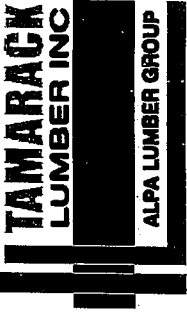
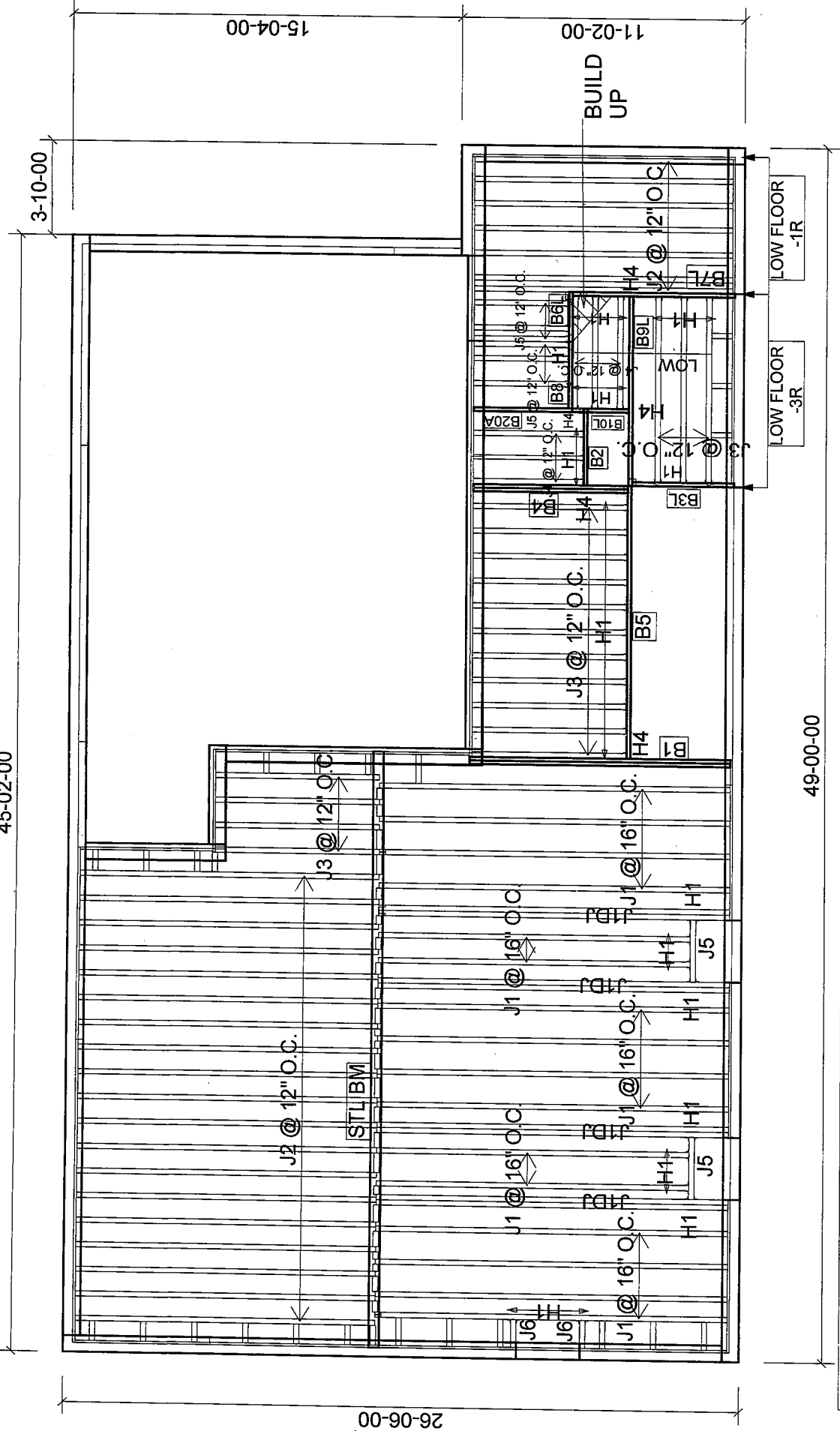


45-02-00



FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-7-15

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/ft²

DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

1st FLOOR

Products					Connector Summary		
PlotID	Length	Product	Plies	Net Qty	Qty	Manuf	Product
J1	14-00-00	9 1/2" NI-40x	1	16	32	H1	IUS2.56/9.5
J1DJ	14-00-00	9 1/2" NI-40x	2	8	4	H1	IUS2.56/9.5
J2	12-00-00	9 1/2" NI-40x	1	26	6	H1	IUS2.56/9.5
J3	8-00-00	9 1/2" NI-40x	1	18	3	H4	HUS1.81/10
J4	6-00-00	9 1/2" NI-40x	1	6	2	H4	HUS1.81/10
J5	4-00-00	9 1/2" NI-40x	1	8			
J6	2-00-00	9 1/2" NI-40x	1	2			
B5	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B7L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B9L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2			
B20A	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B3L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B10L	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B8	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			
B6L	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1			

Town of Innisfil Certified Model
05/03/2018 3:36:34 PM kgervais



FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-7 ~15

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/ft²

DEAD LOAD: 15.0 lb/ft

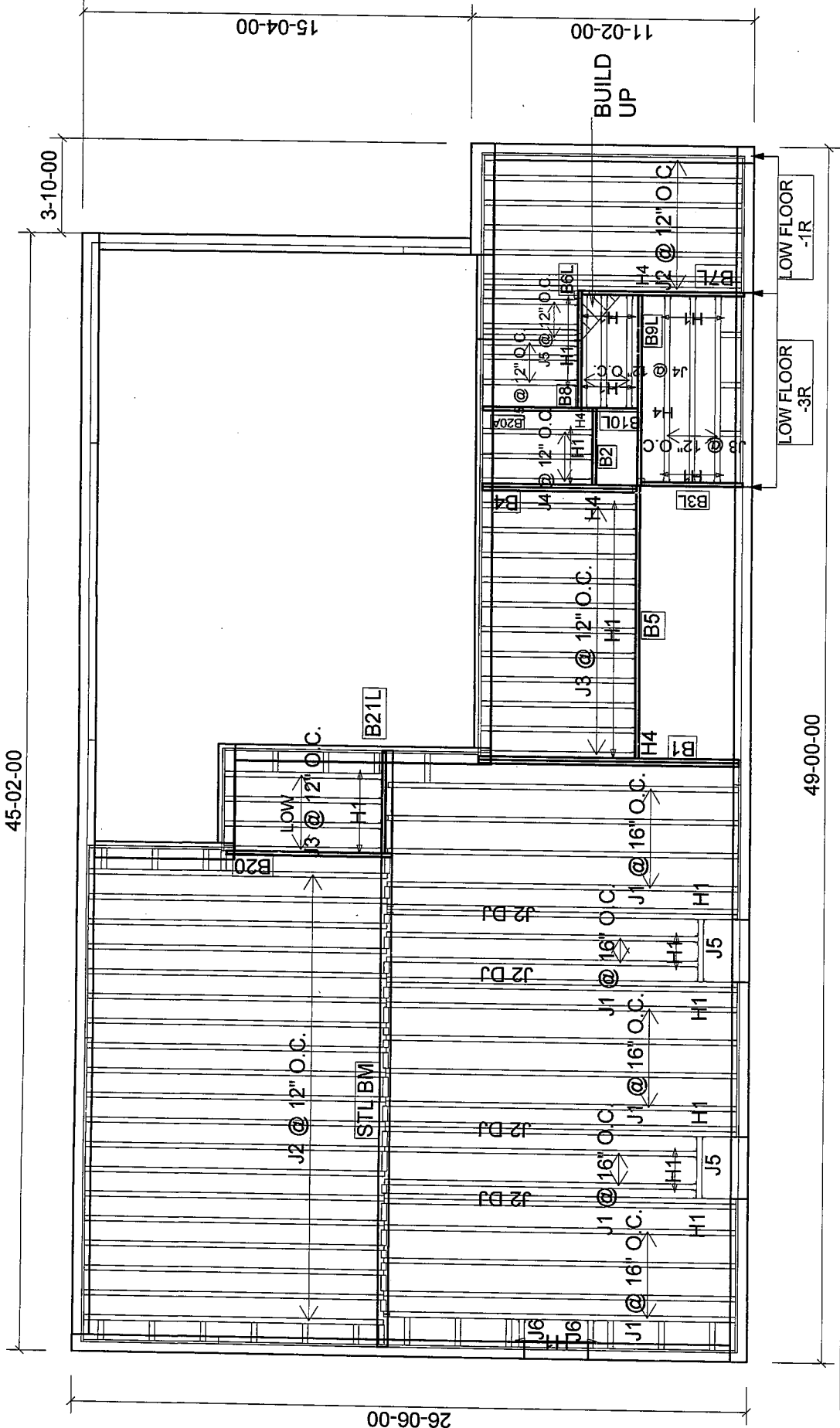
TILED AREAS: 20 lb/ft

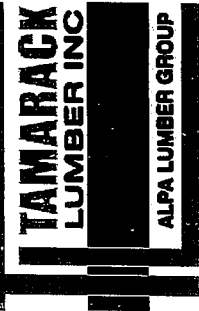
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

1st FLOOR

SUNKEN





FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-7-15

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/ft²

DEAD LOAD: 15.0 lb/ft

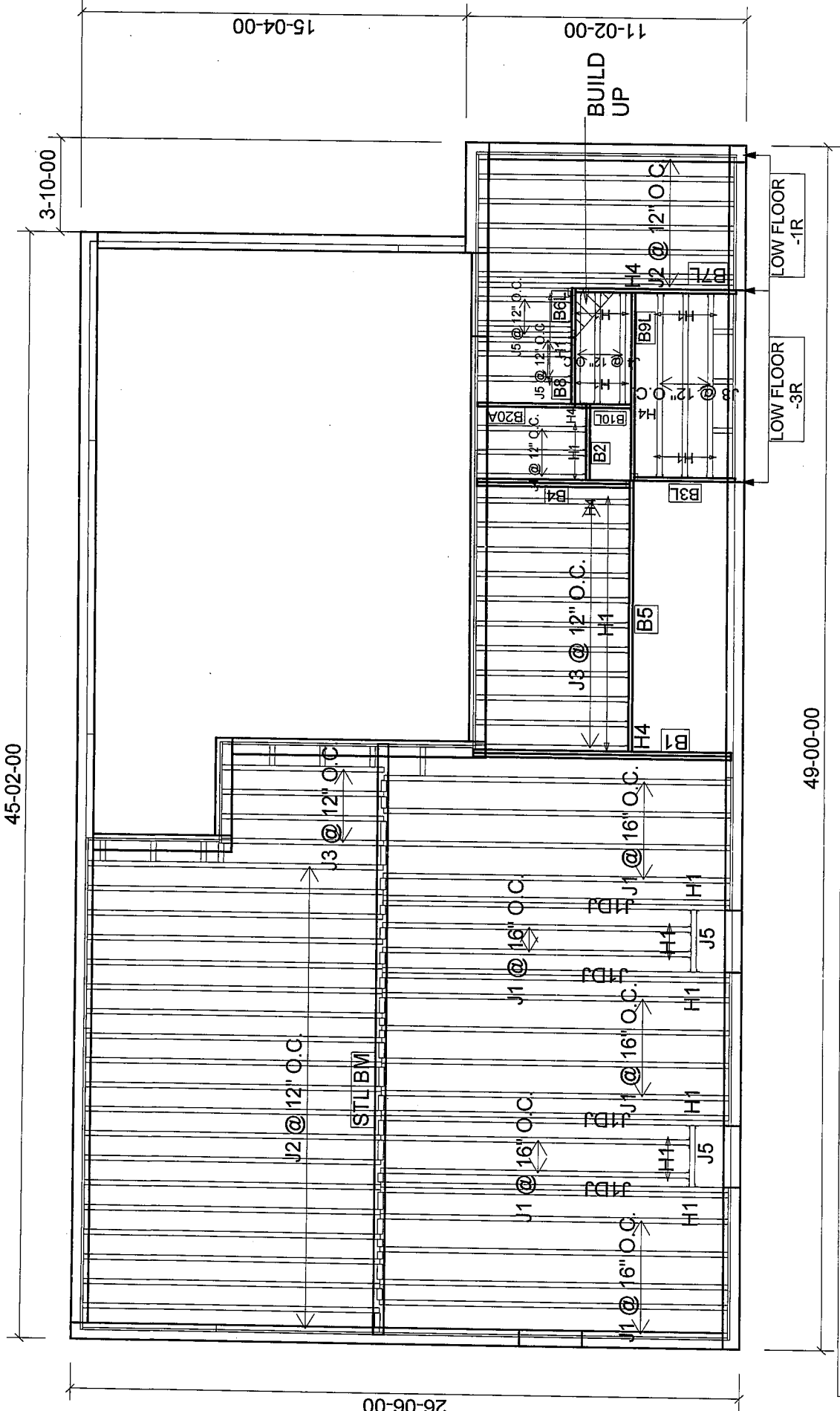
TILED AREAS: 20 lb/ft

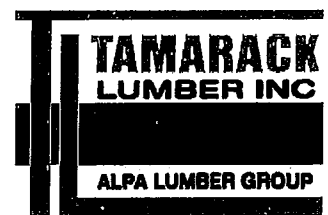
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

