

FROM PLAN DATED: FEB 2016

BUILDER:  
BAYVIEW WELLINGTON

SITE:  
ALCONA

MODEL: S32-2-10

ELEVATION: A,B

LOT:  
CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
REVISION:

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

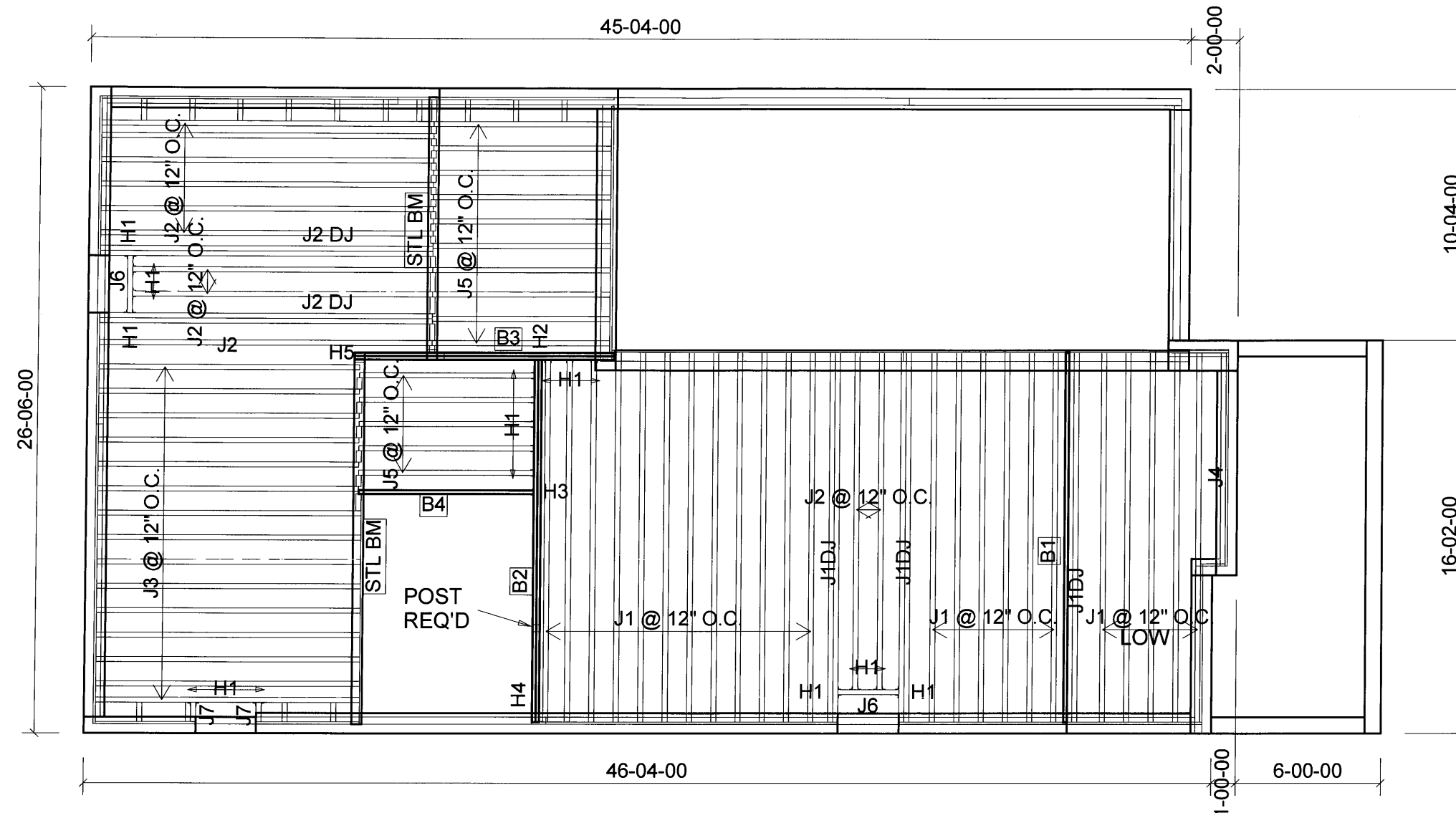
LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

# 1st FLOOR

## STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	23
J1DJ	16-00-00	9 1/2" NI-40x	2	6
J2	14-00-00	9 1/2" NI-40x	1	11
J2 DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	15
J4	10-00-00	9 1/2" NI-40x	1	1
J5	8-00-00	9 1/2" NI-40x	1	15
J6	4-00-00	9 1/2" NI-40x	1	2
J7	2-00-00	9 1/2" NI-40x	1	2
B1	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H2	HGUS410
1	H3	HUS1.81/10
1	H4	TS22
1	H5	H2.5A

Town of Innisfil Certified Model  
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BAYVIEW WELLINGTON

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ALCONA

MODEL: S32-2-10

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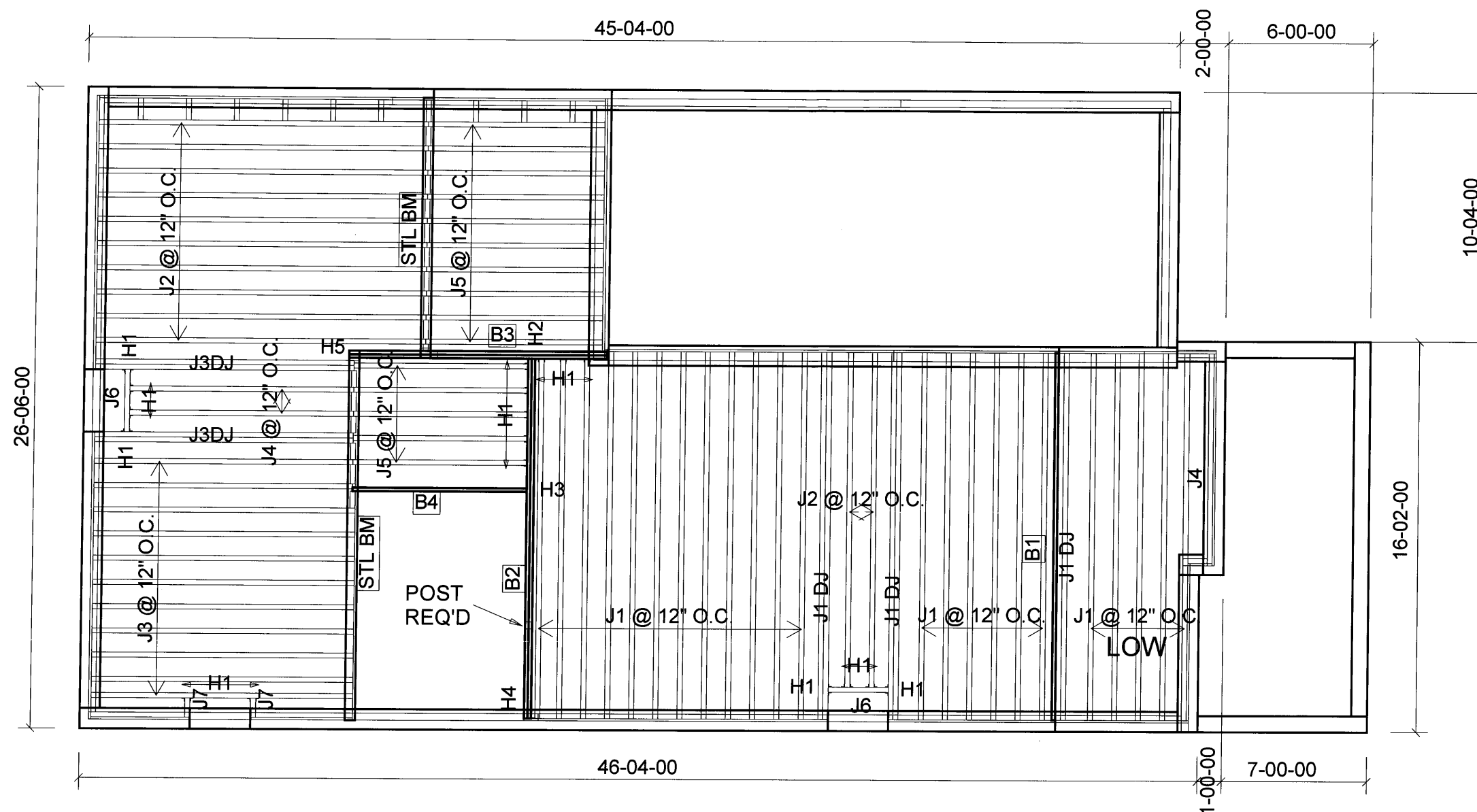
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DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft<sup>2</sup>  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

1st FLOOR

STANDARD WITH ALT

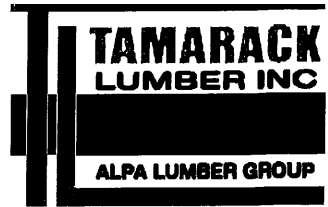


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	23
J1 DJ	16-00-00	9 1/2" NI-40x	2	6
J2	14-00-00	9 1/2" NI-40x	1	12
J3	12-00-00	9 1/2" NI-40x	1	11
J3DJ	12-00-00	9 1/2" NI-40x	2	4
J4	10-00-00	9 1/2" NI-40x	1	3
J5	8-00-00	9 1/2" NI-40x	1	15
J6	4-00-00	9 1/2" NI-40x	1	2
J7	2-00-00	9 1/2" NI-40x	1	2
B1	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H2	HGUS410
1	H3	HUS1.81/10
1	H4	TS22
1	H5	H2.5A

Town of Innisfil Certified Model

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BUILDER:  
BAYVIEW WELLINGTON

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MODEL: S32-2-10

ELEVATION: A,B

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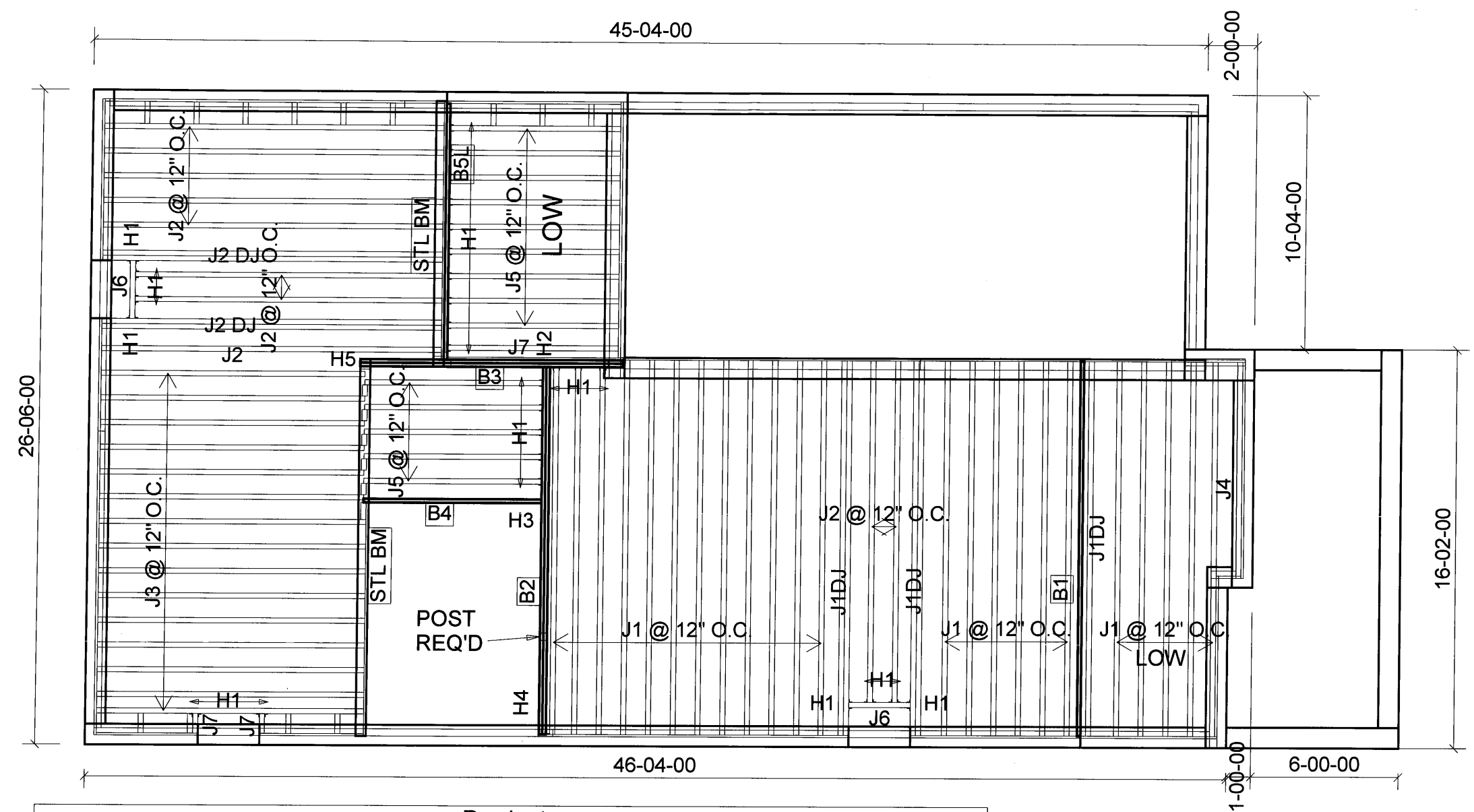
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SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

