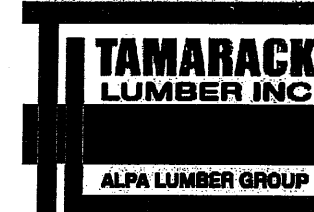


Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	28
J1DJ	12-00-00	9 1/2" NI-40x	2	12
J2	10-00-00	9 1/2" NI-40x	1	27
J3	8-00-00	9 1/2" NI-40x	1	6
J4	6-00-00	9 1/2" NI-40x	1	5
J5	4-00-00	9 1/2" NI-40x	1	3
B2	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	12-00-00	1-3/4" 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
B6	8-00-00	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
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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

TOWN OF BRADFORD WEST GWILLIMBURY
BUILDING DEPARTMENT
PLANS EXAMINED
ONTARIO BUILDING CODE APPLIES
DATE: 2018-09-19
INSPECTOR: BG

SITE COPY



FROM PLAN DATED: SEPT 2016
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: SD25-1 SONOMA 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: 05/02/2018

1st FLOOR

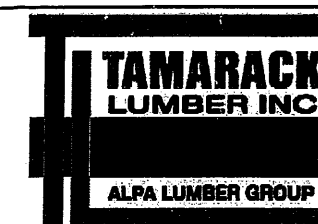
STANDARD

SUNKEN

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

Architectural floor plan showing dimensions and room layouts. Key dimensions include 7-07-00, 13-04-00, 10-00-00, 6-09-00, 9-02-00, 45-06-00, 32-07-00, 2-10-00, 8-02-00, 1-09-00, 19-09-00, 6-08-00, 9-05-00, 5-10-00, 6-04-00, 6-02-00, 11-01-00, 9-10-00, and 23-05-00. Rooms are labeled with numbers (e.g., J1, J2, J3, J4, J5, J6, B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100) and letters (e.g., H1, H2, H3, H4, H5, H6, H7, H8, H9, H10, H11, H12, H13, H14, H15, H16, H17, H18, H19, H20, H21, H22, H23, H24, H25, H26, H27, H28, H29, H30, H31, H32, H33, H34, H35, H36, H37, H38, H39, H40, H41, H42, H43, H44, H45, H46, H47, H48, H49, H50, H51, H52, H53, H54, H55, H56, H57, H58, H59, H60, H61, H62, H63, H64, H65, H66, H67, H68, H69, H70, H71, H72, H73, H74, H75, H76, H77, H78, H79, H80, H81, H82, H83, H84, H85, H86, H87, H88, H89, H90, H91, H92, H93, H94, H95, H96, H97, H98, H99, H100). Other labels include "STL BM", "J1 @ 16" O.C.", "J2 @ 12" O.C.", "J3 @ 12" O.C.", "J4 @ 16" O.C.", "J5 @ 12" O.C.", "J6 @ 12" O.C.", "J7 @ 12" O.C.", "J8 @ 12" O.C.", "J9 @ 12" O.C.", "J10 @ 12" O.C.", "J11 @ 12" O.C.", "J12 @ 12" O.C.", "J13 @ 12" O.C.", "J14 @ 12" O.C.", "J15 @ 12" O.C.", "J16 @ 12" O.C.", "J17 @ 12" O.C.", "J18 @ 12" O.C.", "J19 @ 12" O.C.", "J20 @ 12" O.C.", "J21 @ 12" O.C.", "J22 @ 12" O.C.", "J23 @ 12" O.C.", "J24 @ 12" O.C.", "J25 @ 12" O.C.", "J26 @ 12" O.C.", "J27 @ 12" O.C.", "J28 @ 12" O.C.", "J29 @ 12" O.C.", "J30 @ 12" O.C.", "J31 @ 12" O.C.", "J32 @ 12" O.C.", "J33 @ 12" O.C.", "J34 @ 12" O.C.", "J35 @ 12" O.C.", "J36 @ 12" O.C.", "J37 @ 12" O.C.", "J38 @ 12" O.C.", "J39 @ 12" O.C.", "J40 @ 12" O.C.", "J41 @ 12" O.C.", "J42 @ 12" O.C.", "J43 @ 12" O.C.", "J44 @ 12" O.C.", "J45 @ 12" O.C.", "J46 @ 12" O.C.", "J47 @ 12" O.C.", "J48 @ 12" O.C.", "J49 @ 12" O.C.", "J50 @ 12" O.C.", "J51 @ 12" O.C.", "J52 @ 12" O.C.", "J53 @ 12" O.C.", "J54 @ 12" O.C.", "J55 @ 12" O.C.", "J56 @ 12" O.C.", "J57 @ 12" O.C.", "J58 @ 12" O.C.", "J59 @ 12" O.C.", "J60 @ 12" O.C.", "J61 @ 12" O.C.", "J62 @ 12" O.C.", "J63 @ 12" O.C.", "J64 @ 12" O.C.", "J65 @ 12" O.C.", "J66 @ 12" O.C.", "J67 @ 12" O.C.", "J68 @ 12" O.C.", "J69 @ 12" O.C.", "J70 @ 12" O.C.", "J71 @ 12" O.C.", "J72 @ 12" O.C.", "J73 @ 12" O.C.", "J74 @ 12" O.C.", "J75 @ 12" O.C.", "J76 @ 12" O.C.", "J77 @ 12" O.C.", "J78 @ 12" O.C.", "J79 @ 12" O.C.", "J80 @ 12" O.C.", "J81 @ 12" O.C.", "J82 @ 12" O.C.", "J83 @ 12" O.C.", "J84 @ 12" O.C.", "J85 @ 12" O.C.", "J86 @ 12" O.C.", "J87 @ 12" O.C.", "J88 @ 12" O.C.", "J89 @ 12" O.C.", "J90 @ 12" O.C.", "J91 @ 12" O.C.", "J92 @ 12" O.C.", "J93 @ 12" O.C.", "J94 @ 12" O.C.", "J95 @ 12" O.C.", "J96 @ 12" O.C.", "J97 @ 12" O.C.", "J98 @ 12" O.C.", "J99 @ 12" O.C.", "J100 @ 12" O.C.

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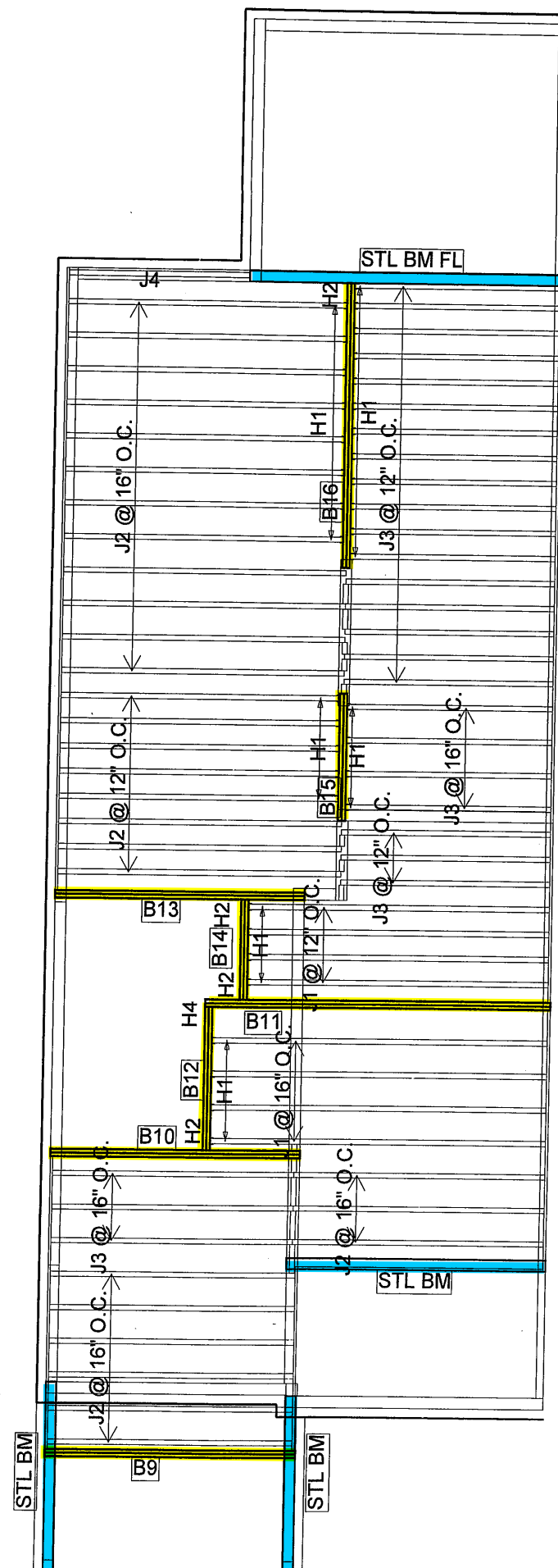


FROM PLAN DATED: SEPT 2016
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: SD25-1 SONOMA 1
ELEVATION: A,B
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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 FIGURE 7 TABLES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
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: 05/02/2018