1st FLOOR

WOD





FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-7-15

ELEVATION: A

LOT:
CITY: INNISFIL, ON

SALESMAN: MARIO
DESIGNER: CZ
REVISION: -

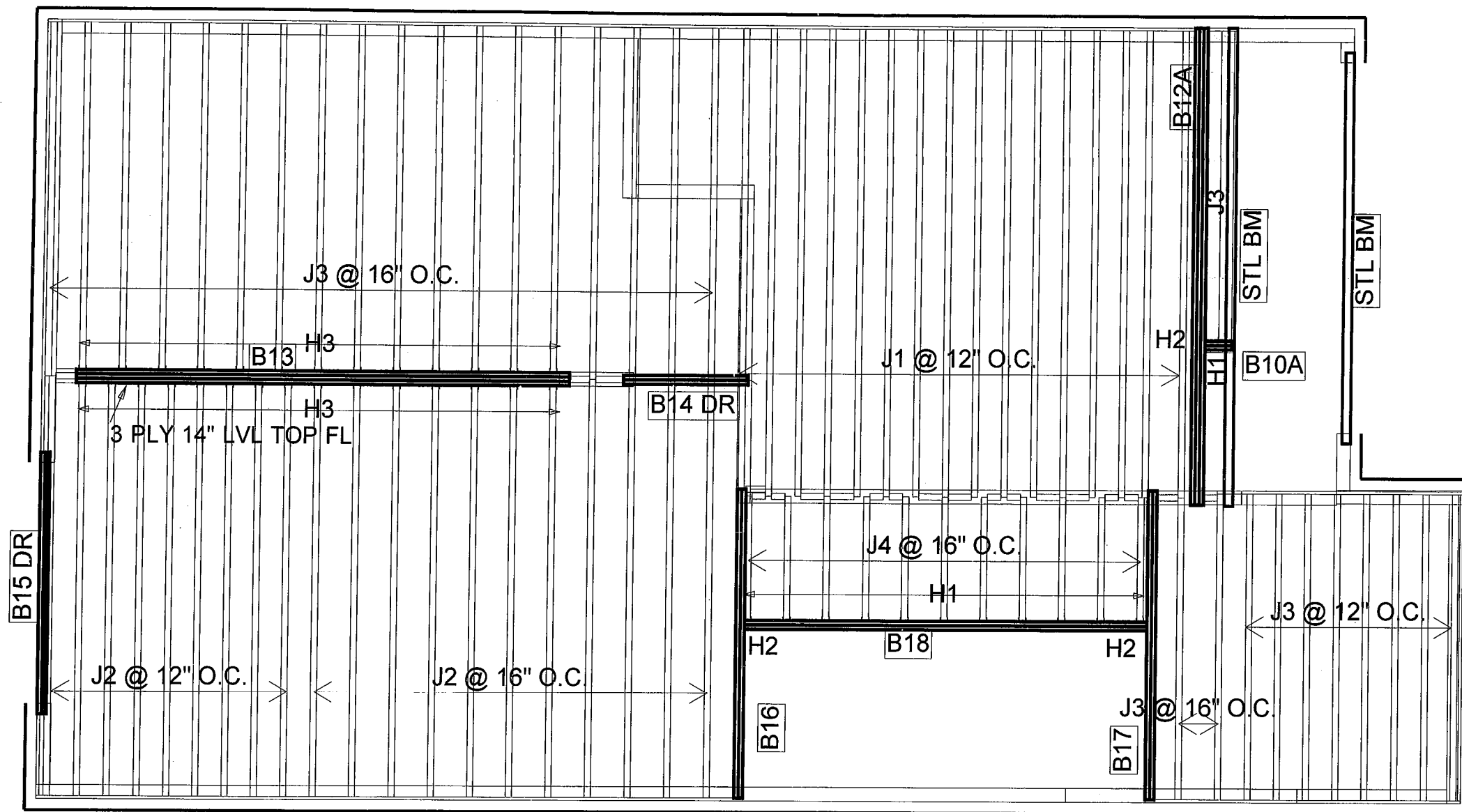
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

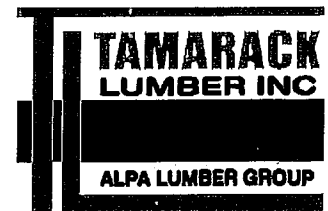
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	16
J2	14-00-00	9 1/2" NI-40x	1	20
J3	12-00-00	9 1/2" NI-40x	1	29
J4	6-00-00	9 1/2" NI-40x	1	11
B12A	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B18	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10A	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
2	H2	HGUS410
1	H2	HGUS410
28	H3	LF259

Town of Innisfil Certified Model
05/03/2018 3:37:54 PM kgervais



FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-7-15

ELEVATION: B

LOT:
CITY: INNISFIL, ON

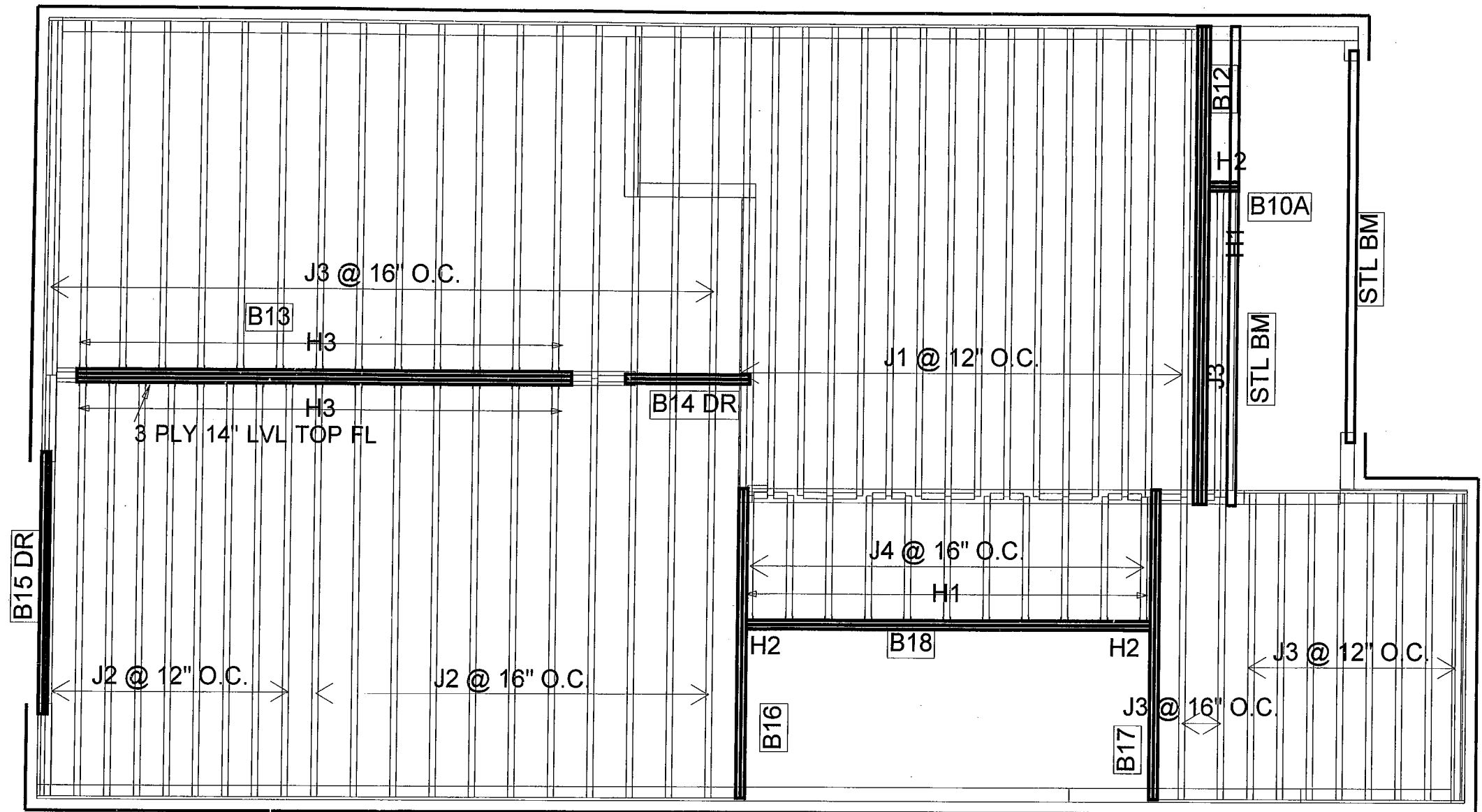
SALESMAN: MARIO
DESIGNER: CZ
REVISION: -

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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 06/09/2017



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	16
J2	14-00-00	9 1/2" NI-40x	1	20
J3	12-00-00	9 1/2" NI-40x	1	29
J4	6-00-00	9 1/2" NI-40x	1	11
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B18	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10A	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	18-00-00	1-3/4" x 14" VERSA-LAM® 2.0 3100 SP	3	3

Connector Summary		
Qty	Manuf	Product
12	H1	IUS2.56/9.5
2	H2	HGUS410
1	H2	HGUS410
28	H3	LF259

Town of Innisfil Certified Model
05/03/2018 3:37:58 PM kgervais

2nd FLOOR



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B20A(i3439)

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

September 7, 2017 08:39:01

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7-15G-ELB.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B20A(i343

Specifier:

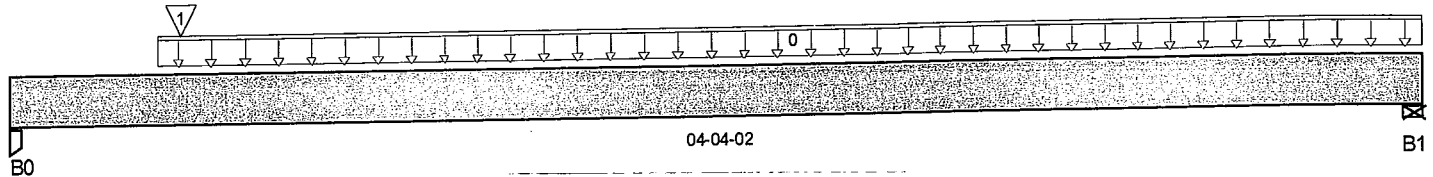
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/03/2018 3:41:15 PM kgervais



Total Horizontal Product Length = 04-04-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	117 / 0	132 / 0		
B1, 4-3/8"	98 / 0	68 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	04-04-02	40	20			n/a
1	B8(i3254)	Conc. Pt. (lbs)	L	00-06-06	00-06-06	58	101			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	228 ft-lbs	12,704 ft-lbs	1.8%	1	01-09-13
End Shear	226 lbs	5,785 lbs	3.9%	1	00-11-04
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-11-15
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-00-05
Max Defl.	0.002"	n/a	n/a	4	01-11-15
Span / Depth	5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	341 lbs	13.7%	9.1%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	232 lbs	5.7%	2.5%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Disclosure

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

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





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i1606)

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

July 26, 2016 17:20:29



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i1606

Specifier:

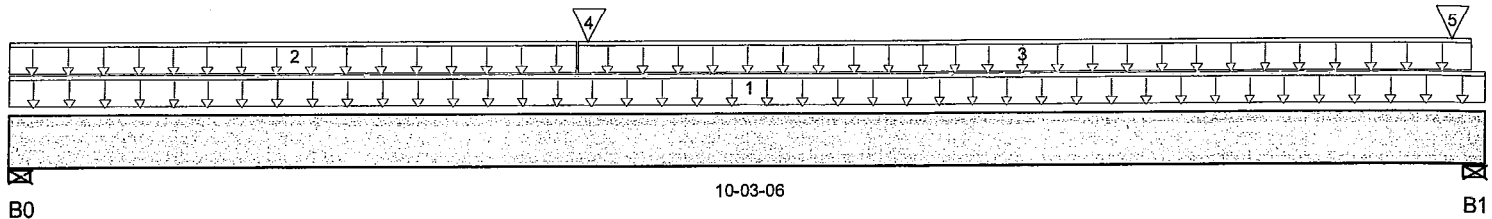
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/03/2018 3:41:21 PM kgervais



Total Horizontal Product Length = 10-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	834 / 0	481 / 0		
B1, 5-1/2"	1,174 / 0	769 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-06	21	11			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-11-06	6	3			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-11-06	10-02-04	5	3			n/a
4	B5(i1501)	Conc. Pt. (lbs)	L	04-00-04	04-00-04	1,161	606			n/a
5	3(i348)	Conc. Pt. (lbs)	L	10-00-10	10-00-10	569	406			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,632 ft-lbs	25,408 ft-lbs	26.1%	1	04-00-04
End Shear	1,783 lbs	11,571 lbs	15.4%	1	00-11-14
Total Load Defl.	L/887 (0.132")	0.488"	27.1%	4	04-09-01
Live Load Defl.	L/999 (0.084")	n/a	n/a	5	04-09-01
Max Defl.	0.132"	n/a	n/a	4	04-09-01
Span / Depth	12.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/8" x 3-1/2"	1,852 lbs	52.2%	18.3%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	2,723 lbs	33.1%	11.6%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DWG NO. YAM 45392-17
STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i16(