1st FLOOR

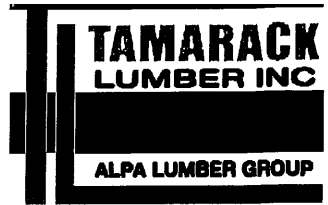
SUNKEN



Products				
PlotID	Length	Product	Plies	Net Qty
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J1DJ	16-00-00	9 1/2" NI-40x	2	6
J2	14-00-00	9 1/2" NI-40x	1	10
J2 DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	15
J4	10-00-00	9 1/2" NI-40x	1	1
J5	8-00-00	9 1/2" NI-40x	1	14
J7	8-00-00	9 1/2" NI-40x	1	1
J6	4-00-00	9 1/2" NI-40x	1	2
J7	2-00-00	9 1/2" NI-40x	1	2
B1	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5L	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
10	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
1	H2	HGUS410
1	H3	HUS1.81/10
1	H4	TS22
1	H5	H2.5A

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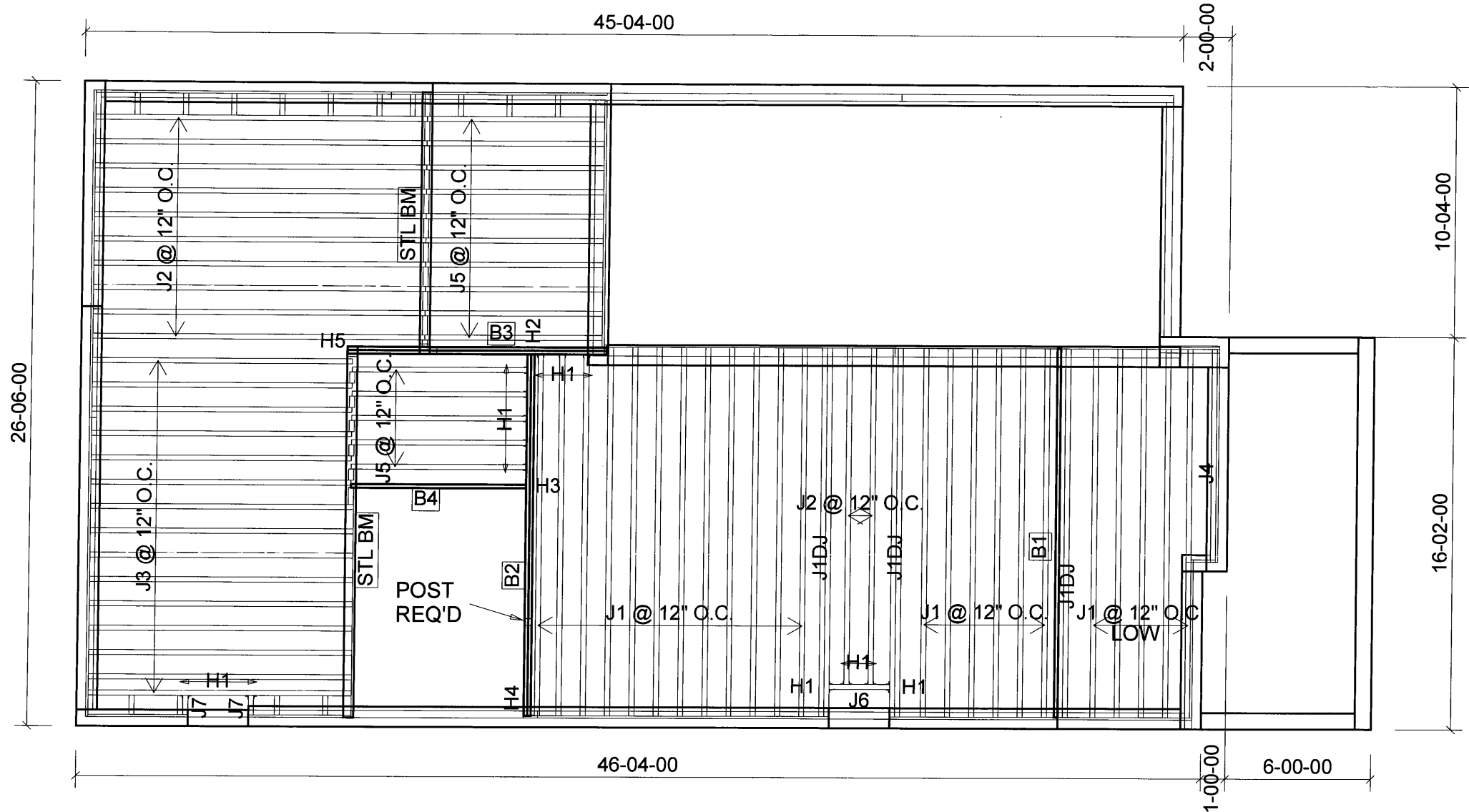
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DATE: 11/09/2017

1st FLOOR

WOD.



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PlotID	Length	Product	Plies	Net Qty
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J1DJ	16-00-00	9 1/2" NI-40x	2	6
J2	14-00-00	9 1/2" NI-40x	1	12
J3	12-00-00	9 1/2" NI-40x	1	15
J4	10-00-00	9 1/2" NI-40x	1	1
J5	8-00-00	9 1/2" NI-40x	1	15
J6	4-00-00	9 1/2" NI-40x	1	1
J7	2-00-00	9 1/2" NI-40x	1	2
B1	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
1	H2	HGUS410
1	H3	HUS1.81/10
1	H4	TS22
1	H5	H2.5A

Town of Innisfil Certified Model  
04/01/2018 12:56:01 PM kgervais

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BAYVIEW WELLINGTON

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ALCONA

MODEL: S32-2-10

ELEVATION: A,B

LOT:  
CITY: INNISFIL, ON

SALESMAN: MARIO  
DESIGNER: CZ  
REVISION:

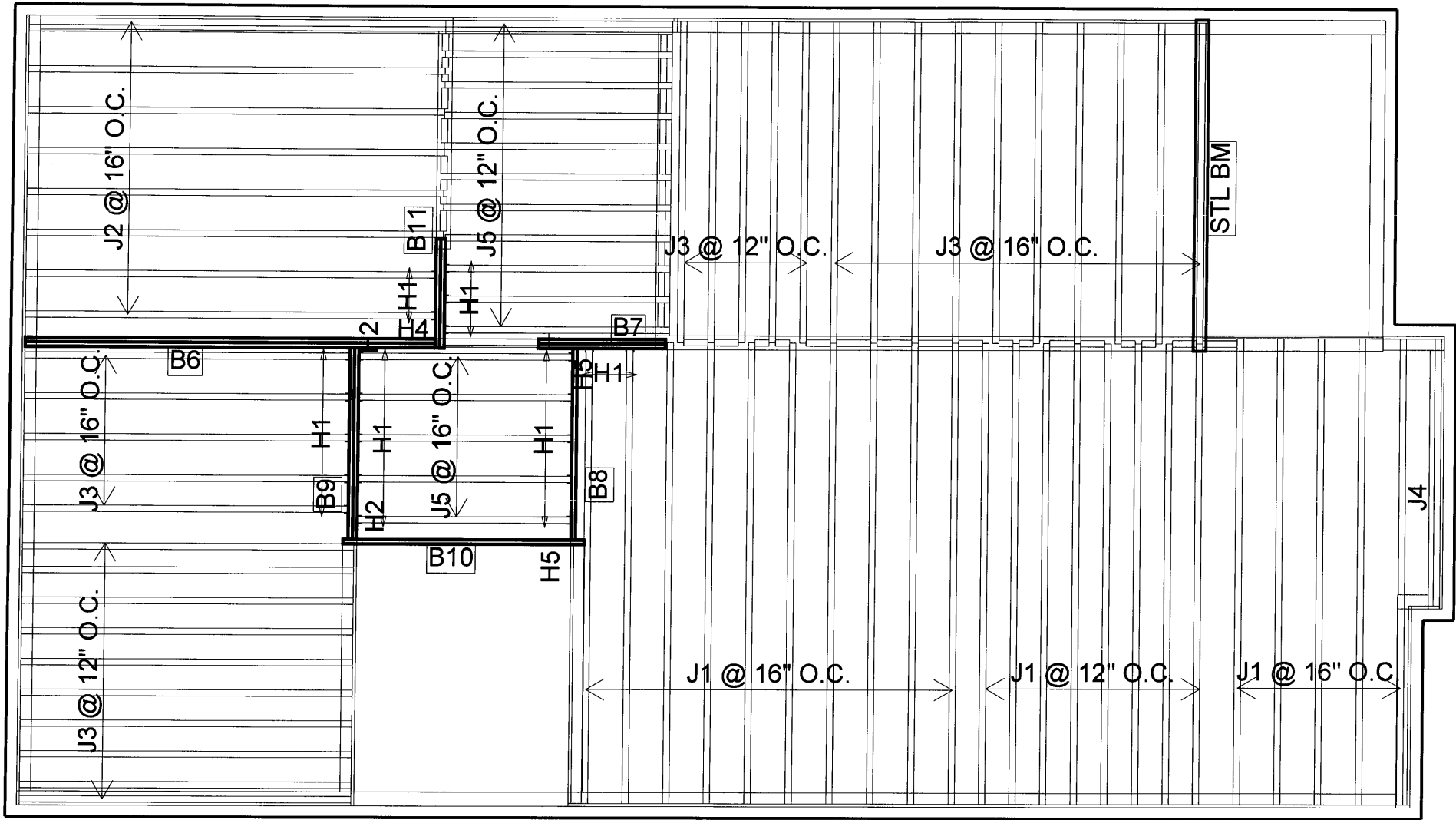
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LOADING:  
DESIGN LOADS: L/480.000  
LIVE LOAD: 40.0 lb/ft²  
DEAD LOAD: 15.0 lb/ft  
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	23
J2	14-00-00	9 1/2" NI-40x	1	9
J3	12-00-00	9 1/2" NI-40x	1	30
J4	10-00-00	9 1/2" NI-40x	1	1
J5	8-00-00	9 1/2" NI-40x	1	17
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	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
B11	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
17	H1	IUS2.56/9.5
1	H2	HGUS410
1	H2	HGUS410
1	H4	HUC410
1	H5	HUS1.81/10
1	H5	HUS1.81/10

Town of Innisfil Certified Model  
04/01/2018 12:56:05 PM kgervais





Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Dropped Beams\Basement\Dropped Beams\B1.

