

FROM PLAN DATED: FEB 2016

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-9-15

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.

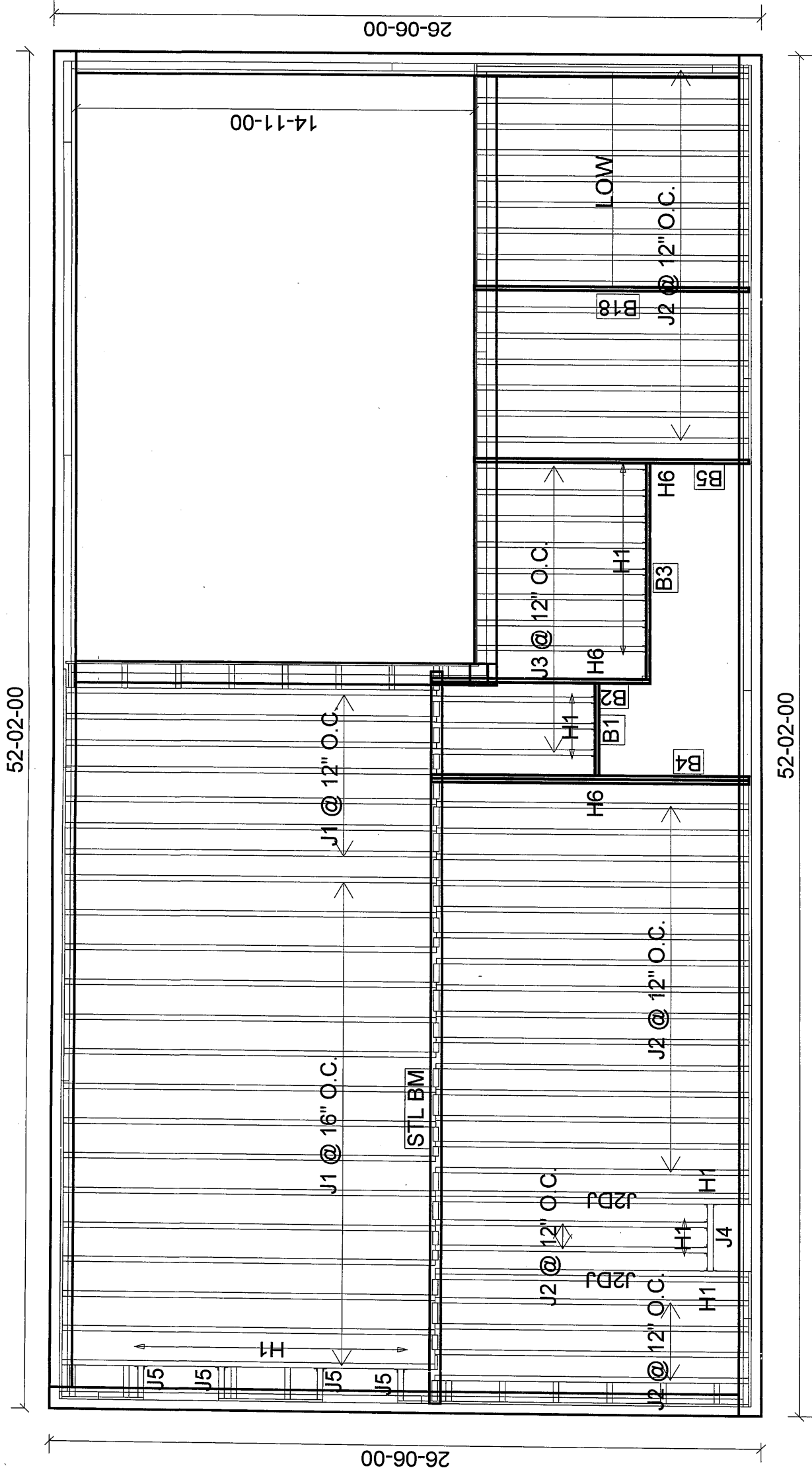
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

1st FLOOR

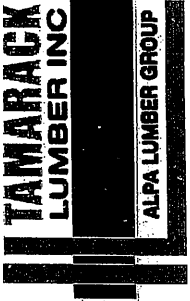
STANDARD



Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H6	HUS1.81/10
1	H6	HUS1.81/10

Products			
PlotID	Length	Product	Plies Net Qty
J1	14-00-00	9 1/2" NI-40x	1 22
J2	12-00-00	9 1/2" NI-40x	1 37
J2DJ	12-00-00	9 1/2" NI-40x	2 4
J3	8-00-00	9 1/2" NI-40x	1 11
J4	4-00-00	9 1/2" NI-40x	1 1
J5	2-00-00	9 1/2" NI-40x	1 4
B18	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1
B5	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2 2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1
B1	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1 1

Town of Innisfil Certified Model
09/03/2018 1:51:42 PM kgervais



FROM PLAN DATED: FEB 2016

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-9-15

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/ft

DEAD LOAD: 15.0 lb/ft

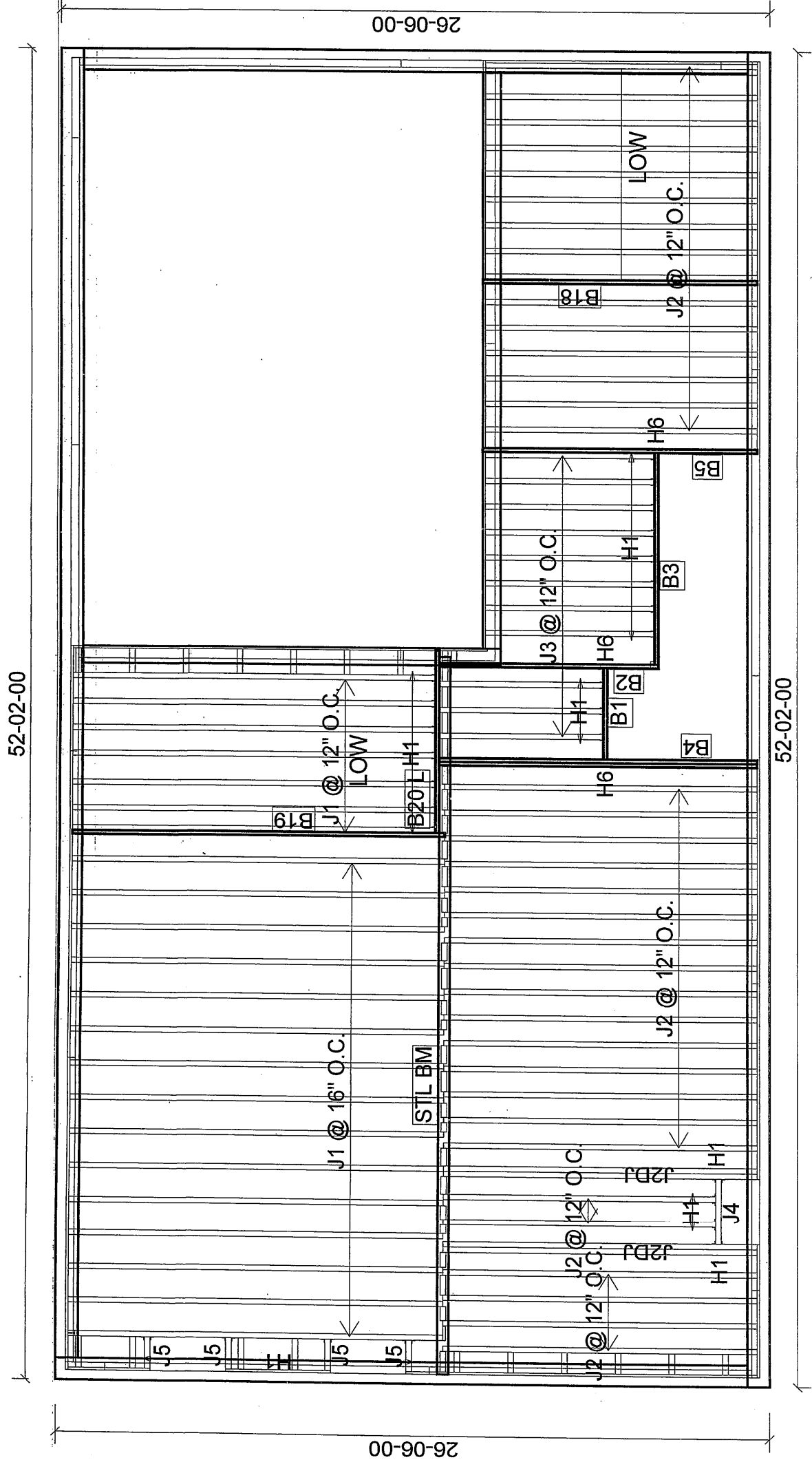
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

1st FLOOR

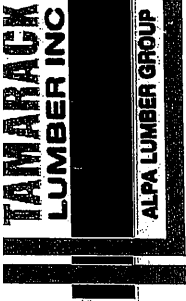
SUNKEN



Connector Summary		
Qty	Manuf	Product
18	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H6	HUS1.81/10
1	H6	HUS1.81/10

Products			
PlotID	Length	Product	Net Qty
J1	14-00-00	9 1/2" NI-40x	22
J2	12-00-00	9 1/2" NI-40x	37
J2DJ	12-00-00	9 1/2" NI-40x	4
J3	8-00-00	9 1/2" NI-40x	11
J4	4-00-00	9 1/2" NI-40x	1
J5	2-00-00	9 1/2" NI-40x	4
B19	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1
B18	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1
B5	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1
B20 L	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1
B1	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1

Town of Innisfil Certified Model
09/03/2018 1:51:44 PM kgervais



FROM PLAN DATED: FEB 2016

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-9-15

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.

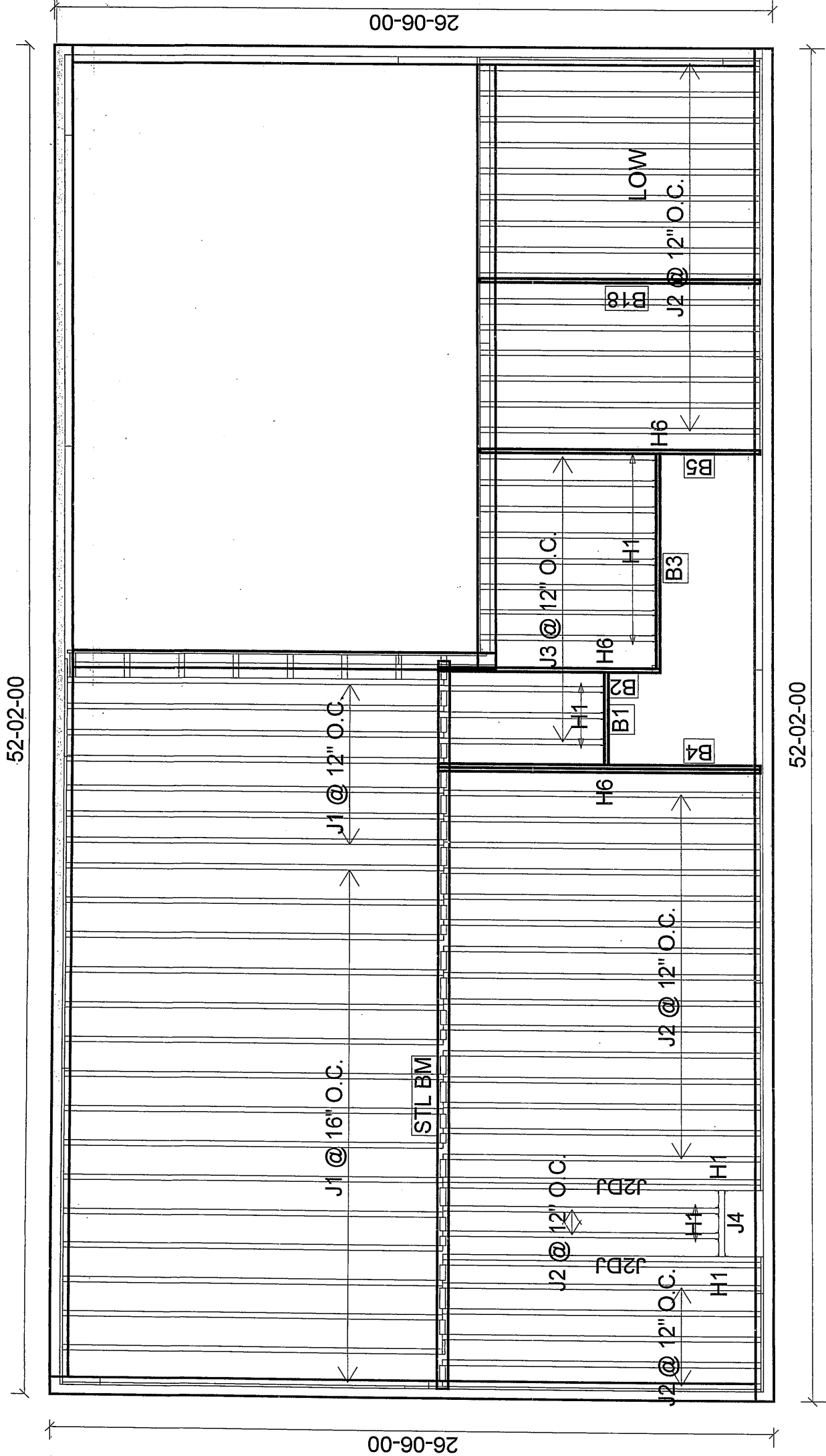
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 07/09/2017

1st FLOOR

WOD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	23
J2	12-00-00	9 1/2" NI-40x	1	38
J2DJ	12-00-00	9 1/2" NI-40x	2	4
J3	8-00-00	9 1/2" NI-40x	1	11
J4	4-00-00	9 1/2" NI-40x	1	1
B18	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
2	H6	HUS1.81/10
1	H6	HUS1.81/10

