

FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: A,B,C

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

REVISION:

NOTES:

REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
S.P.F REQ'D UNDER INTERIOR
UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS. SEE
FIGURE 1. CANTILEVERED JOISTS
INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING
AND RIMBOARD CLOSURE AT ENDS.
SEE FIGURES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2.
CERAMIC TILE APPLICATION AS PER
O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft

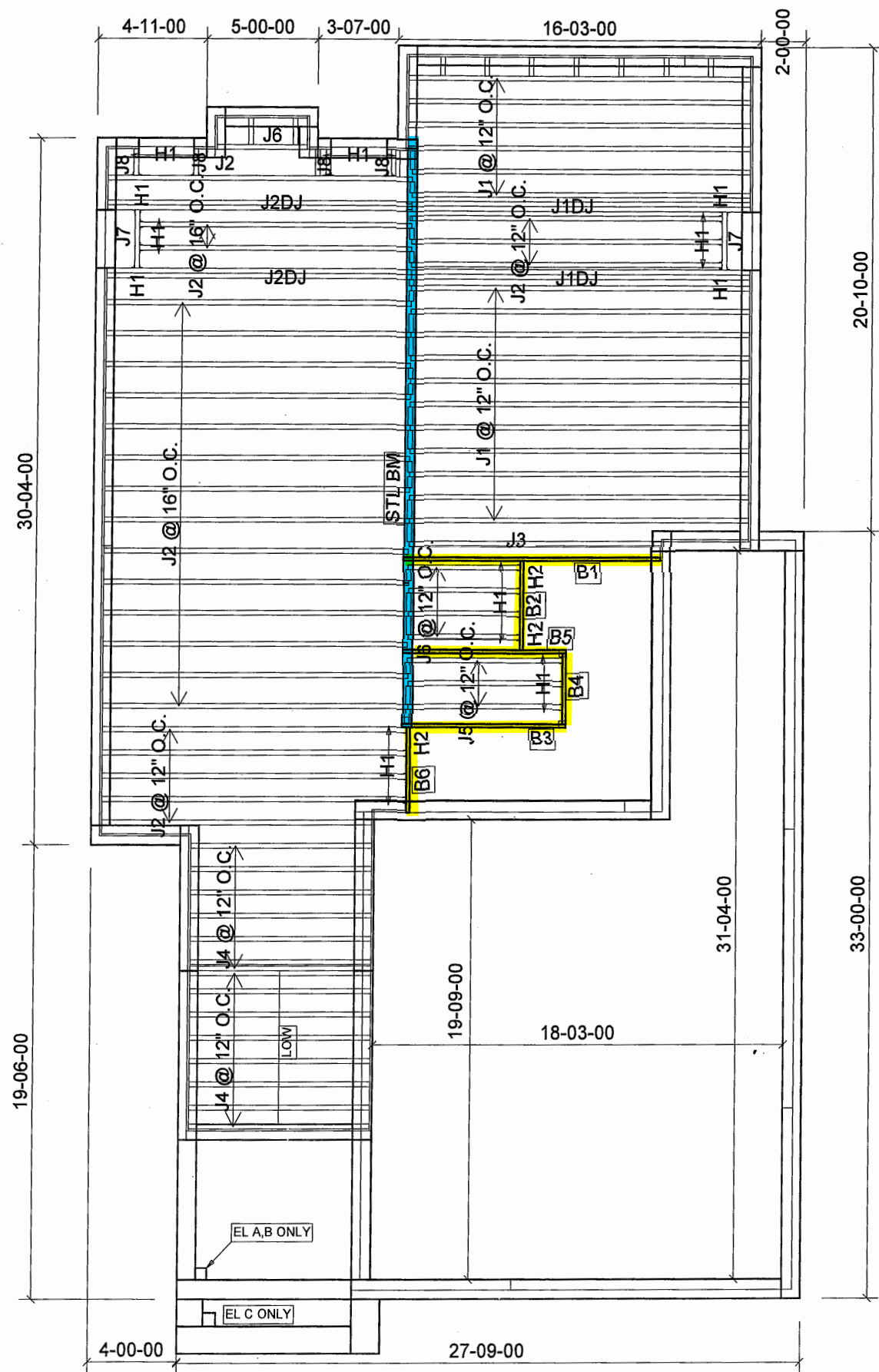
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

1st FLOOR

STANDARD

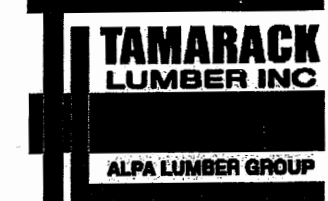


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	17
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	25
J2DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	1
J4	10-00-00	9 1/2" NI-40x	1	15
J5	8-00-00	9 1/2" NI-40x	1	3
J6	6-00-00	9 1/2" NI-40x	1	5
J7	4-00-00	9 1/2" NI-40x	1	2
J8	2-00-00	9 1/2" NI-40x	1	4
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

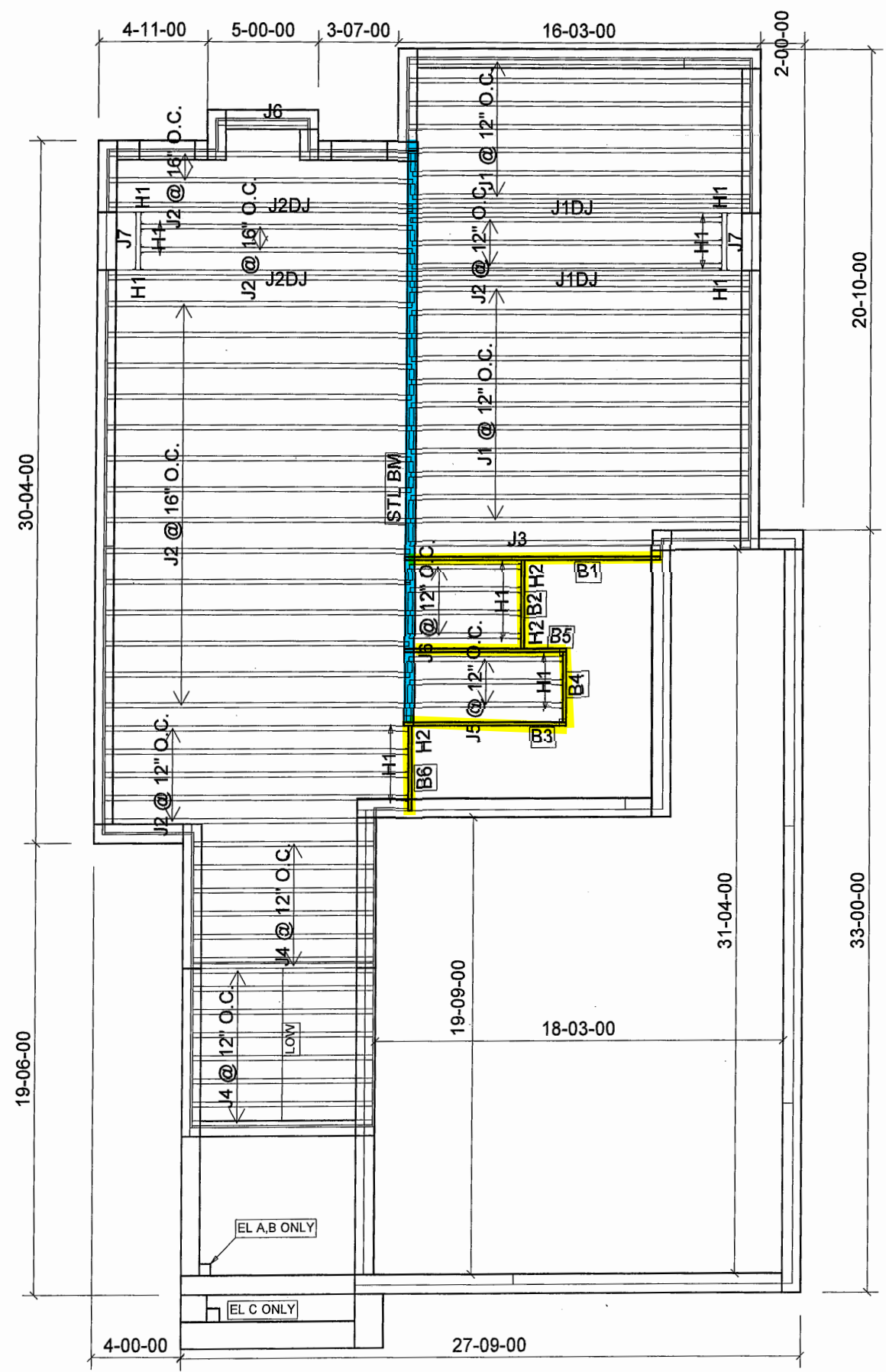
Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
3	H2	HUS1.81/10

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2018-10-23
INSPECTOR: BG

SITE COPY



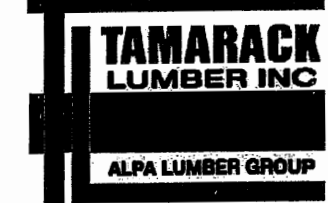
FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-1 BAROSSA 1
ELEVATION: A,B,C
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:
NOTES:
REFER TO THE NORDIC
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
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FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6
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: 16/02/2018
1st FLOOR
STANDARD WITH WOD & WOB



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	18
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	26
J2DJ	14-00-00	9 1/2" NI-40x	2	4
J3	12-00-00	9 1/2" NI-40x	1	1
J4	10-00-00	9 1/2" NI-40x	1	15
J5	8-00-00	9 1/2" NI-40x	1	3
J6	6-00-00	9 1/2" NI-40x	1	5
J7	4-00-00	9 1/2" NI-40x	1	2
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
3	H2	HUS1.81/10

SITE COPY

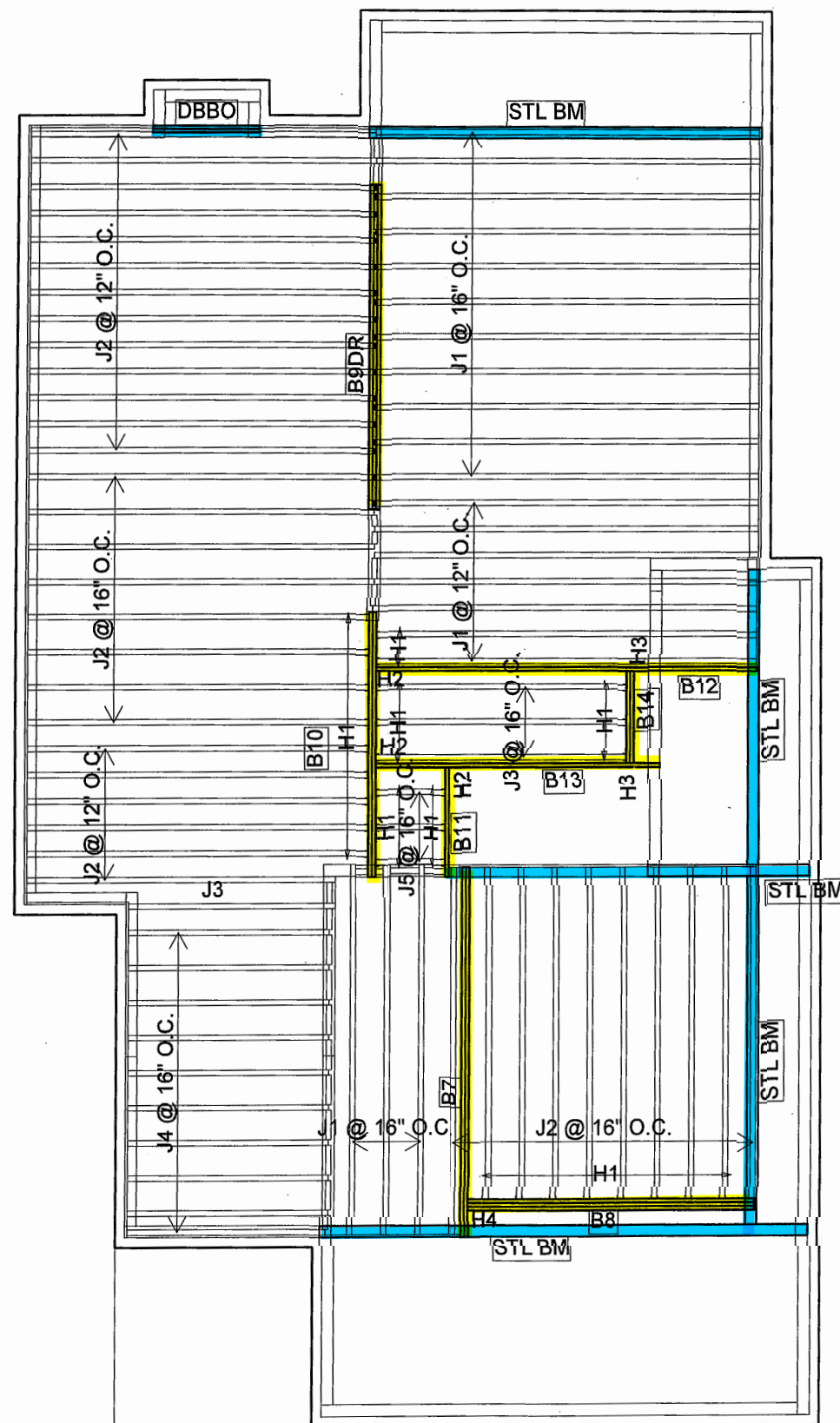


FROM PLAN DATED: JAN 2017
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: S38-1 BAROSSA 1
ELEVATION: A
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:
NOTES:
REFER TO THE NORDIC
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LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft
TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

