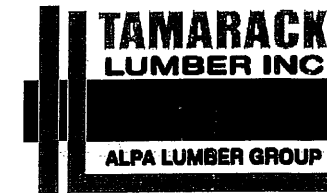


Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	32
J2 DJ	14-00-00	9 1/2" NI-40x	2	10
J2	12-00-00	9 1/2" NI-40x	1	16
J3	10-00-00	9 1/2" NI-40x	1	12
J4DJ	10-00-00	9 1/2" NI-40x	2	2
J4	8-00-00	9 1/2" NI-40x	1	2
J5	4-00-00	9 1/2" NI-40x	1	5
J6	2-00-00	9 1/2" NI-40x	1	6
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7L	6-00-00	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
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
05/01/2018 9:20:06 AM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S32-3-12

ELEVATION: A

LOT:
CITY: INNISFIL

SALESMAN: M D
DESIGNER: LBV
REVISION: CZ

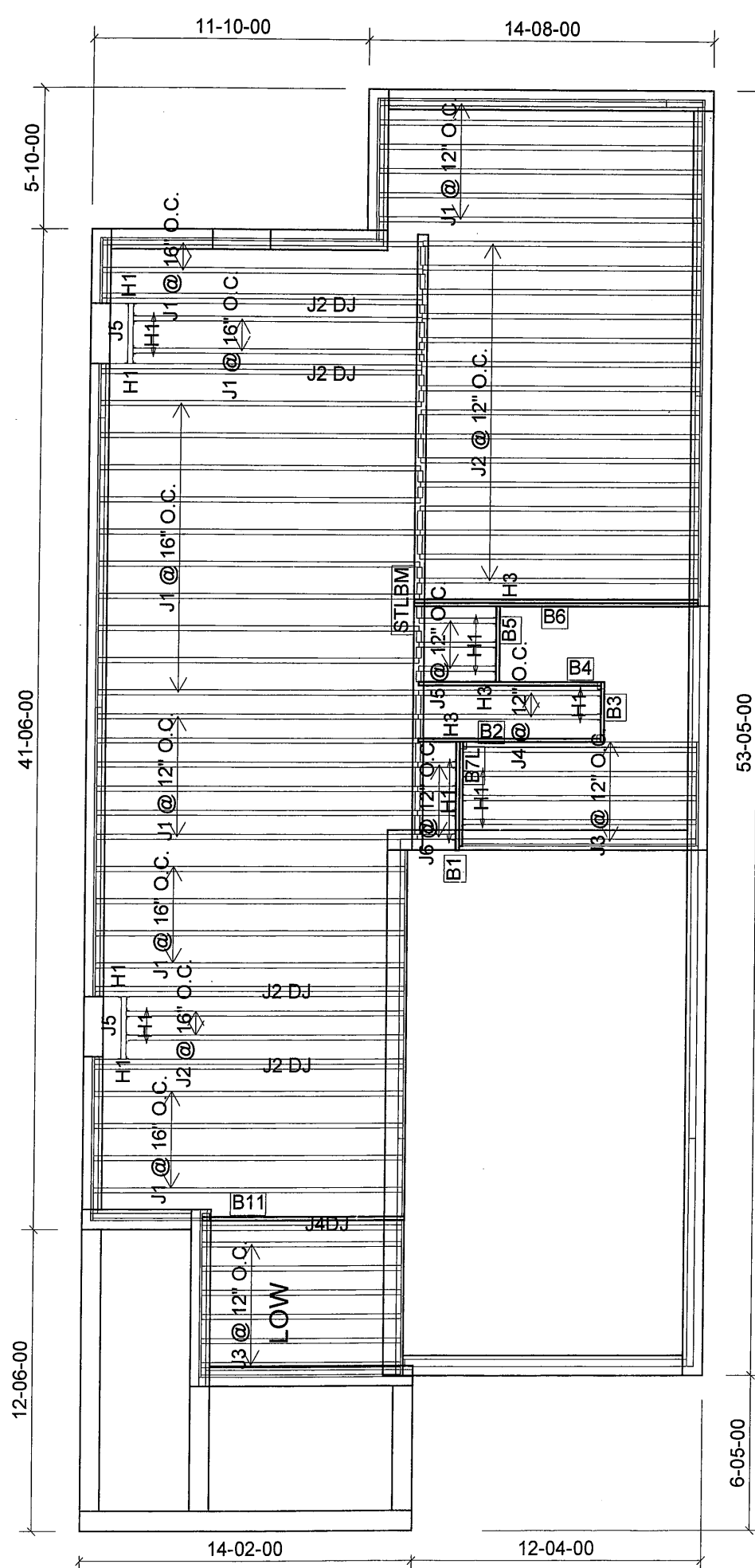
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC
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: 11/09/2017

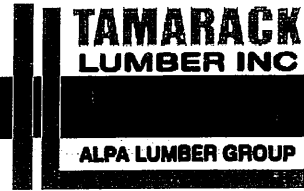
1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	34
J2 DJ	14-00-00	9 1/2" NI-40x	2	8
J2	12-00-00	9 1/2" NI-40x	1	17
J3	10-00-00	9 1/2" NI-40x	1	12
J4DJ	10-00-00	9 1/2" NI-40x	2	2
J4	8-00-00	9 1/2" NI-40x	1	2
J5	4-00-00	9 1/2" NI-40x	1	5
J6	2-00-00	9 1/2" NI-40x	1	4
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7L	6-00-00	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
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
05/01/2018 9:20:10 AM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S32-3-12

ELEVATION: A

LOT:
CITY: INNISFIL

SALESMAN: M D
DESIGNER: LBV
REVISION: CZ

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.

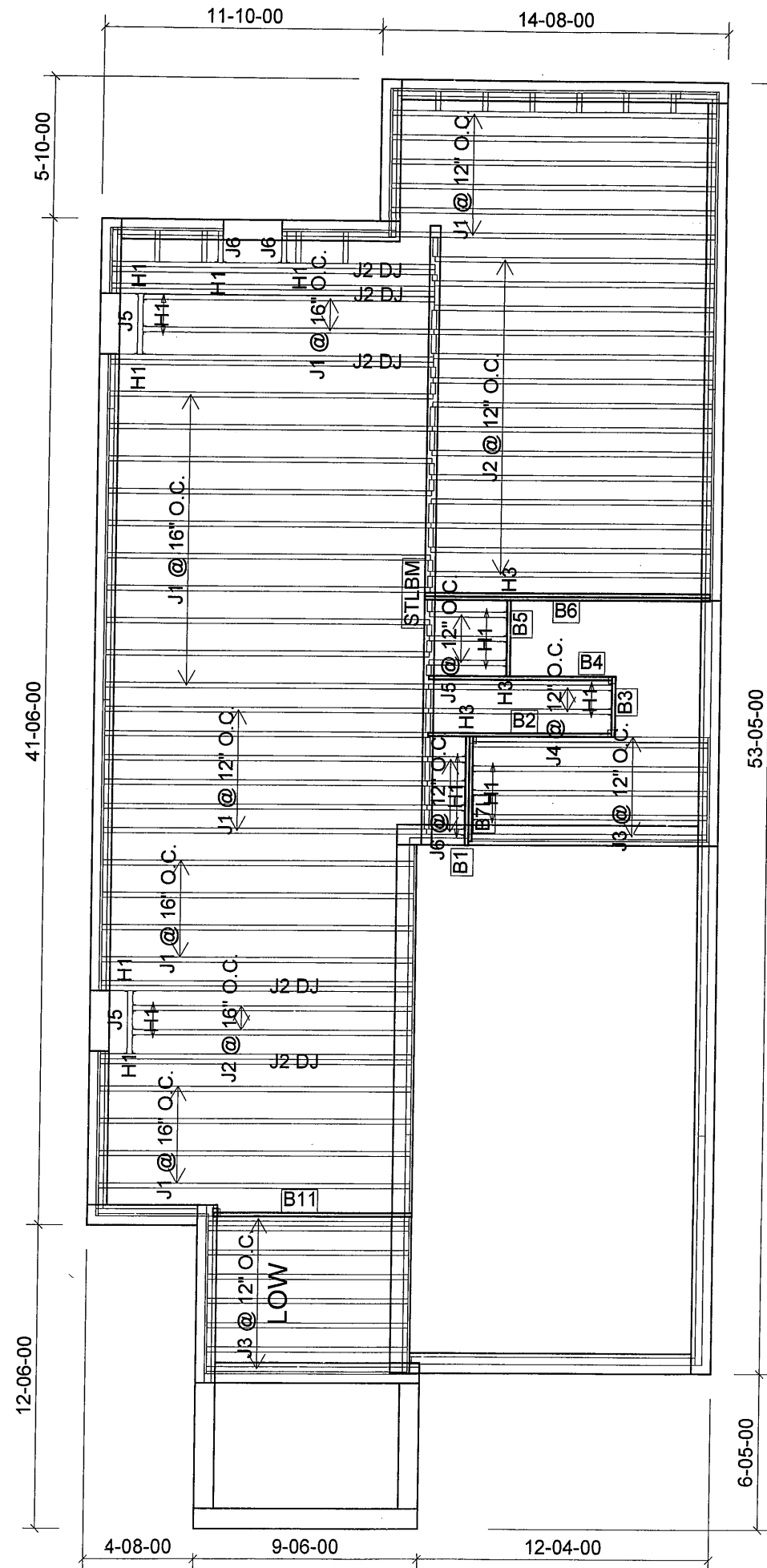
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

1st FLOOR

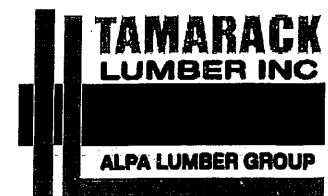
WOD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	32
J2 DJ	14-00-00	9 1/2" NI-40x	2	10
J2	12-00-00	9 1/2" NI-40x	1	16
J3	10-00-00	9 1/2" NI-40x	1	14
J4	8-00-00	9 1/2" NI-40x	1	2
J5	4-00-00	9 1/2" NI-40x	1	5
J6	2-00-00	9 1/2" NI-40x	1	6
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7L	6-00-00	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
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
05/01/2018 9:20:13 AM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S32-3-12