Specifier:

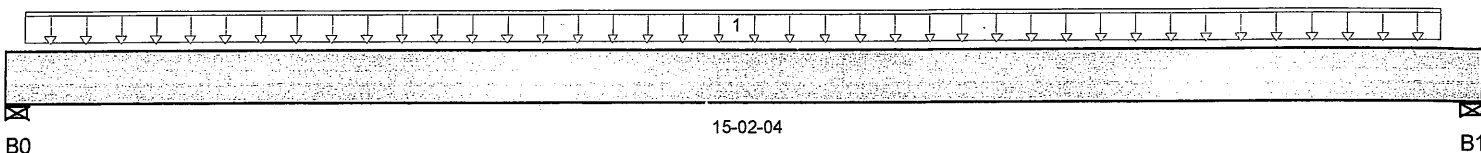
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

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Total Horizontal Product Length = 15-02-04

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

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"		474 / 0		
B1, 4-7/8"		475 / 0		

## Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 User Load	Unf. Lin. (lb/ft)	L	00-02-06	14-09-06	1.00	0.65	1.00	1.15	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,454 ft-lbs	2,881 ft-lbs	85.2%	0	07-05-14
End Shear	590 lbs	3,761 lbs	15.7%	0	00-11-14
Total Load Defl.	L/647 (0.273")	0.735"	37.1%	1	07-05-14
Max Defl.	0.273"	n/a	n/a	1	07-05-14
Span / Depth	18.6	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/8" x 1-3/4"	663 lbs	17.3%	20.1%	Unspecified
B1 Wall/Plate	4-7/8" x 1-3/4"	664 lbs	8.5%	9.8%	Unspecified

## Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
 Calculation assumes member is partially braced. See engineering report for the unbraced length.  
 Resistance Factor phi has been applied to all presented results per CSA 086.  
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.  
 Design based on Dry Service Condition.  
 Importance Factor : Normal Part code : Part 9  
 Deflections less than 1/8" were ignored in the results.

**CONFORMS TO OBC 2012**

## Disclosure

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

BC CALC®, BC FRAMER®, 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.



DWG NO. TAM 45292-17  
**STRUCTURAL  
 COMPONENT ONLY**



Boise Cascade

## Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i2096)

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

July 20, 2016 11:02:43



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2096

Specifier:

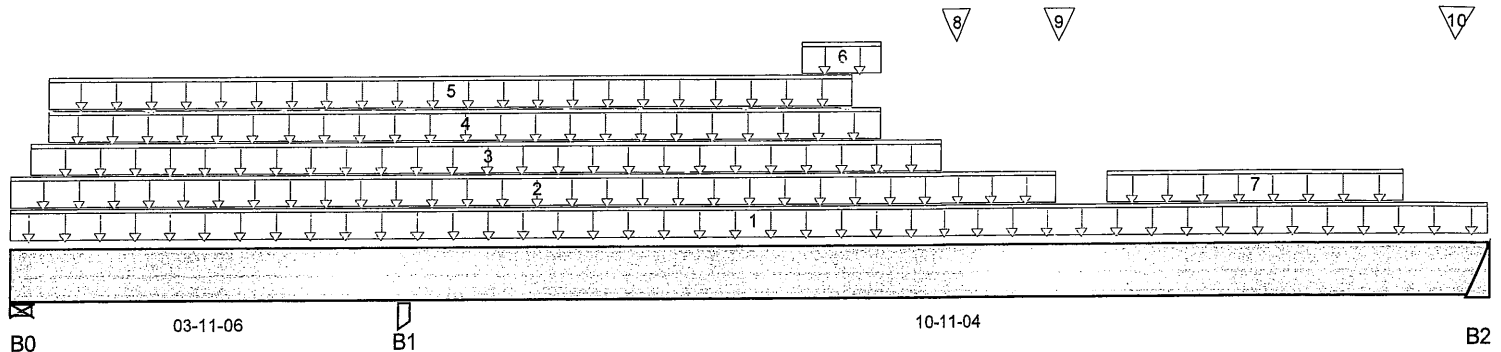
Designer:

Company:

Misc:

Town of Innisfil Certified Model

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Total Horizontal Product Length = 14'-10-10

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

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	44 / 1,010	0 / 502		
B1, 3-1/2"	2,801 / 0	2,736 / 0		
B2	1,204 / 1	762 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	14-10-10	8	4			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-06-12	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-02-06	09-04-06		60			n/a
4	4(i363)	Unf. Lin. (lb/ft)	L	00-04-06	08-08-14		81			n/a
5	4(i363)	Unf. Lin. (lb/ft)	L	00-04-06	08-05-06	11	8			n/a
6	4(i363)	Unf. Lin. (lb/ft)	L	07-11-02	08-08-14	1,385	757			n/a
7	Smoothed Load	Unf. Lin. (lb/ft)	L	11-00-12	14-00-12	147	74			n/a
8	B4(i1987)	Conc. Pt. (lbs)	L	09-06-02	09-06-02	924	496			n/a
9	J7(i2120)	Conc. Pt. (lbs)	L	10-06-12	10-06-12	158	79			n/a
10	J7(i2124)	Conc. Pt. (lbs)	L	14-06-12	14-06-12	117	59			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,632 ft-lbs	25,408 ft-lbs	37.9%	3	09-06-02
Neg. Moment	-9,585 ft-lbs	-25,408 ft-lbs	37.7%	1	03-11-06
Neg. Moment	-9,585 ft-lbs	-25,408 ft-lbs	37.7%	1	03-11-06
End Shear	2,530 lbs	11,571 lbs	21.9%	3	13-11-02
Cont. Shear	4,436 lbs	11,571 lbs	38.3%	1	04-10-10
Uplift	2,142 lbs	n/a	n/a	3	00-00-00
Total Load Defl.	L/581 (0.224")	0.542"	41.3%	10	09-07-11
Live Load Defl.	L/982 (0.132")	0.361"	36.7%	13	09-09-05
Total Neg. Defl.	L/999 (-0.021")	n/a	n/a	10	02-04-09
Max Defl.	0.224"	n/a	n/a	10	09-07-11
Span / Depth	13.7	n/a	n/a		00-00-00



P6 1/2

DWG NO. TAM45293-17  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(j20)

Specifier:

Designer:

Company:

Misc:

Bearing Supports	Dim. (L x W)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B0 Wall/Plate	2-3/8" x 3-1/2"	2,143 lbs	48.3%	21.1%	Unspecified
B1 Post	3-1/2" x 3-1/2"	7,622 lbs	76.6%	51%	Unspecified
B2 Hanger	2" x 3-1/2"	2,759 lbs	n/a	32.3%	HGUS410

### Cautions

Uplift of 2,142 lbs found at span 1 - Left. (SIMPSON 1-7522 @ 57-30)

### Notes

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

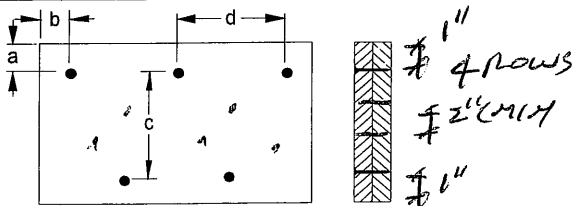
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### Connection Diagram



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

Calculated Side Load = 245.8 lb/ft

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

Connectors are: Nails

3 1/2" ARDOX SPIRAL



DWG NO. TAM 4529317  
STRUCTURAL  
COMPONENT ONLY





## BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i2089

Specifier:

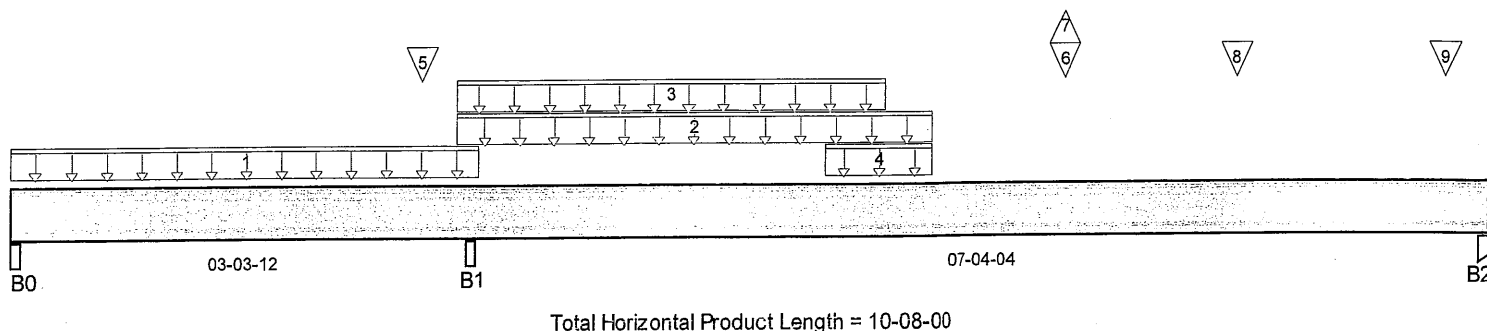
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

04/01/2018 12:56:20 PM kgervais



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

Bearing	Live	Dead	Snow	Wind
B0, 5"	177 / 628	0 / 307		
B1, 8-1/2"	3,413 / 1	2,489 / 0		
B2, 7"	2,255 / 22	2,901 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-04-08	20				n/a
2	5(i365)	Unf. Lin. (lb/ft)	L	03-02-08	06-07-08		81			n/a
3	5(i365)	Unf. Lin. (lb/ft)	L	03-02-08	06-03-08	18				n/a
4	5(i365)	Unf. Lin. (lb/ft)	L	05-10-03	06-07-08	830	455			n/a
5	PBO5(i1288)	Conc. Pt. (lbs)	L	02-11-08	02-11-08	1,578	1,078			n/a
6	-	Conc. Pt. (lbs)	L	07-07-07	07-07-07	1,375	845			n/a
7	-	Conc. Pt. (lbs)	L	07-07-07	07-07-07	-1				n/a
8	J1(i2110)	Conc. Pt. (lbs)	L	08-10-06	08-10-06	291	146			n/a
9	-	Conc. Pt. (lbs)	L	10-04-04	10-04-04	1,128	2,192			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,779 ft-lbs	25,408 ft-lbs	22.7%	4	07-06-12
Neg. Moment	-4,756 ft-lbs	-25,408 ft-lbs	18.7%	1	03-03-12
Neg. Moment	-4,756 ft-lbs	-25,408 ft-lbs	18.7%	1	03-03-12
End Shear	2,733 lbs	11,571 lbs	23.6%	4	09-03-08
Cont. Shear	3,054 lbs	11,571 lbs	26.4%	1	04-05-08
Uplift	1,325 lbs	n/a	n/a	4	00-00-00
Total Load Defl.	L/999 (0.05")	n/a	n/a	13	07-01-02
Live Load Defl.	L/999 (0.031")	n/a	n/a	17	07-02-08
Total Neg. Defl.	L/999 (-0.006")	n/a	n/a	13	02-00-15
Max Defl.	0.05"	n/a	n/a	13	07-01-02
Span / Depth	8.6	n/a	n/a		00-00-00

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



P612

DWG NO. TAM 45294-17  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i208

Specifier:

Designer:

Company:

Misc:

B0	Beam	5" x 3-1/2"	1,326 lbs	14.2%	6.2%	Unspecified
B1	Beam	8-1/2" x 3-1/2"	8,230 lbs	51.8%	22.7%	Unspecified
B2	Post	7" x 3-1/2"	7,008 lbs	35.2%	23.4%	Unspecified

**Disclosure**

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

**Cautions**

Uplift of 1,325 lbs found at span 1 - Left. *CS11P500 2-H2-57 @ 0.30*

**Notes**

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

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

Calculations assume Member is Fully Braced.