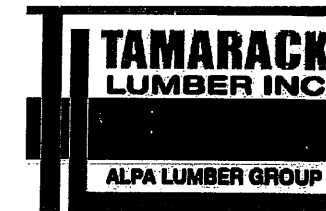
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	8
J2	12-00-00	9 1/2" NI-40x	1	29
J3	10-00-00	9 1/2" NI-40x	1	27
J4	8-00-00	9 1/2" NI-40x	1	1
B11	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
37	H1	IUS2.56/9.5
3	H2	HGUS410
1	H2	HGUS410
1	H4	HUC410

SITE COPY

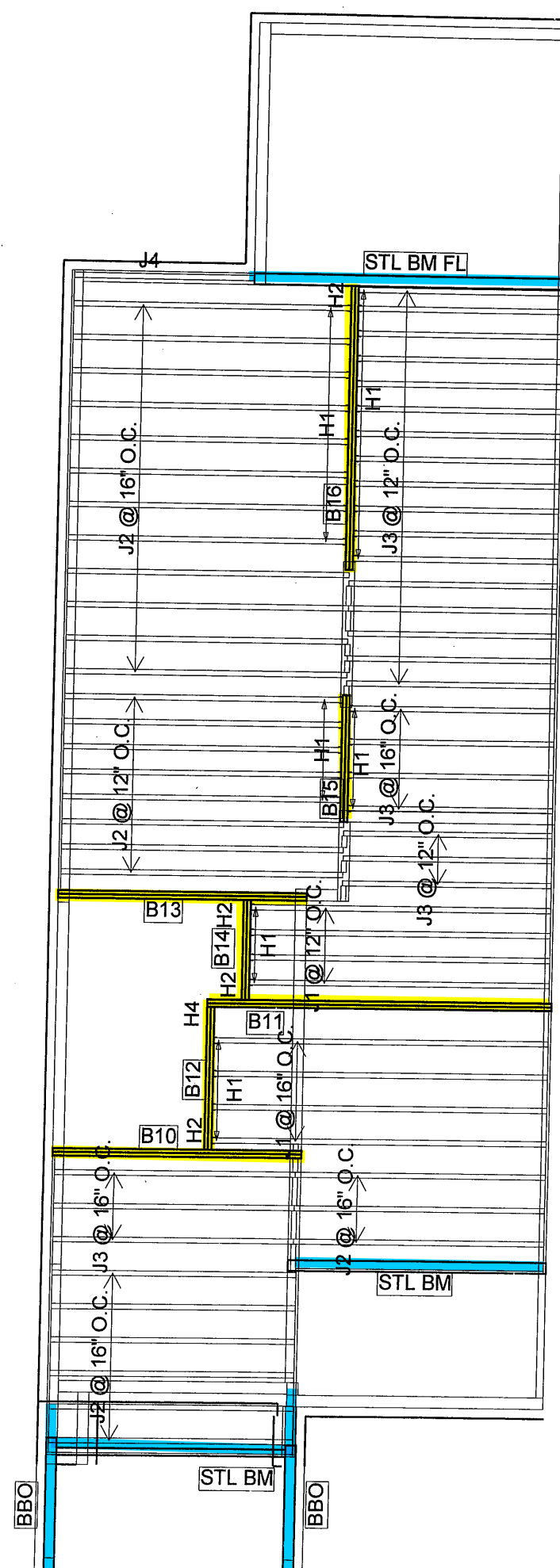


FROM PLAN DATED: SEPT 2016
BUILDER: BAYVIEW WELLINGTON
SITE: GREEN VALLEY EAST
MODEL: SD25-1 SONOMA 1
ELEVATION: C
LOT:
CITY: BRADFORD
SALESMAN: M D
DESIGNER: CZ
REVISION:

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
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SEE FIGURE 7 TABLES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
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: 14/02/2018

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	8
J2	12-00-00	9 1/2" NI-40x	1	29
J3	10-00-00	9 1/2" NI-40x	1	27
J4	8-00-00	9 1/2" NI-40x	1	1
B11	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
37	H1	IUS2.56/9.5
3	H2	HGUS410
1	H2	HGUS410
1	H4	HUC410

SITE COPY

1st Floor Flush Beams B11(i2007)

Dry | 2 spans | L cant.

February 5, 2018 15:52:16

BC CALC® Design Report

Build 6215

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

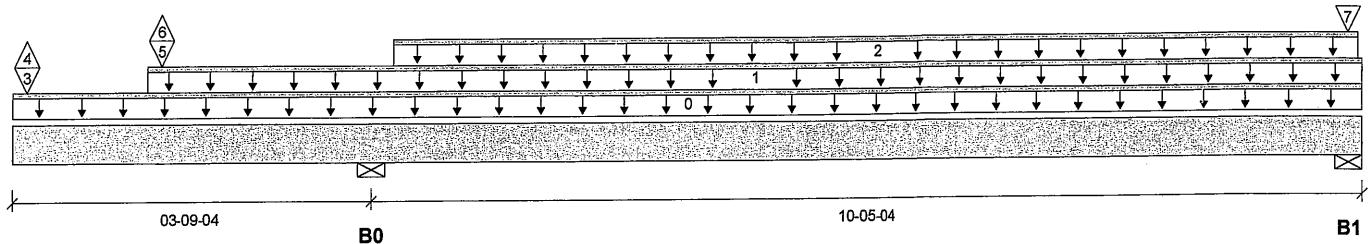
File name: SD25-1 SONOMA 1 EL A.mmdl

Description: 1st Floor Flush Beams B11(i2007)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 14-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	1,356 / 773	734 / 0		
B1, 3-1/2"	416 / 216	464 / 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	14-02-08		10			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	01-05-00	14-02-08	47	23			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	04-00-00	14-02-00		59			n/a
3	B12(i1866)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	228	14			n/a
4	B12(i1866)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	-256				n/a
5	B14(i1891)	Conc. Pt. (lbs)	L	01-06-12	01-06-12	564	125			n/a
6	B14(i1891)	Conc. Pt. (lbs)	L	01-06-12	01-06-12	-350				n/a
7	E28(i1862)	Conc. Pt. (lbs)	L	14-00-12	14-00-12		19			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,505 ft-lbs	23,220 ft-lbs	15.1 %	4	07-10-06
Neg. Moment	-3,878 ft-lbs	-23,220 ft-lbs	16.7 %	1	03-09-04
End Shear	982 lbs	11,571 lbs	8.5 %	4	13-01-08
Cont. Shear	1,527 lbs	11,571 lbs	13.2 %	1	02-09-00
Total Load Deflection	2xL/1,998 (0.099")	n/a	n/a	12	00-00-00
Live Load Deflection	2xL/716 (0.126")	n/a	50.3 %	16	00-00-00
Total Neg. Defl.	2xL/589 (-0.154")	n/a	40.8 %	13	00-00-00
Max Defl.	0.096"	n/a	n/a	13	08-07-14
Span / Depth	12.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 5-1/2" x 3-1/2"	2,951 lbs	28.7 %	12.6 %	Unspecified
B0	Uplift	499 lbs			
B1	Wall/Plate 3-1/2" x 3-1/2"	1,204 lbs	18.4 %	8.1 %	Unspecified

Cautions

 Uplift of 499 lbs found at span 1 - Right.) - (SIMPSON I-FL-STAR DTB B0+B1)
 Uplift of 499 lbs found at span 2 - Left.


PB/L

SITE COPY

 DWG NO. TAM 9214-18
 STRUCTURAL
 COMPONENT ONLY



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

PASSED

1st Floor\Flush Beams\B11(i2007)

Dry | 2 spans | L cant.

February 5, 2018 15:52:16

BC CALC® Design Report

Build 6215

Job name:

File name: SD25-1 SONOMA 1 EL A.mmdl

Address:

Description: 1st Floor\Flush Beams\B11(i2007)

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

Specifier:

Customer:

Designer: CZ

Code reports: CCMC 12472-R

Company:

Notes

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

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

Calculations assume member is fully braced.

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.

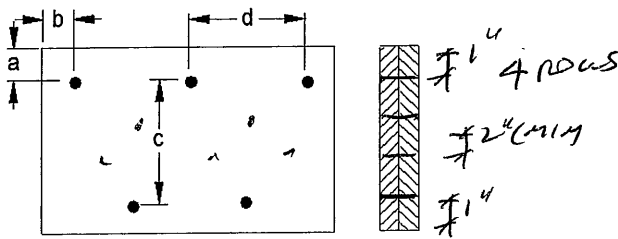
CONFORMS TO OBC 2012

Importance Factor : Normal Part code : Part 9

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

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.

Connection Diagram



a minimum = 2"

c = 3-1/2"

b minimum = 3"

d = 6"

Calculated Side Load = 35.3 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.

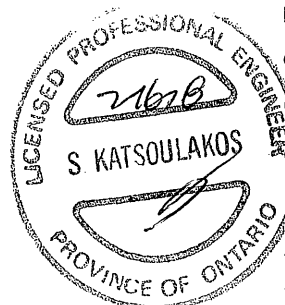
Connectors are:

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.



BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

DWG NO. TAM 9244-08

STRUCTURAL
COMPONENT ONLY

SITE COPY



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

PASSED

1st Floor/Flush Beams\B13(i1878)

Dry | 1 span | No cant.

February 5, 2018 15:52:16

BC CALC® Design Report

Build 6215

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

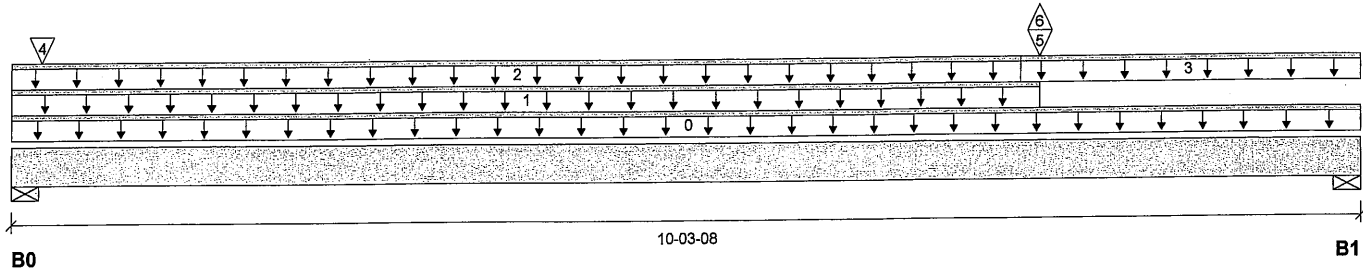
File name: SD25-1 SONOMA 1 EL A.mmdl

Description: 1st Floor/Flush Beams\B13(i1878)

Specifier:

Designer: CZ

Company:



Total Horizontal Product Length = 10-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	234 / 103	843 / 0		
B1, 5-1/2"	578 / 377	341 / 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	10-03-08		10			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	07-10-04		60			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-08	21	10			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	07-08-08	10-03-08	27	13			n/a
4	E14(i619)	Conc. Pt. (lbs)	L	00-02-12	00-02-12		428			n/a
5	B14(i1891)	Conc. Pt. (lbs)	L	07-10-04	07-10-04	582	70			n/a
6	B14(i1891)	Conc. Pt. (lbs)	L	07-10-04	07-10-04	-480				n/a

Controls Summary

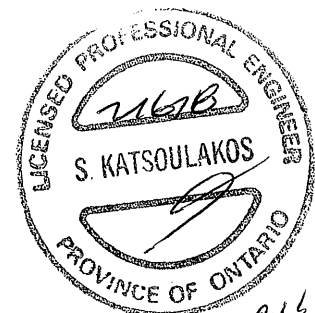
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,541 ft-lbs	23,220 ft-lbs	10.9 %	1	06-07-03
Neg. Moment	-588 ft-lbs	-23,220 ft-lbs	2.5 %	4	07-10-04
End Shear	1,206 lbs	11,571 lbs	10.4 %	1	09-00-08
Total Load Deflection	L/999 (0.059")	n/a	n/a	6	05-04-10
Live Load Deflection	L/999 (0.03")	n/a	n/a	8	05-07-01
Max Defl.	0.059"	n/a	n/a	6	05-04-10
Span / Depth	12.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B0	Wall/Plate 5-1/2" x 3-1/2"	1,180 lbs	17.7 %	7.7 %	Unspecified
B1	Wall/Plate 5-1/2" x 3-1/2"	1,292 lbs	12.6 %	5.5 %	Unspecified
B1	Uplift	259 lbs			

Cautions

Uplift of 259 lbs found at span 1 - Right. (SIMPSON 1-1/2" x 3-1/2" B1)



SITE COPY

DWG NO. TAM 9215-18
STRUCTURAL
COMPONENT ONLY



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

PASSED

1st Floor\Flush Beams\B13(i1878)

Dry | 1 span | No cant.

February 5, 2018 15:52:16

BC CALC® Design Report

Build 6215

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

File name: SD25-1 SONOMA 1 EL A.mmdl

Description: 1st Floor\Flush Beams\B13(i1878)

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.

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.

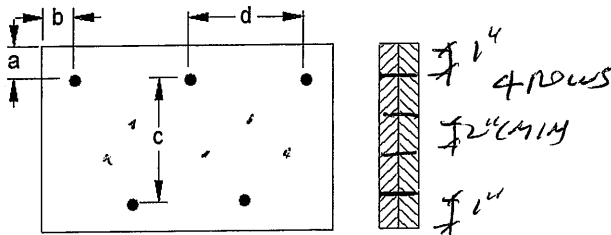
Design based on Dry Service Condition.

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.

Connection Diagram



a minimum = 4"
b minimum = 3"

c = 1-1/2"
d = 4"

Calculated Side Load = 23.4 lb/ft

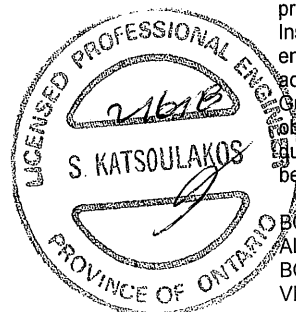
Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 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.



BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®, DWG NO. TAM 9215-18
STRUCTURAL COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B2(i2098)

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

August 28, 2017 16:03:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL C.mmdl

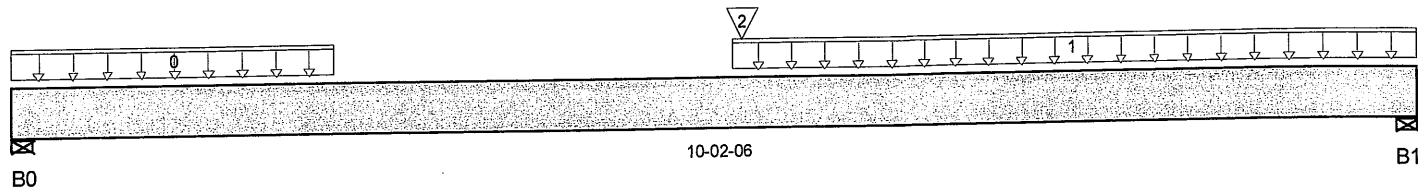
Description: Designs\Flush Beams\Basement\Flush Beams\B2(i2098)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 10-02-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	317 / 0	315 / 0		
B1, 4-3/8"	388 / 0	235 / 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	02-04-00		60			n/a
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-02-08	10-02-06	20	10			n/a
2 B4(i2057)	Conc. Pt. (lbs)	L	05-03-06	05-03-06	603	310			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,447 ft-lbs	8,781 ft-lbs	39.3%	1	05-03-06
End Shear	819 lbs	5,785 lbs	14.2%	1	09-00-08
Total Load Defl.	L/868 (0.131")	0.475"	27.7%	4	05-02-08
Live Load Defl.	L/999 (0.082")	n/a	n/a	5	05-02-08
Max Defl.	0.131"	n/a	n/a	4	05-02-08
Span / Depth	12	n/a	n/a		00-00-00

Bearing Supports

	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 1-3/4"	869 lbs	16.9%	7.4%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	876 lbs	21.4%	9.4%	Unspecified

Notes

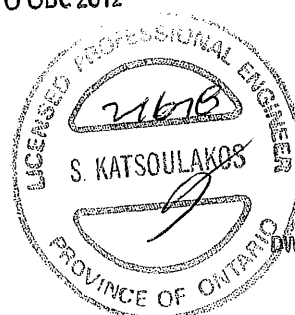
Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 04-09-00, Bottom: 04-09-00.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 BC CALC® analysis 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 CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, SIMPLE FRAMING SYSTEM®, VERSA-LAM®, VERSA-RIM PLUS®, VERSA-RIM®, VERSA-STRAND®, VERSA-STUD® are trademarks of Boise Cascade Wood Products L.L.C.