ELEVATION: B

LOT:
CITY: INNISFIL

SALESMAN: M D
DESIGNER: LBV
REVISION: CZ

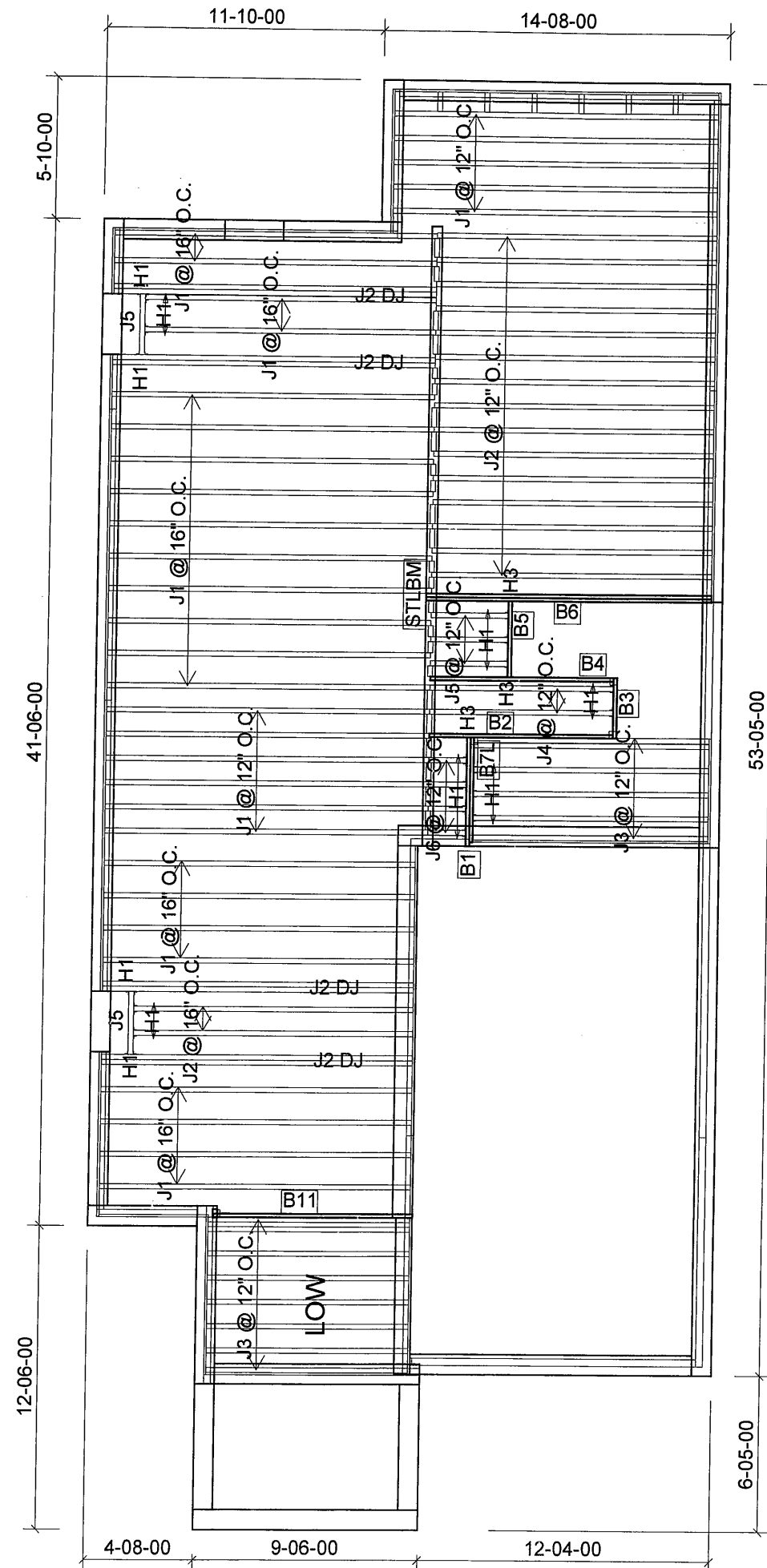
NOTES:
CERAMIC TILE APPLICATION
AS PER O.B.C. 9.30.6.
SQUASH BLOCKS
2x4 OR 2x6 #2 S.P.F. REQ'D UNDER
INTERIOR UNIFORM LOAD BEARING
WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS.
CANTILEVERED JOISTS
REQUIRE I-JOIST BLOCKING ALONG
BEARING AND RIMBOARD CLOSURE
AT ENDS.
REFER TO THE NORDIC
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: 11/09/2017

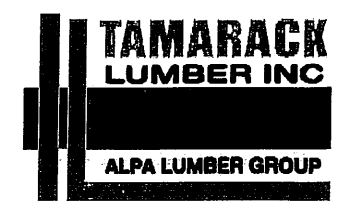
1st FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	33
J2 DJ	14-00-00	9 1/2" NI-40x	2	8
J2	12-00-00	9 1/2" NI-40x	1	17
J3	10-00-00	9 1/2" NI-40x	1	14
J4	8-00-00	9 1/2" NI-40x	1	2
J5	4-00-00	9 1/2" NI-40x	1	5
J6	2-00-00	9 1/2" NI-40x	1	4
B6	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7L	6-00-00	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
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

Town of Innisfil Certified Model
05/01/2018 9:20:14 AM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S32-3-12

ELEVATION: B

LOT:
CITY: INNISFIL

SALESMAN: M D
DESIGNER: LBV
REVISION: CZ

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.

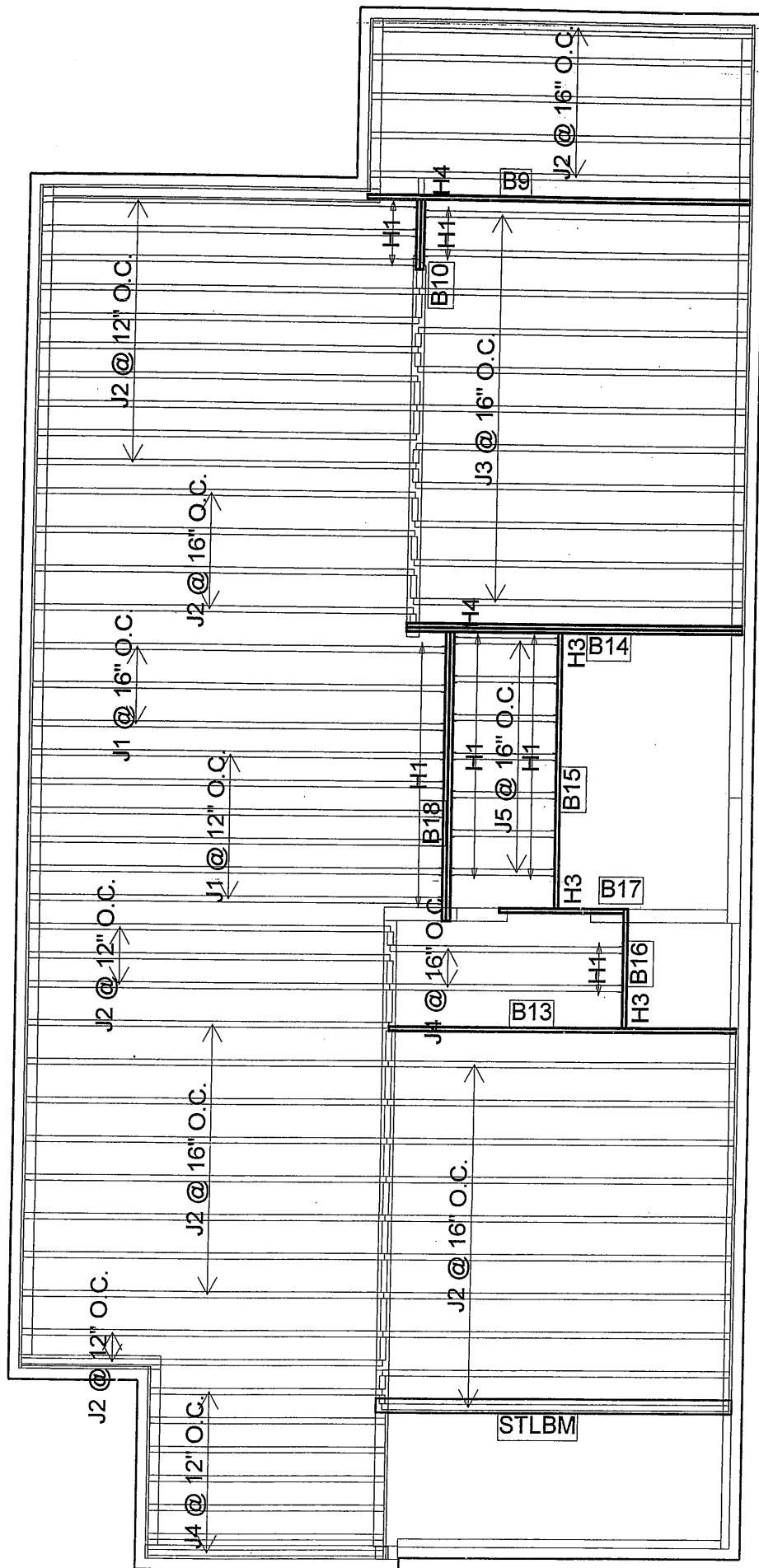
LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 11/09/2017

1st FLOOR

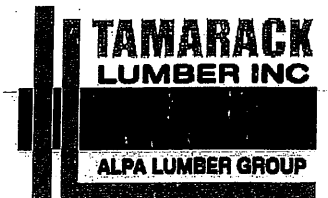
WOD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	9
J2	14-00-00	9 1/2" NI-40x	1	42
J3	12-00-00	9 1/2" NI-40x	1	11
J4	10-00-00	9 1/2" NI-40x	1	9
J5	4-00-00	9 1/2" NI-40x	1	7
B13	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
21	H1	IUS2.56/9.5
2	H3	HUS1.81/10
1	H3	HUS1.81/10
1	H4	HGUS410
1	H4	HGUS410

Town of Innisfil Certified Model
05/01/2018 9:20:17 AM kgervais



FROM PLAN DATED: NOV 2015

BUILDER:
BAYVIEW WELLINGTON

SITE:
ALCONA SHORES

MODEL: S32-3-12

ELEVATION: A,B

LOT:
CITY: INNISFIL

SALESMAN: M D
DESIGNER: LBV
REVISION: CZ

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: 05/09/2017

2nd FLOOR



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2342)

BC CALC® Design Report



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

September 11, 2017 14:49:11

Build 5033

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2342)

Specifier:

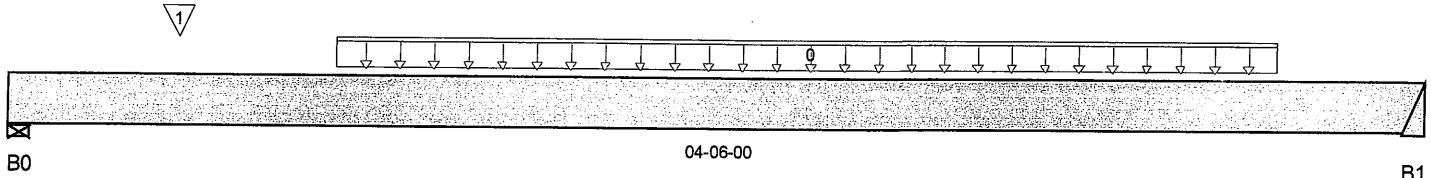
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:20 AM kgervais



Total Horizontal Product Length = 04-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,898 / 0	1,079 / 0		
B1	127 / 0	78 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0 Smoothed Load	Unf. Lin. (lb/ft)	L	01-00-08	04-00-08	36	18			n/a
1 -	Conc. Pt. (lbs)	L	00-06-08	00-06-08	1,917	1,081			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	603 ft-lbs	12,704 ft-lbs	4.7%	1	00-06-08
End Shear	405 lbs	5,785 lbs	7%	1	01-03-00
Total Load Defl.	L/999 (0.004")	n/a	n/a	4	02-02-00
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	02-02-00
Max Defl.	0.004"	n/a	n/a	4	02-02-00
Span / Depth	5.1	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 1-3/4"	4,196 lbs	81.6%	35.7%	Unspecified
B1 Hanger	2" x 1-3/4"	288 lbs	n/a	6.7%	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 O86.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

DWG NO. TAM 4646617
STRUCTURAL
COMPONENT ONLY





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i2375)

BC CALC® Design Report



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

September 11, 2017 14:49:11

Build 5033

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2375)

Specifier:

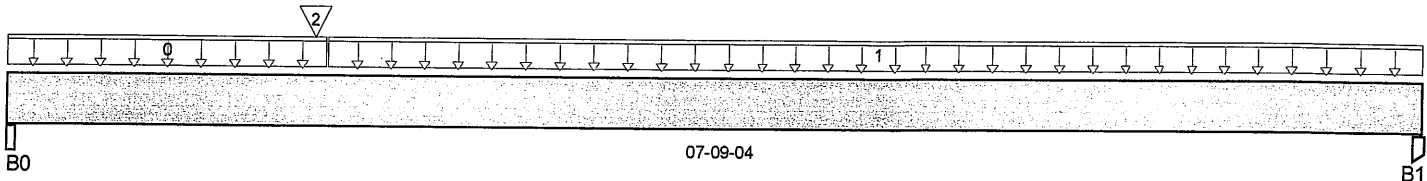
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:23 AM kgervais



Total Horizontal Product Length = 07-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	158 / 0	105 / 0		
B1, 1-3/4"	95 / 0	68 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-09-00	40	20			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-09-00	07-09-04	21	10			n/a
2	B1(i2342)	Conc. Pt. (lbs)	L	01-08-02	01-08-02	57	38			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	495 ft-lbs	12,704 ft-lbs	3.9%	1	03-03-02
End Shear	276 lbs	5,785 lbs	4.8%	1	01-00-02
Total Load Defl.	L/999 (0.015")	n/a	n/a	4	03-09-13
Live Load Defl.	L/999 (0.009")	n/a	n/a	5	03-09-13
Max Defl.	0.015"	n/a	n/a	4	03-09-13
Span / Depth	9.5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	2-5/8" x 1-3/4"	368 lbs	15%	6.6%	Unspecified
B1 Post	1-3/4" x 1-3/4"	227 lbs	9.1%	6.1%	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 O86.