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

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

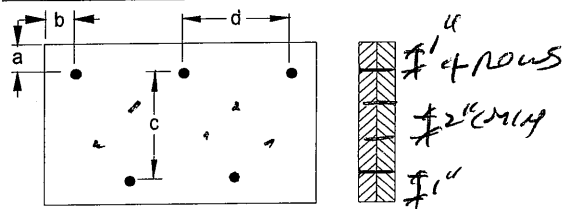
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

**CONFORMS TO OBC 2012**

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**Connection Diagram**

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

Calculated Side Load = 427.9 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**



DWG NO. TAM 45294-17  
STRUCTURAL  
COMPONENT ONLY

## BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i2135

Specifier:

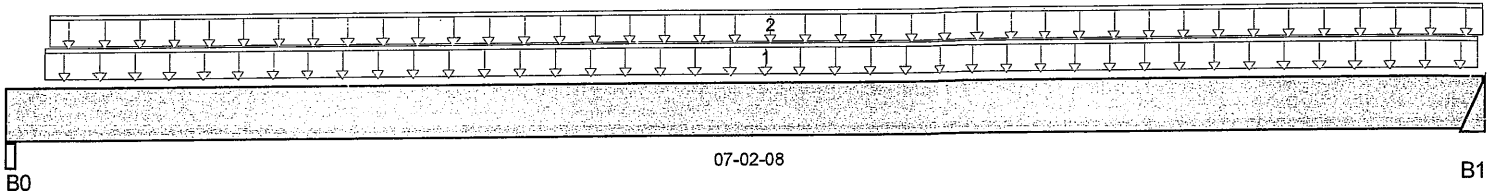
Designer:

Company:

Msc:

**Town of Innisfil Certified Model**

04/01/2018 12:56:25 PM kgervais



07-02-08

B1

Total Horizontal Product Length = 07-02-08

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

Bearing	Live	Dead	Snow	Wind
B0, 2-1/2"	907 / 0	471 / 0		
B1	940 / 0	487 / 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	00-02-04	07-02-04	240	120			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	07-02-08	24	12			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,431 ft-lbs	12,704 ft-lbs	27%	1	03-07-08
End Shear	1,488 lbs	5,785 lbs	25.7%	1	01-00-00
Total Load Defl.	L/999 (0.085")	n/a	n/a	4	03-07-08
Live Load Defl.	L/999 (0.056")	n/a	n/a	5	03-07-08
Max Defl.	0.085"	n/a	n/a	4	03-07-08
Span / Depth	8.8	n/a	n/a		00-00-00

### Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-1/2" x 1-3/4"	1,950 lbs	83.5%	36.5%	Unspecified
B1 Hanger	2" x 1-3/4"	2,020 lbs	n/a	47.3%	HUS1.81/10

### Notes

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

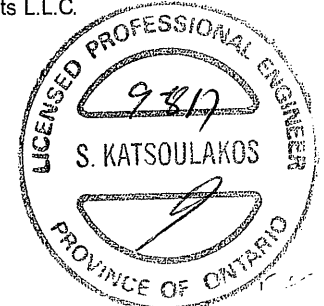
Deflections less than 1/8" were ignored in the results.

**CONFORMS TO OBC 2012**

### Disclosure

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

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**DWG NO. TAM 4529517**  
**STRUCTURAL**  
**COMPONENT ONLY**



Boise Cascade

## Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5L(i2070)

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

July 20, 2016 11:02:43



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5L(i207

Specifier:

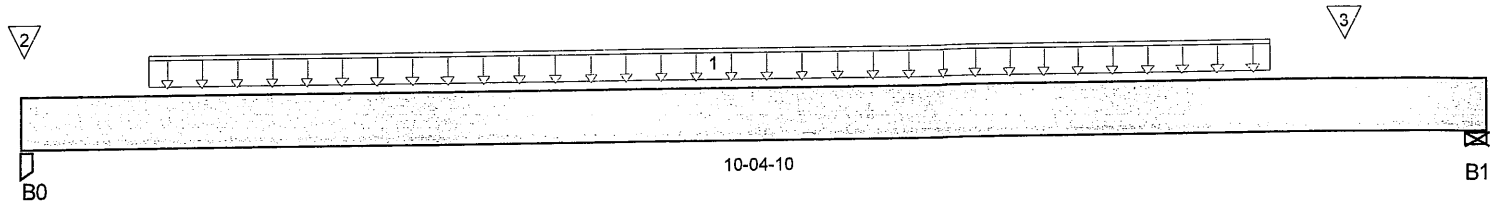
Designer:

Company:

Misc:

Town of Innisfil Certified Model

04/01/2018 12:56:29 PM kgervais



Total Horizontal Product Length = 10-04-10

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

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	635 / 0	345 / 0		
B1, 2-3/8"	651 / 0	352 / 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	00-10-10	08-10-10	140	70			n/a
2	FC2 Floor Material	Conc. Pt. (lbs)	L	00-00-04	00-00-04	22	11			n/a
3	J7(i2082)	Conc. Pt. (lbs)	L	09-04-10	09-04-10	146	73			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,797 ft-lbs	12,704 ft-lbs	29.9%	1	05-04-10
End Shear	1,410 lbs	5,785 lbs	24.4%	1	09-04-12
Total Load Defl.	L/623 (0.193")	0.501"	38.5%	4	05-03-02
Live Load Defl.	L/958 (0.125")	0.334"	37.6%	5	05-03-02
Max Defl.	0.193"	n/a	n/a	4	05-03-02
Span / Depth	12.7	n/a	n/a		00-00-00

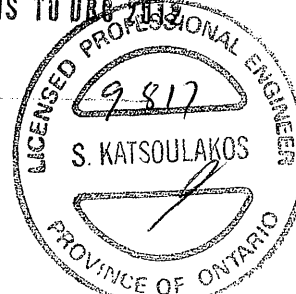
## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	1,384 lbs	27.8%	18.5%	Unspecified
B1 Wall/Plate	2-3/8" x 1-3/4"	1,416 lbs	63.8%	27.9%	Unspecified

## Notes

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

CONFORMS TO DBO-113



## 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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DWG NO. TAM 4529617  
 STRUCTURAL  
 COMPONENT ONLY



# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i3215)

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

September 5, 2017 11:16:28

BC CALC® Design Report



Build 5033

File Name: S32-2-10 SUNKEN.mmd

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i3215)

Address:

Specifier:

City, Province, Postal Code:

Designer:

Customer:

Company:

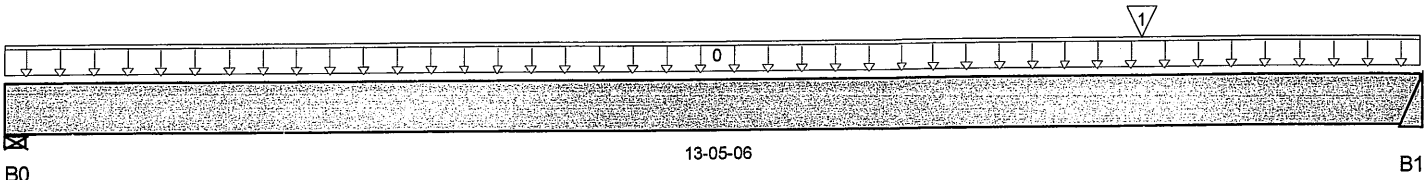
Code reports:

CCMC 12472-R

Misc:

**Town of Innisfil Certified Model**

04/01/2018 12:56:31 PM kgervais



Total Horizontal Product Length = 13-05-06

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

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	401 / 0	272 / 0		
B1	1,079 / 0	627 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	13-05-06	27	13			n/a
1	B9(i3406)	Conc. Pt. (lbs)	L	10-09-10	10-09-10	1,121	590			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,869 ft-lbs	25,408 ft-lbs	23.1%	1	10-09-10
End Shear	2,337 lbs	11,571 lbs	20.2%	1	12-05-14
Total Load Defl.	L/717 (0.218")	0.652"	33.5%	4	07-05-13
Live Load Defl.	L/1,154 (0.136")	0.435"	31.2%	5	07-05-13
Max Defl.	0.218"	n/a	n/a	4	07-05-13
Span / Depth	16.5	n/a	n/a		00-00-00

## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 3-1/2"	940 lbs	11.5%	5%	Unspecified
B1 Hanger	2" x 3-1/2"	2,403 lbs	n/a	28.1%	HUC410

## Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO DBC 2012



pg 1/2





Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i3215)**

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

September 5, 2017 11:16:28

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-2-10 SUNKEN.mmdl

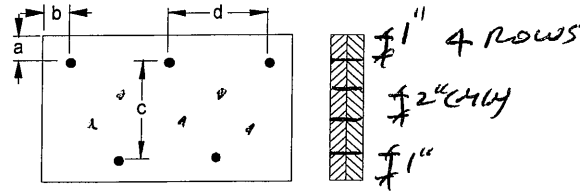
Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i3215)

Specifier:

Designer:

Company:

Msc:

**Connection Diagram**

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

Calculated Side Load = 179.9 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: 3 1/2" ARDOX SPIRAL Nails

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

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

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proh

## BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i1942)

Specifier:

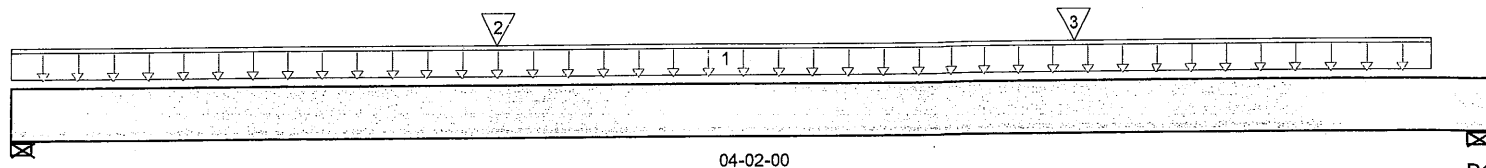
Designer:

Company:

Msc:

**Town of Innisfil Certified Model**

04/01/2018 12:56:37 PM kgervais



Total Horizontal Product Length = 04-02-00

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

Bearing	Live	Dead	Snow	Wind
B0, 3-11/16"	643 / 0	352 / 0		
B1, 4"	547 / 0	297 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-00-02	9	4			n/a
2	-	Conc. Pt (lbs)	L	01-04-06	01-04-06	747	388			n/a
3	J1(i1690)	Conc. Pt (lbs)	L	03-00-00	03-00-00	396	198			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,446 ft-lbs	25,408 ft-lbs	5.7%	1	01-08-00
End Shear	1,349 lbs	11,571 lbs	11.7%	1	01-01-03
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-00-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-00-00
Max Defl.	0.005"	n/a	n/a	4	02-00-00
Span / Depth	4.6	n/a	n/a		00-00-00

### Bearing Supports

B0	Wall/Plate	3-11/16" x 3-1/2"	1,404 lbs	20.2%	8.9%	Unspecified
B1	Wall/Plate	4" x 3-1/2"	1,192 lbs	15.9%	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 OBC 2012**





Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(1194

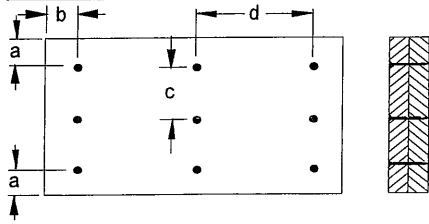
Specifier:

Designer:

Company:

Misc:

### Connection Diagram



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

Calculated Side Load = 608.4 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" ARDOX SPIRAL

### Disclosure

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DWG NO. TAM 45290-17  
STRUCTURAL  
COMPONENT ONLY

## BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i1937)

Specifier:

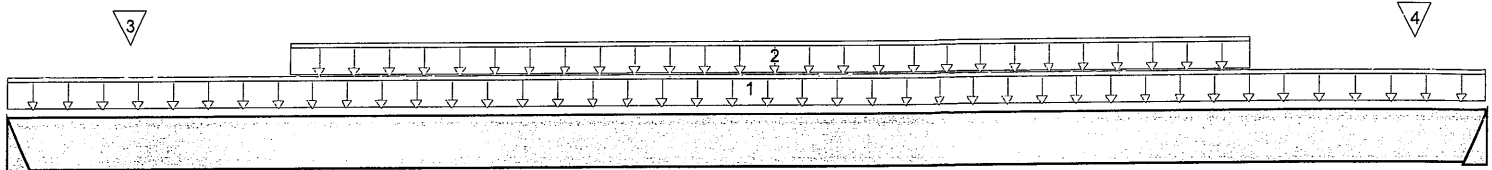
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

04/01/2018 12:56:46 PM kgervais



06-01-08

B0

B1

Total Horizontal Product Length = 06-01-08

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

Bearing	Live	Dead	Snow	Wind
B0	560 / 0	294 / 0		
B1	467 / 0	248 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-01-08	9	5			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-02-00	05-02-00	143	71			n/a
3	J5(i1920)	Conc. Pt. (lbs)	L	00-06-00	00-06-00	266	133			n/a
4	J5(i1935)	Conc. Pt. (lbs)	L	05-10-00	05-10-00	128	64			n/a

### Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,504 ft-lbs	12,704 ft-lbs	11.8%	1	03-02-00
End Shear	852 lbs	5,785 lbs	14.7%	1	00-11-08
Total Load Defl.	L/999 (0.026")	n/a	n/a	4	03-01-00
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	03-01-00
Max Defl.	0.026"	n/a	n/a	4	03-01-00
Span / Depth	7.5	n/a	n/a		00-00-00

### Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,208 lbs	n/a	28.3%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,010 lbs	n/a	23.7%	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.  
 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.  
 Design based on Dry Service Condition.  
 Importance Factor : Normal Part code : Part 9  
 Deflections less than 1/8" were ignored in the results.

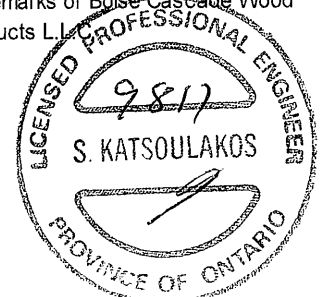
### Disclosure

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CONFORMS TO UBC 2012

DWG NO. TAM 45299-17  
 STRUCTURAL  
 COMPONENT ONLY





## BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i1921)

Specifier:

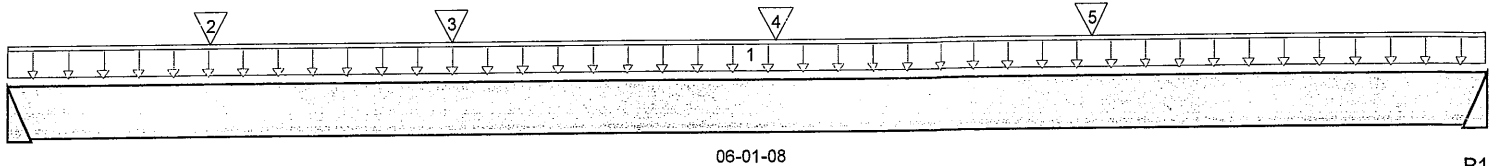
Designer:

Company:

Msc:

**Town of Innisfil Certified Model**

04/01/2018 12:56:49 PM kgervais



B0

B1

Total Horizontal Product Length = 06-01-08

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

Bearing	Live	Dead	Snow	Wind
B0	1,071 / 0	565 / 0		
B1	1,083 / 0	570 / 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	06-01-08	178	89			n/a
2	J3(i1928)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	232	116			n/a
3	J3(i1919)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	249	124			n/a
4	J3(i1939)	Conc. Pt. (lbs)	L	03-02-00	03-02-00	284	142			n/a
5	J3(i1938)	Conc. Pt. (lbs)	L	04-06-00	04-06-00	284	142			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,458 ft-lbs	25,408 ft-lbs	13.6%	1	03-02-00
End Shear	1,983 lbs	11,571 lbs	17.1%	1	00-11-08
Total Load Defl.	L/999 (0.03")	n/a	n/a	4	03-01-00
Live Load Defl.	L/999 (0.02")	n/a	n/a	5	03-01-00
Max Defl.	0.03"	n/a	n/a	4	03-01-00
Span / Depth	7.5	n/a	n/a		00-00-00

## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	2,314 lbs	n/a	27.1%	HGUS410
B1 Hanger	2" x 3-1/2"	2,337 lbs	n/a	27.4%	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.

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.

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







Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

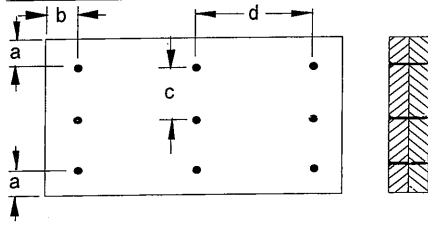
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i)192

Specifier:

Designer:

Company:

Misc:

**Connection Diagram**

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

Calculated Side Load = 444.4 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****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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DWG NO. TAM 45300.17  
 STRUCTURAL  
 COMPONENT ONLY



## BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i2210)

Specifier:

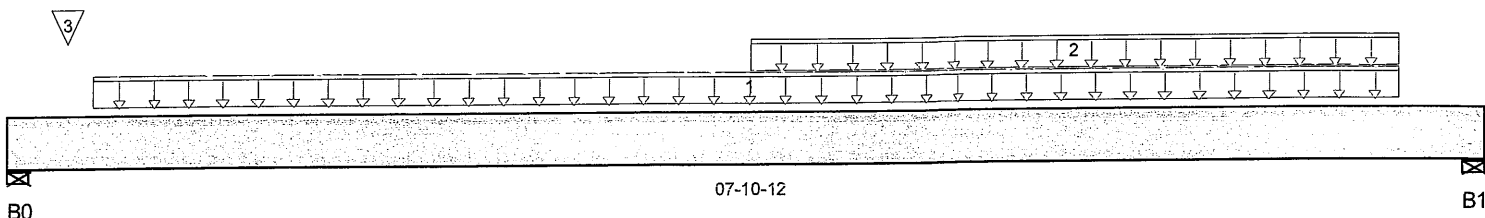
Designer:

Company:

Misc:

Town of Innisfil Certified Model

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Total Horizontal Product Length = 07-10-12

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

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,270 / 0	684 / 0		
B1, 5-1/4"	616 / 0	327 / 0		

## Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-05-06	07-05-06	16	8			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	03-11-07	07-05-06	215	108			n/a
3	B9(i2184)	Conc. Pt. (lbs)	L	00-03-12	00-03-12	1,021	540			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,869 ft-lbs	12,704 ft-lbs	14.7%	1	04-09-10
End Shear	1,322 lbs	5,785 lbs	22.8%	1	06-08-00
Total Load Defl.	L/999 (0.044")	n/a	n/a	4	04-02-08
Live Load Defl.	L/999 (0.029")	n/a	n/a	5	04-02-08
Max Defl.	0.044"	n/a	n/a	4	04-02-08
Span / Depth	9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 1-3/4"	2,759 lbs	53.7%	23.5%	Unspecified
B1 Wall/Plate	5-1/4" x 1-3/4"	1,332 lbs	27.2%	11.9%	Unspecified

## Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBC 2012

## Disclosure

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DWG NO. TAM45301-17  
STRUCTURAL  
COMPONENT ONLY

## BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i1570

Specifier:

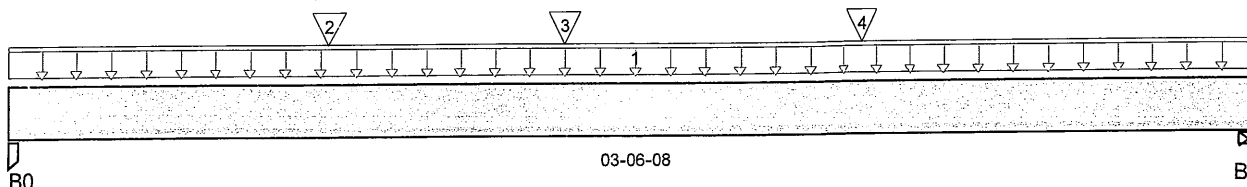
Designer:

Company:

Misc:

**Town of Innisfil Certified Model**

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Total Horizontal Product Length = 03-06-08

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

Bearing	Live	Dead	Snow	Wind
B0, 3-3/8"	537 / 0	390 / 0		
B1, 4"	525 / 0	387 / 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	03-06-08		60			n/a
2	-	Conc. Pt. (lbs)	L	00-10-14	00-10-14	404	202			n/a
3	J5(i1758)	Conc. Pt. (lbs)	L	01-06-14	01-06-14	148	74			n/a
4	-	Conc. Pt. (lbs)	L	02-05-00	02-05-00	504	251			n/a

## Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,070 ft-lbs	25,408 ft-lbs	4.2%	1	01-06-14
End Shear	1,108 lbs	11,571 lbs	9.6%	1	02-05-00
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-09-04
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-09-04
Max Defl.	0.003"	n/a	n/a	4	01-09-04
Span / Depth	3.9	n/a	n/a		00-00-00

## Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-3/8" x 3-1/2"	1,293 lbs	13.4%	8.9%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	1,271 lbs	17%	7.4%	Unspecified

## Notes

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

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

Calculations assume Member is Fully Braced.

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

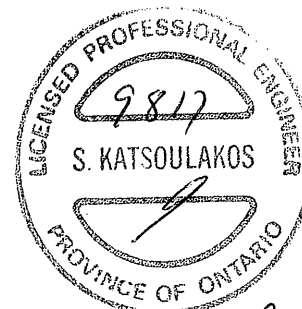
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

**CONFORMS TO OBC 2012**



P61L

DWG NO. TAM 4530217  
STRUCTURAL  
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-2-10.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i15

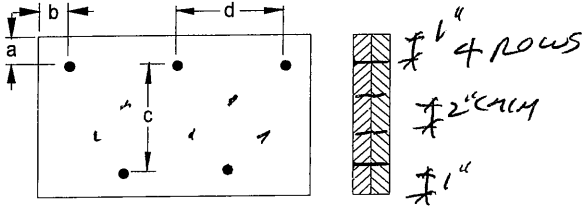
Specifier:

Designer:

Company:

Misc:

### Connection Diagram



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

Calculated Side Load = 409.2 lb/ft

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

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

3 1/2" ARDOX SPIRAL

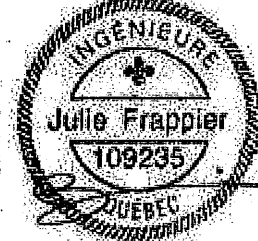
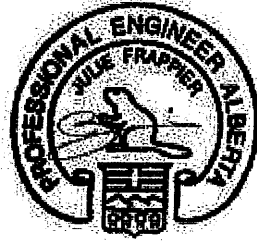
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DWG NO. TAM 45302-17  
STRUCTURAL  
COMPONENT ONLY



## Maximum Floor Spans

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

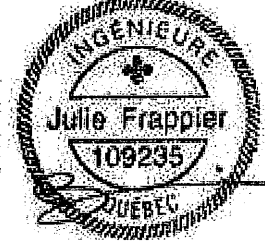
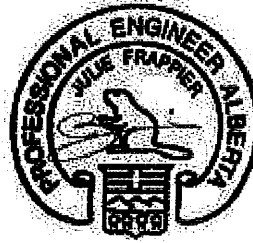
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"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

