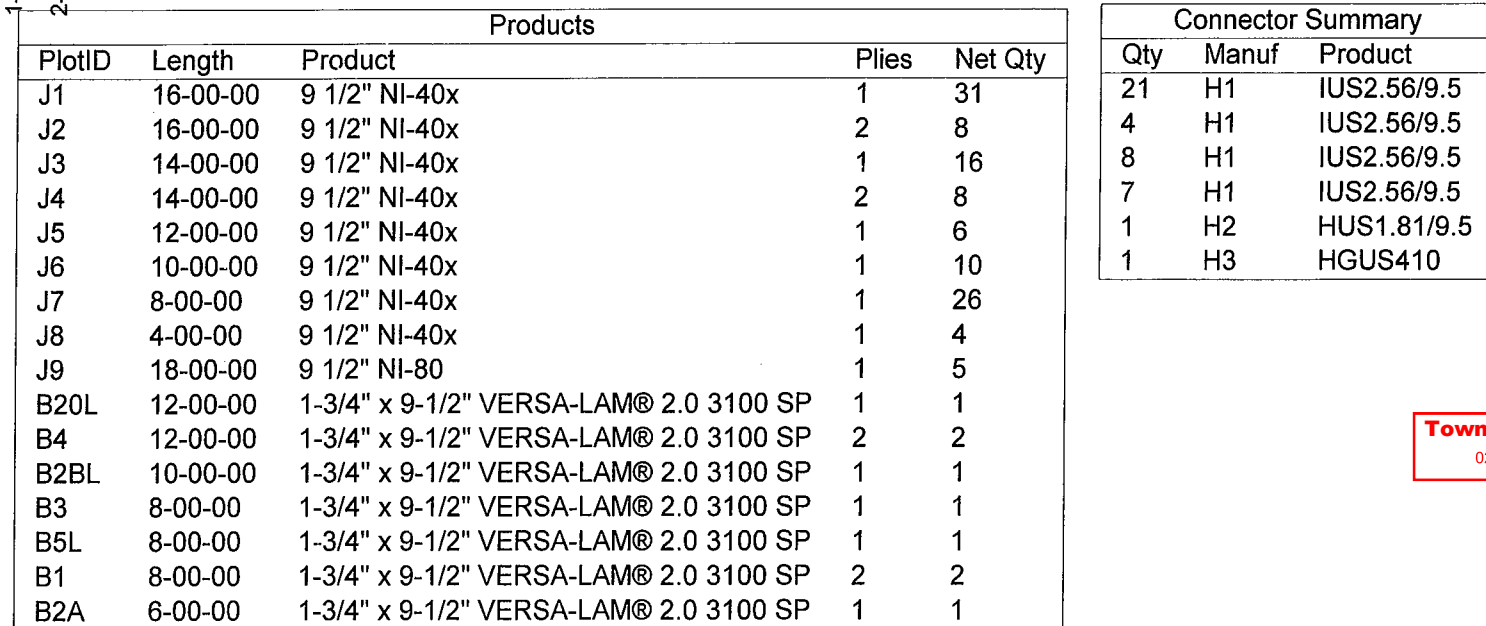
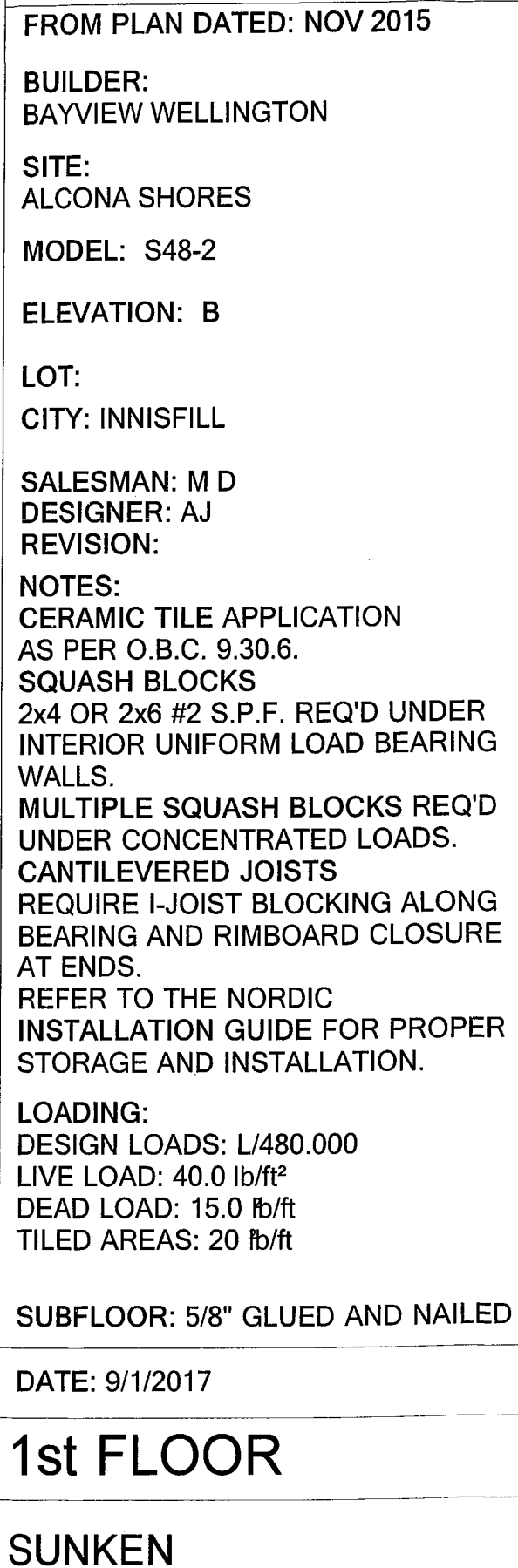
1st FLOOR

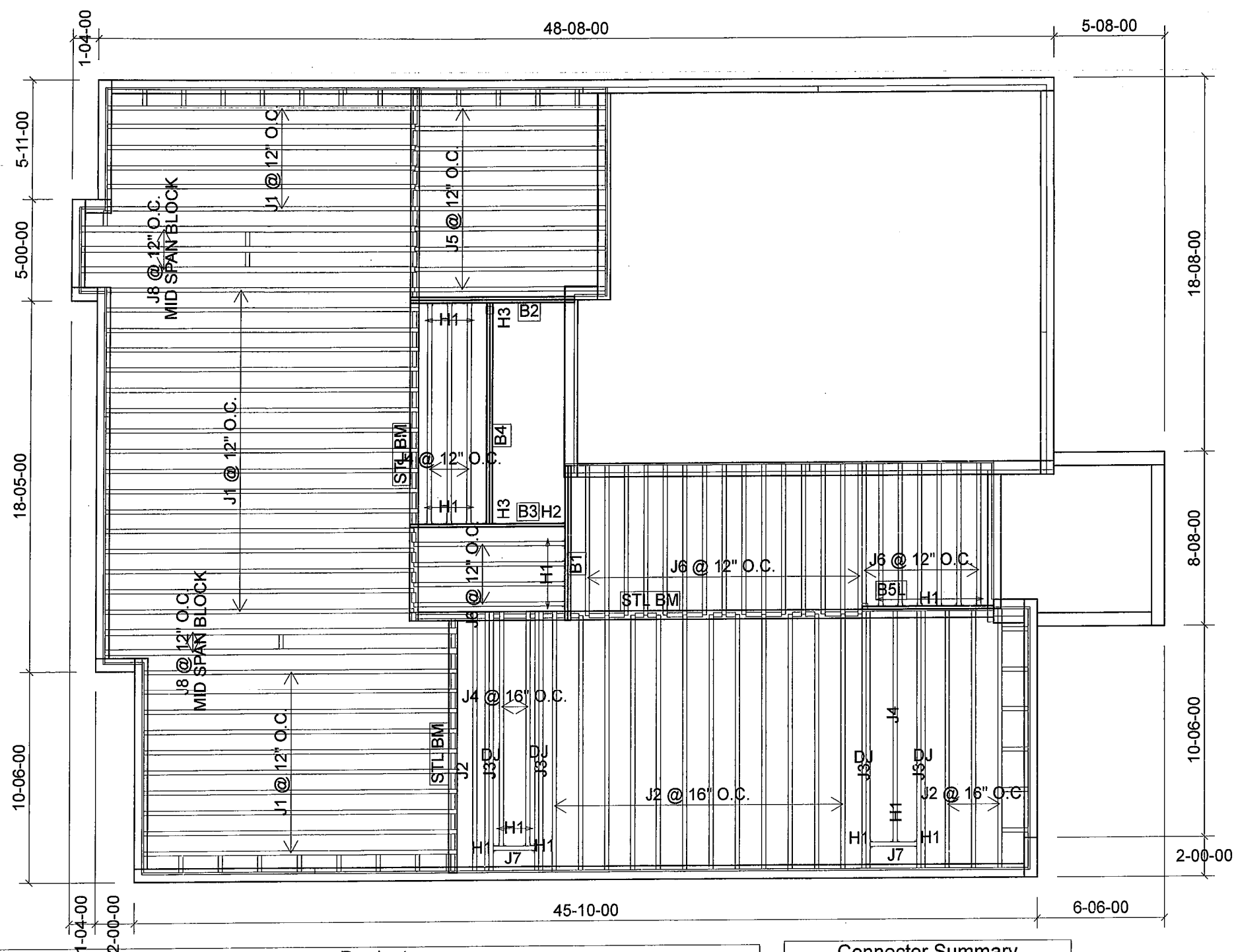


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	31
J2	16-00-00	9 1/2" NI-40x	2	8
J3	14-00-00	9 1/2" NI-40x	1	16
J4	14-00-00	9 1/2" NI-40x	2	8
J5	12-00-00	9 1/2" NI-40x	1	6
J6	10-00-00	9 1/2" NI-40x	1	10
J7	8-00-00	9 1/2" NI-40x	1	26
J8	4-00-00	9 1/2" NI-40x	1	4
J9	18-00-00	9 1/2" NI-80	1	5
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
1	H2	HUS1.81/9.5
1	H3	HGUS410
1	H3	HGUS410

Town of Innisfil Certified Model
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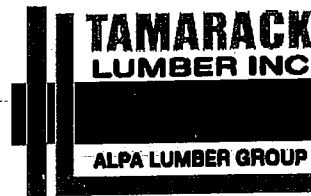




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J4	12-00-00	9 1/2" NI-40x	1	6
J5	10-00-00	9 1/2" NI-40x	1	10
J6	8-00-00	9 1/2" NI-40x	1	26
J7	4-00-00	9 1/2" NI-40x	1	2
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B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H1	IUS2.56/9.5
1	H2	HUS1.81/9.5
1	H3	HGUS410
1	H3	HGUS410

Town of Innisfil Certified Model
02/12/2017 10:28:21 AM kgervais



FROM PLAN DATED: NOV 2015

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BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S48-2

ELEVATION: B

LOT:
CITY: INNISFILL

SALESMAN: M D
DESIGNER: AJ
REVISION:

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WITH DECK

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SALESMAN: M D
DESIGNER: AJ
REVISION:

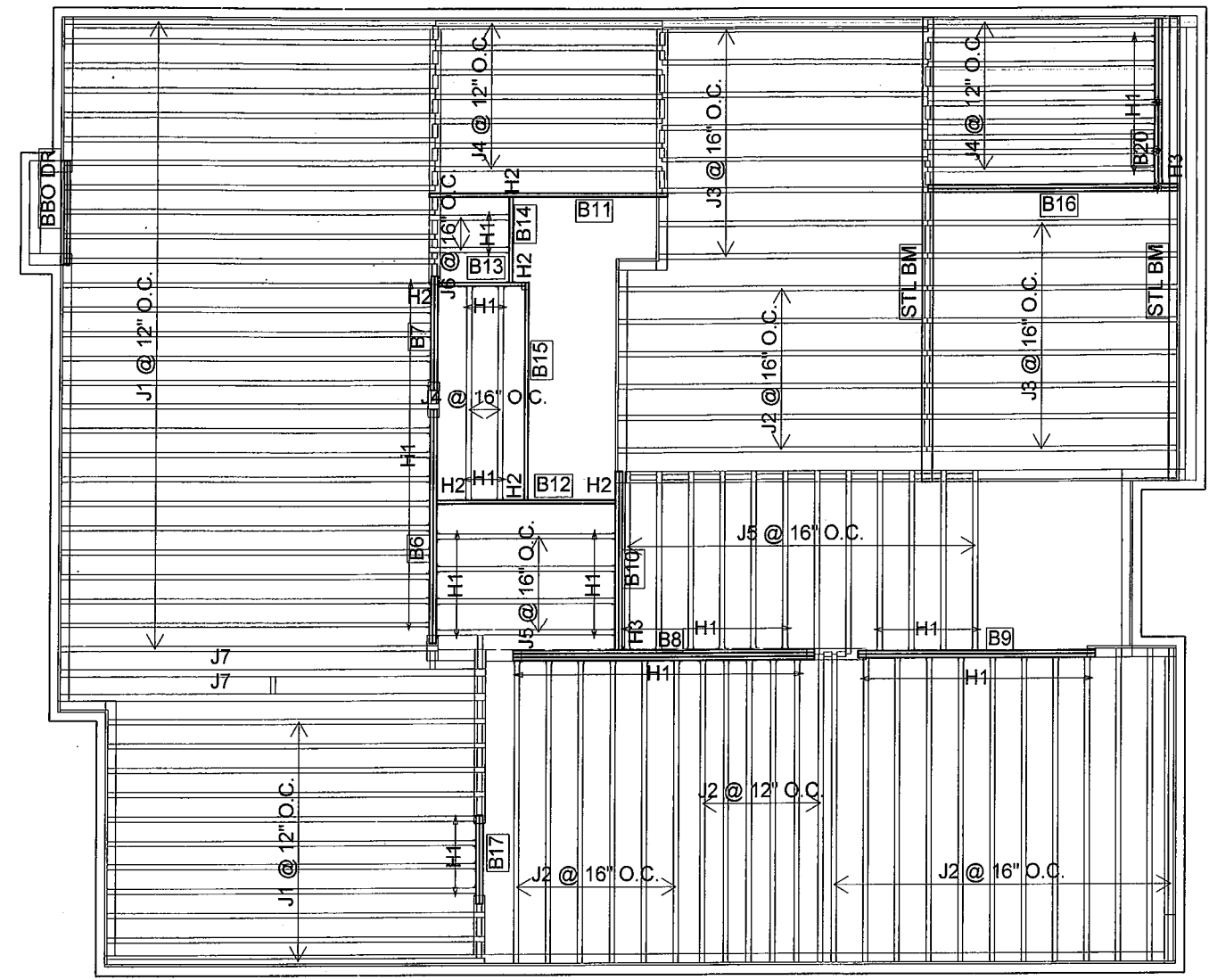
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SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 9/1/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	38
J2	14-00-00	9 1/2" NI-40x	1	30
J3	12-00-00	9 1/2" NI-40x	1	16
J4	10-00-00	9 1/2" NI-40x	1	18
J5	8-00-00	9 1/2" NI-40x	1	16
J6	4-00-00	9 1/2" NI-40x	1	2
J7	18-00-00	9 1/2" NI-80	1	2
B8	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
46	H1	IUS2.56/9.5
17	H1	IUS2.56/9.5
3	H2	HUS1.81/9.5
3	H2	HUS1.81/9.5
1	H3	HGUS410
1	H3	HGUS410

Town of Innisfil Certified Model
02/12/2017 10:28:24 AM kgervais



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2 SUNKEN EL-Ammdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2A(i4802

Specifier:

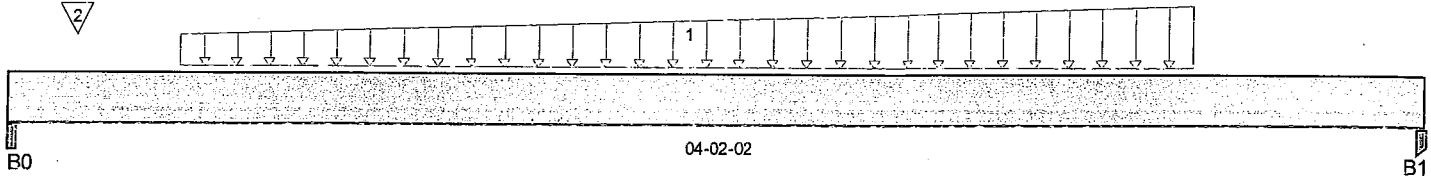
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:28:30 AM kgervais



Total Horizontal Product Length = 04-02-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	634 / 0	300 / 0		
B1, 3-1/2"	324 / 0	131 / 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	Trapezoidal (lb/ft)	L	00-06-00	03-06-00	192	72			n/a
					00-02-06	263	99			n/a
2	5(i1513)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	272	154			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	759 ft-lbs	12,704 ft-lbs	6%	1	02-00-00
End Shear	643 lbs	5,785 lbs	11.1%	1	03-01-02
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-01-14
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-01-14
Max Defl.	0.005"	n/a	n/a	4	02-01-14
Span / Depth	4.5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 1-3/4"	1,325 lbs	27%	11.8%	Unspecified
B1 Post	3-1/2" x 1-3/4"	650 lbs	13.1%	8.7%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012


BC CALC® Design Report



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

September 22, 2016 09:36:53

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i3676)

Specifier:

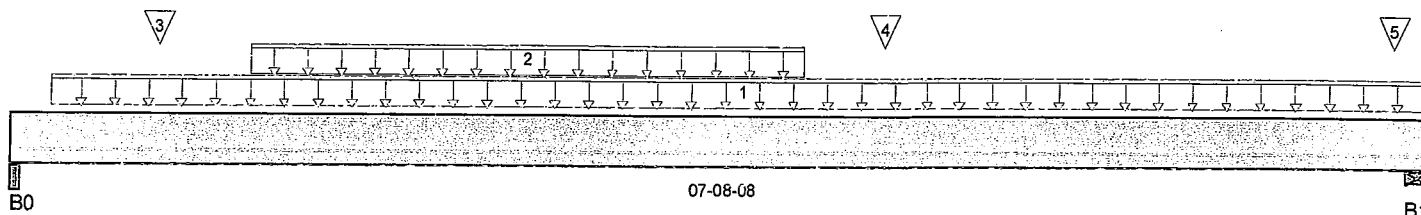
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:28:34 AM kgervais



Total Horizontal Product Length = 07-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	878 / 0	417 / 0		
B1, 4-3/8"	1,497 / 0	846 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	07-08-08	20	7			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-10	04-03-10	154	58			n/a
3	J7(i3657)	Conc. Pt. (lbs)	L	00-09-10	00-09-10	122	45			n/a
4	B3(i3672)	Conc. Pt. (lbs)	L	04-08-12	04-08-12	999	509			n/a
5	2(i1510)	Conc. Pt. (lbs)	L	07-06-05	07-06-05	618	397			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,758 ft-lbs	25,408 ft-lbs	18.7%	1	04-08-12
End Shear	1,807 lbs	11,571 lbs	15.6%	1	06-06-10
Total Load Defl.	L/999 (0.053")	n/a	n/a	4	04-00-07
Live Load Defl.	L/999 (0.036")	n/a	n/a	5	04-00-07
Max Defl.	0.053"	n/a	n/a	4	04-00-07
Span / Depth	8.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	1,837 lbs	23.4%	8.2%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	3,303 lbs	50.5%	17.7%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i3676)

BC CALC® Design Report



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

September 22, 2016 09:36:53

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

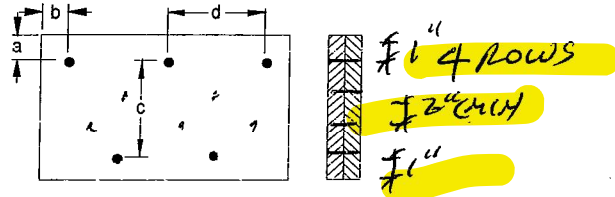
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i3676)

Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram

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

Calculated Side Load = 440.3 lb/ft

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

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

3 1/2" ARDOX SPIRAL

Disclosure

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Town of Innisfil Certified Model

02/12/2017 10:28:49 AM kgervais



DWG NO. TAM 44681-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:53

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

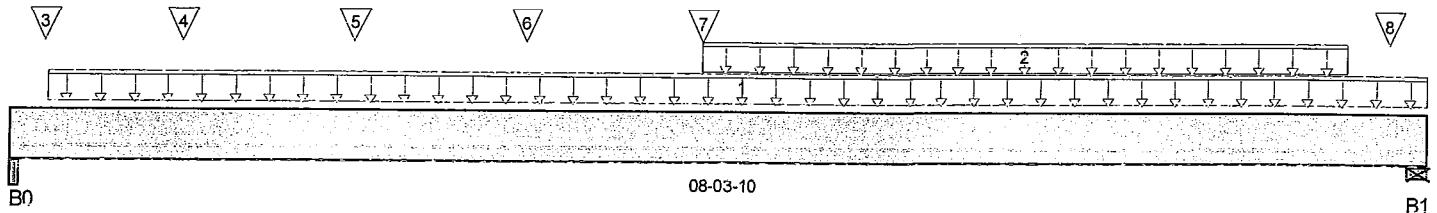
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i3706)

Specifier:

Designer: AJ

Company:

Msc:



Total Horizontal Product Length = 08-03-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	1,840 / 0	996 / 0		
B1, 5-1/2"	2,413 / 0	1,633 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	08-03-10	10	4			n/a
2	User Load	Unf. Lin. (lb/ft)	L	04-00-06	07-10-02	240	120			n/a
3	5(i1513)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	544	308			n/a
4	J5(i3763)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	194	73			n/a
5	J5(i3850)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	227	85			n/a
6	J5(i3851)	Conc. Pt. (lbs)	L	03-00-00	03-00-00	247	93			n/a
7	B4(i3852)	Conc. Pt. (lbs)	L	04-00-06	04-00-06	941	610			n/a
8	2(i1510)	Conc. Pt. (lbs)	L	08-00-14	08-00-14	1,086	886			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,336 ft-lbs	25,408 ft-lbs	28.9%	1	04-00-06
End Shear	2,650 lbs	11,571 lbs	22.9%	1	01-02-12
Total Load Defl.	L/999 (0.095")	n/a	n/a	4	04-01-08
Live Load Defl.	L/999 (0.061")	n/a	n/a	5	04-01-08
Max Defl.	0.095"	n/a	n/a	4	04-01-08
Span / Depth	9.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	4,005 lbs	51%	17.9%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	5,661 lbs	68.8%	24.1%	Unspecified

Notes





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i3706)

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

September 22, 2016 09:36:53

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i3706)

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

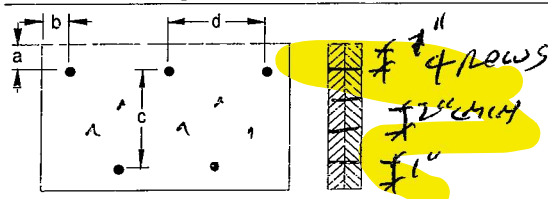
Resistance Factor phi has been applied to all presented results per CSA 086.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBC 2012**Connection Diagram**

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

Calculated Side Load = 435.9 lb/ft

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

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

3 1/2" ARDOX SPIRAL**Disclosure**

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Town of Innisfil Certified Model

02/12/2017 10:28:58 AM kgervais



DWG NO. TAM 4468217
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i3672)

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

September 22, 2016 09:36:54

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i3672)

Specifier:

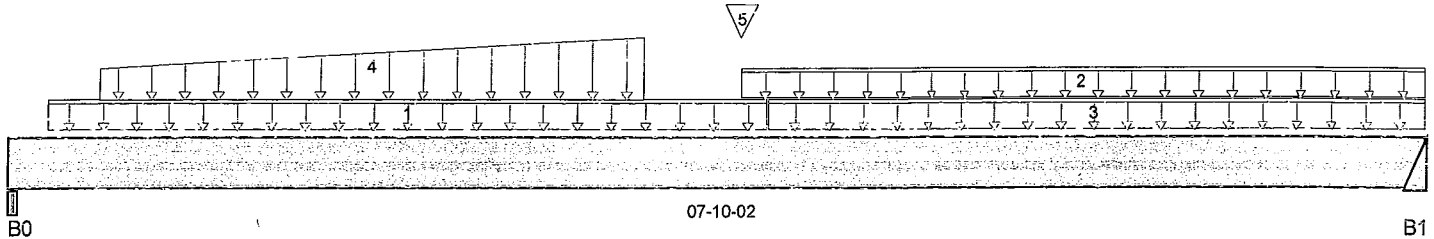
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:29:02 AM kgervais



07-10-02

B1

Total Horizontal Product Length = 07-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	891 / 0	412 / 0		
B1	998 / 0	509 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	04-02-02	19	7			n/a
2	User Load	Unf. Lin. (lb/ft)	L	04-00-06	07-10-02	240	120			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	04-02-02	07-10-02	20	8			n/a
4	Smoothed Load	Trapezoidal (lb/ft)	L	00-06-00		189	71			n/a
					03-06-00	254	95			n/a
5	B4(i3852)	Conc. Pt. (lbs)	L	04-00-06	04-00-06	158	119			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,874 ft-lbs	12,704 ft-lbs	30.5%	1	04-00-06
End Shear	1,693 lbs	5,785 lbs	29.3%	1	01-02-12
Total Load Defl.	L/999 (0.105")	n/a	n/a	4	04-01-04
Live Load Defl.	L/999 (0.07")	n/a	n/a	5	04-01-04
Max Defl.	0.105"	n/a	n/a	4	04-01-04
Span / Depth	9.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 1-3/4"	1,851 lbs	47.2%	16.5%	Unspecified
B1 Hanger	2" x 1-3/4"	2,132 lbs	n/a	49.9%	Hanger

Notes





Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basment\Flush Beams\B3(i3672)

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B3(i3672)

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

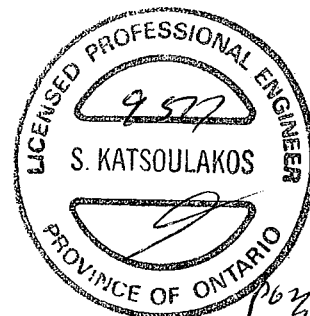
CONFORMS TO OBC 2012**Disclosure**

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02/12/2017 10:29:05 AM kgervais