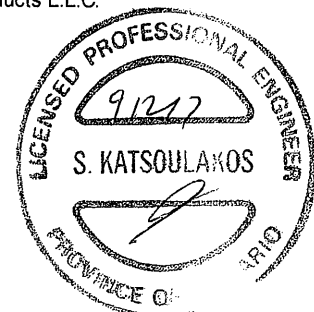
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

DWG NO. TAM 46467-17
STRUCTURAL
COMPONENT ONLY





Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B3(i1979

Specifier:

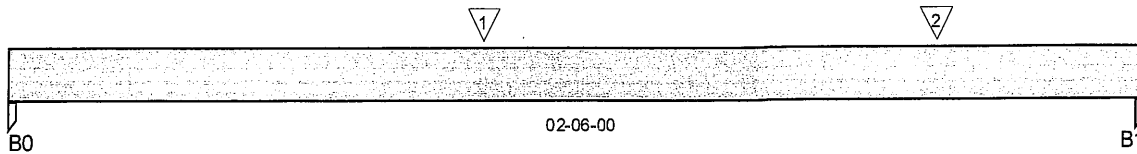
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:26 AM kgervais



Total Horizontal Product Length = 02-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	110 / 0	61 / 0		
B1, 3-1/2"	167 / 0	89 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	J6(i1645)	Conc. Pt. (lbs)	L	01-00-08	01-00-08	162	81			n/a
2	J6(i1631)	Conc. Pt. (lbs)	L	02-00-08	02-00-08	115	57			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	194 ft-lbs	12,704 ft-lbs	1.5%	1	01-00-08
End Shear	217 lbs	5,785 lbs	3.8%	1	01-01-00
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-02-12
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-02-12
Max Defl.	0"	n/a	n/a	4	01-02-12
Span / Depth	2.6	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"	242 lbs	6.1%	3.2%	Unspecified
B1 Post	3-1/2" x 1-3/4"	361 lbs	9.1%	4.8%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

Disclosure

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

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DWG NO. TAM 45218-17
STRUCTURAL
COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1978

Specifier:

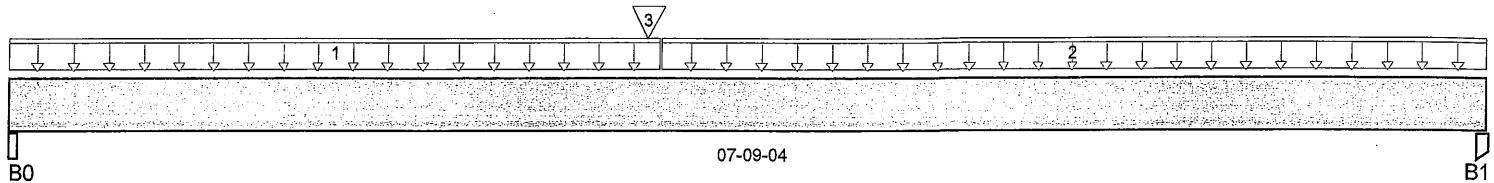
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:27 AM kgervais



Total Horizontal Product Length = 07-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-5/8"	336 / 0	192 / 0		
B1, 1-3/4"	242 / 0	143 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-05-00	20	10			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-05-00	07-09-04	9	5			n/a
3	B5(i1977)	Conc. Pt. (lbs)	L	03-04-02	03-04-02	469	243			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,099 ft-lbs	12,704 ft-lbs	16.5%	1	03-04-02
End Shear	694 lbs	5,785 lbs	12%	1	01-00-02
Total Load Defl.	L/999 (0.05")	n/a	n/a	4	03-08-14
Live Load Defl.	L/999 (0.032")	n/a	n/a	5	03-08-14
Max Defl.	0.05"	n/a	n/a	4	03-08-14
Span / Depth	9.5	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 Beam	2-5/8" x 1-3/4"	743 lbs	37.9%	13.3%	Unspecified
B1 Post	1-3/4" x 1-3/4"	541 lbs	27.2%	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. TAM 45279-17
 STRUCTURAL
 COMPONENT ONLY



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

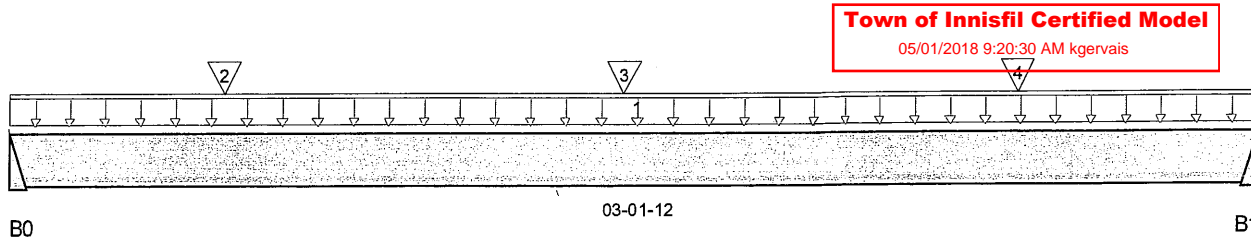
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i1977

Specifier:

Designer:

Company:

Misc:



Total Horizontal Product Length = 03-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	469 / 0	243 / 0		
B1	469 / 0	242 / 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	03-01-12	240	120			n/a
2	J7(i1636)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	55	28			n/a
3	J7(i1699)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	68	34			n/a
4	J7(i1693)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	60	30			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	720 ft-lbs	12,704 ft-lbs	5.7%	1	01-06-08
End Shear	454 lbs	5,785 lbs	7.8%	1	02-02-04
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-07-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-07-00
Max Defl.	0.003"	n/a	n/a	4	01-07-00
Span / Depth	3.7	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,007 lbs	n/a	23.6%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,006 lbs	n/a	23.6%	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 CSA 086.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

Disclosure

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

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CONFORMS TO OBC 2012

DWG NO. TAM 45280-17
STRUCTURAL
COMPONENT ONLY



BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B6(i1969

Specifier:

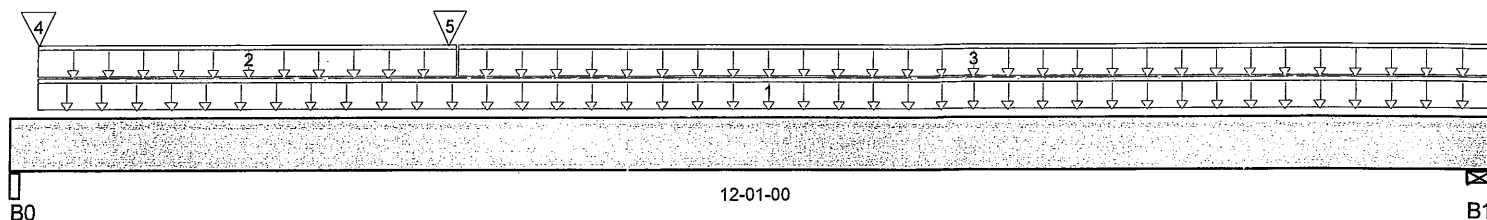
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:32 AM kgervais



Total Horizontal Product Length = 12-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	2,588 / 0	1,493 / 0		
B1, 2-1/2"	274 / 0	196 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	12-01-00	18	9			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	03-07-10	15	8			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-07-10	12-01-00	5	3			n/a
4	5(i786)	Conc. Pt. (lbs)	L	00-02-10	00-02-10	2,077	1,173			n/a
5	B5(i1977)	Conc. Pt. (lbs)	L	03-06-12	03-06-12	469	242			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,252 ft-lbs	25,408 ft-lbs	12.8%	1	03-06-12
End Shear	1,081 lbs	11,571 lbs	9.3%	1	01-02-12
Total Load Defl.	L/999 (0.098")	n/a	n/a	4	05-08-12
Live Load Defl.	L/999 (0.06")	n/a	n/a	5	05-08-12
Max Defl.	0.098"	n/a	n/a	4	05-08-12
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 Beam	5-1/4" x 3-1/2"	5,749 lbs	73.2%	25.6%	Unspecified
B1 Wall/Plate	2-1/2" x 3-1/2"	656 lbs	17.4%	6.1%	Unspecified

Notes

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

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

Calculations assume Member is Fully Braced.

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

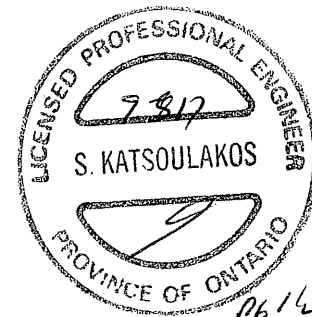
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012



DWG NO. TAM 452B1-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B6(i19)

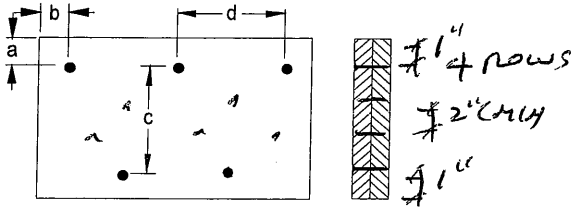
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 86.3 lb/ft

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

Connectors are:

3 1/2" ARDOX SPIRAL Nails

Disclosure

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

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DWG NO. TAM 45281-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



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

July 21, 2016 10:01:06

Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B7L(i213

Specifier:

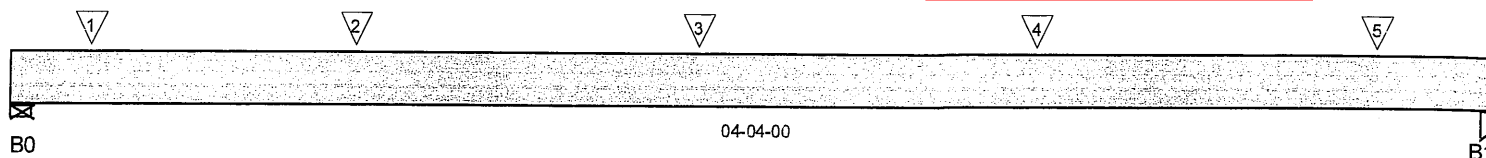
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:34 AM kgervais



Total Horizontal Product Length = 04-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	318 / 0	184 / 0		
B1, 3-1/2"	406 / 0	213 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	9(i1818)	Conc. Pt. (lbs)	L	00-02-12	00-02-12		15			n/a
2	J5(i1962)	Conc. Pt. (lbs)	L	01-00-00	01-00-00	183	91			n/a
3	J5(i1964)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	203	101			n/a
4	J5(i1964)	Conc. Pt. (lbs)	L	03-00-00	03-00-00	203	101			n/a
5	J5(i1960)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	135	68			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	819 ft-lbs	12,704 ft-lbs	6.4%	1	02-00-00
End Shear	641 lbs	5,785 lbs	11.1%	1	01-01-00
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	02-01-14
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	02-01-14
Max Defl.	0.006"	n/a	n/a	4	02-01-14
Span / Depth	4.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	707 lbs	27%	9.5%	Unspecified
B1 Post	3-1/2" x 1-3/4"	875 lbs	22%	11.7%	Unspecified

Notes

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

CONFORMS TO OBC 2012

DWG NO. TAM 45282-17
 STRUCTURAL
 COMPONENT ONLY

Disclosure

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

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Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i2048)

Specifier:

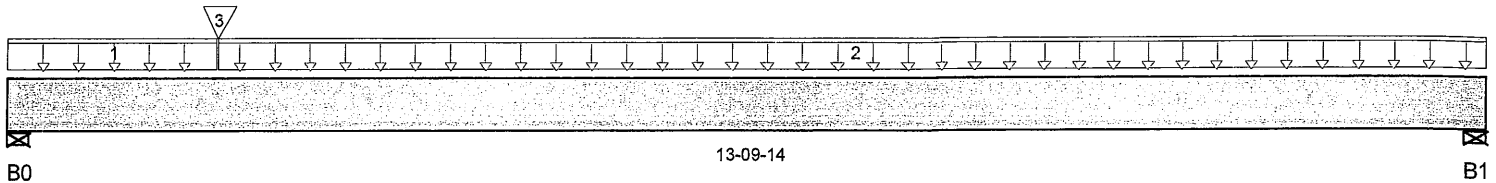
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:36 AM kgervais