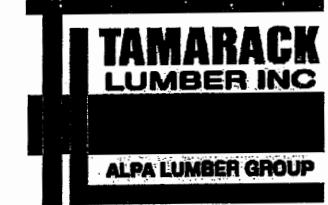
2nd FLOOR

SITE COPY



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	21
J2	14-00-00	9 1/2" NI-40x	1	37
J3	10-00-00	9 1/2" NI-40x	1	4
J4	8-00-00	9 1/2" NI-40x	1	10
J5	4-00-00	9 1/2" NI-40x	1	3
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/9.5
20	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H2	HUS1.81/10
2	H3	HGUS410
1	H4	HGUS5.50/10



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: **B**

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

REVISION:

NOTES:

REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
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SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

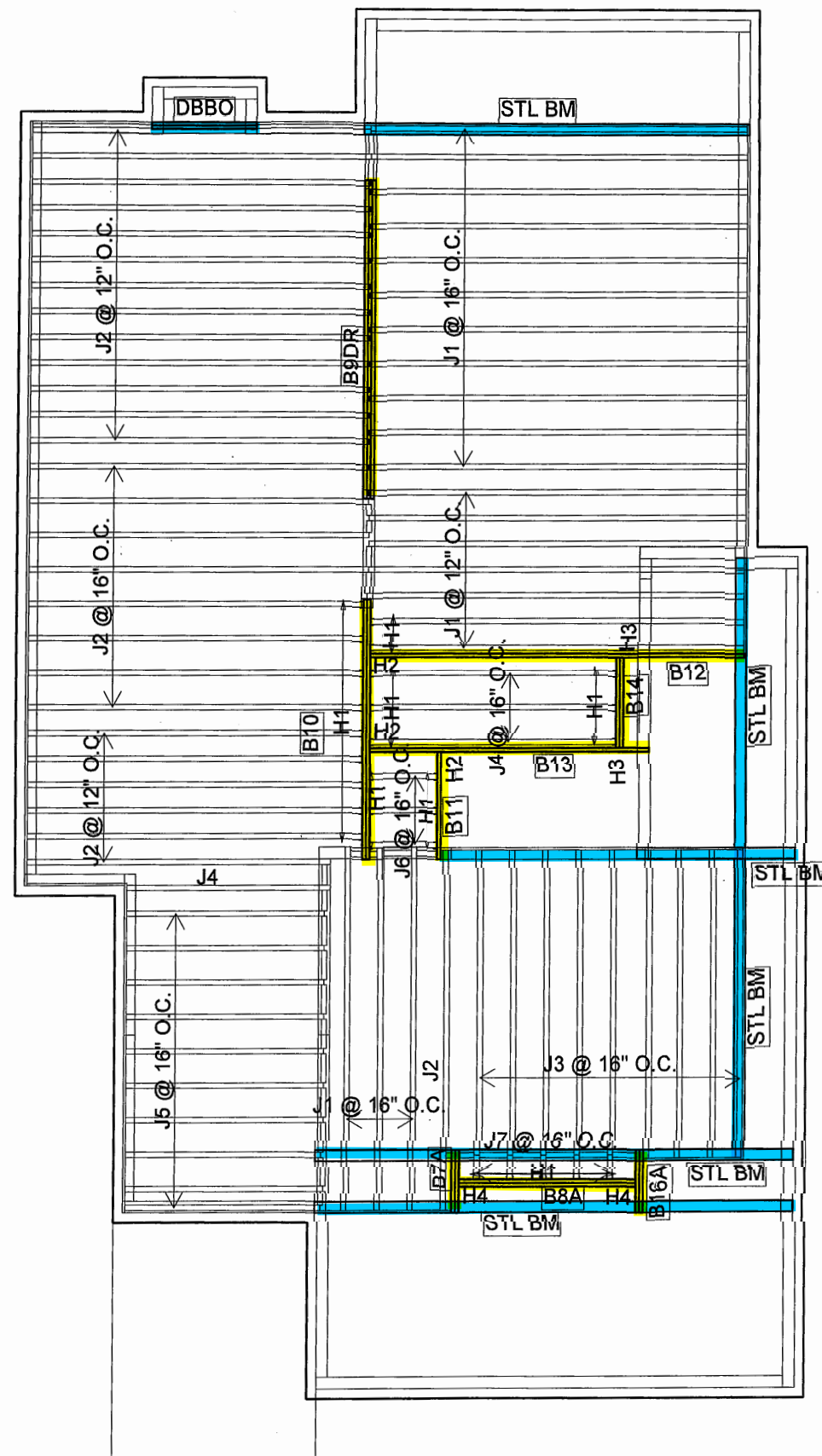
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

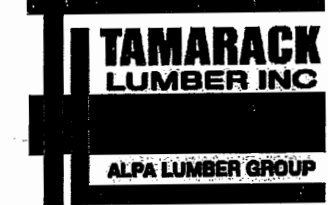
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	21
J2	14-00-00	9 1/2" NI-40x	1	28
J3	12-00-00	9 1/2" NI-40x	1	9
J4	10-00-00	9 1/2" NI-40x	1	4
J5	8-00-00	9 1/2" NI-40x	1	10
J6	4-00-00	9 1/2" NI-40x	1	3
J7	2-00-00	9 1/2" NI-40x	1	5
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8A	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16A	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B7A	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/9.5
25	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H2	HUS1.81/10
2	H3	HGUS410
2	H4	HGUS410

SITE COPY



FROM PLAN DATED: JAN 2017

BUILDER: BAYVIEW WELLINGTON

SITE: GREEN VALLEY EAST

MODEL: S38-1 BAROSSA 1

ELEVATION: C

LOT:

CITY: BRADFORD

SALESMAN: M D

DESIGNER: CZ

REVISION:

NOTES:

REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
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SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
S.P.F. REQ'D UNDER INTERIOR
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APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

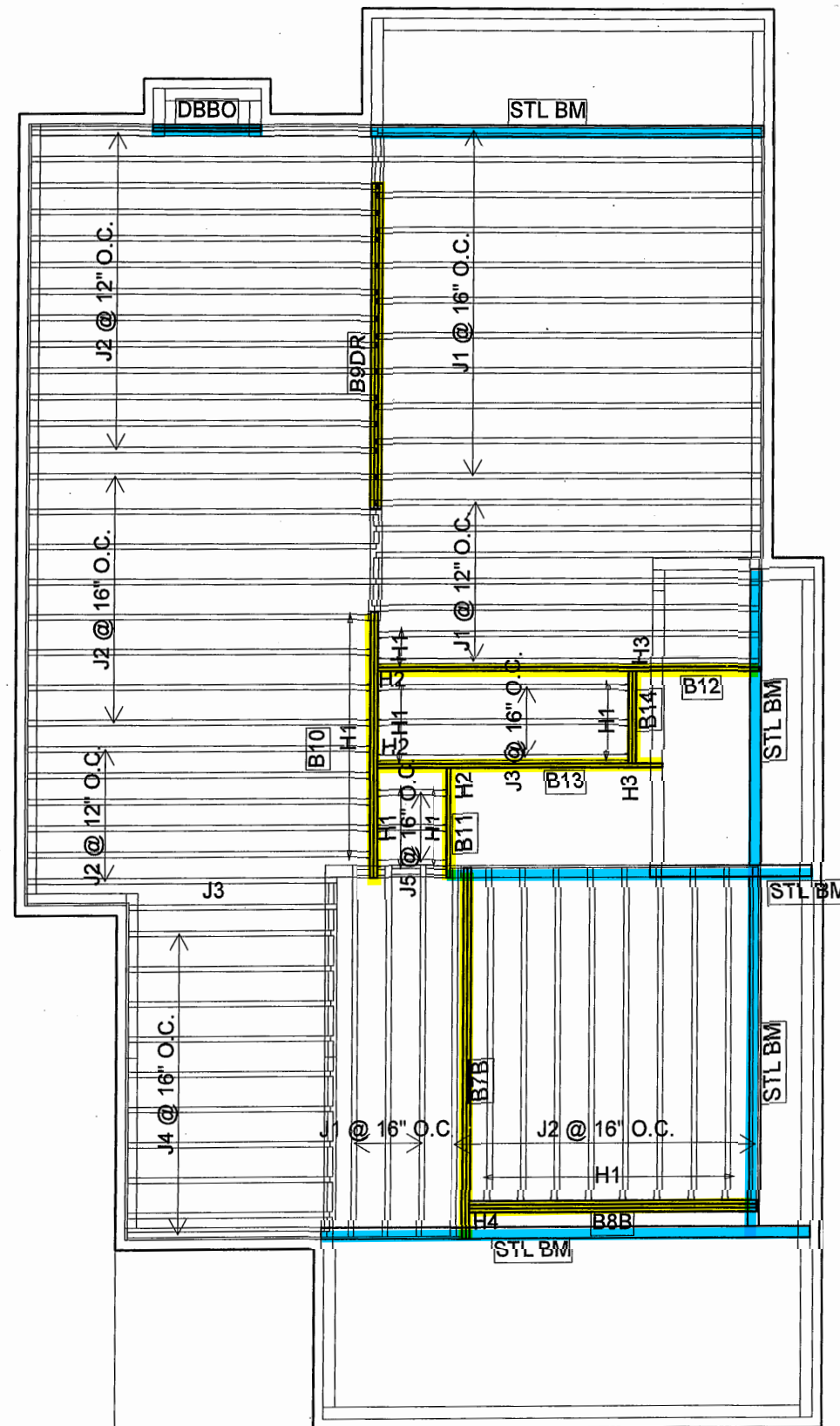
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 16/02/2018

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	21
J2	14-00-00	9 1/2" NI-40x	1	37
J3	10-00-00	9 1/2" NI-40x	1	4
J4	8-00-00	9 1/2" NI-40x	1	10
J5	4-00-00	9 1/2" NI-40x	1	3
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7B	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B8B	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B11	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
3	H1	IUS2.56/9.5
20	H1	IUS2.56/9.5
8	H1	IUS2.56/9.5
1	H2	HUS1.81/10
2	H2	HUS1.81/10
2	H3	HGUS410
1	H4	HGUS5.50/10

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2106)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

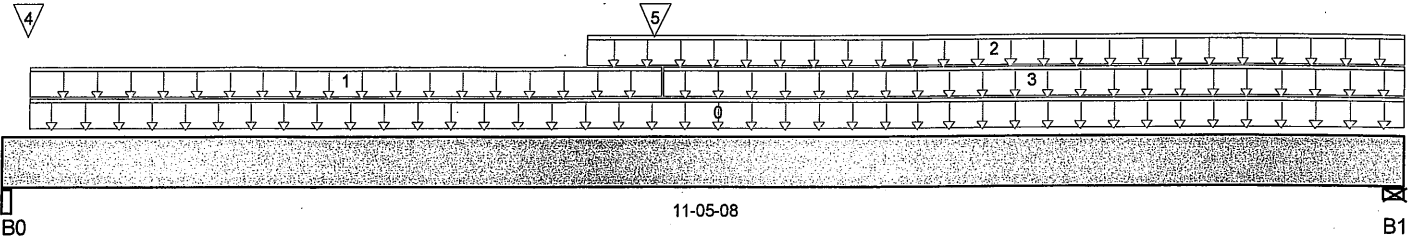
Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2106)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 11'-05"-08"

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	636 / 0	435 / 0		
B1, 4-3/8"	390 / 0	492 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	11-05-08	13	5			n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	05-04-10	7	3			n/a
2 User Load	Unf. Lin. (lb/ft)	L	04-09-03	11-05-08		60			n/a
3 FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-04-10	11-05-08	3				n/a
4 9(i676)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	180	87			n/a
5 B2(i2149)	Conc. Pt. (lbs)	L	05-03-12	05-03-12	646	309			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,906 ft-lbs	12,704 ft-lbs	38.6%	1	05-03-12
End Shear	1,071 lbs	5,785 lbs	18.5%	1	10-03-10
Total Load Defl.	L/512 (0.253")	0.539"	46.9%	4	05-08-05
Live Load Defl.	L/946 (0.137")	0.359"	38.1%	5	05-08-05
Max Defl.	0.253"	1"	25.3%	4	05-08-05
Span / Depth	13.6	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 1-3/4"	1,498 lbs	30.5%	13.4%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	1,200 lbs	29.4%	12.8%	Unspecified

Notes



SITE COPY

DWG NO. TAM 9655 -8
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B1(i2106)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmd

Description: Designs\Flush Beams\Basement\Flush Beams\B1(i2106)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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

Disclosure

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

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



SITE COPY

DWG NO. TAM 9655 -18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i2149)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

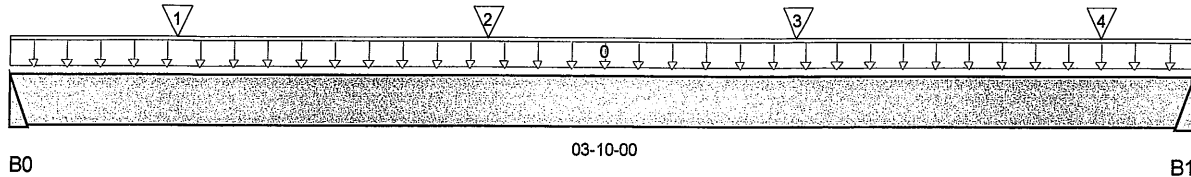
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2149)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	633 / 0	304 / 0		
B1	641 / 0	307 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	240	120			n/a
1	J6(i2115)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	84	31			n/a
2	J6(i2056)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	103	39			n/a
3	J6(i2055)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	103	39			n/a
4	J6(i2054)	Conc. Pt. (lbs)	L	03-06-08	03-06-08	64	24			n/a

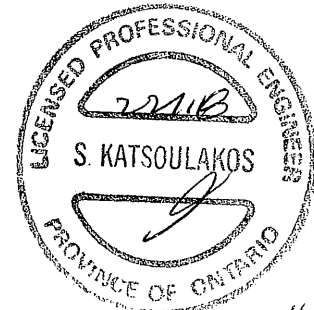
Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,163 ft-lbs	12,704 ft-lbs	9.2%	1	01-10-04
End Shear	748 lbs	5,785 lbs	12.9%	1	00-11-08
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	01-11-00
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	01-11-00
Max Defl.	0.008"	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"	1,330 lbs	n/a	31.1%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,346 lbs	n/a	31.5%	HUS1.81/10

Notes



SITE COPY

DWG NO. TAM 9656-18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement/Flush Beams\B2(i2149)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B2(i214

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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.