DWG NO. TAM 4468317
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i3852)

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdi

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i3852)

Specifier:

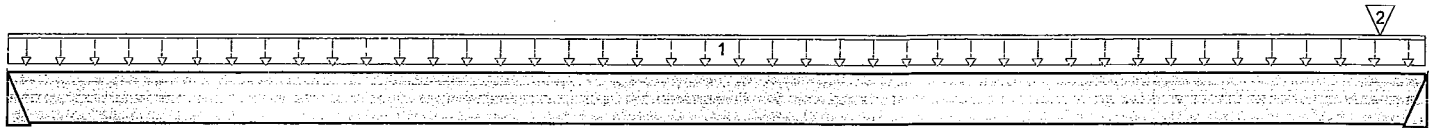
Designer: AJ

Company:

Msc:

Town of Innisfil Certified Model

02/12/2017 10:29:09 AM kgervais



11-00-08

B0

B1

Total Horizontal Product Length = 11-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	150 / 0	114 / 0		
B1	945 / 0	613 / 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	11-00-08	24	9			n/a
2	PBO4(i1534)	Conc. Pt. (lbs)	L	10-08-02	10-08-02	835	524			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,121 ft-lbs	25,408 ft-lbs	4.4%	1	06-02-13
End Shear	698 lbs	11,571 lbs	6%	1	10-01-00
Total Load Defl.	L/999 (0.035")	n/a	n/a	4	05-07-15
Live Load Defl.	L/999 (0.02")	n/a	n/a	5	05-09-11
Max Defl.	0.035"	n/a	n/a	4	05-07-15
Span / Depth	13.7	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"	368 lbs	n/a	4.3%	Hanger
B1 Hanger	2" x 3-1/2"	2,184 lbs	n/a	25.6%	Hanger

Notes

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per 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



DWONG, YAM 4468417
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i3852)

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

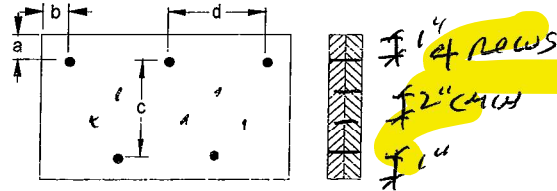
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i3852)

Specifier:

Designer: AJ

Company:

Msc:

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

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Town of Innisfil Certified Model

02/12/2017 10:29:19 AM kgervais



DWG NO. TAM 44604/17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5L(i51)

Specifier:

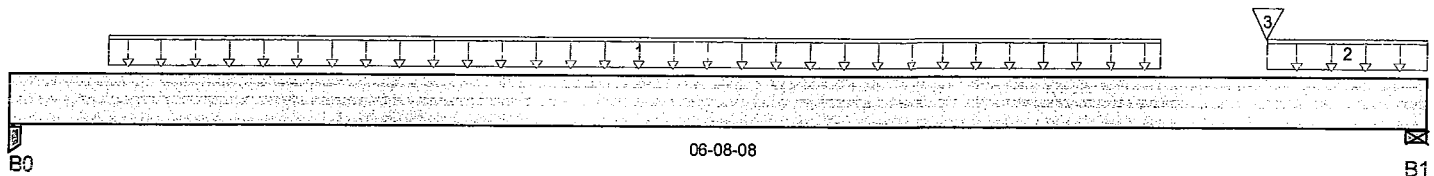
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:29:24 AM kgervais



Total Horizontal Product Length = 06-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	408 / 0	168 / 0		
B1, 3-1/2"	431 / 0	177 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-08	05-05-08	142	52			n/a
2	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	05-11-08	06-08-08	18	7			n/a
3	J6(i72)	Conc. Pt. (lbs)	L	05-11-08	05-11-08	118	44			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,391 ft-lbs	12,704 ft-lbs	10.9%	1	02-11-08
End Shear	773 lbs	5,785 lbs	13.4%	1	01-01-00
Total Load Defl.	L/999 (0.027")	n/a	n/a	4	03-04-00
Live Load Defl.	L/999 (0.019")	n/a	n/a	5	03-04-00
Max Defl.	0.027"	n/a	n/a	4	03-04-00
Span / Depth	7.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	823 lbs	20.7%	11%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	868 lbs	33.2%	11.6%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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DWONG, YAM 4468517
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i2976)

Specifier:

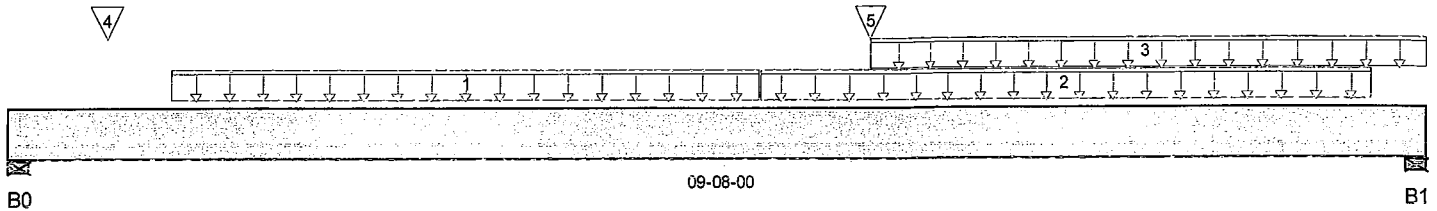
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:29:28 AM kgervais



Total Horizontal Product Length = 09-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,247 / 0	1,177 / 0		
B1, 4"	1,994 / 0	1,055 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-01-04	05-01-04	469	234			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	05-01-04	09-03-08	297	148			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-10-02	09-08-00	30	15			n/a
4	-	Conc. Pt. (lbs)	L	00-07-15	00-07-15	494	247			n/a
5	B12(i3212)	Conc. Pt. (lbs)	L	05-10-02	05-10-02	515	280			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	11,207 ft-lbs	25,408 ft-lbs	44.1%	1	04-09-08
End Shear	4,211 lbs	11,571 lbs	36.4%	1	01-01-08
Total Load Defl.	L/467 (0.234")	0.456"	51.3%	4	04-09-08
Live Load Defl.	L/713 (0.154")	0.304"	50.5%	5	04-09-08
Max Defl.	0.234"	n/a	n/a	4	04-09-08
Span / Depth	11.5	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	4" x 3-1/2"	4,841 lbs	80.9%	28.3%	Unspecified
B1	Wall/Plate	4" x 3-1/2"	4,310 lbs	72.1%	25.2%	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 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





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i2976)

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S48-2.mmdl

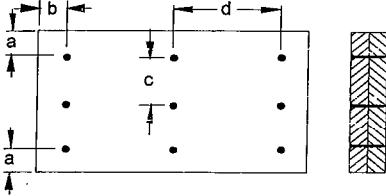
Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i2976)

Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram

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

Calculated Side Load = 636.4 lb/ft

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

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

3 1/2" ARDOX SPIRAL

Disclosure

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Town of Innisfil Certified Model

02/12/2017 10:29:30 AM kgervais



DWG NO. TAM 4468617
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

File Name: S48-2.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i3109)

Address:

Specifier:

City, Province, Postal Code: INNISFILL,

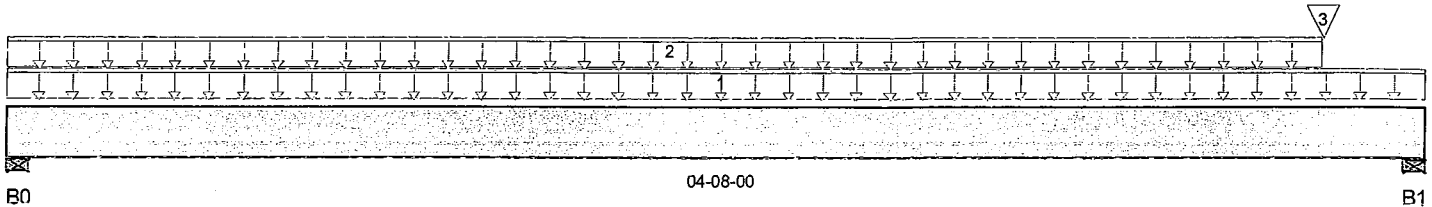
Designer: AJ

Customer:

Company:

Code reports: CCMC 12472-R

Misc:



Total Horizontal Product Length = 04-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	867 / 0	455 / 0		
B1, 4"	1,158 / 0	610 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-08-00	333	166			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	30	15			n/a
3	B13(i2979)	Conc. Pt. (lbs)	L	04-04-00	04-04-00	342	181			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,603 ft-lbs	25,408 ft-lbs	6.3%	1	02-03-08
End Shear	1,125 lbs	11,571 lbs	9.7%	1	01-01-08
Total Load Defl.	L/999 (0.007")	n/a	n/a	4	02-04-04
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	02-04-04
Max Defl.	0.007"	n/a	n/a	4	02-04-04
Span / Depth	5.2	n/a	n/a		00-00-00

Town of Innisfil Certified Model

02/12/2017 10:29:39 AM kgervais

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	4" x 3-1/2"	1,870 lbs	31.3%	10.9%	Unspecified
B1	4" x 3-1/2"	2,499 lbs	41.8%	14.6%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per 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





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i3109)

BC CALC® Design Report



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

September 22, 2016 09:36:54

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

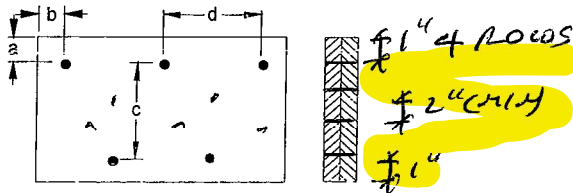
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i3109)

Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram

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

Calculated Side Load = 732.3 lb/ft

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

Connectors are: 16d 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.

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Town of Innisfil Certified Model

02/12/2017 10:29:52 AM kgervais



DWG NO. TAW 4468-17
 STRUCTURAL
 COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i2911)

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

September 22, 2016 09:36:55

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2911)

Specifier:

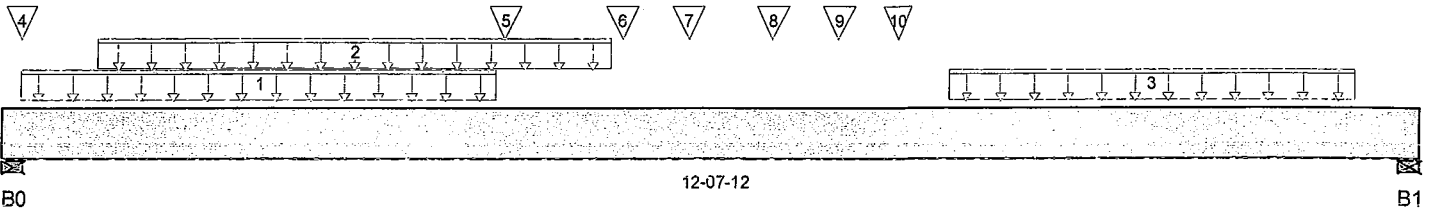
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:30:03 AM kgervais



Total Horizontal Product Length = 12-07-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,733 / 0	1,482 / 0		
B1, 3-3/4"	2,491 / 0	1,349 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-02-00	04-04-12	19	9			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-00	05-05-00	220	110			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	08-05-04	12-01-00	443	221			n/a
4	J2(i3293)	Conc. Pt. (lbs)	L	00-02-00	00-02-00	532	266			n/a
5	-	Conc. Pt. (lbs)	L	04-05-09	04-05-09	677	374			n/a
6	J2(i3297)	Conc. Pt. (lbs)	L	05-06-00	05-06-00	336	168			n/a
7	J5(i3276)	Conc. Pt. (lbs)	L	06-01-00	06-01-00	202	101			n/a
8	J2(i3298)	Conc. Pt. (lbs)	L	06-10-00	06-10-00	307	154			n/a
9	J5(i3275)	Conc. Pt. (lbs)	L	07-05-00	07-05-00	202	101			n/a
10	J2(i3407)	Conc. Pt. (lbs)	L	07-11-04	07-11-04	265	133			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	17,257 ft-lbs	39,636 ft-lbs	43.5%	1	06-01-00
End Shear	5,135 lbs	17,356 lbs	29.6%	1	11-06-08
Total Load Defl.	L/340 (0.429")	0.606"	70.7%	4	06-03-04
Live Load Defl.	L/524 (0.278")	0.404"	68.7%	5	06-03-04
Max Defl.	0.429"	n/a	n/a	4	06-03-04
Span / Depth	15.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 5-1/4"	5,951 lbs	66.3%	23.2%	Unspecified
B1 Wall/Plate	3-3/4" x 5-1/4"	5,422 lbs	64.5%	22.6%	Unspecified

Notes



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2911

Specifier:

Designer: AJ

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

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

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

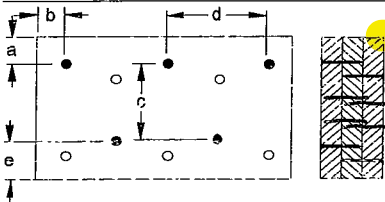
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBC 2012

Connection Diagram



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

Calculated Side Load = 601.4 lb/ft

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

Nailing schedule applies to both sides of the member.