Total Horizontal Product Length = 13-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	630 / 0	359 / 0		
B1, 4-3/8"	244 / 0	157 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1 FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-11-08	20	10			n/a
2 FC4 Floor Material	Unf. Lin. (lb/ft)	L	01-11-08	13-09-14	27	13			n/a
3 B10(i2065)	Conc. Pt. (lbs)	L	01-11-08	01-11-08	519	271			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,352 ft-lbs	12,704 ft-lbs	18.5%	1	04-09-10
End Shear	1,333 lbs	5,785 lbs	23%	1	01-03-00
Total Load Defl.	L/751 (0.21")	0.656"	31.9%	4	06-07-12
Live Load Defl.	L/1,208 (0.13")	0.438"	29.8%	5	06-05-11
Max Defl.	0.21"	n/a	n/a	4	06-07-12
Span / Depth	16.6	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 1-3/4"	1,394 lbs	33.9%	11.9%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	562 lbs	17.2%	6%	Unspecified

Notes

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

CONFORMS TO OBC 2012

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DWG NO. TAM45283-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i2065)

Specifier:

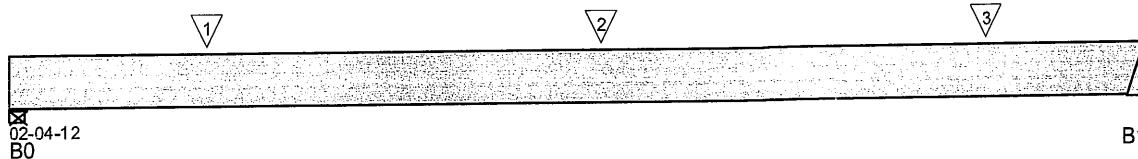
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:37 AM kgervais



Total Horizontal Product Length = 02-04-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	716 / 0	370 / 0		
B1	554 / 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 -	Conc. Pt. (lbs)	L	00-05-00	00-05-00	584	292			n/a
2 J2(i2063)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	271	136			n/a
3 -	Conc. Pt. (lbs)	L	02-00-11	02-00-11	415	208			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	521 ft-lbs	25,408 ft-lbs	2.1%	1	01-02-14
End Shear	517 lbs	11,571 lbs	4.5%	1	01-01-00
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-02-14
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-02-14
Max Defl.	0.001"	n/a	n/a	4	01-02-14
Span / Depth	2.6	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 3-1/2"	1,537 lbs	29.4%	10.3%	Unspecified
B1 Hanger	2" x 3-1/2"	1,192 lbs	n/a	14%	HGUS410

Notes

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

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

Calculations assume Member is Fully Braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

CONFORMS TO OBC 2012

DWG NO. TAM 45284-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i2C

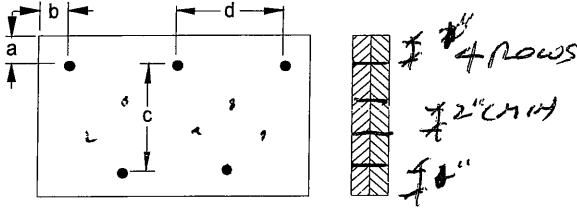
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 676.2 lb/ft

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

Connectors are: 16d

3 1/2" ARDOX SPIRAL Nails

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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10/27
 DWG NO. TAM 45284-17
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B11(i213

Specifier:

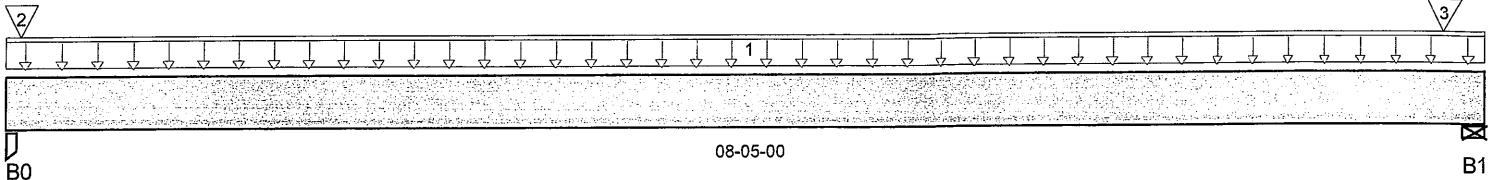
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:38 AM kgervais



Total Horizontal Product Length = 08-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	205 / 0	144 / 0		
B1, 3-1/2"	127 / 0	96 / 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	08-05-00	25	12			n/a
2	E4(i770)	Conc. Pt. (lbs)	L	00-01-00	00-01-00	100	71			n/a
3	2(i781)	Conc. Pt. (lbs)	L	08-02-04	08-02-04	22	23			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	468 ft-lbs	12,704 ft-lbs	3.7%	1	04-02-08
End Shear	185 lbs	5,785 lbs	3.2%	1	01-01-00
Total Load Defl.	L/999 (0.015")	n/a	n/a	4	04-02-08
Live Load Defl.	L/999 (0.009")	n/a	n/a	5	04-02-08
Max Defl.	0.015"	n/a	n/a	4	04-02-08
Span / Depth	10.1	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"	488 lbs	12.3%	6.5%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	311 lbs	11.9%	4.2%	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.

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DWG NO. TAM45285-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i1972)✓

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

July 21, 2016 10:01:07

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i1972

Specifier:

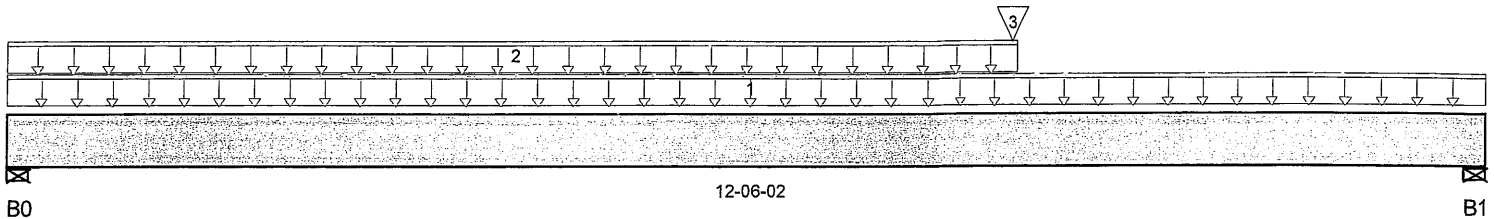
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:41 AM kgervais



Total Horizontal Product Length = 12-06-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2-3/4"	533 / 0	299 / 0		
B1, 2-3/8"	706 / 0	388 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-06-02	24	12			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	-00-00-00	08-06-12	29	14			n/a
3	-	Conc. Pt. (lbs)	L	08-06-00	08-06-00	674	345			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,466 ft-lbs	12,704 ft-lbs	43%	1	08-05-14
End Shear	1,481 lbs	5,785 lbs	25.6%	1	11-06-04
Total Load Defl.	L/392 (0.374")	0.61"	61.2%	4	06-07-07
Live Load Defl.	L/606 (0.242")	0.407"	59.4%	5	06-07-07
Max Defl.	0.374"	n/a	n/a	4	06-07-07
Span / Depth	15.4	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	2-3/4" x 1-3/4"	1,173 lbs	57.1%	20%	Unspecified
B1 Wall/Plate	2-3/8" x 1-3/4"	1,545 lbs	87%	30.5%	Unspecified

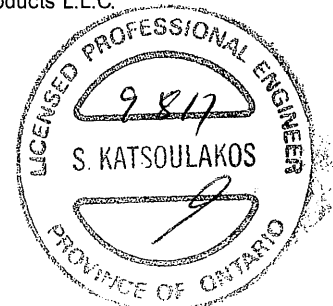
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculation assumes member is partially braced. See engineering report for the unbraced length.
 Resistance Factor phi has been applied to all presented results per CSA 086.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC and CSA 086.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9
 Deflections less than 1/8" were ignored in the results.

CONFORMS TO OBC 2012

DWG NO. TAM 45206-17
 STRUCTURAL
 COMPONENT ONLY

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Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i1973

Specifier:

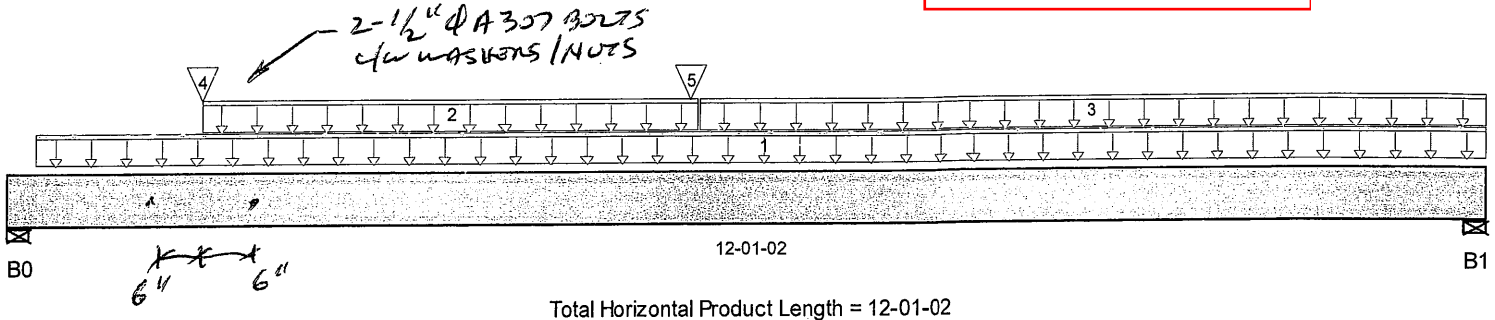
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:42 AM kgervais



Total Horizontal Product Length = 12-01-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	2,003 / 0	1,113 / 0		
B1, 4-3/8"	511 / 0	328 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	12-01-02	18	9			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	01-07-00	05-07-12	9	4			n/a
3	FC4 Floor Material	Unf. Lin. (lb/ft)	L	05-07-12	12-01-02	6	3			n/a
4	B18(i1974)	Conc. Pt. (lbs)	L	01-07-00	01-07-00	1,823	957			n/a
5	B15(i1971)	Conc. Pt. (lbs)	L	05-06-14	05-06-14	385	215			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	5,997 ft-lbs	25,408 ft-lbs	23.6%	1	05-06-14
End Shear	4,309 lbs	11,571 lbs	37.2%	1	01-03-00
Total Load Defl.	L/713 (0.192")	0.57"	33.6%	4	05-07-12
Live Load Defl.	L/999 (0.12")	n/a	n/a	5	05-07-12
Max Defl.	0.192"	n/a	n/a	4	05-07-12
Span / Depth	14.4	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	4,397 lbs	53.5%	18.7%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	1,178 lbs	18%	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 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 45287-17
STRUCTURAL
COMPONENT ONLY



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(j1)

Specifier:

Designer:

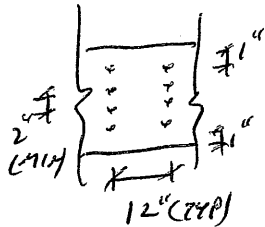
Company:

Misc:

Connection Diagram

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection.

