

FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-6-15G

ELEVATION: A,B

LOT:
CITY: INNISFIL, ON

SALESMAN: MARIO
DESIGNER: CZ
REVISION: -

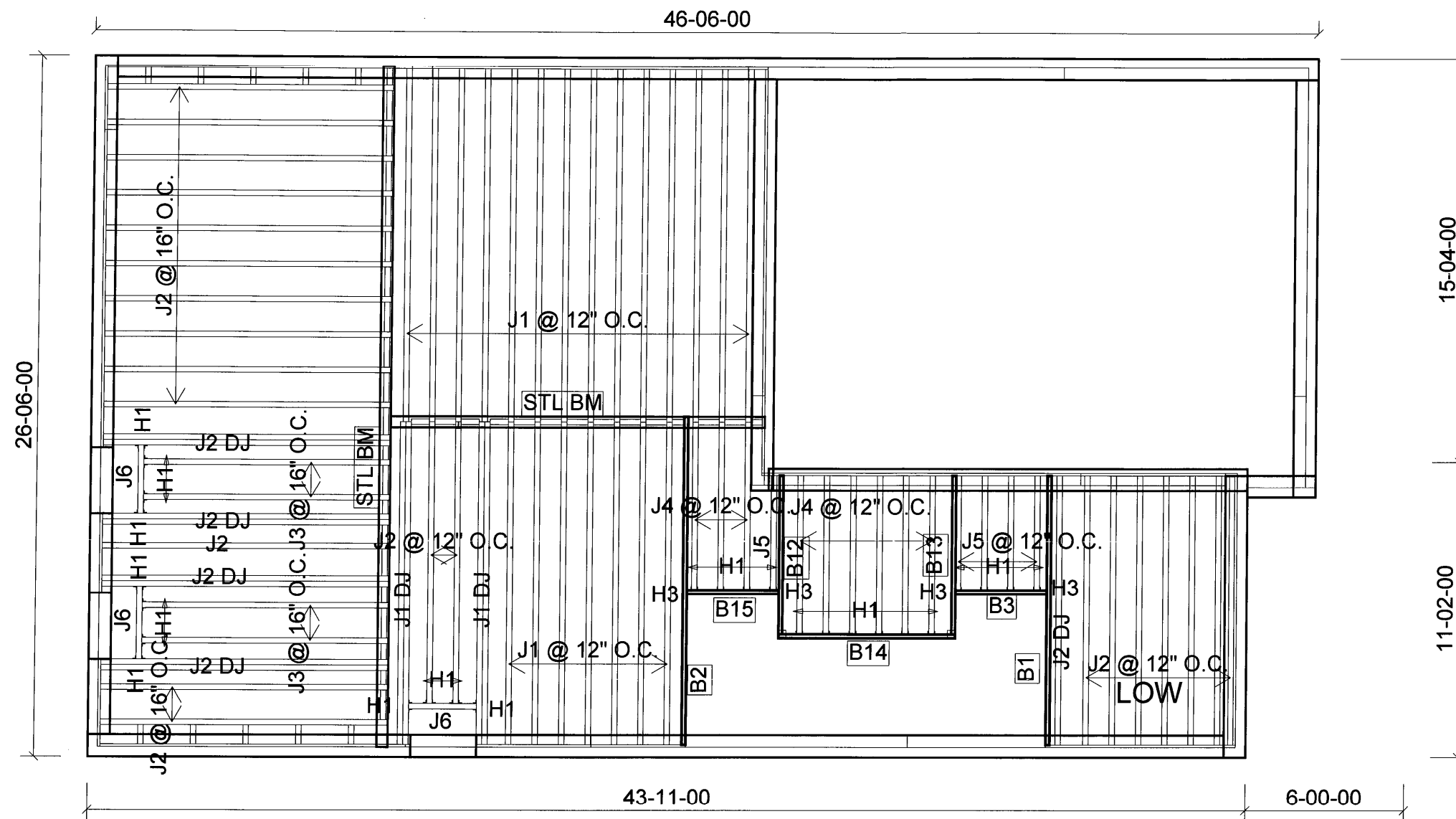
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 12/09/2017

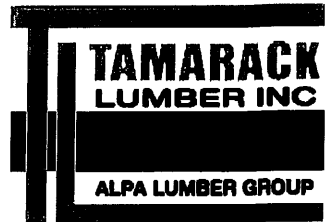
1st FLOOR
STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	21
J1 DJ	14-00-00	9 1/2" NI-40x	2	4
J2	12-00-00	9 1/2" NI-40x	1	22
J2 DJ	12-00-00	9 1/2" NI-40x	2	10
J3	10-00-00	9 1/2" NI-40x	1	4
J4	8-00-00	9 1/2" NI-40x	1	9
J5	6-00-00	9 1/2" NI-40x	1	5
J6	4-00-00	9 1/2" NI-40x	1	3
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
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FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-6-15G

ELEVATION: A,B

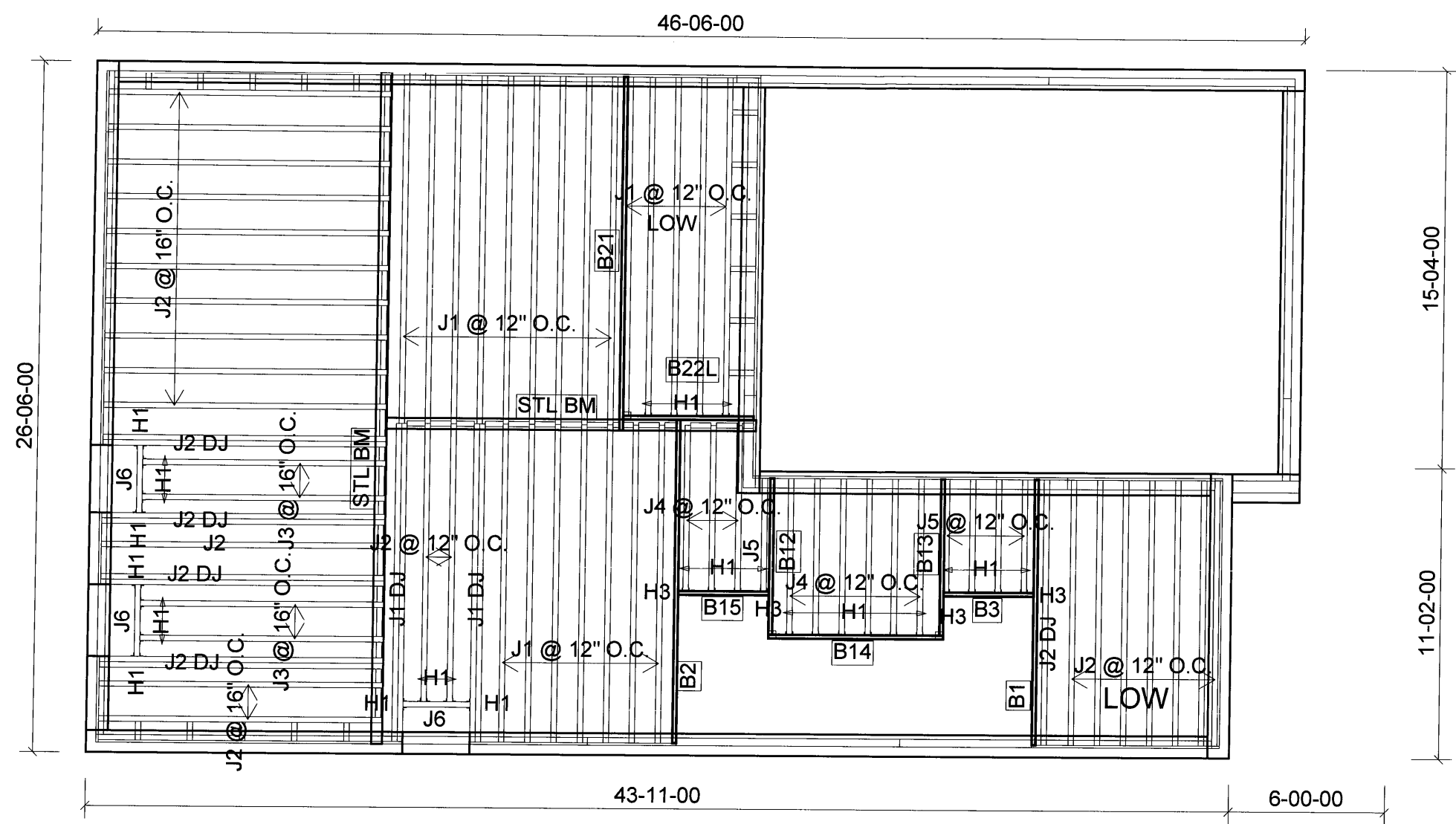
LOT:
CITY: INNISFIL, ON

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
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MULTIPLE SQUASH BLOCKS REQ'D
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LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

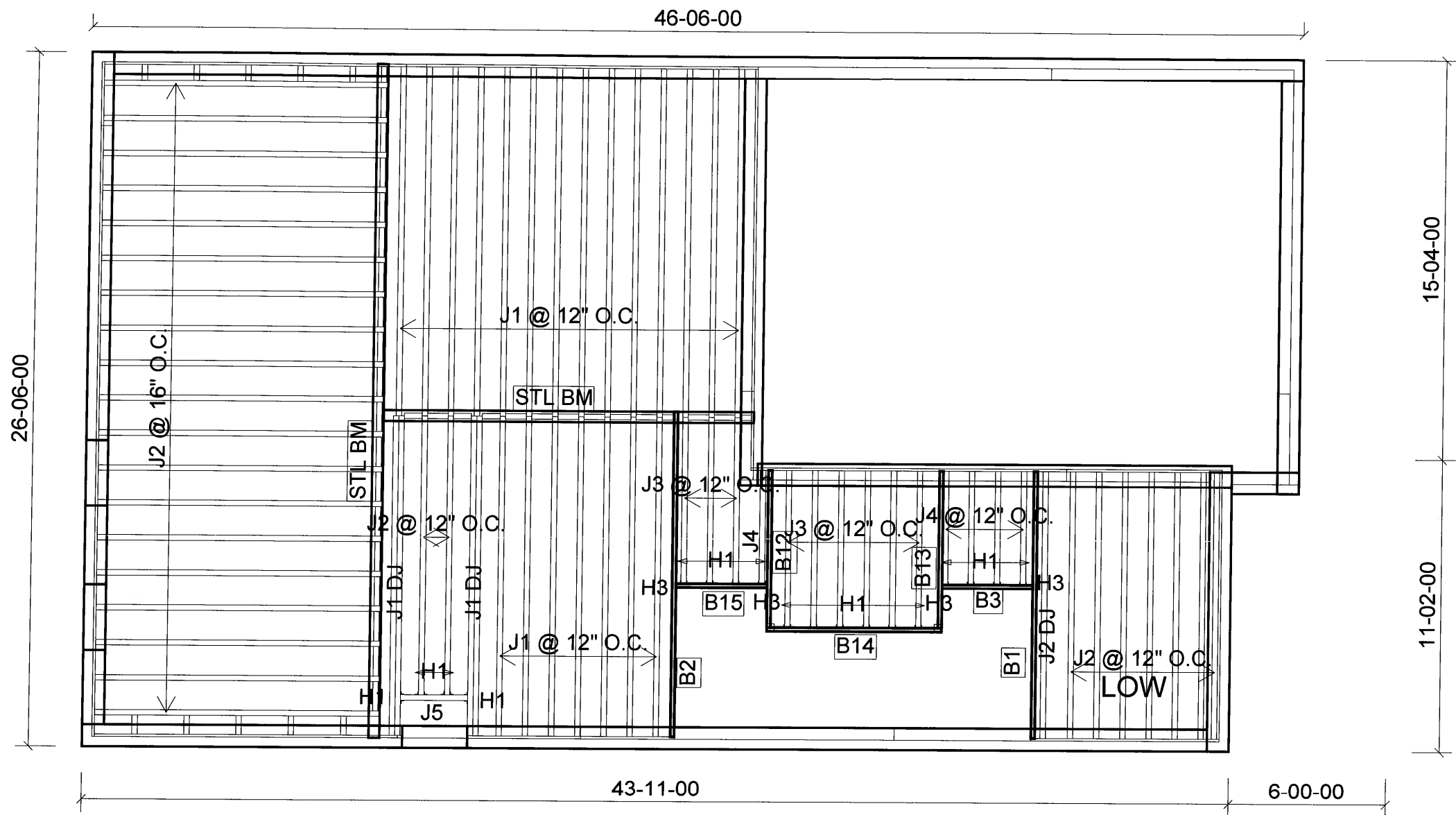


Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	21
J1 DJ	14-00-00	9 1/2" NI-40x	2	4
J2	12-00-00	9 1/2" NI-40x	1	22
J2 DJ	12-00-00	9 1/2" NI-40x	2	10
J3	10-00-00	9 1/2" NI-40x	1	4
J4	8-00-00	9 1/2" NI-40x	1	9
J5	6-00-00	9 1/2" NI-40x	1	5
J6	4-00-00	9 1/2" NI-40x	1	3
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B21	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B22L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
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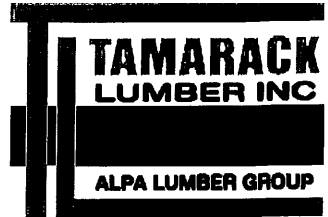
1st FLOOR
SUNKEN



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	21
J1 DJ	14-00-00	9 1/2" NI-40x	2	4
J2	12-00-00	9 1/2" NI-40x	1	28
J2 DJ	12-00-00	9 1/2" NI-40x	2	2
J3	8-00-00	9 1/2" NI-40x	1	9
J4	6-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	1
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
03/01/2018 9:51:25 AM kgervais



FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-6-15G

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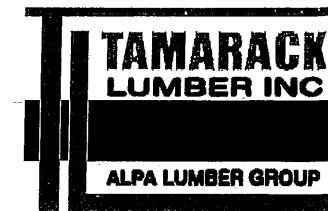
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 12/09/2017

1st FLOOR

WOD



FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-6-15G

ELEVATION: A

LOT:
CITY: INNISFIL, ON

SALESMAN: MARIO
DESIGNER: CZ
REVISION: -

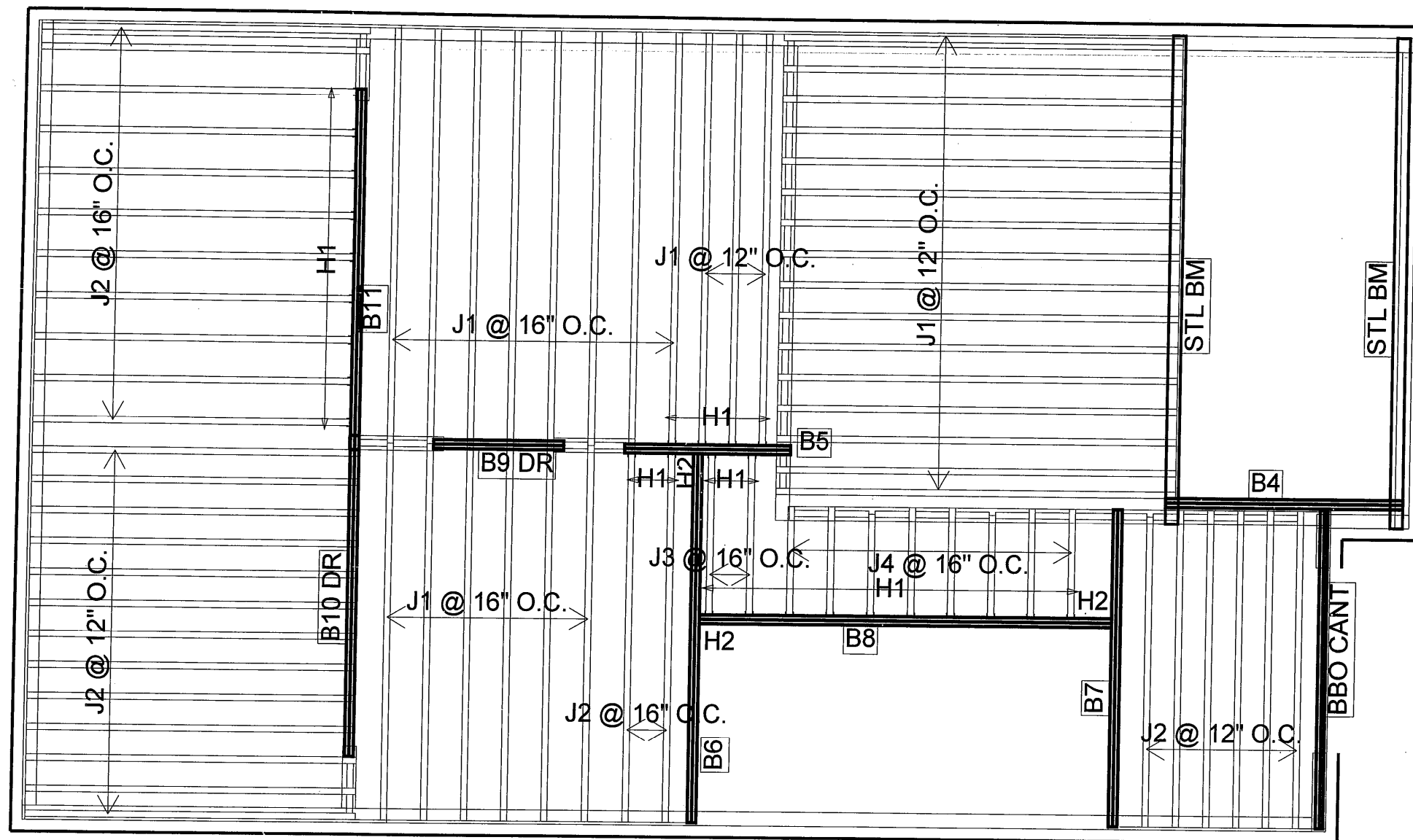
NOTES:
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AS PER O.B.C. 9.30.6.
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2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
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LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 06/09/2017

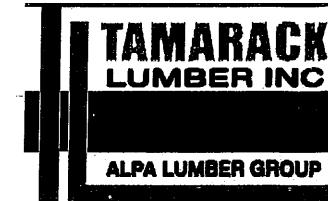
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	33
J2	12-00-00	9 1/2" NI-40x	1	32
J3	6-00-00	9 1/2" NI-40x	1	2
J4	4-00-00	9 1/2" NI-40x	1	8
B8	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
27	H1	IUS2.56/9.5
3	H2	HGUS410

Town of Innisfil Certified Model
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FROM PLAN DATED: NOV. 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA

MODEL: S32-6-15G

ELEVATION: B

LOT:
CITY: INNISFIL, ON

SALESMAN: MARIO
DESIGNER: CZ
REVISION: -

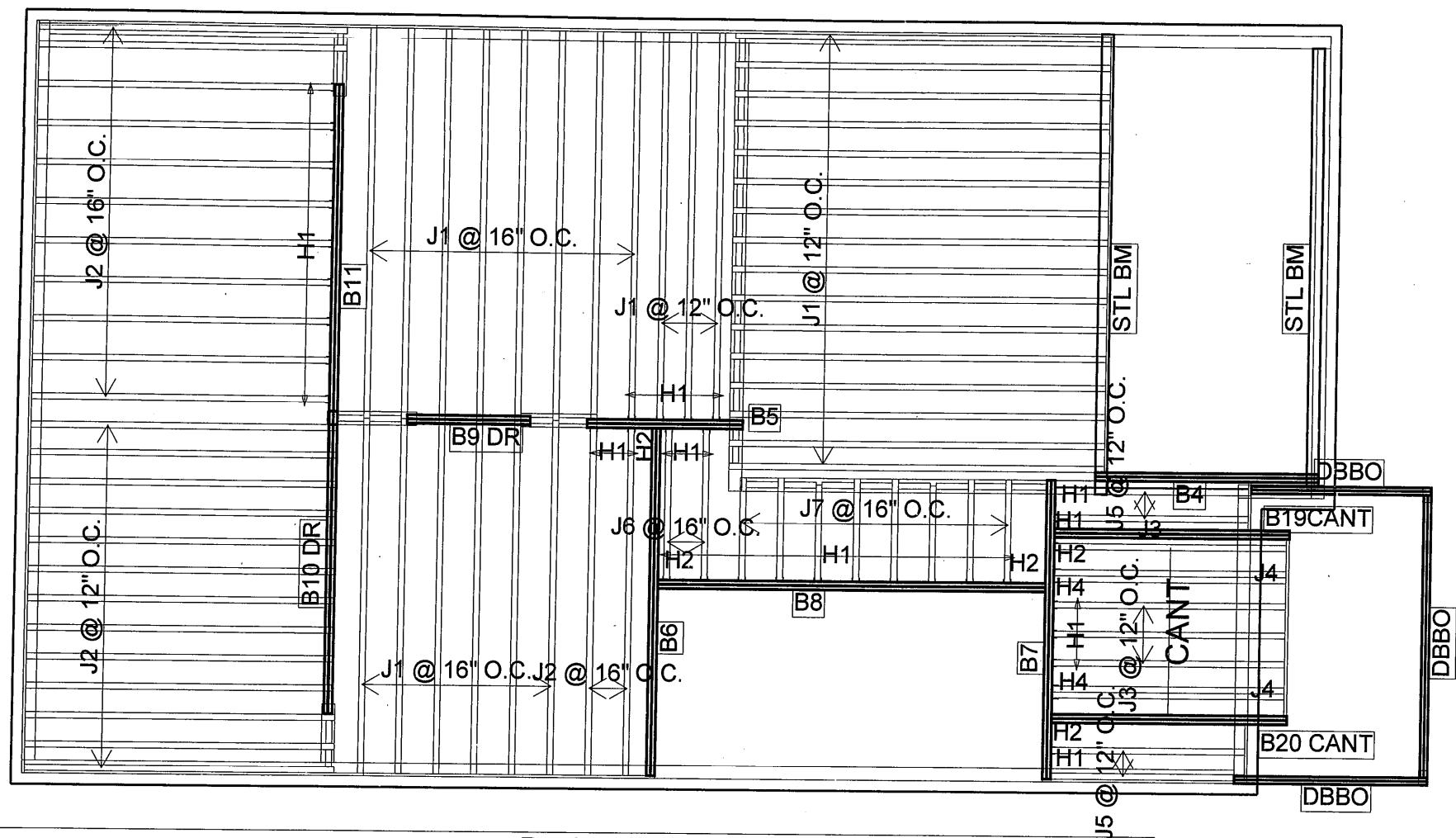
NOTES:
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AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
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REFER TO THE NORDIC
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LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 29/03/2017

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	33
J2	12-00-00	9 1/2" NI-40x	1	26
J3	10-00-00	9 1/2" NI-40x	1	4
J4	10-00-00	9 1/2" NI-40x	2	4
J5	8-00-00	9 1/2" NI-40x	1	4
J6	6-00-00	9 1/2" NI-40x	1	2
J7	4-00-00	9 1/2" NI-40x	1	8
B8	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B6	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19CANT	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B20 CANT	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
33	H1	IUS2.56/9.5
5	H2	HGUS410
2	H4	HU310-2

Town of Innisfil Certified Model
03/01/2018 9:51:30 AM kgervais

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i1824

Specifier:

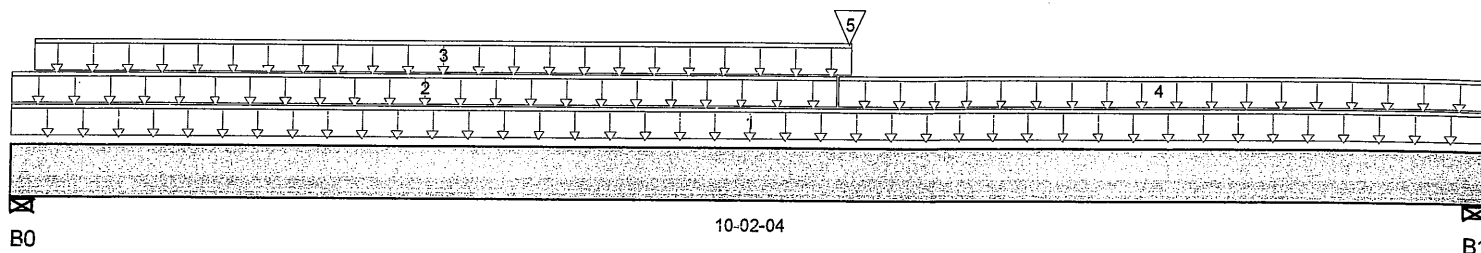
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:51:35 AM kgervais



Total Horizontal Product Length = 10-02-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	280 / 0	407 / 0		
B1, 4-3/8"	384 / 0	319 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-02-04	6	3			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-08-06	3				n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-01-13	05-09-09		60			n/a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-08-06	10-02-04	9	4			n/a
5	B3(i1823)	Conc. Pt. (lbs)	L	05-09-04	05-09-04	550	282			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,652 ft-lbs	12,704 ft-lbs	28.7%	1	05-09-04
End Shear	932 lbs	5,785 lbs	16.1%	1	09-00-06
Total Load Defl.	L/754 (0.155")	0.488"	31.8%	4	05-01-05
Live Load Defl.	L/999 (0.08")	n/a	n/a	5	05-03-01
Max Defl.	0.155"	n/a	n/a	4	05-01-05
Span / Depth	12.3	n/a	n/a		00-00-00

Bearing Supports

B0	Wall/Plate	2-3/8" x 1-3/4"	930 lbs	52.4%	18.3%	Unspecified
B1	Wall/Plate	4-3/8" x 1-3/4"	975 lbs	29.8%	10.4%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO DBC 2012



DWG NO. TAM 4544517
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i18;

Specifier:

Designer:

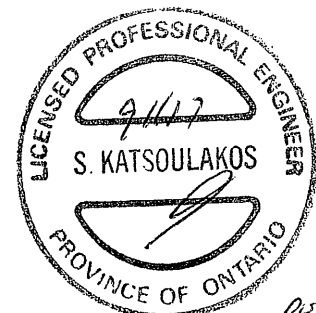
Company:

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 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 4544517
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i1827

Specifier:

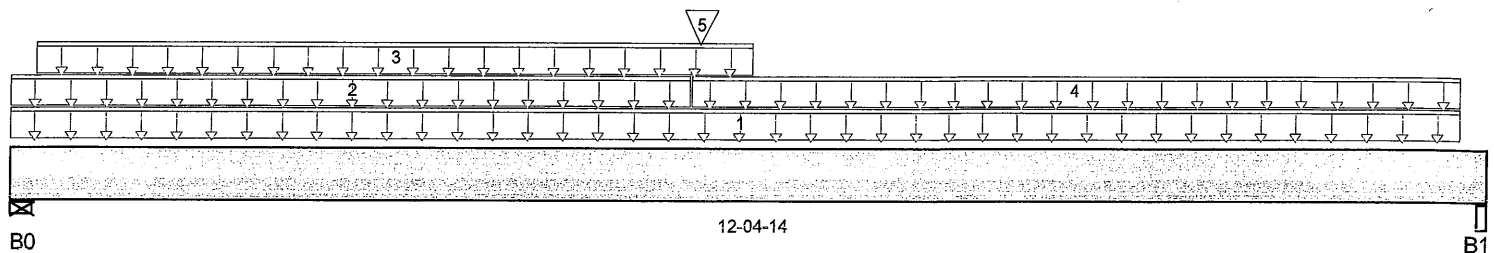
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:51:40 AM kgervais