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

3 1/2" ARDOX SPIRAL

Disclosure

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Town of Innisfil Certified Model

02/12/2017 10:30:13 AM kgervais



DWG NO. TAM 44688-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:55

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

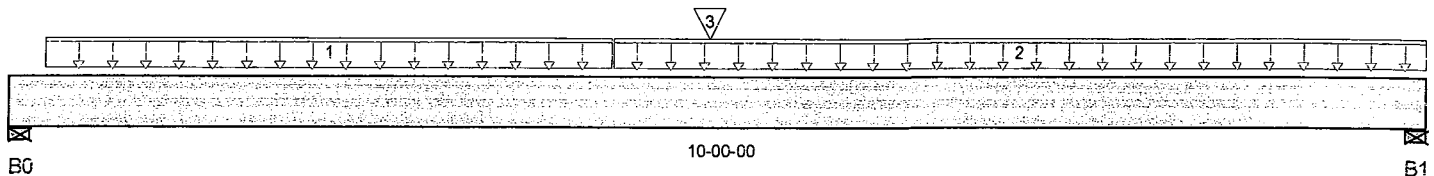
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i3056)

Specifier:

Designer: AJ

Company:

Msc:



Total Horizontal Product Length = 10-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,879 / 0	988 / 0		
B1, 4"	1,544 / 0	820 / 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	00-03-00	04-03-00	400	200			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	04-03-00	10-00-00	293	147			n/a
3	J5(i3266)	Conc. Pt. (lbs)	L	04-11-00	04-11-00	122	61			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	8,022 ft-lbs	25,408 ft-lbs	31.6%	1	04-04-00
End Shear	3,219 lbs	11,571 lbs	27.8%	1	01-01-08
Total Load Defl.	L/629 (0.181")	0.473"	38.2%	4	04-11-00
Live Load Defl.	L/999 (0.118")	n/a	n/a	5	04-11-00
Max Defl.	0.181"	n/a	n/a	4	04-11-00
Span / Depth	11.9	n/a	n/a		00-00-00

Town of Innisfil Certified Model

02/12/2017 10:30:16 AM kgervais

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	4,054 lbs	67.8%	23.7%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	3,341 lbs	55.9%	19.6%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B9(i3056)

BC CALC® Design Report



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

September 22, 2016 09:36:55

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports:

CCMC 12472-R

File Name: S48-2.mmdl

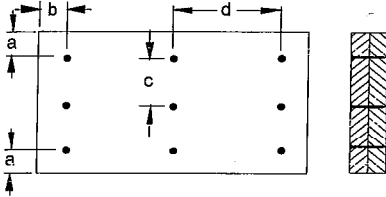
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i3056)

Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram

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

Calculated Side Load = 591.4 lb/ft

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

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

3 1/2" ARDOX SPIRAL

Disclosure

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Town of Innisfil Certified Model

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DWG NO. TAM 446897
 STRUCTURAL
 COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...\B10(i2943)

BC CALC® Design Report



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

September 22, 2016 09:36:55

Build 4340

File Name: S48-2.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i2943)

Address:

Specifier:

City, Province, Postal Code: INNISFILL,

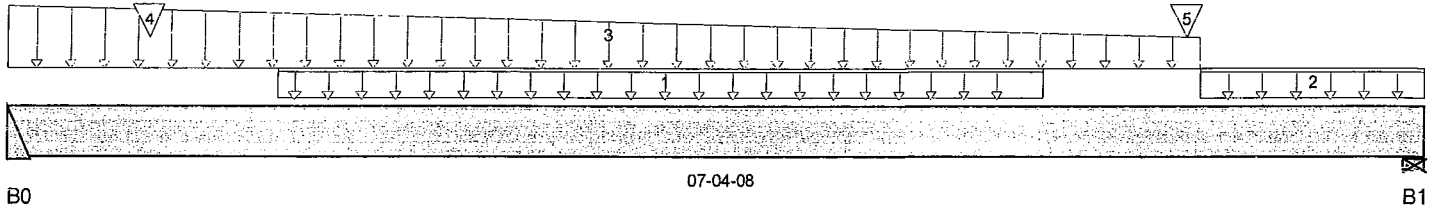
Designer: AJ

Customer:

Company:

Code reports: CCMC 12472-R

Misc:



07-04-08

B0

B1

Total Horizontal Product Length = 07-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	549 / 0	311 / 0		
B1, 5-1/2"	609 / 0	362 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-12	05-04-12	157	78			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	06-02-08	07-04-08	10				n/a
3	FC3 Floor Material	Trapezoidal (lb/ft)	L	00-00-00		9	5			n/a
					06-02-08	7	3			n/a
4	J5(i3281)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	171	85			n/a
5	B12(i3212)	Conc. Pt. (lbs)	L	06-01-10	06-01-10	288	167			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,258 ft-lbs	25,408 ft-lbs	8.9%	1	03-04-12
End Shear	1,332 lbs	11,571 lbs	11.5%	1	06-01-08
Total Load Defl.	L/999 (0.027")	n/a	n/a	4	03-06-12
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	03-06-12
Max Defl.	0.027"	n/a	n/a	4	03-06-12
Span / Depth	8.7	n/a	n/a		00-00-00

Town of Innisfil Certified Model

02/12/2017 10:30:35 AM kgervais

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	1,213 lbs	n/a	14.2%	Hanger
B1 Wall/Plate	5-1/2" x 3-1/2"	1,365 lbs	16.6%	5.8%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per 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. TAM4469017
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i294

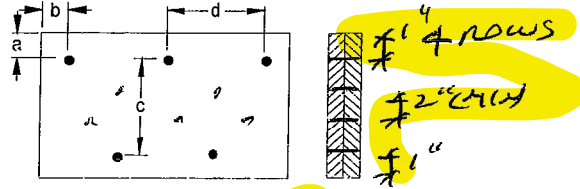
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



a minimum = 1" c = 7-1/2"
b minimum = 3" d = 2-1/4" 6"

Calculated Side Load = 328.9 lb/ft

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

Connectors are: 16d Steel Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

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

BC CALO®, BC FRAMER®, AJS™,
ALLJOIST®, BC RIM BOARD™, 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

02/12/2017 10:30:47 AM kgervais



DWG NO. TAM 4469017
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:55

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i3169)

Specifier:

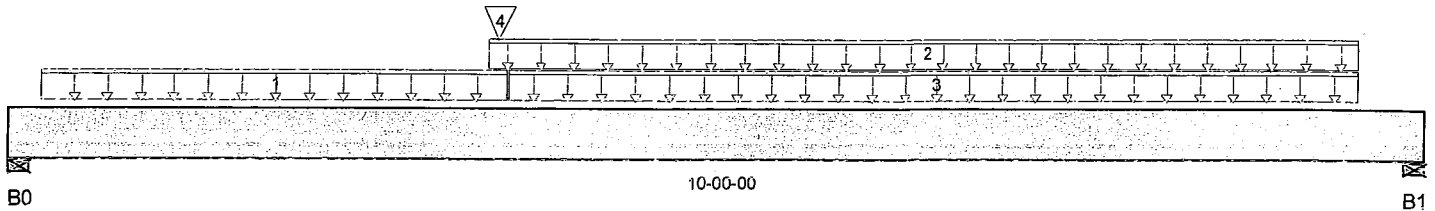
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:30:50 AM kgervais



Total Horizontal Product Length = 10-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	491 / 0	402 / 0		
B1, 5-1/2"	280 / 0	411 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	03-06-04	40	20			n/a
2	User Load	Unf. Lin. (lb/ft)	L	03-04-08	09-06-08		60			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	03-06-04	09-06-08	23	11			n/a
4	B14(i3021)	Conc. Pt. (lbs)	L	03-05-06	03-05-06	501	260			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,311 ft-lbs	12,704 ft-lbs	26.1%	1	03-05-06
End Shear	1,145 lbs	5,785 lbs	19.8%	1	01-03-00
Total Load Defl.	L/836 (0.132")	0.46"	28.7%	4	04-09-15
Live Load Defl.	L/999 (0.066")	n/a	n/a	5	04-08-00
Max Defl.	0.132"	n/a	n/a	4	04-09-15
Span / Depth	11.6	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	5-1/2" x 1-3/4"	1,239 lbs	30.1%	10.6%	Unspecified
B1 Wall/Plate	5-1/2" x 1-3/4"	934 lbs	22.7%	8%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9
 Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

BC 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.



DWG NO. TAM 44691-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

September 22, 2016 09:36:55

Build 4340

File Name: S48-2.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3212)

Address:

Specifier:

City, Province, Postal Code: INNISFILL,

Designer: AJ

Customer:

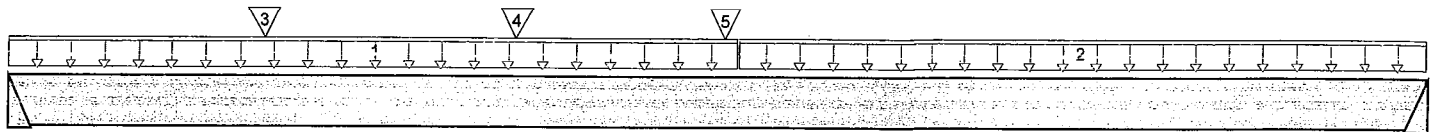
Company:

Code reports: CCMC 12472-R

Misc:

Town of Innisfil Certified Model

02/12/2017 10:30:53 AM kgervais



07-06-00

B0

B1

Total Horizontal Product Length = 07-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	515 / 0	281 / 0		
B1	283 / 0	164 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	28	14			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	03-10-00	07-06-00	30	15			n/a
3	J4(i3282)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	254	127			n/a
4	J4(i3283)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	223	112			n/a
5	B15(i1533)	Conc. Pt. (lbs)	L	03-09-02	03-09-02	102	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,927 ft-lbs	12,704 ft-lbs	15.2%	1	02-08-00
End Shear	1,061 lbs	5,785 lbs	18.3%	1	00-11-08
Total Load Defl.	L/999 (0.049")	n/a	n/a	4	03-06-11
Live Load Defl.	L/999 (0.031")	n/a	n/a	5	03-06-11
Max Defl.	0.049"	n/a	n/a	4	03-06-11
Span / Depth	9.2	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,124 lbs	n/a	26.3%	Hanger
B1 Hanger	2" x 1-3/4"	631 lbs	n/a	14.8%	Hanger

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

BC CALC®, 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.



BC CALC® Design Report



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

September 22, 2016 09:36:56

Build 4340

File Name: S48-2.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i2979);

Address:

Specifier:

City, Province, Postal Code: INNISFILL,

Designer: AJ

Customer:

Company:

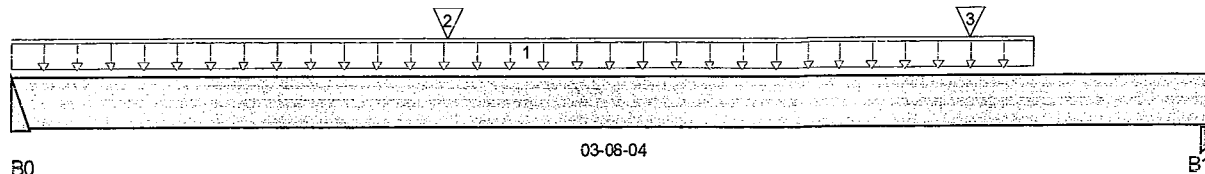
Code reports:

CCMC 12472-R

Msc:

Town of Innisfil Certified Model

02/12/2017 10:30:55 AM kgervais



Total Horizontal Product Length = 03-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	352 / 0	187 / 0		
B1, 1-3/4"	714 / 0	373 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-01-12	28	14			n/a
2 J4(i3282)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	255	128			n/a
3 -	Conc. Pt. (lbs)	L	02-11-06	02-11-06	721	369			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	995 ft-lbs	12,704 ft-lbs	7.8%	1	02-08-00
End Shear	1,095 lbs	5,785 lbs	18.9%	1	02-09-00
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	01-11-00
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	01-11-00
Max Defl.	0.006"	n/a	n/a	4	01-11-00
Span / Depth	4.4	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	762 lbs	n/a	17.8%	Hanger
B1 Post	1-3/4" x 1-3/4"	1,537 lbs	77.3%	41.1%	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. TAM44693.17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



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

September 22, 2016 09:36:56

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i3021)

Specifier:

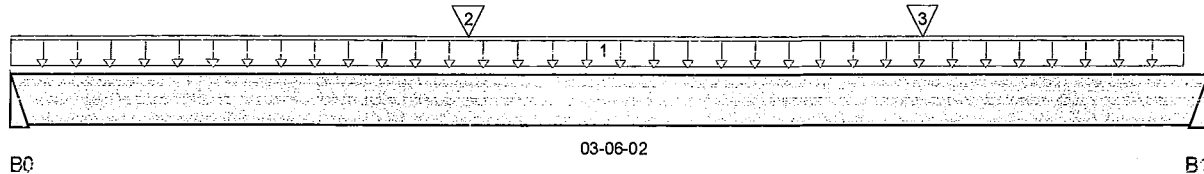
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:30:59 AM kgervais



Total Horizontal Product Length = 03-06-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	497 / 0	257 / 0		
B1	500 / 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	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-05-05	240	120			n/a
2	J6(i3284)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	94	47			n/a
3	J6(i3285)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	77	39			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	888 ft-lbs	12,704 ft-lbs	7%	1	01-08-02
End Shear	589 lbs	5,785 lbs	10.2%	1	02-06-10
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	01-09-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-09-00
Max Defl.	0.005"	n/a	n/a	4	01-09-00
Span / Depth	4.2	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,068 lbs	n/a	25%	Hanger
B1 Hanger	2" x 1-3/4"	1,074 lbs	n/a	25.1%	Hanger

Notes

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

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

Calculations assume Member is Fully Braced.