DWG NO. TAM 9216-18
 STRUCTURAL
 COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B3(i1287)

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

August 24, 2017 10:58:42

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

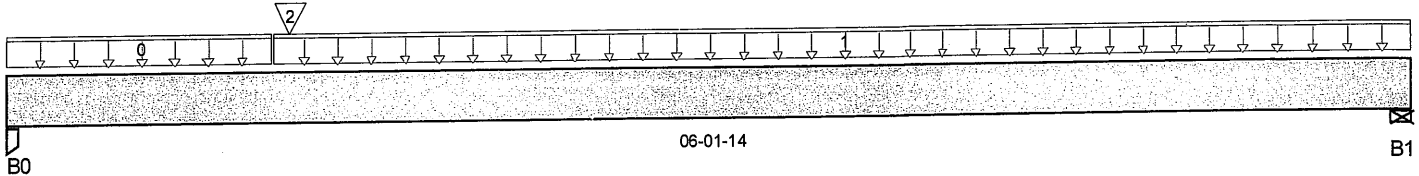
Description: Designs\Flush Beams\Basement\Flush Beams\B3(i1287)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 06-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-3/8"	597 / 0	320 / 0		
B1, 4-3/8"	194 / 0	114 / 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	00-00-00	01-02-00	19	10			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	01-02-00	06-01-14	25	13			n/a
2	B4(i1362)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	644	331			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,288 ft-lbs	12,704 ft-lbs	10.1%	1	01-02-14
End Shear	1,246 lbs	5,785 lbs	21.5%	1	01-00-14
Total Load Defl.	L/999 (0.017")	n/a	n/a	4	02-09-03
Live Load Defl.	L/999 (0.011")	n/a	n/a	5	02-08-08
Max Defl.	0.017"	n/a	n/a	4	02-09-03
Span / Depth	7.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-3/8" x 1-3/4"	1,296 lbs	27%	18%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	433 lbs	10.6%	4.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 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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DRWG NO. TAM 92-10-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B4(i1362)

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

August 24, 2017 10:58:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports:

CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

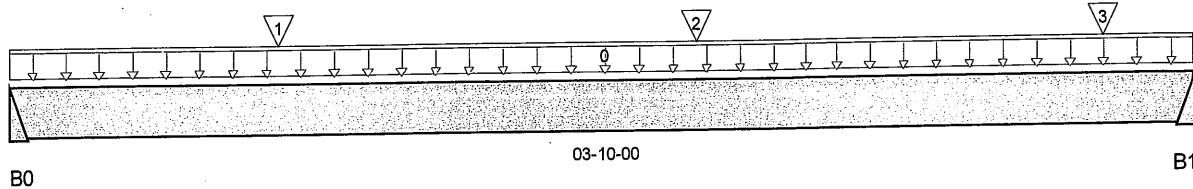
Description: Designs\Flush Beams\Basement\Flush Beams\B4(i1362)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	614 / 0	315 / 0		
B1	638 / 0	328 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	240	120			n/a
1	J4(i1271)	Conc. Pt. (lbs)	L	00-10-08	00-10-08	121	60			n/a
2	J4(i1345)	Conc. Pt. (lbs)	L	02-02-08	02-02-08	129	64			n/a
3	J4(i1359)	Conc. Pt. (lbs)	L	03-06-08	03-06-08	82	41			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,176 ft-lbs	12,704 ft-lbs	9.3%	1	02-00-10
End Shear	793 lbs	5,785 lbs	13.7%	1	00-11-08
Total Load Defl.	L/999 (0.008")	n/a	n/a	4	01-11-03
Live Load Defl.	L/999 (0.005")	n/a	n/a	5	01-11-03
Max Defl.	0.008"	n/a	n/a	4	01-11-03
Span / Depth	4.6	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise 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 Hanger	2" x 1-3/4"	1,315 lbs	n/a	30.8%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,368 lbs	n/a	32%	HUS1.81/10

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



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

DWG NO. TAM 9218-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B5(i1360)

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

August 24, 2017 10:58:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

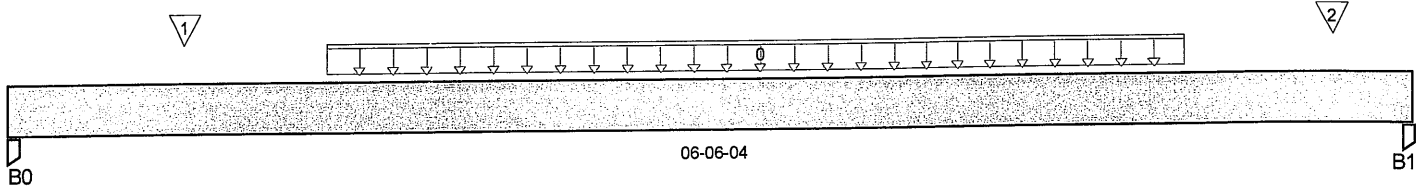
Description: Designs\Flush Beams\Basement\Flush Beams\B5(i1360)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 06-06-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 1-5/8"	348 / 0	189 / 0		
B1, 1-5/8"	376 / 0	204 / 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	01-05-12	05-05-12	120	60			n/a
1 J3(i1273)	Conc. Pt. (lbs)	L	00-09-12	00-09-12	135	67			n/a
2 J3(i1267)	Conc. Pt. (lbs)	L	06-01-12	06-01-12	109	55			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,331 ft-lbs	12,704 ft-lbs	10.5%	1	03-05-12
End Shear	712 lbs	5,785 lbs	12.3%	1	00-11-02
Total Load Defl.	L/999 (0.027")	n/a	n/a	4	03-02-12
Live Load Defl.	L/999 (0.017")	n/a	n/a	5	03-02-12
Max Defl.	0.027"	n/a	n/a	4	03-02-12
Span / Depth	8.1	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	1-5/8" x 1-3/4"	759 lbs	32.9%	21.9%	Unspecified
B1 Post	1-5/8" x 1-3/4"	819 lbs	35.5%	23.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

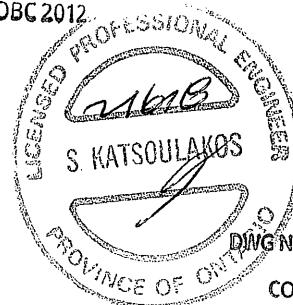
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



BC CALC®, 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.

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B6(i1312)

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

August 24, 2017 10:58:42

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

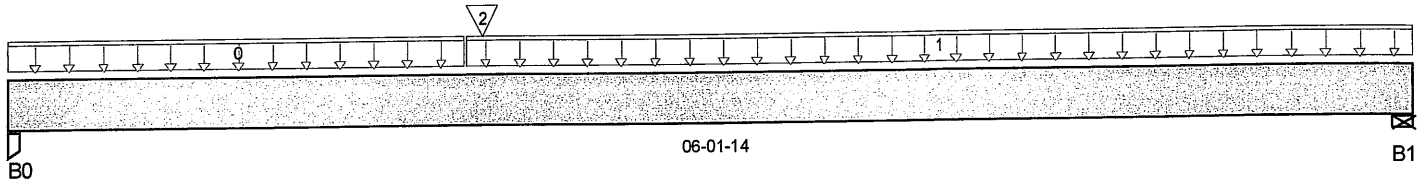
Description: Designs\Flush Beams\Basement\Flush Beams\B6(i1312)

Specifier:

Designer: CZ

Company:

Msc:



Total Horizontal Product Length = 06-01-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-3/8"	409 / 0	225 / 0		
B1, 4-3/8"	264 / 0	150 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-00-00	10	5			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	02-00-00	06-01-14	32	16			n/a
2	B7(i1295)	Conc. Pt. (lbs)	L	02-00-14	02-00-14	521	269			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,599 ft-lbs	12,704 ft-lbs	12.6%	1	02-00-14
End Shear	865 lbs	5,785 lbs	14.9%	1	01-00-14
Total Load Defl.	L/999 (0.021")	n/a	n/a	4	02-09-11
Live Load Defl.	L/999 (0.014")	n/a	n/a	5	02-09-11
Max Defl.	0.021"	n/a	n/a	4	02-09-11
Span / Depth	7.1	n/a	n/a		00-00-00

Disclosure

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

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-3/8" x 1-3/4"	895 lbs	18.7%	12.4%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	584 lbs	14.3%	6.2%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



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

DWG NO. TAM 9210-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\Flush Beams\B7(i1295)

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

August 24, 2017 10:58:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

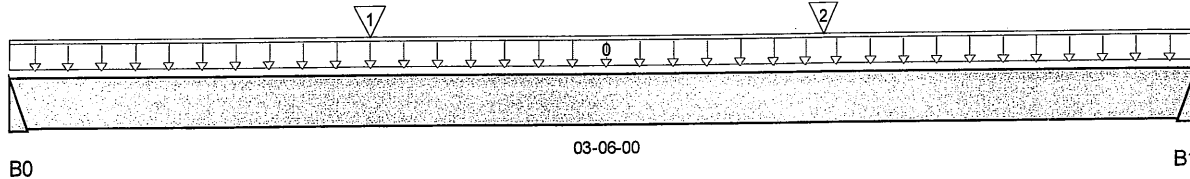
Description: Designs\Flush Beams\Basement\Flush Beams\B7(i1295)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	521 / 0	269 / 0		
B1	521 / 0	269 / 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	03-06-00	240	120			n/a
1	J4(i1356)	Conc. Pt. (lbs)	L	01-00-12	01-00-12	99	49			n/a
2	J4(i1355)	Conc. Pt. (lbs)	L	02-04-12	02-04-12	103	52			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	909 ft-lbs	12,704 ft-lbs	7.2%	1	01-09-04
End Shear	624 lbs	5,785 lbs	10.8%	1	00-11-08
Total Load Defl.	L/999 (0.005")	n/a	n/a	4	01-09-04
Live Load Defl.	L/999 (0.003")	n/a	n/a	5	01-09-04
Max Defl.	0.005"	n/a	n/a	4	01-09-04
Span / Depth	4.2	n/a	n/a		00-00-00

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise 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 Hanger	2" x 1-3/4"	1,118 lbs	n/a	26.2%	HUS1.81/10
B1 Hanger	2" x 1-3/4"	1,117 lbs	n/a	26.2%	HUS1.81/10