OK WITH
MULTIPLY
+
BOLTING



PROVIDE 4 ROWS OF 3 1/2" ARDOX
SPIRAL NAILS @ 12" O/C FOR
MULTI-PLY NAILING. MAINTAIN
A MIN. 1" LUMBER EDGE/END
DISTANCE. DO NOT USE AIR NAILS

+
BOLTS

Disclosure

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DWG NO. TAM 45287-17
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B15(i1971)

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

July 21, 2016 10:01:07

BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i1971)

Specifier:

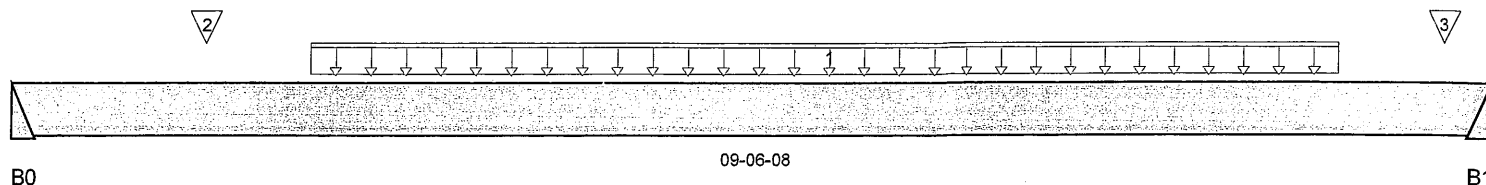
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:45 AM kgervais



Total Horizontal Product Length = 09-06-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	348 / 0	197 / 0		
B1	383 / 0	214 / 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	01-11-00	08-07-00	81	40			n/a
2	J5(i1797)	Conc. Pt. (lbs)	L	01-03-00	01-03-00	119	60			n/a
3	J5(i1791)	Conc. Pt. (lbs)	L	09-03-00	09-03-00	72	36			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,942 ft-lbs	12,704 ft-lbs	15.3%	1	05-03-00
End Shear	763 lbs	5,785 lbs	13.2%	1	00-11-08
Total Load Defl.	L/999 (0.086")	n/a	n/a	4	04-09-00
Live Load Defl.	L/999 (0.055")	n/a	n/a	5	04-09-00
Max Defl.	0.086"	n/a	n/a	4	04-09-00
Span / Depth	11.8	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	769 lbs	n/a	18%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	842 lbs	n/a	19.7%	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. TAM45288-17
STRUCTURAL
COMPONENT ONLY

Disclosure

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BC CALC® Design Report



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i1970

Specifier:

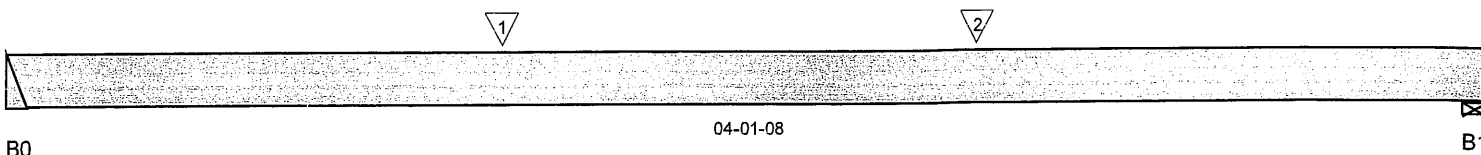
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:46 AM kgervais



Total Horizontal Product Length = 04-01-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	529 / 0	273 / 0		
B1, 5-1/2"	605 / 0	312 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
1	J4(i1902)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	571	285			n/a
2	J4(i1816)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	563	281			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,437 ft-lbs	12,704 ft-lbs	11.3%	1	01-04-08
End Shear	1,290 lbs	5,785 lbs	22.3%	1	02-10-08
Total Load Defl.	L/999 (0.01")	n/a	n/a	4	01-11-00
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	01-11-00
Max Defl.	0.01"	n/a	n/a	4	01-11-00
Span / Depth	4.6	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	1,136 lbs	n/a	26.6%	HUS1.81/10
B1 Wall/Plate	5-1/2" x 1-3/4"	1,297 lbs	31.6%	11%	Unspecified

Notes

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

CONFORMS TO OBC 2012

Disclosure

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OWNED BY TAM 4528917
 STRUCTURAL
 COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100-SP 1st Floor\Flush Beams\B17(i2287)

BC CALC® Design Report



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

September 5, 2017 16:06:11

Build 5033

File Name: S32-3-12.mmdl

Job Name:

Description: Designs\Flush Beams\1st Floor\Flush Beams\B17(i2287);

Address:

Specifier:

City, Province, Postal Code:INNISFIL,

Designer:

Customer:

Company:

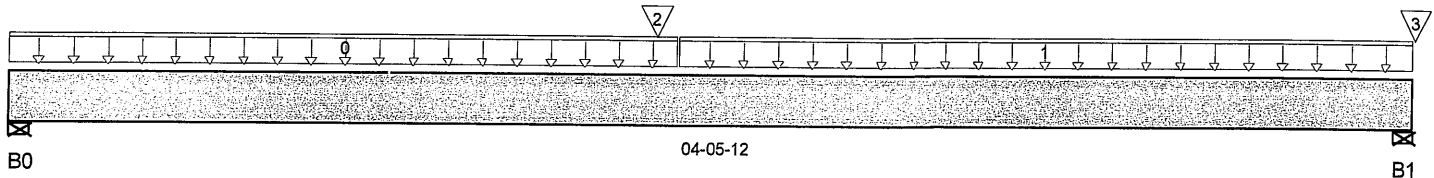
Code reports:

CCMC 12472-R

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:48 AM kgervais



Total Horizontal Product Length = 04-05-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	292 / 0	170 / 0		
B1, 4"	312 / 0	178 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-01-08	53	27			n/a
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	02-01-08	04-05-12	28	14			n/a
2	B15(i1971)	Conc. Pt. (lbs)	L	02-00-10	02-00-10	346	197			n/a
3	FC4 Floor Material	Conc. Pt. (lbs)	L	04-05-12	04-05-12	78	39			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	937 ft-lbs	12,704 ft-lbs	7.4%	1	02-00-10
End Shear	521 lbs	5,785 lbs	9%	1	01-01-00
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	02-01-15
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	02-01-15
Max Defl.	0.006"	n/a	n/a	4	02-01-15
Span / Depth	5	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	3-1/2" x 1-3/4"	650 lbs	19.9%	8.7%	Unspecified
B1 Wall/Plate	4" x 1-3/4"	690 lbs	18.4%	8.1%	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 O86.

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

BC CALC® Design Report


Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i1974)

Specifier:

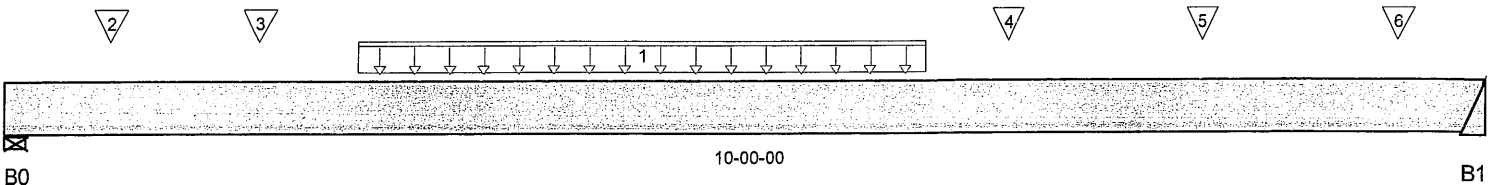
Designer:

Company:

Misc:

Town of Innisfil Certified Model

05/01/2018 9:20:49 AM kgervais



Total Horizontal Product Length = 10-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,866 / 0	983 / 0		
B1	1,837 / 0	965 / 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	02-04-08	06-02-08	395	198			n/a
2 J1(i1820)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	323	162			n/a
3 -	Conc. Pt. (lbs)	L	01-08-08	01-08-08	447	223			n/a
4 -	Conc. Pt. (lbs)	L	06-09-07	06-09-07	456	228			n/a
5 -	Conc. Pt. (lbs)	L	08-01-06	08-01-06	506	253			n/a
6 -	Conc. Pt. (lbs)	L	09-05-02	09-05-02	455	227			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	9,282 ft-lbs	25,408 ft-lbs	36.5%	1	04-08-08
End Shear	3,543 lbs	11,571 lbs	30.6%	1	01-03-00
Total Load Defl.	L/533 (0.214")	0.475"	45%	4	05-01-00
Live Load Defl.	L/813 (0.14")	0.317"	44.3%	5	05-01-00
Max Defl.	0.214"	n/a	n/a	4	05-01-00
Span / Depth	12	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	4,028 lbs	49%	17.2%	Unspecified
B1 Hanger	2" x 3-1/2"	3,961 lbs	n/a	46.4%	HGUS410

Notes

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

CONFORMS TO OBC 2012


p616

 DWG NO. TAM 45291-17
**STRUCTURAL
 COMPONENT ONLY**



Build 4340

Job Name:

Address:

City, Province, Postal Code: INNISFIL,

Customer:

Code reports: CCMC 12472-R

File Name: S32-3-12.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B18(i1)

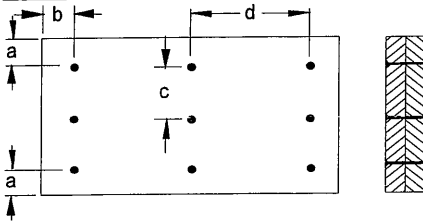
Specifier:

Designer:

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 647.2 lb/ft

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

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

3 1/2" ARDOX SPIRAL

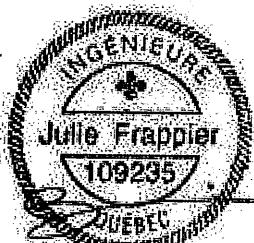
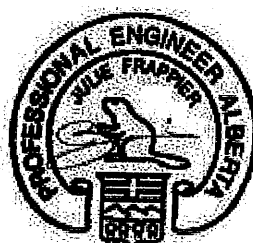
Disclosure

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. TAM45291-17
 STRUCTURAL
 COMPONENT ONLY



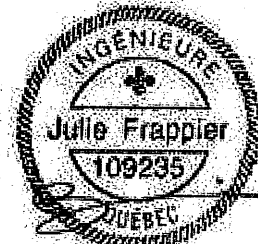
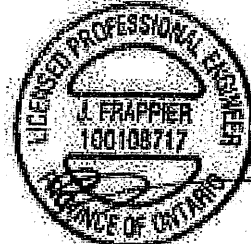
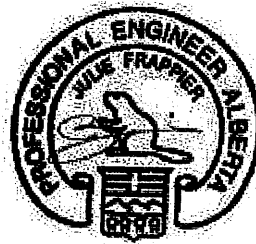
Maximum Floor Spans

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

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

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

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



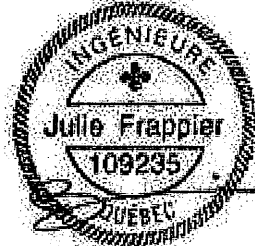
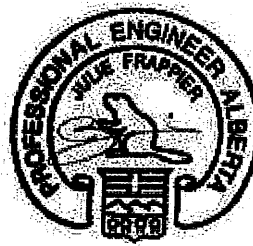
Maximum Floor Spans

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

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

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



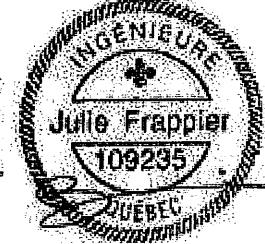
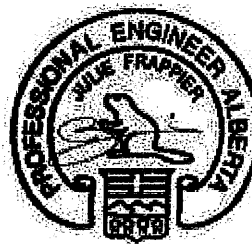
Maximum Floor Spans

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

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

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

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



Maximum Floor Spans

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

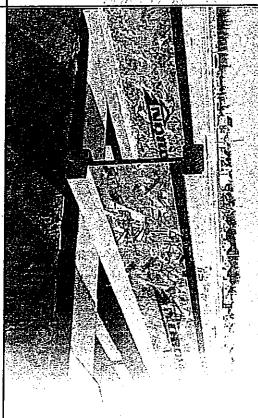
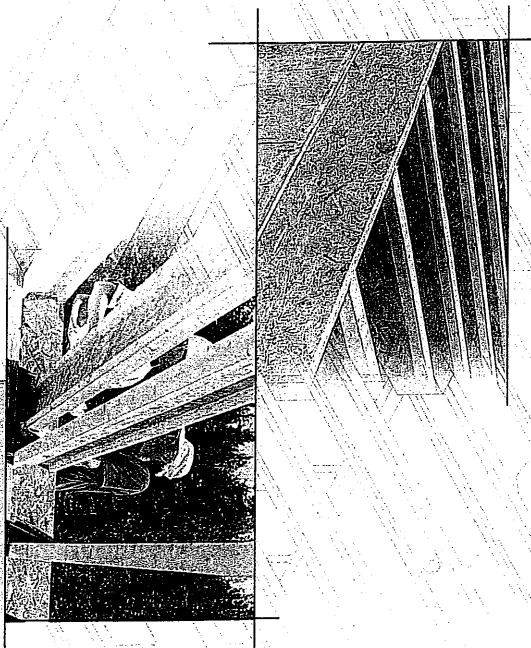
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

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

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



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



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SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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

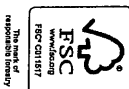
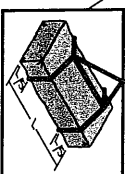
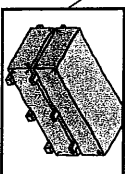
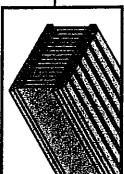


Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

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

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2	24"	12"	16"	19.2"	24"
12	NI-20	15-11	13-9	13-9	13-5	16-3	15-4	14-10	14-7
12	NI-24	16-1	14-8	14-8	14-9	17-5	16-5	15-10	15-5
12	NI-28	16-3	15-4	15-10	14-11	17-7	16-7	15-10	15-5
12	NI-32	16-1	15-1	15-6	15-7	18-7	17-4	16-9	16-11
12	NI-36	16-3	15-8	15-8	15-9	18-10	17-6	16-11	16-10
12	NI-40	16-1	15-0	15-5	15-6	18-4	17-3	16-8	16-7
12	NI-44	16-1	14-5	14-5	14-6	18-6	17-5	16-8	16-7
12	NI-48	16-1	14-3	14-3	14-4	18-8	17-7	16-9	16-8
12	NI-52	16-1	14-1	14-1	14-2	18-10	17-9	16-11	16-9
12	NI-56	16-1	13-9	13-9	14-0	18-12	17-11	16-13	16-11
12	NI-60	16-1	13-7	13-7	13-8	18-14	17-13	16-15	16-13
12	NI-64	16-1	13-5	13-5	13-6	18-16	17-15	16-17	16-15
12	NI-68	16-1	13-3	13-3	13-4	18-18	17-17	16-19	16-17
12	NI-72	16-1	13-1	13-1	13-2	18-20	17-19	16-21	16-19
12	NI-76	16-1	12-9	12-9	13-0	18-22	17-21	16-23	16-21
12	NI-80	16-1	12-7	12-7	12-8	18-24	17-23	16-25	16-23
12	NI-84	16-1	12-5	12-5	12-6	18-26	17-25	16-27	16-25
12	NI-88	16-1	12-3	12-3	12-4	18-28	17-27	16-29	16-27
12	NI-92	16-1	12-1	12-1	12-2	18-30	17-29	16-31	16-29
12	NI-96	16-1	11-9	11-9	12-0	18-32	17-31	16-33	16-31
12	NI-100	16-1	11-7	11-7	11-8	18-34	17-33	16-35	16-33
12	NI-104	16-1	11-5	11-5	11-6	18-36	17-35	16-37	16-35
12	NI-108	16-1	11-3	11-3	11-4	18-38	17-37	16-39	16-37
12	NI-112	16-1	11-1	11-1	11-2	18-40	17-39	16-41	16-39
12	NI-116	16-1	10-9	10-9	11-0	18-42	17-41	16-43	16-41
12	NI-120	16-1	10-7	10-7	10-8	18-44	17-43	16-45	16-43
12	NI-124	16-1	10-5	10-5	10-6	18-46	17-45	16-47	16-45
12	NI-128	16-1	10-3	10-3	10-4	18-48	17-47	16-49	16-47
12	NI-132	16-1	10-1	10-1	10-2	18-50	17-49	16-51	16-49
12	NI-136	16-1	9-9	9-9	10-0	18-52	17-51	16-53	16-51
12	NI-140	16-1	9-7	9-7	9-8	18-54	17-53	16-55	16-53
12	NI-144	16-1	9-5	9-5	9-6	18-56	17-55	16-57	16-55
12	NI-148	16-1	9-3	9-3	9-4	18-58	17-57	16-59	16-57
12	NI-152	16-1	9-1	9-1	9-2	18-60	17-59	16-61	16-59
12	NI-156	16-1	8-9	8-9	9-0	18-62	17-61	16-63	16-61
12	NI-160	16-1	8-7	8-7	8-8	18-64	17-63	16-65	16-63
12	NI-164	16-1	8-5	8-5	8-6	18-66	17-65	16-67	16-65
12	NI-168	16-1	8-3	8-3	8-4	18-68	17-67	16-69	16-67
12	NI-172	16-1	8-1	8-1	8-2	18-70	17-69	16-71	16-69
12	NI-176	16-1	7-9	7-9	8-0	18-72	17-71	16-73	16-71
12	NI-180	16-1	7-7	7-7	7-8	18-74	17-73	16-75	16-73
12	NI-184	16-1	7-5	7-5	7-6	18-76	17-75	16-77	16-75
12	NI-188	16-1	7-3	7-3	7-4	18-78	17-77	16-79	16-77
12	NI-192	16-1	7-1	7-1	7-2	18-80	17-79	16-81	16-79
12	NI-196	16-1	6-9	6-9	7-0	18-82	17-81	16-83	16-81
12	NI-200	16-1	6-7	6-7	6-8	18-84	17-83	16-85	16-83
12	NI-204	16-1	6-5	6-5	6-6	18-86	17-85	16-87	16-85
12	NI-208	16-1	6-3	6-3	6-4	18-88	17-87	16-89	16-87
12	NI-212	16-1	6-1	6-1	6-2	18-90	17-89	16-91	16-89
12	NI-216	16-1	5-9	5-9	6-0	18-92	17-91	16-93	16-91
12	NI-220	16-1	5-7	5-7	5-8	18-94	17-93	16-95	16-93
12	NI-224	16-1	5-5	5-5	5-6	18-96	17-95	16-97	16-95
12	NI-228	16-1	5-3	5-3	5-4	18-98	17-97	16-99	16-97
12	NI-232	16-1	5-1	5-1	5-2	18-100	17-99	16-101	16-99
12	NI-236	16-1	4-9	4-9	5-0	18-102	17-101	16-103	16-101
12	NI-240	16-1	4-7	4-7	4-8	18-104	17-103	16-105	16-103
12	NI-244	16-1	4-5	4-5	4-6	18-106	17-105	16-107	16-105
12	NI-248	16-1	4-3	4-3	4-4	18-108	17-107	16-109	16-107
12	NI-252	16-1	4-1	4-1	4-2	18-110	17-109	16-111	16-109
12	NI-256	16-1	3-9	3-9	4-0	18-112	17-111	16-113	16-111
12	NI-260	16-1	3-7	3-7	3-8	18-114	17-113	16-115	16-113
12	NI-264	16-1	3-5	3-5	3-6	18-116	17-115	16-117	16-115
12	NI-268	16-1	3-3	3-3	3-4	18-118	17-117	16-119	16-117
12	NI-272	16-1	3-1	3-1	3-2	18-120	17-119	16-121	16-119
12	NI-276	16-1	2-9	2-9	3-0	18-122	17-121	16-123	16-121
12	NI-280	16-1	2-7	2-7	2-8	18-124	17-123	16-125	16-123
12	NI-284	16-1	2-5	2-5	2-6	18-126	17-125	16-127	16-125
12	NI-288	16-1	2-3	2-3	2-4	18-128	17-127	16-129	16-127
12	NI-292	16-1	2-1	2-1	2-2	18-130	17-129	16-131	16-129
12	NI-296	16-1	1-9	1-9	2-0	18-132	17-131	16-133	16-131
12	NI-300	16-1	1-7	1-7	1-8	18-134	17-133	16-135	16-133
12	NI-304	16-1	1-5	1-5	1-6	18-136	17-135	16-137	16-135
12	NI-308	16-1	1-3	1-3	1-4	18-138	17-137	16-139	16-137
12	NI-312	16-1	1-1	1-1	1-2	18-140	17-139	16-141	16-139
12	NI-316	16-1	0-9	0-9	1-0	18-142	17-141	16-143	16-141
12	NI-320	16-1	0-7	0-7	0-8	18-144	17-143	16-145	16-143
12	NI-324	16-1	0-5	0-5	0-6	18-146	17-145	16-147	16-145
12	NI-328	16-1	0-3	0-3	0-4	18-148	17-147	16-149	16-147
12	NI-332	16-1	0-1	0-1	0-2	18-150	17-149	16-151	16-149
12	NI-336	16-1	0-0	0-0	0-1	18-152	17-151	16-153	16-151
12	NI-340	16-1	0-0	0-0	0-1	18-154	17-153	16-155	16-153
12	NI-344	16-1	0-0	0-0	0-1	18-156	17-155	16-157	16-155
12	NI-348	16-1	0-0	0-0	0-1	18-158	17-157	16-159	16-157
12	NI-352	16-1	0-0	0-0	0-1	18-160	17-159	16-161	16-159
12	NI-356	16-1	0-0	0-0	0-1	18-162	17-161	16-163	16-161
12	NI-360	16-1	0-0	0-0	0-1	18-164	17-163	16-165	16-163
12	NI-364	16-1	0-0	0-0	0-1	18-166	17-165	16-167	16-165
12	NI-368	16-1	0-0	0-0	0-1	18-168	17-167	16-169	16-167
12	NI-372	16-1	0-0	0-0	0-1	18-170	17-169	16-171	16-169
12	NI-376	16-1	0-0	0-0	0-1	18-172	17-171	16-173	16-171
12	NI-380	16-1	0-0	0-0	0-1	18-174	17-173	16-175	16-173
12	NI-384	16-1	0-0	0-0	0-1	18-176	17-175	16-177	16-175
12	NI-388	16-1	0-0	0-0	0-1	18-178	17-177	16-179	16-177
12	NI-392	16-1	0-0	0-0	0-1	18-180	17-179	16-181	16-179
12	NI-396	16-1	0-0	0-0	0-1	18-182	17-181	16-183	16-181
12	NI-400	16-1	0-0	0-0	0-1	18-184	17-183	16-185	16-183
12	NI-404	16-1	0-0	0-0	0-1	18-186	17-185	16-187	16-185
12	NI-408	16-1	0-0	0-0	0-1	18-188	17-187	16-189	16-187
12	NI-412	16-1	0-0	0-0	0-1	18-190	17-189	16-191	16-189
12	NI-416	16-1	0-0	0-0	0-1	18-192	17-191	16-193	16-191
12	NI-420	16-1	0-0	0-0	0-1	18-194	17-193	16-195	16-193
12	NI-424	16-1	0-0	0-0	0-1	18-196	17-195	16-197	16-195
12	NI-428	16-1	0-0	0-0	0-1	18-198	17-197	16-199	16-197
12	NI-432	16-1	0-0	0-0	0-1	18-200	17-199	16-201	16-199
12	NI-436	16-1	0-0	0-0	0-1	18-202	17-201	16-203	16-201
12	NI-440	16-1	0-0	0-0	0-1	18-204	17-203	16-205	16-203
12	NI-444	16-1	0-0	0-0	0-1	18-206	17-205	16-207	16-205
12	NI-448	16-1	0-0	0-0	0-1	18-208	17-207	16-209	16-207
12	NI-452	16-1	0-0	0-0	0-1	18-210	17-209	16-211	16-209
12	NI-456	16-1	0-0	0-0	0-1	18-212	17-211	16-213	16-211
12	NI-460	16-1	0-0	0-0	0-1	18-214	17-213	16-215	16-213
12	NI-464	16-1	0-0	0-0	0-1	18-216	17-215	16-217	16-215
12	NI-468	16-1	0-0	0-0	0-1	18-218	17-217	16-219	16-217
12	NI-472	16-1	0-0	0-0	0-1	18-220	17-219	16-221	16-219
12	NI-476	16-1	0-0	0-0	0-1	18-222	17-221	16-223	16-221
12	NI-480	16-1	0-0	0-0	0-1	18-224	17-223	16-225	16-223
12	NI-484	16-1	0-0	0-0	0-1	18-226	17-225	16-227	16-225
12	NI-488	16-1	0-0	0-0	0-1	18-228	17-227	16-229	16-227
12	NI-492	16-1	0-0	0-0	0-1	18-230	17-229	16-231	16-229
12	NI-496	16-1	0-0	0-0	0-1	18-232	17-231	16-233	16-231
12	NI-500	16-1	0-0	0-0	0-1	18-234	17-233	16-235	16-233
12	NI-504	16-1	0-0	0-0	0-1	18-236	17-235	16-237	16-235
12	NI-508	16-1	0-0	0-0	0-1	18-238	17-237	16-239	16-237
12	NI-512	16-1	0-0	0-0	0-1	18-240	17-239	16-241	16-239