Resistance Factor phi has been applied to all presented results per 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 44694-17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



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

September 22, 2016 09:36:56

Build 4340

File Name: S48-2.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i1533)

Address:

Specifier:

City, Province, Postal Code: INNISFILL,

Designer: AJ

Customer:

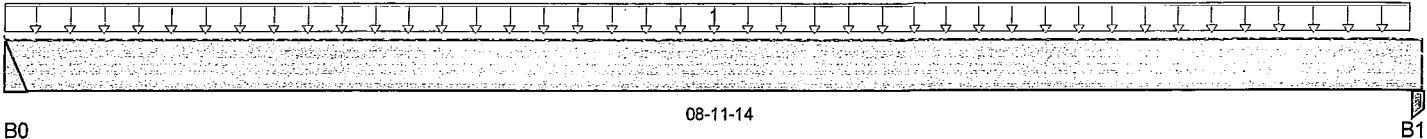
Company:

Code reports: CCMC 12472-R

Msc:

Town of Innisfil Certified Model

02/12/2017 10:31:02 AM kgervais



08-11-14

Total Horizontal Product Length = 08-11-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	103 / 0	60 / 0		
B1, 3-1/2"	105 / 0	61 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 FC3 Floor Material	Unf. Lin. (lb/ft)	L	-00-00-00	08-11-00	23	9	1.00	1.15	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	487 ft-lbs	12,704 ft-lbs	3.8%	1	04-05-03
End Shear	180 lbs	5,785 lbs	3.1%	1	00-11-08
Total Load Defl.	L/999 (0.019")	n/a	n/a	4	04-05-03
Live Load Defl.	L/999 (0.012")	n/a	n/a	5	04-05-03
Max Defl.	0.019"	n/a	n/a	4	04-05-03
Span / Depth	10.9	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	230 lbs	n/a	5.4%	Hanger
B1 Post	3-1/2" x 1-3/4"	233 lbs	5.9%	3.1%	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 UBC 2012





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...B16(i3491)

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

September 22, 2016 09:36:56

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i3491)

Specifier:

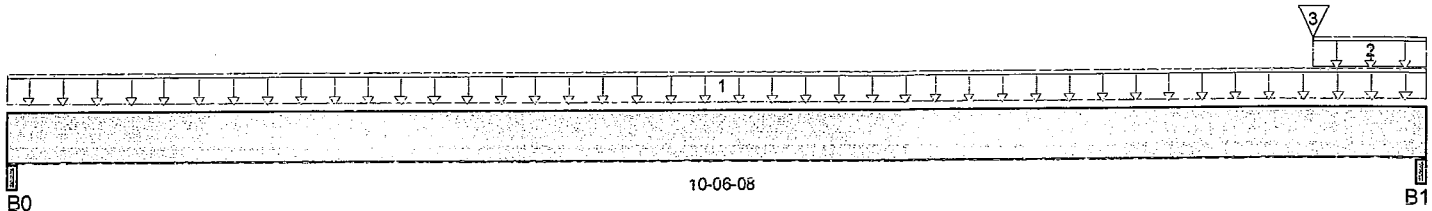
Designer: AJ

Company:

Msc:

Town of Innisfil Certified Model

02/12/2017 10:31:04 AM kgervais



Total Horizontal Product Length = 10-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	240 / 0	179 / 0	40 / 0	
B1, 4-1/8"	428 / 0	476 / 0	684 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-06-08	44	22			n/a
2	User Load	Unf. Lin. (lb/ft)	L	09-08-08	10-06-08		100			n/a
3	-	Conc. Pt. (lbs)	L	09-08-08	09-08-08	204	238	723		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,637 ft-lbs	25,408 ft-lbs	6.4%	1	05-08-13
End Shear	1,168 lbs	11,571 lbs	10.1%	13	09-04-14
Total Load Defl.	L/999 (0.046")	n/a	n/a	35	05-04-01
Live Load Defl.	L/999 (0.028")	n/a	n/a	51	05-04-01
Max Defl.	0.046"	n/a	n/a	35	05-04-01
Span / Depth	12.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-5/8" x 3-1/2"	604 lbs	15.4%	5.4%	Unspecified
B1 Beam	4-1/8" x 3-1/2"	1,834 lbs	29.7%	10.4%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

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 DBC 2012



16/12



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i3491)

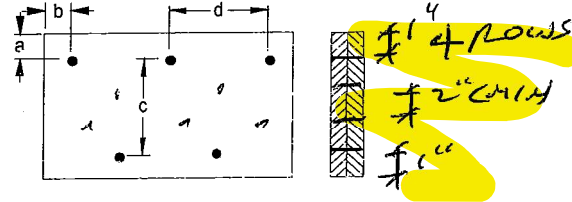
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



a minimum = 1" c = 3-1/2"

b minimum = 3" d = 6"

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

Member has no side loads.

Connectors are: 16d 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.

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Town of Innisfil Certified Model

02/12/2017 10:31:15 AM kgervais



DWG NO. TAM 4469617
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i3422)

Specifier:

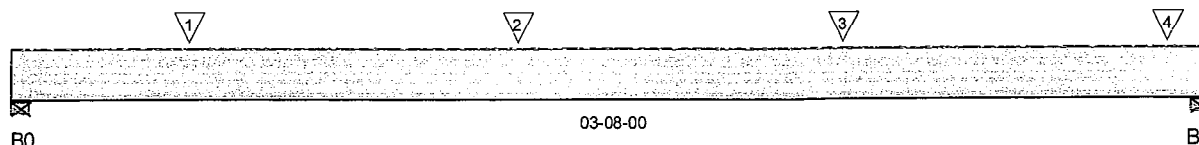
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:31:18 AM kgervais



Total Horizontal Product Length = 03-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	554 / 0	294 / 0		
B1, 4"	690 / 0	362 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	J1 (i3358)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	311	155			n/a
2	J1 (i3357)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	311	155			n/a
3	J1 (i3356)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	311	155			n/a
4	J1 (i3355)	Conc. Pt. (lbs)	L	03-06-08	03-06-08	311	155			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	848 ft-lbs	25,408 ft-lbs	3.3%	1	01-06-08
End Shear	814 lbs	11,571 lbs	7%	1	02-06-08
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-09-14
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-09-14
Max Defl.	0.002"	n/a	n/a	4	01-09-14
Span / Depth	3.9	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	4" x 3-1/2"	1,197 lbs	20%	7%	Unspecified
B1	Wall/Plate	4" x 3-1/2"	1,488 lbs	24.9%	8.7%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012


pg 1/2

BC CALC® Design Report



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

September 22, 2016 09:36:56

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i3422

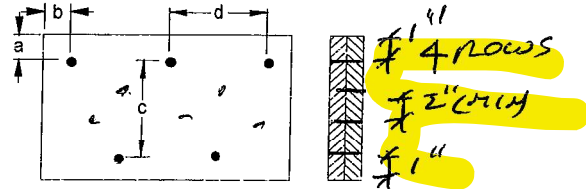
Specifier:

Designer: AJ

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 745.6 lb/ft

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

Connectors are: 16d Nails

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.

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Town of Innisfil Certified Model

02/12/2017 10:31:29 AM kgervais



BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2 SUNKEN EL-Ammdl

Description: Designs\Flush Beams\Basement\Flush Beams\B20L(i444

Specifier:

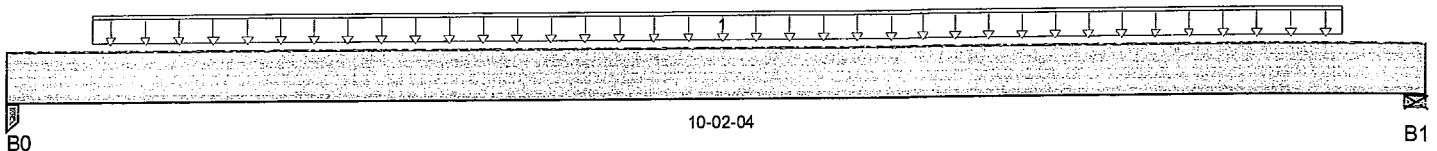
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

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Total Horizontal Product Length = 10-02-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	835 / 0	442 / 0		
B1, 2-3/8"	837 / 0	443 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-04	09-07-04	186	92	1.00	1.15	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,939 ft-lbs	12,704 ft-lbs	38.9%	1	05-01-04
End Shear	1,803 lbs	5,785 lbs	31.2%	1	09-02-06
Total Load Defl.	L/485 (0.245")	0.496"	49.5%	4	05-01-04
Live Load Defl.	L/740 (0.161")	0.331"	48.6%	5	05-01-04
Max Defl.	0.245"	n/a	n/a	4	05-01-04
Span / Depth	12.5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	2-3/8" x 1-3/4"	1,805 lbs	53.5%	35.6%	Unspecified
B1 Wall/Plate	2-3/8" x 1-3/4"	1,809 lbs	81.5%	35.7%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO UBC 2012

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 DWG NO. TAM 4469B 17
 STRUCTURAL
 COMPONENT ONLY




Build 4.340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B20(i4695)

Specifier:

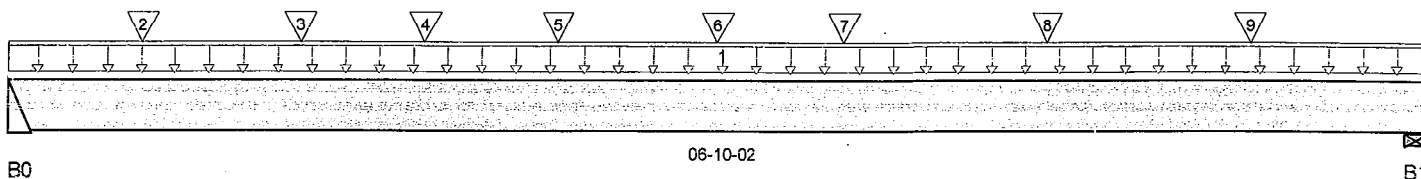
Designer: AJ

Company:

Misc:

Town of Innisfil Certified Model

02/12/2017 10:31:41 AM kgervais



Total Horizontal Product Length = 06-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	850 / 0	842 / 0	678 / 0	
B1, 4-3/8"	822 / 0	816 / 0	586 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-10-02	18	9			n/a
2	J4(i4683)	Conc. Pt. (lbs)	L	00-07-10	00-07-10	184	183	119		n/a
3	J4(i4659)	Conc. Pt. (lbs)	L	01-04-12	01-04-12	206	201	260		n/a
4	J4(i4466)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	149	147	98		n/a
5	J4(i4467)	Conc. Pt. (lbs)	L	02-07-10	02-07-10	167	166	110		n/a
6	J4(i4660)	Conc. Pt. (lbs)	L	03-04-12	03-04-12	206	201	260		n/a
7	J4(i4676)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	192	191	126		n/a
8	J4(i4469)	Conc. Pt. (lbs)	L	05-00-00	05-00-00	239	237	156		n/a
9	J4(i4470)	Conc. Pt. (lbs)	L	06-00-00	06-00-00	208	206	135		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,529 ft-lbs	25,408 ft-lbs	17.8%	1	03-04-12
End Shear	2,389 lbs	11,571 lbs	20.6%	1	00-11-08
Total Load Defl.	L/999 (0.051")	n/a	n/a	35	03-03-10
Live Load Defl.	L/999 (0.03")	n/a	n/a	51	03-03-10
Max Defl.	0.051"	n/a	n/a	35	03-03-10
Span / Depth	8.1	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 3-1/2"	2,667 lbs	n/a	31.2%	HGUS410
B1 Wall/Plate	4-3/8" x 3-1/2"	2,546 lbs	31.1%	13.6%	Unspecified

Notes



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFILL,

Customer:

Code reports: CCMC 12472-R

File Name: S48-2.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B20(i4695)

Specifier:

Designer: AJ

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.

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.

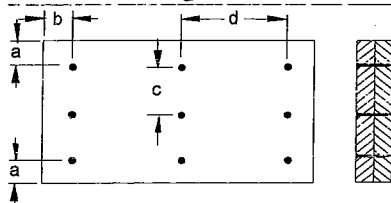
CONFORMS TO CBC 2012

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.