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012



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DWG NO. TAM 9221-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



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

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

August 28, 2017 16:03:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL C.mmdl

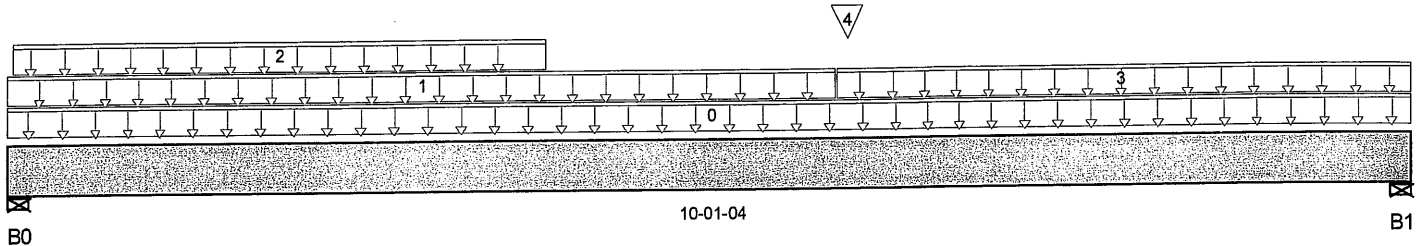
Description: Designs\Flush Beams\Basement\Flush Beams\B8(i2117)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 10-01-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4-3/8"	388 / 0	411 / 0		
B1, 4-3/8"	547 / 0	343 / 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	00-00-00	10-01-04	30	15			n/a
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-11-06	3				n/a
2	User Load	Unf. Lin. (lb/ft)	L	00-00-08	03-10-08		60			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-11-06	10-01-04	24	12			n/a
4	B7(i2152)	Conc. Pt. (lbs)	L	06-00-04	06-00-04	519	268			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	3,738 ft-lbs	12,704 ft-lbs	29.4%	1	06-00-04
End Shear	1,112 lbs	5,785 lbs	19.2%	1	08-11-06
Total Load Defl.	L/747 (0.153")	0.475"	32.1%	4	05-02-01
Live Load Defl.	L/999 (0.09")	n/a	n/a	5	05-03-09
Max Defl.	0.153"	n/a	n/a	4	05-02-01
Span / Depth	12	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4-3/8" x 1-3/4"	1,096 lbs	26.8%	11.7%	Unspecified
B1 Wall/Plate	4-3/8" x 1-3/4"	1,250 lbs	30.6%	13.4%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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



Po 12

DWG NO. TAM 9222-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



Boise Cascade

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

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

August 28, 2017 16:03:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL C.mmdl

Description: Designs\Flush Beams\Basement\Flush Beams\B8(i2117)

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 922-8
STRUCTURAL
COMPONENT ONLY

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B9(i725)

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

August 24, 2017 10:58:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

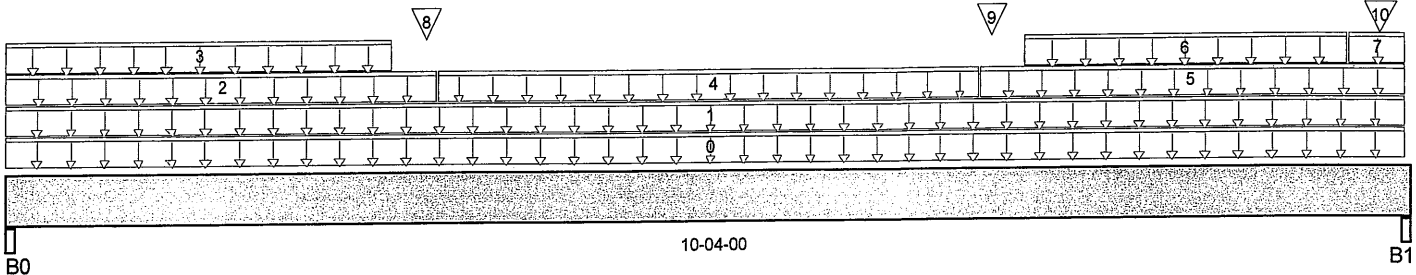
Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i725)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 10-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/4"	402 / 0	782 / 0	744 / 0	
B1, 5-1/4"	399 / 0	799 / 0	738 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	LOW ROOF	Unf. Lin. (lb/ft)	L	00-00-00	10-03-08	33	30	72		n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-08	12	6			n/a
2	E15(i622)	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00		81			n/a
3	E15(i622)	Unf. Lin. (lb/ft)	L	00-00-00	02-10-00	33	30	72		n/a
4	E21(i635)	Unf. Lin. (lb/ft)	L	03-02-00	07-02-00		61			n/a
5	E20(i634)	Unf. Lin. (lb/ft)	L	07-02-00	10-03-08		81			n/a
6	E20(i634)	Unf. Lin. (lb/ft)	L	07-06-00	09-10-08	33	30	72		n/a
7	E20(i634)	Unf. Lin. (lb/ft)	L	09-10-08	10-03-08			36		n/a
8	E15(i622)	Conc. Pt. (lbs)	L	03-01-00	03-01-00	78	85	169		n/a
9	E20(i634)	Conc. Pt. (lbs)	L	07-03-00	07-03-00	76	83	167		n/a
10	E16(i620)	Conc. Pt. (lbs)	L	10-01-04	10-01-04		30	16		n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	4,679 ft-lbs	25,408 ft-lbs	18.4%	13	05-02-00
End Shear	1,865 lbs	11,571 lbs	16.1%	13	09-01-04
Total Load Defl.	L/999 (0.121")	n/a	n/a	45	05-02-00
Live Load Defl.	L/999 (0.066")	n/a	n/a	61	05-02-00
Max Defl.	0.121"	n/a	n/a	45	05-02-00
Span / Depth	12.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Beam	5-1/4" x 3-1/2"	2,295 lbs	23.4%	10.2%	Unspecified
B1 Beam	5-1/4" x 3-1/2"	2,306 lbs	23.5%	10.3%	Unspecified

Notes



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Boise Cascade

Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\Flush Beams\B9(i725)

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

August 24, 2017 10:58:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B9(i725)

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.

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

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

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

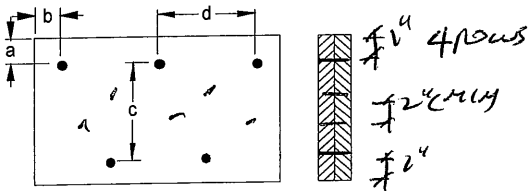
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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Connection Diagram

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

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

Member has no side loads.

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL**SITE COPY**

Page 2 of 2

DWG NO. TAM 9223.18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B10(i1296)

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

August 24, 2017 10:58:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

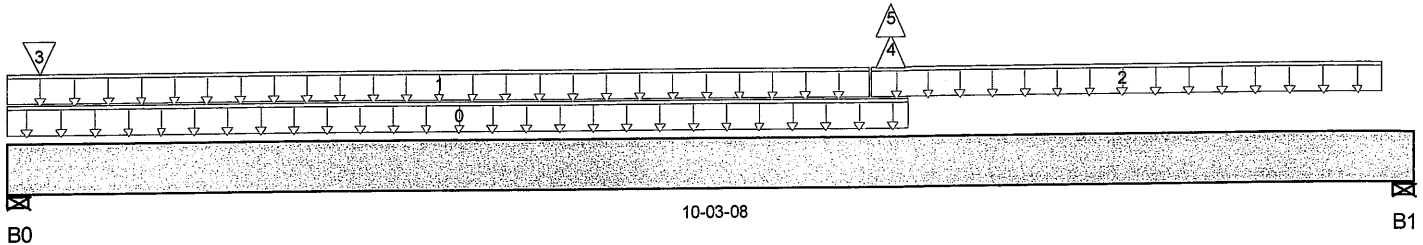
Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i1296)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 10-03-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	181 / 128	788 / 0		
B1, 5-1/2"	252 / 224	202 / 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	06-07-00		60			n/a
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-03-08	19	10			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	06-03-08	10-00-12	27	13			n/a
3	E14(i619)	Conc. Pt. (lbs)	L	00-02-12	00-02-12		428			n/a
4	B12(i1163)	Conc. Pt. (lbs)	L	06-05-04	06-05-04	211	-43			n/a
5	B12(i1163)	Conc. Pt. (lbs)	L	06-05-04	06-05-04	-352				n/a

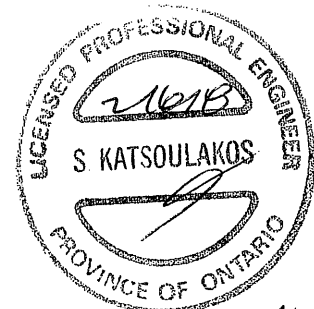
Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,758 ft-lbs	25,408 ft-lbs	6.9%	1	05-07-15
Neg. Moment	-676 ft-lbs	-25,408 ft-lbs	2.7%	4	06-05-04
End Shear	365 lbs	7,521 lbs	4.9%	0	01-03-00
Uplift	154 lbs	n/a	n/a	4	10-03-08
Total Load Defl.	L/999 (0.041")	n/a	n/a	6	05-02-04
Live Load Defl.	L/999 (-0.02")	n/a	n/a	9	05-06-01
Total Neg. Defl.	L/999 (-0")	n/a	n/a	7	07-11-09
Max Defl.	0.041"	n/a	n/a	6	05-02-04
Span / Depth	12	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	1,103 lbs	16.5%	7.2%	Unspecified
B1 Wall/Plate	5-1/2" x 3-1/2"	630 lbs	6.1%	2.7%	Unspecified

Cautions

Uplift of 154 lbs found at span 1 - Right. (SIMPSON 1-H2SA @ 0.31)

Notes



SITE COPY

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B10(i1296)

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.