Total Horizontal Product Length = 12-04-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/8"	437 / 0	520 / 0		
B1, 5"	416 / 0	336 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-02-06	13	6			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-08-06	3				n/a
3 User Load	Unf. Lin. (lb/ft)	L	00-02-08	06-02-09		60			n/a
4 FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-08-06	12-02-06	7	4			n/a
5 B15(i1859)	Conc. Pt. (lbs)	L	05-09-04	05-09-04	634	327			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,545 ft-lbs	12,704 ft-lbs	43.6%	1	05-09-04
End Shear	1,267 lbs	5,785 lbs	21.9%	1	00-11-14
Total Load Defl.	L/412 (0.347")	0.596"	58.3%	4	05-11-15
Live Load Defl.	L/766 (0.187")	0.397"	47%	5	05-11-15
Max Defl.	0.347"	n/a	n/a	4	05-11-15
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 Wall/Plate	2-3/8" x 1-3/4"	1,305 lbs	73.5%	25.7%	Unspecified
B1 Beam	5" x 1-3/4"	1,045 lbs	28%	9.8%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

Importance Factor : Normal Part code : Part 9

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



DWG NO. TAM 4544617
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i18;

Specifier:

Designer:

Company:

Misc:

Disclosure

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DWG NO. TAM 45446 17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i1823

Specifier:

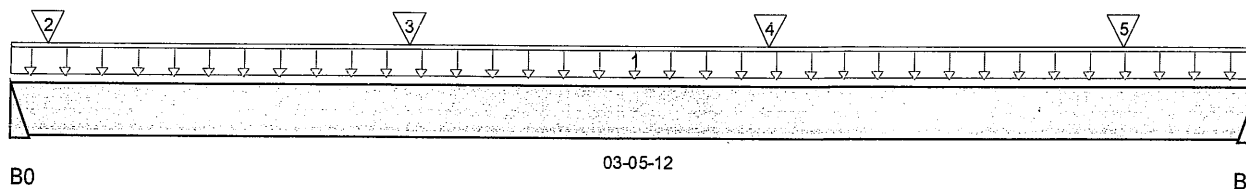
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:51:44 AM kgervais



Total Horizontal Product Length = 03-05-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	568 / 0	292 / 0		
B1	551 / 0	283 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-05-09	240	120			n/a
2 J7(i1845)	Conc. Pt. (lbs)	L	00-01-04	00-01-04	51	26			n/a
3 J7(i1849)	Conc. Pt. (lbs)	L	01-01-04	01-01-04	87	43			n/a
4 J7(i1812)	Conc. Pt. (lbs)	L	02-01-04	02-01-04	87	43			n/a
5 J7(i1843)	Conc. Pt. (lbs)	L	03-01-04	03-01-04	63	31			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	918 ft-lbs	12,704 ft-lbs	7.2%	1	01-09-08
End Shear	614 lbs	5,785 lbs	10.6%	1	00-11-08
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	01-08-12
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-08-12
Max Defl.	0.005"	n/a	n/a	4	01-08-12
Span / Depth	4.1	n/a	n/a		00-00-00

Disclosure

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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,217 lbs	n/a	28.5%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,180 lbs	n/a	27.6%	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 CSA086.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO OBC 2012

DWG NO. YAM 45447-17
STRUCTURAL
COMPONENT ONLY

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Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B4(i1890)

Specifier:

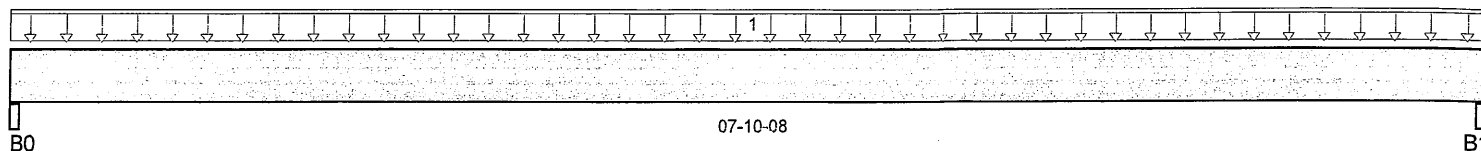
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:52:59 AM kgervais



Total Horizontal Product Length = 07-10-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5"	632 / 0	1,003 / 0	2,170 / 0	
B1, 5"	630 / 0	1,003 / 0	2,170 / 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	07-10-08	160	245	551		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,863 ft-lbs	25,408 ft-lbs	30.9%	13	03-11-04
End Shear	3,342 lbs	11,571 lbs	28.9%	13	01-02-08
Total Load Defl.	L/999 (0.105")	n/a	n/a	45	03-11-04
Live Load Defl.	L/999 (0.075")	n/a	n/a	61	03-11-04
Max Defl.	0.105"	n/a	n/a	45	03-11-04
Span / Depth	9.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5" x 3-1/2"	4,824 lbs	64.5%	22.6%	Unspecified
B1 Beam	5" x 3-1/2"	4,823 lbs	64.5%	22.6%	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 CSA086.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DWG NO. TAM4544B-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B4(i18c

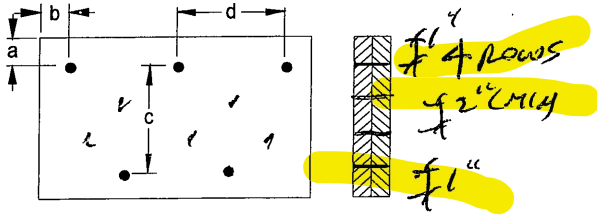
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

b minimum = 3" d = 6"

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

Member has no side loads.

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 4544B-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B5(i1934)

Specifier:

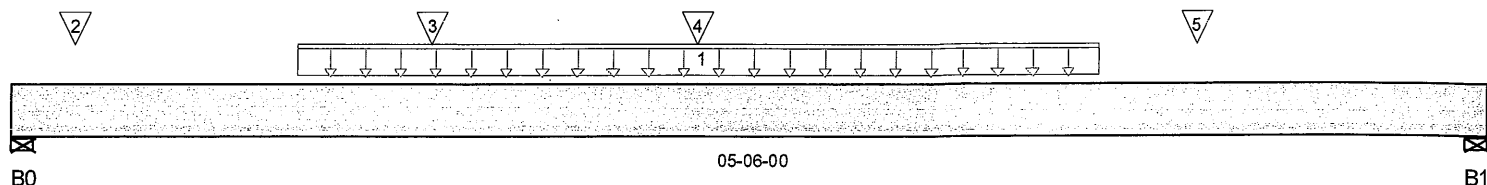
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:53:13 AM kgervais



Total Horizontal Product Length = 05-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	1,528 / 0	865 / 0		
B1, 5-1/2"	1,265 / 0	725 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-00-12	04-00-12	269	134			n/a
2	J3(i1011)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	319	159			n/a
3	J2(i1054)	Conc. Pt. (lbs)	L	01-06-12	01-06-12	311	155			n/a
4	-	Conc. Pt. (lbs)	L	02-06-09	02-06-09	942	614			n/a
5	-	Conc. Pt. (lbs)	L	04-05-02	04-05-02	414	207			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,827 ft-lbs	25,408 ft-lbs	19%	1	02-06-02
End Shear	2,682 lbs	11,571 lbs	23.2%	1	01-01-08
Total Load Defl.	L/999 (0.026")	n/a	n/a	4	02-07-12
Live Load Defl.	L/999 (0.016")	n/a	n/a	5	02-07-12
Max Defl.	0.026"	n/a	n/a	4	02-07-12
Span / Depth	6.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0	Wall/Plate 4" x 3-1/2"	3,373 lbs	56.4%	19.7%	Unspecified
B1	Wall/Plate 5-1/2" x 3-1/2"	2,804 lbs	34.1%	11.9%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012


DWG NO. TAM 45449-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B5(i193

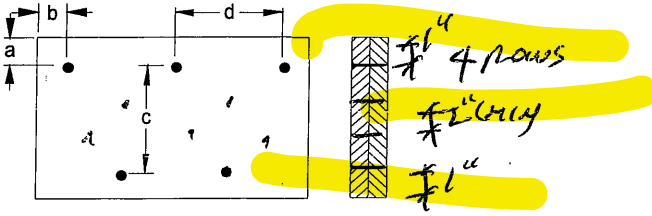
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 717.7 lb/ft

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

Connectors are: 16d Nails

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 45449-17
 STRUCTURAL
 COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i2421)

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

August 31, 2016 08:28:24

BC CALC® Design Report



Build 4340

File Name: S32-6.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i2421)

Address:

Specifier:

City, Province, Postal Code:

Designer:

Customer:

Company:

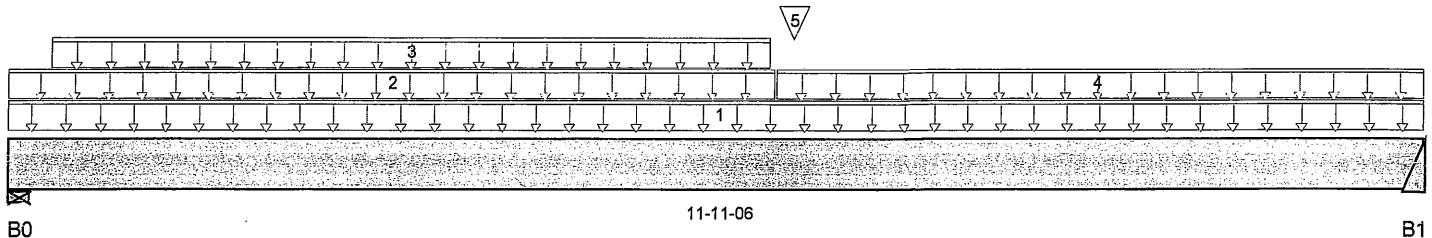
Code reports:

CCMC 12472-R

Misc:

Town of Innisfil Certified Model

03/01/2018 9:53:41 AM kgervais



Total Horizontal Product Length = 11-11-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	761 / 0	735 / 0		
B1	889 / 0	634 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-11-06	17	9			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-05-06	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-03	06-04-14		60			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-05-06	11-11-06	9	5			n/a
5	B8(i2414)	Conc. Pt. (lbs)	L	06-07-02	06-07-02	1,351	741			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,174 ft-lbs	25,408 ft-lbs	40%	1	06-07-02
End Shear	2,060 lbs	11,571 lbs	17.8%	1	10-11-14
Total Load Defl.	L/473 (0.293")	0.577"	50.7%	4	06-02-14
Live Load Defl.	L/825 (0.168")	0.385"	43.7%	5	06-02-14
Max Defl.	0.293"	n/a	n/a	4	06-02-14
Span / Depth	14.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 3-1/2"	2,061 lbs	25.2%	11%	Unspecified
B1 Hanger	2" x 3-1/2"	2,126 lbs	n/a	24.9%	HGUS410

Notes





Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B6(i2421)

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

August 31, 2016 08:28:24

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B6(i2421)

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

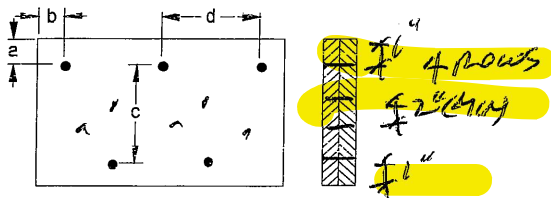
Resistance Factor phi has been applied to all presented results per CSA 086.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012**Connection Diagram**

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

Calculated Side Load = 256.4 lb/ft

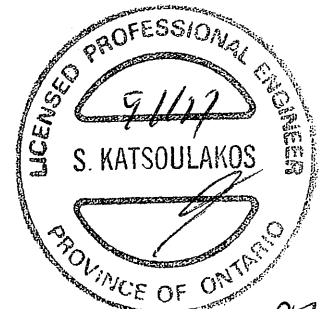
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 1 Nails

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

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DWG NO. TAM 45452-17
 STRUCTURAL
 COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i1971)

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

August 2, 2016 17:07:24

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i1971)

Specifier:

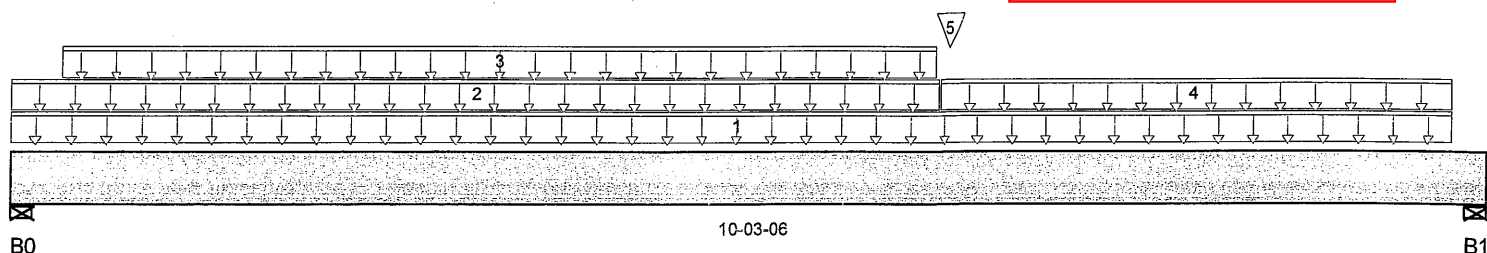
Designer:

Company:

Msc:

Town of Innisfil Certified Model

03/01/2018 9:54:00 AM kgervais



Total Horizontal Product Length = 10-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	355 / 0	486 / 0		
B1, 5-1/2"	580 / 0	479 / 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	10-00-10	21	11			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-05-06	6	3			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-04-02	06-05-02		60			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-05-06	10-00-10	30	15			n/a
5	B8(i1964)	Conc. Pt. (lbs)	L	06-06-04	06-06-04	576	321			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,181 ft-lbs	25,408 ft-lbs	16.5%	1	06-06-04
End Shear	1,343 lbs	11,571 lbs	11.6%	1	09-00-06
Total Load Defl.	L/999 (0.089")	n/a	n/a	4	05-03-04
Live Load Defl.	L/999 (0.045")	n/a	n/a	5	05-05-04
Max Defl.	0.089"	n/a	n/a	4	05-03-04
Span / Depth	12.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 3-1/2"	1,140 lbs	13.9%	6.1%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	1,469 lbs	14.3%	6.3%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DWG NO. YAM45451-17
STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i197

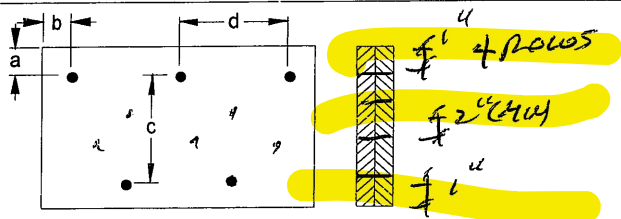
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 127.7 lb/ft

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

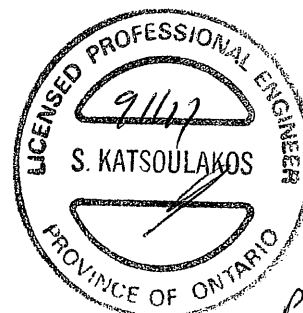
Connectors are: Nails

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. YAM45451-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i2127)

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

August 2, 2016 17:17:07

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2127)

Specifier:

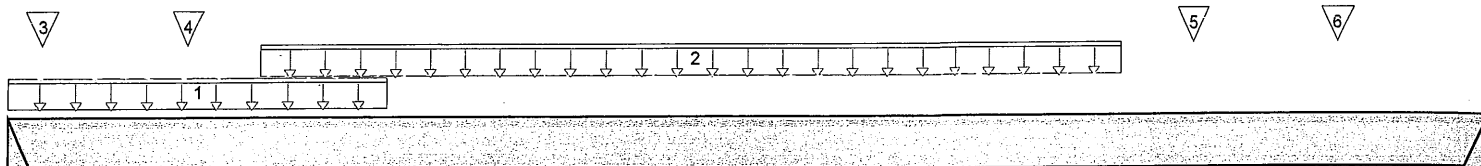
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:54:15 AM kgervais



13-08-00

B1

Total Horizontal Product Length = 13-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,337 / 0	734 / 0		
B1	589 / 0	360 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-05-14	240	120			n/a
2	-	Unf. Lin. (lb/ft)	L	02-03-12	10-03-12	77	38			n/a
3	J4(i2179)	Conc. Pt. (lbs)	L	00-03-12	00-03-12	100	50			n/a
4	J4(i2172)	Conc. Pt. (lbs)	L	01-07-12	01-07-12	158	79			n/a
5	J5(i2100)	Conc. Pt. (lbs)	L	10-11-12	10-11-12	104	52			n/a
6	J5(i2094)	Conc. Pt. (lbs)	L	12-03-12	12-03-12	110	55			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,703 ft-lbs	25,408 ft-lbs	22.4%	1	05-07-12
End Shear	2,249 lbs	11,571 lbs	19.4%	1	00-11-08
Total Load Defl.	L/604 (0.267")	0.673"	39.7%	4	06-05-12
Live Load Defl.	L/956 (0.169")	0.449"	37.6%	5	06-05-12
Max Defl.	0.267"	n/a	n/a	4	06-05-12
Span / Depth	17	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	2,922 lbs	n/a	34.2%	HGUS410
B1 Hanger	2" x 3-1/2"	1,334 lbs	n/a	15.6%	HGUS410

Notes

p612

DWG NO. TAM 45452-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(j212

Specifier:

Designer:

Company:

Misc:

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

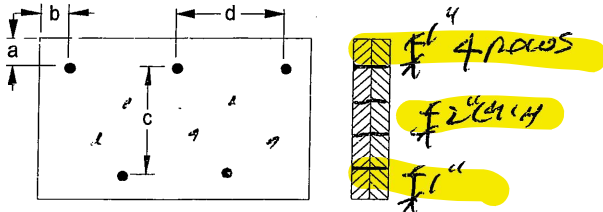
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012**Disclosure**

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

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Connection Diagram

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

Calculated Side Load = 175.1 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

DWG NO. YAM 45452-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B9

Specifier:

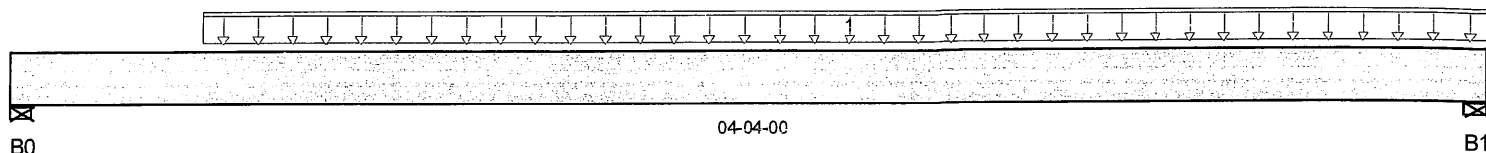
Designer:

Company:

Msc:

Town of Innisfil Certified Model

03/01/2018 9:54:29 AM kgervais



Total Horizontal Product Length = 04-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	795 / 0	417 / 0		
B1, 4"	1,215 / 0	626 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-12	04-04-00	533	266	1.00	1.15	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,992 ft-lbs	25,408 ft-lbs	7.8%	1	02-06-12
End Shear	1,701 lbs	11,571 lbs	14.7%	1	01-01-08
Total Load Defl.	L/999 (0.007")	n/a	n/a	4	02-02-04
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	02-02-04
Max Defl.	0.007"	n/a	n/a	4	02-02-04
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	4" x 3-1/2"	1,715 lbs	18.9%	10%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	2,605 lbs	28.6%	15.3%	Unspecified

Notes

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

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

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. TAM43453-17
 STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

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

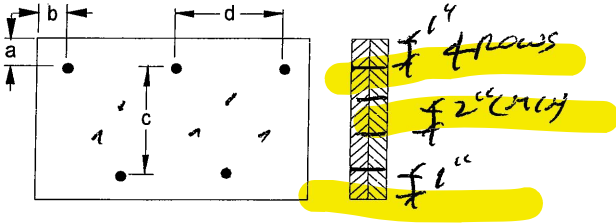
Specifier:

Designer:

Company:

Misc:

Connection Diagram



a minimum = 4" 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

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DWG NO. YAM 4545317
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

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

Specifier:

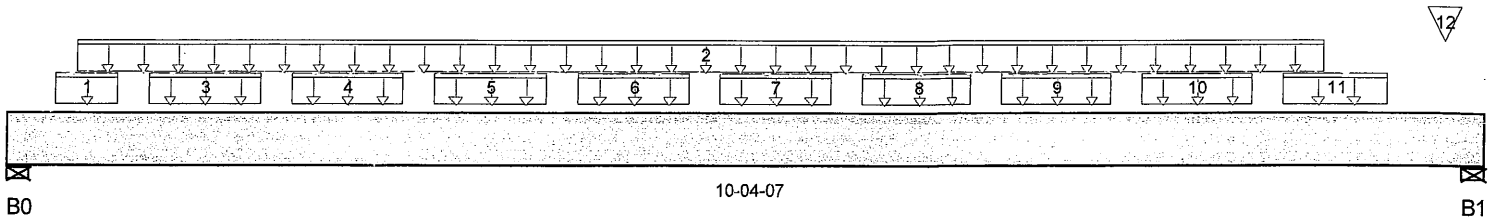
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:54:42 AM kgervais



Total Horizontal Product Length = 10-04-07

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-15/16"	1,112 / 0	893 / 0		
B1, 5-1/2"	2,465 / 0	1,599 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	Bk1(i1069)	Unf. Lin. (lb/ft)	L	00-03-15	00-09-03		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-11	09-03-03	220	122			n/a
3	Bk1(i1060)	Unf. Lin. (lb/ft)	L	00-11-11	01-09-03		71			n/a
4	Bk1(i1060)	Unf. Lin. (lb/ft)	L	01-11-11	02-09-03		71			n/a
5	Bk1(i1060)	Unf. Lin. (lb/ft)	L	02-11-11	03-09-03		71			n/a
6	Bk1(i1060)	Unf. Lin. (lb/ft)	L	03-11-11	04-09-03		71			n/a
7	Bk1(i1060)	Unf. Lin. (lb/ft)	L	04-11-11	05-09-03		71			n/a
8	Bk1(i1060)	Unf. Lin. (lb/ft)	L	05-11-11	06-09-03		71			n/a
9	Bk1(i1060)	Unf. Lin. (lb/ft)	L	06-11-11	07-09-03		71			n/a
10	Bk1(i1060)	Unf. Lin. (lb/ft)	L	07-11-11	08-09-03		71			n/a
11	Bk1(i1064)	Unf. Lin. (lb/ft)	L	08-11-11	09-08-07		72			n/a
12	-	Conc. Pt. (lbs)	L	10-01-02	10-01-02	1,472	777			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	6,879 ft-lbs	25,408 ft-lbs	27.1%	1	04-10-07
End Shear	2,608 lbs	11,571 lbs	22.5%	1	01-01-07
Total Load Defl.	L/696 (0.167")	0.485"	34.5%	4	04-11-12
Live Load Defl.	L/999 (0.093")	n/a	n/a	5	04-11-12
Max Defl.	0.167"	n/a	n/a	4	04-11-12
Span / Depth	12.3	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-15/16" x 3-1/2"	2,784 lbs	30.9%	16.5%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	5,697 lbs	45.6%	24.3%	Unspecified

Notes



DWG NO. TAM 45454-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.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.

Design based on Dry Service Condition.

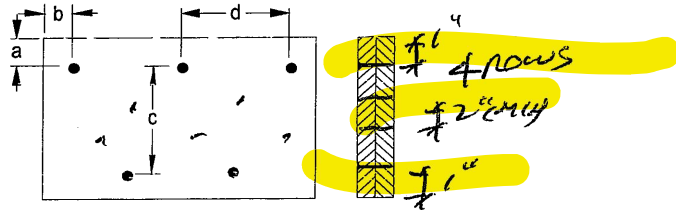
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO UBC 2012**Disclosure**

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

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Connection Diagram

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

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. TAM45454-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdi

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i2455)

Specifier:

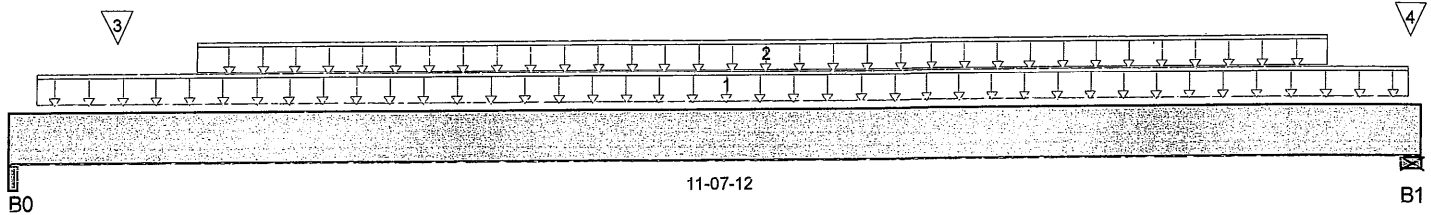
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:54:57 AM kgervais



Total Horizontal Product Length = 11-07-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,282 / 0	697 / 0		
B1, 4-3/4"	1,353 / 0	732 / 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	00-02-12	11-06-08	24	12			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-08	10-10-08	210	105			n/a
3	J2(i2484)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	243	121			n/a
4	J2(i2462)	Conc. Pt. (lbs)	L	11-06-08	11-06-08	164	82			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	7,601 ft-lbs	25,408 ft-lbs	29.9%	1	06-02-08
End Shear	2,528 lbs	11,571 lbs	21.8%	1	10-05-08
Total Load Defl.	L/570 (0.23")	0.546"	42.1%	4	05-10-08
Live Load Defl.	L/879 (0.149")	0.364"	41%	5	05-10-08
Max Defl.	0.23"	n/a	n/a	4	05-10-08
Span / Depth	13.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/2" x 3-1/2"	2,795 lbs	13.3%	11.9%	Unspecified
B1 Wall/Plate	4-3/4" x 3-1/2"	2,945 lbs	33.2%	14.5%	Unspecified

Notes

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

CONFORMS TO OBC 2012

 DWG NO. YAM/5/55 -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: S32-6.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i2455)

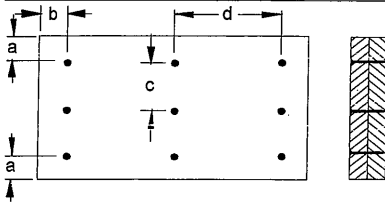
Specifier:

Designer:

Company:

Msc:

Connection Diagram



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

Calculated Side Load = 447.1 lb/ft

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

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

3 1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 45435-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B12(i1844)

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

August 2, 2016 16:55:32

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B12(i184

Specifier:

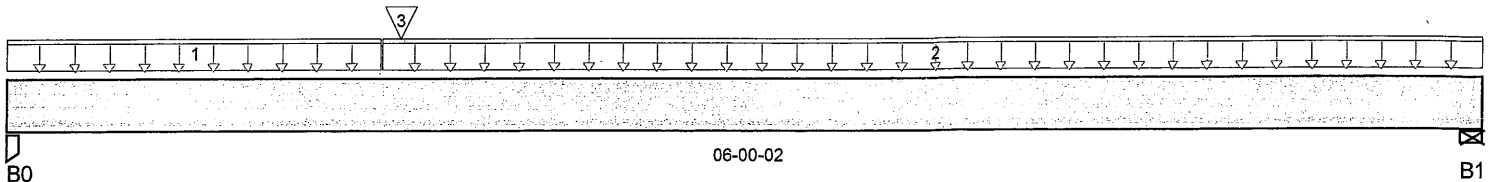
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:15 AM kgervais



Total Horizontal Product Length = 06-00-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	499 / 0	272 / 0		
B1, 4-3/8"	225 / 0	131 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-06-04	16	8			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-06-04	06-00-02	20	10			n/a
3	B15(i1859)	Conc. Pt. (lbs)	L	01-07-02	01-07-02	607	316			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,592 ft-lbs	12,704 ft-lbs	12.5%	1	01-07-02
End Shear	1,051 lbs	5,785 lbs	18.2%	1	00-11-04
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	02-07-06
Live Load Defl.	L/999 (0.013")	n/a	n/a	5	02-07-06
Max Defl.	0.021"	n/a	n/a	4	02-07-06
Span / Depth	7.1	n/a	n/a		00-00-00

Disclosure

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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	1,088 lbs	54.7%	29.1%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	501 lbs	15.3%	5.4%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

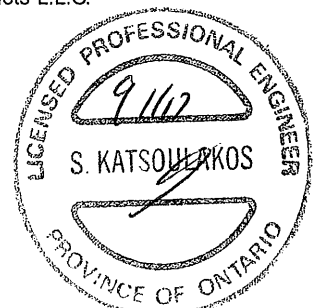
Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DWG NO. TAM 45456-17
STRUCTURAL
COMPONENT ONLY

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BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B13(i1833

Specifier:

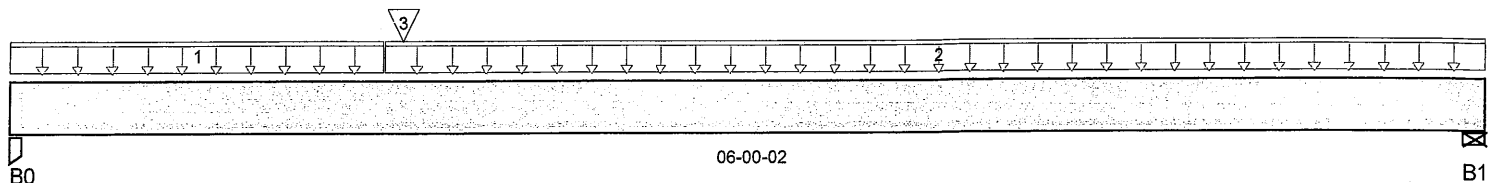
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:19 AM kgervais



Total Horizontal Product Length = 06-00-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	478 / 0	259 / 0		
B1, 4-3/8"	217 / 0	126 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-06-04	18	9			n/a
2 FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-06-04	06-00-02	20	10			n/a
3 -	Conc. Pt. (lbs)	L	01-07-02	01-07-02	578	298			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,516 ft-lbs	12,704 ft-lbs	11.9%	1	01-07-02
End Shear	1,000 lbs	5,785 lbs	17.3%	1	00-11-04
Total Load Defl.	L/999 (0.02")	n/a	n/a	4	02-07-07
Live Load Defl.	L/999 (0.013")	n/a	n/a	5	02-07-07
Max Defl.	0.02"	n/a	n/a	4	02-07-07
Span / Depth	7.1	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	1,041 lbs	52.3%	27.9%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	483 lbs	14.8%	5.2%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

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. TAM45457-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B14(i183

Specifier:

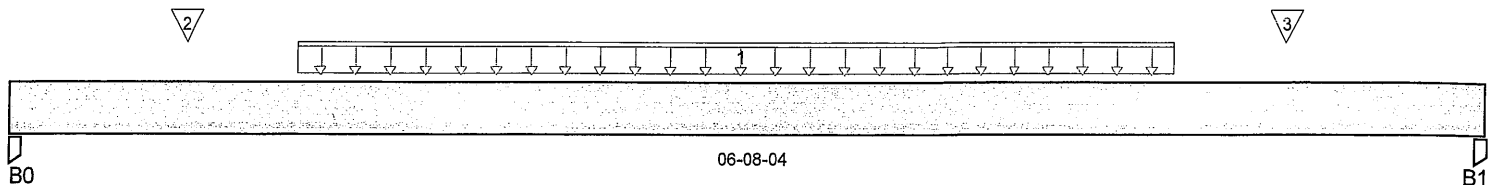
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:22 AM kgervais



Total Horizontal Product Length = 06-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	352 / 0	192 / 0		
B1, 3-1/2"	345 / 0	189 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
1 Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-08	05-03-08	120	60			n/a
2 J6(i1850)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	105	53			n/a
3 J6(i1819)	Conc. Pt. (lbs)	L	05-09-08	05-09-08	112	56			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,255 ft-lbs	12,704 ft-lbs	9.9%	1	03-09-08
End Shear	691 lbs	5,785 lbs	11.9%	1	05-07-04
Total Load Defl.	L/999 (0.025")	n/a	n/a	4	03-04-04
Live Load Defl.	L/999 (0.016")	n/a	n/a	5	03-04-04
Max Defl.	0.025"	n/a	n/a	4	03-04-04
Span / Depth	7.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	768 lbs	19.3%	10.3%	Unspecified
B1 Post	3-1/2" x 1-3/4"	754 lbs	19%	10.1%	Unspecified

Notes

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

CONFORMS TO OBC 2012

Disclosure

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DWG NO. YAM 4545B-17
 STRUCTURAL
 COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B15(i1859)

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

August 2, 2016 16:55:33



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B15(i185

Specifier:

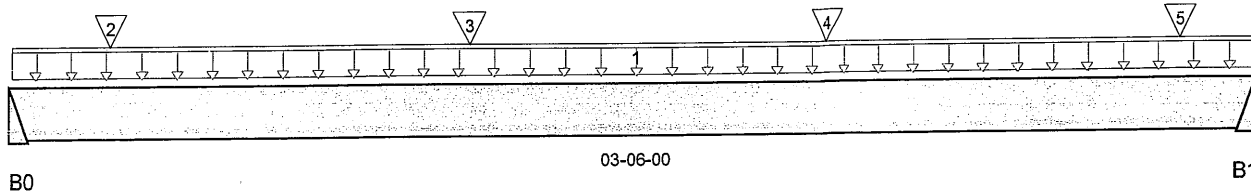
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:26 AM kgervais



Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	629 / 0	325 / 0		
B1	611 / 0	318 / 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	00-00-02	03-06-00	240	120			n/a
2	J6(i1183)	Conc. Pt. (lbs)	L	00-03-08	00-03-08	89	44			n/a
3	J6(i1186)	Conc. Pt. (lbs)	L	01-03-08	01-03-08	130	65			n/a
4	J6(i1878)	Conc. Pt. (lbs)	L	02-03-08	02-03-08	130	71			n/a
5	J7(i1815)	Conc. Pt. (lbs)	L	03-03-08	03-03-08	54	27			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,043 ft-lbs	12,704 ft-lbs	8.2%	1	01-08-12
End Shear	710 lbs	5,785 lbs	12.3%	1	02-06-08
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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,350 lbs	n/a	31.6%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,313 lbs	n/a	30.8%	HUS1.81/10

Notes

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

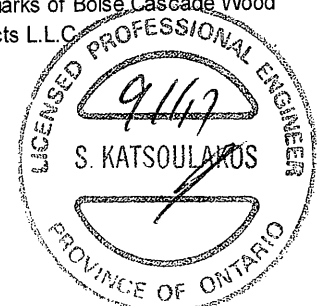
CONFORMS TO OBC 2012

DWG NO. TAM43454-17
STRUCTURAL
COMPONENT ONLY

Disclosure

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BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B19CANT

Specifier:

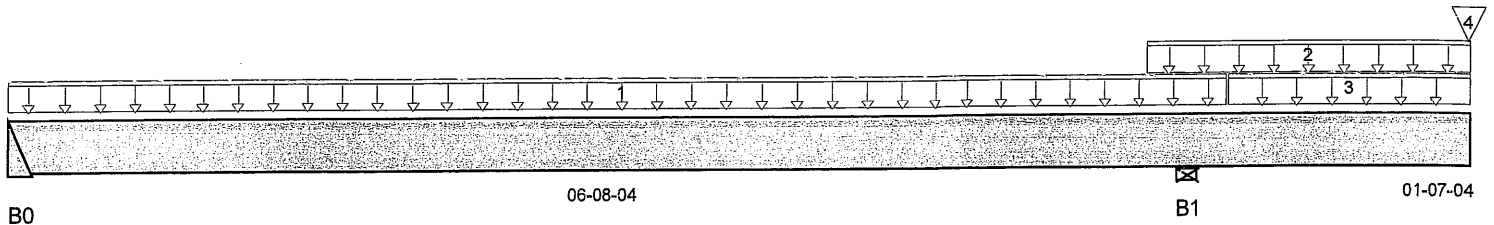
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:29 AM kgervais



Total Horizontal Product Length = 08-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	68 / 10	36 / 0	0 / 24	
B1, 5-1/2"	160 / 0	371 / 0	243 / 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	06-11-00	20	10			n/a
2	User Load	Unf. Lin. (lb/ft)	L	06-05-08	08-03-08	33	130	114		n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-11-00	08-03-08	12	6			n/a
4	FC2 Floor Material	Conc. Pt. (lbs)	L	08-03-04	08-03-04	3	11	10		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	183 ft-lbs	25,408 ft-lbs	0.7%	44	02-08-11
Neg. Moment	-531 ft-lbs	-25,408 ft-lbs	2.1%	49	06-08-04
Neg. Moment	-531 ft-lbs	-25,408 ft-lbs	2.1%	49	06-08-04
End Shear	95 lbs	11,571 lbs	0.8%	44	00-11-08
Cont. Shear	249 lbs	11,571 lbs	2.2%	49	07-08-08
Uplift	9 lbs	n/a	n/a	87	00-00-00
Total Load Defl.	2xL/1,998 (0.004")	n/a	n/a	154	08-03-08
Live Load Defl.	2xL/1,998 (0.003")	n/a	n/a	206	08-03-08
Total Neg. Defl.	L/999 (-0.002")	n/a	n/a	154	04-03-04
Max Defl.	-0.002"	n/a	n/a	154	04-03-04
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 Hanger	2" x 3-1/2"	147 lbs	n/a	1.7%	HGUS410
B0 Hanger Uplift	2" x 3-1/2"	9 lbs	n/a	0.00	HGUS410
B1 Wall/Plate	5-1/2" x 3-1/2"	907 lbs	8.8%	3.9%	Unspecified

Notes

 DWG NO. YAM 4546017
 STRUCTURAL
 COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B19CAI

Specifier:

Designer:

Company:

Misc:

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

Design meets User specified (2xL/360) Live load deflection criteria.

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

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

CONFORMS TO CBC 2012

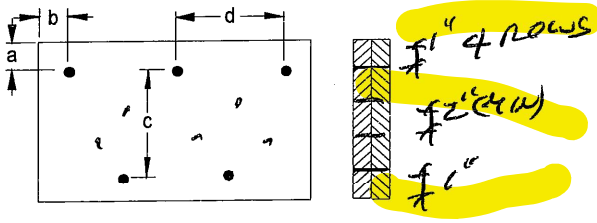
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Disclosure

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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

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DWG NO. TAMP 5460-17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report

Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B20 CAN

Specifier:

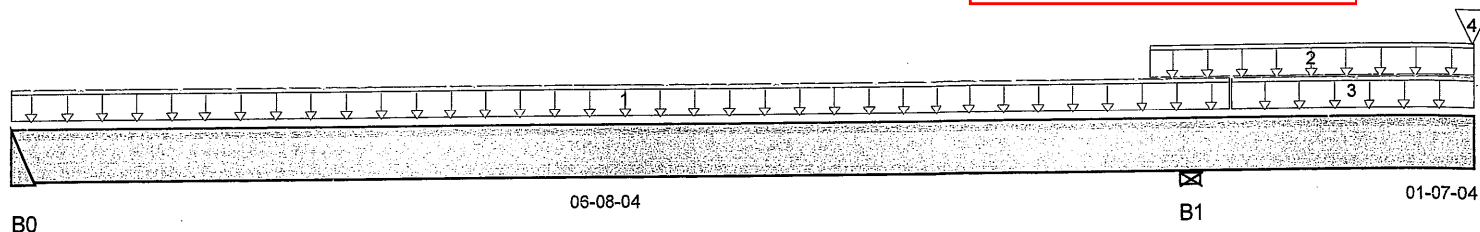
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:42 AM kgervais



Total Horizontal Product Length = 08-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	136 / 13	63 / 0	0 / 30	
B1, 5-1/2"	252 / 0	443 / 0	270 / 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	06-11-00	40	20			n/a
2	User Load	Unf. Lin. (lb/ft)	L	06-05-08	08-03-08	33	130	114		n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-11-00	08-03-08	21	11			n/a
4	FC2 Floor Material	Conc. Pt. (lbs)	L	08-03-04	08-03-04	9	36	31		n/a

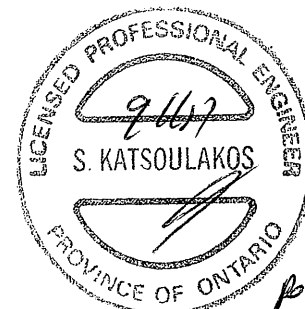
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	383 ft-lbs	25,408 ft-lbs	1.5%	44	02-11-05
Neg. Moment	-649 ft-lbs	-25,408 ft-lbs	2.6%	49	06-08-04
Neg. Moment	-649 ft-lbs	-25,408 ft-lbs	2.6%	49	06-08-04
End Shear	190 lbs	11,571 lbs	1.6%	44	00-11-08
Cont. Shear	321 lbs	11,571 lbs	2.8%	49	07-08-08
Total Load Defl.	2xL/1,998 (0.005")	n/a	n/a	154	08-03-08
Live Load Defl.	2xL/1,998 (0.003")	n/a	n/a	206	08-03-08
Total Neg. Defl.	L/999 (-0.002")	n/a	n/a	154	04-05-00
Max Defl.	0.004"	n/a	n/a	107	03-02-00
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 Hanger	2" x 3-1/2"	283 lbs	n/a	3.3%	HGUS410
B1 Wall/Plate	5-1/2" x 3-1/2"	1,085 lbs	10.6%	4.6%	Unspecified

Notes



DW NO. YAM/5461-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B20 CA

Specifier:

Designer:

Company:

Misc:

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

Design meets User specified (2xL/360) Live load deflection criteria.