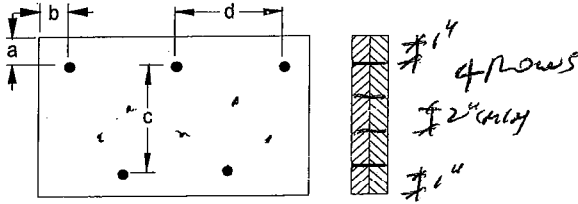
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 251.9 lb/ft

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

Connectors are: Nails
3 1/2" ARDOX SPIRAL

Disclosure

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

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



DWG NO. TAM 45392-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i1352)

Specifier:

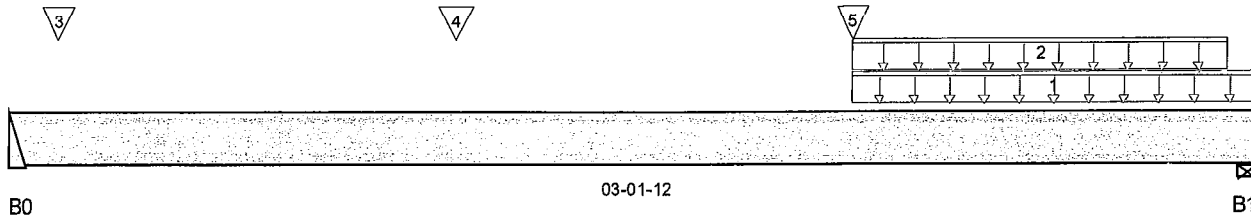
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/03/2018 3:41:30 PM kgervais



Total Horizontal Product Length = 03-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	512 / 0	263 / 0		
B1, 1-3/4"	463 / 0	239 / 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	02-01-08	03-01-12	24	12			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	02-01-08	03-00-15	240	120			n/a
3	J6(i1443)	Conc. Pt. (lbs)	L	00-01-08	00-01-08	198	99			n/a
4	J6(i1348)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	327	163			n/a
5	J6(i1408)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	196	98			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	695 ft-lbs	12,704 ft-lbs	5.5%	1	01-01-08
End Shear	671 lbs	5,785 lbs	11.6%	1	00-11-08
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-07-02
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-07-02
Max Defl.	0.003"	n/a	n/a	4	01-07-02
Span / Depth	3.7	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,098 lbs	n/a	25.7%	HUS1.81/10
B1 Wall/Plate	1-3/4" x 1-3/4"	993 lbs	75.9%	26.6%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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 DBC 2012



DWG NO. YAM 45393-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i13)

Specifier:

Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/03/2018 3:41:36 PM kgervais

Disclosure

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DWG NO. TAM 45393-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(-3R)(i

Specifier:

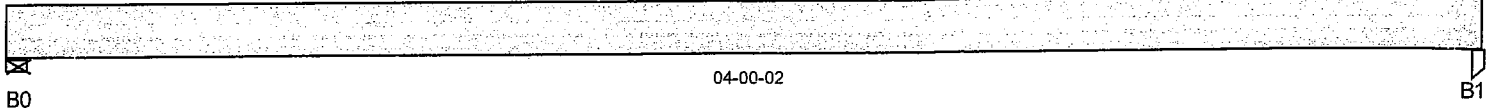
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/03/2018 3:41:58 PM kgervais



Total Horizontal Product Length = 04-00-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	248 / 0	179 / 0		
B1, 1-3/4"	233 / 0	176 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	J6(i386)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	157	100			n/a
2	J6(i373)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	157	114			n/a
3	J6(i385)	Conc. Pt. (lbs)	L	03-00-00	03-00-00	167	122			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	683 ft-lbs	12,704 ft-lbs	5.4%	1	02-00-00
End Shear	564 lbs	5,785 lbs	9.8%	1	03-00-14
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	02-00-12
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-00-12
Max Defl.	0.005"	n/a	n/a	4	02-00-12
Span / Depth	4.7	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	596 lbs	22.8%	8%	Unspecified
B1 Post	1-3/4" x 1-3/4"	570 lbs	28.6%	15.3%	Unspecified

Notes

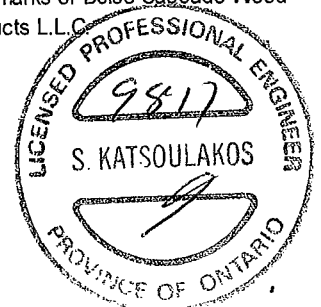
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume Member is Fully Braced.
 Resistance Factor phi has been applied to all presented results per CSA086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA086.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9
 Deflections less than 1/8" were ignored in the results.

CONFORMS TO UBC 2012

Disclosure

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DWG NO. TAM 45394-17
 STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1479)

Specifier:

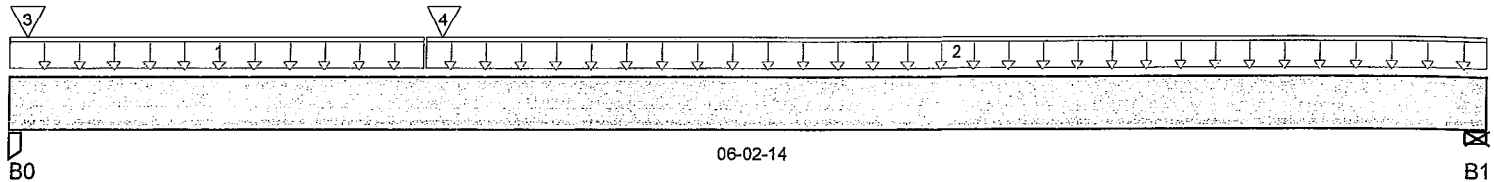
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:25 PM kgervais



Total Horizontal Product Length = 06-02-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,155 / 0	638 / 0		
B1, 4-3/8"	205 / 0	135 / 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	01-09-00	18	9			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-09-00	06-02-14	20	10			n/a
3 B5(i1501)	Conc. Pt. (lbs)	L	00-00-14	00-00-14	731	391			n/a
4 B2(i1352)	Conc. Pt. (lbs)	L	01-09-14	01-09-14	501	258			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,425 ft-lbs	25,408 ft-lbs	5.6%	1	01-09-14
End Shear	891 lbs	11,571 lbs	7.7%	1	01-01-00
Total Load Defl.	L/999 (0.01")	n/a	n/a	4	02-09-13
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-09-13
Max Defl.	0.01"	n/a	n/a	4	02-09-13
Span / Depth	7.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 3-1/2"	2,530 lbs	31.8%	16.9%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	475 lbs	7.3%	2.5%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume Member is Fully Braced.
Resistance Factor phi has been applied to all presented results per CSA086.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA086.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9
Deflections less than 1/8" were ignored in the results.

CONFORMS TO UBC 2012



DWG NO. TAM 45395-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B4(i14;

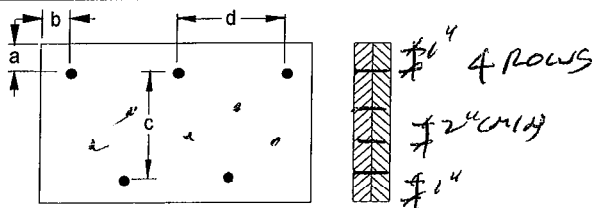
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 263.5 lb/ft

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

Connectors are:

3 1/2" ARDOX SPIRAL Nails

Disclosure

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DWG NO. YAM 45395-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5(i1501

Specifier:

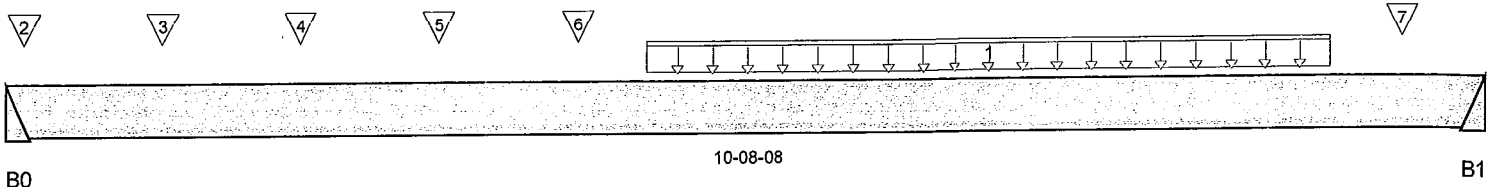
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:31 PM kgervais



Total Horizontal Product Length = 10-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,163 / 0	607 / 0		
B1	729 / 0	390 / 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	04-07-08	09-07-08	122	61			n/a
2	J5(i1482)	Conc. Pt. (lbs)	L	00-01-08	00-01-08	174	87			n/a
3	J5(i1413)	Conc. Pt. (lbs)	L	01-01-08	01-01-08	296	148			n/a
4	J5(i1456)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	296	148			n/a
5	J5(i1396)	Conc. Pt. (lbs)	L	03-01-08	03-01-08	268	134			n/a
6	J5(i1390)	Conc. Pt. (lbs)	L	04-01-08	04-01-08	138	69			n/a
7	J5(i1410)	Conc. Pt. (lbs)	L	10-01-08	10-01-08	110	55			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,823 ft-lbs	12,704 ft-lbs	38%	1	04-01-08
End Shear	2,128 lbs	5,785 lbs	36.8%	1	00-11-08
Total Load Defl.	L/461 (0.273")	0.525"	52%	4	05-01-08
Live Load Defl.	L/706 (0.179")	0.35"	51%	5	05-01-08
Max Defl.	0.273"	n/a	n/a	4	05-01-08
Span / Depth	13.3	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	2,504 lbs	n/a	58.6%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,581 lbs	n/a	37%	HUS1.81/10

Notes

 DWG NO. TAM 4539617
 STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5(i15(

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

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**

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DWG NO. TAM 45396-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B6(-1R)(i

Specifier:

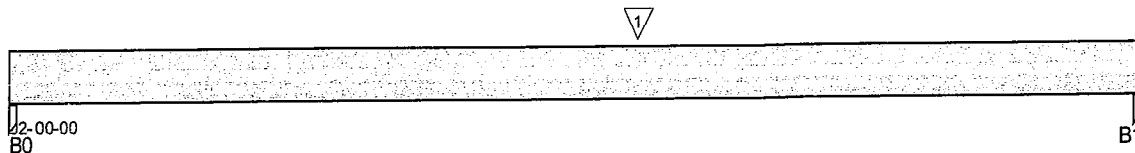
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:36 PM kgervais



Total Horizontal Product Length = 02-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	32 / 0	21 / 0		
B1, 3-1/2"	43 / 0	26 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 J7(i1465)	Conc. Pt. (lbs)	L	01-01-04	01-01-04	75	37			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	62 ft-lbs	12,704 ft-lbs	0.5%	1	01-01-04
End Shear	68 lbs	5,785 lbs	1.2%	1	01-01-00
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-00-06
Max Defl.	0"	n/a	n/a	4	01-00-06
Span / Depth	1.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	75 lbs	1.9%	1%	Unspecified
B1 Post	3-1/2" x 1-3/4"	96 lbs	2.4%	1.3%	Unspecified

Notes

Design meets Code minimum (L/240) Total 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.

Disclosure

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DWG NO. TAM 45397-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B7(-3R)(i

Specifier:

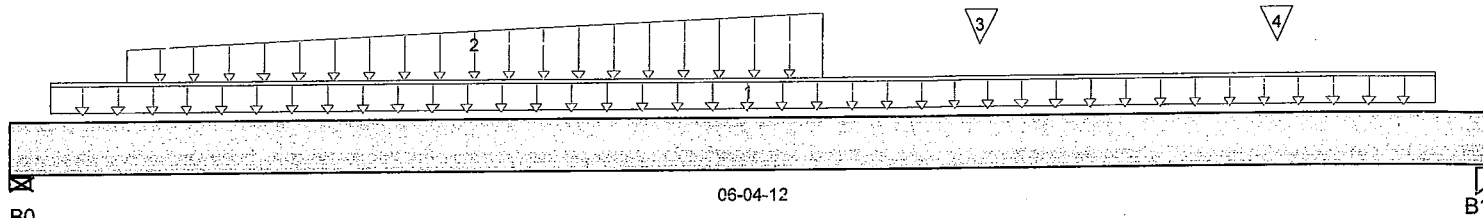
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:40 PM kgervais



Total Horizontal Product Length = 06-04-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	415 / 0	457 / 0		
B1, 3-1/2"	369 / 0	419 / 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	00-02-01	06-02-04		60			n/a
2	Smoothed Load	Trapezoidal (lb/ft)	L	00-06-00	03-06-00	160	91			n/a
						160	110			n/a
3	-	Conc. Pt. (lbs)	L	04-02-07	04-02-07	214	137			n/a
4	J6(i383)	Conc. Pt. (lbs)	L	05-06-00	05-06-00	92	46			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,913 ft-lbs	12,704 ft-lbs	15.1%	1	03-00-00
End Shear	1,081 lbs	5,785 lbs	18.7%	1	01-01-00
Total Load Defl.	L/999 (0.035")	n/a	n/a	4	03-02-07
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	03-02-07
Max Defl.	0.035"	n/a	n/a	4	03-02-07
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 Wall/Plate	3-1/2" x 1-3/4"	1,193 lbs	45.6%	16%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,078 lbs	27.1%	14.4%	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.