Town of Innisfil Certified Model
09/03/2018 1:51:45 PM kgervais

FROM PLAN DATED: FEB 2016

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-9-15

ELEVATION: A,B

LOT:
CITY: INNISFIL , ON

SALESMAN: MARIO
DESIGNER: CZ
REVISION: -

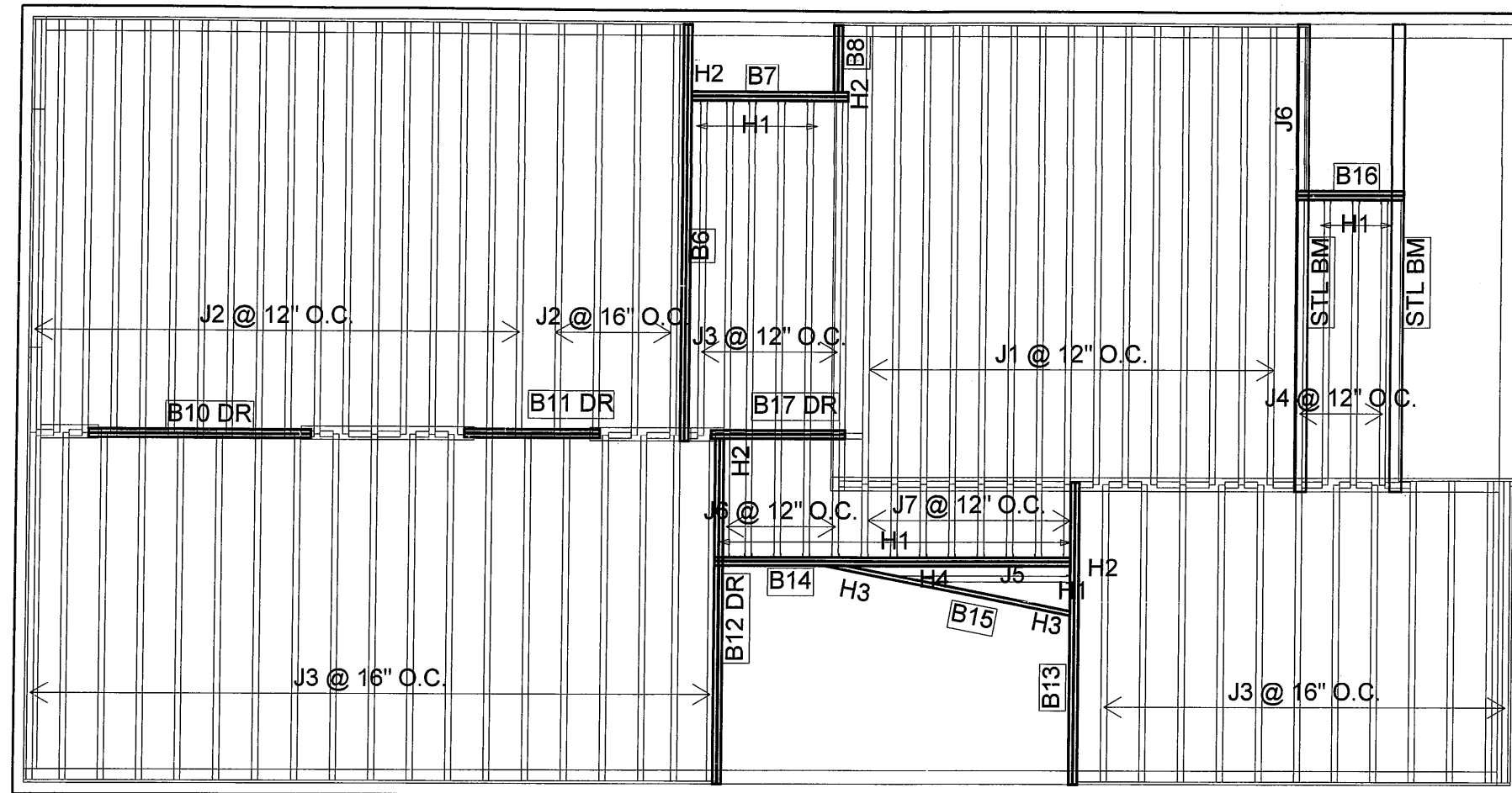
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	15
J2	14-00-00	9 1/2" NI-40x	1	22
J3	12-00-00	9 1/2" NI-40x	1	37
J4	10-00-00	9 1/2" NI-40x	1	4
J5	8-00-00	9 1/2" NI-40x	1	1
J6	6-00-00	9 1/2" NI-40x	1	6
J7	4-00-00	9 1/2" NI-40x	1	8
B6	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
22	H1	IUS2.56/9.5
4	H2	HGUS410
1	H3	LS 90
1	H3	LS 90
1	H4	LSSUH310



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i11655)

Specifier:

Designer:

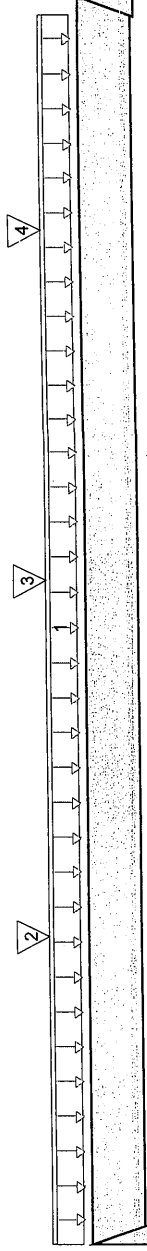
Company:

Misc:

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

Town of Innisfil Certified Model

09/03/2018 1:51:50 PM kgervais



03-06-06

B1

Total Horizontal Product Length = 03-06-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	596 / 0	306 / 0		
B1	596 / 0	306 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-05-14	240	120			n/a
2 J3(i11721)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	126	63			n/a
3 J3(i11731)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	125	62			n/a
4 J3(i11643)	Conc. Pt. (lbs)	L	02-10-08	02-10-08	104	52			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,089 ft-lbs	12,704 ft-lbs	8.6%	1	01-10-08
End Shear	754 lbs	5,785 lbs	13%	1	00-11-08
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	01-09-02
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	01-09-02
Max Defl.	0.006"	n/a	n/a	4	01-09-02
Span / Depth	4.2	n/a	n/a		00-00-00

Disclosure

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

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,277 lbs	n/a	29.9%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,278 lbs	n/a	29.9%	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.

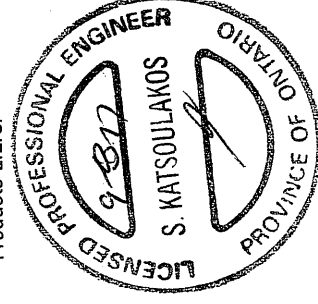
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

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 DBC 2012



DWG NO. TAM 4525617
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\Basment\Flush Beams\B3(i11262)

Specifier:

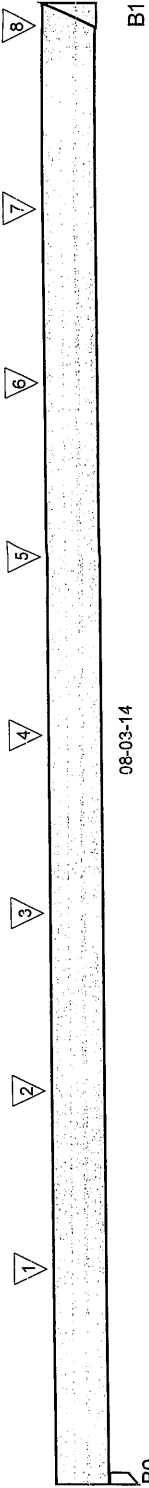
Designer:

Company:

Msc:

Town of Inlet Certified Model

09/03/2018 1:51:52 PM kgavals



Total Horizontal Product Length = 08-03-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-1 1/16"	363 / 0	226 / 0		
B1	515 / 0	371 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 J3(i11246)	Conc. Pt (lbs)	L	01-02-06	01-02-06	85	43			n/a
2 J3(i11303)	Conc. Pt (lbs)	L	02-02-06	02-02-06	65	33			n/a
3 J3(i11337)	Conc. Pt (lbs)	L	03-02-06	03-02-06	130	65			n/a
4 J3(i11378)	Conc. Pt (lbs)	L	04-02-06	04-02-06	130	67			n/a
5 J3(i11327)	Conc. Pt (lbs)	L	05-02-06	05-02-06	130	92			n/a
6 J3(i11339)	Conc. Pt (lbs)	L	06-02-06	06-02-06	130	99			n/a
7 J3(i11274)	Conc. Pt (lbs)	L	07-02-06	07-02-06	130	99			n/a
8 J3(i11334)	Conc. Pt (lbs)	L	08-02-06	08-02-06	78	59			n/a

Controls Summary

Controls Summary		Demand	Resistance	Resistance	Case
Pos. Moment		2,255 ft-lbs	12,704 ft-lbs	17.8%	1
End Shear		1,040 lbs	5,785 lbs	18%	1
Total Load Defl.		L/999 (0.075")	n/a	n/a	4
Live Load Defl.		L/999 (0.046")	n/a	n/a	5
Max Defl.		0.075"	n/a	n/a	4
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 Post	1-1 1/16" x 1-3/4"	826 lbs	34.9%	23.2%	Unspecified
B1 Hanger	2" x 1-3/4"	1,237 lbs	n/a	29%	Hanger

Notes

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

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

Calculations assume Member is Fully Braced.

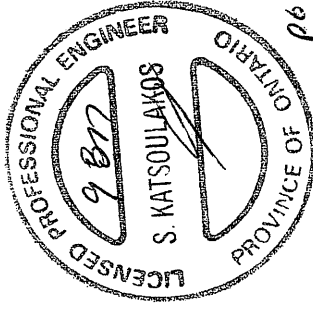
Resistance Factor phi has been applied to all presented results per CSA 086.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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



pg 16

DWG NO. TAM 45250-17

STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i11);

Specifier:

Designer:

Company:

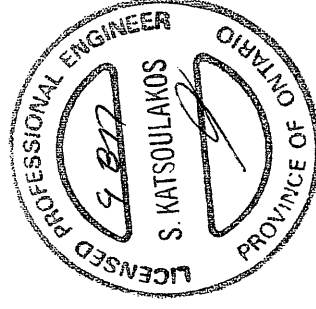
Misc:

Disclosure

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

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

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



p022

DWG NO. YAW 4525817
STRUCTURAL
COMPONENT ONLY



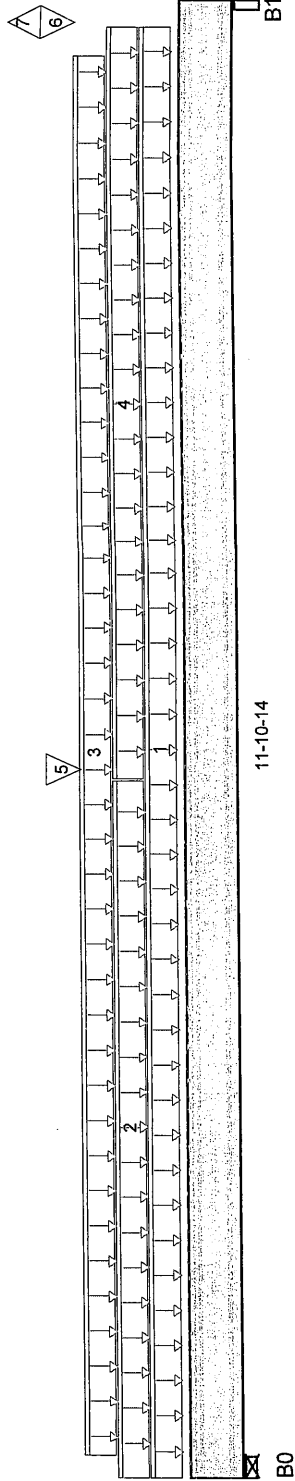
BC CALC® Design Report

Build 4340
Job Name:
Address:
City, Province, Postal Code:,
Customer:
Code reports:

File Name: S32-9.mmdl
Description: Designs\Flush Beams\Basment\Flush Beams\B4(i11630)
Specifier:
Designer:
Company:
Msc:

CCMC 12472-R

Town of Innisfil Certified Model
09/03/2018 1:51:55 PM kgervais



Total Horizontal Product Length = 11-10-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	479 / 0	640 / 0		
B1, 5"	2,614 / 807	1,439 / 0	0 / 1	

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-08-06	20	10			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-07-06	6				n/a
3 User Load	Unf. Lin. (lb/ft)	L	00-02-02	11-05-10		60			n/a
4 FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-07-06	11-08-06	20	10			n/a
5 B1(i11655)	Conc. Pt (lbs)	L	05-08-04	05-08-04	596	306			n/a
6 13(i6946)	Conc. Pt (lbs)	L	11-08-10	11-08-10	2,108	786		-1	n/a
7 13(i6946)	Conc. Pt (lbs)	L	11-08-10	11-08-10	-807				n/a

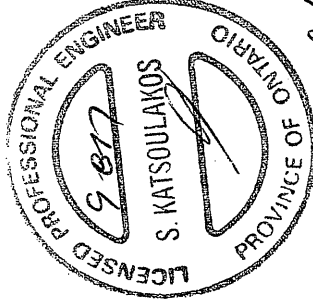
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,216 ft-lbs	25,408 ft-lbs	24.5%	1	05-08-03
End Shear	1,476 lbs	11,571 lbs	12.8%	1	10-08-06
Total Load Defl.	L/728 (0.188")	0.571"	33%	56	05-10-01
Live Load Defl.	L/999 (0.089")	n/a	n/a	83	05-10-01
Max Defl.	0.188"	n/a	n/a	56	05-10-01
Span / Depth	14.4	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Member	Material
B0 Wall/Plate	2-3/8" x 3-1/2"	1,517 lbs	34.2%	15%	Unspecified
B1 Beam	5" x 3-1/2"	5,720 lbs	61.2%	26.8%	Unspecified

Notes



DWNO. YAM 4525917
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(11)

Specifier:

Designer:

Company:

Misc:

Disclosure

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

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

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

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

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

Calculations assume Member is Fully Braced.