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

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





## Maximum Floor Spans

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

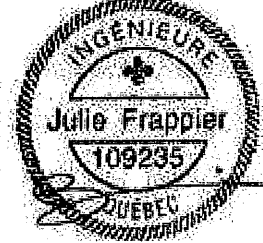
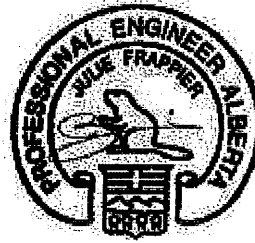
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"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

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

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

## Maximum Floor Spans

Live Load = 40 psf, Dead Load = 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

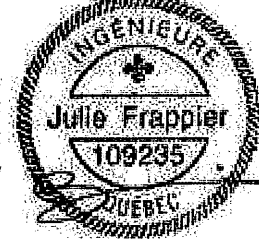
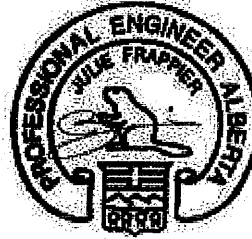
  

Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
	NI-60	18'-1"	16'-4"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

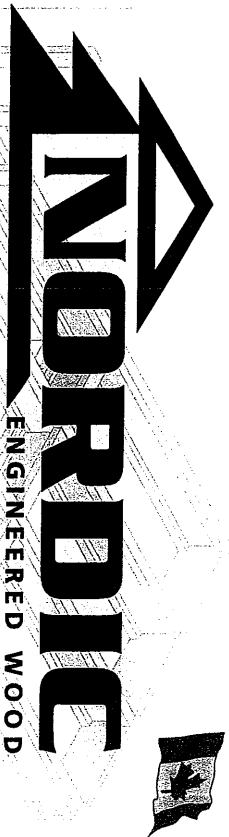
Live Load = 40 psf, Dead Load = 30 psf  
Simple Spans, L/480 Deflection Limit  
3/4" OSB G&N Sheathing



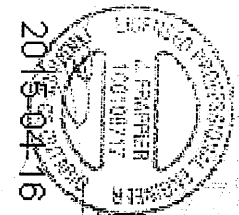
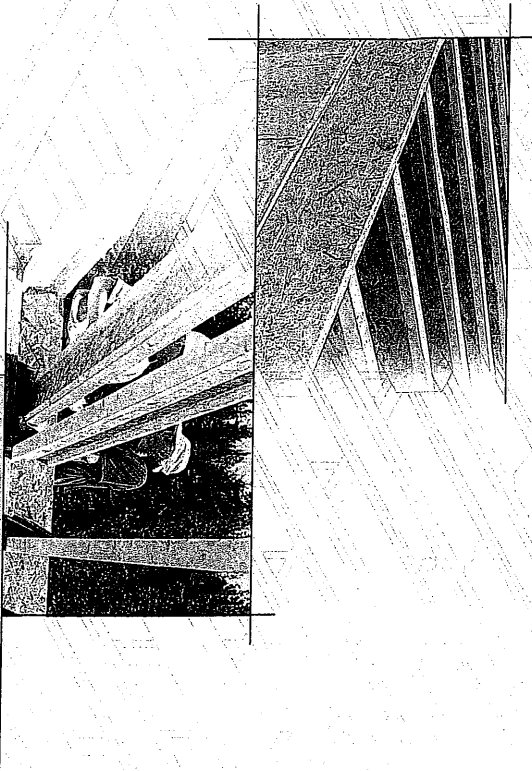
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

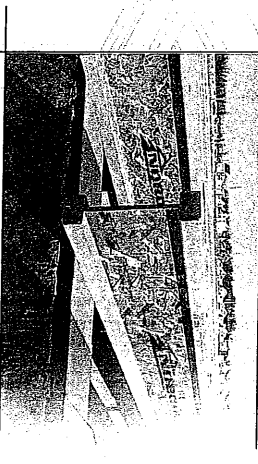
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load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

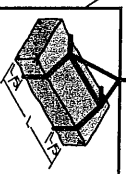
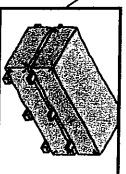
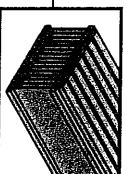
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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



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

## 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.



1. Maximum **clear** spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate

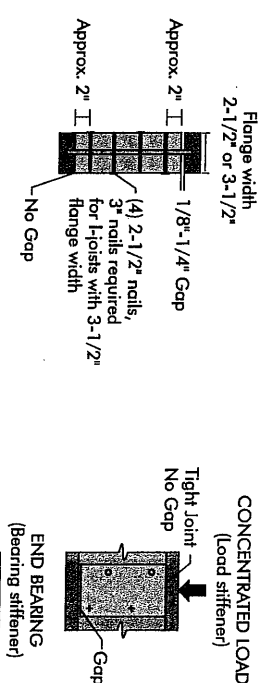
1. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS8-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
2. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
3. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
4. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
5. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
6. SI units conversion: 1 inch = 25.4 mm  
1 foot = 0.305 m

### RECOMMENDATIONS:

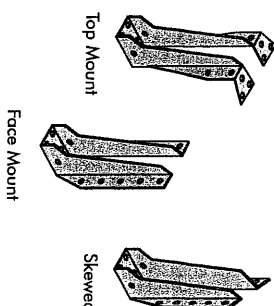
- A **bearing stiffener** is required in all engineered applications with factored reactions greater than shown in the I-Ioist properties table found of the *I-Ioist Construction Guide* (C101). The gap between the stiffener and the flange is at the top.
- A **bearing stiffener** is required when the I-Ioist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

See table below for web stiffener size requirements

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width



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

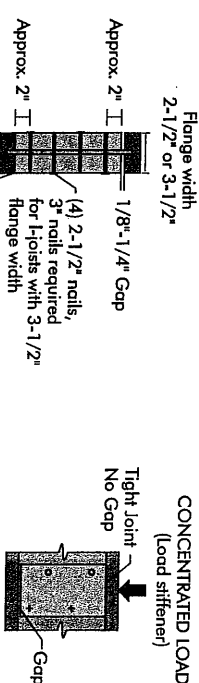


## CCMC EVALUATION REPORT 13032-R

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
2 1/2"	SL 200	15.1	14.2	13.9	13.5	16.3	15.4	14.10	14.7
3"	SL 210	16.1	15.2	14.8	14.3	17.5	16.5	15.0	15.5
3 1/2"	SL 220	16.9	15.4	14.10	14.1	17.7	16.7	15.0	15.1
4"	SL 230	17.1	16.1	15.6	15.7	18.7	17.4	16.9	16.1
4 1/2"	SL 240	17.1	16.1	15.8	15.9	18.10	17.6	16.11	17.0
5"	SL 250	18.1	16.0	15.9	15.6	18.4	17.3	16.8	16.7
5 1/2"	SL 260	18.1	17.0	16.5	16.6	20.0	18.6	17.9	17.7
6"	SL 270	18.4	17.3	16.7	16.9	20.3	18.9	18.0	18.1
6 1/2"	SL 280	19.6	18.0	17.4	17.5	21.6	19.1	19.0	19.1
7"	SL 290	19.8	18.3	17.6	17.7	21.9	20.2	19.3	19.4
7 1/2"	SL 300	20.2	18.7	17.0	17.1	22.9	20.7	19.8	19.9
8"	SL 310	20.1	18.9	17.1	18.0	22.5	20.9	19.10	19.11
8 1/2"	SL 320	20.1	18.7	17.10	17.11	22.2	20.6	19.8	19.4
9"	SL 330	20.5	18.11	18.1	18.2	22.7	20.11	20.0	20.1
9 1/2"	SL 340	21.7	20.0	19.1	19.2	23.10	21.1	21.1	21.2
10"	SL 350	21.11	20.5	19.4	19.5	24.5	22.5	21.5	21.6
10 1/2"	SL 360	22.5	20.8	19.7	19.10	24.8	22.10	21.10	21.1
11"	SL 370	22.7	20.11	19.11	20.0	25.0	23.1	22.10	22.1
11 1/2"	SL 380	23.5	20.9	19.9	19.10	24.7	22.9	21.11	21.1
12"	SL 390	23.6	21.1	20.9	20.10	26.0	24.0	22.11	23.0
12 1/2"	SL 400	24.11	22.1	21.5	21.6	26.5	24.5	23.4	23.4
13"	SL 410	24.8	22.9	21.9	21.10	27.3	25.2	23.9	23.9
13 1/2"	SL 420	24.8	22.9	21.9	21.10	27.3	25.2	24.0	24.1

**FIGURE 2**  
**WEB STIFFENER INSTALLATION DETAILS**

**RECOMMENDATIONS:**



## STIFFENER SIZE REQUIREMENTS

Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

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

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

2015-04-16



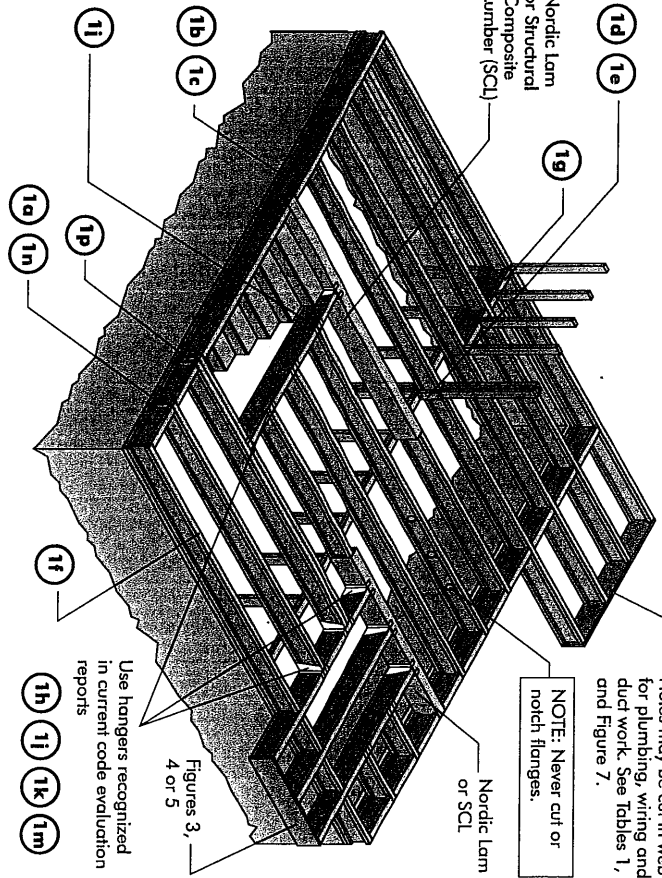
# INSTALLING NORDIC I-JOISTS

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 (criple 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.



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

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



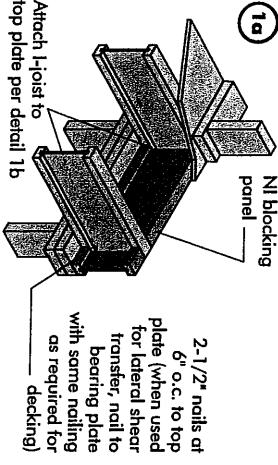
Figures 3, 4 or 5  
Holes may be cut in web for plumbing, wiring and duct work. See Tables 1, 2 and Figure 7.

NOTE: Never cut or notch flanges.

Figures 3, 4 or 5

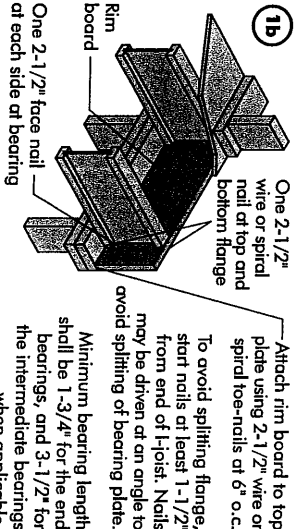
Use hangers recognized in current code evaluation reports

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



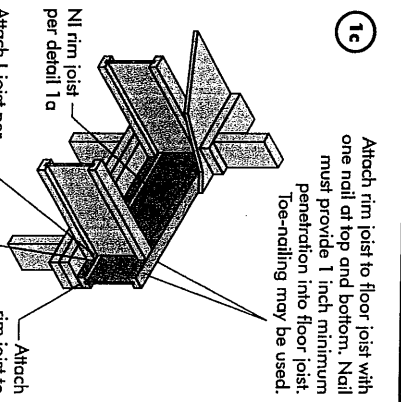
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
N1 Joists	3,300

\*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.