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Connection Diagram



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

Calculated Side Load = 930.4 lb/ft

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

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

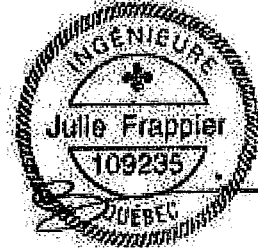
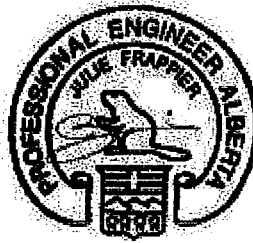
3 1/2" ARDOX SPIRAL

Town of Innisfil Certified Model

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DWG NO. TAM 4468917
STRUCTURAL
COMPONENT ONLY



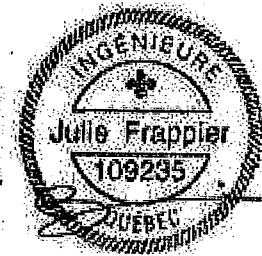
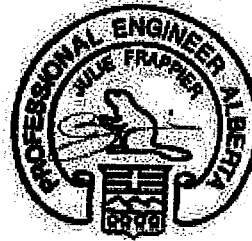
Maximum Floor Spans

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

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



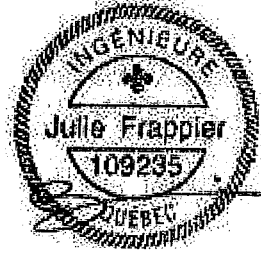
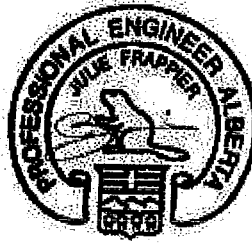
Maximum Floor Spans

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

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

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

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



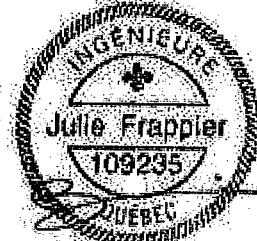
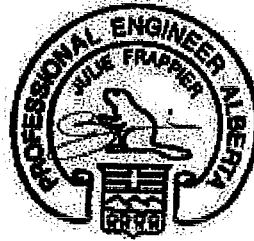
Maximum Floor Spans

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

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

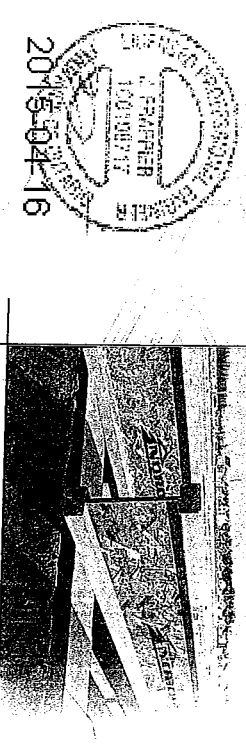
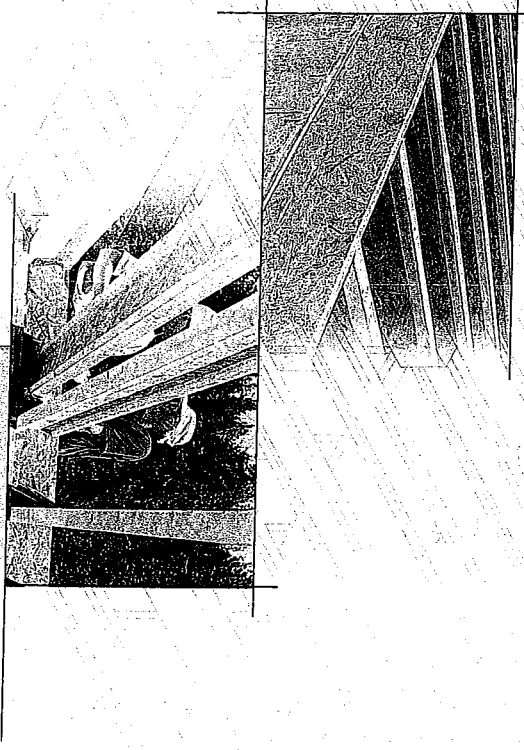
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

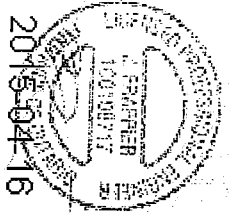
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load 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



Distributed by:



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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



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

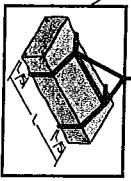
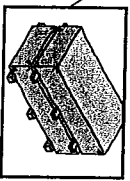


Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

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

STORAGE AND HANDLING GUIDELINES

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



- CCMC EVALUATION REPORT 13032-R

7. Hangers shown illustrate the three most commonly used metal hangers.

4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.

NORDIC I-JOIST SERIES

	S-FF No. 2	1950f MSR	2100f MSR	1950f MSR	2100f MSR	2400f MSR	NFG Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
	NI-20 OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"	NI-40x OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"	NI-60 OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"	NI-70 OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"	NI-80 OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"	NI-90 OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"	NI-90x OSB 3/8" x 1/2" 9 1/2" x 1 1/2" x 1 1/2"

BEARING

Rotating Stiffener

Gap

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

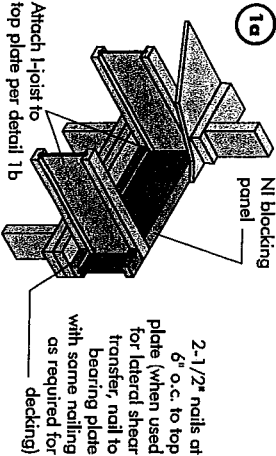
Nordic Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

2015-04-16

INSTALLING NORDIC I-JOISTS

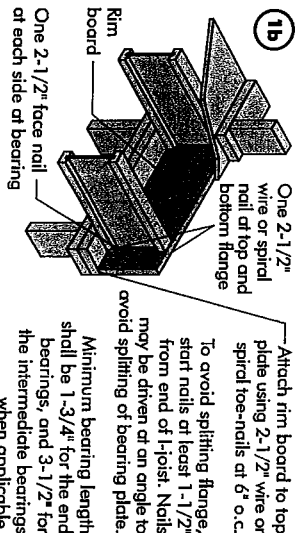
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple 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.

2015-04-16



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

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

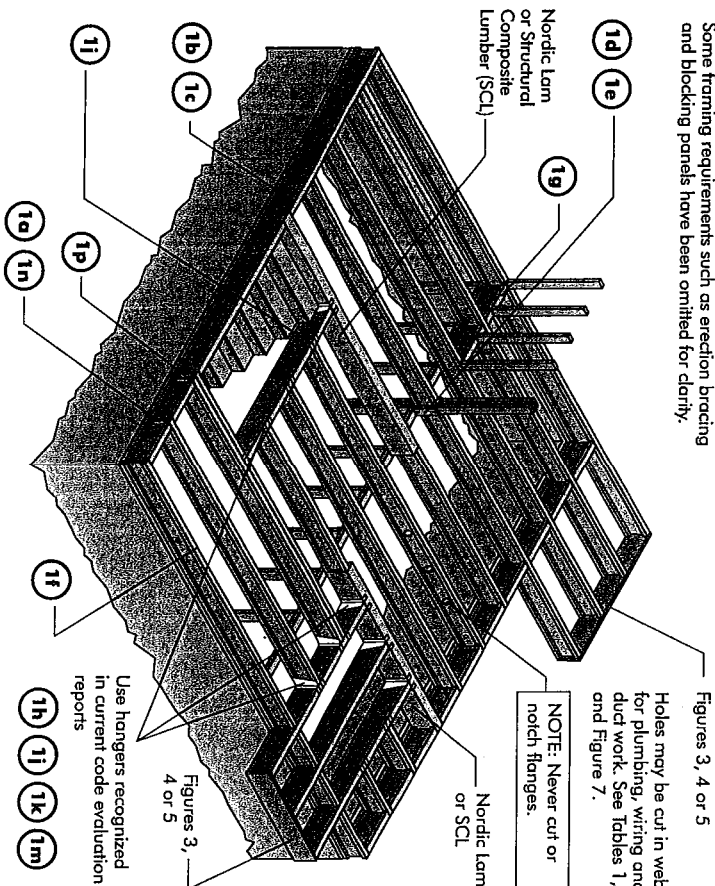


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pf)
1-1/8" Rim Board Plus	8,090

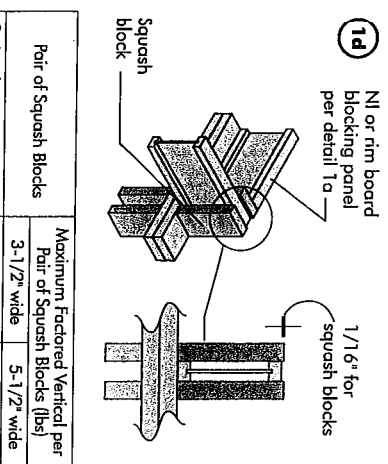
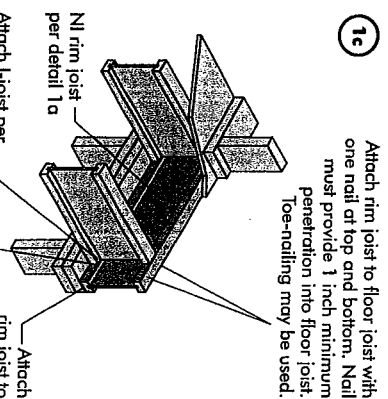
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

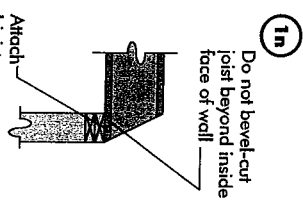
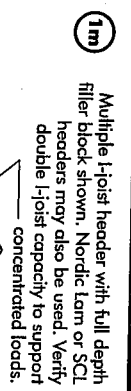
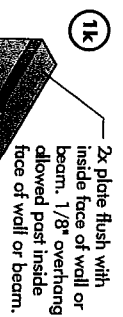
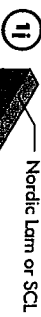
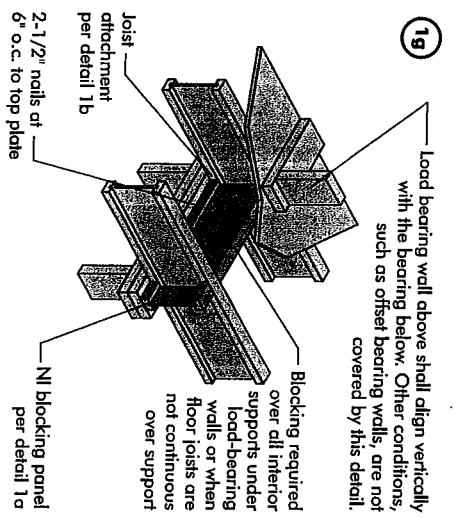
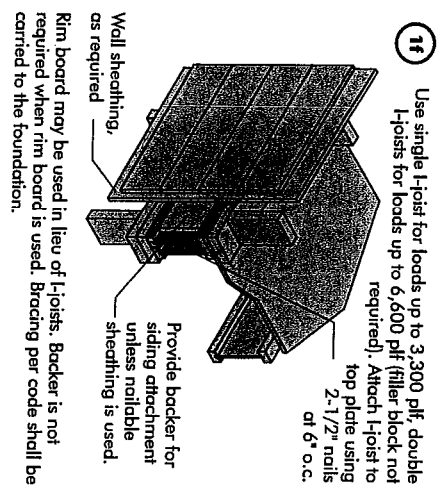
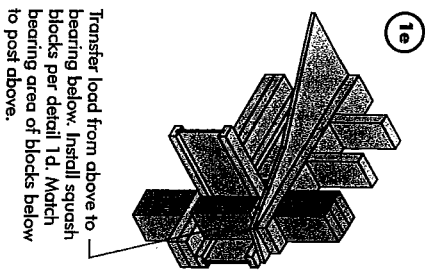
Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.



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	8,500

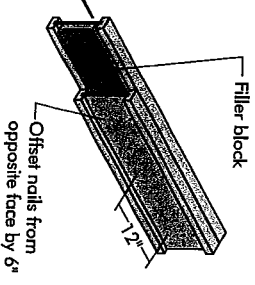


Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Note: Blocking required at bearing for lateral support, not shown for clarity.

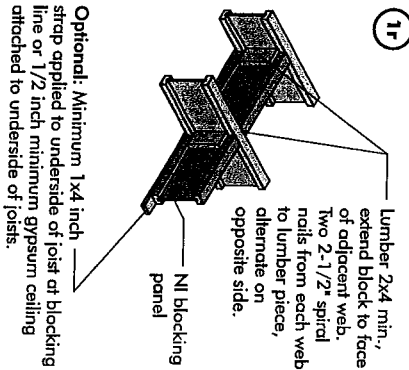
1p



- Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
 2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
 3. Filler block is required between joists for full length of span.
 4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch 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.
 5. The maximum factored load that may be applied to one side of the double I-joist using this detail is 860 lb/ft. Verify double I-joist capacity.

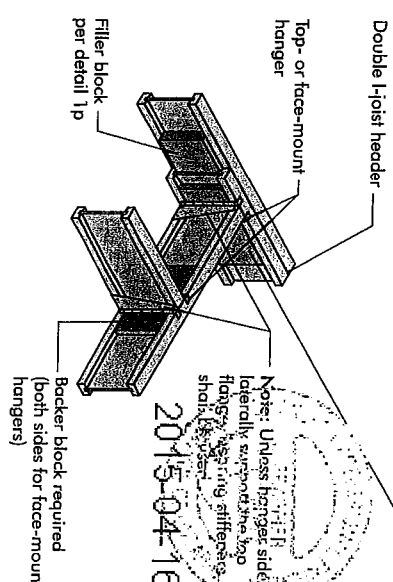
FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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



1h

Backer block (use if hanger load exceeds 360 lbs) Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer right to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.