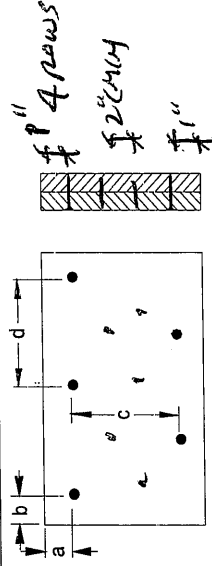
Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA O86. Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO CBC 2012**Connection Diagram**

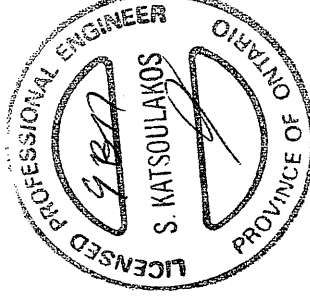
a minimum = 2" c = 1 1/2"
b minimum = 3" d = 6"

Calculated Side Load = 111.1 lb/ft

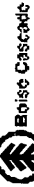
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are:

Nails

3 1/2" ARDOX SPIRAL

0022
DRAWING: TAM 45259-17
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i13033)

BC CALC® Design Report



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

Build 5033

File Name: S32-9-15G.mmdl

Job Name:

Description: Designs\Flush Beams\Basement\Flush Beams\B5(i)13033

Address:

Specifier:

City, Province, Postal Code:

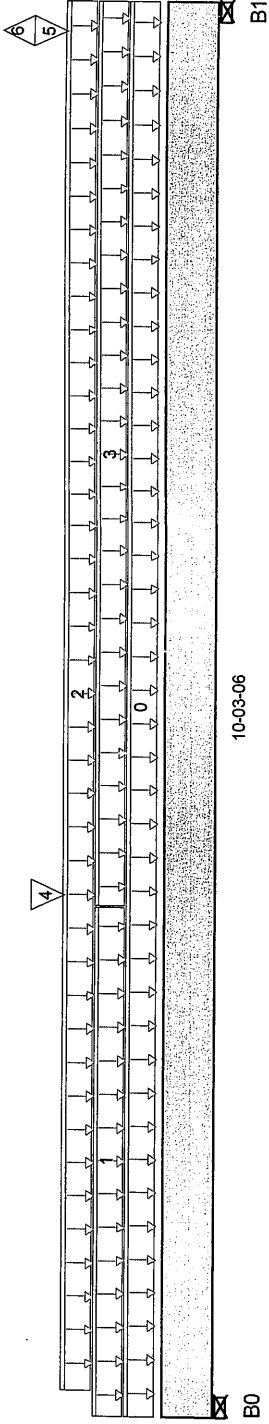
Designer:

Customer:

Company:

Code reports: CCMC 12472-R

Misc:



Total Horizontal Product Length = 10-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	428 / 0	598 / 0		
B1, 5-1/2"	430 / 2	630 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	1.00	0.65	1.00	1.15
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-06	16	8		n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-06	3			n/a
2 User Load	Unf. Lin. (lb/ft)	L	00-02-03	10-03-06		60		n/a
3 FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-08-06	10-03-06	4	2		n/a
4 B3(i12947)	Conc. Pt. (lbs)	L	03-09-04	03-09-04	527	375		n/a
5 6(i144)	Conc. Pt. (lbs)	L	10-00-10	10-00-10	129	95		n/a
6 6(i144)	Conc. Pt. (lbs)	L	10-00-10	10-00-10	-2			n/a

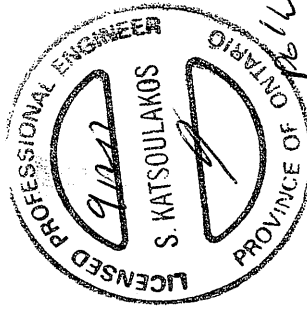
Controls Summary

Pos. Moment	4,239 ft-lbs	12,704 ft-lbs	33.4%	1	03-09-04
End Shear	1,283 lbs	5,785 lbs	22.2%	1	00-11-14
Total Load Defl.	L/625 (0.187")	0.488"	38.4%	6	04-09-11
Live Load Defl.	L/999 (0.08")	n/a	n/a	8	04-08-10
Max Defl.	0.187"	n/a	n/a	6	04-09-11
Span / Depth	12.3	n/a	n/a		00-00-00

Bearing Supports

Panel	Panel Dimensions	Panel Weight	Panel Volume	Panel Area	Panel Perimeter	Panel Surface Area	Panel Volume	Panel Area	Panel Perimeter	Panel Surface Area
30	Wall/Plate	2-3/8" x 1-3/4"	1,389 lbs	62.6%	27.4%	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified
31	Wall/Plate	5-1/2" x 1-3/4"	1,433 lbs	27.9%	12.2%	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified

Votes



4646B-17

STRUCTURAL

COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i13033)

BC CALC® Design Report



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

September 11, 2017 10:49:01

Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B5(i13033)

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 OBC 2012

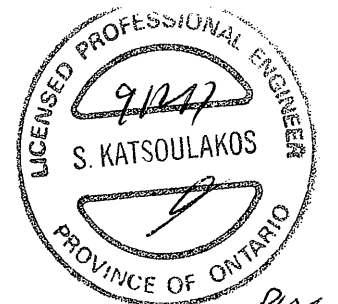
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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 46468-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i11294

Specifier:

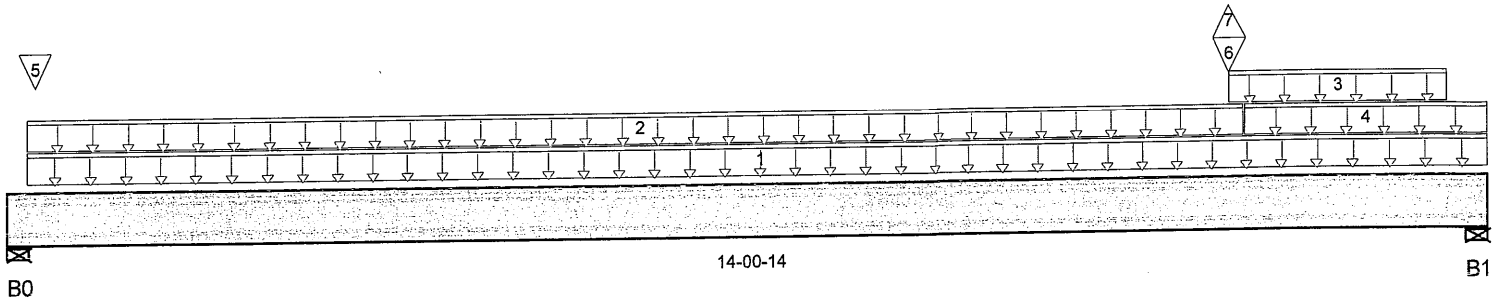
Designer:

Company:

Misc:

Town of Innisfil Certified Model

09/03/2018 1:52:09 PM kgervais



Total Horizontal Product Length = 14-00-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	218 / 0	253 / 0	16 / 0	
B1, 4-3/8"	600 / 3	727 / 0	182 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-04	14-00-14	8	4			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-04	11-09-08	12	6			n/a
3	User Load	Unf. Lin. (lb/ft)	L	11-07-12	13-08-08	33	130	96		n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	11-09-08	14-00-14	6				n/a
5	FC2 Floor Material	Conc. Pt. (lbs)	L	00-03-02	00-03-02		29			n/a
6	B7(i11318)	Conc. Pt. (lbs)	L	11-07-12	11-07-12	491	418			n/a
7	B7(i11318)	Conc. Pt. (lbs)	L	11-07-12	11-07-12	-3				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,364 ft-lbs	25,408 ft-lbs	13.2%	1	11-07-12
End Shear	1,647 lbs	11,571 lbs	14.2%	1	12-11-00
Total Load Defl.	L/1,093 (0.147")	0.669"	22%	58	07-07-00
Live Load Defl.	L/999 (0.074")	n/a	n/a	85	07-07-00
Max Defl.	0.147"	n/a	n/a	58	07-07-00
Span / Depth	16.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	651 lbs	6.3%	2.8%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	1,900 lbs	23.2%	10.2%	Unspecified

Notes



DWG NO. TAM 45261-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i112

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

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

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

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

Design based on Dry Service Condition.

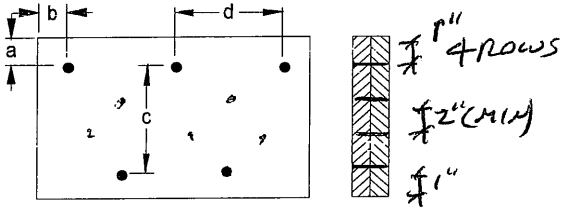
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012**Disclosure**

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

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

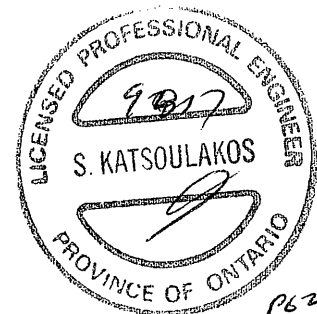
Connection Diagram

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

Calculated Side Load = 93.6 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: **3 1/2" ARDOX SPIRAL**



DWG NO. YAM45261 -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: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i11318)

Specifier:

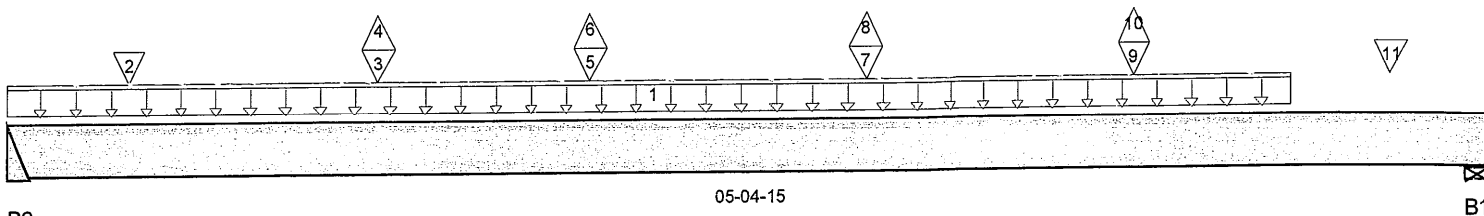
Designer:

Company:

Misc:

Town of Innisfil Certified Model

09/03/2018 1:52:17 PM kgervais



B0

B1

Total Horizontal Product Length = 05-04-15

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	499 / 3	425 / 0		
B1, 5-1/2"	464 / 4	490 / 0	81 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	04-08-08		60			n/a
2	J4(i11256)	Conc. Pt. (lbs)	L	00-05-04	00-05-04	176	87			n/a
3	J2(i11271)	Conc. Pt. (lbs)	L	01-04-04	01-04-04	164	82			n/a
4	J2(i11271)	Conc. Pt. (lbs)	L	01-04-04	01-04-04	-1				n/a
5	J2(i9515)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	173	86			n/a
6	J2(i9515)	Conc. Pt. (lbs)	L	02-01-08	02-01-08	-2				n/a
7	J2(i9684)	Conc. Pt. (lbs)	L	03-01-08	03-01-08	196	97			n/a
8	J2(i9684)	Conc. Pt. (lbs)	L	03-01-08	03-01-08	-2				n/a
9	J2(i9481)	Conc. Pt. (lbs)	L	04-01-08	04-01-08	193	96			n/a
10	J2(i9481)	Conc. Pt. (lbs)	L	04-01-08	04-01-08	-2				n/a
11	B8(i8634)	Conc. Pt. (lbs)	L	05-00-12	05-00-12	54	129	81		n/a

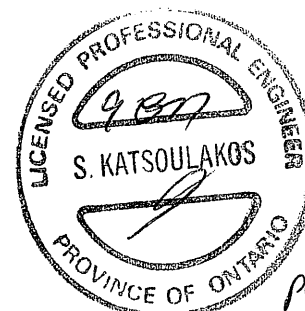
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,494 ft-lbs	25,408 ft-lbs	5.9%	1	02-02-04
End Shear	1,046 lbs	11,571 lbs	9%	1	04-01-15
Total Load Defl.	L/999 (0.009")	n/a	n/a	58	02-06-12
Live Load Defl.	L/999 (0.005")	n/a	n/a	85	02-06-12
Max Defl.	0.009"	n/a	n/a	58	02-06-12
Span / Depth	6.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	1,280 lbs	n/a	15%	HGUS410
B1 Wall/Plate	5-1/2" x 3-1/2"	1,349 lbs	13.1%	5.7%	Unspecified

Notes



DWG NO. TAM 45262-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i)113

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.

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

CONFORMS TO OBC 2012

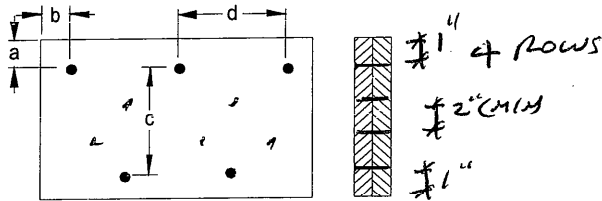
Design based on Dry Service Condition.

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.

Connection Diagram

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

Calculated Side Load = 364.0 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

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



DWG NO. TAM 45262-17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code,:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i8634)

Specifier:

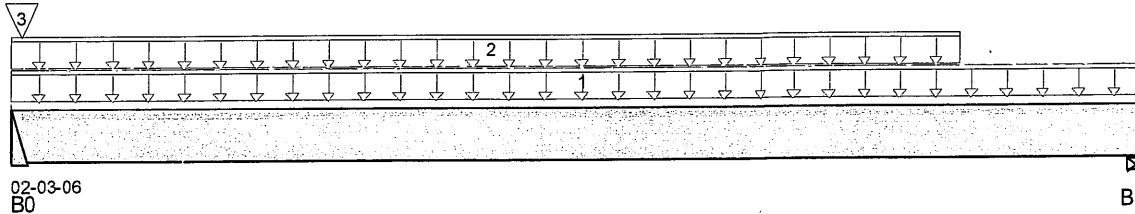
Designer:

Company:

Misc:

Town of Innisfil Certified Model

09/03/2018 1:52:22 PM kgervais



Total Horizontal Product Length = 02-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	58 / 0	139 / 0	88 / 0	
B1, 4-3/8"	55 / 0	123 / 0	74 / 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	02-03-06	24	9			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-11-00	29	114	84		n/a
3	FC2 Floor Material	Conc. Pt. (lbs)	L	00-00-04	00-00-04	2				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	140 ft-lbs	25,408 ft-lbs	0.6%	13	01-00-08
End Shear	26 lbs	11,571 lbs	0.2%	13	00-11-08
Total Load Defl.	L/999 (0")	n/a	n/a	45	01-00-08
Live Load Defl.	L/999 (0")	n/a	n/a	61	01-00-08
Max Defl.	0"	n/a	n/a	45	01-00-08
Span / Depth	2.4	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"	334 lbs	n/a	3.9%	HGUS410
B1 Wall/Plate	4-3/8" x 3-1/2"	292 lbs	3.6%	1.6%	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.