CONFORMS TO OBC 2012

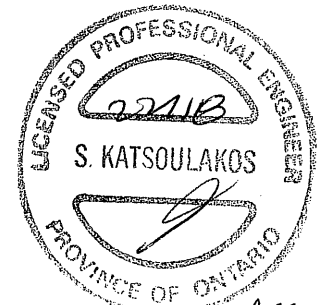
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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

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SITE COPY

DWG NO. TAM 9656-B
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i1828)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

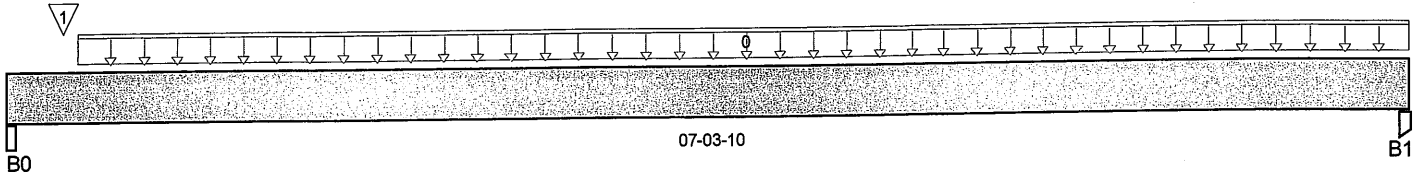
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i1828)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 07-03-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	964 / 0	405 / 0		
B1, 3-1/2"	63 / 0	41 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	FC 1 Floor Material	Unf. Lin. (lb/ft)	L	00-04-06	07-03-10	18	7			n/a
1	B6(i2143)	Conc. Pt. (lbs)	L	00-03-08	00-03-08	905	365			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	227 ft-lbs	12,704 ft-lbs	1.8%	1	03-08-11
End Shear	101 lbs	5,785 lbs	1.7%	1	01-02-12
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	03-08-11
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	03-08-11
Max Defl.	0.005"	n/a	n/a	4	03-08-11
Span / Depth	8.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 1-3/4"	1,952 lbs	39.8%	17.4%	Unspecified
B1 Post	3-1/2" x 1-3/4"	145 lbs	2.9%	1.9%	Unspecified

Notes

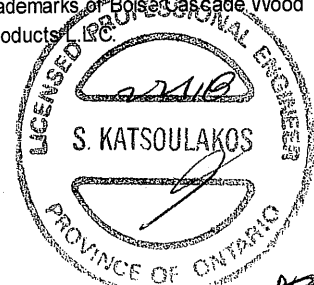
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume 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

Disclosure

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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.



DWG NO. TAM 9657-8
 STRUCTURAL
 COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i1701)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

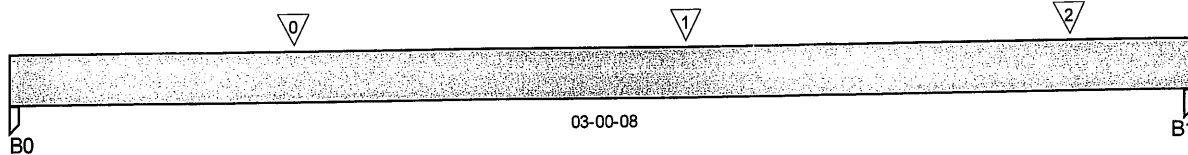
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1701)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-3/4"	172 / 0	72 / 0		
B1, 1-3/4"	204 / 0	84 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J5(i2060)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	133	50			n/a
1	J5(i2059)	Conc. Pt. (lbs)	L	01-08-12	01-08-12	142	53			n/a
2	J5(i2058)	Conc. Pt. (lbs)	L	02-08-12	02-08-12	101	38			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	301 ft-lbs	12,704 ft-lbs	2.4%	1	01-08-12
End Shear	273 lbs	5,785 lbs	4.7%	1	00-11-04
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-06-06
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-06-06
Max Defl.	0.001"	n/a	n/a	4	01-06-06
Span / Depth	3.6	n/a	n/a		00-00-00

Disclosure

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Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-3/4" x 1-3/4"	347 lbs	14%	9.3%	Unspecified
B1 Post	1-3/4" x 1-3/4"	411 lbs	16.5%	11%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
CONFORMS TO OBC 2012
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

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DWG NO. TAM 9658-18
 STRUCTURAL
 COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i1960)

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

September 12, 2017 11:09:34

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

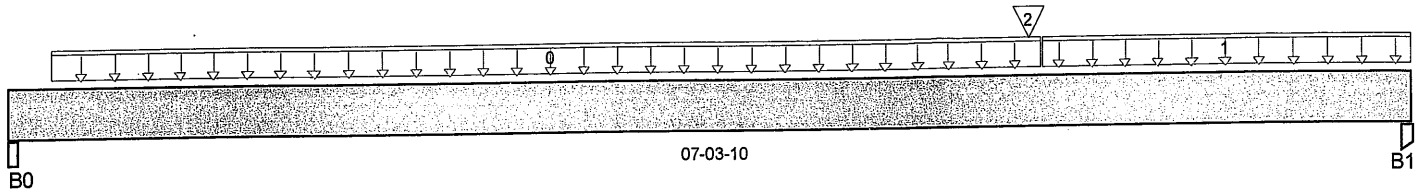
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i1960)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 07-03-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	234 / 0	123 / 0		
B1, 3-1/2"	516 / 0	260 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	05-04-10	20	8			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-04-10	07-03-10	9	3			n/a
2	B2(i2149)	Conc. Pt. (lbs)	L	05-03-12	05-03-12	628	302			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,887 ft-lbs	12,704 ft-lbs	14.9%	1	05-03-12
End Shear	1,073 lbs	5,785 lbs	18.5%	1	06-02-10
Total Load Defl.	L/999 (0.035")	n/a	n/a	4	04-00-07
Live Load Defl.	L/999 (0.023")	n/a	n/a	5	04-00-07
Max Defl.	0.035"	n/a	n/a	4	04-00-07
Span / Depth	8.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 1-3/4"	505 lbs	10.3%	4.5%	Unspecified
B1 Post	3-1/2" x 1-3/4"	1,099 lbs	22.1%	14.7%	Unspecified

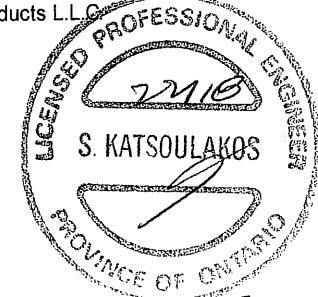
Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.
CONFORMS TO OBC 2012
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

Disclosure

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SITE COPY

DWG NO. TAM 9659.18
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B6(i2143)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

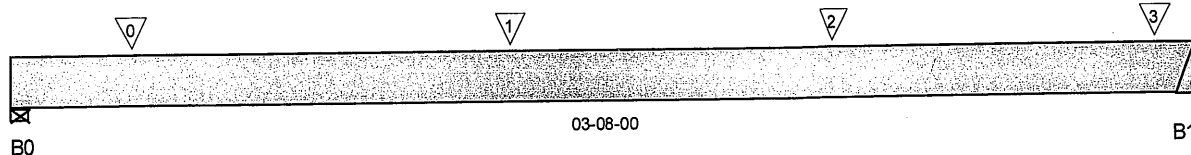
Description: Designs\Flush Beams\Basement\Flush Beams\B6(i2143)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,251 / 0	808 / 0		
B1	974 / 0	425 / 0		

Load Summary

Tag Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0 -	Conc. Pt. (lbs)	L	00-04-08	00-04-08	775	592			n/a
1 J2(i2024)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	514	223			n/a
2 J2(i2023)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	514	223			n/a
3 -	Conc. Pt. (lbs)	L	03-06-09	03-06-09	422	177			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,251 ft-lbs	12,704 ft-lbs	9.8%	1	01-06-08
End Shear	1,131 lbs	5,785 lbs	19.6%	1	02-08-08
Total Load Defl.	L/999 (0.006")	n/a	n/a	4	01-11-12
Live Load Defl.	L/999 (0.004")	n/a	n/a	5	01-11-12
Max Defl.	0.006"	n/a	n/a	4	01-11-12
Span / Depth	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 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"	2,887 lbs	56.2%	24.6%	Unspecified
B1 Hanger	2" x 1-3/4"	1,992 lbs	n/a	46.6%	HUS1.81/10

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum 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.

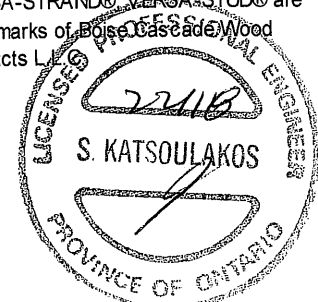
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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DWG NO. TAM 9660-18
 STRUCTURAL
 COMPONENT ONLY

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i2098)

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

September 12, 2017 11:09:32

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

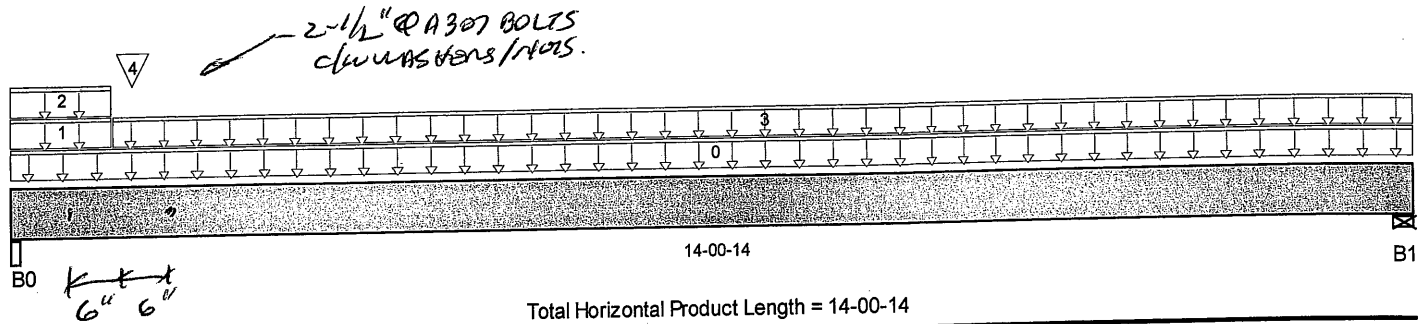
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i2098)

Specifier:

Designer: CZ

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	2,309 / 0	2,081 / 0		
B1, 4-3/8"	321 / 0	255 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	14-00-14	10	4			n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	94	180		281	n/a
2	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	33	30		99	n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	14-00-14	17	6		1,932	n/a
4	-	Conc. Pt. (lbs)	L	01-02-06	01-02-06	2,145	1,857			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,733 ft-lbs	25,408 ft-lbs	18.6%	1	01-07-00
End Shear	5,665 lbs	11,571 lbs	49%	1	01-02-12
Total Load Defl.	L/805 (0.2")	0.67"	29.8%	4	06-04-01
Live Load Defl.	L/999 (0.109")	n/a	n/a	5	06-06-04
Max Defl.	0.2"	1"	20%	4	06-04-01
Span / Depth	16.9	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	6,065 lbs	61.8%	27.1%	Unspecified
B1 Wall/Plate	4-3/8" x 3-1/2"	801 lbs	9.8%	4.3%	Unspecified

Notes



SITE COPY

DWG NO. TAM 9661-18
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B7(i2098)

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

September 12, 2017 11:09:32

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7(i2098)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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**Disclosure**

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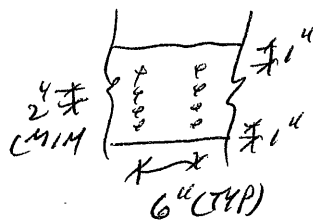
Connection Diagram

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

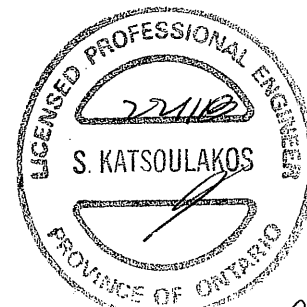
OK with
NAILING

BOULDER

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PROVIDE 4 ROWS OF 3-1/2" ARDOX SPIRAL NAILS @ 6" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 1" LUMBER EDGE / END DISTANCE. DO NOT USE AIR NAILS.