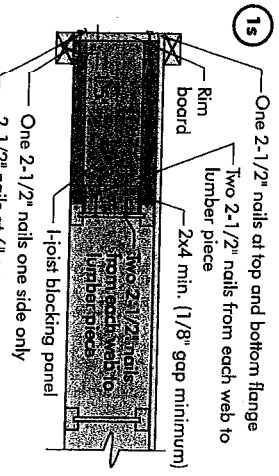
For hanger capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads.

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

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-Q437 Standard.

** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

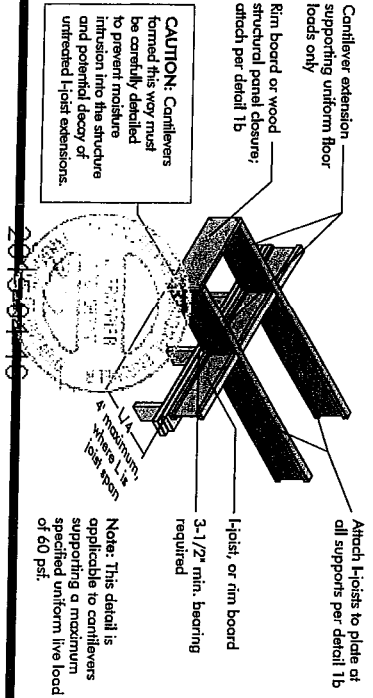


Notes:

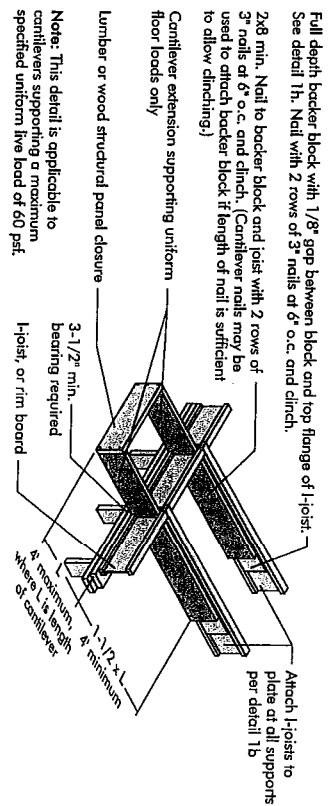
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

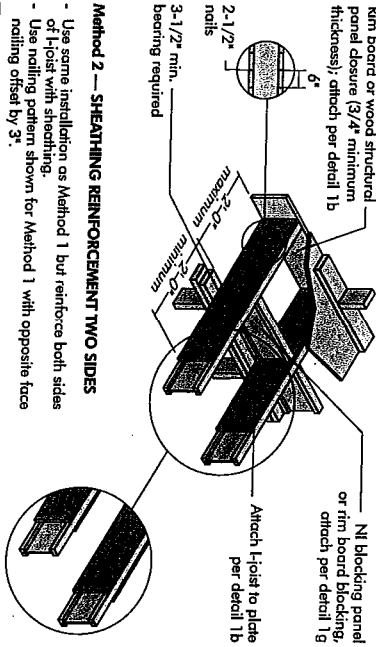


390 LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

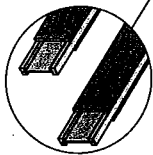


CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

440 Method 1 — SHEATHING REINFORCEMENT ONE SIDE



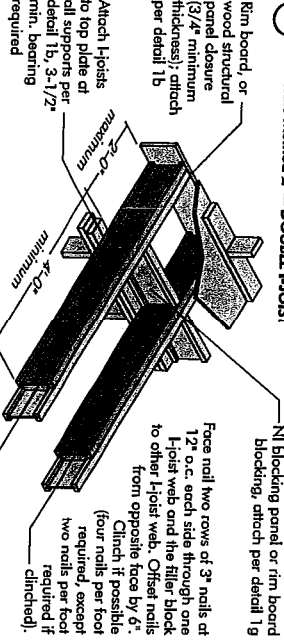
Method 2 — SHEATHING REINFORCEMENT TWO SIDES



- 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".

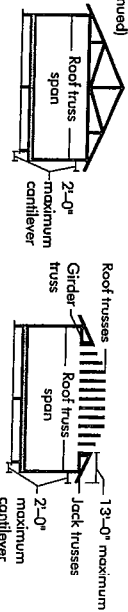
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

450 Alternate Method 2 — DOUBLE I-JOIST



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

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



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

CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS 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.)
12	12	12	12	12	12
16	16	16	16	16	16
19.2	19.2	19.2	19.2	19.2	19.2
24	24	24	24	24	24
30	30	30	30	30	30
32	32	32	32	32	32
34	34	34	34	34	34
36	36	36	36	36	36
38	38	38	38	38	38
40	40	40	40	40	40
42	42	42	42	42	42
44	44	44	44	44	44
46	46	46	46	46	46
48	48	48	48	48	48
50	50	50	50	50	50
52	52	52	52	52	52
54	54	54	54	54	54
56	56	56	56	56	56
58	58	58	58	58	58
60	60	60	60	60	60
62	62	62	62	62	62
64	64	64	64	64	64
66	66	66	66	66	66
68	68	68	68	68	68
70	70	70	70	70	70
72	72	72	72	72	72
74	74	74	74	74	74
76	76	76	76	76	76
78	78	78	78	78	78
80	80	80	80	80	80
82	82	82	82	82	82
84	84	84	84	84	84
86	86	86	86	86	86
88	88	88	88	88	88
90	90	90	90	90	90
92	92	92	92	92	92
94	94	94	94	94	94
96	96	96	96	96	96
98	98	98	98	98	98
100	100	100	100	100	100

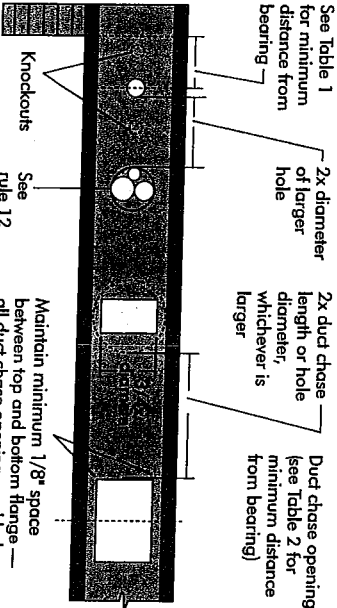
1. N = NI reinforcement required.
2. N = NI reinforced with 3/4" wood structural panel on one side only.
3. X = try a deeper joist or closer spacing.
4. For larger openings, or multiple 3-0" width openings spaced less than 6-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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



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

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

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

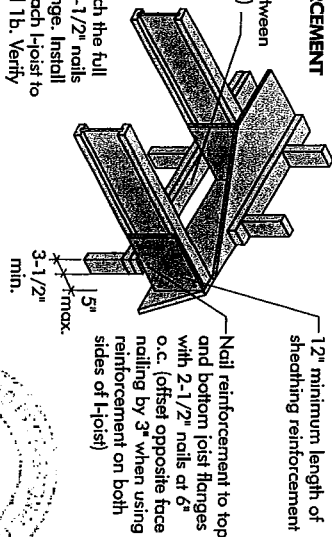
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in.)												Span adjustment Factor		
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4		11	12
10	20	0-7	1-0	1-3	1-6	1-9	2-2	2-5	2-8	3-1	3-4	3-7	4-0	4-3	4-6	4-9
12	24	0-9	1-2	1-5	1-8	2-1	2-4	2-7	3-0	3-3	3-6	3-9	4-2	4-5	4-8	5-1
14	28	1-1	1-4	1-7	2-0	2-3	2-6	2-9	3-2	3-5	3-8	4-1	4-4	4-7	5-0	5-3
16	32	1-3	1-6	1-9	2-2	2-5	2-8	3-1	3-4	3-7	4-0	4-3	4-6	4-9	5-2	5-5
18	36	1-5	1-8	2-1	2-4	2-7	3-0	3-3	3-6	3-9	4-2	4-5	4-8	5-1	5-4	5-7
20	40	1-7	2-0	2-3	2-6	2-9	3-2	3-5	3-8	4-1	4-4	4-7	5-0	5-3	5-6	5-9
22	44	1-9	2-2	2-5	2-8	3-1	3-4	3-7	4-0	4-3	4-6	4-9	5-2	5-5	5-8	6-1
24	48	2-1	2-4	2-7	3-0	3-3	3-6	3-9	4-2	4-5	4-8	5-1	5-4	5-7	6-0	6-3
26	52	2-3	2-6	2-9	3-2	3-5	3-8	4-1	4-4	4-7	5-0	5-3	5-6	5-9	6-2	6-5
28	56	2-5	2-8	3-1	3-4	3-7	4-0	4-3	4-6	4-9	5-2	5-5	5-8	6-1	6-4	6-7
30	60	2-7	3-0	3-3	3-6	3-9	4-2	4-5	4-8	5-1	5-4	5-7	6-0	6-3	6-6	6-9
32	64	2-9	3-2	3-5	3-8	4-1	4-4	4-7	5-0	5-3	5-6	5-9	6-2	6-5	6-8	7-1
34	68	3-1	3-4	3-7	4-0	4-3	4-6	4-9	5-2	5-5	5-8	6-1	6-4	6-7	7-0	7-3
36	72	3-3	3-6	3-9	4-2	4-5	4-8	5-1	5-4	5-7	6-0	6-3	6-6	6-9	7-2	7-5
38	76	3-5	3-8	4-1	4-4	4-7	5-0	5-3	5-6	5-9	6-2	6-5	6-8	7-1	7-4	7-7
40	80	3-7	4-0	4-3	4-6	4-9	5-2	5-5	5-8	6-1	6-4	6-7	7-0	7-3	7-6	7-9
42	84	3-9	4-2	4-5	4-8	5-1	5-4	5-7	6-0	6-3	6-6	6-9	7-2	7-5	7-8	8-1
44	88	4-1	4-4	4-7	5-0	5-3	5-6	5-9	6-2	6-5	6-8	7-1	7-4	7-7	8-0	8-3
46	92	4-3	4-6	4-9	5-2	5-5	5-8	6-1	6-4	6-7	7-0	7-3	7-6	7-9	8-2	8-5
48	96	4-5	4-8	5-1	5-4	5-7	6-0	6-3	6-6	6-9	7-2	7-5	7-8	8-1	8-4	8-7
50	100	4-7	5-0	5-3	5-6	5-9	6-2	6-5	6-8	7-1	7-4	7-7	8-0	8-3	8-6	8-9
52	104	4-9	5-2	5-5	5-8	6-1	6-4	6-7	7-0	7-3	7-6	7-9	8-2	8-5	8-8	9-1
54	108	5-1	5-4	5-7	6-0	6-3	6-6	6-9	7-2	7-5	7-8	8-1	8-4	8-7	9-0	9-3
56	112	5-3	5-6	5-9	6-2	6-5	6-8	7-1	7-4	7-7	8-0	8-3	8-6	8-9	9-2	9-5
58	116	5-5	5-8	6-1	6-4	6-7	7-0	7-3	7-6	7-9	8-2	8-5	8-8	9-1	9-4	9-7
60	120	5-7	6-0	6-3	6-6	6-9	7-2	7-5	7-8	8-1	8-4	8-7	9-0	9-3	9-6	9-9
62	124	5-9	6-2	6-5	6-8	7-1	7-4	7-7	8-0	8-3	8-6	8-9	9-2	9-5	9-8	10-1
64	128	6-1	6-4	6-7	7-0	7-3	7-6	7-9	8-2	8-5	8-8	9-1	9-4	9-7	10-0	10-3
66	132	6-3	6-6	6-9	7-2	7-5	7-8	8-1	8-4	8-7	9-0	9-3	9-6	9-9	10-2	10-5
68	136	6-5	6-8	7-1	7-4	7-7	8-0	8-3	8-6	8-9	9-2	9-5	9-8	10-1	10-4	10-7
70	140	6-7	7-0	7-3	7-6	7-9	8-2	8-5	8-8	9-1	9-4	9-7	10-0	10-3	10-6	10-9
72	144	6-9	7-2	7-5	7-8	8-1	8-4	8-7	9-0	9-3	9-6	9-9	10-2	10-5	10-8	11-1
74	148	7-1	7-4	7-7	8-0	8-3	8-6	8-9	9-2	9-5	9-8	10-1	10-4	10-7	11-0	11-3
76	152	7-3	7-6	7-9	8-2	8-5	8-8	9-1	9-4	9-7	10-0	10-3	10-6	10-9	11-2	11-5
78	156	7-5	7-8	8-1	8-4	8-7	9-0	9-3	9-6	9-9	10-2	10-5	10-8	11-1	11-4	11-7
80	160	7-7	8-0	8-3	8-6	8-9	9-2	9-5	9-8	10-1	10-4	10-7	11-0	11-3	11-6	11-9
82	164	7-9	8-2	8-5	8-8	9-1	9-4	9-7	10-0	10-3	10-6	10-9	11-2	11-5	11-8	12-1
84	168	8-1	8-4	8-7	9-0	9-3	9-6	9-9	10-2	10-5	10-8	11-1	11-4	11-7	12-0	12-3
86	172	8-3	8-6	8-9	9-2	9-5	9-8	10-1	10-4	10-7	11-0	11-3	11-6	11-9	12-2	12-5
88	176	8-5	8-8	9-1	9-4	9-7	10-0	10-3	10-6	10-9	11-2	11-5	11-8	12-1	12-4	12-7
90	180	8-7	9-0	9-3	9-6	9-9	10-2	10-5	10-8	11-1	11-4	11-7	12-0	12-3	12-6	12-9
92	184	8-9	9-2	9-5	9-8	10-1	10-4	10-7	11-0	11-3	11-6	11-9	12-2	12-5	12-8	13-1
94	188	9-1	9-4	9-7	10-0	10-3	10-6	10-9	11-2	11-5	11-8	12-1	12-4	12-7	13-0	13-3
96	192	9-3	9-6	9-9	10-2	10-5	10-8	11-1	11-4	11-7	12-0	12-3	12-6	12-9	13-2	13-5
98	196	9-5	9-8	10-1	10-4	10-7	11-0	11-3	11-6	11-9	12-2	12-5	12-8	13-1	13-4	13-7
100	200	9-7	10-0	10-3	10-6	10-9	11-2	11-5	11-8	12-1	12-4	12-7	13-0	13-3	13-6	13-9
102	204	9-9	10-2	10-5	10-8	11-1	11-4	11-7	12-0	12-3	12-6	12-9	13-2	13-5	13-8	14-1
104	208	10-1	10-4	10-7	11-0	11-3	11-6	11-9	12-2	12-5	12-8	13-1	13-4	13-7	14-0	14-3
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108	216	10-5	10-8	11-1	11-4	11-7	12-0	12-3	12-6	12-9	13-2	13-5	13-8	14-1	14-4	14-7
110	220	10-7	11-0	11-3	11-6	11-9	12-2	12-5	12-8	13-1	13-4	13-7	14-0	14-3	14-6	14-9
112	224	10-9	11-2	11-5	11-8	12-1	12-4	12-7	13-0	13-3	13-6	13-9	14-2	14-5	14-8	15-1
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116	232	11-3	11-6	11-9	12-2	12-5	12-8	13-1	13-4	13-7	14-0	14-3	14-6	14-9	15-2	15-5
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122	244	11-9	12-2	12-5	12-8	13-1	13-4	13-7	14-0	14-3	14-6	14-9	15-2	15-5	15-8	16-1
124	248	12-1	12-4	12-7	13-0	13-3	13-6	13-9	14-2	14-5	14-8	15-1	15-4	15-7	16-0	16-3
126	252	12-3	12-6	12-9	13-2	13-5	13-8	14-1	14-4	14-7	15-0	15-3	15-6	15-9	16-2	16-5
128	256	12-5	12-8	13-1	13-4	13-7	14-0	14-3	14-6	14-9	15-2	15-5	15-8	16-1	16-4	16-7
130	260	12-7	13-0	13-3	13-6	13-9	14-2	14-5	14-8	15-1	15-4	15-7	16-0	16-3	16-6	16-9
132	264	12-9	13-2	13-5	13-8	14-1	14-4	14-7	15-0	15-3	15-6	15-9	16-2	16-5	16-8	17-1
134	268	13-1	13-4	13-7	14-0	14-3	14-6	14-9	15-2	15-5	15-8	16-1	16-4	16-7	17-0	17-3
136	272	13-3	13-6	13-9	14-2	14-5	14-8	15-1	15-4	15-7	16-0	16-3	16-6	16-9	17-2	17-5
138	276	13-5	13-8	14-1	14-4	14-7	15-0	15-3	15-6	15-9	16-2	16-5	16-8	17-1	17-4	17-7
140	280	13-7	14-0	14-3	14-6	14-9	15-2	15-5	15-8	16-1	16-4	16-7	17-0	17-3	17-6	17-9
142	284	13-9	14-2	14-5	14-8	15-1	15-4	15-7	16-0	16-3	16-6	16-9	17-2	17-5	17-8	18-1
144	288	14-1	14-4	14-7	15-0	15-3	15-6	15-9	16-2	16-5	16-8	17-1	17-4	17-7	18-0	18-3
146	292	14-3	14-6	14-9	15-2	15-5	15-8	16-1	16-4	16-7	17-0	17-3	17-6	17-9	18-2	18-5
148	296	14-5	14-8	15-1	15-4	15-7	16-0	16-3	16-6	16-9	17-2	17-5	17-8	18-1	18-4	18-7
150	300	14-7	15-0	15-3	15-6	15-9	16-2	16-5	16-8	17-1	17-4	17-7	18-0	18-3	18-6	18-9
152	304	14-9	15-2	15-5	15-8	16-1	16-4	16-7	17-0	17-3	17-6	17-9	18-2	18-5	18-8	19-1
154	308	15-1	15-4	15-7	16-0	16-3	16-6	16-9	17-2	17-5	17-8	18-1	18-4	18-7	19-0	19-3
156	312	15-3	15-6	15-9	16-2	16-5	16-8	17-1	17-4	17-7	18-0	18-3	18-6	18-9	19-2	19-5
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160	320	15-7	16-0	16-3	16-6	16-9	17-2	17-5	17-8	18-1	18-4	18-7	19-0	19-3	19-6	19-9
162	324	15-9	16-2	16-5	16-8	17-1	17-4	17-7	18-0	18-3	18-6	18-9	19-2	19-5	19-8	20-1
164	328	16-1	16-4	16-7	17-0	17-3	17-6	17-9	18-2	18-5	18-8	19-1	19-4	19-7	20-0	20-3
166	332	16-3	16-6	16-9	17-2	17-5	17-8	18-1	18-4	18-7	19-0	19-3	19-6	19-9	20-2	20-5
168	336	16-5	16-8	17-1	17-4	17-7	18-0	18-3	18-6	18-9	19-2	19-5	19-8	20-1	20-4	20-7
170	340	16-7	17-0	17-3	17-6	17-9	18-2	18-5	18-8	19-1	19-4	19-7	20-0	20-3	20-6	20-9
172	344	16-9	17-2	17-5	17-8	18-1	18-4	18-7	19-0	19-3	19-6	19-9	20-2	20-5	20-8	21-1
174	348	17-1	17-4	17-7	18-0	18-3	18-6	18-9	19-2	19-5	19-					