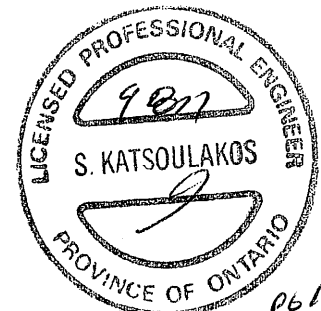
Unbalanced snow loads determined from building geometry were used in selected product's verification.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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



DWG NO. TAM 45263-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i863

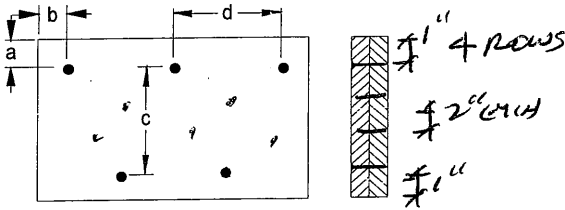
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

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

Member has no side loads.

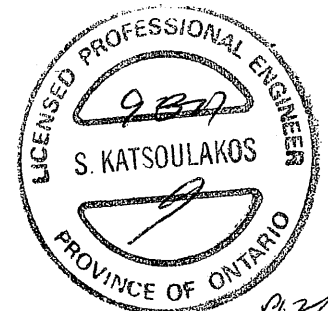
Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

BC 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 45263-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-9.mmdl

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

Specifier:

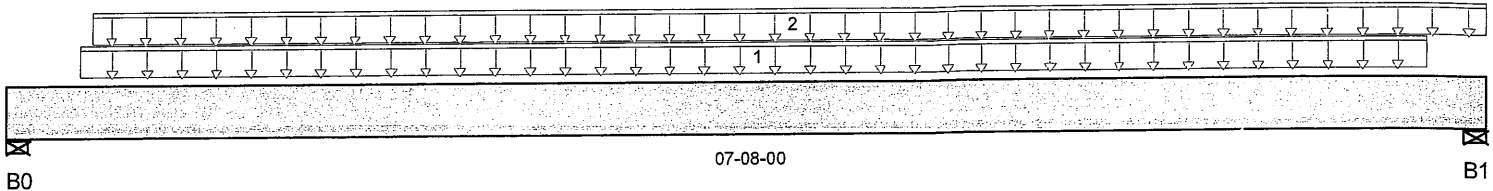
Designer:

Company:

Misc:

Town of Innisfil Certified Model

09/03/2018 1:52:24 PM kgervais



Total Horizontal Product Length = 07-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,849 / 0	1,168 / 0		
B1, 4"	1,893 / 0	1,216 / 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	00-04-08	07-04-08	534	268			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-05-04	07-08-00		60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,347 ft-lbs	25,408 ft-lbs	28.9%	1	03-10-08
End Shear	3,558 lbs	11,571 lbs	30.7%	1	01-01-08
Total Load Defl.	L/999 (0.096")	n/a	n/a	4	03-10-08
Live Load Defl.	L/999 (0.058")	n/a	n/a	5	03-10-08
Max Defl.	0.096"	n/a	n/a	4	03-10-08
Span / Depth	9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	4,233 lbs	37.2%	24.8%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	4,359 lbs	38.3%	25.5%	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.

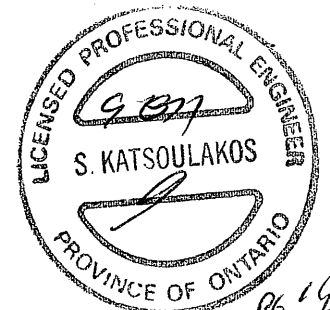
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

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 45264-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

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

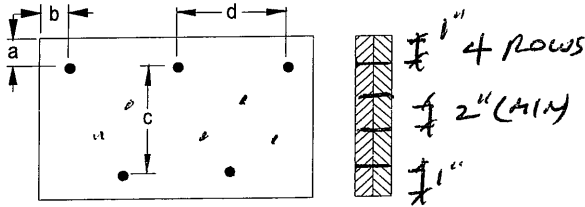
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

BC 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 45264-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B11

Specifier:

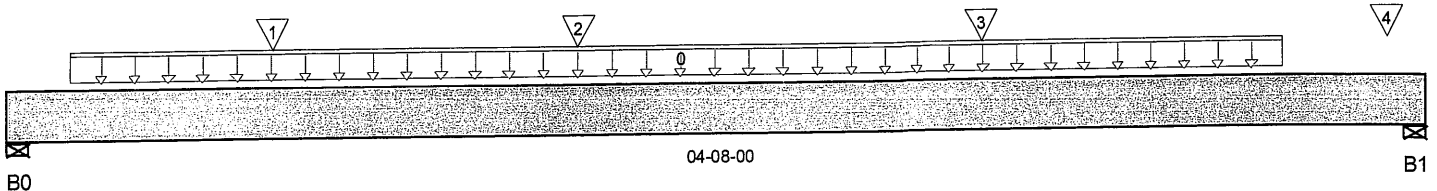
Designer:

Company:

Misc:

Town of Innisfil Certified Model

09/03/2018 1:52:26 PM kgervais



Total Horizontal Product Length = 04-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,018 / 0	650 / 0		
B1, 4"	1,220 / 0	807 / 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	00-02-08	04-02-08	228	114			n/a
1	J3(i12227)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	274	197			n/a
2	J3(i12223)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	320	231			n/a
3	J3(i12230)	Conc. Pt. (lbs)	L	03-02-08	03-02-08	366	264			n/a
4	J3(i12233)	Conc. Pt. (lbs)	L	04-06-08	04-06-08	366	264			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,510 ft-lbs	25,408 ft-lbs	9.9%	1	02-02-08
End Shear	1,946 lbs	11,571 lbs	16.8%	1	03-06-08
Total Load Defl.	L/999 (0.011")	n/a	n/a	4	02-04-00
Live Load Defl.	L/999 (0.007")	n/a	n/a	5	02-04-00
Max Defl.	0.011"	n/a	n/a	4	02-04-00
Span / Depth	5.2	n/a	n/a		00-00-00

Bearing Supports

Sealing Supports						
B0	Wall/Plate	4" x 3-1/2"	2,340 lbs	20.6%	13.7%	Unspecified
B1	Wall/Plate	4" x 3-1/2"	2,838 lbs	25%	16.6%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-03-06, Bottom: 00-03-06.
 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. TAM45265-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

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

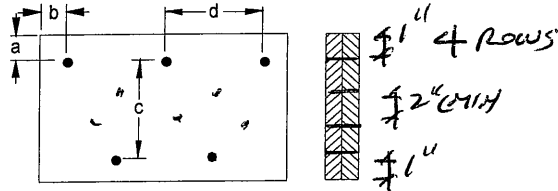
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

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

Member has no side loads.

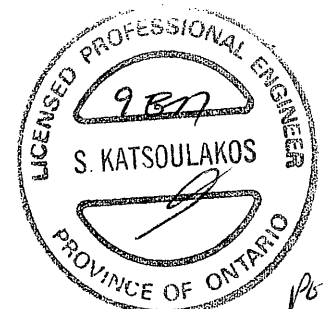
Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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



DWG NO. TAM 45265-17
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12 DR(i13097)

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

September 11, 2017 10:48:29

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B12

Specifier:

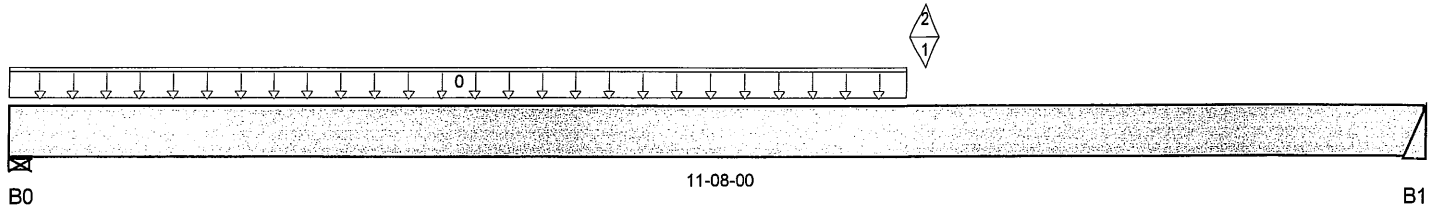
Designer:

Company:

Msc:

Town of Innisfil Certified Model

09/03/2018 1:52:28 PM kgervais



Total Horizontal Product Length = 11-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	509 / 0	351 / 0		
B1	842 / 1	528 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	R1(i12898)	Unf. Lin. (lb/ft)	L	00-00-00	07-04-08	8	6			n/a
1	B14(i13150)	Conc. Pt. (lbs)	L	07-06-04	07-06-04	1,293	720			n/a
2	B14(i13150)	Conc. Pt. (lbs)	L	07-06-04	07-06-04	-1				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,669 ft-lbs	24,074 ft-lbs	31.9%	1	07-06-04
End Shear	1,912 lbs	11,571 lbs	16.5%	1	10-08-08
Total Load Defl.	L/685 (0.196")	0.558"	35%	6	06-05-00
Live Load Defl.	L/999 (0.121")	n/a	n/a	8	06-05-00
Max Defl.	0.196"	n/a	n/a	6	06-05-00
Span / Depth	14.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	1,202 lbs	7.7%	5.1%	Unspecified
B1 Hanger	2" x 3-1/2"	1,924 lbs	n/a	22.5%	HGUS410

Notes

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

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

Calculations assume unbraced length of Top: 03-11-00, Bottom: 03-11-00

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



DWG NO. TAM 46469-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

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

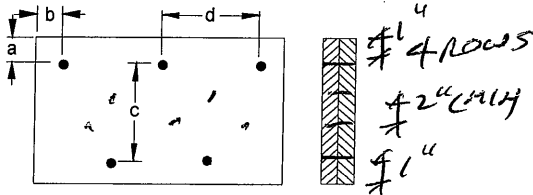
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

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

Member has no side loads.

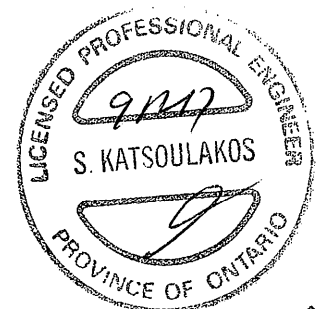
Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise 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™, 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 46469-17
STRUCTURAL
COMPONENT ONLY



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

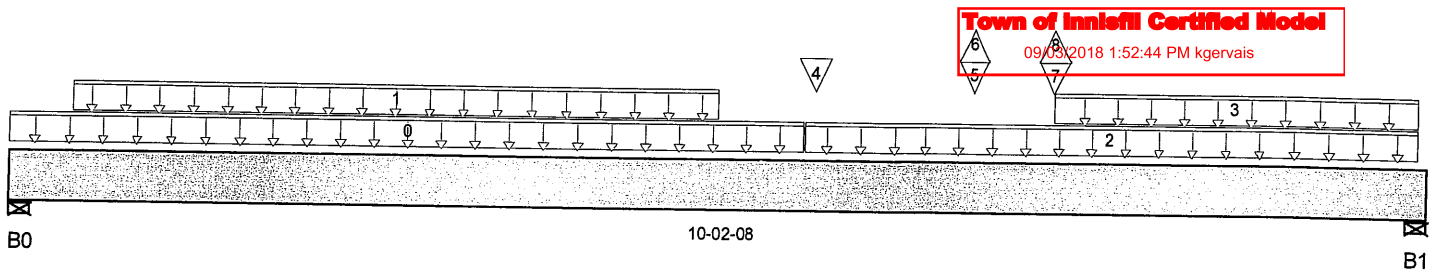
Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i13168)

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 10-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	340 / 2	454 / 0		
B1, 3-1/2"	656 / 4	503 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-08-08	24	12			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-05-06	05-01-01		60			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-08-08	10-01-12	21	11			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-06-04	10-01-12	5				n/a
4	B15(i13149)	Conc. Pt. (lbs)	L	05-09-04	05-09-04	100	68			n/a
5	J5(i13064)	Conc. Pt. (lbs)	L	06-11-04	06-11-04	68	32			n/a
6	J5(i13064)	Conc. Pt. (lbs)	L	06-11-04	06-11-04	-5				n/a
7	B14(i13150)	Conc. Pt. (lbs)	L	07-06-04	07-06-04	573	353			n/a
8	B14(i13150)	Conc. Pt. (lbs)	L	07-06-04	07-06-04	-1				n/a

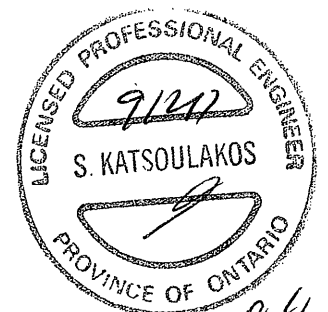
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,792 ft-lbs	25,408 ft-lbs	14.9%	1	06-11-03
End Shear	1,542 lbs	11,571 lbs	13.3%	1	09-01-08
Total Load Defl.	L/999 (0.086")	n/a	n/a	6	05-04-12
Live Load Defl.	L/999 (0.045")	n/a	n/a	8	05-06-10
Max Defl.	0.086"	n/a	n/a	6	05-04-12
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	5-1/2" x 3-1/2"	1,076 lbs	10.5%	4.6%	Unspecified
B1	3-1/2" x 3-1/2"	1,612 lbs	24.6%	10.8%	Unspecified

Notes



DWG NO. TAM 46470-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

September 11, 2017 10:48:28

Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i13

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.