+
BOLTS.**SITE COPY**

DWG NO. TAM 9661-8
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B7A(i1962)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

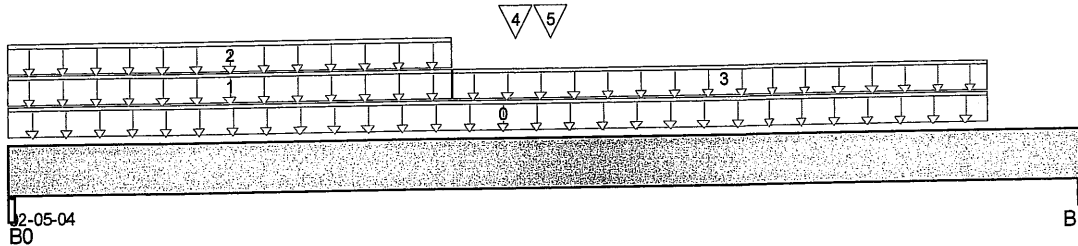
Description: Designs\Flush Beams\1st Floor\Flush Beams\B7A(i1962)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 02-05-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	465 / 0	688 / 0		
B1, 5-1/4"	318 / 0	450 / 0		

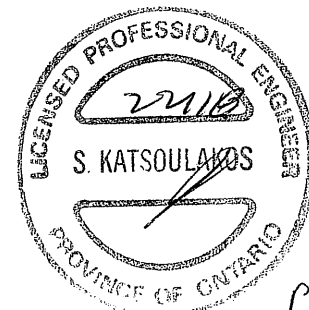
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-02-10	10				n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	94	180		281	n/a
2	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	33	30		99	n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	02-02-10	17				n/a
4	-	Conc. Pt. (lbs)	L	01-01-11	01-01-11	602	877		1,388	n/a
5	LOWROOF	Conc. Pt. (lbs)	L	01-02-10	01-02-10	13	12		28	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	912 ft-lbs	25,408 ft-lbs	3.6%	1	01-01-12
End Shear	1,098 lbs	11,571 lbs	9.5%	1	01-02-12
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	01-02-02
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-02-02
Max Defl.	0.001"	n/a	n/a	4	01-02-02
Span / Depth	2.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	1,559 lbs	15.9%	7%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	1,040 lbs	10.6%	4.6%	Unspecified

Notes



SITE COPY

DWG NO. TAM 9662-8
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B7A(i1962)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B7A(i1962)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

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

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

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

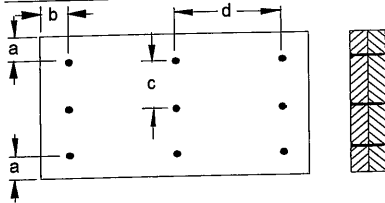
Importance Factor: Normal Part code: Part 9

Disclosure

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

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Connection Diagram



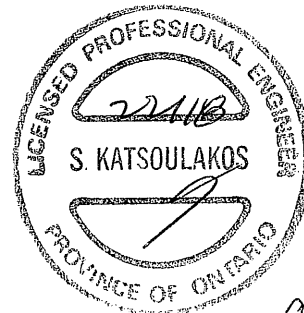
a minimum = 2" c = 2-3/4"
b minimum = 3" d = 4"

Calculated Side Load = 458.8 lb/ft

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

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 9662-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i2117)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

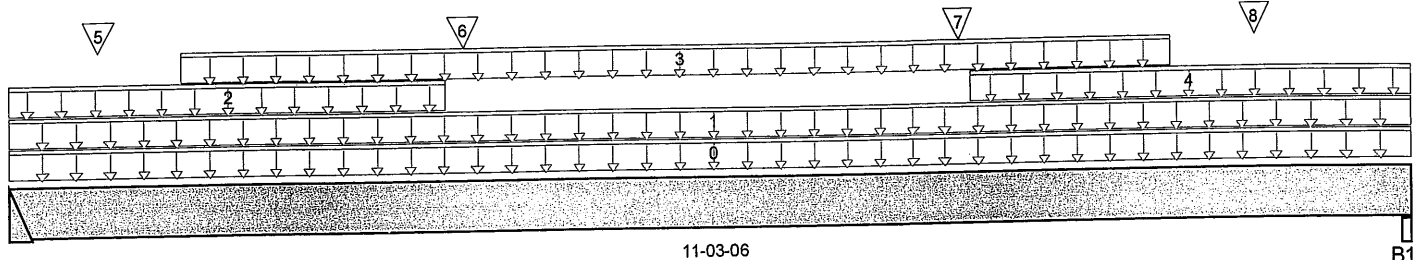
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2117)

Specifier:

Designer: CZ

Company:

Misc:



B0

B1

Total Horizontal Product Length = 11-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	1,851 / 0	1,572 / 0		
B1, 4-1/8"	1,809 / 0	1,584 / 0		

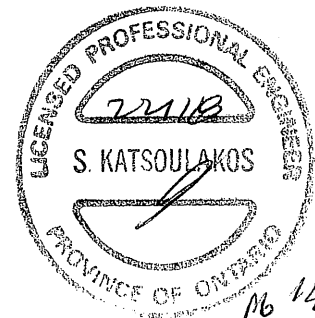
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06	44	40		96	n/a
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06		100			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-03	33	30		72	n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	09-04-08	265	99			n/a
4	User Load	Unf. Lin. (lb/ft)	L	07-08-15	11-03-06	33	30		72	n/a
5	J2(i2116)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	289	108			n/a
6	User Load	Conc. Pt. (lbs)	L	03-07-11	03-07-11	99	90		216	n/a
7	User Load	Conc. Pt. (lbs)	L	07-07-11	07-07-11	99	90		216	n/a
8	J2(1927)	Conc. Pt. (lbs)	L	10-00-08	10-00-08	326	122			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	12,904 ft-lbs	39,636 ft-lbs	32.6%	1	05-10-08
End Shear	4,301 lbs	17,356 lbs	24.8%	1	10-01-12
Total Load Defl.	L/489 (0.267")	0.545"	49.1%	4	05-06-08
Live Load Defl.	L/896 (0.146")	0.363"	40.2%	5	05-06-08
Max Defl.	0.267"	1"	26.7%	4	05-06-08
Span / Depth	13.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 5-1/4"	4,742 lbs	n/a	37%	HGUS5.50/10
B1 Beam	4-1/8" x 5-1/4"	4,694 lbs	40.6%	17.8%	Unspecified

Notes



SITE COPY

DWG NO. TAM 9663-18
STRUCTURAL
COMPONENT ONLY

pg 12



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B8(i2117)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8(i2117

Specifier:

Designer: CZ

Company:

Msc:

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum total load deflection criteria.
Design meets User specified (0.75") Maximum 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

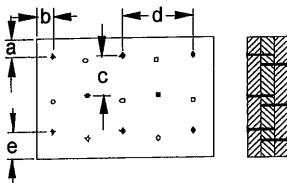
CONFORMS TO OBC 2012

Disclosure

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

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Connection Diagram



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

Calculated Side Load = 476.6 lb/ft

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

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 9663-18
STRUCTURAL
COMPONENT ONLY

SITE COPY

1st Floor Flush Beams B7B(i2153)

Dry | 1 span | No cant.

February 16, 2018 16:06:19

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: BRA...RD

Customer:

Code reports: CCMC 12472-R

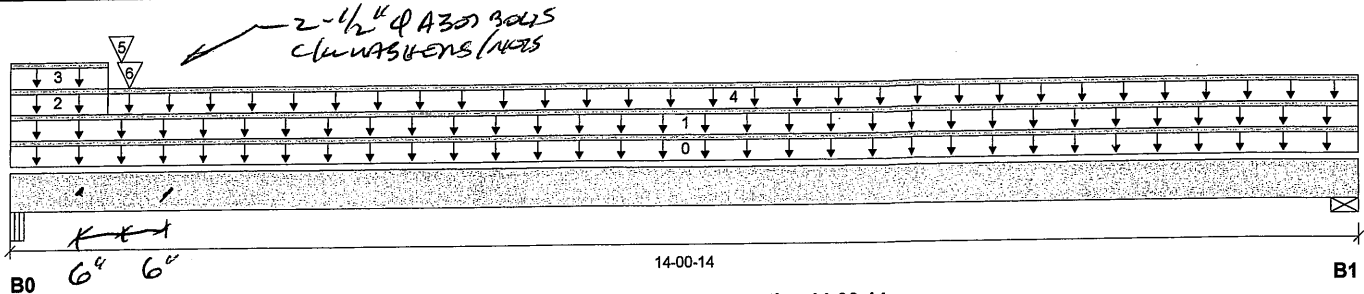
File name: S38-1 BAROSSA 1 EL C-L2.mmdl

Description: 1st Floor Flush Beams B7B(i2153)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 14-00-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	2,233 / 0	2,024 / 0	2,040 / 0	
B1, 4-3/8"	318 / 0	253 / 0	116 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	14-00-14		10			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	14-00-14	10	4			n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	77	170	231		n/a
3	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	33	30	99		n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	14-00-14	17	6			n/a
5	bm2	Conc. Pt. (lbs)	L	01-01-10	01-01-10	215	215	646		n/a
6	B8A(i2154)	Conc. Pt. (lbs)	L	01-02-10	01-02-10	1,868	1,592	1,180		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,346 ft-lbs	23,220 ft-lbs	23.0 %	1	01-02-10
End Shear	6,427 lbs	11,571 lbs	55.5 %	1	01-02-12
Total Load Deflection	L/709 (0.227")	n/a	33.9 %	35	06-04-01
Live Load Deflection	L/1,165 (0.138")	n/a	30.9 %	51	06-04-01
Max Defl.	0.227"	n/a	22.7 %	35	06-04-01
Span / Depth	16.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Beam 5-1/4" x 3-1/2"	6,900 lbs	70.3 %	30.8 %	Unspecified
B1	Wall/Plate 4-3/8" x 3-1/2"	850 lbs	10.4 %	4.6 %	Unspecified



DWG NO. TAM 9664-13
STRUCTURAL
COMPONENT ONLY

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

PASSED

1st Floor Flush Beams B7B(i2153)

Dry | 1 span | No cant.

February 16, 2018 16:06:19

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: BRA...RD

Customer:

Code reports: CCMC 12472-R

File name: S38-1 BAROSSA 1 EL C-L2.mmdl

Description: 1st Floor Flush Beams B7B(i2153)

Specifier:

Designer: CZ

Company:

Notes

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

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

Design meets User specified (1") Maximum Total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

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

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

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

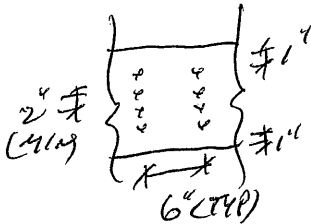
CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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
NAILING
+
BOLTING



PROVIDE 4 ROWS OF 3-1/2" ARDOX
SPIRAL NAILS @ 6" O/C FOR
MULTI-PLY NAILING. MAINTAIN
A MIN. 1" LUMBER EDGE / END
DISTANCE. DO NOT USE AIR NAILS.

+
BOLTS

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is 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 (800)232-0788 before installation.

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DWG NO. TAM 9664-18
STRUCTURAL
COMPONENT ONLY



SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8A(i1964)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

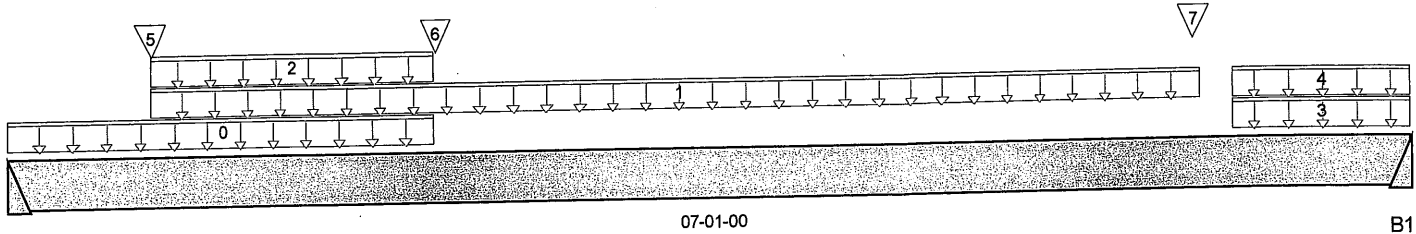
Description: Designs\Flush Beams\1st Floor\Flush Beams\B8A(i1964)

Specifier:

Designer: CZ

Company:

Misc:



07-01-00

B1

Total Horizontal Product Length = 07-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	290 / 0	554 / 0		
B1	292 / 0	580 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	02-01-12	33	30		72	n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-08-08	06-00-08	24	97			n/a
2	LOWROOF	Unf. Lin. (lb/ft)	L	00-08-08	02-01-12	36	33		79	n/a
3	LOWROOF	Unf. Lin. (lb/ft)	L	06-02-07	07-01-00	44	40		96	n/a
4	0	Unf. Lin. (lb/ft)	L	06-02-07	07-01-00	33	30		72	n/a
5	J7(i1666)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	30	63		40	n/a
6	User Load	Conc. Pt. (lbs)	L	02-01-12	02-01-12	99	90		216	n/a
7	-	Conc. Pt. (lbs)	L	06-00-00	06-00-00	132	221		216	n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,250 ft-lbs	16,515 ft-lbs	7.6%	0	03-04-08
End Shear	783 lbs	7,521 lbs	10.4%	0	06-01-08
Total Load Defl.	L/999 (0.023")	n/a	n/a	4	03-05-08
Live Load Defl.	L/999 (0.007")	n/a	n/a	5	03-05-08
Max Defl.	0.023"	n/a	n/a	4	03-05-08
Span / Depth	8.7	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 3-1/2"	1,128 lbs	n/a	14%	HGUS410
B1 Hanger	2" x 3-1/2"	1,163 lbs	n/a	14.6%	HGUS410

Notes



SITE COPY

DWG NO. TAM 9665-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B8A(i1964)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B8A(i1964)

Specifier:

Designer: CZ

Company:

Misc:

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Design meets User specified (1") Maximum total load deflection criteria.
Design meets User specified (0.75") Maximum 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

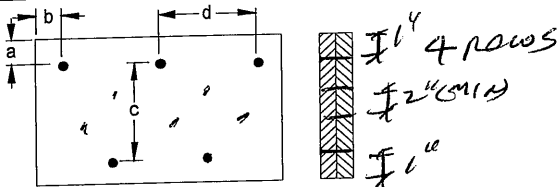
CONFORMS TO OBC 2012

Disclosure

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

Connection Diagram



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

Calculated Side Load = 47.6 lb/ft

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

Connectors are: Nails

3-1/2" ARDOX SPIRAL



SITE COPY

DWG NO. TAM 9665.18
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

PASSED

1st Floor\Flush Beams\B8B(i2154)

Dry | 1 span | No cant.