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

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

CONFORMS TO OBC 2012

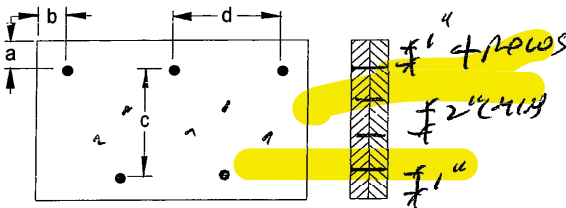
Design based on Dry Service Condition.

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" 6"
 b minimum = 3" d = 2" 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 (16d Nails)

3 1/2" ARDOX SPIRAL

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DWG NO. TAM 45461-17
 STRUCTURAL
 COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B21(i1719)

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

August 3, 2016 08:37:44

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B21(i171

Specifier:

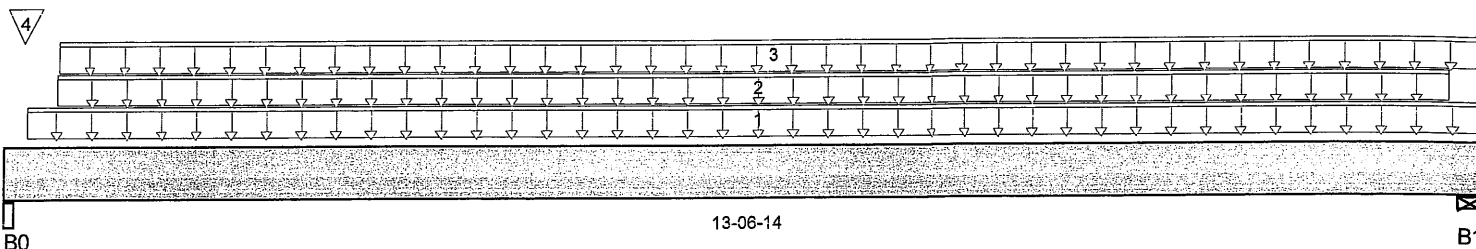
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:55:58 AM kgervais



Total Horizontal Product Length = 13-06-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5"	1,684 / 0	1,377 / 0		
B1, 2-3/8"	81 / 0	457 / 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	00-02-08	13-06-14	9	4			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-05-11	13-03-11		60			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-14	13-06-14	4	2			n/a
4	6(i316)	Conc. Pt. (lbs)	L	00-02-04	00-02-04	1,604	918			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,122 ft-lbs	8,258 ft-lbs	25.7%	0	06-10-12
End Shear	628 lbs	3,761 lbs	16.7%	0	01-02-08
Total Load Defl.	L/718 (0.219")	0.654"	33.4%	4	06-10-12
Live Load Defl.	L/999 (0.032")	n/a	n/a	5	06-10-12
Max Defl.	0.219"	n/a	n/a	4	06-10-12
Span / Depth	16.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5" x 1-3/4"	4,246 lbs	90.9%	39.8%	Unspecified
B1 Wall/Plate	2-3/8" x 1-3/4"	640 lbs	44.4%	19.4%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

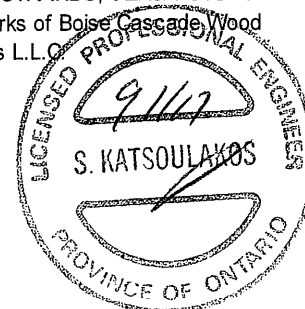
Disclosure

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CONFORMS TO OBC 2012

DWG NO. TAM 45462-17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B22L(i17

Specifier:

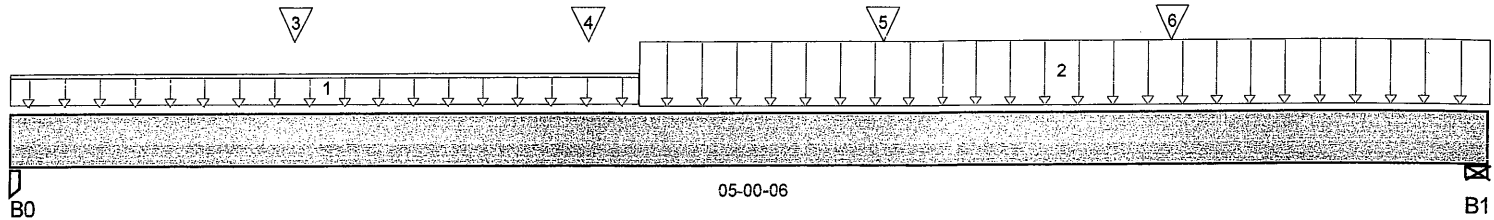
Designer:

Company:

Misc:

Town of Innisfil Certified Model

03/01/2018 9:56:01 AM kgervais



Total Horizontal Product Length = 05-00-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	532 / 0	277 / 0		
B1, 4-3/8"	555 / 0	289 / 0		

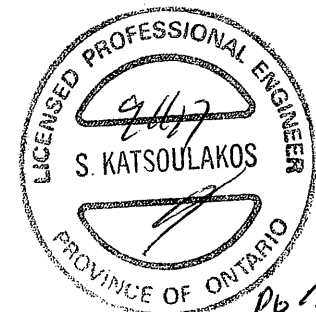
Load Summary

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	02-01-10	6	3			n/a
2	FC1 Floor Material	Trapezoidal (lb/ft)	L	02-01-10	05-00-06	10	5			n/a
						9	5			n/a
3	J1(i1696)	Conc. Pt. (lbs)	L	00-11-08	00-11-08	242	121			n/a
4	J1(i1742)	Conc. Pt. (lbs)	L	01-11-08	01-11-08	261	130			n/a
5	J1(i1765)	Conc. Pt. (lbs)	L	02-11-08	02-11-08	261	130			n/a
6	J1(i1720)	Conc. Pt. (lbs)	L	03-11-08	03-11-08	283	141			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,458 ft-lbs	12,704 ft-lbs	11.5%	1	02-11-08
End Shear	1,117 lbs	5,785 lbs	19.3%	1	03-10-08
Total Load Defl.	L/999 (0.015")	n/a	n/a	4	02-05-15
Live Load Defl.	L/999 (0.01")	n/a	n/a	5	02-05-15
Max Defl.	0.015"	n/a	n/a	4	02-05-15
Span / Depth	5.7	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	1,144 lbs	23%	15.3%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	1,194 lbs	29.2%	12.8%	Unspecified

Notes



DWG NO. TAM 4546317
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File Name: S32-6-ELB.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B22L(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.

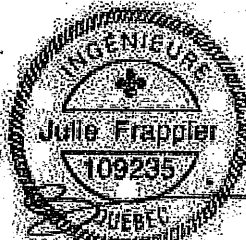
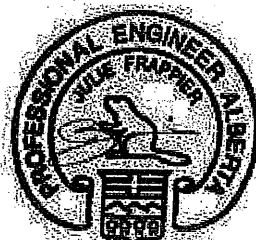
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCK®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



DWG NO. TAM 48463-17
STRUCTURAL
COMPONENT ONLY

Maximum Floor Spans

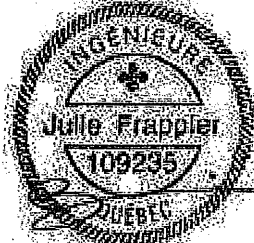
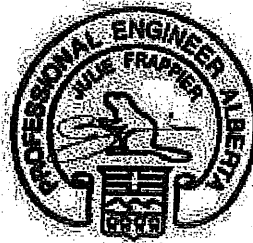
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



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

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

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



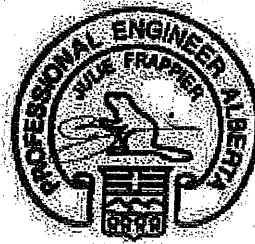
Maximum Floor Spans

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

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

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

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



Maximum Floor Spans

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

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

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

1. 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.

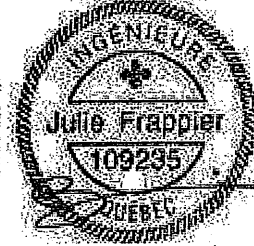
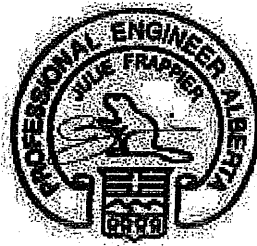
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

3. Minimum bearing length shall be 1-3/4 inches for the end 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 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.

6. Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



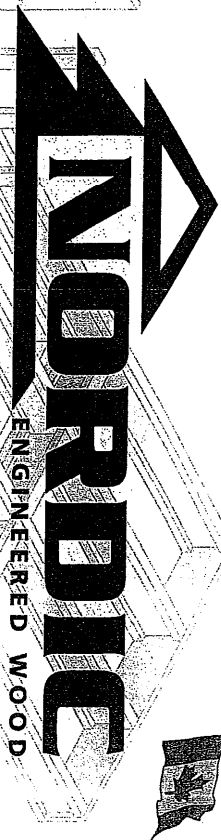
Maximum Floor Spans

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

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

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

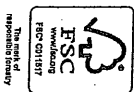
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load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



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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



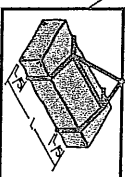
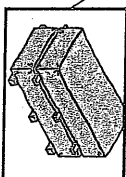
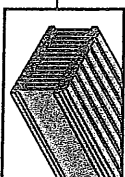
Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

- 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.
- 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.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate 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 uniform loads, an engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA C08-09 Standard, and NBC 2010.
- SI units conversion: 1 inch = 25.4 mm
1 foot = 0.305 m

WEB STIFFENERS

RECOMMENDATIONS:

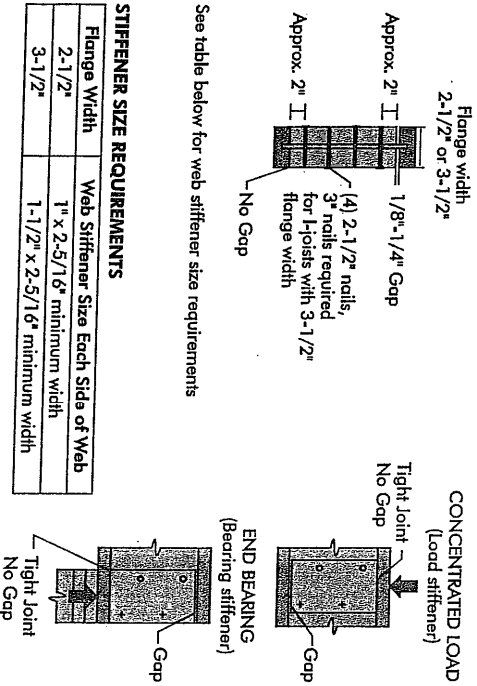
- A **bearing stiffener** is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A **bearing stiffener** is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A **load stiffener** is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
16"	NL-20	15.4	14.2	13.9	13.5	15.4	14.1	13.7	13.4
	NL-40	16.1	15.2	14.8	14.9	17.5	16.5	16.1	15.5
	NL-60	16.6	15.4	15.1	14.9	17.7	16.7	16.3	15.7
	NL-80	17.1	16.1	15.6	15.2	18.2	17.1	16.6	16.1
	NL-90	17.3	16.3	15.8	15.3	18.7	17.4	16.9	16.3
	NL-100	17.4	16.4	15.9	15.4	18.8	17.5	17.0	16.4
	NL-120	18.1	17.0	16.5	16.0	19.4	18.0	17.5	16.9
	NL-140	18.4	17.3	16.8	16.3	20.3	18.9	18.4	17.8
	NL-160	19.4	18.3	17.8	17.3	21.6	19.9	19.4	18.8
	NL-180	20.2	18.7	18.2	17.7	22.9	20.7	20.2	19.6
18"	NL-20	20.4	18.9	18.4	18.0	22.5	20.9	20.4	19.9
	NL-40	20.1	18.7	18.1	17.7	22.2	20.6	20.1	19.6
	NL-60	20.5	19.1	18.5	18.1	22.7	21.1	20.6	20.1
	NL-80	21.7	20.0	19.4	19.0	23.9	22.1	21.6	21.1
	NL-90	22.1	20.3	19.7	19.3	24.3	22.5	22.0	21.5
	NL-100	22.5	20.8	20.1	19.7	24.7	22.9	22.4	21.9
	NL-120	23.1	21.4	20.7	20.3	25.3	23.5	23.0	22.5
	NL-140	23.6	21.9	21.2	20.8	26.0	24.0	23.5	23.0
	NL-160	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-180	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
20"	NL-20	24.8	22.9	21.9	21.5	27.3	25.2	24.7	24.2
	NL-40	22.3	20.8	19.9	19.5	24.7	22.9	22.4	21.9
	NL-60	23.6	21.9	21.2	20.8	26.0	24.0	23.5	23.0
	NL-80	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-90	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-100	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-120	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-140	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-160	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5
	NL-180	24.5	22.6	21.9	21.5	26.5	24.5	24.0	23.5