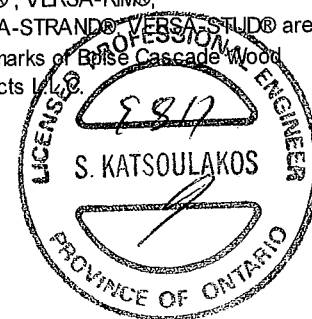
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CONFORMS TO OBC 2012

DWONG, YAM 45390.17
STRUCTURAL
COMPONENT ONLY





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B8(i1337)

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

July 26, 2016 17:20:30



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:.

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B8(i1337

Specifier:

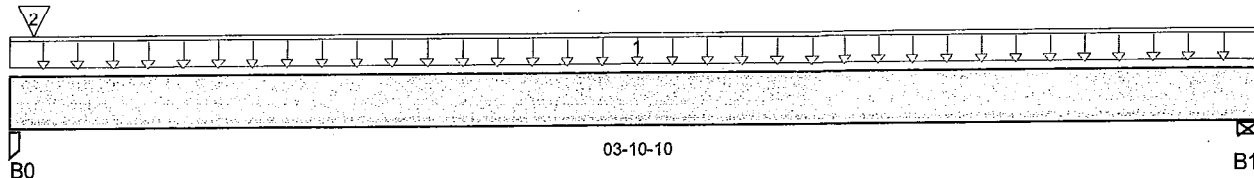
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:42 PM kgervais



Total Horizontal Product Length = 03-10-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	136 / 0	160 / 0		
B1, 4-3/8"	79 / 0	59 / 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	03-10-10	40	20			n/a
2	B11(i1335)	Conc. Pt. (lbs)	L	00-00-14	00-00-14	60	104			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	136 ft-lbs	25,408 ft-lbs	0.5%	1	01-10-14
End Shear	80 lbs	11,571 lbs	0.7%	1	01-01-00
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-10-14
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-10-14
Max Defl.	0"	n/a	n/a	4	01-10-14
Span / Depth	4.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 3-1/2"	405 lbs	5.1%	2.7%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	192 lbs	2.9%	1%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DRW NO. TAM 45399-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B8(i13:

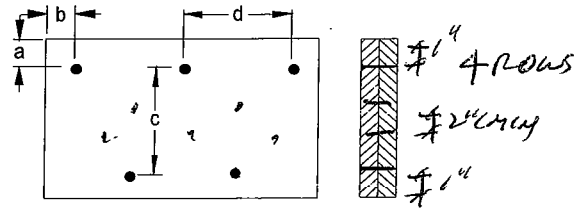
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 60.6 lb/ft

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

Connectors are: Nails

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. YAM 4579717
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B9(-3R)(i

Specifier:

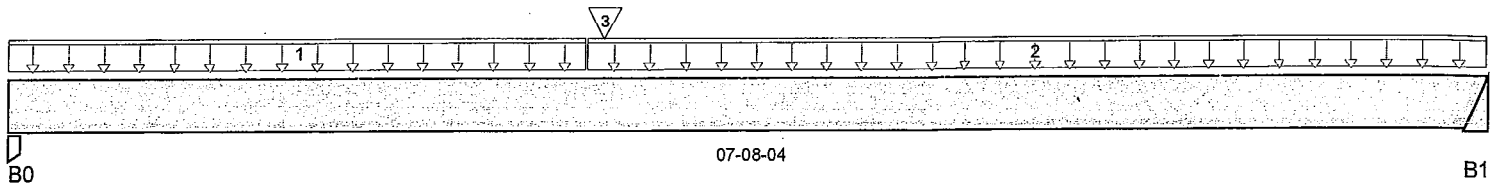
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:45 PM kgervais



Total Horizontal Product Length = 07-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	154 / 0	116 / 0		
B1	144 / 0	103 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-00-00	23	12			n/a
2 FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-00-00	07-08-04	30	15			n/a
3 -	Conc. Pt. (lbs)	L	03-01-01	03-01-01	88	77			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	812 ft-lbs	12,704 ft-lbs	6.4%	1	03-02-00
End Shear	316 lbs	5,785 lbs	5.5%	1	01-01-00
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	03-10-00
Live Load Defl.	L/999 (0.012")	n/a	n/a	5	03-10-00
Max Defl.	0.021"	n/a	n/a	4	03-10-00
Span / Depth	9.3	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	376 lbs	9.5%	5%	Unspecified
B1 Hanger	2" x 1-3/4"	345 lbs	n/a	8.1%	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

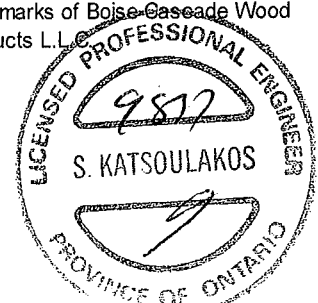
Deflections less than 1/8" were ignored in the results.

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. TAM45400-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B10(-3R)

Specifier:

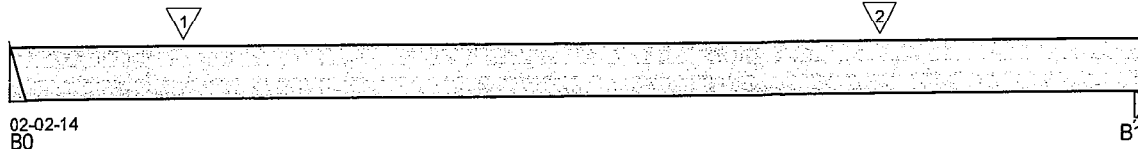
Designer:

Company:

Msc:

Town of Innisfil Certified Model

06/03/2018 2:19:47 PM kgervais



Total Horizontal Product Length = 02-02-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	146 / 0	79 / 0		
B1, 3-1/2"	488 / 0	259 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 J6(i382)	Conc. Pt. (lbs)	L	00-04-02	00-04-02	68	34			n/a
2 -	Conc. Pt. (lbs)	L	01-08-10	01-08-10	566	294			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	244 ft-lbs	12,704 ft-lbs	1.9%	1	01-04-02
End Shear	200 lbs	5,785 lbs	3.5%	1	00-11-08
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-01-14
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-01-14
Max Defl.	0"	n/a	n/a	4	01-01-14
Span / Depth	2.4	n/a	n/a		00-00-00

Disclosure

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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	318 lbs	n/a	7.5%	HUS1.81/10
B1 Post	3-1/2" x 1-3/4"	1,056 lbs	26.5%	14.1%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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



DWG NO. TAM 45401-17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10A(i3155)

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

July 27, 2017 10:57:47

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10A(i3155)

Specifier:

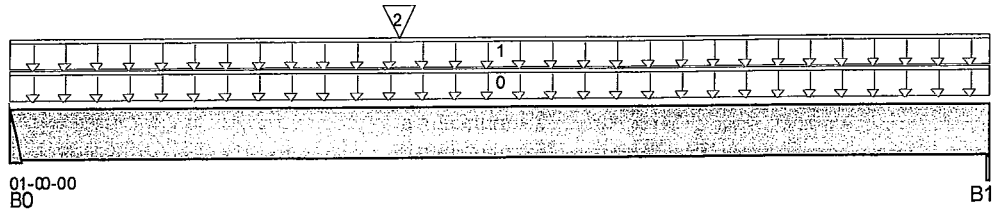
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:48 PM kgervais



Total Horizontal Product Length = 01-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	131 / 0	127 / 0	116 / 0	
B1, 3-1/2"	120 / 0	139 / 0	150 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	33	130	114		n/a
1	LOWER ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	44	40	152		n/a
2	J3(i2982)	Conc. Pt. (lbs)	L	00-04-12	00-04-12	174	87			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	86 ft-lbs	25,408 ft-lbs	0.3%	1	00-04-12
End Shear	153 lbs	11,571 lbs	1.3%	23	00-11-08
Span / Depth	0.8	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"	415 lbs	n/a	4.9%	HGUS410
B1 Beam	3-1/2" x 3-1/2"	458 lbs	7%	3.1%	Unspecified

Notes

Calculations assume unbraced length of Top: 00-03-08, Bottom: 00-03-08.

Hanger Manufacturer: Unassigned

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

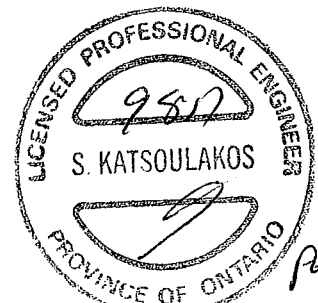
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO CBC 2012



DWG NO. TAM95402-17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...\B10A(i3155)

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

July 27, 2017 10:57:47

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10A(i3155)

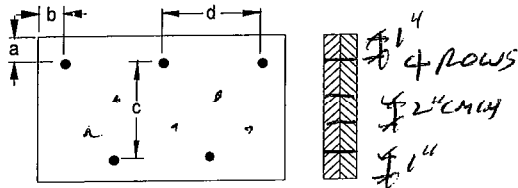
Specifier:

Designer:

Company:

Msc:

Connection Diagram



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

Calculated Side Load = 369.8 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.

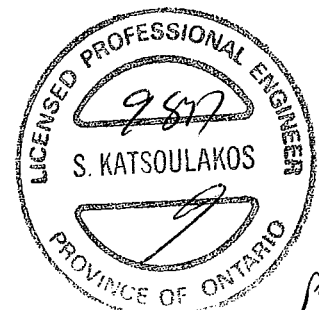
Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 45402-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B11(i1335)

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

July 26, 2016 17:20:30



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B11(i133

Specifier:

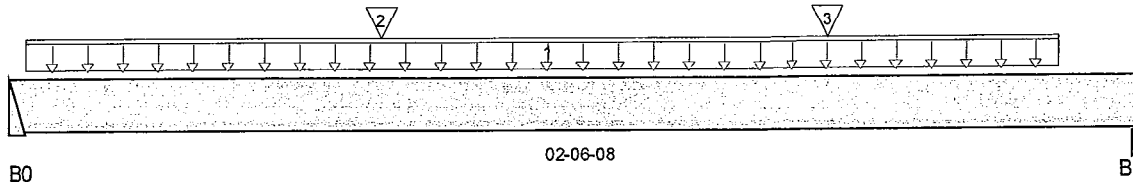
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:50 PM kgervais



Total Horizontal Product Length = 02-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	63 / 0	107 / 0		
B1, 3-1/2"	71 / 0	111 / 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	00-00-08	02-04-05		60			n/a
2	J7(i1406)	Conc. Pt. (lbs)	L	00-10-00	00-10-00	74	37			n/a
3	J7(i1425)	Conc. Pt. (lbs)	L	01-10-00	01-10-00	60	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	141 ft-lbs	12,704 ft-lbs	1.1%	1	00-10-12
End Shear	128 lbs	5,785 lbs	2.2%	1	00-11-08
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-02-08
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-02-02
Max Defl.	0"	n/a	n/a	4	01-02-08
Span / Depth	2.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	228 lbs	n/a	5.4%	HUS1.81/10
B1 Post	3-1/2" x 1-3/4"	246 lbs	6.2%	3.3%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

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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CONFORMS TO OBC 2012



DWG NO. TAM 45403-17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i3166)

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

July 27, 2017 11:57:56

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i3166)

Specifier:

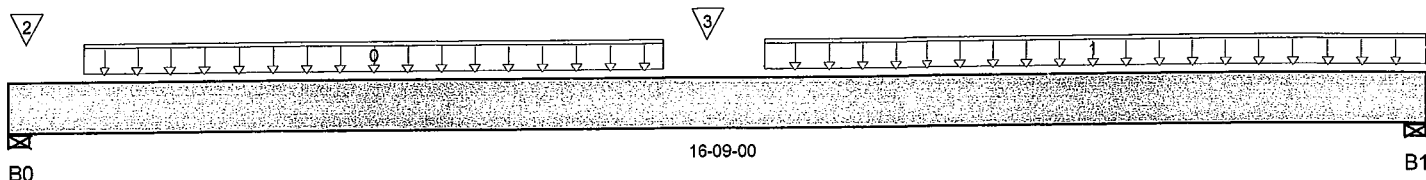
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:52 PM kgervais



Total Horizontal Product Length = 16-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	4,426 / 0	2,391 / 0		
B1, 4"	4,319 / 0	2,338 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-08	07-08-08	510	255			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	08-10-08	16-09-00	517	258			n/a
2	-	Conc. Pt. (lbs)	L	00-02-08	00-02-08	563	281			n/a
3	-	Conc. Pt. (lbs)	L	08-02-08	08-02-08	632	316			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	36,437 ft-lbs	82,449 ft-lbs	44.2%	1	08-02-08
End Shear	8,245 lbs	25,578 lbs	32.2%	1	01-06-00
Total Load Defl.	L/384 (0.506")	0.81"	62.4%	4	08-02-08
Live Load Defl.	L/593 (0.328")	0.54"	60.7%	5	08-02-08
Max Defl.	0.506"	n/a	n/a	4	08-02-08
Span / Depth	13.9	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	4" x 5-1/4"	9,628 lbs	85.9%	37.6%	Unspecified
B1	Wall/Plate	4" x 5-1/4"	9,400 lbs	83.8%	36.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

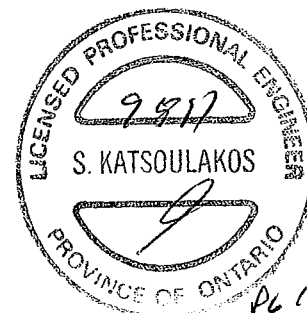
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



DWG NO. TAM45424-17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i3166)