February 16, 2018 16:06:19

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: BRA...RD

Customer:

Code reports: CCMC 12472-R

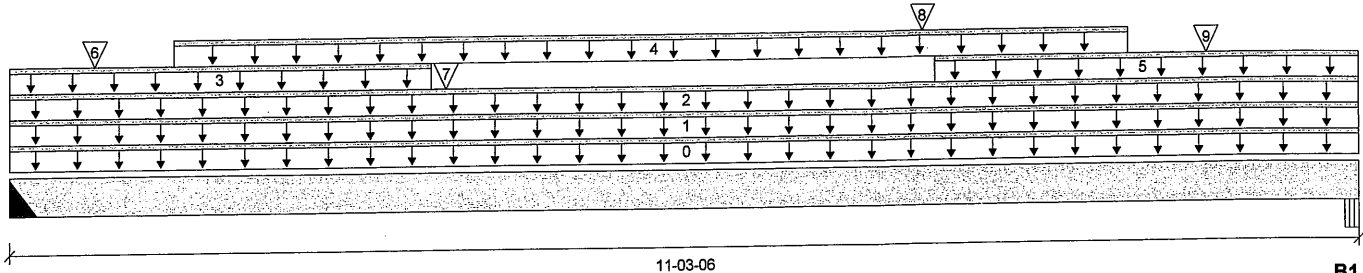
File name: S38-1 BAROSSA 1 EL C-L2.mmdl

Description: 1st Floor\Flush Beams\B8B(i2154)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 11-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 2"	1,889 / 0	1,606 / 0	1,191 / 0	
B1, 4-1/8"	1,848 / 0	1,620 / 0	1,229 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06		14			00-00-00
1	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06	44	40	132		n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-00	11-03-06		100			n/a
3	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-03	44	40	132		n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	09-04-08	265	99			n/a
5	User Load	Unf. Lin. (lb/ft)	L	07-08-15	11-03-06	44	40	132		n/a
6	J2(i2116)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	289	108			n/a
7	User Load	Conc. Pt. (lbs)	L	03-07-11	03-07-11	99	90			n/a
8	User Load	Conc. Pt. (lbs)	L	07-07-11	07-07-11	99	90			n/a
9	J2(i1927)	Conc. Pt. (lbs)	L	10-00-08	10-00-08	326	122			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	14,406 ft-lbs	36,222 ft-lbs	39.8 %	1	05-10-08
End Shear	4,837 lbs	17,356 lbs	27.9 %	1	10-01-12
Total Load Deflection	L/421 (0.311")	n/a	57.0 %	35	05-06-08
Live Load Deflection	L/697 (0.187")	n/a	51.6 %	51	05-06-08
Max Defl.	0.311"	n/a	31.1 %	35	05-06-08
Span / Depth	13.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Hanger 2" x 5-1/4"	5,437 lbs	n/a	42.4 %	HGUS5.50/10
B1	Beam 4-1/8" x 5-1/4"	5,412 lbs	46.8 %	20.5 %	Unspecified

Cautions

Hanger model HGUS5.50/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



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DWG NO. TAM 9666-18
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

PASSED

1st Floor\Flush Beams\B8B(i2154)

Dry | 1 span | No cant.

February 16, 2018 16:06:19

BC CALC® Design Report

Build 6215

Job name:

Address:

City, Province, Postal Code: BRA...RD

Customer:

Code reports: CCMC 12472-R

File name: S38-1 BAROSSA 1 EL C-L2.mmdl

Description: 1st Floor\Flush Beams\B8B(i2154)

Specifier:

Designer: CZ

Company:

Notes

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

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

Design meets User specified (1") Maximum Total load deflection criteria.

Design meets User specified (0.75") Maximum 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.

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

Design based on Dry Service Condition.

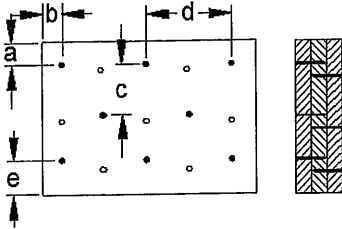
CONFORMS TO OBC 2012

Importance Factor : Normal Part code : Part 9

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

Nailing schedule applies to both sides of the member.

Connection Diagram



a minimum = 2"

b minimum = 3"

c = 2-1/4"

d = 4"

e minimum = 3"

Calculated Side Load = 476.6 lb/ft

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

Nailing schedule applies to both sides of the member.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is 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 (800)232-0788 before installation.

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DWG NO. TAM 9666-18
STRUCTURAL
COMPONENT ONLY



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Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9DR(i1672)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

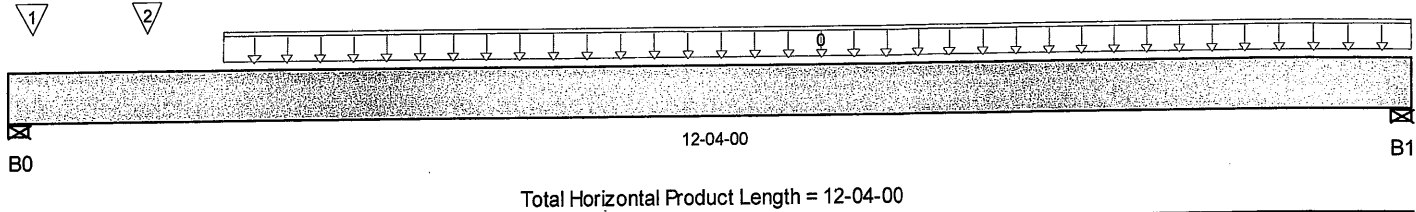
Description: Designs\Dropped Beams\1st Floor\Dropped Beams\B9D

Specifier:

Designer: CZ

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	3,456 / 0	1,383 / 0		
B1, 4"	3,680 / 0	1,467 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-08	12-04-00	590	221			n/a
1	J1(i1798)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	300	112			n/a
2	-	Conc. Pt. (lbs)	L	01-02-08	01-02-08	666	249			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	19,821 ft-lbs	39,636 ft-lbs	50%	1	06-02-08
End Shear	6,302 lbs	17,356 lbs	36.3%	1	01-01-08
Total Load Defl.	L/306 (0.462")	0.59"	78.4%	4	06-02-08
Live Load Defl.	L/429 (0.33")	0.393"	84%	5	06-02-08
Max Defl.	0.462"	1"	46.2%	4	06-02-08
Span / Depth	14.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 5-1/4"	6,913 lbs	40.5%	27%	Unspecified
B1 Wall/Plate	4" x 5-1/4"	7,354 lbs	43.1%	28.7%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume unbraced length of Top: 00-03-02, Bottom: 00-03-02.
 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



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DWG NO. TAM 9667-18
 STRUCTURAL
 COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B9DR(i1672)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

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

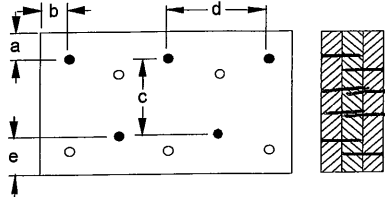
Specifier:

Designer: CZ

Company:

Misc:

Connection Diagram



4 rows

a minimum = 0"
b minimum = 3"
c = 6 1/2"
d = 6"
e minimum = 2"

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

Nailing schedule applies to both sides of the member.

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

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DWG NO. TAM 9667-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i1621)

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

September 12, 2017 11:29:23

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

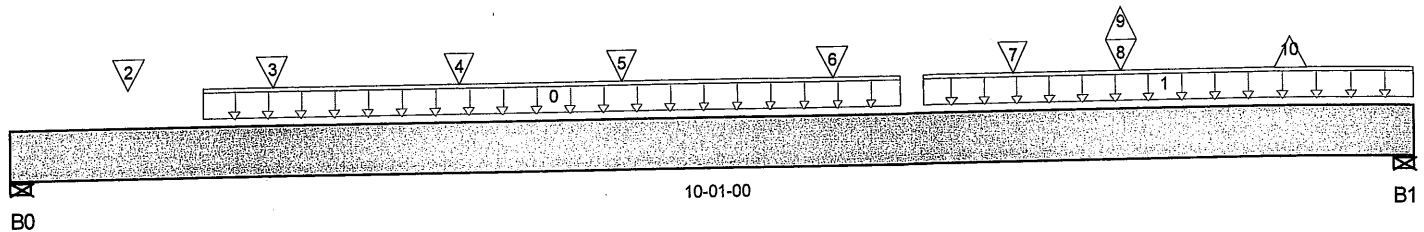
Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i1621)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 10-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,953 / 0	832 / 0		
B1, 4"	2,423 / 3	1,080 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-08	06-04-08	297	110			n/a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	06-06-08	10-01-00	332	122			n/a
2	-	Conc. Pt. (lbs)	L	00-09-15	00-09-15	369	138			n/a
3	J6(i1845)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	81	30			n/a
4	J6(i1699)	Conc. Pt. (lbs)	L	03-02-08	03-02-08	71	27			n/a
5	-	Conc. Pt. (lbs)	L	04-04-06	04-04-06	384	182			n/a
6	J2(i1696)	Conc. Pt. (lbs)	L	05-10-08	05-10-08	316	118			n/a
7	J4(i1826)	Conc. Pt. (lbs)	L	07-02-08	07-02-08	207	78			n/a
8	-	Conc. Pt. (lbs)	L	07-11-15	07-11-15	285	262			n/a
9	-	Conc. Pt. (lbs)	L	07-11-15	07-11-15	-1				n/a
10	J1(i1831)	Conc. Pt. (lbs)	L	09-02-08	09-02-08	-2				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	10,382 ft-lbs	25,408 ft-lbs	40.9%	1	04-10-08
End Shear	4,128 lbs	11,571 lbs	35.7%	1	08-11-08
Total Load Defl.	L/488 (0.232")	0.471"	49.2%	6	05-01-08
Live Load Defl.	L/703 (0.161")	0.314"	51.2%	8	05-01-08
Max Defl.	0.232"	1"	23.2%	6	05-01-08
Span / Depth	11.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	3,969 lbs	38.6%	16.9%	Unspecified
B1 Wall/Plate	4" x 3-1/2"	4,985 lbs	66.7%	29.2%	Unspecified

Notes



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DWG NO. TAM 966B18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i1621)

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

September 12, 2017 11:29:23

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i1621)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

Calculations assume member is fully braced.

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

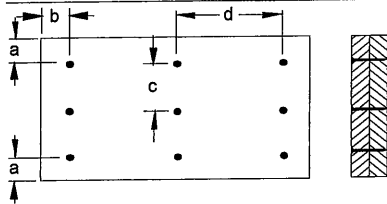
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



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

Calculated Side Load = 546.3 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: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 9666-18
STRUCTURAL
COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B11(i1651)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

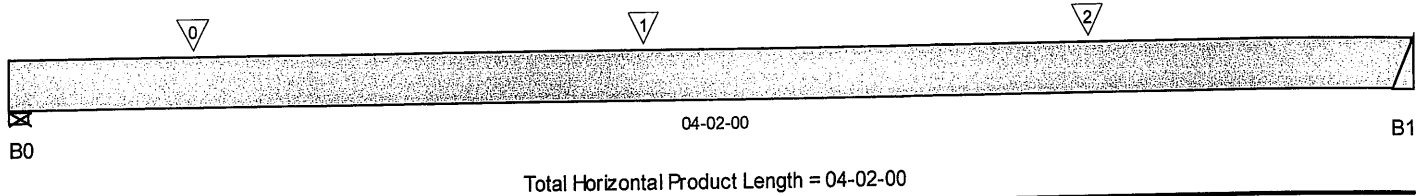
Description: Designs\Flush Beams\1st Floor\Flush Beams\B11(i1651)

Specifier:

Designer: CZ

Company:

Misc:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	113 / 0	53 / 0		
B1	89 / 0	43 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	J5(i2093)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	50	19			n/a
1	J5(i2148)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	81	30			n/a
2	J5(i1714)	Conc. Pt. (lbs)	L	03-02-08	03-02-08	71	27			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	207 ft-lbs	12,704 ft-lbs	1.6%	1	01-10-08
End Shear	182 lbs	5,785 lbs	3.1%	1	03-02-08
Total Load Defl.	L/999 (0.001")	n/a	n/a	4	02-02-08
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	02-02-08
Max Defl.	0.001"	n/a	n/a	4	02-02-08
Span / Depth	4.6	n/a	n/a		00-00-00

Bearing Supports

Beam Support						
B0	Wall/Plate	5-1/2" x 1-3/4"	236 lbs	4.6%	2%	Unspecified
B1	Hanger	2" x 1-3/4"	187 lbs	n/a	4.4%	HUS1.81/10

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum 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

Disclosure

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

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DWG NO. TAM 9669.18
 STRUCTURAL
 COMPONENT ONLY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i1956)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