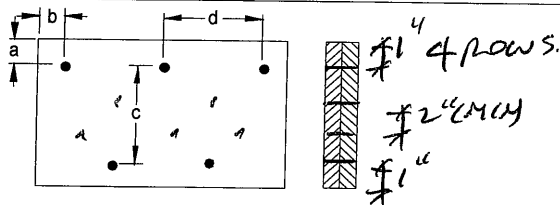
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

Connection Diagram



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

Calculated Side Load = 163.5 lb/ft

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

Connectors are: Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

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



DWG NO. TAM 46470-17
STRUCTURAL
COMPONENT ONLY



Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i13150)

Specifier:

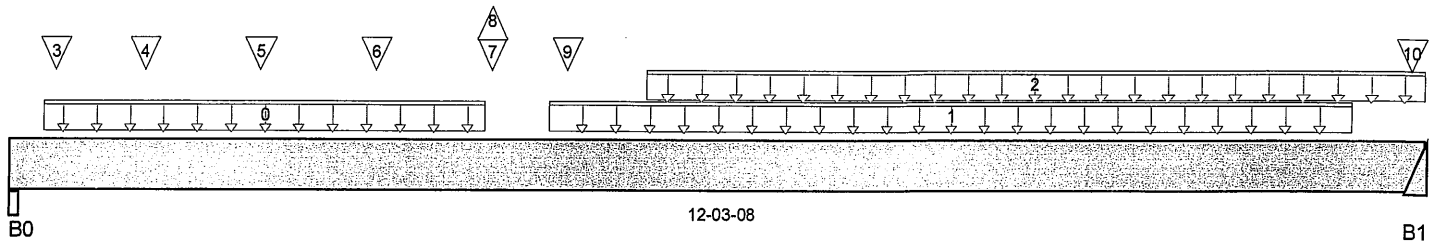
Designer:

Company:

Misc:

Town of Innisfil Certified Model

09/03/2018 1:52:48 PM kgervais



Total Horizontal Product Length = 12-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	1,288 / 1	717 / 0		
B1	576 / 1	355 / 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	00-03-08	04-01-08	240	120			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	04-08-00	11-08-00	52	26			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	05-06-01	12-03-08	10	5			n/a
3	J6(i12972)	Conc. Pt. (lbs)	L	00-04-12	00-04-12	58	29			n/a
4	J6(i12988)	Conc. Pt. (lbs)	L	01-02-00	01-02-00	83	41			n/a
5	J6(i13047)	Conc. Pt. (lbs)	L	02-02-00	02-02-00	93	47			n/a
6	J6(i12980)	Conc. Pt. (lbs)	L	03-02-00	03-02-00	90	45			n/a
7	J6(i13059)	Conc. Pt. (lbs)	L	04-02-00	04-02-00	46	22			n/a
8	J6(i13059)	Conc. Pt. (lbs)	L	04-02-00	04-02-00	-2				n/a
9	B15(i13149)	Conc. Pt. (lbs)	L	04-09-13	04-09-13	96	70			n/a
10	J7(i13018)	Conc. Pt. (lbs)	L	12-02-00	12-02-00	33	17			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,614 ft-lbs	25,408 ft-lbs	22.1%	1	04-09-13
End Shear	2,301 lbs	11,571 lbs	19.9%	1	01-01-00
Total Load Defl.	L/727 (0.198")	0.598"	33%	6	05-10-00
Live Load Defl.	L/999 (0.124")	n/a	n/a	8	05-10-00
Max Defl.	0.198"	n/a	n/a	6	05-10-00
Span / Depth	15.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	3-1/2" x 3-1/2"	2,829 lbs	21.2%	18.9%	Unspecified
B1 Hanger	2" x 3-1/2"	1,307 lbs	n/a	15.3%	HGUS410

Notes



DWG NO. TAM 46421-17
 STRUCTURAL
 COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i13150)

BC CALC® Design Report



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

September 11, 2017 10:48:28

Build 5033

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9-15G.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i13150)

Specifier:

Designer:

Company:

Msc:

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

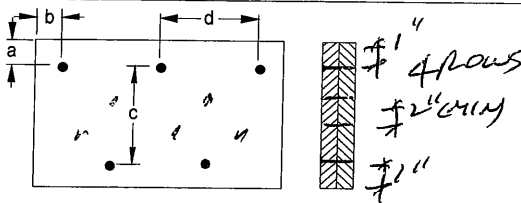
CONFORMS TO CBC 2012

Disclosure

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

Connection Diagram



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

Calculated Side Load = 132.3 lb/ft

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

Connectors are: 3 1/2" ARDOX SPIRAL

3 1/2" ARDOX SPIRAL



DWG NO. TAM 46421-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i11685)

Specifier:

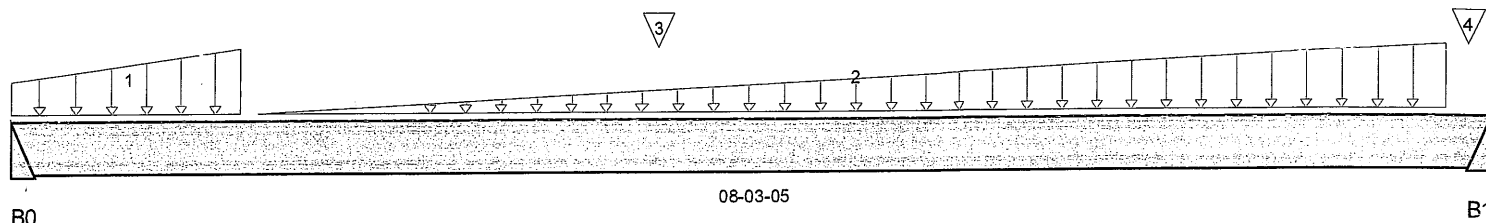
Designer:

Company:

Misc:

Town of Innisfil Certified Model

12/03/2018 8:44:38 AM kgervais



Total Horizontal Product Length = 08-03-05

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	85 / 0	62 / 0		
B1	108 / 0	74 / 0		

Load Summary

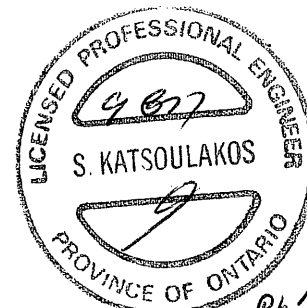
Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Trapezoidal (lb/ft)	L	00-00-00	01-03-06	3	1			n/a
2	FC2 Floor Material	Trapezoidal (lb/ft)	L	01-04-07	08-00-07	0	0			n/a
3	J6(i11621)	Conc. Pt. (lbs)	L	03-07-07	03-07-07	91	45			n/a
4	FC2 Floor Material	Conc. Pt. (lbs)	L	08-01-14	08-01-14	6	3			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	612 ft-lbs	12,704 ft-lbs	4.8%	1	03-07-07
End Shear	242 lbs	5,785 lbs	4.2%	1	07-03-13
Total Load Defl.	L/999 (0.018")	n/a	n/a	4	04-01-00
Live Load Defl.	L/999 (0.011")	n/a	n/a	5	04-01-00
Max Defl.	0.018"	n/a	n/a	4	04-01-00
Span / Depth	10.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	205 lbs	n/a	4.8%	LS 90
B1 Hanger	2" x 1-3/4"	255 lbs	n/a	6%	LS 90

Notes

DWG NO. YAM45269-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i11

Specifier:

Designer:

Company:

Misc:

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

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

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

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012**Disclosure**

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

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



DWG NO. TAM 45269.17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i11575)

Specifier:

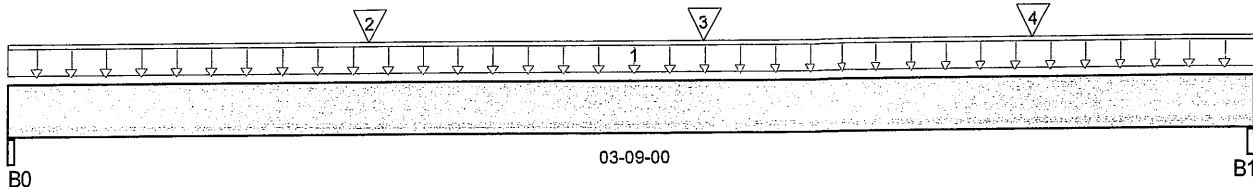
Designer:

Company:

Misc:

Town of Innisfil Certified Model

12/03/2018 8:44:45 AM kgervais



Total Horizontal Product Length = 03-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5"	520 / 0	763 / 0	780 / 0	
B1, 5"	577 / 0	791 / 0	780 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-09-00	143	330	416		n/a
2	J5(i11612)	Conc. Pt. (lbs)	L	01-01-00	01-01-00	189	95			n/a
3	J5(i11603)	Conc. Pt. (lbs)	L	02-01-00	02-01-00	200	100			n/a
4	J5(i11596)	Conc. Pt. (lbs)	L	03-01-00	03-01-00	167	83			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,552 ft-lbs	25,408 ft-lbs	6.1%	13	01-11-00
End Shear	1,034 lbs	11,571 lbs	8.9%	1	01-02-08
Total Load Defl.	L/999 (0.004")	n/a	n/a	45	01-10-06
Live Load Defl.	L/999 (0.002")	n/a	n/a	61	01-10-06
Max Defl.	0.004"	n/a	n/a	45	01-10-06
Span / Depth	3.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5" x 3-1/2"	2,384 lbs	25.5%	11.2%	Unspecified
B1 Beam	5" x 3-1/2"	2,448 lbs	26.2%	11.5%	Unspecified

Notes

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



CONFORMS TO OBC 2012

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code,:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i11

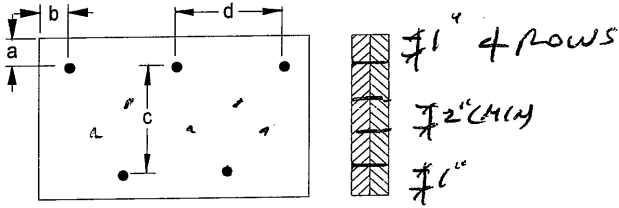
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 326.2 lb/ft

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

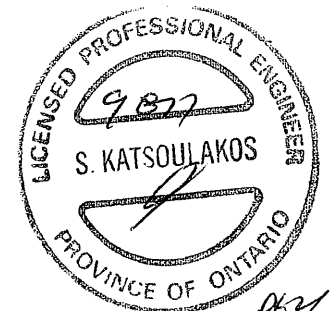
Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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

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



DWG NO. TAM 45270-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B17

Specifier:

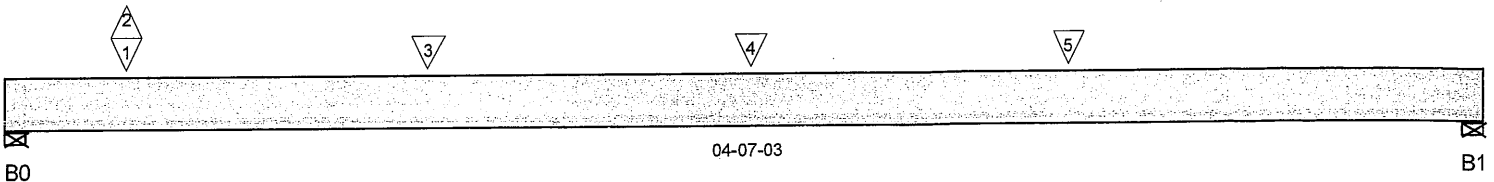
Designer:

Company:

Misc:

Town of Innisfil Certified Model

12/03/2018 8:44:47 AM kgervais



Total Horizontal Product Length = 04-07-03

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	2,027 / 807	711 / 0	0 / 1	
B1, 5-1/2"	716 / 0	380 / 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	00-04-08	00-04-08	1,387	369	-1		n/a
2 -	Conc. Pt. (lbs)	L	00-04-08	00-04-08	-807				n/a
3 J2(i9515)	Conc. Pt. (lbs)	L	01-03-12	01-03-12	416	208			n/a
4 J2(i9684)	Conc. Pt. (lbs)	L	02-03-12	02-03-12	470	235			n/a
5 J2(i9481)	Conc. Pt. (lbs)	L	03-03-12	03-03-12	470	235			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,901 ft-lbs	25,408 ft-lbs	7.5%	1	02-03-12
End Shear	1,535 lbs	11,571 lbs	13.3%	1	03-04-03
Uplift	571 lbs	n/a	n/a	12	00-00-00
Total Load Defl.	L/999 (0.007")	n/a	n/a	56	02-03-06
Live Load Defl.	L/999 (0.004")	n/a	n/a	83	02-03-06
Max Defl.	0.007"	n/a	n/a	56	02-03-06
Span / Depth	4.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/4" x 3-1/2"	3,929 lbs	26.3%	17.5%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	1,550 lbs	9.9%	6.6%	Unspecified

Cautions

Uplift of 571 lbs found at span 1 - Left. (SIMPSON 1-4257 @ B0)

Notes



DWG NO. TAM 4521-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9.mmdl

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

Specifier:

Designer:

Company:

Misc:

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

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

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

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

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

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

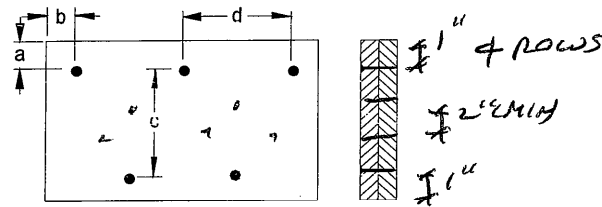
Importance Factor : Normal Part code : Part 9

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.

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

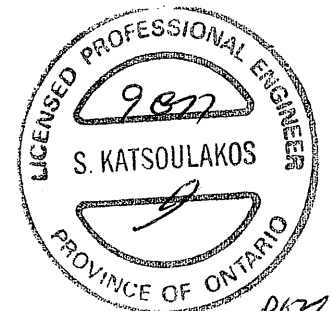
Connection Diagram

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

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

Member has no side loads.

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



DWG NO. TAM 4521-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-9.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B18(i116

Specifier:

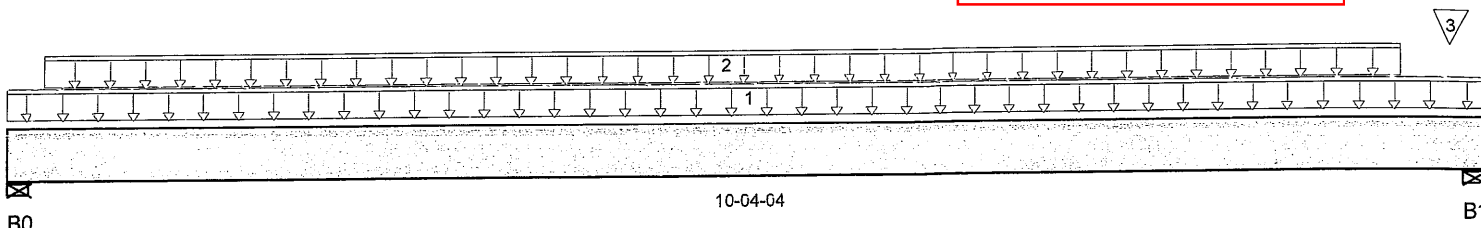
Designer:

Company:

Misc:

Town of Innisfil Certified Model

12/03/2018 8:44:48 AM kgervais



Total Horizontal Product Length = 10-04-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	102 / 0	365 / 0		
B1, 4-3/8"	328 / 0	507 / 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	10-04-04	20	10			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-03-01	09-09-06		60			n/a
3	6(i144)	Conc. Pt. (lbs)	L	10-01-06	10-01-06	223	148			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,286 ft-lbs	8,258 ft-lbs	15.6%	0	05-01-02
End Shear	491 lbs	3,761 lbs	13.1%	0	00-11-14
Total Load Defl.	L/999 (0.082")	n/a	n/a	4	05-01-02
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	05-01-02
Max Defl.	0.082"	n/a	n/a	4	05-01-02
Span / Depth	12.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/8" x 1-3/4"	512 lbs	35.5%	15.5%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	1,126 lbs	27.6%	12.1%	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.