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

July 27, 2017 11:57:56

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i3166)

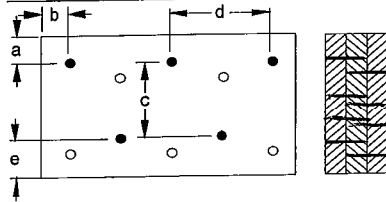
Specifier:

Designer:

Company:

Misc:

Connection Diagram



4 rows

a minimum = 2"
b minimum = 3"
c = 8"
d = 6"
e minimum = 2"

Calculated Side Load = 601.1 lb/ft

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

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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POK

DWNO.TAM 45404-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7-ELB.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B15

Specifier:

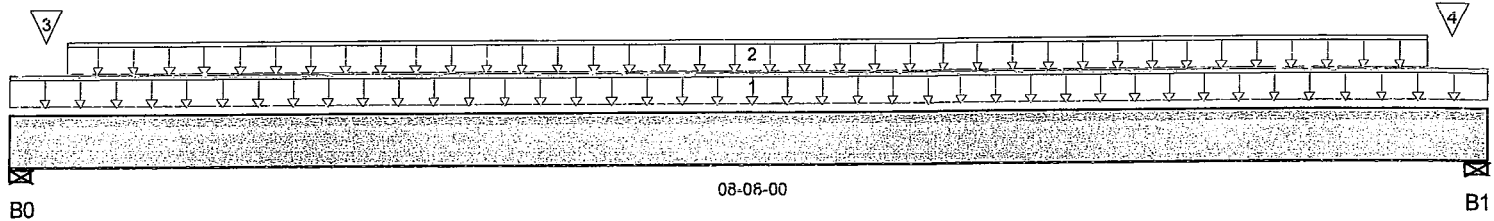
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:55 PM kgervais



Total Horizontal Product Length = 08-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	830 / 0	1,154 / 0	2,304 / 0	
B1, 4"	831 / 0	1,155 / 0	2,303 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	R1(i2804)	Unf. Lin. (lb/ft)	L	00-00-00	08-08-00	7	6			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-04-00	08-04-00	176	260	576		n/a
3	J2(i581)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	97	48			n/a
4	J2(i581)	Conc. Pt. (lbs)	L	08-05-08	08-05-08	98	49			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,720 ft-lbs	25,408 ft-lbs	42.2%	13	04-04-00
End Shear	4,168 lbs	11,571 lbs	36%	13	01-01-08
Total Load Defl.	L/528 (0.185")	0.406"	45.5%	45	04-04-00
Live Load Defl.	L/745 (0.131")	0.271"	48.3%	61	04-04-00
Max Defl.	0.185"	n/a	n/a	45	04-04-00
Span / Depth	10.3	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	5,314 lbs	46.7%	31.1%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	5,313 lbs	46.7%	31.1%	Unspecified

Notes

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

CONFORMS TO OBC 2012


 DWG NO. TAM 45425.17
 STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7-ELB.mmdl

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

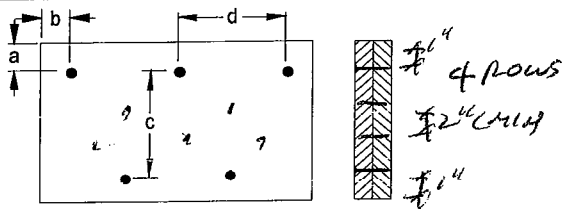
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

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

Member has no side loads.

Connectors are: 16d ~~Spike~~ Nails (0.148 in.) – 3-1/4 in.

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 45405-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B16(i721)

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

July 26, 2016 17:20:30

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i721)

Specifier:

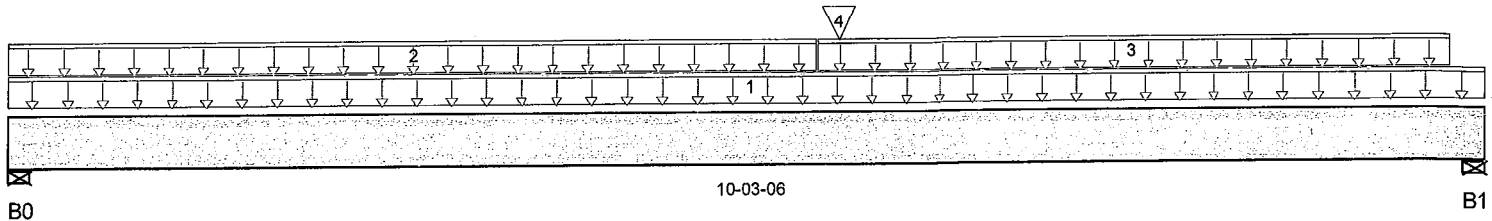
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:19:58 PM kgervais



Total Horizontal Product Length = 10-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	409 / 0	282 / 0		
B1, 5-1/2"	495 / 0	335 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-06	22	11			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-07-06	6	3			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-07-06	10-00-10	5	3			n/a
4	B18(i851)	Conc. Pt. (lbs)	L	05-09-02	05-09-02	626	379			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,103 ft-lbs	25,408 ft-lbs	16.1%	1	05-09-02
End Shear	1,078 lbs	11,571 lbs	9.3%	1	09-00-06
Total Load Defl.	L/999 (0.081")	n/a	n/a	4	05-02-06
Live Load Defl.	L/999 (0.049")	n/a	n/a	5	05-02-06
Max Defl.	0.081"	n/a	n/a	4	05-02-06
Span / Depth	12.1	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"	965 lbs	14.8%	5.2%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	1,161 lbs	14.1%	4.9%	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 CSA086.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO UBC 2012



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i72

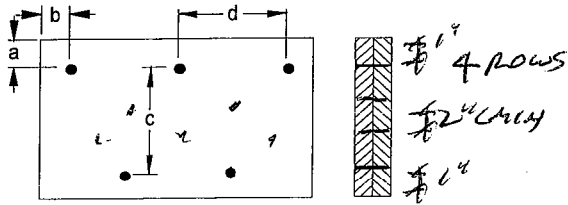
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 142.9 lb/ft

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

Connectors are:

Nails

3 1/2" ARDOX SPIRAL

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 45406-17
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i1069)

Specifier:

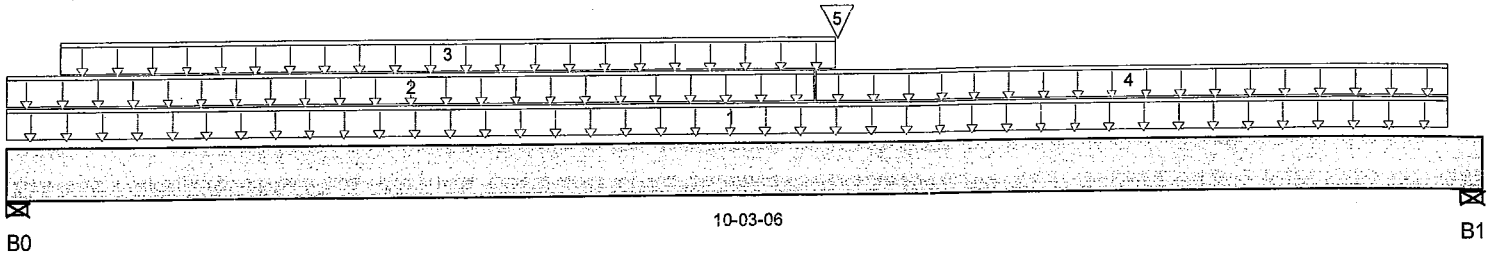
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:20:00 PM kgervais



10-03-06

B0

B1

Total Horizontal Product Length = 10-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	1,319 / 0	737 / 0		
B1, 5-1/2"	857 / 0	516 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-00-10	19	10			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-07-06	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-06	05-09-02	240	120			n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-07-06	10-00-10	7	4			n/a
5	B18(i851)	Conc. Pt. (lbs)	L	05-09-02	05-09-02	622	377			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,366 ft-lbs	25,408 ft-lbs	29%	1	05-04-00
End Shear	2,420 lbs	11,571 lbs	20.9%	1	01-01-14
Total Load Defl.	L/705 (0.163")	0.479"	34.1%	4	05-00-11
Live Load Defl.	L/999 (0.104")	n/a	n/a	5	04-11-13
Max Defl.	0.163"	n/a	n/a	4	05-00-11
Span / Depth	12.1	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"	2,899 lbs	44.3%	15.5%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	1,931 lbs	23.5%	8.2%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012



DWG NO. TAM 43407-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i1C

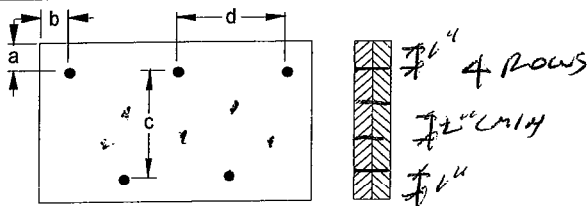
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 142.1 lb/ft

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

Connectors are: 3/4" x 3" Nails (2x4) 3/4" x 3" Nails

3/4" ARDOX SPIRAL

Disclosure

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DWGN. TAM 45407-17
 STRUCTURAL
 COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B18(i851)

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

July 26, 2016 17:20:31

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i851)

Specifier:

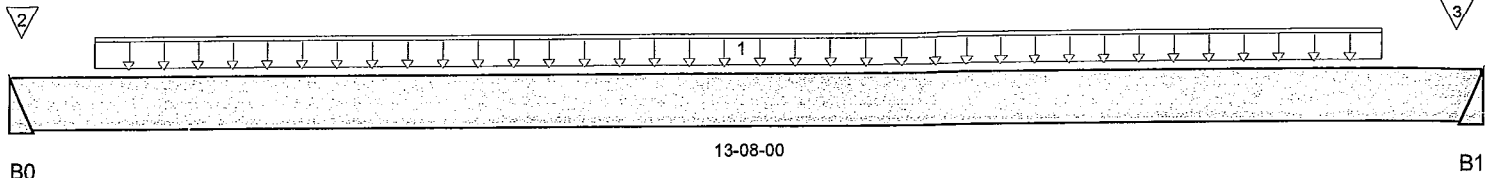
Designer:

Company:

Msc:

Town of Innisfil Certified Model

06/03/2018 2:20:02 PM kgervais



Total Horizontal Product Length = 13-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	627 / 0	379 / 0		
B1	621 / 0	376 / 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	00-09-04	12-09-04	92	46			n/a
2	J4(i708)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	72	36			n/a
3	J4(i766)	Conc. Pt. (lbs)	L	13-05-04	13-05-04	78	39			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,676 ft-lbs	25,408 ft-lbs	18.4%	1	06-09-04
End Shear	1,250 lbs	11,571 lbs	10.8%	1	00-11-08
Total Load Defl.	L/750 (0.215")	0.673"	32%	4	06-09-04
Live Load Defl.	L/1,205 (0.134")	0.449"	29.9%	5	06-09-04
Max Defl.	0.215"	n/a	n/a	4	06-09-04
Span / Depth	17	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	1,414 lbs	n/a	16.6%	HGUS410
B1 Hanger	2" x 3-1/2"	1,402 lbs	n/a	16.4%	HGUS410

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.

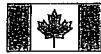
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

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 DBC 2012



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i85

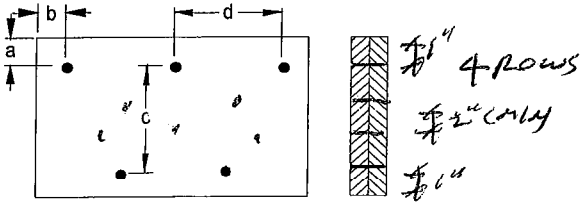
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 200.9 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: 3/4" x 3" Nails @ 12" O.C. - 3" x 3" x 1/2"

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 45402.17
 STRUCTURAL
 COMPONENT ONLY


BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B14

Specifier:

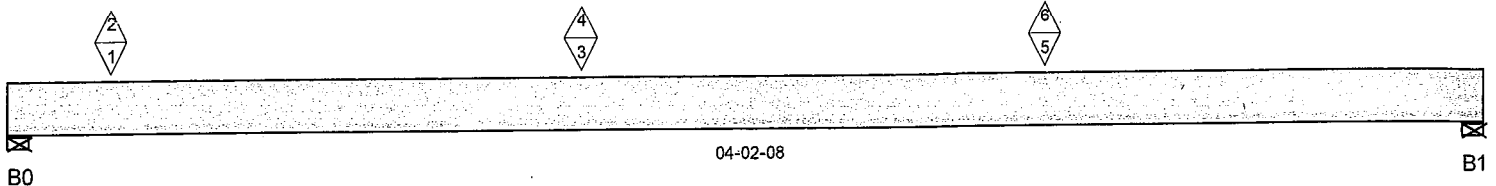
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:20:04 PM kgervais



Total Horizontal Product Length = 04-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	943 / 13	486 / 0		
B1, 4"	528 / 13	279 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 -	Conc. Pt. (lbs)	L	00-03-08	00-03-08	501	250			n/a
2 -	Conc. Pt. (lbs)	L	00-03-08	00-03-08	-2				n/a
3 -	Conc. Pt. (lbs)	L	01-07-08	01-07-08	510	249			n/a
4 -	Conc. Pt. (lbs)	L	01-07-08	01-07-08	-13				n/a
5 -	Conc. Pt. (lbs)	L	02-11-08	02-11-08	460	225			n/a
6 -	Conc. Pt. (lbs)	L	02-11-08	02-11-08	-11				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,303 ft-lbs	25,408 ft-lbs	5.1%	1	01-07-08
End Shear	1,127 lbs	11,571 lbs	9.7%	1	03-01-00
Total Load Defl.	L/999 (0.004")	n/a	n/a	6	02-01-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	8	02-01-00
Max Defl.	0.004"	n/a	n/a	6	02-01-00
Span / Depth	4.6	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	2,022 lbs	22.2%	11.8%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	1,141 lbs	12.5%	6.7%	Unspecified

Notes

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

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

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

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

 DWG NO. TAM 45409-17
**STRUCTURAL
 COMPONENT ONLY**



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7.mmdl

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

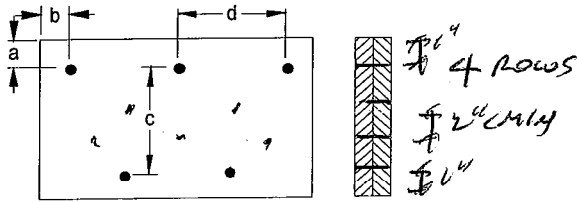
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

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

Member has no side loads.