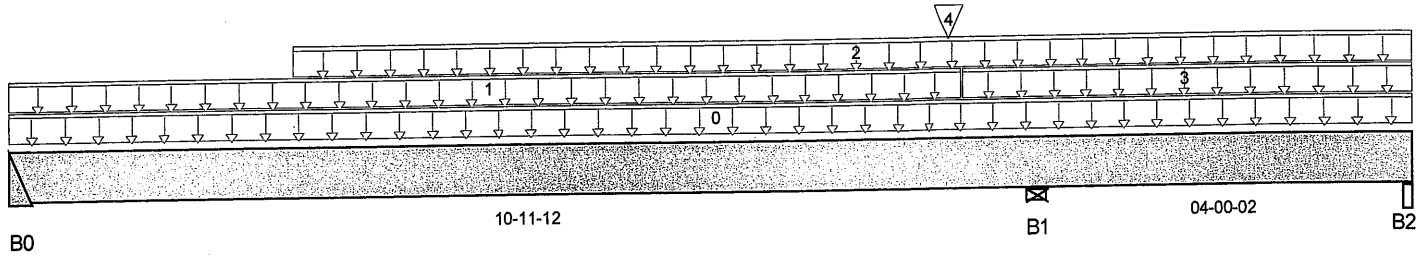
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i1956)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 14-11-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	113 / 0	186 / 0		
B1, 5-1/2"	1,016 / 0	1,145 / 0		
B2, 4-1/8"	18 / 178	0 / 107		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	14-11-14	6	2			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-02-02	14	5			n/a
2	User Load	Unf. Lin. (lb/ft)	L	03-00-01	14-11-14		60			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	10-02-02	14-11-14	3				n/a
4	B14(i1875)	Conc. Pt. (lbs)	L	10-00-06	10-00-06	722	341			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	895 ft-lbs	8,258 ft-lbs	10.8%	0	05-00-14
Neg. Moment	-2,183 ft-lbs	-12,704 ft-lbs	17.2%	1	10-11-12
End Shear	244 lbs	3,761 lbs	6.5%	0	00-11-08
Cont. Shear	1,954 lbs	5,785 lbs	33.8%	1	09-11-08
Uplift	401 lbs	n/a	n/a	2	14-11-14
Total Load Defl.	L/999 (0.073")	n/a	n/a	9	05-03-07
Live Load Defl.	L/999 (0.026")	n/a	n/a	12	05-06-01
Total Neg. Defl.	L/999 (-0.009")	n/a	n/a	9	12-06-04
Max Defl.	0.073"	n/a	n/a	9	05-03-07
Span / Depth	13.7	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"	402 lbs	n/a	9.4%	IUS2.56/9.5
B1 Wall/Plate	5-1/2" x 1-3/4"	2,956 lbs	57.5%	25.2%	Unspecified
B2 Beam	4-1/8" x 1-3/4"	401 lbs	10.4%	4.6%	Unspecified

Cautions

Uplift of 401 lbs found at span 2 - Right. (SIMPSON 1-1/2" x 1/2" L-PLATE @ B2)

Notes



DWG NO. TAM 9670-8
STRUCTURAL
COMPONENT ONLY

SITE COPY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B12(i1956)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i1956)

Specifier:

Designer: CZ

Company:

Msc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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**Disclosure**

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

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DWG NO. TAM 9670.18
STRUCTURAL
COMPONENT ONLY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i1649)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

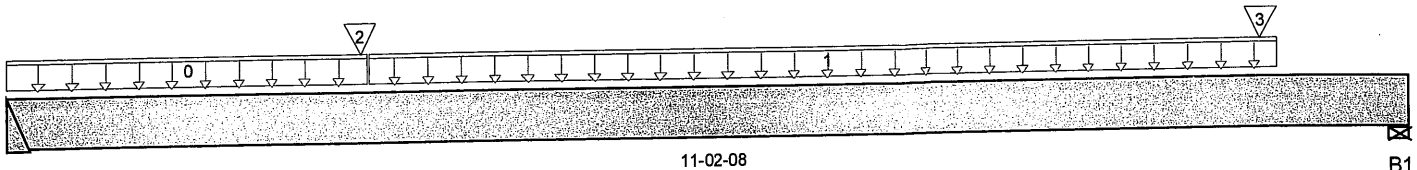
Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i1649)

Specifier:

Designer: CZ

Company:

Misc:



B0

B1

Total Horizontal Product Length = 11-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	211 / 0	117 / 0		
B1, 5-1/2"	800 / 0	395 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-10-08	27	10			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	02-10-08	10-02-02	8	3			n/a
2	B11(i1651)	Conc. Pt. (lbs)	L	02-09-10	02-09-10	85	41			n/a
3	B14(i1875)	Conc. Pt. (lbs)	L	10-00-06	10-00-06	794	368			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,349 ft-lbs	12,704 ft-lbs	10.6%	1	08-04-14
End Shear	1,536 lbs	5,785 lbs	26.6%	1	09-11-08
Total Load Defl.	L/999 (0.083")	n/a	n/a	4	05-09-01
Live Load Defl.	L/999 (0.053")	n/a	n/a	5	05-09-01
Max Defl.	0.083"	n/a	n/a	4	05-09-01
Span / Depth	13.5	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 1-3/4"	463 lbs	n/a	10.8%	HUS1.81/10
B1 Wall/Plate	5-1/2" x 1-3/4"	1,693 lbs	32.9%	14.4%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Design meets User specified (1") Maximum total load deflection criteria.
 Design meets User specified (0.75") Maximum live load deflection criteria.
 Calculations assume unbraced length of Top: 01-00-06, Bottom: 01-00-06.

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 9671-18
 STRUCTURAL
 COMPONENT ONLY

SITE COPY



Boise Cascade

Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B13(i1649)

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

September 12, 2017 11:09:33

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B13(i1649)

Specifier:

Designer: CZ

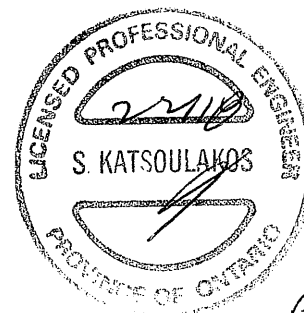
Company:

Misc:

Disclosure

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

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DWG NO. TAM 9671-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...B14(i1875)

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

September 12, 2017 11:09:32

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

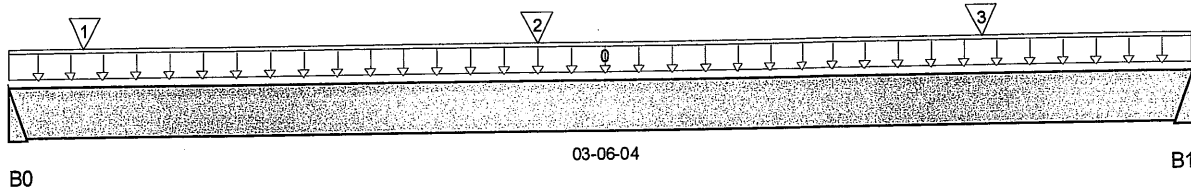
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i1875)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-06-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	783 / 0	364 / 0		
B1	732 / 0	344 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-06-04	240	120			n/a
1	J3(i2126)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	178	67			n/a
2	J3(i2108)	Conc. Pt. (lbs)	L	01-06-12	01-06-12	279	105			n/a
3	J3(i1955)	Conc. Pt. (lbs)	L	02-10-12	02-10-12	213	80			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,275 ft-lbs	25,408 ft-lbs	5%	1	01-06-12
End Shear	851 lbs	11,571 lbs	7.4%	1	02-06-12
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	01-09-00
Live Load Defl.	L/999 (0.002")	n/a	n/a	5	01-09-00
Max Defl.	0.003"	n/a	n/a	4	01-09-00
Span / Depth	4.2	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	1,630 lbs	n/a	19.1%	HGUS4 10
B1 Hanger	2" x 3-1/2"	1,528 lbs	n/a	17.9%	HGUS4 10

Notes

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum 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



DWG NO. TAM 9672-18
STRUCTURAL
COMPONENT ONLY

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i1875)

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

September 12, 2017 11:09:32

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: S38-1 BAROSSA 1.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i1875)

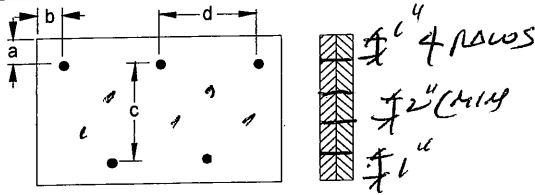
Specifier:

Designer: CZ

Company:

Misc:

Connection Diagram



a minimum = 0" c = 1-1/2"
b minimum = 3" d = 4"

Calculated Side Load = 374.9 lb/ft

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

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

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DWG NO. TAM 9672-8
STRUCTURAL
COMPONENT ONLY

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor...\B16A(i1963)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

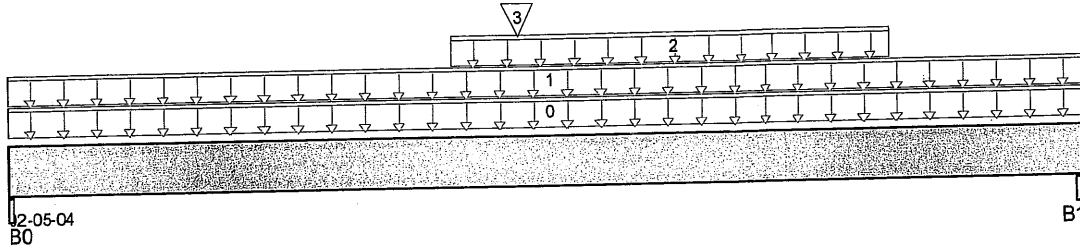
Description: Designs\Flush Beams\1st Floor\Flush Beams\B16A(i196:

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 02-05-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	215 / 0	509 / 0		
B1, 5-1/4"	194 / 0	459 / 0		

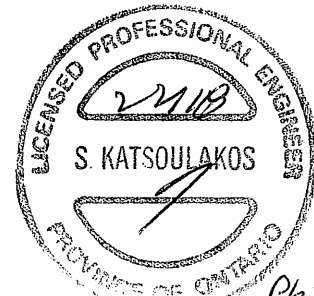
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	02-05-04	33	130		216	n/a
1	LOWROOF	Unf. Lin. (lb/ft)	L	00-00-00	02-05-04	11	10		24	n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-00-00	02-00-00	6				n/a
3	-	Conc. Pt. (lbs)	L	01-01-12	01-01-12	294	600		440	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	426 ft-lbs	16,515 ft-lbs	2.6%	0	01-01-12
End Shear	382 lbs	7,521 lbs	5.1%	0	01-02-08
Total Load Defl.	L/999 (0")	n/a	n/a	4	01-02-05
Live Load Defl.	L/999 (0")	n/a	n/a	5	01-02-05
Max Defl.	0"	n/a	n/a	4	01-02-05
Span / Depth	2.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	712 lbs	11.2%	4.9%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	642 lbs	10.1%	4.4%	Unspecified

Notes



DWG NO. TAM 9673
STRUCTURAL
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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16A(i1963)

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

September 21, 2017 12:04:08

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: S38-1 BAROSSA 1-ELB.mmdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16A(i1963)

Specifier:

Designer: CZ

Company:

Misc:

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

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

Design meets User specified (1") Maximum total load deflection criteria.

Design meets User specified (0.75") Maximum live load deflection criteria.

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

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

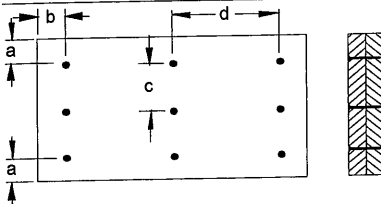
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



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

Calculated Side Load = 480.9 lb/ft

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

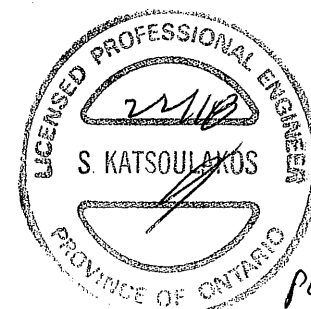
Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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

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DWG NO. TAM
STRUCTURAL
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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B1A(i1291)

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

September 21, 2017 12:03:10

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: WATERDOWN,

Customer:

Code reports: CCMC 12472-R

File Name: HIGHGROVE 2 EL-1,3 DECK.mmdl

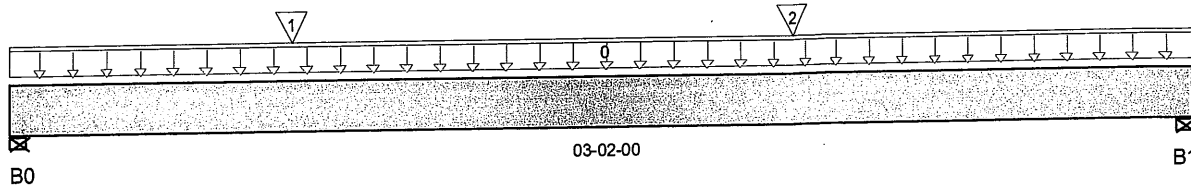
Description: Designs\Flush Beams\Basement\Flush Beams\B1A(i1291

Specifier:

Designer: AJ

Company:

Misc:



Total Horizontal Product Length = 03-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	327 / 0	299 / 0		
B1, 4"	253 / 0	262 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	E1(i275)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00		81			n/a
1	J3(i1263)	Conc. Pt. (lbs)	L	00-09-00	00-09-00	290	145			n/a
2	J3(i1285)	Conc. Pt. (lbs)	L	02-01-00	02-01-00	290	145			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	516 ft-lbs	12,704 ft-lbs	4.1%	1	02-01-00
End Shear	554 lbs	5,785 lbs	9.6%	1	02-00-08
Total Load Defl.	L/999 (0.002")	n/a	n/a	4	01-07-00
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	01-07-05
Max Defl.	0.002"	n/a	n/a	4	01-07-00
Span / Depth	3.3	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

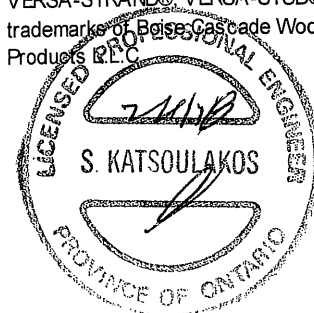
B0	Wall/Plate	4" x 1-3/4"	865 lbs	23.1%	10.1%	Unspecified
B1	Wall/Plate	4" x 1-3/4"	707 lbs	18.9%	8.3%	Unspecified