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



STIFFENER SIZE REQUIREMENTS

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

NORDIC I-JOIST SERIES

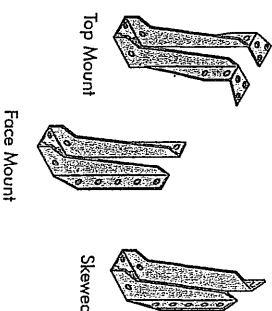
S-RF No.2	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	NPG Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
NL-20	NL-40x	NL-60	NL-70	NL-80	NL-90	NL-90x
1-1/2" x 11-7/8"	1-1/2" x 13-1/2"	1-1/2" x 13-1/2"	1-1/2" x 13-1/2"	1-1/2" x 13-1/2"	1-1/2" x 13-1/2"	1-1/2" x 13-1/2"
OSB 3/8"	OSB 3/8"	OSB 3/8"	OSB 3/8"	OSB 3/8"	OSB 3/8"	OSB 3/8"
9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"	9-1/2"
11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"	11-7/8"
14"	14"	14"	14"	14"	14"	14"
16"	16"	16"	16"	16"	16"	16"
18"	18"	18"	18"	18"	18"	18"
20"	20"	20"	20"	20"	20"	20"
22"	22"	22"	22"	22"	22"	22"
24"	24"	24"	24"	24"	24"	24"
26"	26"	26"	26"	26"	26"	26"
28"	28"	28"	28"	28"	28"	28"
30"	30"	30"	30"	30"	30"	30"
32"	32"	32"	32"	32"	32"	32"
34"	34"	34"	34"	34"	34"	34"
36"	36"	36"	36"	36"	36"	36"
38"	38"	38"	38"	38"	38"	38"
40"	40"	40"	40"	40"	40"	40"
42"	42"	42"	42"	42"	42"	42"
44"	44"	44"	44"	44"	44"	44"
46"	46"	46"	46"	46"	46"	46"
48"	48"	48"	48"	48"	48"	48"
50"	50"	50"	50"	50"	50"	50"
52"	52"	52"	52"	52"	52"	52"
54"	54"	54"	54"	54"	54"	54"
56"	56"	56"	56"	56"	56"	56"
58"	58"	58"	58"	58"	58"	58"
60"	60"	60"	60"	60"	60"	60"
62"	62"	62"	62"	62"	62"	62"
64"	64"	64"	64"	64"	64"	64"
66"	66"	66"	66"	66"	66"	66"
68"	68"	68"	68"	68"	68"	68"
70"	70"	70"	70"	70"	70"	70"
72"	72"	72"	72"	72"	72"	72"
74"	74"	74"	74"	74"	74"	74"
76"	76"	76"	76"	76"	76"	76"
78"	78"	78"	78"	78"	78"	78"
80"	80"	80"	80"	80"	80"	80"
82"	82"	82"	82"	82"	82"	82"
84"	84"	84"	84"	84"	84"	84"
86"	86"	86"	86"	86"	86"	86"
88"	88"	88"	88"	88"	88"	88"
90"	90"	90"	90"	90"	90"	90"
92"	92"	92"	92"	92"	92"	92"
94"	94"	94"	94"	94"	94"	94"
96"	96"	96"	96"	96"	96"	96"
98"	98"	98"	98"	98"	98"	98"
100"	100"	100"	100"	100"	100"	100"

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

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

I-JOIST HANGERS

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



2015-04-16

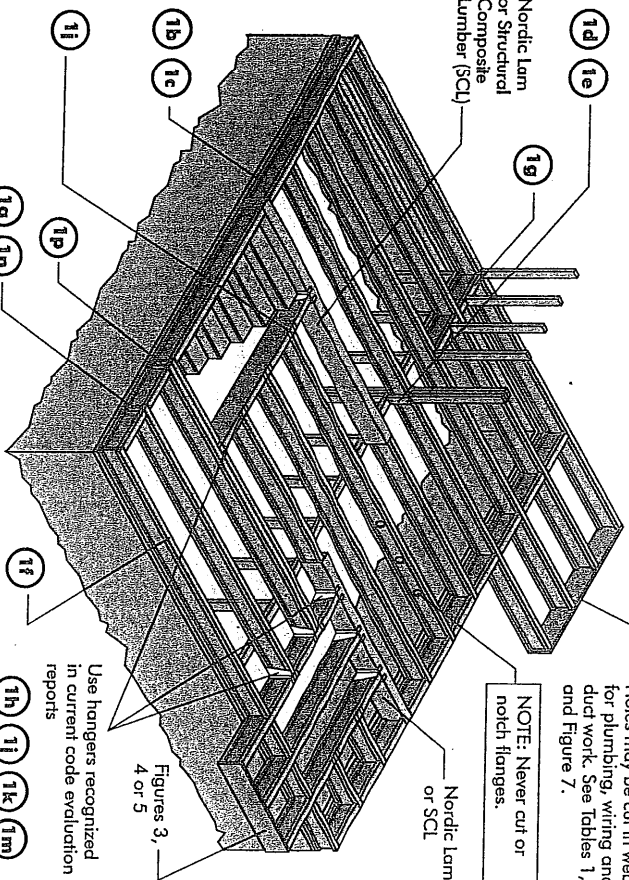
INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact joist 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-span joists 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 unsuited 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.

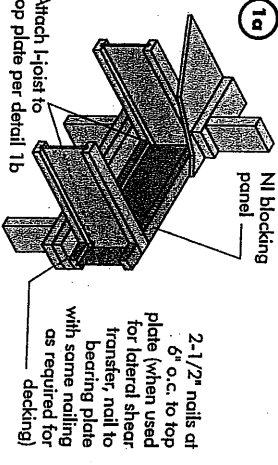
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FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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

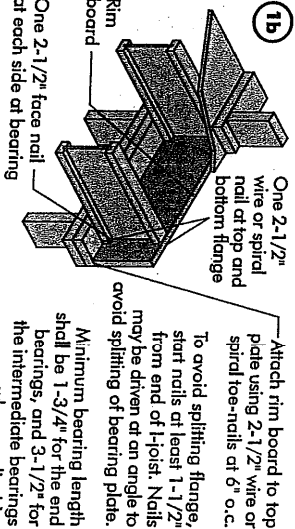


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3\"/>



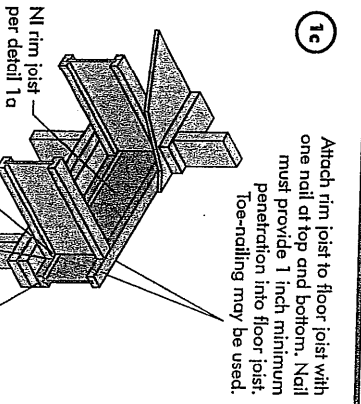
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

*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

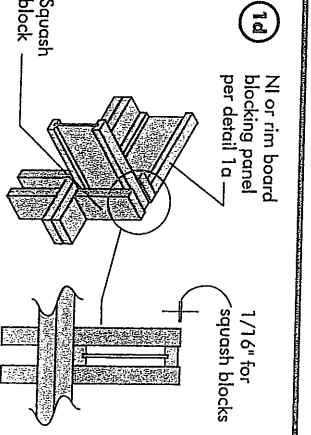
*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



Attach 1-joist per detail 1b

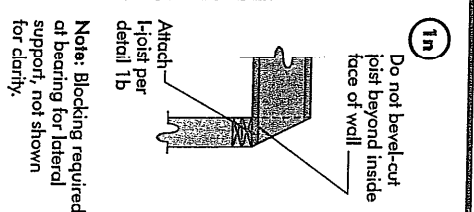
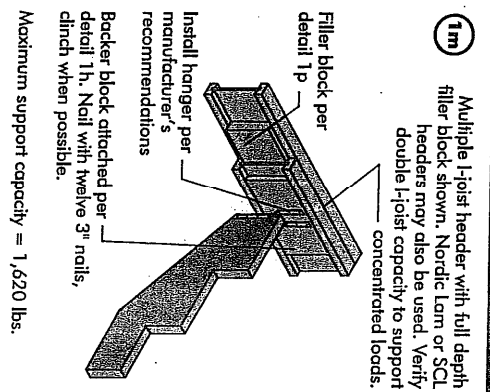
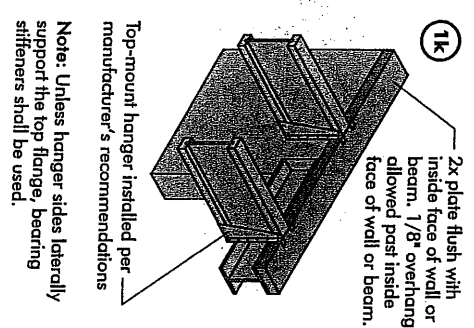
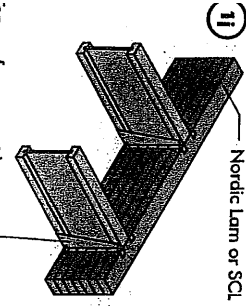
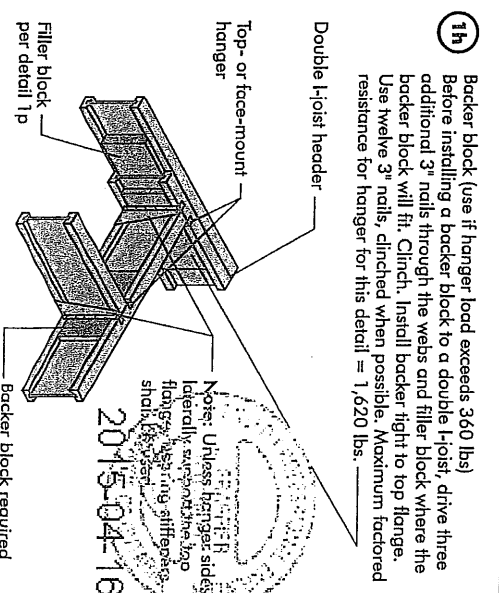
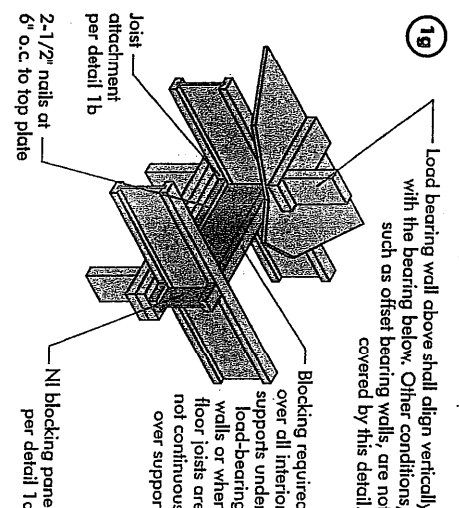
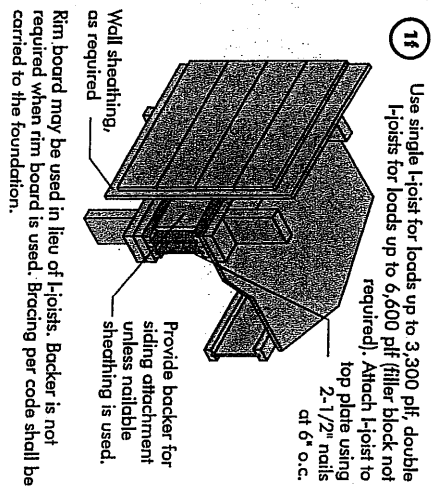
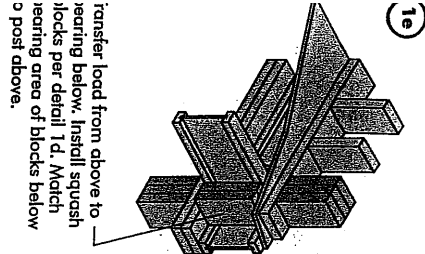
Attach rim joist to top plate per detail 1a

*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.