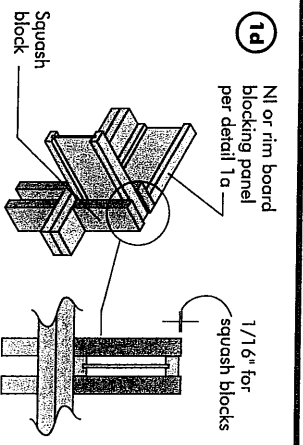


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

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

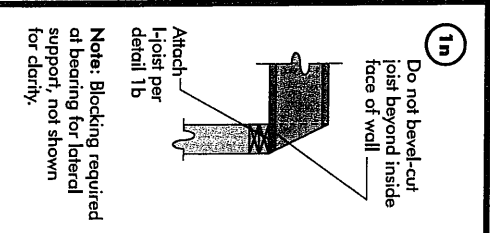
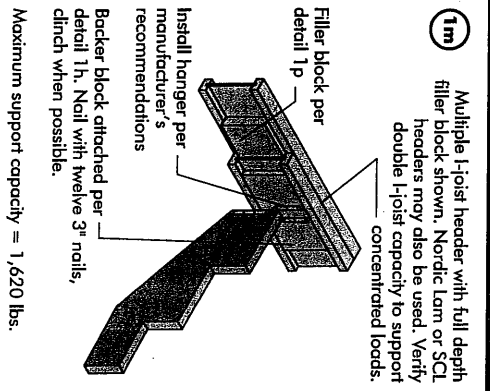
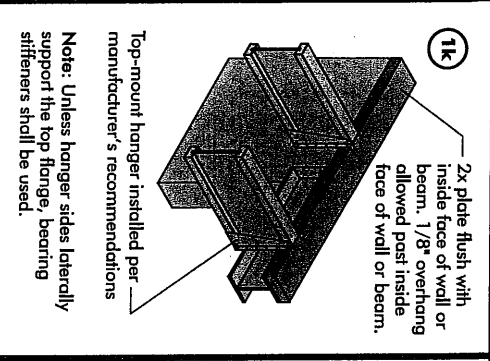
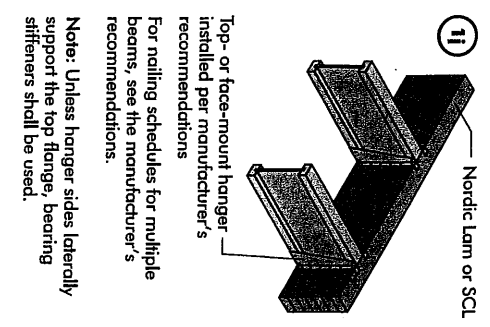
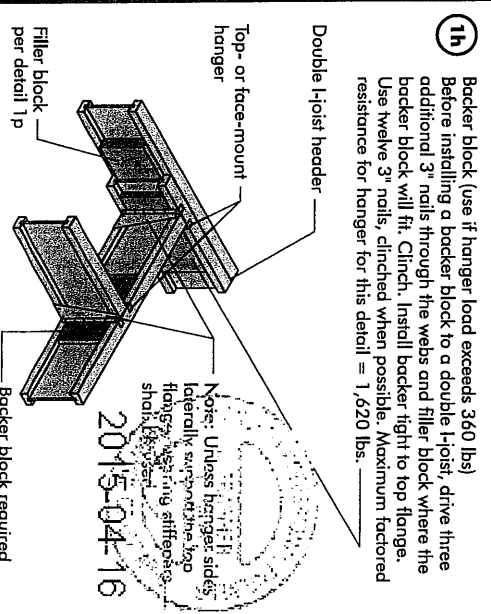
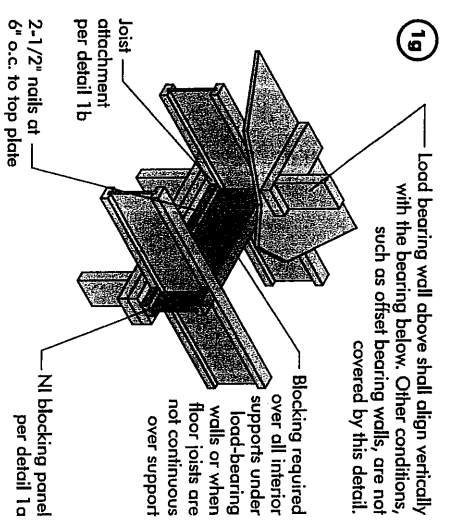
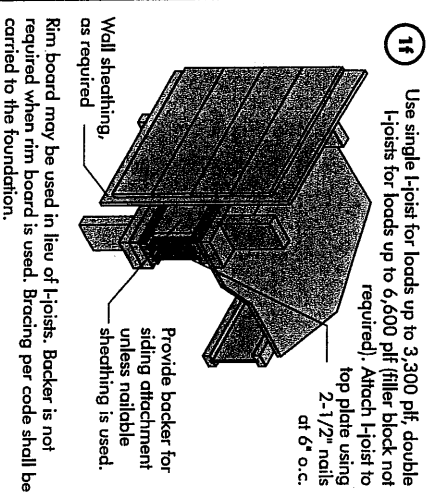
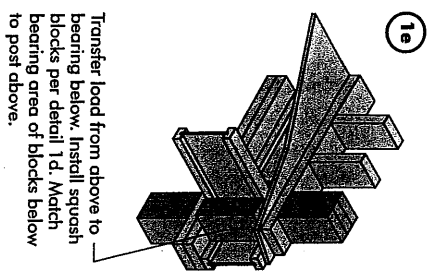


Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.



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

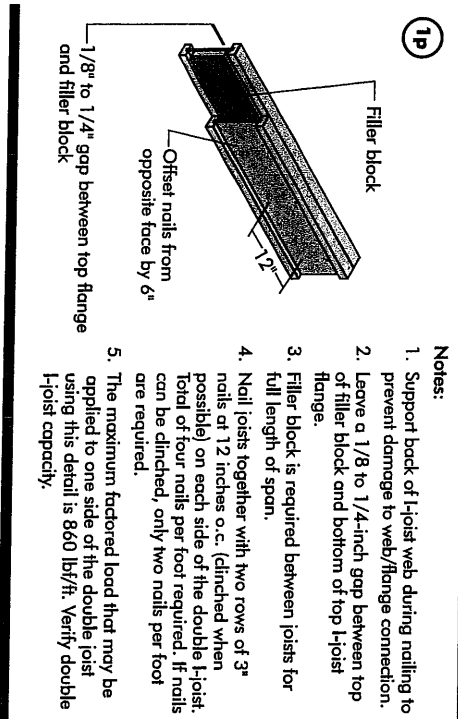
Provide lateral bracing per detail 1a, 1b, or 1c



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

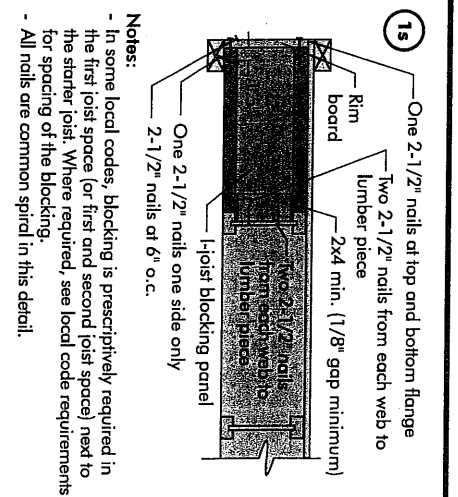
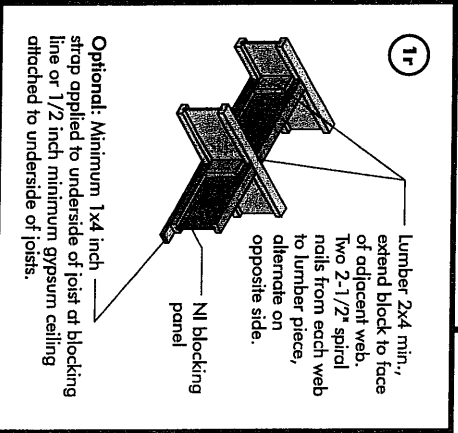
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"

\* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q437 Standard.  
 \*\* For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".



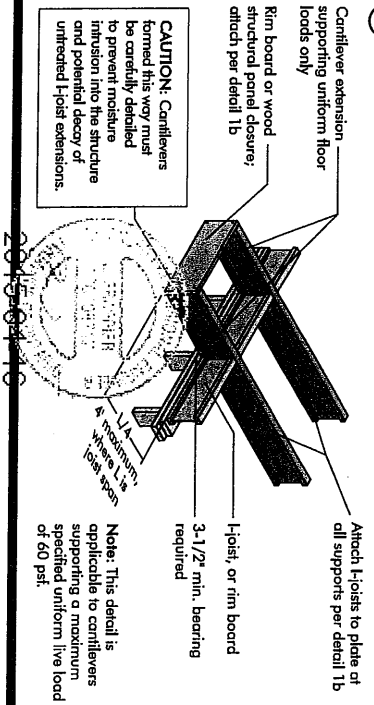
**Notes:**

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

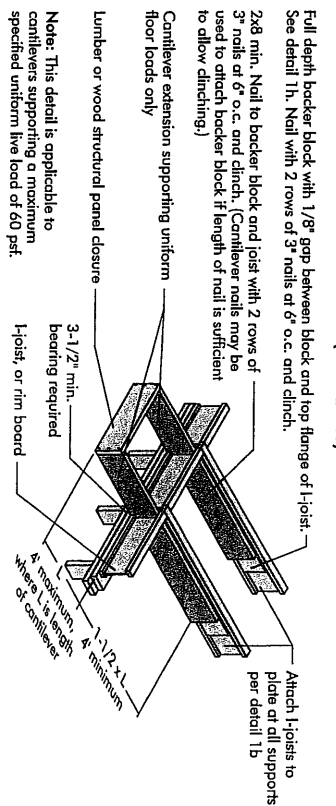


## CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

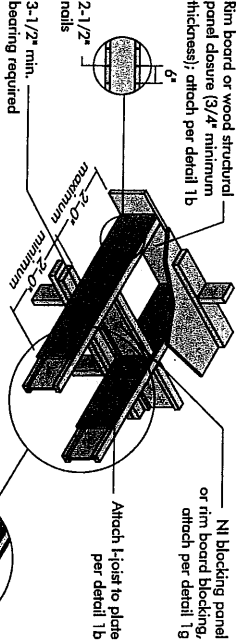


### 3b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



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

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



### Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

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

### 4b Alternate Method 2 — DOUBLE I-JOIST

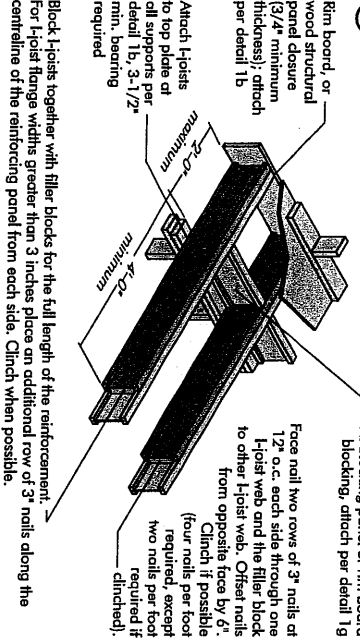
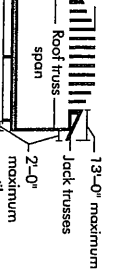
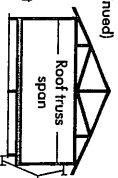


FIGURE 4 (continued)  
See table below for N1 reinforcement requirements of cantilever.