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

Disclosure

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DWG NO. TAM 45409-17
 STRUCTURAL
 COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i3437)

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

September 7, 2017 08:09:19

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7-15G-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3437)

Specifier:

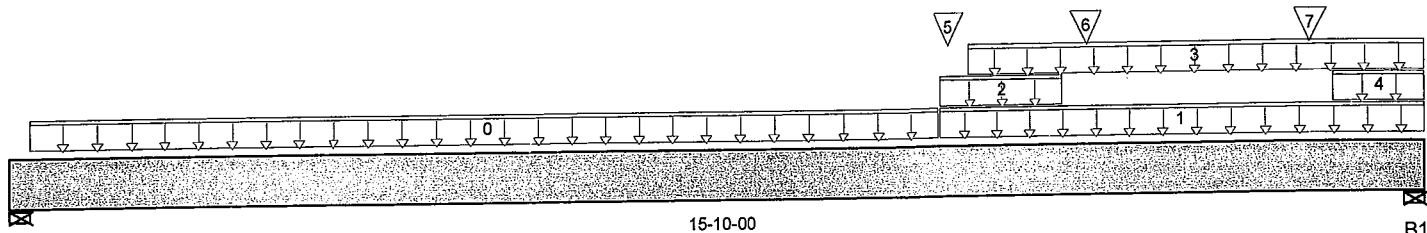
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:20:06 PM kgervais



15-10-00

B1

Total Horizontal Product Length = 15-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	363 / 0	425 / 0	560 / 0	
B1, 5-1/2"	796 / 0	1,005 / 0	2,023 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	10-04-08	23	11			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	10-04-08	15-10-00	15	8			n/a
2	User Load	Unf. Lin. (lb/ft)	L	10-04-08	11-09-08	44	140	152		n/a
3	LOWER ROOF	Unf. Lin. (lb/ft)	L	10-08-06	15-10-00	44	40	152		n/a
4	ROOF	Unf. Lin. (lb/ft)	L	14-09-08	15-10-00	44	140	152		n/a
5	-	Conc. Pt. (lbs)	L	10-05-09	10-05-09	369	355	947		n/a
6	User Load	Conc. Pt. (lbs)	L	12-00-08	12-00-08	71	70	241		n/a
7	User Load	Conc. Pt. (lbs)	L	14-06-08	14-06-08	71	70	241		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	13,284 ft-lbs	39,636 ft-lbs	33.5%	13	10-05-06
End Shear	4,075 lbs	17,356 lbs	23.5%	13	14-07-00
Total Load Defl.	L/409 (0.441")	0.752"	58.6%	45	08-07-15
Live Load Defl.	L/593 (0.304")	0.501"	60.7%	61	08-07-15
Max Defl.	0.441"	n/a	n/a	45	08-07-15
Span / Depth	19	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 5-1/4"	1,553 lbs	10.1%	4.4%	Unspecified
B1 Wall/Plate	5-1/2" x 5-1/4"	4,688 lbs	30.4%	13.3%	Unspecified

Notes



PC/L



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i3437)

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

September 7, 2017 08:09:19

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7-15G-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i3437)

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume member is fully braced.

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

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

Unbalanced snow loads determined from building geometry were used in selected products verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

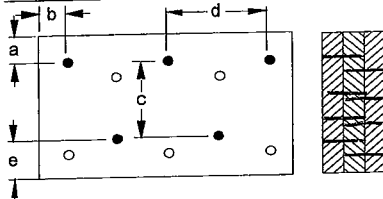
CONFORMS TO NBC 2012

Disclosure

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Connection Diagram



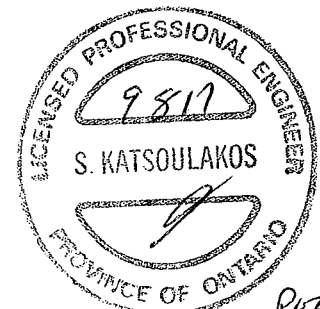
a minimum = 2" c = 6 1/2"
b minimum = 3" d = 6"
e minimum = 2"

Calculated Side Load = 24.5 lb/ft

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

Nailing schedule applies to both sides of the member.

Connectors are: 3 1/2" ARDOX SPIRAL Nails



DWG NO. TAM 45410-17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12A(i3392)

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

September 7, 2017 08:06:06

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-7-15G.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12A(i3392

Specifier:

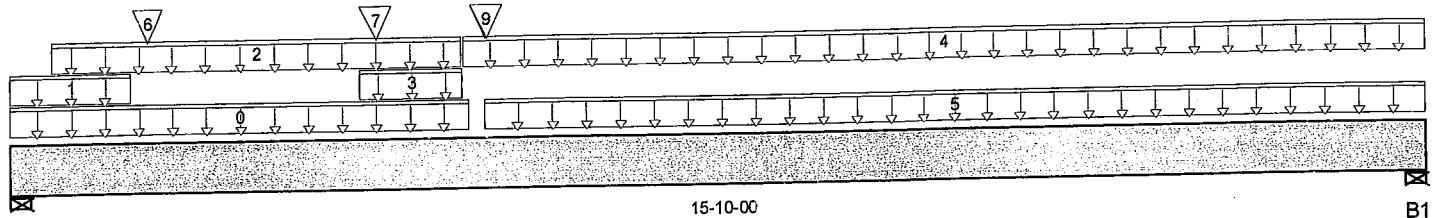
Designer:

Company:

Misc:

Town of Innisfil Certified Model

06/03/2018 2:20:08 PM kgervais



15-10-00

B1

B0

Total Horizontal Product Length = 15-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	750 / 0	991 / 0	2,056 / 0	
B1, 5-1/2"	363 / 0	413 / 0	552 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	05-01-08	44	40	156		n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-04-03	44	140	156		n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	05-00-08	15	8			n/a
3	User Load	Unf. Lin. (lb/ft)	L	03-10-11	05-00-10	44	140	152		n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-00-08	15-10-00	11	5			n/a
5	FC3 Floor Material	Unf. Lin. (lb/ft)	L	05-03-06	15-10-00	16	8			n/a
6	User Load	Conc. Pt. (lbs)	L	01-06-06	01-06-06	71	70	241		n/a
7	User Load	Conc. Pt. (lbs)	L	04-00-13	04-00-13	71	70	241		n/a
8	ROOF	Conc. Pt. (lbs)	L	05-03-08	05-03-08		15			n/a
9	-	Conc. Pt. (lbs)	L	05-03-10	05-03-10	263	277	903		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,799 ft-lbs	39,636 ft-lbs	32.3%	13	05-03-10
End Shear	3,736 lbs	17,356 lbs	21.5%	13	01-03-00
Total Load Defl.	L/425 (0.425")	0.752"	56.5%	45	07-02-04
Live Load Defl.	L/607 (0.297")	0.501"	59.3%	61	07-02-04
Max Defl.	0.425"	n/a	n/a	45	07-02-04
Span / Depth	19	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 5-1/4"	4,698 lbs	30.5%	13.3%	Unspecified
B1 Wall/Plate	5-1/2" x 5-1/4"	1,525 lbs	9.9%	4.3%	Unspecified

Notes



P6 1/2

DWG NO. TAM 45411-17
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12A(i3392)

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

September 7, 2017 08:06:06

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-7-15G.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12A(i3392)

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume member is fully braced.

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

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

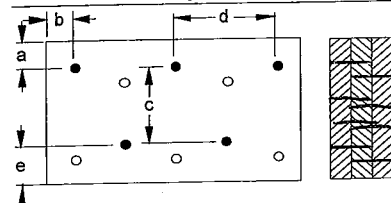
CONFORMS TO CBC 2012

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Connection Diagram



a minimum = 8" c = 6 1/2"
b minimum = 3" d = 6"
e minimum = 2"

Calculated Side Load = 9.5 lb/ft

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

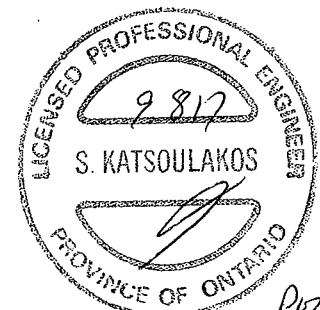
Nailing schedule applies to both sides of the member.

Connectors are: 3 1/2" ARDOX SPIRAL

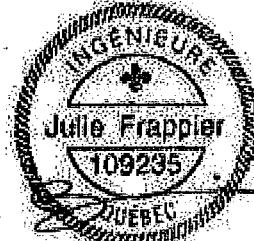
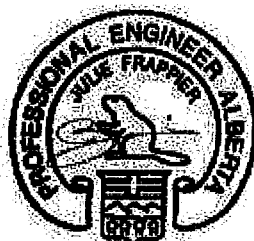
Disclosure

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

BC CALO®, BC FRAMER®, 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 45411-17
STRUCTURAL
COMPONENT ONLY



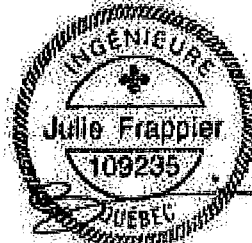
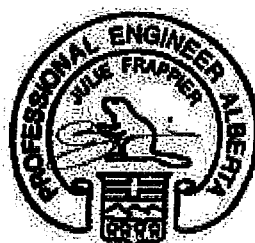
Maximum Floor Spans

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.



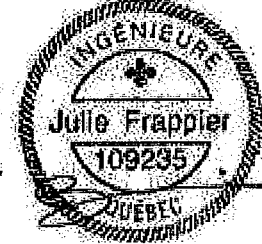
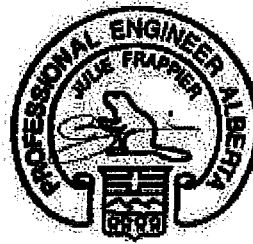
Maximum Floor Spans

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.



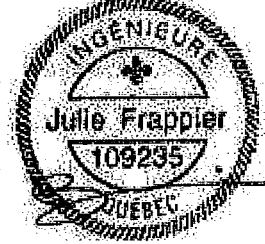
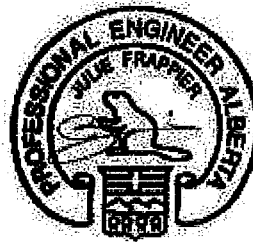
Maximum Floor Spans

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
14"	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
16"	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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

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



Maximum Floor Spans

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

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

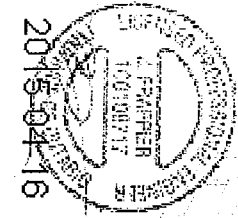
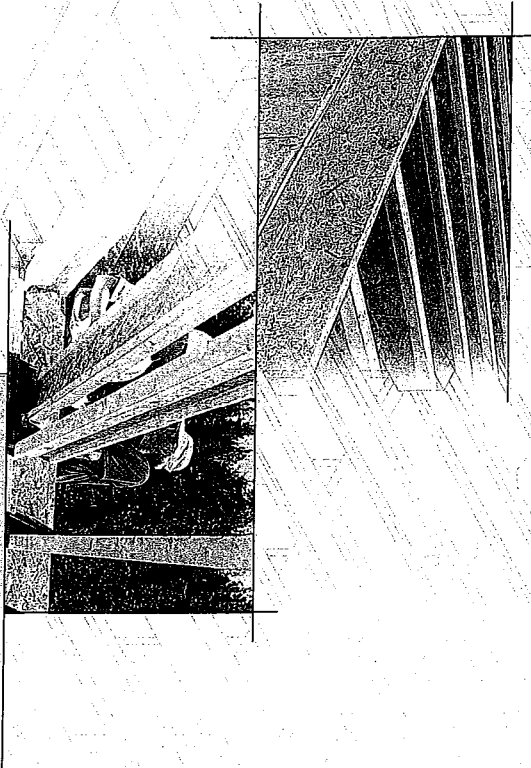
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60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

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



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 longers, 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.