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.

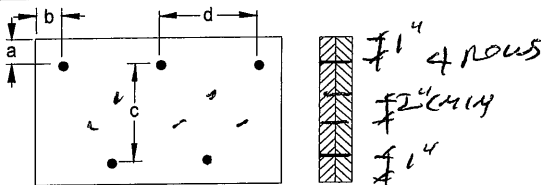
Importance Factor: Normal Part code: Part 9

Disclosure

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Connection Diagram



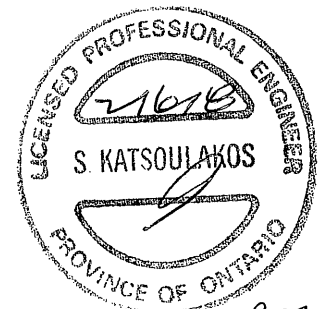
a minimum = 1" c = 1-1/2"
b minimum = 3" d = 6"

Calculated Side Load = 25.8 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: Nails

3-1/2" ARDOX SPIRAL



DWG NO. TAM 9224-18
STRUCTURAL
COMPONENT ONLY

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12(i1163)

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

August 24, 2017 10:58:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

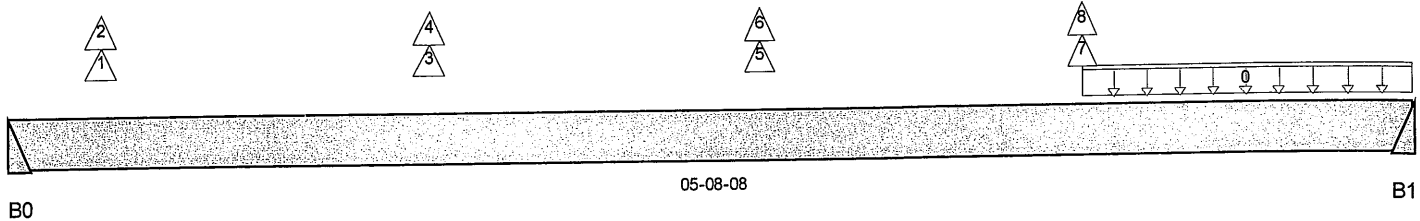
Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i1163)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 05-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	211 / 354	0 / 43		
B1	211 / 254	6 / 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	04-04-08	05-08-08	57	28			n/a
1	J1(i1175)	Conc. Pt. (lbs)	L	00-04-08	00-04-08	71	-39			n/a
2	J1(i1175)	Conc. Pt. (lbs)	L	00-04-08	00-04-08	-150				n/a
3	J1(i1177)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	102	-24			n/a
4	J1(i1177)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	-150				n/a
5	J1(i1178)	Conc. Pt. (lbs)	L	03-00-08	03-00-08	102	-24			n/a
6	J1(i1178)	Conc. Pt. (lbs)	L	03-00-08	03-00-08	-150				n/a
7	J1(i1181)	Conc. Pt. (lbs)	L	04-04-08	04-04-08	72	-43			n/a
8	J1(i1181)	Conc. Pt. (lbs)	L	04-04-08	04-04-08	-158				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	410 ft-lbs	25,408 ft-lbs	1.6%	3	03-00-08
Neg. Moment	-705 ft-lbs	-25,408 ft-lbs	2.8%	2	03-00-08
End Shear	578 lbs	11,571 lbs	5%	2	00-11-08
Uplift	585 lbs	n/a	n/a	2	00-00-00
Total Load Defl.	L/999 (0.003")	n/a	n/a	6	02-10-08
Live Load Defl.	L/999 (-0.005")	n/a	n/a	9	02-10-08
Total Neg. Defl.	L/999 (-0.005")	n/a	n/a	7	02-10-08
Max Defl.	-0.005"	n/a	n/a	7	02-10-08
Span / Depth	6.9	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"	278 lbs	n/a	6.9%	HGUS410
B0 Hanger Uplift	2" x 3-1/2"	585 lbs	n/a	0.05	HGUS410
B1 Hanger	2" x 3-1/2"	325 lbs	n/a	4.4%	HUC410
B1 Hanger Uplift	2" x 3-1/2"	375 lbs	n/a	0.04	HUC410



Cautions

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B12(i1163)

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

August 24, 2017 10:58:40

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B12(i1163)

Specifier:

Designer: CZ

Company:

Misc:

Uplift of 585 lbs found at span 1 - Left.
Hanger B0 cannot handle uplift of -585 lbs.

) - (SIMPSON 1-H6V5410 @ B0)

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

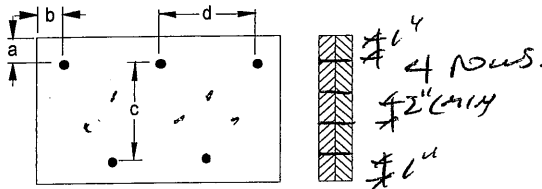
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



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

Calculated Side Load = 97.1 lb/ft

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

Connectors are: 3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 9225-18
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i1097)

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

August 24, 2017 10:58:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

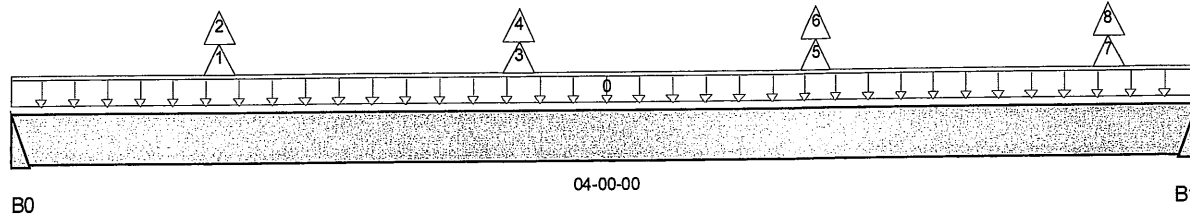
Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i1097)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0	567 / 363	122 / 0		
B1	579 / 467	76 / 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	04-00-00	240	120			n/a
1	J1(i1203)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	47	-74			n/a
2	J1(i1203)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	-196				n/a
3	J1(i1199)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	51	-80			n/a
4	J1(i1199)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	-211				n/a
5	J1(i1196)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	51	-80			n/a
6	J1(i1196)	Conc. Pt. (lbs)	L	02-08-08	02-08-08	-211				n/a
7	J1(i1197)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	37	-87			n/a
8	J1(i1197)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	-212				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	894 ft-lbs	25,408 ft-lbs	3.5%	1	02-00-04
Neg. Moment	-507 ft-lbs	-25,408 ft-lbs	2%	4	01-08-08
End Shear	559 lbs	11,571 lbs	4.8%	4	03-00-08
Uplift	632 lbs	n/a	n/a	4	04-00-00
Total Load Defl.	L/999 (0.003")	n/a	n/a	6	02-00-04
Live Load Defl.	L/999 (0.003")	n/a	n/a	8	02-00-04
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	7	02-00-04
Max Defl.	0.003"	n/a	n/a	6	02-00-04
Span / Depth	4.8	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Hanger	2" x 3-1/2"	1,002 lbs	n/a	11.7%	HGUS410
B0 Hanger Uplift	2" x 3-1/2"	435 lbs	n/a	0.04	HGUS410
B1 Hanger	2" x 3-1/2"	964 lbs	n/a	11.3%	HGUS410
B1 Hanger Uplift	2" x 3-1/2"	632 lbs	n/a	0.06	HGUS410

Cautions



SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B14(i1097)

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

August 24, 2017 10:58:37

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B14(i1097)

Specifier:

Designer: CZ

Company:

Misc:

Uplift of 632 lbs found at span 1 - Right.

Hanger B1 cannot handle uplift of -632 lbs.) - (SIMPSON H6054100 D.B1)

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

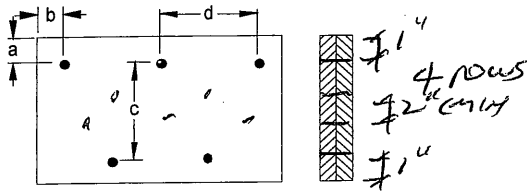
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2010 and CSA O86.