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

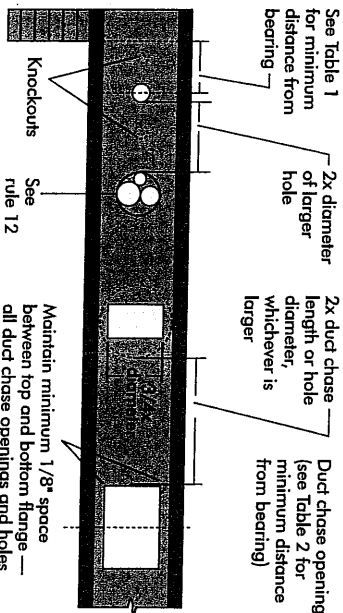
JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING: (UNFACTORED)											
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)				LL = 40 psf, DL = 15 psf JOIST SPACING (in.)				LL = 50 psf, DL = 15 psf JOIST SPACING (in.)			
2 1/2	26	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
3	28	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
3 1/2	30	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
4	32	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
4 1/2	34	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
5	36	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
5 1/2	38	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
6	40	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
6 1/2	42	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
7		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
7 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
8		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
8 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
10		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
10 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
11		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
11 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
12		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
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13		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
13 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
14		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
14 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
15		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
15 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
16		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
16 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
17		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
17 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
18		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
18 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
19		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
19 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
20		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
20 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
21		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
21 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
22		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
22 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
23		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
23 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
24		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
24 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
25		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
25 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
26		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
26 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
27		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
27 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
28		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
28 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
29		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
29 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
30		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
30 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
31		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
31 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
32		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
32 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
33		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
33 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
34		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
34 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
35		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
35 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
36		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
36 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
37		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
37 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
38		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
38 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
39		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
39 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
40		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
40 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
41		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
41 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
42		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
42 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
43		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
43 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
44		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
44 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
45		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
45 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
46		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
46 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
47		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
47 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
48		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
48 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
49		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
49 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
50		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
50 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
51		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
51 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
52		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
52 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
53		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
53 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
54		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
54 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
55		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
55 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
56		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
56 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
57		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
57 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
58		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
58 1/2		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
59		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
59 1/2													

# 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.

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	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	Span adjustment Factor
10	20	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
12	24	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
14	28	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
16	32	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
18	36	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
20	40	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
22	44	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
24	48	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
26	52	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
28	56	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
30	60	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
32	64	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
34	68	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
36	72	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
38	76	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
40	80	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
42	84	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
44	88	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
46	92	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
48	96	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
50	100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
52	104	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
54	108	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
56	112	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
58	116	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
60	120	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0

### OPTIONAL:

1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Hole location distance is measured from inside face of supports to centre of hole.
3. Distances in this chart are based on uniformly loaded joists.

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Rf of Joists), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$D_{\text{reduced}} = \frac{L_{\text{actual}}}{L_{\text{span}}} \times D$$

Where:

- $D_{\text{reduced}}$  = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications (ft).
- $L_{\text{actual}}$  = Distance shall not be less than 6 inches from the face of the support to edge of the hole.
- $L_{\text{span}}$  = The actual measured span distance between the inside faces of supports (ft).
- $D$  = Span Adjustment Factor given in this table.
- $D_{\text{actual}}$  = The minimum distance from the inside face of any support to centre of hole from this table.
- If  $D_{\text{actual}}$  is greater than 1, use 1 in the above calculation for  $D_{\text{actual}}$ .

TABLE 2  
DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth	Joist Series	8	10	12	14	16	18	20	22	24
10	20	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
12	24	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
14	28	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
16	32	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
18	36	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
20	40	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
22	44	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
24	48	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
26	52	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
28	56	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
30	60	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
32	64	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
34	68	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
36	72	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
38	76	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
40	80	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
42	84	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
44	88	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
46	92	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
48	96	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
50	100	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
52	104	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
54	108	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
56	112	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
58	116	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
60	120	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

1. Above table may be used for I-joist spacing of 24 inches on centre or less.
2. Duct chase opening location distance is measured from inside face of supports to centre of opening.
3. The above table is based on simple-span joists only. For other applications, contact your local distributor.
4. Distances are based on uniformly loaded floor joists that meet the span requirements for a design load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. For other applications, contact your local distributor.

2015-04-16

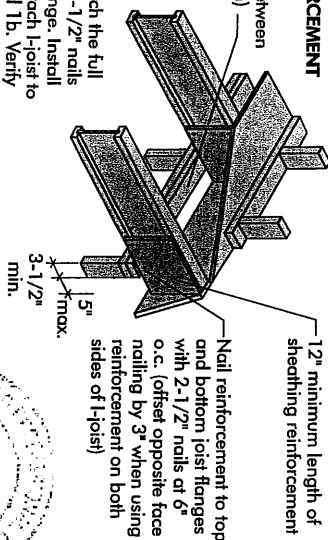


# BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

## 5a SHEATHING REINFORCEMENT

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

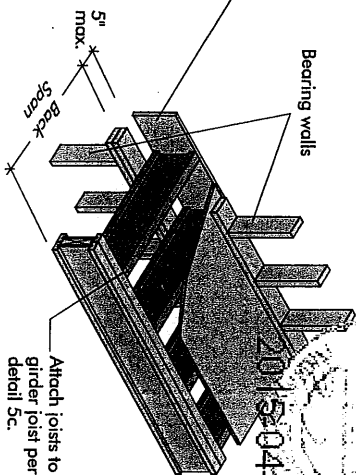
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

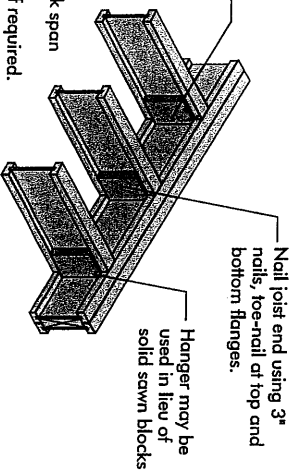
Notes:  
- Provide full depth blocking between joists over support (not shown for clarity)  
- Attach I-joist to plate at all supports per detail 1b.  
- 3-1/2" minimum I-joist bearing required.



## 5c SET-BACK CONNECTION

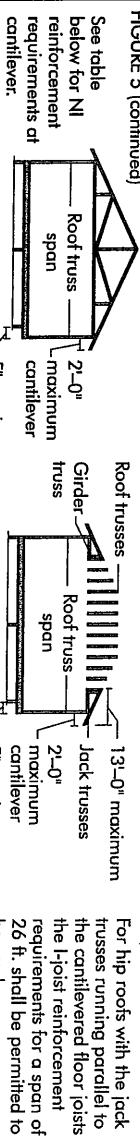
Vertical solid sawn blocks (2x6 S-P-F No. 2 or better) nailed through joist web and web of girder using 2-1/2" nails.

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)				ROOF LOADING (UNFACTORED)			
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf			
		12	16	19.2	24	12	16	19.2	24
9-1/2"	26	X	X	X	X	X	X	X	X
	28	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X
	36	X	X	X	X	X	X	X	X
11-7/8"	26	X	X	X	X	X	X	X	X
	28	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X
	36	X	X	X	X	X	X	X	X
	38	X	X	X	X	X	X	X	X
	40	X	X	X	X	X	X	X	X
	42	X	X	X	X	X	X	X	X
14"	26	X	X	X	X	X	X	X	X
	28	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X
	36	X	X	X	X	X	X	X	X
	38	X	X	X	X	X	X	X	X
	40	X	X	X	X	X	X	X	X
	42	X	X	X	X	X	X	X	X
16"	26	X	X	X	X	X	X	X	X
	28	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X
	36	X	X	X	X	X	X	X	X
	38	X	X	X	X	X	X	X	X
	40	X	X	X	X	X	X	X	X
	42	X	X	X	X	X	X	X	X

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.
3. 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.  
3. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of 1/480. Use 12" o.c. requirements for lesser spacing.
4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is trussed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
5. 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. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger end 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 on 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"

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

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

#### IMPORTANT NOTE:

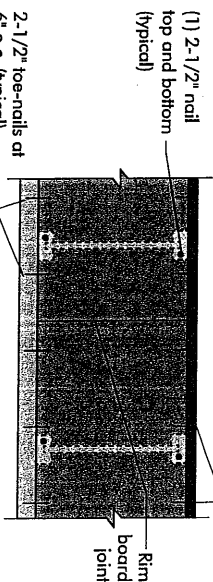
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

## RIM BOARD INSTALLATION DETAILS

### 8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

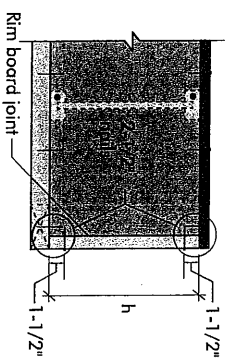
#### Rim board Joint Between Floor Joists

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

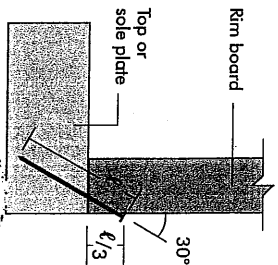


2-1/2" nails at 6" o.c. (typical)

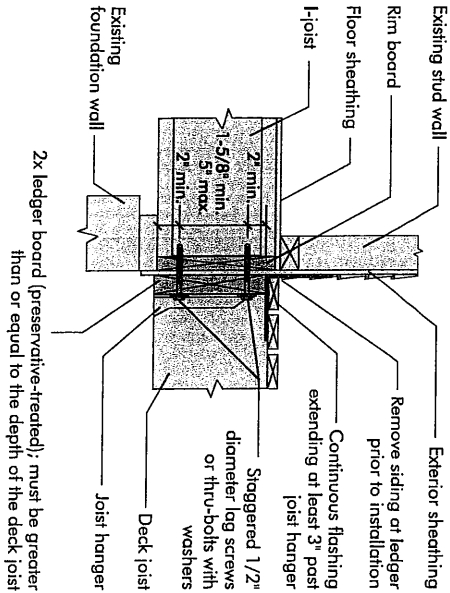
#### Rim board Joint at Corner



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



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

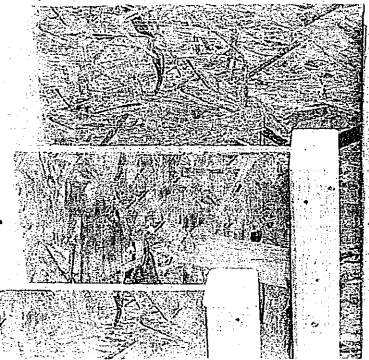


2015-04-16

## PRODUCT WARRANTY

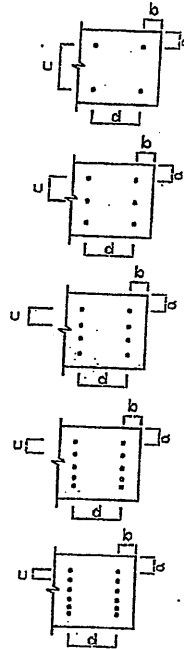
Champion's Challenge guarantees that, in accordance with our specifications, these products are free from manufacturing defects in material and workmanship.

Furthermore, Champion's Challenge 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.





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 PLIES FOR MULTI-PLY MEMBERS (3 PLY OR MORE)
- (5) ALL NAILS ARE 3-1/2" ARDOX SPIRAL NAILS
- (6) DO NOT USE AIR-DRIVEN NAILS



DWG NO TAMN1001.14

STRUCTURAL

COMPONENT ONLY

TO BE USED ONLY  
WITH BEAM CALCS  
BEARING THE  
STAMP BELOW

PROVIDE NAILING

DETAIL # X SEE

DWG #TAMN1001-14