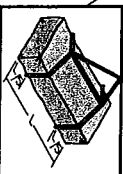
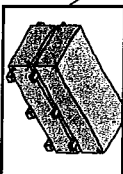
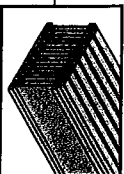
Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

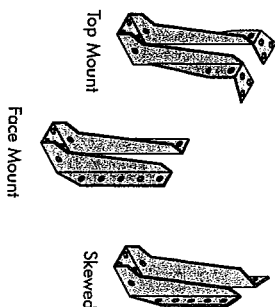
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing		On centre spacing		On centre spacing		On centre spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
12"	12"	13.1	15.2	13.9	15.5	10.3	15.4	14.1	14.7
12"	16"	15.4	18.0	16.5	18.6	12.5	18.7	17.2	17.7
12"	19.2"	16.1	19.2	17.5	19.7	13.2	19.4	17.9	18.4
12"	24"	16.3	19.5	17.8	20.0	13.4	19.7	18.1	18.6
16"	12"	14.5	16.8	15.8	17.4	10.8	16.9	15.6	16.1
16"	16"	17.0	20.0	18.5	21.0	13.6	20.2	18.8	19.3
16"	19.2"	17.5	20.5	19.0	21.5	14.1	20.7	19.3	19.8
16"	24"	18.0	21.0	19.5	22.0	14.6	21.2	19.8	20.3
19.2"	12"	13.5	15.8	14.8	16.4	11.0	16.5	15.2	15.7
19.2"	16"	16.0	18.5	17.0	18.5	13.5	19.0	17.6	18.1
19.2"	19.2"	16.5	19.0	17.5	19.0	13.8	19.3	17.9	18.4
19.2"	24"	17.0	19.5	18.0	20.0	14.1	19.6	18.2	18.7
24"	12"	12.5	14.8	13.8	15.4	10.0	15.5	14.2	14.7
24"	16"	15.0	17.5	16.0	17.6	12.5	18.0	16.7	17.2
24"	19.2"	15.5	18.0	16.5	18.6	12.8	18.3	17.0	17.5
24"	24"	16.0	18.5	17.0	19.0	13.1	18.6	17.3	17.8

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

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



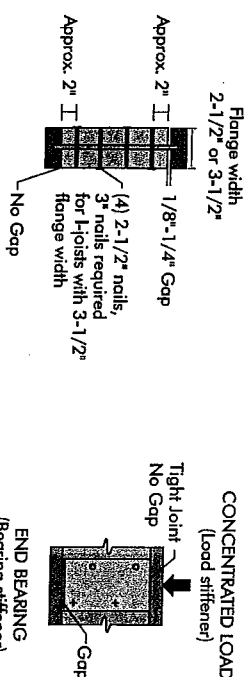
WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the Hoist Properties table found in the Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist 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.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

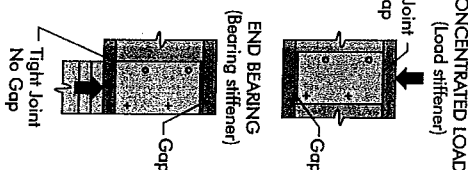
FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



See table below for web stiffener size requirements

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



NORDIC I-JOIST SERIES

	NL-20	NL-40x	NL-60	NL-70	NL-80	NL-90	NL-90x	NL-90x
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
S-RF No. 2	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	2400F MSR	2400F MSR	2400F MSR
	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	2400F MSR	2400F MSR	2400F MSR

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

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

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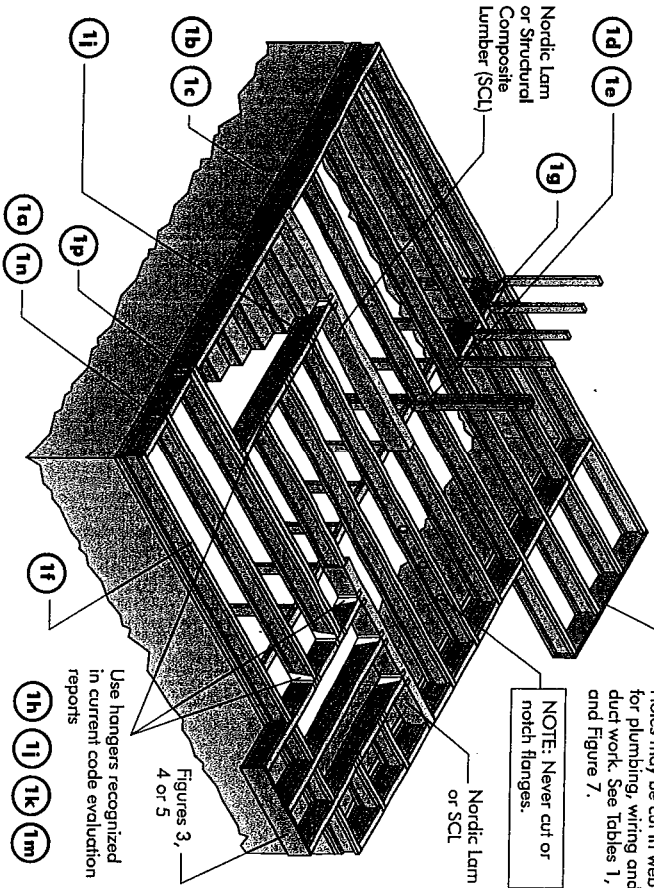
INSTALLING NORDIC I-JOISTS

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.

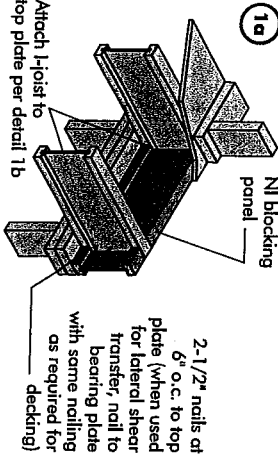
2015-04-16

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

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

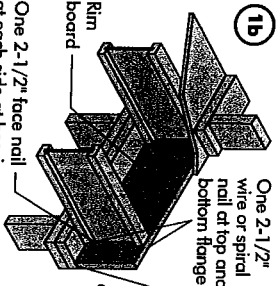


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



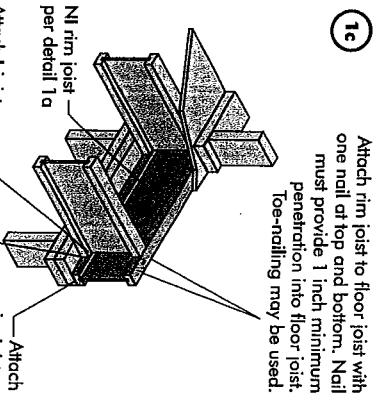
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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

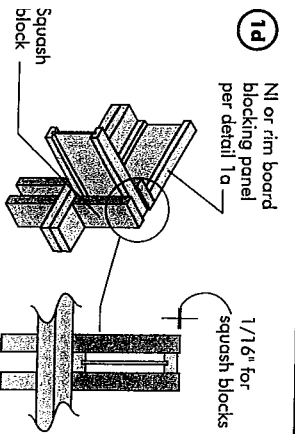


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

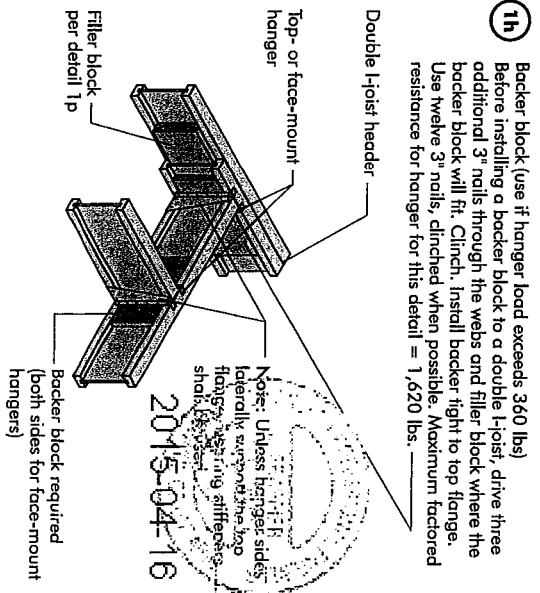
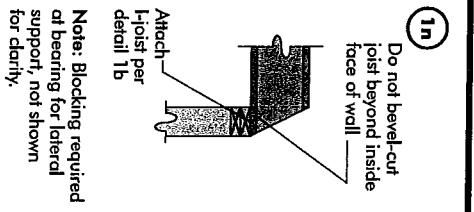
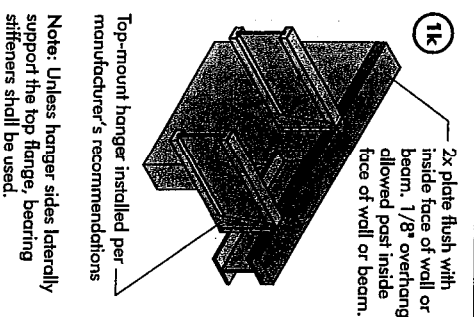
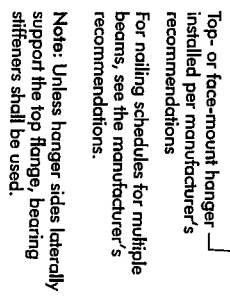
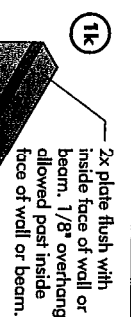
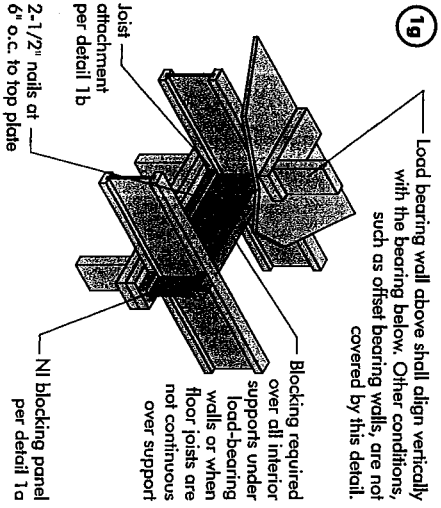
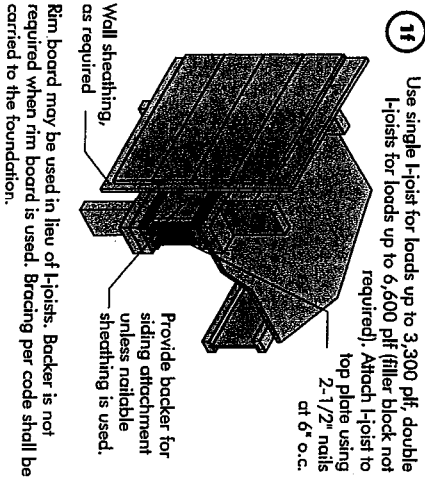
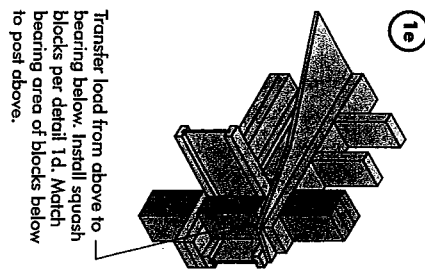
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
1-1/8" Rim Board Plus	4,300
	6,600



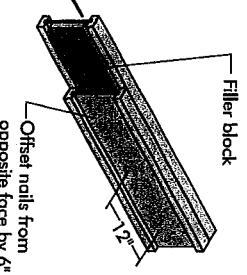
Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
1-1/8" Rim Board Plus	4,300
	6,600



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".

1p



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

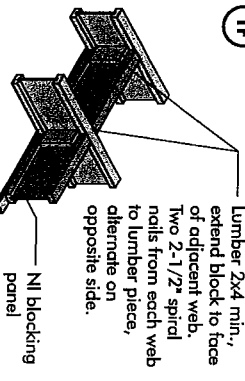
Notes:

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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

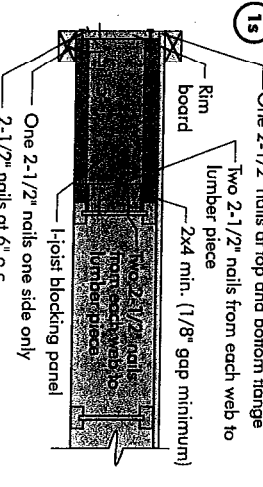
Flange Size	Joist	Filler Block Size
2-1/2" x 1-1/2"	9-1/2" x 11-7/8" x 14"	2-1/8" x 8" x 2-1/8" x 10"
2-1/2" x 1-1/2"	9-1/2" x 11-7/8" x 14"	2-1/8" x 8" x 2-1/8" x 10"
3-1/2" x 1-1/2"	11-7/8" x 14" x 16"	3" x 7" x 3" x 9" x 3" x 11"

1r



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

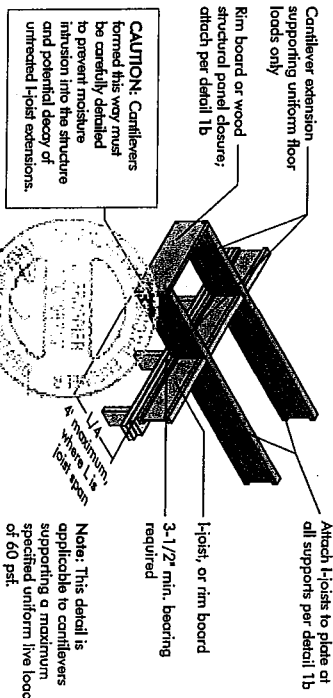
1s



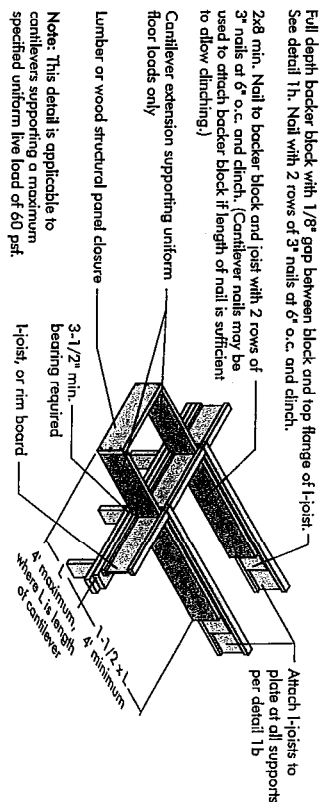
Notes:
 - In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
 - All nails are common spiral in this detail.