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

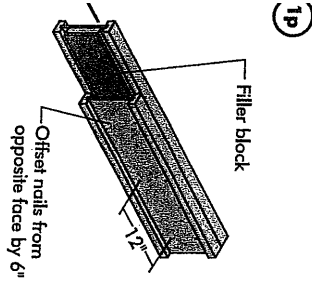
*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



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

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

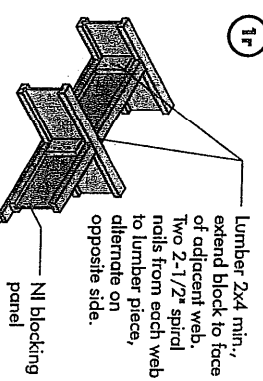
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net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



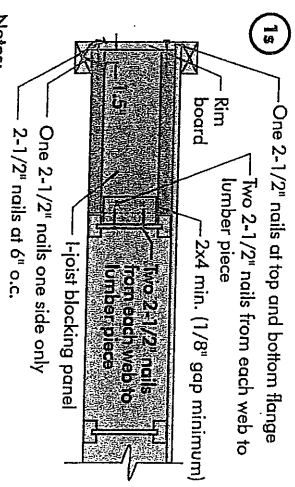
- Notes:**
- Support back of I-joist web during nailing to prevent damage to web/flange connection.
 - Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
 - Filler block is required between joists for full length of span.
 - Nail joists together with two rows of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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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



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



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.

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

Cantilever extension supporting uniform floor loads only

Rim board or wood structural panel closure, attach per detail 1b

Attach I-joists to plate at all supports per detail 1b

I-joist, or rim board

3-1/2" min. bearing required

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

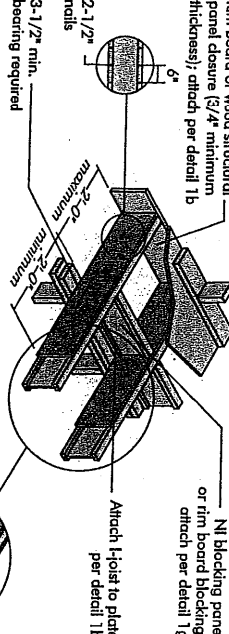
CAUTION: Cantilevers formed this way must be carefully detailed to prevent moisture intrusion into the structure and potential decay of unheated I-joist extensions.

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Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

— NI blocking panel
or rim board blocking,
attach per detail 1 g



Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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



The diagram shows a cross-section of a joist with two layers of sheathing attached to opposite sides. The top layer is nailed to the top face, and the bottom layer is nailed to the bottom face. The nailing is staggered, with the bottom layer's nails offset by 3 inches from the top layer's nails. The entire assembly is enclosed in a circle.

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

(4b) Alternate Method 2 — DOUBLE I-JOIST

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

Attach I-joists to top plate of all supports per detail 1b, 3-1/2" min. bearing required

maximum 2'-0"

minimum 4'-0"

Force nail two rows of 3" nails at 12" o.c. each side through one I-joist web and the filler block to other I-joist web. Offset nails from opposite face by 6". Clinch if possible (four nails per foot required, except two nails per foot required if clinched).

N blocking panel or rim board blocking, attach per detail 1g

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

3" nails along the

3b

LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

Full depth backer block with 1/8" gap between block and top flange of I-joist.
See detail 1b. Nail with 2 rows of 3" nails at 6" o.c. and clinch.

2x8 min. Nail to backer block and joist with 2 rows of 3" nails at 6" o.c. and clinch. (Cantilever nails may be used to attach backer block if length of nail is sufficient to allow clinching.)

Cantilever extension supporting uniform floor loads only

Lumber or wood structural panel closure

3-1/2" min. beading required

I-joist, or rim board

Attach I-joists to plate at all supports per detail 1b

1-1/2 x 1-1/2 min. 4" maximum, 4" minimum where I-joist or cantilever

2x6 min. Nail to backer block and post with 2 rows of 3" nails at 6" o.c. and clinch. (Cantilever nails may be used to attach backer block if length of nail is sufficient to allow clinching.)

— Cantilever extension supporting uniform floor loads only

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

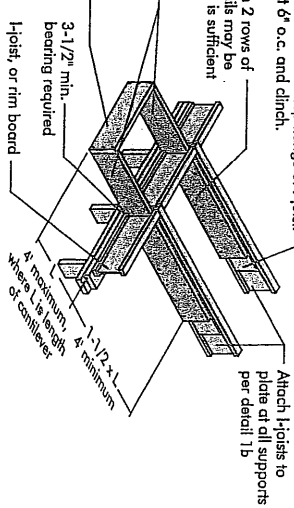


FIGURE 4 (continued)

See table below for NI reinforcement requirements at cantilever.

For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the 1-jolt reinforcement requirements for a span of 26 ft. shall be permitted to be used.

Roof truss span

Diagram illustrating the components and dimensions of a roof truss system:

- Roof trusses
- Girder
- Roof truss span
- Jack trusses
- 13'-0" maximum
- 2'-0" maximum
- canthover

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.

JOIST DEPTH (in.)	MOOF TRUSS SPAN (ft)	No-LOADING (UNFACTORED)						
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)		LL = 40 psf, DL = 15 psf JOIST SPACING (in.)		LL = 60 psf, DL = 15 psf JOIST SPACING (in.)		
24	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
30	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
36	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
42	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24

JOIST DEPTH (in.)	MOOF TRUSS SPAN (ft)	No-LOADING (UNFACTORED)						
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)		LL = 40 psf, DL = 15 psf JOIST SPACING (in.)		LL = 60 psf, DL = 15 psf JOIST SPACING (in.)		
24	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
30	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
36	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
42	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24
	12	16	19.2	24	12	16	19.2	24

N = No reinforcement required.

For larger openings or multiple spans, see Table 4.

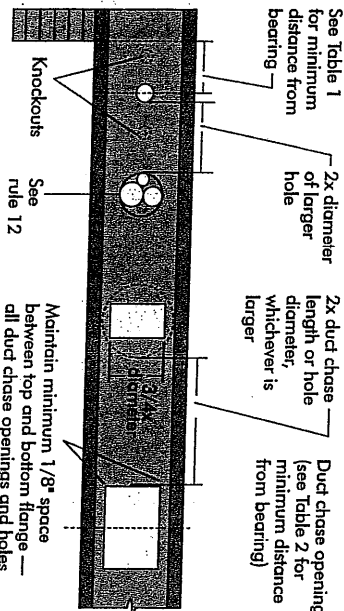
1. = N1 reinforced with 3/4" wood structural lumber on one side only.
2. = N4 reinforced with 3/4" wood structural panel on both sides.
3. = Tr'y a deeper joist or deeper wood I-beam.
2. Maximum design load shall be: 15 psf roof dead load, 55 psf roof live load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
4. For conventional roof construction using a ridge beam, the roof truss span length between the supporting walls is the distance between the ridge beam and the supporting wall.
5. When the roof is framed using a gable end, the roof truss span is equivalent to the distance between the supporting walls as if a truss is used.
6. Cantilevered joists supporting gabled trusses or roof beams may require additional raftering.

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 longest rectangular 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 conformed section of a joist. Holes of greater size may be permitted subject to verification.
9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in)												Span adjustment Factor		
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4		11	12
14	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
12	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
10	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
8	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9

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 Span, Section 1.1), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

$$\text{Reduced } D = \frac{\text{Actual } D}{\text{Full Span}} \times D$$

Where:

- Reduced = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span application as (ft). The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.
- Actual = The actual measured span distance between the inside faces of supports (ft).
- Span Adjustment Factor = 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 Reduced is greater than 1, use 1 in the above calculation for Reduced.

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)												Duct chase length (in)		Minimum distance from inside face of any support to centre of opening (ft/in)	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
14	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-4	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
12	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-4	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
10	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-4	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
8	N-20	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-16	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-12	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-8	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2
	N-4	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2

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

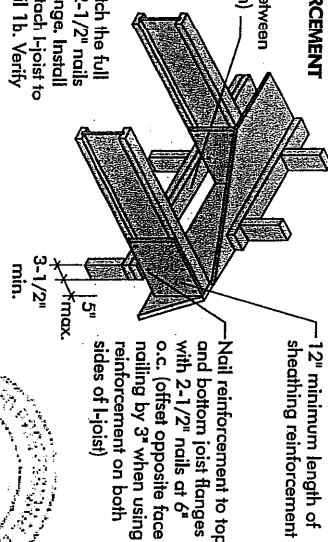
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BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

5a SHEATHING REINFORCEMENT

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

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

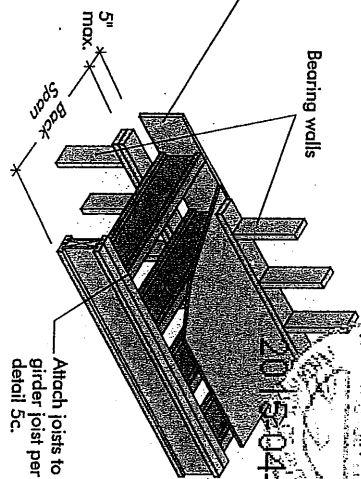


5b SET-BACK DETAIL

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

Notes:

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



5c SET-BACK CONNECTION

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

Alternate for opposite side.

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

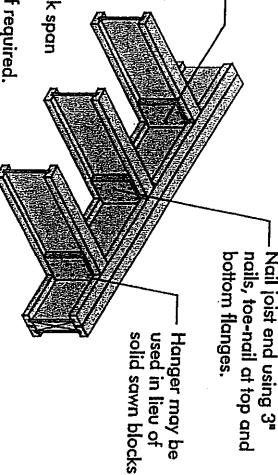
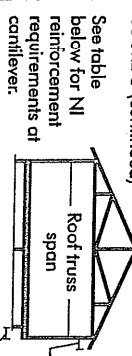
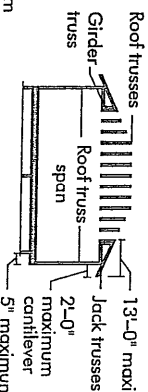


FIGURE 5 (continued)



See table below for NI reinforcement requirements at cantilever.



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
9 1/2	26	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	28	X	X	X	X	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X	X	X	X	X
11 7/8	26	N	N	N	X	N	N	N	X	N	N	N	X
	28	X	X	X	X	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X	X	X	X	X
14	26	X	X	X	X	X	X	X	X	X	X	X	X
	28	X	X	X	X	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X	X	X	X	X
16	26	X	X	X	X	X	X	X	X	X	X	X	X
	28	X	X	X	X	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X	X
	32	X	X	X	X	X	X	X	X	X	X	X	X
	34	X	X	X	X	X	X	X	X	X	X	X	X

RIM BOARD INSTALLATION DETAILS

- ## FASTENERS FOR SHEATHING AND SUBFLOORING(1)

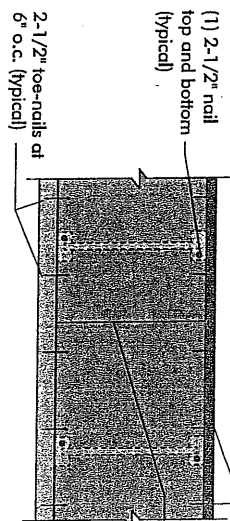
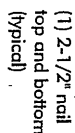
1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
3. Flooring screws shall not be less than 1/8-inch in diameter.
4. Special conditions 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.

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.

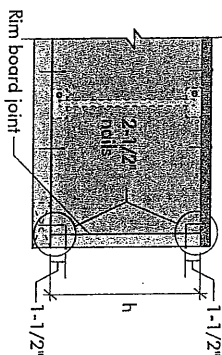
RIM BOARD INSTALLATION DETAILS

Rim board Joint Between Floor Joists

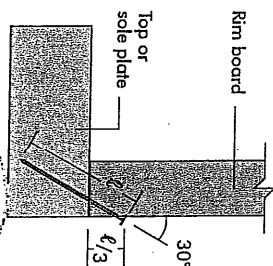
2-1/2" nails at 6" o.c. (typical)



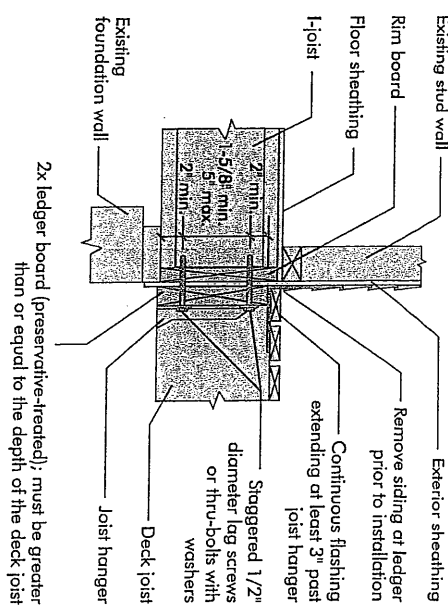
Rim board Joint at Corner



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



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

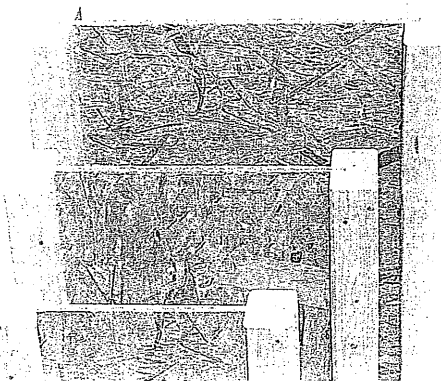


2015-04-16

PRODUCT WARRANTY

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

Furthermore, Chemtreat Cibaigumma 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.

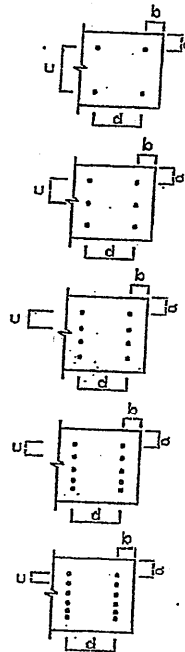


MICRO CITY ENGINEERING SERVICES INC.

TEL: (519) 287 - 2242

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

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



NOTES:

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



DWG NO TAMN1001.14

STRUCTURAL
COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING
DETAIL # X SEE
DWG #TAMN1001-14