CONFORMS TO OBC 2012

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram



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

Calculated Side Load = 341.8 lb/ft

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

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 42268
STRUCTURAL
COMPONENT ONLY

SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...B15(i1322)

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

August 24, 2017 10:58:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

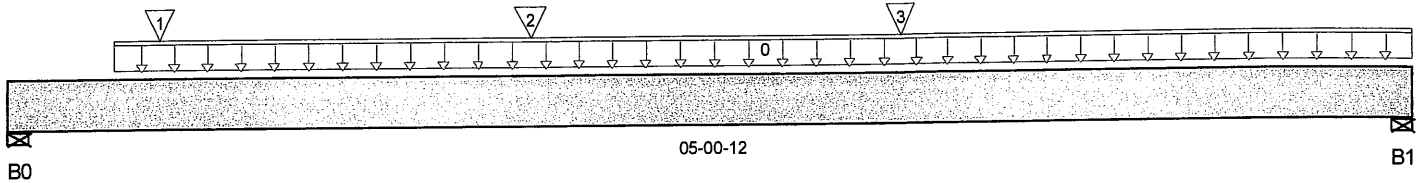
Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i1322)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 05-00-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-1/2"	923 / 0	485 / 0		
B1, 5-3/4"	1,099 / 0	573 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-08	05-00-12	289	144			n/a
1	J3(i1142)	Conc. Pt. (lbs)	L	00-06-08	00-06-08	202	101			n/a
2	J3(i1171)	Conc. Pt. (lbs)	L	01-10-08	01-10-08	231	116			n/a
3	J3(i1171)	Conc. Pt. (lbs)	L	03-02-08	03-02-08	231	116			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	1,921 ft-lbs	25,408 ft-lbs	7.6%	1	02-10-08
End Shear	1,400 lbs	11,571 lbs	12.1%	1	03-09-08
Total Load Defl.	L/999 (0.009")	n/a	n/a	4	02-06-00
Live Load Defl.	L/999 (0.006")	n/a	n/a	5	02-06-00
Max Defl.	0.009"	n/a	n/a	4	02-06-00
Span / Depth	5.4	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-1/2" x 3-1/2"	1,991 lbs	19.4%	8.5%	Unspecified
B1 Wall/Plate	5-3/4" x 3-1/2"	2,364 lbs	22%	9.6%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA 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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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B15(i1322)

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

August 24, 2017 10:58:41

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B15(i1322)

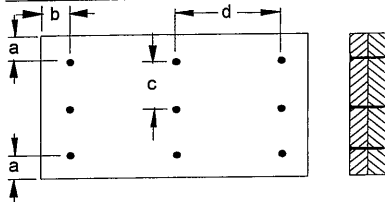
Specifier:

Designer: CZ

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 484.2 lb/ft

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

Connectors are: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16(i1411)

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

August 28, 2017 16:05:07

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

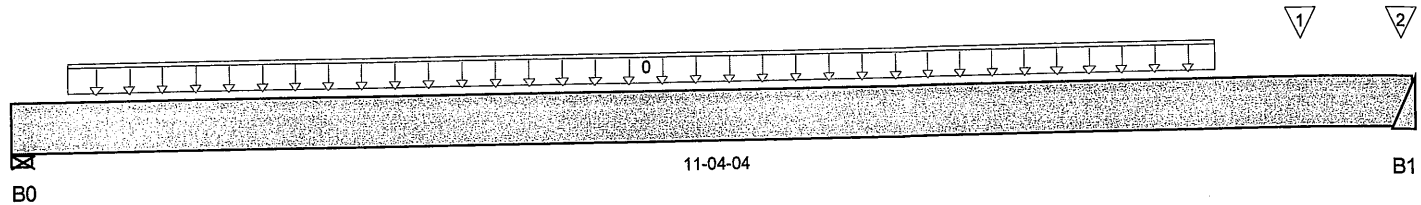
Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i1411)

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 11-04-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 4"	2,222 / 0	1,171 / 0		
B1	2,192 / 0	1,154 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-05-08	09-09-08	416	209			n/a
1	-	Conc. Pt. (lbs)	L	10-05-08	10-05-08	438	220			n/a
2	J3(i1357)	Conc. Pt. (lbs)	L	11-03-00	11-03-00	97	48			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	13,087 ft-lbs	25,408 ft-lbs	51.5%	1	05-05-08
End Shear	4,473 lbs	11,571 lbs	38.7%	1	01-01-08
Total Load Defl.	L/328 (0.402")	0.549"	73.2%	4	05-08-08
Live Load Defl.	L/500 (0.263")	0.366"	72%	5	05-08-08
Max Defl.	0.402"	n/a	n/a	4	05-08-08
Span / Depth	13.9	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	4" x 3-1/2"	4,797 lbs	64.2%	28.1%	Unspecified
B1 Hanger	2" x 3-1/2"	4,731 lbs	n/a	55.4%	HGUS410

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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



SITE COPY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1st Floor\...\B16(i1411)

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

August 28, 2017 16:05:07

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL Ammdl

Description: Designs\Flush Beams\1st Floor\Flush Beams\B16(i1411)

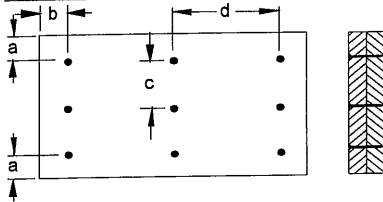
Specifier:

Designer: CZ

Company:

Misc:

Connection Diagram



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

Calculated Side Load = 455.6 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: 16d Nails

3-1/2" ARDOX SPIRAL

Disclosure

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DWG NO. TAM 9218-18
STRUCTURAL
COMPONENT ONLY

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Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B18L(i1800)

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

August 24, 2017 14:42:58

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL C.mmdl

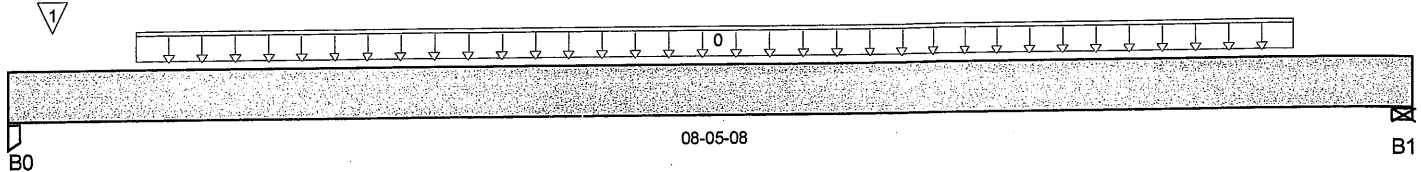
Description: Designs\Flush Beams\Basement\Flush Beams\B18L(i180

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 08-05-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 3-1/2"	623 / 0	332 / 0		
B1, 3-1/2"	537 / 0	289 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Trib.
0	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-02	07-09-02	152	76			n/a
1	J3(i1799)	Conc. Pt. (lbs)	L	00-03-02	00-03-02	96	48			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	2,635 ft-lbs	12,704 ft-lbs	20.7%	1	04-03-02
End Shear	1,159 lbs	5,785 lbs	20%	1	07-04-08
Total Load Defl.	L/999 (0.085")	n/a	n/a	4	04-03-02
Live Load Defl.	L/999 (0.055")	n/a	n/a	5	04-03-02
Max Defl.	0.085"	n/a	n/a	4	04-03-02
Span / Depth	10.1	n/a	n/a		00-00-00

Disclosure

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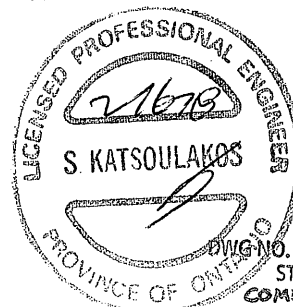
Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Post	3-1/2" x 1-3/4"	1,350 lbs	27.2%	18.1%	Unspecified
B1 Wall/Plate	3-1/2" x 1-3/4"	1,166 lbs	35.6%	15.6%	Unspecified

Notes

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

CONFORMS TO OBC 2012

BC CALC®, 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.