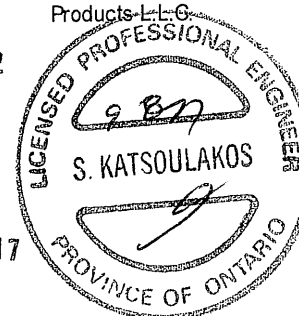
Disclosure

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

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

CONFORMS TO OBC 2012

DWG NO. TAM 452217
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9 sunken.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B19(i112

Specifier:

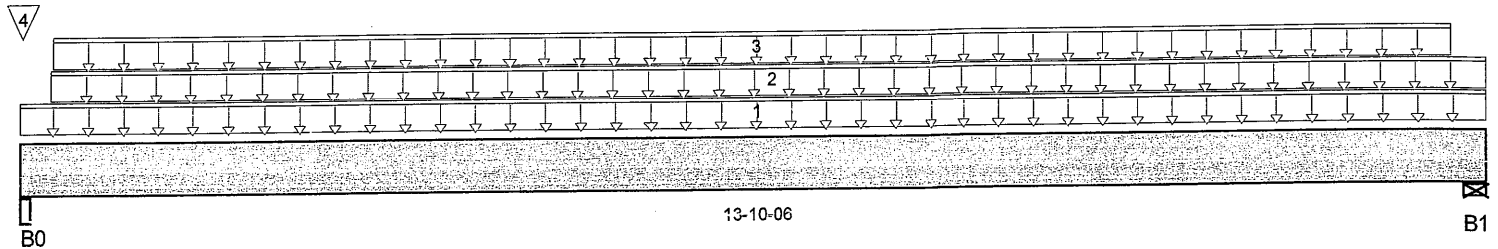
Designer:

Company:

Misc:

Town of Innisfil Certified Model

12/03/2018 8:44:51 AM kgervais



Total Horizontal Product Length = 13-10-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-1/2"	239 / 0	572 / 0		
B1, 2-3/8"	169 / 0	515 / 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	13-10-06	21	10			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-03-06	13-10-06	4	2			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-03-10	13-06-10		60			n/a
4	12(i6943)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	71	56			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,485 ft-lbs	8,258 ft-lbs	30.1%	0	06-11-04
End Shear	701 lbs	3,761 lbs	18.6%	0	01-00-00
Total Load Defl.	L/525 (0.31")	0.679"	45.7%	4	06-11-04
Live Load Defl.	L/999 (0.075")	n/a	n/a	5	06-11-04
Max Defl.	0.31"	n/a	n/a	4	06-11-04
Span / Depth	17.2	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-1/2" x 1-3/4"	800 lbs	52.7%	23.1%	Unspecified
B1 Wall/Plate	2-3/8" x 1-3/4"	720 lbs	49.9%	21.9%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

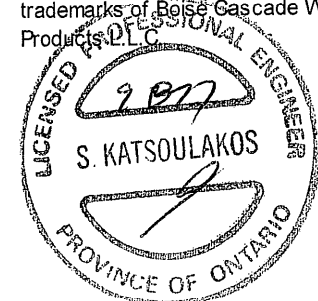
CONFORMS TO OBC 2012

DWG NO. TAM 45223-17
STRUCTURAL
COMPONENT ONLY

Disclosure

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

BC 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 LLC.



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code,:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-9 sunken.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B20 L(i11

Specifier:

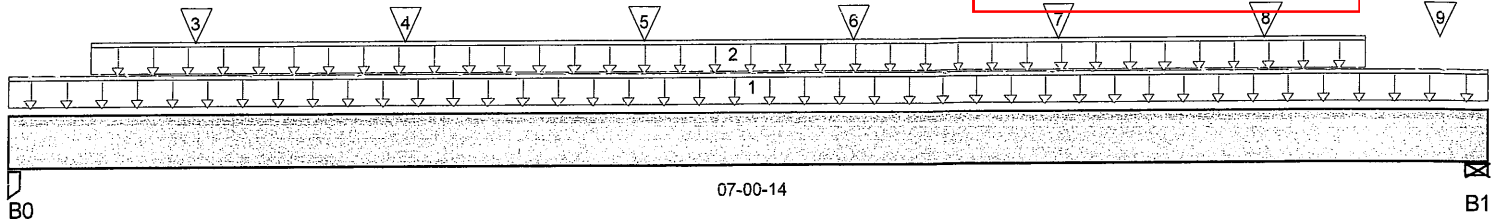
Designer:

Company:

Misc:

Town of Innisfil Certified Model

12/03/2018 8:44:52 AM kgervais



Total Horizontal Product Length = 07-00-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	837 / 0	623 / 0		
B1, 4-3/8"	873 / 0	697 / 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	07-00-14	6	3			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-04-11	06-06-00		60			n/a
3	J1(i11050)	Conc. Pt. (lbs)	L	00-10-10	00-10-10	241	121			n/a
4	J1(i11095)	Conc. Pt. (lbs)	L	01-10-10	01-10-10	289	145			n/a
5	J1(i11095)	Conc. Pt. (lbs)	L	03-00-04	03-00-04	289	145			n/a
6	J1(i11024)	Conc. Pt. (lbs)	L	04-00-04	04-00-04	271	135			n/a
7	J1(i11024)	Conc. Pt. (lbs)	L	05-00-04	05-00-04	271	135			n/a
8	J1(i11072)	Conc. Pt. (lbs)	L	06-00-04	06-00-04	284	142			n/a
9	1(i127)	Conc. Pt. (lbs)	L	06-10-03	06-10-03	25	76			n/a

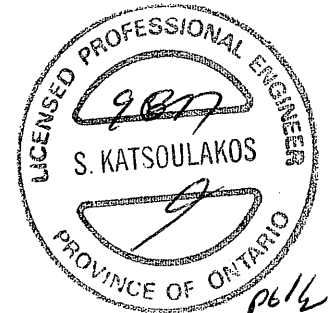
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,552 ft-lbs	12,704 ft-lbs	28%	1	03-04-14
End Shear	1,948 lbs	5,785 lbs	33.7%	1	05-11-00
Total Load Defl.	L/999 (0.079")	n/a	n/a	4	03-06-00
Live Load Defl.	L/999 (0.046")	n/a	n/a	5	03-06-00
Max Defl.	0.079"	n/a	n/a	4	03-06-00
Span / Depth	8.3	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"	2,034 lbs	40.9%	27.2%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	2,180 lbs	53.3%	23.3%	Unspecified

Notes



DWG NO. TAM 45274-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-9 sunken.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B20 L(i

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012**Disclosure**

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

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



DWG NO. TAM 45274.17
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
TAMARACK LUMBER
3269 NORTH SERVICE ROAD
BURLINGTON, ON
CAROL ZHANG
Aug. 2, 2016 14:48

PROJECT
J1-2ND FL.wwb

Design Check Calculation Sheet Nordic Sizer – Canada 6.3.1

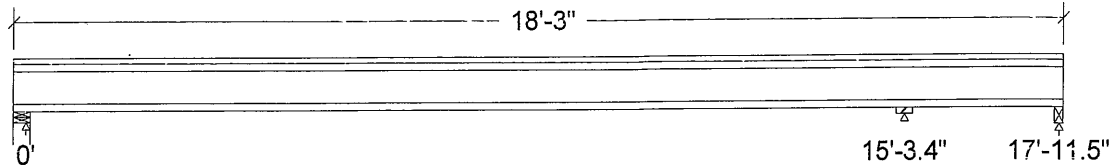
Town of Innisfil Certified Model

12/03/2018 8:45:10 AM kgervais

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area	No		20.00	psf
Load3	Live	Full Area	No		40.00	psf
Self-weight	Dead	Full UDL	No		2.7	plf

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in) :



Unfactored:					
Dead	136		452		-181
Live	240		798		-319
Factored:					
Uplift					709
Total	530		1761		
Bearing:					
Resistance					
Joist	1884		3804		1854
Support	6188		-		2690
Anal/Des					
Joist	0.28		0.46		0.00
Support	0.09		-		0.00
Load case	#2		#2		#1
Length	3-1/2		3-1/2		1-3/4
Min req'd	1-3/4		3-1/2		1-3/4
Stiffener	No		No		No
KB support	1.00		-		1.00
fcp sup	769		-		769
Kzcp sup	1.15		-		1.00

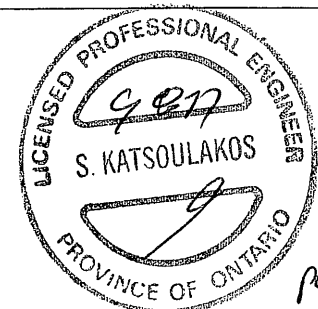
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Non-wood; 3 - Lumber Beam, No.1/No.2;

Total length: 18'-3.0"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.



DWG NO. TAM 45225-17
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 942	Vr = 1895	lbs	Vf/Vr = 0.50
Moment (+)	Mf = 1593	Mr = 4824	lbs-ft	Mf/Mr = 0.33
Moment (-)	Mf = 2206	Mr = 4824	lbs-ft	Mf/Mr = 0.46
Perm. Defl'n	0.06 = <L/999	0.51 = L/360	in	0.12
Live Defl'n	0.11 = <L/999	0.38 = L/480	in	0.28
Total Defl'n	0.17 = <L/999	0.76 = L/240	in	0.22
Bare Defl'n	0.12 = <L/999	0.51 = L/360	in	0.24
Vibration	Lmax = 15'-3	Lv = 17'-8	ft	
Defl'n	= 0.027	= 0.043	in	0.64

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L
 Moment (+) : LC #2 = 1.25D + 1.5L
 Moment (-) : LC #2 = 1.25D + 1.5L
 Deflection: LC #1 = 1.0D (permanent)
 LC #2 = 1.0D + 1.0L (live)
 LC #2 = 1.0D + 1.0L (total)
 LC #2 = 1.0D + 1.0L (bare joist)
 Bearing : Support 1 - LC #2 = 1.25D + 1.5L
 Support 2 - LC #2 = 1.25D + 1.5L
 Support 3 - LC #1 = 1.4D

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake
 L=live(use,occupancy) Ls=live(storage,equipment) f=fire

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

CALCULATIONS:

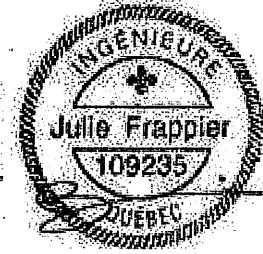
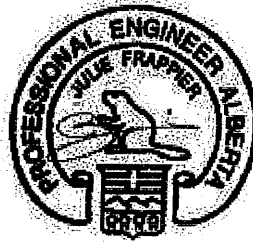
Deflection: EIcomp = 258e06 lb-in² K= 4.94e06 lbs
 "Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC Part 4) and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1. **CONFORMS TO OBC 2012**
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. TAM 45235.17 -
 STRUCTURAL
 COMPONENT ONLY



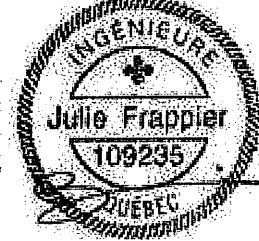
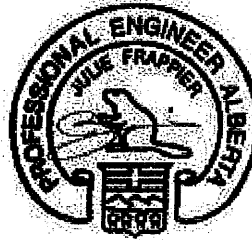
Maximum Floor Spans

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

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

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



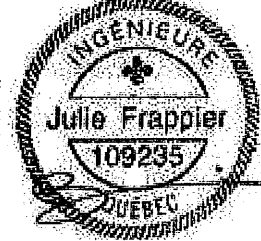
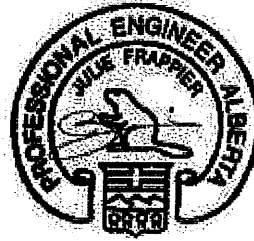
Maximum Floor Spans

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

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

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

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



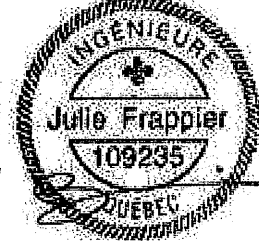
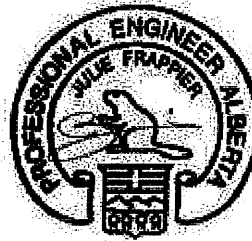
Maximum Floor Spans

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

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

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

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



Maximum Floor Spans

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

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

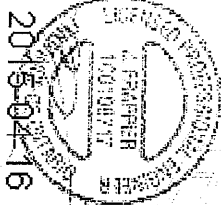
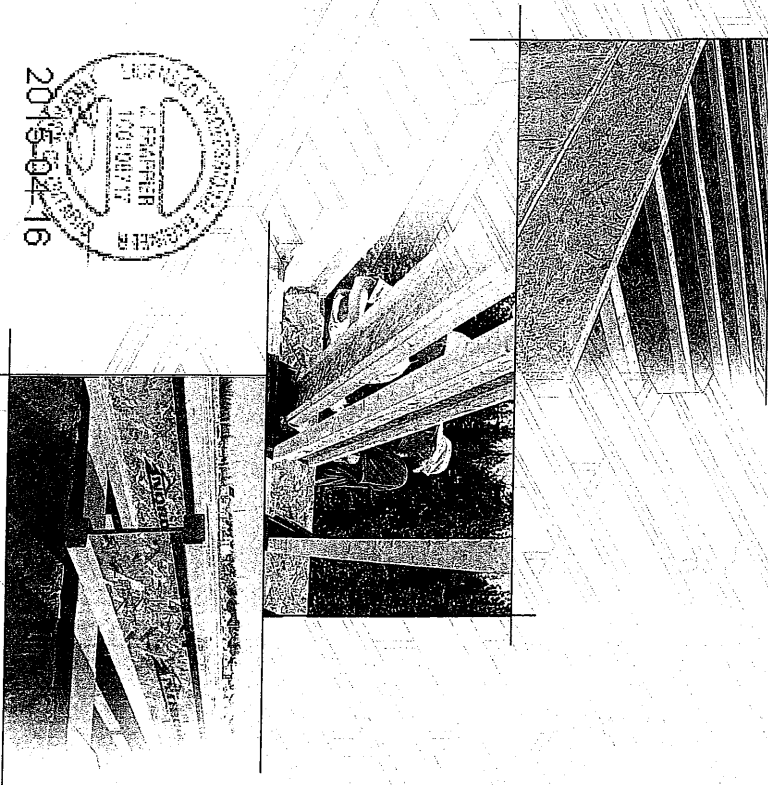
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60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

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



1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.

■ Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.

■ Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.

3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.

4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.

5. Never install a damaged I-joist.

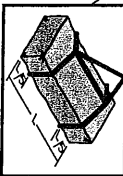
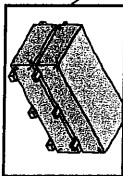
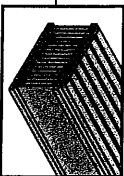
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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



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

STORAGE AND HANDLING GUIDELINES

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



The mark of responsible forestry

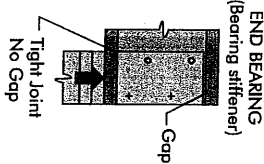
1. Maximum **clear** spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1,50L + 1,25D. The serviceability limit states include the consideration for floor 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 CGS8-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2	24"	12"	16"	19.2"	24"
20	10	5.1	4.2	3.9	3.5	6.3	5.2	4.1	3.7
20	11	6.1	5.2	4.8	4.9	7.5	6.5	5.1	4.5
20	12	6.3	5.4	5.4	4.3	7.7	6.7	5.0	4.5
20	13	7.1	6.1	6.5	5.7	8.7	7.4	6.9	5.6
20	14	7.3	6.3	5.8	5.5	8.1	7.6	6.1	5.0
20	15	6.1	6.0	5.5	5.5	8.4	7.3	6.8	5.7
20	16	18.1	17.0	16.5	16.5	20.0	18.6	17.9	17.7
20	17	18.4	17.3	16.7	16.9	20.3	18.9	18.0	18.1
20	18	18.4	18.0	17.4	17.5	21.6	19.1	19.0	19.1
20	19	18.9	18.3	17.6	17.7	21.9	20.2	19.3	19.4
20	20	20.2	18.7	17.0	17.1	22.9	20.7	19.8	19.9
20	21	20.4	18.9	17.1	17.0	22.5	20.9	19.1	19.1
20	22	20.1	18.7	17.1	17.0	22.2	20.9	19.1	19.1
20	23	20.1	18.7	17.1	17.0	22.2	20.6	19.8	19.4
20	24	20.5	18.1	17.1	18.2	22.7	20.1	20.0	20.1
20	25	21.7	20.6	18.1	19.2	23.1	22.1	21.1	21.2
20	26	21.1	20.3	19.4	19.5	24.3	22.5	21.5	21.6
20	27	22.5	20.6	19.6	19.3	24.9	22.1	21.0	21.0
20	28	22.7	20.1	19.1	20.0	25.0	23.1	22.0	22.2
20	29	22.5	20.8	19.9	19.1	24.7	22.9	21.9	21.1
20	30	22.5	21.9	20.9	20.1	26.0	24.0	22.1	23.0
20	31	24.0	22.1	21.1	21.2	26.5	24.5	23.1	23.4
20	32	24.5	22.6	21.5	21.6	26.1	24.1	23.9	23.9
20	33	24.8	22.9	21.9	21.1	27.3	25.2	24.0	24.1

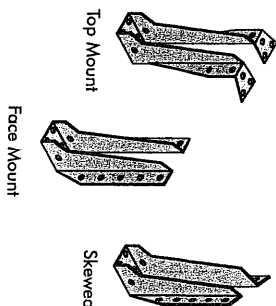
RECOMMENDATIONS:

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

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



1. Hangers should 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.

[illegible]

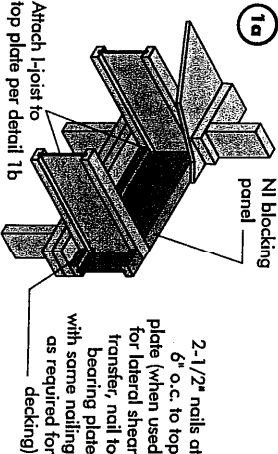
Charniers Chibougamou Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from stage to the finished product, reflects our commitment to quality.

2015-04-16

INSTALLING NORDIC I-JOISTS

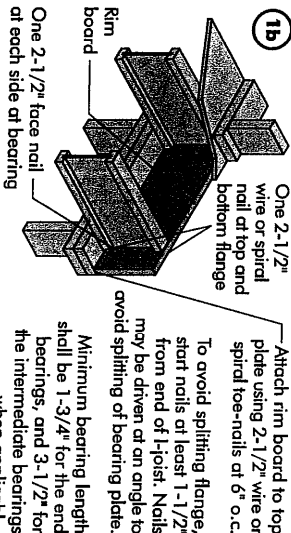
1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should **never** be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of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

2015-04-16



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

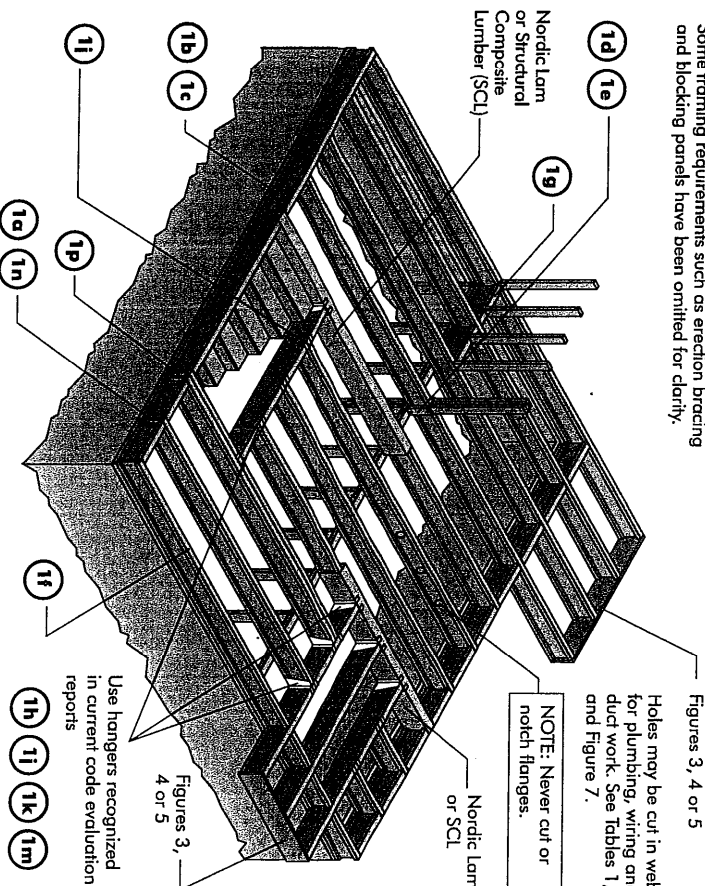


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

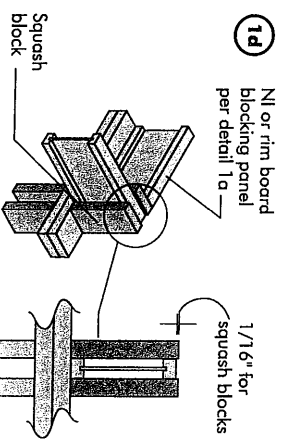
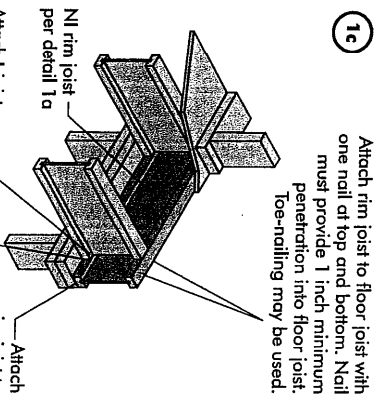
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

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

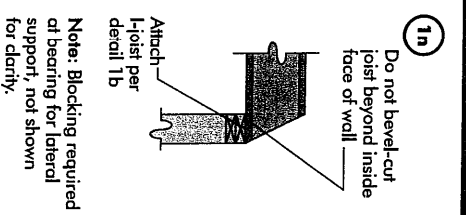
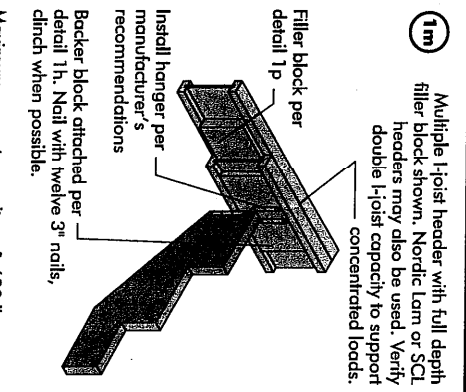
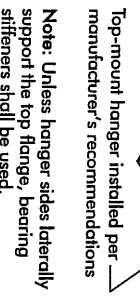
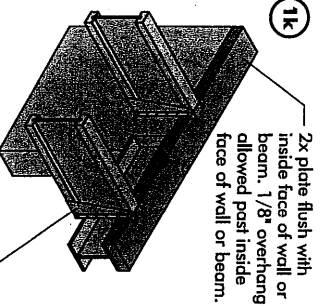
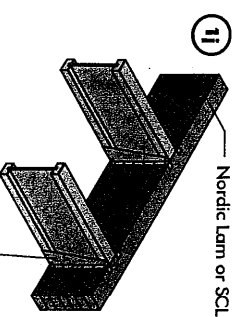
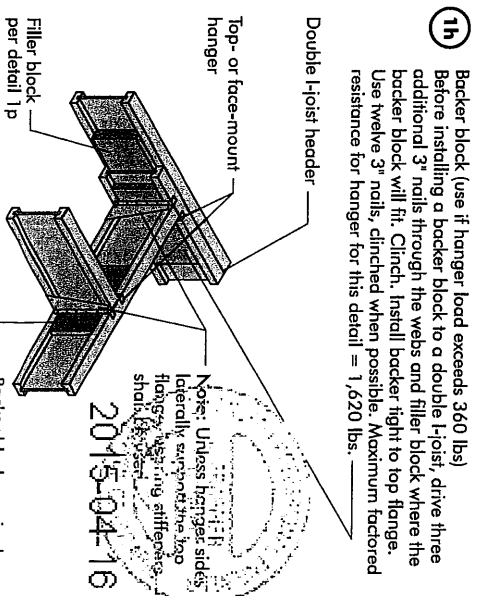
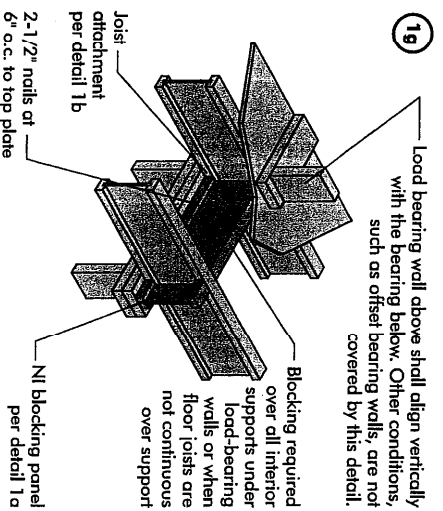
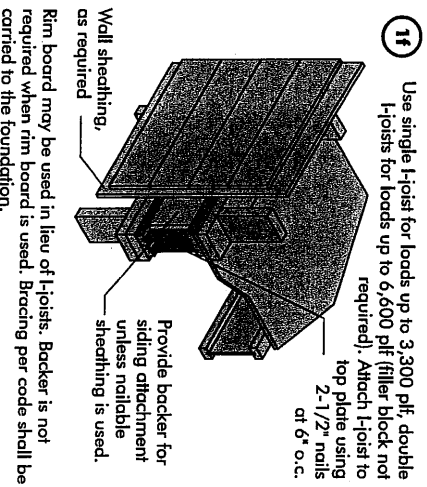
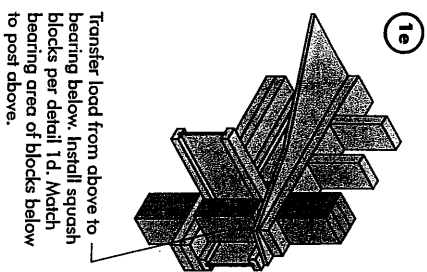


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



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

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



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

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 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".

Top- or face-mount hanger installed per manufacturer's recommendations

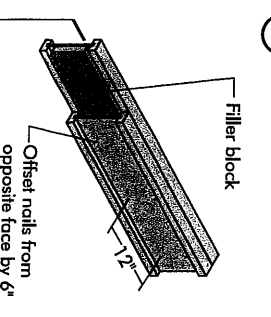
Top-mount hanger installed per manufacturer's recommendations

Filler block per detail 1p

Attach I-joist per detail 1b

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

1p



Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.

2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.

3. Filler block is required between joists for full length of span.

4. Nail joists together with two rows of 3" nails at 12 inches o.c. (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.