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 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

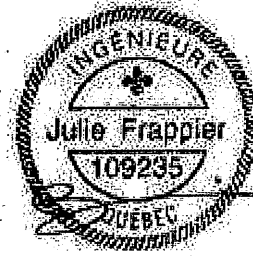
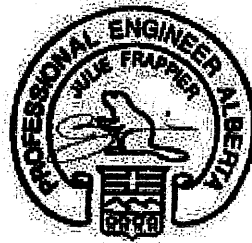
CONFORMS TO OBC 2012

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DWG NO. TAM 9674-18
 STRUCTURAL
 COMPONENT ONLY



Maximum Floor Spans

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

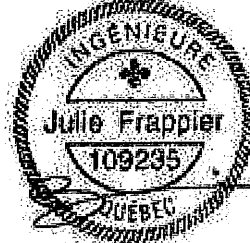
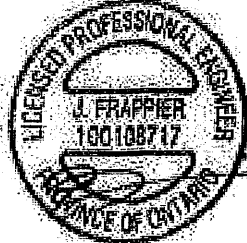
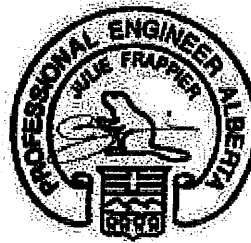
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"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

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

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

Maximum Floor Spans

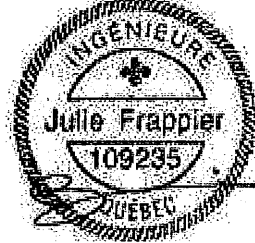
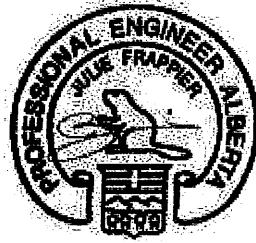
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing



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

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

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



Maximum Floor Spans

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

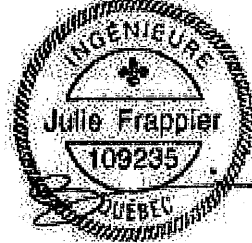
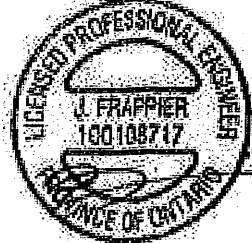
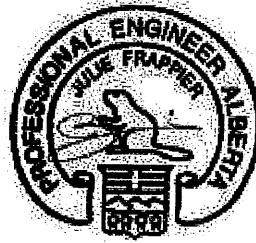
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"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

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

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

Maximum Floor Spans

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



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

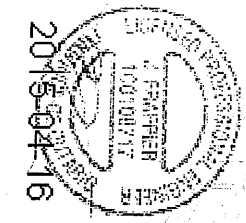
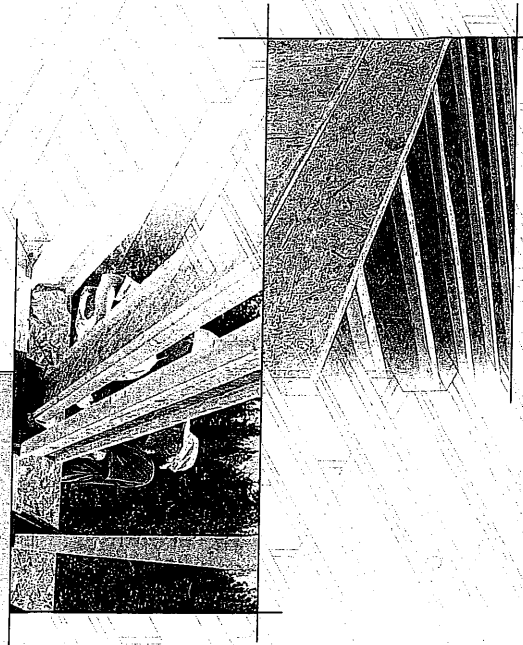
Depth	Series	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
	NI-60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

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



INSTALLATION GUIDE

FOR RESIDENTIAL FLOORS



Distributed by:



N-C301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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

Avoid Accidents by Following these Important Guidelines:

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

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



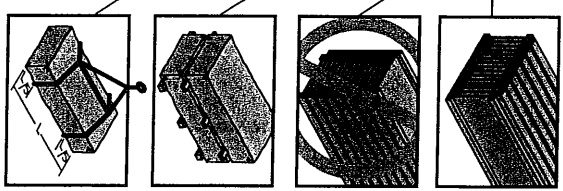
Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



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

STORAGE AND HANDLING GUIDELINES

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



SITE COPY



MAXIMUM FLOOR SPANS

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

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing				On centre spacing			
		12"	16"	19.2	24"	12"	16"	19.2"	24"
12	12S	15.1	14.32	13.9	13.5	16.53	15.21	14.10	14.77
12	12L	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12H	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12V	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12W	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12X	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12Y	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12Z	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AA	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AB	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AC	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AD	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AE	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AF	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AG	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AH	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AI	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AJ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AK	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AL	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AM	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AN	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AO	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AP	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AQ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AR	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AS	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AT	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AU	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AV	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AW	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AX	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AY	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12AZ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BA	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BB	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BC	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BD	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BE	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BF	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BG	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BH	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BI	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BJ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BK	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BL	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BM	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BN	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BO	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BP	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BQ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BR	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BS	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BT	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BU	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BV	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BW	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BX	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BY	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12BZ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CA	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CB	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CC	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CD	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CE	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CF	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CG	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CH	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CI	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CJ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CK	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CL	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CM	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CN	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CO	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CP	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CQ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CR	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CS	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CT	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CU	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CV	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CW	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CX	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CY	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12CZ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DA	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DB	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DC	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DD	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DE	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DF	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DG	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DH	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DI	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DJ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DK	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DL	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DM	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DN	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DO	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DP	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DQ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DR	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DS	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DT	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DU	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DV	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DW	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DX	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DY	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12DZ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EA	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EB	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EC	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12ED	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EE	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EF	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EG	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EH	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EI	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EJ	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EK	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EL	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EM	16.21	15.22	14.8	14.3	16.55	15.23	14.10	14.77
12	12EN	16.21	15.22	14.8	14.3	16.55	15.23		

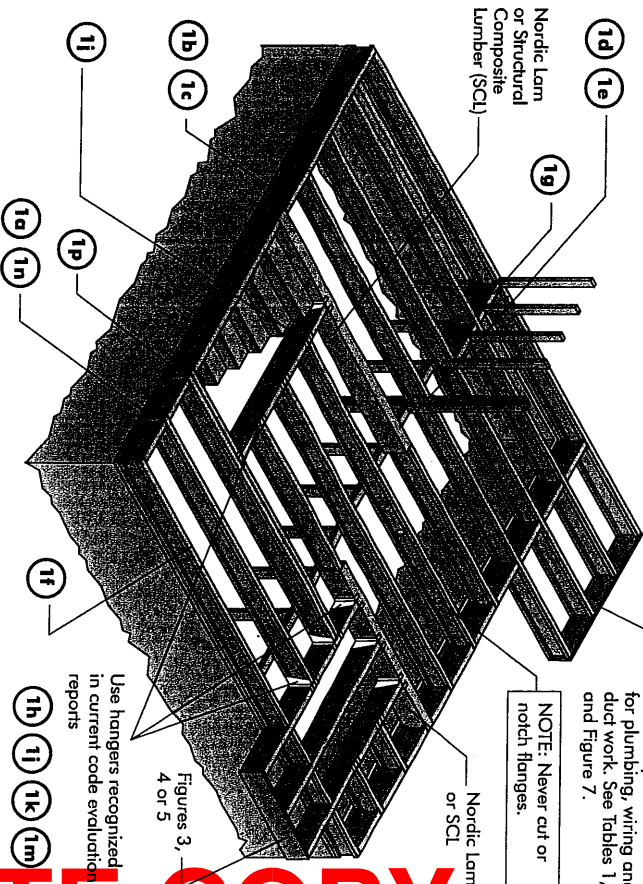
INSTALLING NORDIC I-JOISTS

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-span joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend 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.

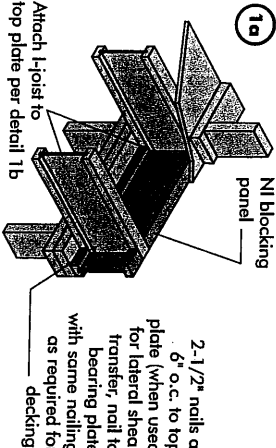
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FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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

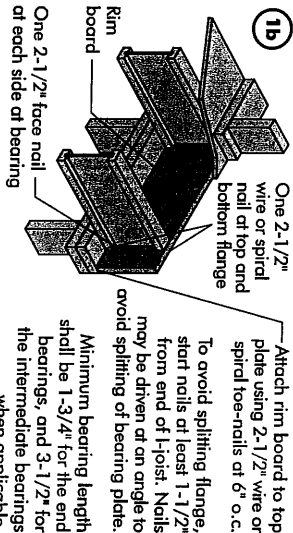


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



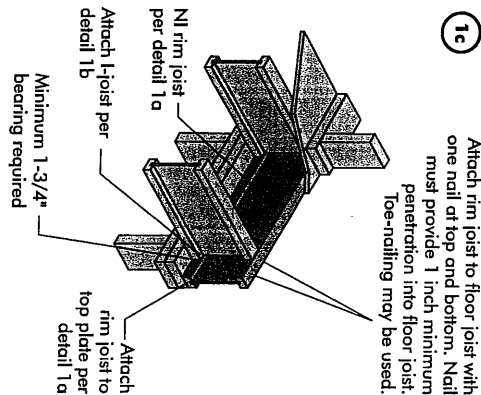
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

*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.



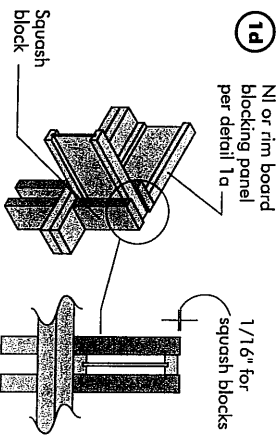
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	8,090

*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.



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

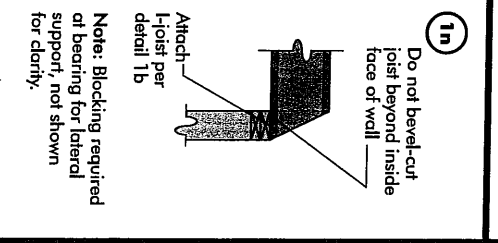
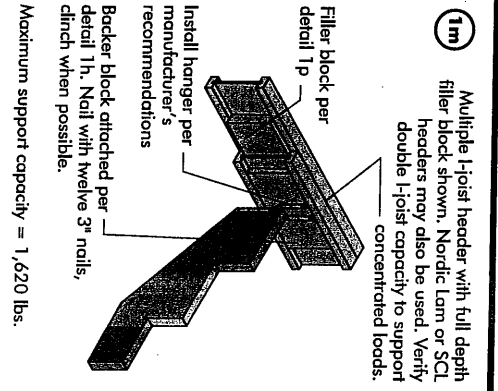
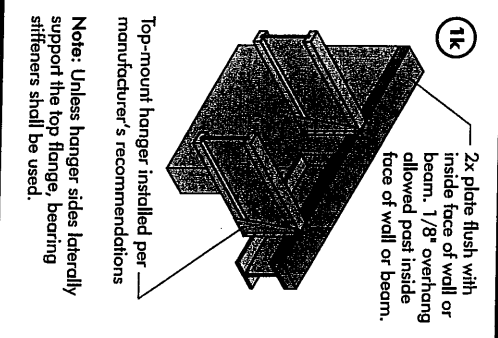
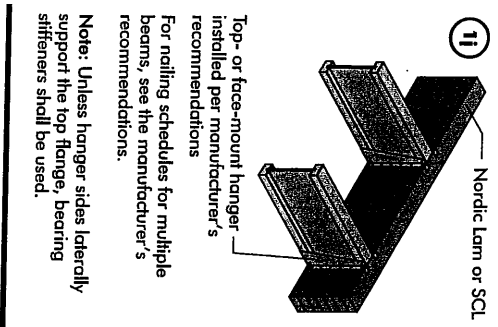
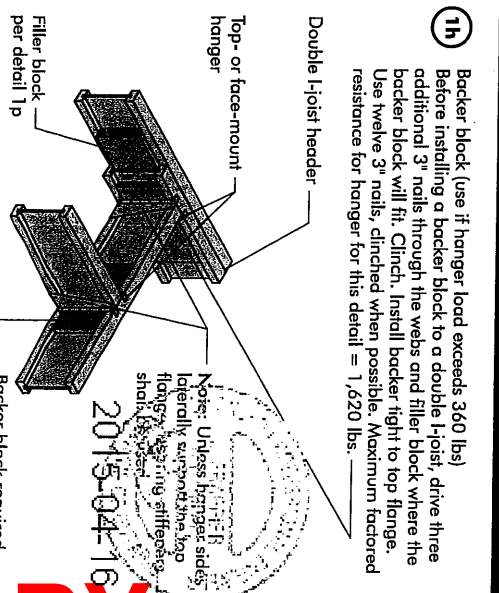
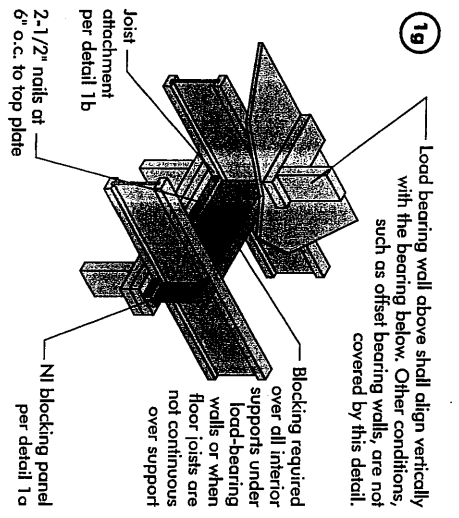
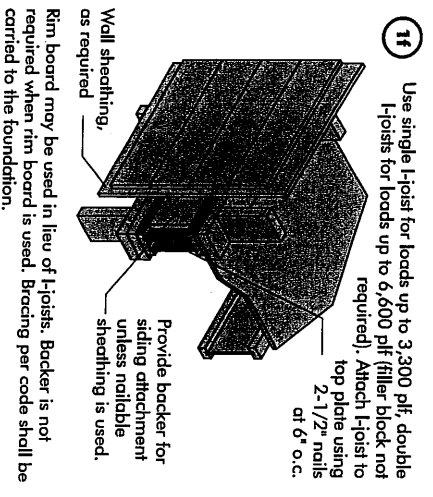
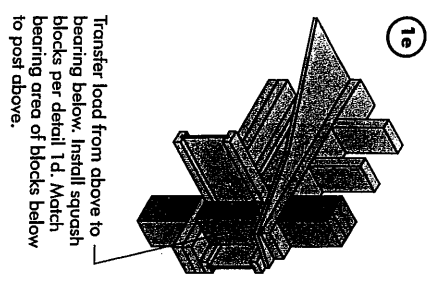
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



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.