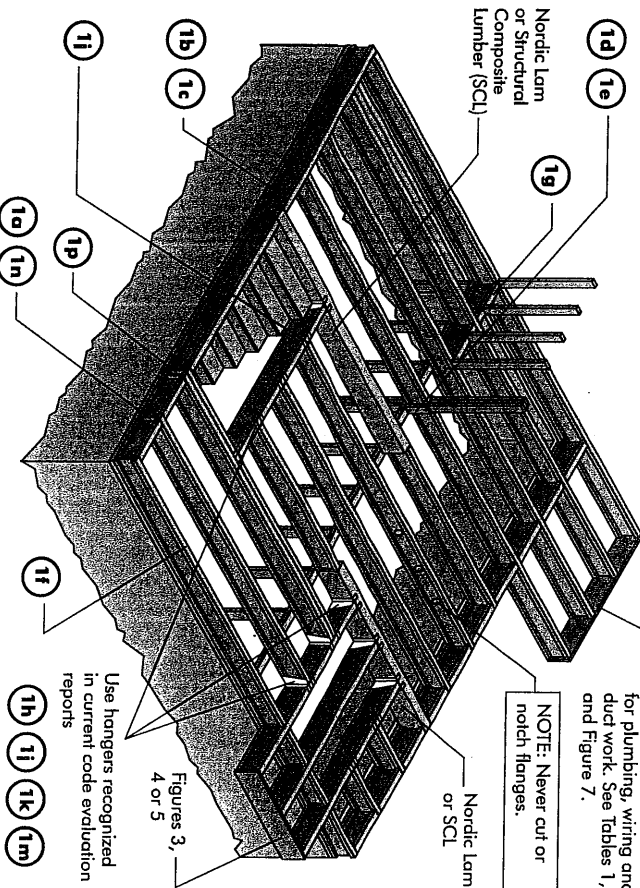
INSTALLING NORDIC I-JOISTS

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

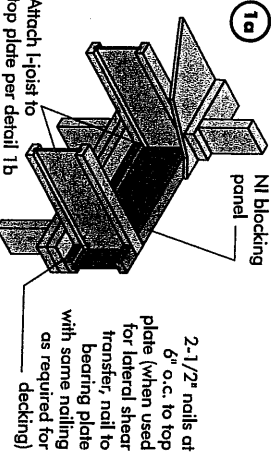
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FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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

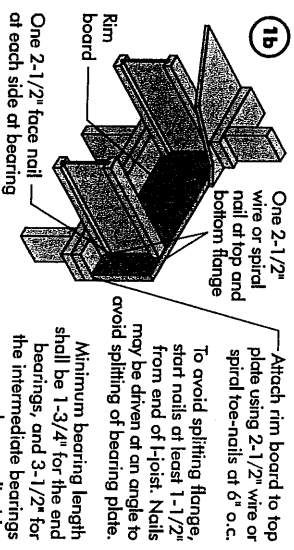


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



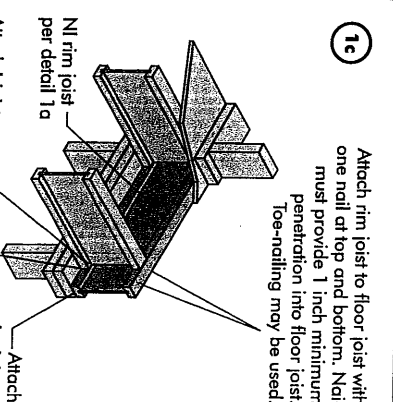
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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

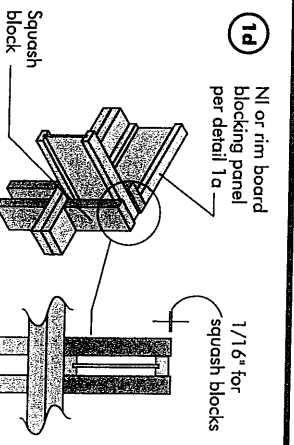


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

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

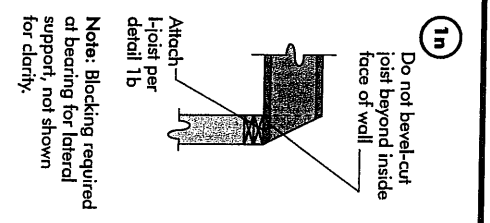
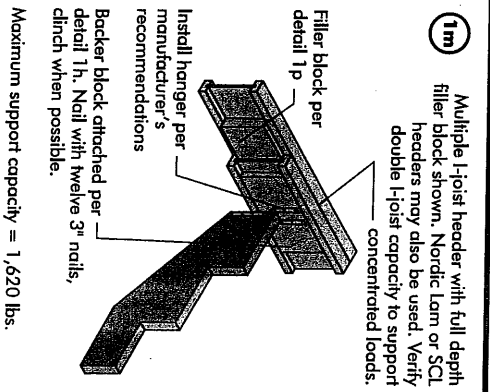
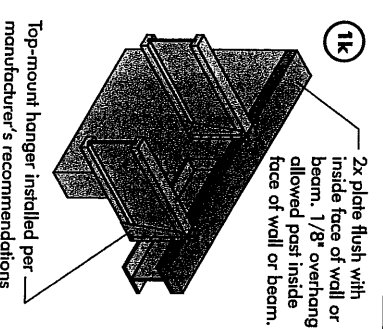
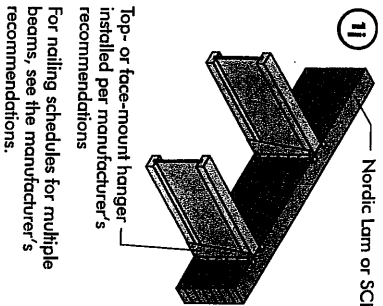
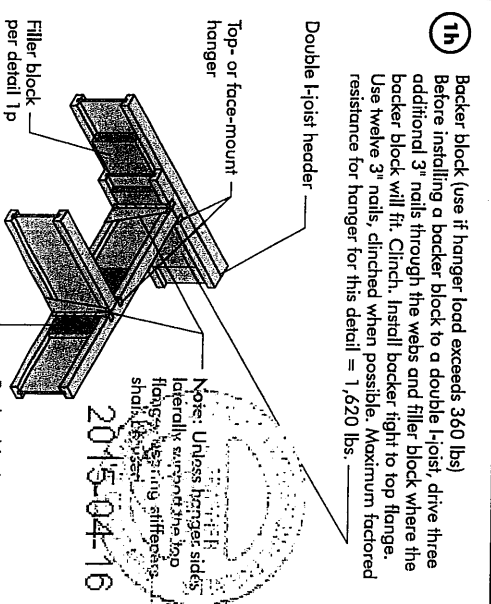
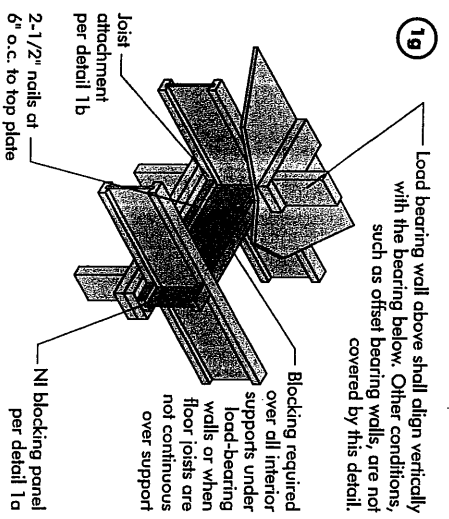
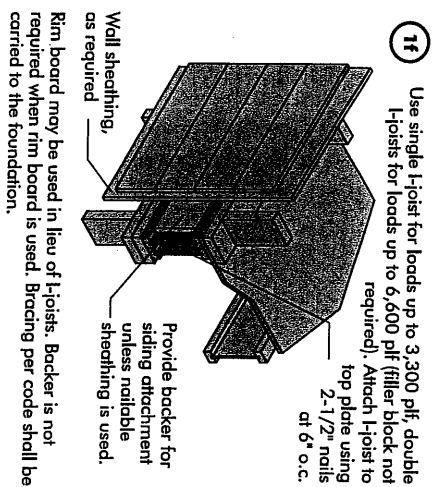
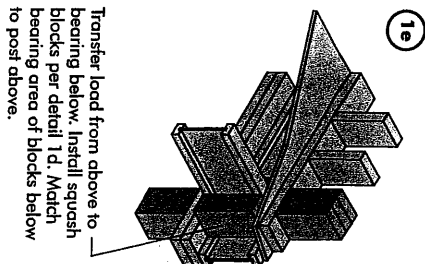


Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.



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

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



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

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

* Minimum grade for backer block material shall be S-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

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

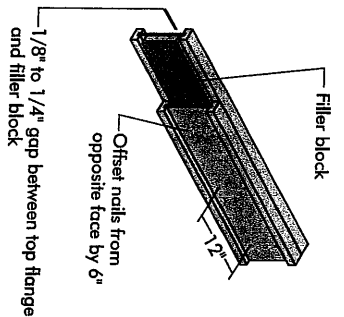
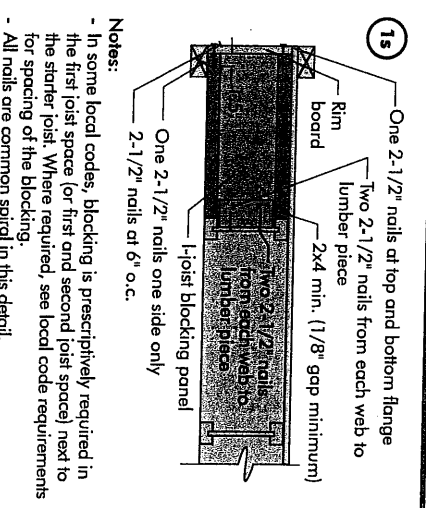
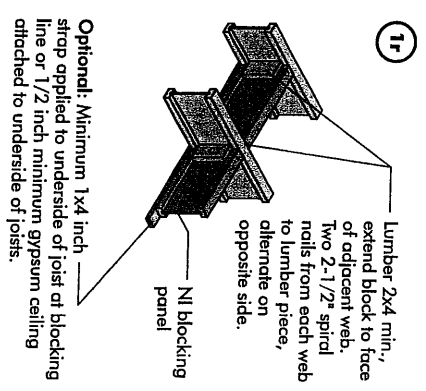
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Notes:

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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

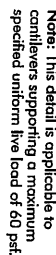
Flange Size	Joist Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2"	2-1/8" x 6"
	11-7/8"	2-1/8" x 8"
	14"	2-1/8" x 10"
	16"	2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2"	3" x 6"
	11-7/8"	3" x 8"
	14"	3" x 10"
	16"	3" x 12"
3-1/2" x 2"	11-7/8"	3" x 7"
	14"	3" x 9"
	16"	3" x 11"



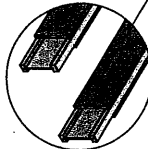
3d I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



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



4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



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

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

Klin board, or wood structural panel closure

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

maximum 2'-0"

minimum 4'-0"

Face 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. Or fasten to from opposite faces by 6".

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

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

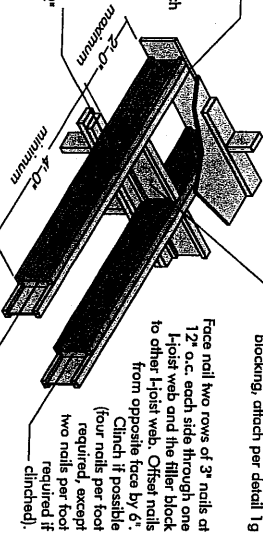


Diagram illustrating the roof truss structure, showing a 21'-0" maximum cantilever.

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.