1q

Offset nails from opposite face by 6"

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

Filler block

Offset nails from opposite face by 6"

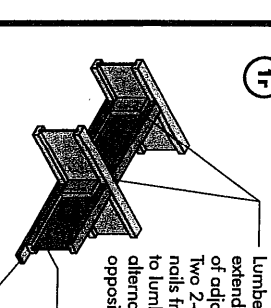
1/8" to 1/4" gap between top flange and filler block

Filler block

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

1r

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

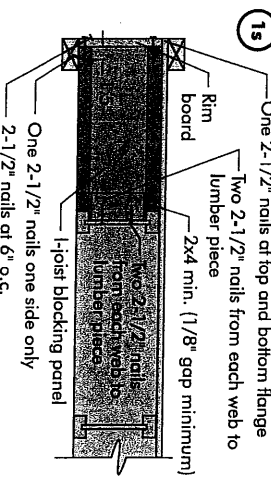


Optional: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

NI blocking panel

NI blocking panel

1s



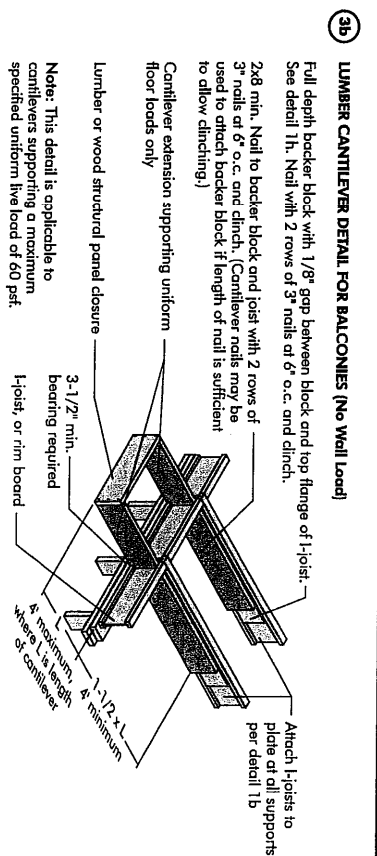
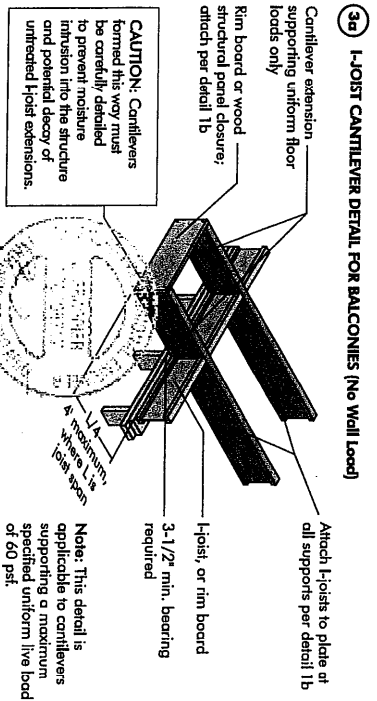
Notes:

- 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.

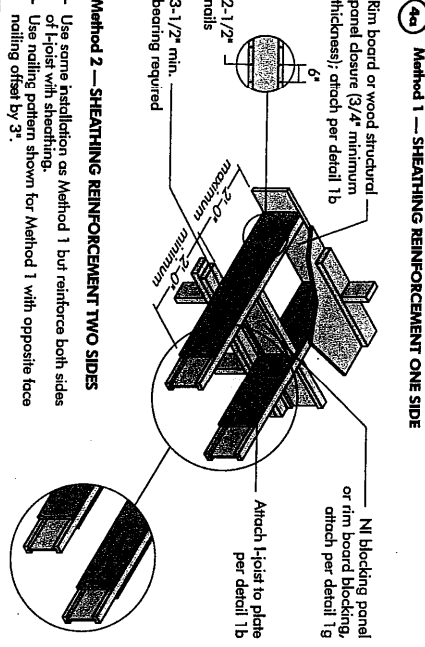
- All nails are common spiral in this detail.

2015-04-16

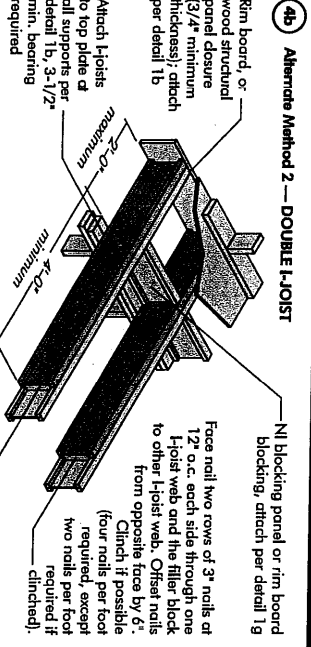
CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)



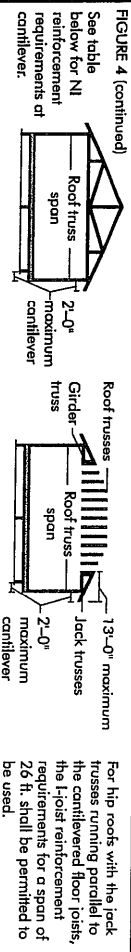
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)



Notes: 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.



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.



JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)	LL = 40 psf, DL = 15 psf JOIST SPACING (in.)	LL = 50 psf, DL = 15 psf JOIST SPACING (in.)			
12	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	19.2	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	24	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	19.2	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	24	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
14	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	19.2	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	24	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	19.2	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	24	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
16	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	19.2	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	24	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	19.2	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	24	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	12	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		
	16	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ	ZZZZZZZZZZ		

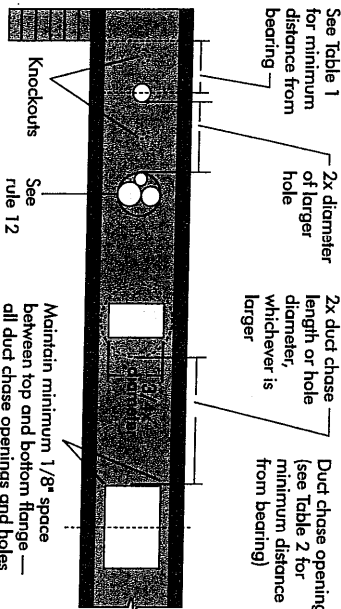
1. N = No reinforcement required.
 2. N = NI reinforced with 3/4" wood structural panel on one side only.
 3. NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
 4. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath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

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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



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

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

Knockouts are prescored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut 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
10	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
12	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
14	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
16	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
18	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
20	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
22	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
24	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
26	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
28	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
30	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
32	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
34	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
36	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
38	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
40	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
42	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
44	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
46	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
48	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
50	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
52	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
54	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
56	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
58	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
60	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
62	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
64	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
66	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
68	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
70	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
72	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
74	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
76	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
78	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
80	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
82	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
84	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
86	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
88	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
90	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
92	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
94	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
96	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
98	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8
100	2	0-7/8	1-5/8	2-3/8	3-1/8	4-1/8	5-1/8	6-1/8	7-1/8	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	14-1/8

Above table control beam L-1-L-15, 7.5 x 15

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

OPTIONAL:

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum, p. 26, Joists), the minimum distance from the centreline of the hole to the face of any support (L) as given above may be reduced as follows:

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

Where:

D_{reduced} = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span application (ft).
 L_{actual} = The actual measured span distance between the inside faces of supports (ft).
 L = Span Adjustment Factor given in this table.
 D = The minimum distance from the inside face of any support to centre of hole from this table.
 If L_{actual} is greater than 1, use 1 in the above calculation for L_{actual} .

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

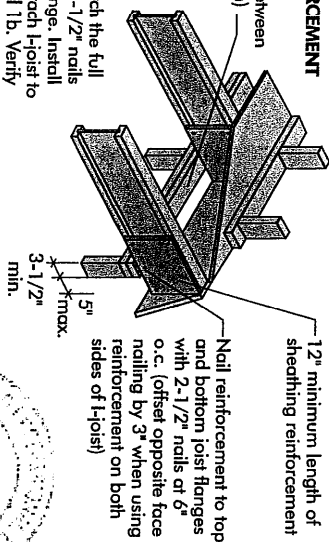
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in.)											
		Due to chaise length (in.)											
		8	10	12	14	16	18	20	22	24	26	28	30
8-1/2	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
10	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
12	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
14	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
16	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
18	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
20	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
22	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
24	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
26	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
28	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
30	2-10	4-1/4	4-1/2	4-3/4	5-1/4	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8
	2-11	5-1/4	5-1/2	5-3/4	6-1/4	6-5/8	7-1/8	7-5/8	8-1/8	8-5/8	9-1/8	9-5/8	10-1/8
	2-12	5-5/8	5-3/4	5-10	6-3/4	6-11/8	7-1/4	7-5/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4
	2-13	5-7/8	5-5/4	5-11/8	6-5/8	6-10	7-3/8	7-7/8	8-1/4	8-5/8	9-1/4	9-5/8	10-1/4

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

5a SHEATHING REINFORCEMENT

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

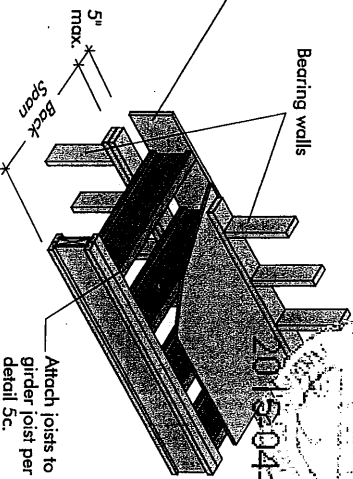
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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



5b SET-BACK DETAIL

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

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



5c SET-BACK CONNECTION

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

Alternate for opposite side.

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

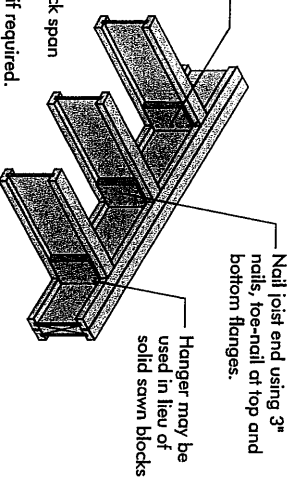
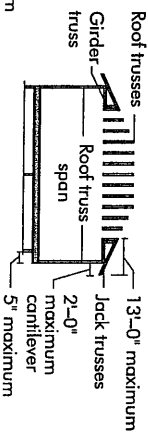
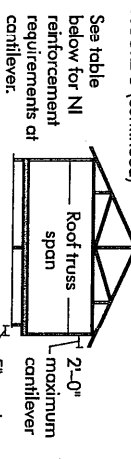


FIGURE 5 (continued)



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				ROOF LOADING (UNFACTORED)			
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)				LL = 40 psf, DL = 15 psf JOIST SPACING (in.)			
9-1/2"	26	12	16	19.2	24	12	16	19.2	24
	28	1	X	X	X	2	X	X	X
	30	1	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X
11-1/2"	26	2	X	X	X	2	X	X	X
	28	2	X	X	X	2	X	X	X
	30	2	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X
14"	26	2	X	X	X	2	X	X	X
	28	2	X	X	X	2	X	X	X
	30	2	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X
16"	26	2	X	X	X	2	X	X	X
	28	2	X	X	X	2	X	X	X
	30	2	X	X	X	2	X	X	X
	32	2	X	X	X	2	X	X	X
	34	2	X	X	X	2	X	X	X

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

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

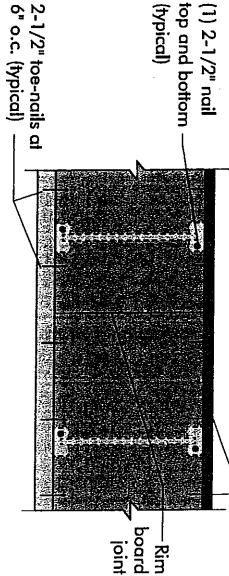
RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim board Joint Between Floor Joists

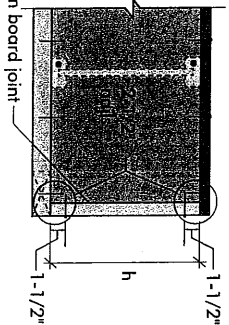
2-1/2" nails at 6" o.c. (typical)

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

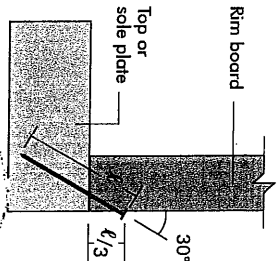


Rim board Joint at Corner

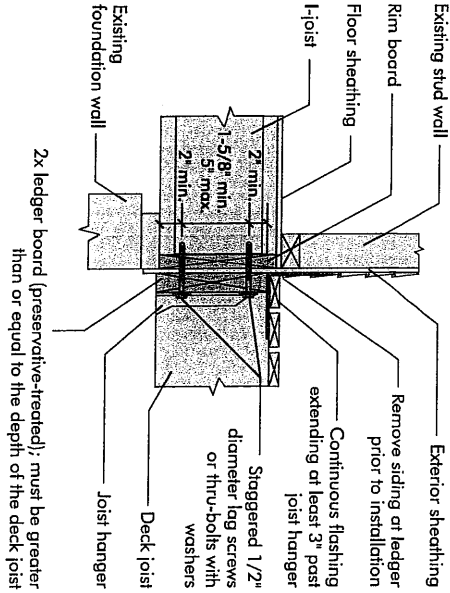
1-1/2" h



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

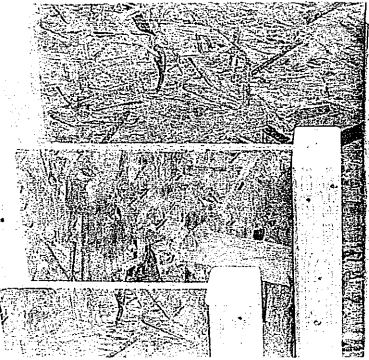


2015-04-16

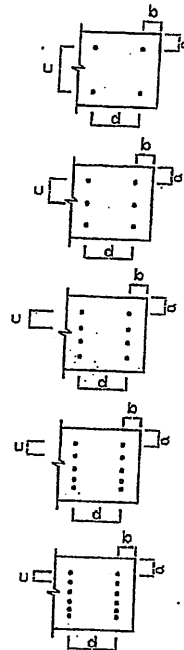
PRODUCT WARRANTY

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

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

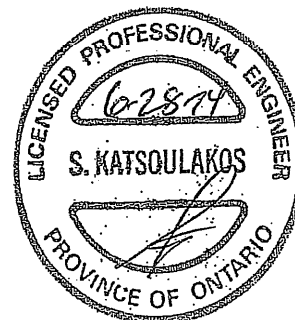


LVL HEADER AND CONVENTIONAL LUMBER NAILING DETAILS		
DETAIL NUMBER	NUMBER OF ROWS	SPACING (INCHES o/c) "d"
A	2	12
B	2	8
C	2	6
D	2	4
1A	3	12
1B	3	8
1C	3	6
1D	3	4
2A	4	12
2B	4	8
2C	4	6
2D	4	4
3A	5	12
3B	5	8
3C	5	6
3D	5	4
4A	6	12
4B	6	8
4C	6	6
4D	6	4



NOTES:

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



DWG NO TAMN1001.14

STRUCTURAL

COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING

DETAIL NO X SEE

DWG #TAMN1001-14