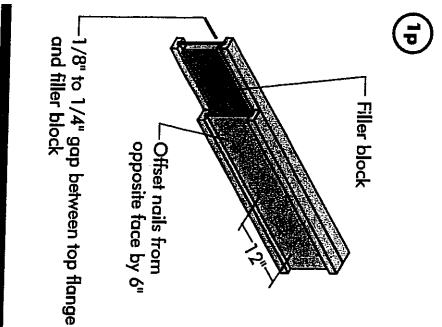
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BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

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

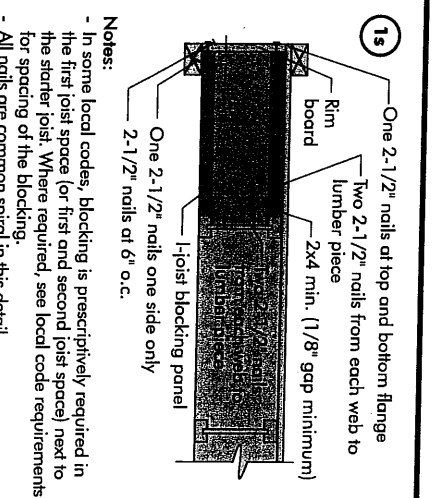
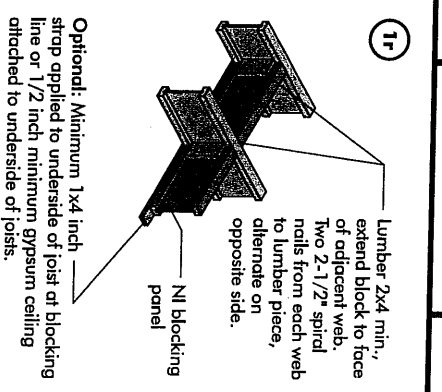
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q437 Standard.
 ** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net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



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

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

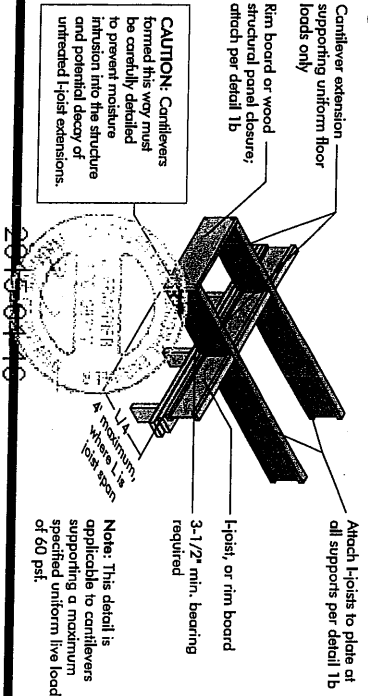
Flange Size	Joist Depth	Block Size
2-1/2" x 1-1/2"	9-1/2" x 14"	2-1/8" x 6"
2-1/2" x 1-1/2"	11-7/8" x 14"	2-1/8" x 8"
3-1/2" x 1-1/2"	11-7/8" x 14"	2-1/8" x 10"
3-1/2" x 1-1/2"	11-7/8" x 16"	2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2" x 14"	3" x 6"
3-1/2" x 1-1/2"	11-7/8" x 14"	3" x 8"
3-1/2" x 1-1/2"	11-7/8"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



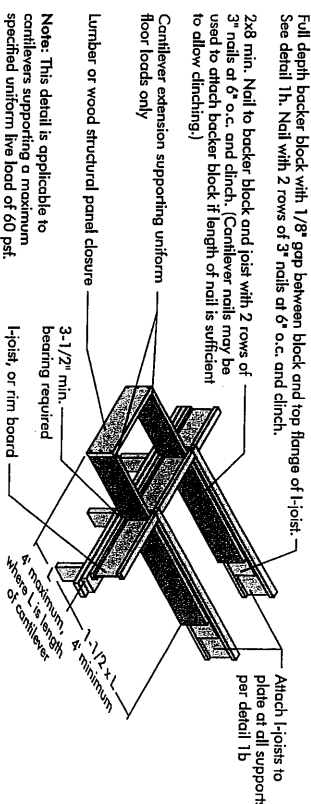
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CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

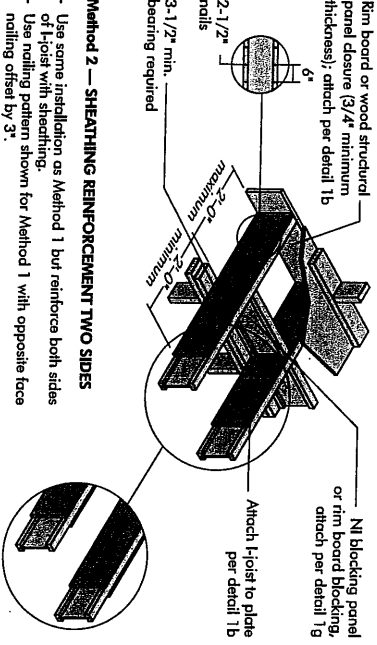


39) LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

40) Method 1 — SHEATHING REINFORCEMENT ONE SIDE



Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

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

40) Alternate Method 2 — DOUBLE I-JOIST

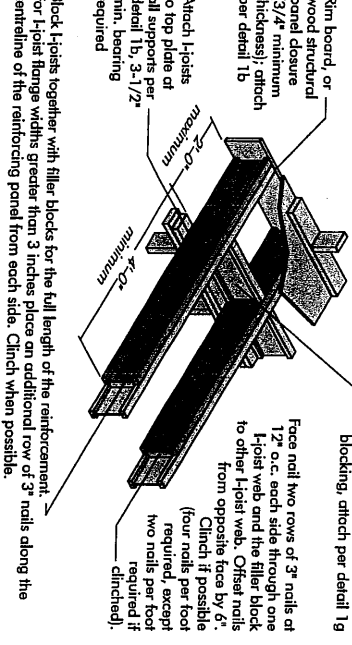
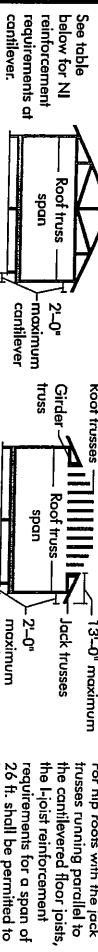


FIGURE 4 (continued)



CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)											
		LL = 30 psf, DL = 15 psf JOIST SPACING (in.)				LL = 40 psf, DL = 15 psf JOIST SPACING (in.)				LL = 50 psf, DL = 15 psf JOIST SPACING (in.)			
12	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	16	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
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	28	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	32	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	36	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	40	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	44	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	48	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
16	12	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
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	28	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	32	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
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	44	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	48	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24

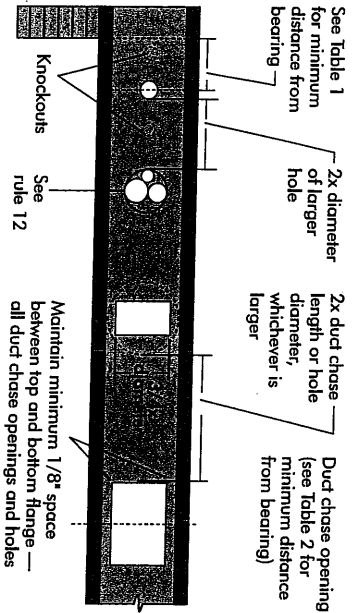
1. N = No reinforcement required.
2. N = NI reinforced with 3/4" wood structural panel on one side only.
3. N = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath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

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of hole (ft-in.)												Span adjustment Factor		
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4		11	12
10	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	6-1/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	8-5/8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	10-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	12-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	6-1/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	8-5/8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	10-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	12-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	6-1/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	8-5/8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	10-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	12-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	6-1/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	8-5/8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	10-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	12-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	6-1/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	8-5/8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	10-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	12-3/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 Floor 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:

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

Where:

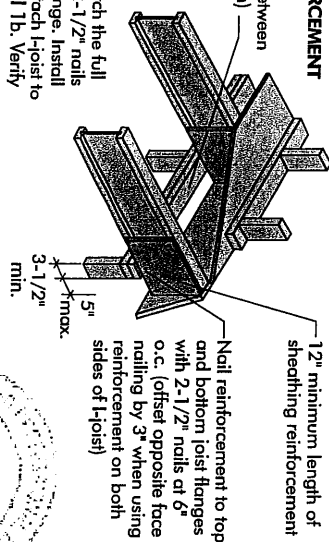
- D_{reduced} = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span applications (ft). The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.
- L_{actual} = The actual measured span distance between the inside faces of supports (ft).
- SAF = 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.

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

5a SHEATHING REINFORCEMENT

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

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

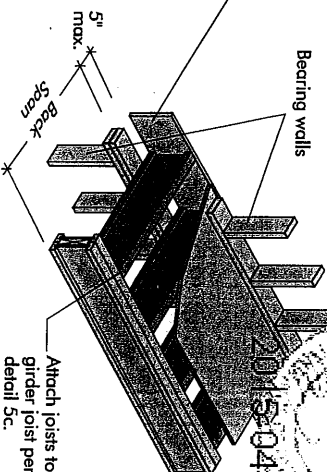


5b SET-BACK DETAIL

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

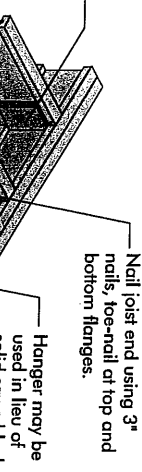
Notes:

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



5c SET-BACK CONNECTION

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



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

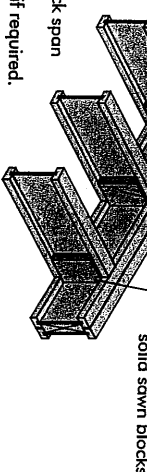
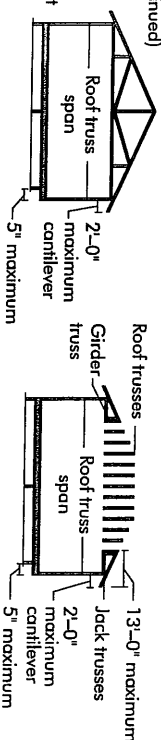


FIGURE 5 (continued)

See table below for NI reinforcement requirements at cantilever.



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	LL = 30 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
12	12	1	1	1	1	1	1	1	1	1	1	1	1
16	16	1	1	1	1	1	1	1	1	1	1	1	1
19.2	19.2	1	1	1	1	1	1	1	1	1	1	1	1
24	24	1	1	1	1	1	1	1	1	1	1	1	1
28	28	1	1	1	1	1	1	1	1	1	1	1	1
30	30	1	1	1	1	1	1	1	1	1	1	1	1
32	32	1	1	1	1	1	1	1	1	1	1	1	1
34	34	1	1	1	1	1	1	1	1	1	1	1	1
36	36	1	1	1	1	1	1	1	1	1	1	1	1
38	38	1	1	1	1	1	1	1	1	1	1	1	1
40	40	1	1	1	1	1	1	1	1	1	1	1	1
42	42	1	1	1	1	1	1	1	1	1	1	1	1

1. N = No reinforcement required.
1 = NI reinforced with 3/4" wood structural panel on one side only.
- 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
X = Try a deeper joist or closer spacing.
3. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
4. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's 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 framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
6. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

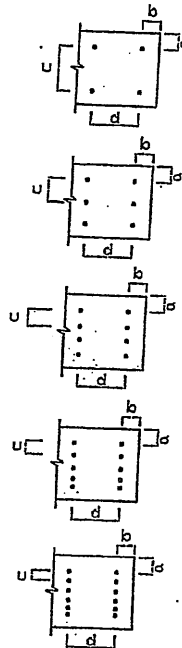
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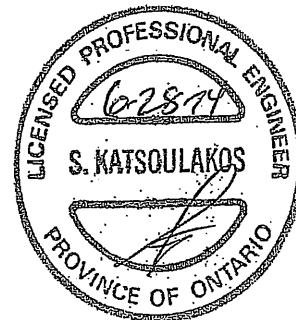
R.R. #1, P.O. BOX 61, GLENCOE, ONTARIO, N0L 1M0

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 BELOWS

PROVIDE NAILING
DETAIL # X SEE
DWG #TAMN1001-14

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