JOIST TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				JOIST TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)			
	$LL = 30 \text{ psf}, DL = 15 \text{ psf}$ JOIST SPACING (in)					$LL = 40 \text{ psf}, DL = 15 \text{ psf}$ JOIST SPACING (in)			
24	12	16	19.2	24	12	16	19.2	24	
36	12	16	19.2	24	12	16	19.2	24	
48	12	16	19.2	24	12	16	19.2	24	
60	12	16	19.2	24	12	16	19.2	24	
72	12	16	19.2	24	12	16	19.2	24	
84	12	16	19.2	24	12	16	19.2	24	
96	12	16	19.2	24	12	16	19.2	24	
108	12	16	19.2	24	12	16	19.2	24	
120	12	16	19.2	24	12	16	19.2	24	
132	12	16	19.2	24	12	16	19.2	24	
144	12	16	19.2	24	12	16	19.2	24	
156	12	16	19.2	24	12	16	19.2	24	
168	12	16	19.2	24	12	16	19.2	24	
180	12	16	19.2	24	12	16	19.2	24	
192	12	16	19.2	24	12	16	19.2	24	
204	12	16	19.2	24	12	16	19.2	24	
216	12	16	19.2	24	12	16	19.2	24	
228	12	16	19.2	24	12	16	19.2	24	
240	12	16	19.2	24	12	16	19.2	24	
252	12	16	19.2	24	12	16	19.2	24	
264	12	16	19.2	24	12	16	19.2	24	
276	12	16	19.2	24	12	16	19.2	24	
288	12	16	19.2	24	12	16	19.2	24	
300	12	16	19.2	24	12	16	19.2	24	
312	12	16	19.2	24	12	16	19.2	24	
324	12	16	19.2	24	12	16	19.2	24	
336	12	16	19.2	24	12	16	19.2	24	
348	12	16	19.2	24	12	16	19.2	24	
360	12	16	19.2	24	12	16	19.2	24	
372	12	16	19.2	24	12	16	19.2	24	
384	12	16	19.2	24	12	16	19.2	24	
396	12	16	19.2	24	12	16	19.2	24	
408	12	16	19.2	24	12	16	19.2	24	
420	12	16	19.2	24	12	16	19.2	24	

JOIST TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				JOIST TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)			
	LL = 30 psf, DL = 15 psf JOIST SPACING (in)					LL = 40 psf, DL = 15 psf JOIST SPACING (in)			
24	12	16	19.2	24	12	16	19.2	24	
36	12	16	19.2	24	12	16	19.2	24	
48	12	16	19.2	24	12	16	19.2	24	
60	12	16	19.2	24	12	16	19.2	24	
72	12	16	19.2	24	12	16	19.2	24	
84	12	16	19.2	24	12	16	19.2	24	
96	12	16	19.2	24	12	16	19.2	24	
108	12	16	19.2	24	12	16	19.2	24	
120	12	16	19.2	24	12	16	19.2	24	
132	12	16	19.2	24	12	16	19.2	24	
144	12	16	19.2	24	12	16	19.2	24	
156	12	16	19.2	24	12	16	19.2	24	
168	12	16	19.2	24	12	16	19.2	24	
180	12	16	19.2	24	12	16	19.2	24	
192	12	16	19.2	24	12	16	19.2	24	
204	12	16	19.2	24	12	16	19.2	24	
216	12	16	19.2	24	12	16	19.2	24	
228	12	16	19.2	24	12	16	19.2	24	
240	12	16	19.2	24	12	16	19.2	24	
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420	12	16	19.2	24	12	16	19.2	24	

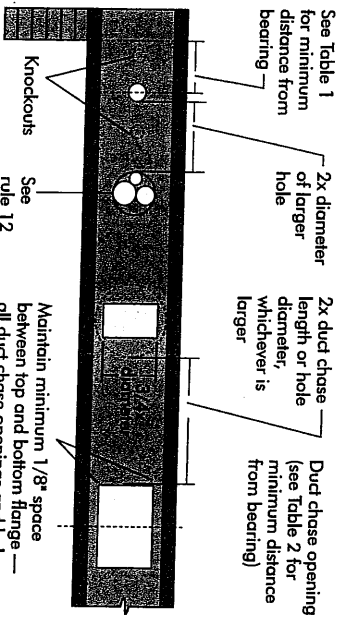
1. = N1 reinforced with 3/4" wood structural panel on one side only.
2. = N1 reinforced with 3/4" wood structural panel on both sides, or double H-joist.
3. = Try a deeper joist or shallower joist.
4. = Maximum design load of 13 psf roof, 15 psf floor, 30 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
5. For large openings, or multiple 3'-0" wide openings, spaced less than 6'-0" o.c., add studs from the masonry the opening's cripple over the opening.
6. = Ties apply to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
7. For conventional roof construction using a ridge beam, the roof truss span column above is equivalent to the distance between the supporting wall and the ridge beam.
8. When the roof is framed using a ridge board, the roof truss span is equivalent to the distance between the supporting walls as if a truss is used.
9. If roof trusses are supporting girders, trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

1. The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centred on the middle of the web.
4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/8 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 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 coniferous section of a joist. Holes of greater size may be permitted subject to verification.
9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Joist Depth	Joist Series	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	Span adjustment Factor
12	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
14	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
16	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
18	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
20	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
22	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
24	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
26	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
28	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
30	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
32	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
34	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
36	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
38	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
40	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
42	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
44	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
46	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
48	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
50	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
52	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
54	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
56	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
58	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
60	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
62	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
64	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
66	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
68	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
70	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
72	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
74	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
76	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
78	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
80	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
82	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
84	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
86	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
88	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
90	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
92	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
94	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
96	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
98	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0
100	2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0

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

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

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

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

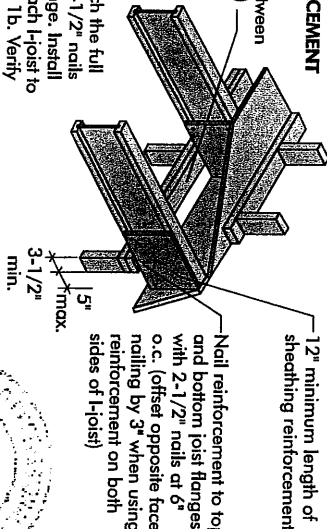
Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in.)									
		8	10	12	14	16	18	20	22	24	
12	2	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	
14	2	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	
16	2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	
18	2	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	
20	2	5.9	6.1	6.3	6.5	6.7	6.9	7.1	7.3	7.5	
22	2	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	
24	2	7.3	7.5	7.7	7.9	8.1	8.3	8.5	8.7	8.9	
26	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
28	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
30	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
32	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
34	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
36	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
38	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
40	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
42	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
44	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
46	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
48	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
50	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
52	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
54	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
56	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
58	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
60	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
62	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
64	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
66	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
68	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
70	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
72	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
74	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
76	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
78	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
80	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
82	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
84	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
86	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
88	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
90	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
92	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
94	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
96	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
98	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
100	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
102	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
104	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
106	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
108	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
110	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
112	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
114	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
116	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
118	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
120	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
122	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
124	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
126	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
128	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
130	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
132	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
134	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
136	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
138	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
140	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
142	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
144	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
146	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
148	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
150	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
152	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
154	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
156	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
158	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
160	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
162	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
164	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
166	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
168	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
170	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
172	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
174	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
176	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
178	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
180	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
182	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
184	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
186	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
188	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
190	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
192	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
194	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
196	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
198	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
200	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
202	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
204	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
206	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
208	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
210	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
212	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
214	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
216	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
218	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
220	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
222	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
224	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
226	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
228	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
230	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
232	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
234	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
236	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
238	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
240	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
242	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
244	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
246	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
248	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
250	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
252	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
254	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
256	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
258	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
260	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
262	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
264	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
266	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
268	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
270	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
272	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
274	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
276	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
278	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	
280	2	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.3	
282	2	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	
284	2	7.4	7.6	7.8	8.0	8.2	8.4	8.6			

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

5c SHEATHING REINFORCEMENT

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

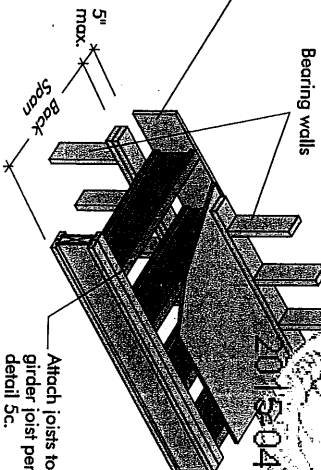
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

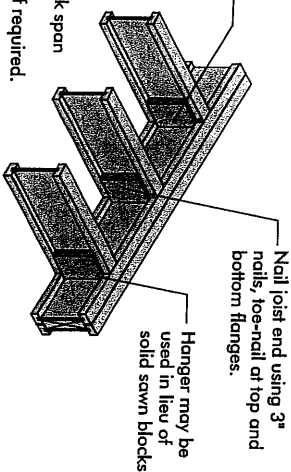
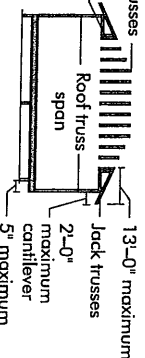
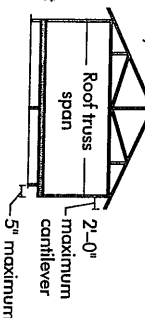


FIGURE 5 (continued)

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)				ROOF TRUSS SPAN (ft)			
	LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9 1/2"	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34
11 7/8"	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34
14"	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34	26 28 30 32 34
16"	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42	26 28 30 32 34 36 38 40 42

1. N = No reinforcement required.
 2. NI = Reinforced with 3/4" wood structural panel on one side only.
 3. NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
 4. For larger openings, or multiple 3'-0" with openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
 5. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is formed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- 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.
- For larger openings, or multiple 3'-0" with openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
3. NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. For larger openings, or multiple 3'-0" with openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
5. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is formed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- 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.

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.

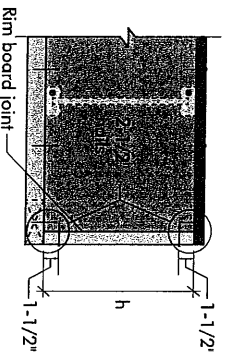
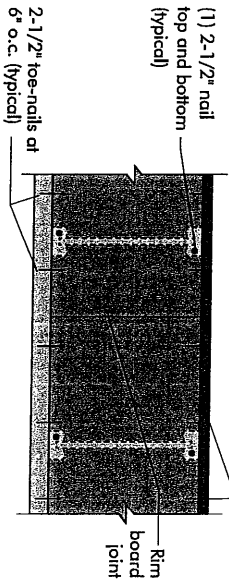
IMPORTANT NOTE:
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

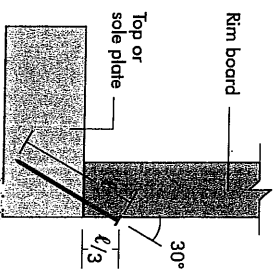
Rim board Joint Between Floor Joists

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

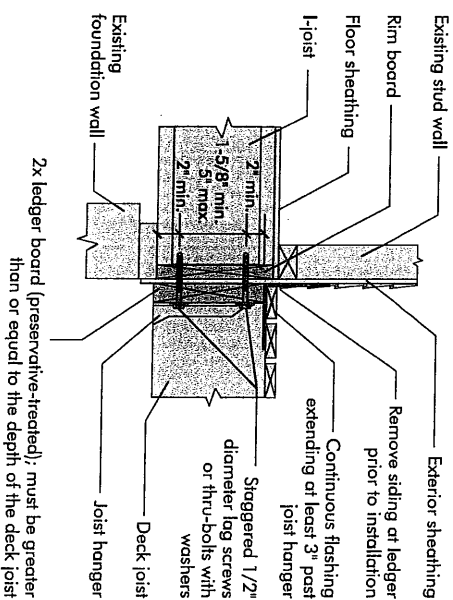
Rim board Joint at Corner



8b
TOE-NAIL CONNECTION
AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL

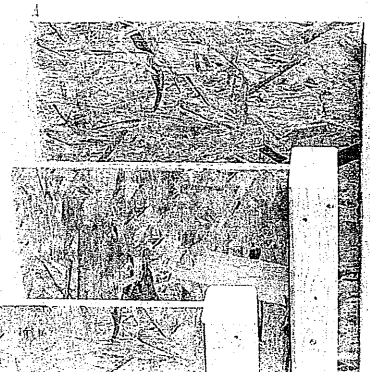


2015-04-16

PRODUCT WARRANTY

Chemtreat Chillingham guarantees that, in accordance with our specifications, North products are free from manufacturing defects in material and workmanship.

Furthermore, Chem-Tek Chibrogman 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.

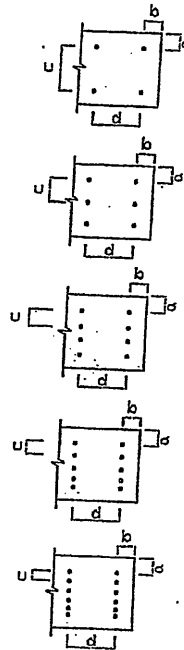


MICRO CITY ENGINEERING SERVICES INC.

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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