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

39a I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

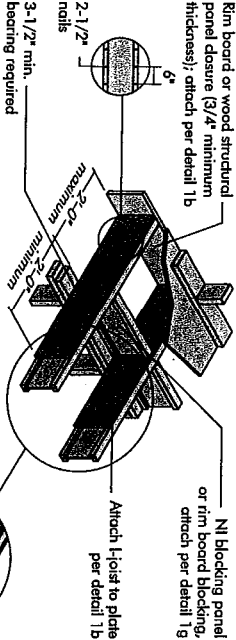


39b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

40 Method 1 — SHEATHING REINFORCEMENT ONE SIDE

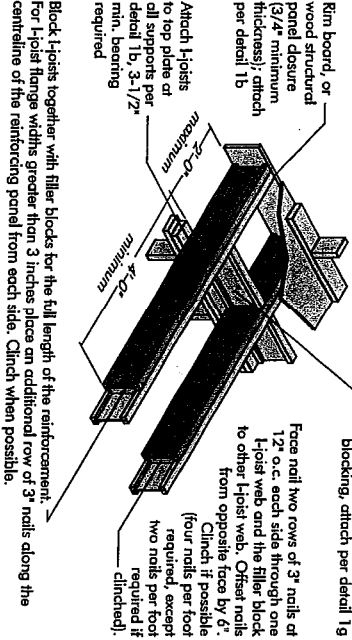


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

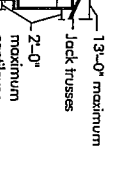
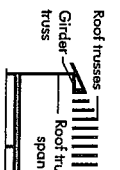
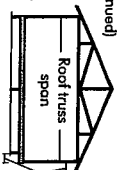
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

45 Alternate Method 2 — DOUBLE I-JOIST



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

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)				JOIST SPACING (in.)			
		LL = 30 psf, DL = 15 psf	LL = 40 psf, DL = 15 psf	LL = 50 psf, DL = 15 psf	LL = 60 psf, DL = 15 psf	12	16	19.2	24
12	12	N	N	N	N	N	N	N	N
16	16	N	N	N	N	N	N	N	N
19.2	19.2	N	N	N	N	N	N	N	N
24	24	N	N	N	N	N	N	N	N
30	30	N	N	N	N	N	N	N	N
32	32	N	N	N	N	N	N	N	N
34	34	N	N	N	N	N	N	N	N
36	36	N	N	N	N	N	N	N	N
38	38	N	N	N	N	N	N	N	N
40	40	N	N	N	N	N	N	N	N
42	42	N	N	N	N	N	N	N	N
44	44	N	N	N	N	N	N	N	N
46	46	N	N	N	N	N	N	N	N
48	48	N	N	N	N	N	N	N	N
50	50	N	N	N	N	N	N	N	N
52	52	N	N	N	N	N	N	N	N
54	54	N	N	N	N	N	N	N	N
56	56	N	N	N	N	N	N	N	N
58	58	N	N	N	N	N	N	N	N
60	60	N	N	N	N	N	N	N	N
62	62	N	N	N	N	N	N	N	N
64	64	N	N	N	N	N	N	N	N
66	66	N	N	N	N	N	N	N	N
68	68	N	N	N	N	N	N	N	N
70	70	N	N	N	N	N	N	N	N
72	72	N	N	N	N	N	N	N	N
74	74	N	N	N	N	N	N	N	N
76	76	N	N	N	N	N	N	N	N
78	78	N	N	N	N	N	N	N	N
80	80	N	N	N	N	N	N	N	N
82	82	N	N	N	N	N	N	N	N
84	84	N	N	N	N	N	N	N	N
86	86	N	N	N	N	N	N	N	N
88	88	N	N	N	N	N	N	N	N
90	90	N	N	N	N	N	N	N	N
92	92	N	N	N	N	N	N	N	N
94	94	N	N	N	N	N	N	N	N
96	96	N	N	N	N	N	N	N	N
98	98	N	N	N	N	N	N	N	N
100	100	N	N	N	N	N	N	N	N

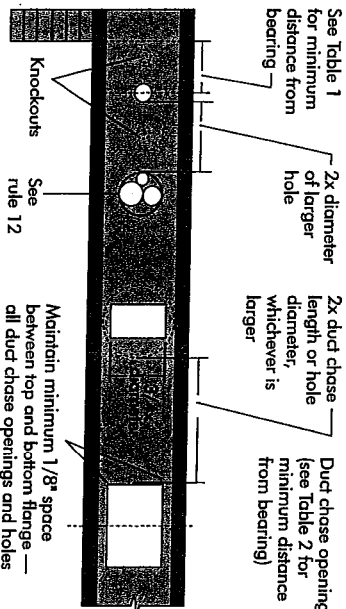
1. N = No reinforcement required.
2. N1 = N1 reinforced with 3/4" wood structural panel on one side only.
3. N2 = N2 reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

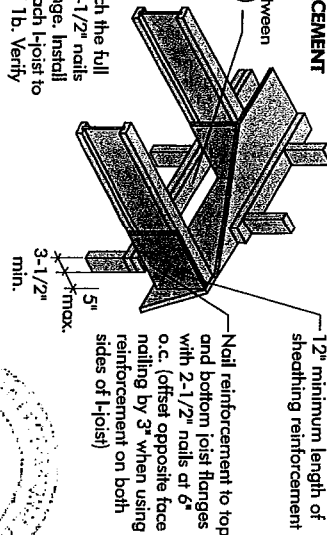
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in.)														Span adjustment Factor	
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
10	10	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	1.0
12	12	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6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

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

5a SHEATHING REINFORCEMENT

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

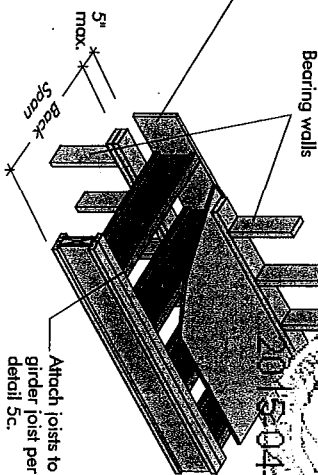
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

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

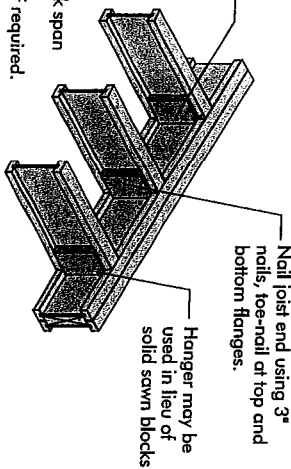
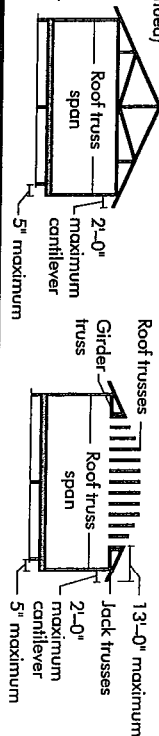


FIGURE 5 (continued)
See table below for NI reinforcement requirements at cantilever.



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)				ROOF LOADING (UNFACTORED)				LL = 50 psf, DL = 15 psf			
	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2"	X	X	X	X	X	X	X	X	X	X	X	X
12"	X	X	X	X	X	X	X	X	X	X	X	X
14"	X	X	X	X	X	X	X	X	X	X	X	X
16"	X	X	X	X	X	X	X	X	X	X	X	X
18"	X	X	X	X	X	X	X	X	X	X	X	X
20"	X	X	X	X	X	X	X	X	X	X	X	X
22"	X	X	X	X	X	X	X	X	X	X	X	X
24"	X	X	X	X	X	X	X	X	X	X	X	X
26"	X	X	X	X	X	X	X	X	X	X	X	X
28"	X	X	X	X	X	X	X	X	X	X	X	X
30"	X	X	X	X	X	X	X	X	X	X	X	X
32"	X	X	X	X	X	X	X	X	X	X	X	X
34"	X	X	X	X	X	X	X	X	X	X	X	X
36"	X	X	X	X	X	X	X	X	X	X	X	X
38"	X	X	X	X	X	X	X	X	X	X	X	X
40"	X	X	X	X	X	X	X	X	X	X	X	X
42"	X	X	X	X	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.
3. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3-0" maximum width window or door openings.
4. For larger openings, or multiple 3-0" width openings spaced less than 6-0" o.c., additional joists beneath the opening's eave may be required.
5. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
6. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
7. 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 topped into place with a block and sledgehammer.
5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch of all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2" common nail to assure accurate and consistent spacing.)
10. **Complete all nailing of each panel before glue sets.** Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Maximum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Common Wire or Spiral Nails	Nail Size and Type	Staples	Maximum Spacing of Fasteners
16	5/8	2"	1-3/4"	2"	6"
20	5/8	2"	1-3/4"	2"	6"
24	3/4	2"	1-3/4"	2"	12"

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

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

IMPORTANT NOTE:

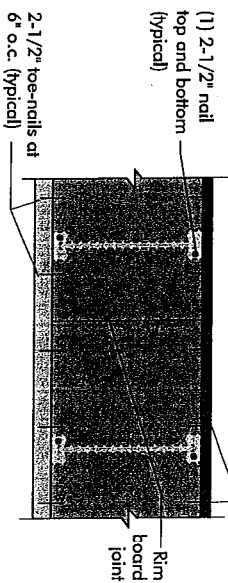
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

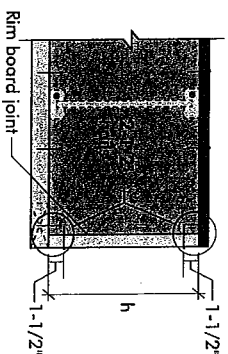
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim board joint Between Floor Joists

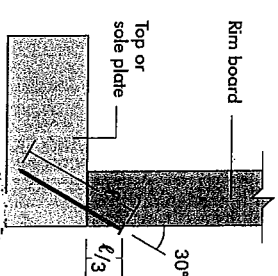
2-1/2" nails at 6' o.c. (typical)



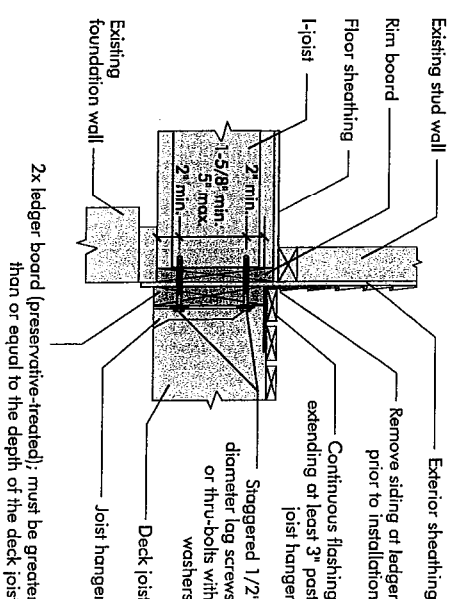
Rim board joint at Corner



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

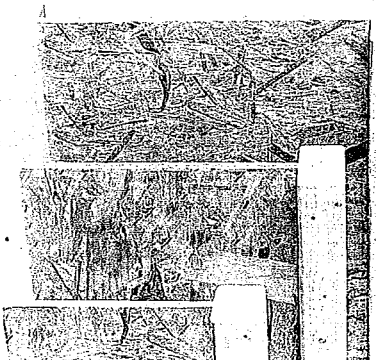


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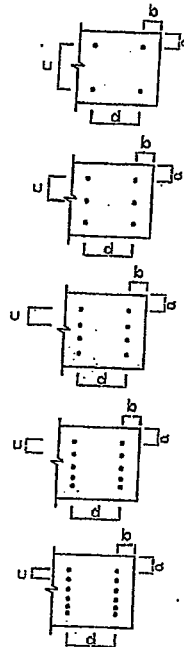
PRODUCT WARRANTY

Customer Obligations guarantee that, in accordance with our specifications, Novalis products are free from manufacturing defects in material and workmanship.

Furthermore, Customer Obligations warrant 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 PLYS FOR MULTI-PLY MEMBERS (3 PLY OR MORE)
- (5) ALL NAILS ARE 3-1/2" ARDOX SPIRAL NAILS
- (6) DO NOT USE AIR-DRIVEN NAILS



DWG NO TAMN1001.14

STRUCTURAL

COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING

DETAIL # X SEE

DWG #TAMN1001-14