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

5a SHEATHING REINFORCEMENT

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

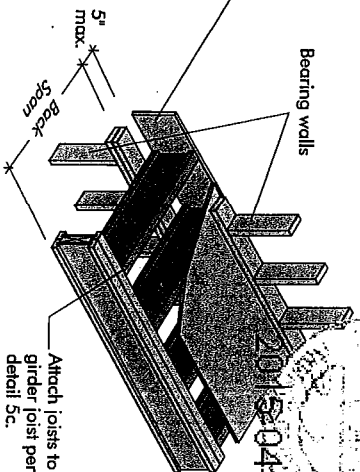
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

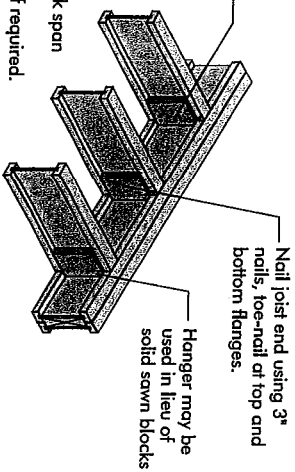
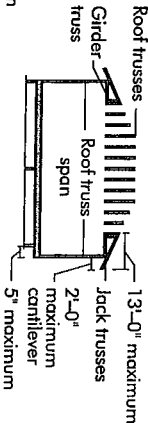
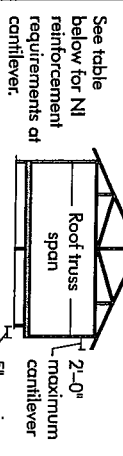


FIGURE 5 (continued)



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)		ROOF LOADING (UNFACTORED)				JOIST SPACING (in.)					
	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9 1/2"	26	1	2	2	2	2	2	2	2	2	2	2
	28	1	2	2	2	2	2	2	2	2	2	2
	30	2	2	2	2	2	2	2	2	2	2	2
	32	2	2	2	2	2	2	2	2	2	2	2
	34	2	2	2	2	2	2	2	2	2	2	2
11 7/8"	26	2	2	2	2	2	2	2	2	2	2	2
	28	2	2	2	2	2	2	2	2	2	2	2
	30	2	2	2	2	2	2	2	2	2	2	2
	32	2	2	2	2	2	2	2	2	2	2	2
	34	2	2	2	2	2	2	2	2	2	2	2
14"	26	2	2	2	2	2	2	2	2	2	2	2
	28	2	2	2	2	2	2	2	2	2	2	2
	30	2	2	2	2	2	2	2	2	2	2	2
	32	2	2	2	2	2	2	2	2	2	2	2
	34	2	2	2	2	2	2	2	2	2	2	2
16"	26	2	2	2	2	2	2	2	2	2	2	2
	28	2	2	2	2	2	2	2	2	2	2	2
	30	2	2	2	2	2	2	2	2	2	2	2
	32	2	2	2	2	2	2	2	2	2	2	2
	34	2	2	2	2	2	2	2	2	2	2	2
16"	36	2	2	2	2	2	2	2	2	2	2	2
	38	2	2	2	2	2	2	2	2	2	2	2
	40	2	2	2	2	2	2	2	2	2	2	2
	42	2	2	2	2	2	2	2	2	2	2	2
	44	2	2	2	2	2	2	2	2	2	2	2

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.
2. 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.
- For larger openings, or multiple 3'-0" with openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- 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.
- For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- Cantilevered joists 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 tapped 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. Top 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	Staples	Maximum Spacing of Fasteners
16	5/8	2"	1-3/4"	2"	6"
20	5/8	2"	1-3/4"	2"	6"
24	3/4	2"	1-3/4"	2"	6"
					Intern. Supports 12"

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 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:

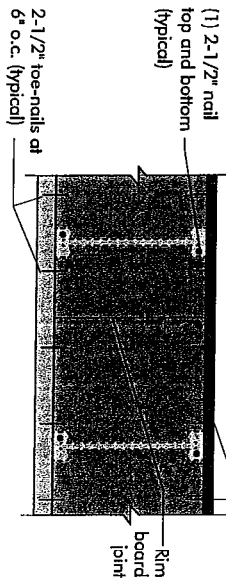
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

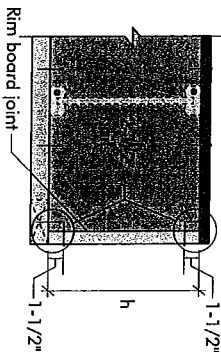
8c ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim board Joint Between Floor Joists

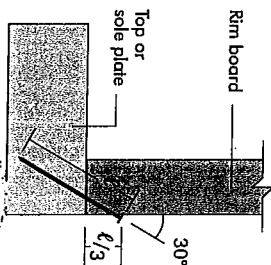
2-1/2" nails at 6" o.c. (typical)



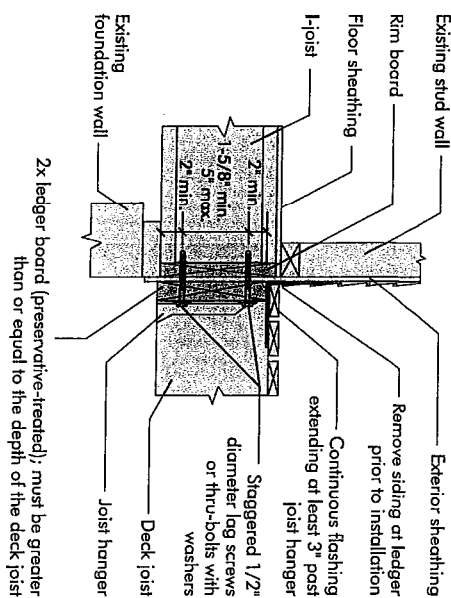
Rim board Joint at Corner



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

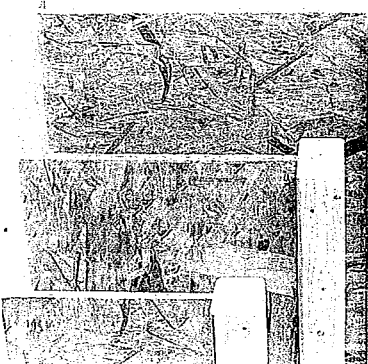


2015-04-16

PRODUCT WARRANTY

Champion Challenging guarantees that, in accordance with our specifications, Nucleo products are free from manufacturing defects in material and workmanship.

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

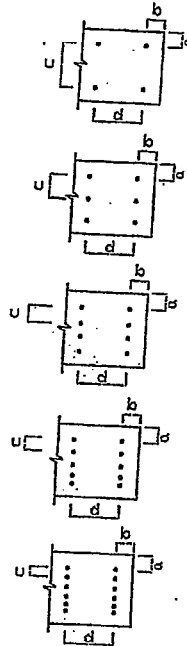


MICRO CITY ENGINEERING SERVICES INC.

TEL: (519) 287 - 2242

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

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



NOTES:

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



DWG NO TAMN1001.14

STRUCTURAL
COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
SEAL BELOW

PROVIDE NAILING
DETAIL # X SEE
DWG #TAMN1001-14