ENG. NO. TAM 9229-18
 STRUCTURAL
 COMPONENT ONLY

SITE COPY



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP Basement\...\B19L(i1801)

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

August 24, 2017 14:42:58

BC CALC® Design Report



Build 5033

Job Name:

Address:

City, Province, Postal Code: BRADFORD,

Customer:

Code reports: CCMC 12472-R

File Name: SD25-1 SONOMA 1 EL C.mmdl

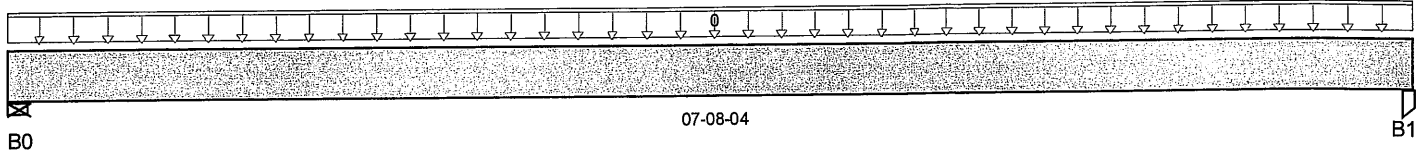
Description: Designs\Flush Beams\Basement\Flush Beams\B19L(i180

Specifier:

Designer: CZ

Company:

Misc:



Total Horizontal Product Length = 07-08-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B0, 5-3/4"	21 / 0	30 / 0		
B1, 1-3/4"	19 / 0	27 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live	Dead	Snow	Wind	Trib.
0	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-04	5	3	1.00	1.15	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand / Resistance	Load Case	Location
Pos. Moment	110 ft-lbs	12,704 ft-lbs	0.9%	1	04-00-02
End Shear	47 lbs	5,785 lbs	0.8%	1	01-03-04
Total Load Defl.	L/999 (0.003")	n/a	n/a	4	04-00-02
Live Load Defl.	L/999 (0.001")	n/a	n/a	5	04-00-02
Max Defl.	0.003"	n/a	n/a	4	04-00-02
Span / Depth	9.1	n/a	n/a		00-00-00

Bearing Supports	Dim. (L x W)	Demand	Demand / Resistance Support	Demand / Resistance Member	Material
B0 Wall/Plate	5-3/4" x 1-3/4"	69 lbs	1.3%	0.6%	Unspecified
B1 Post	1-3/4" x 1-3/4"	63 lbs	2.5%	1.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Disclosure

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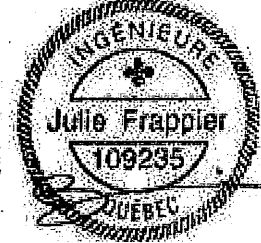
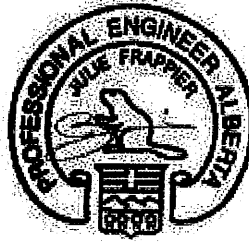


DWG NO. TAM 9230-18
STRUCTURAL
COMPONENT ONLY

SITE COPY

Maximum Floor Spans

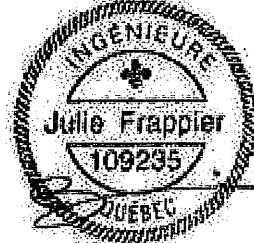
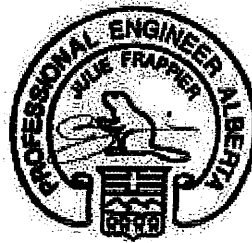
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



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

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

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



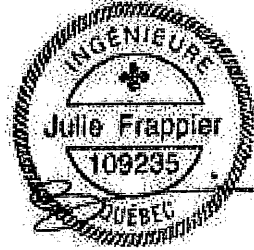
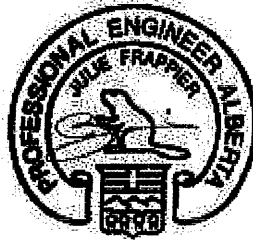
Maximum Floor Spans

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

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



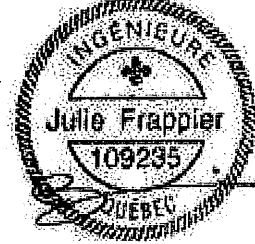
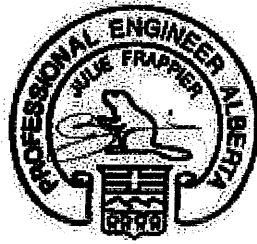
Maximum Floor Spans

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

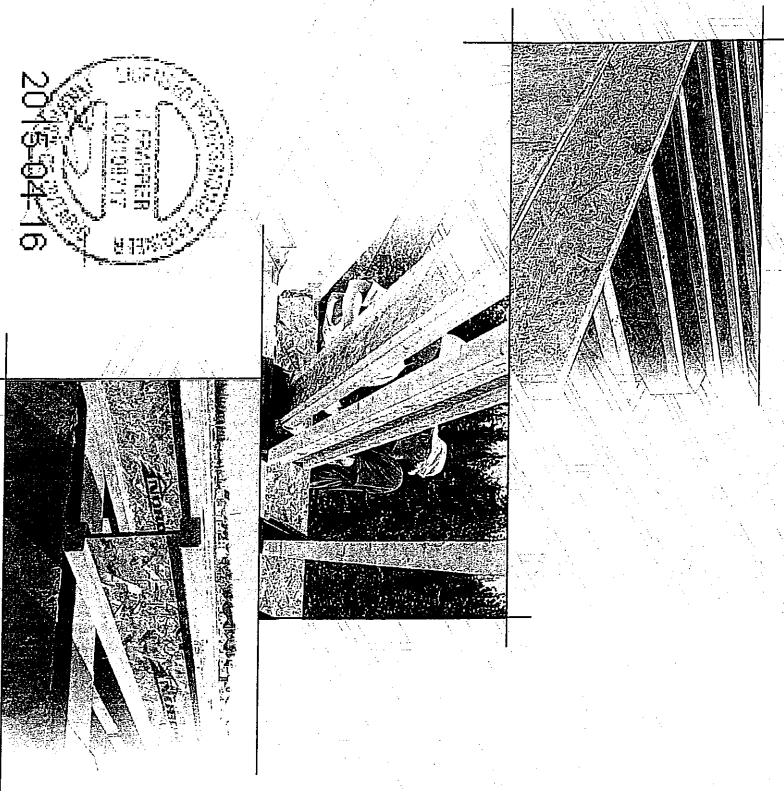
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

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

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



INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



2015-04-16

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.



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

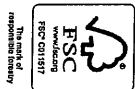
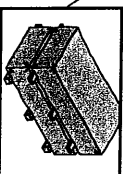
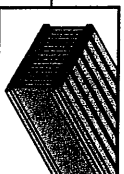


Never stack building materials over unsheathed I-joists. Once sheathed, do not over-stress I-joist with concentrated loads from building materials.

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.

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.



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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-rolled 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

WEB STIFFENERS

RECOMMENDATIONS:

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

SI units conversion: 1 inch = 25.4 mm

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
6"	NI-6	15.1	14.2	13.9	13.5	16.5	15.4	15.1	14.7
8"	NI-8	16.1	15.2	14.8	14.5	17.5	16.5	16.1	15.7
10"	NI-10	17.1	16.2	15.8	15.5	18.5	17.5	17.1	16.7
12"	NI-12	18.1	17.2	16.8	16.5	19.5	18.5	18.1	17.7
14"	NI-14	19.1	18.2	17.8	17.5	20.5	19.5	19.1	18.7
16"	NI-16	20.1	19.2	18.8	18.5	21.5	20.5	20.1	19.7
18"	NI-18	21.1	20.2	19.8	19.5	22.5	21.5	21.1	20.7
20"	NI-20	22.1	21.2	20.8	20.5	23.5	22.5	22.1	21.7
22"	NI-22	23.1	22.2	21.8	21.5	24.5	23.5	23.1	22.7
24"	NI-24	24.1	23.2	22.8	22.5	25.5	24.5	24.1	23.7
26"	NI-26	25.1	24.2	23.8	23.5	26.5	25.5	25.1	24.7
28"	NI-28	26.1	25.2	24.8	24.5	27.5	26.5	26.1	25.7
30"	NI-30	27.1	26.2	25.8	25.5	28.5	27.5	27.1	26.7
32"	NI-32	28.1	27.2	26.8	26.5	29.5	28.5	28.1	27.7
34"	NI-34	29.1	28.2	27.8	27.5	30.5	29.5	29.1	28.7
36"	NI-36	30.1	29.2	28.8	28.5	31.5	30.5	30.1	29.7
38"	NI-38	31.1	30.2	29.8	29.5	32.5	31.5	31.1	30.7
40"	NI-40	32.1	31.2	30.8	30.5	33.5	32.5	32.1	31.7
42"	NI-42	33.1	32.2	31.8	31.5	34.5	33.5	33.1	32.7
44"	NI-44	34.1	33.2	32.8	32.5	35.5	34.5	34.1	33.7
46"	NI-46	35.1	34.2	33.8	33.5	36.5	35.5	35.1	34.7
48"	NI-48	36.1	35.2	34.8	34.5	37.5	36.5	36.1	35.7
50"	NI-50	37.1	36.2	35.8	35.5	38.5	37.5	37.1	36.7
52"	NI-52	38.1	37.2	36.8	36.5	39.5	38.5	38.1	37.7
54"	NI-54	39.1	38.2	37.8	37.5	40.5	39.5	39.1	38.7
56"	NI-56	40.1	39.2	38.8	38.5	41.5	40.5	40.1	39.7
58"	NI-58	41.1	40.2	39.8	39.5	42.5	41.5	41.1	40.7
60"	NI-60	42.1	41.2	40.8	40.5	43.5	42.5	42.1	41.7
62"	NI-62	43.1	42.2	41.8	41.5	44.5	43.5	43.1	42.7
64"	NI-64	44.1	43.2	42.8	42.5	45.5	44.5	44.1	43.7
66"	NI-66	45.1	44.2	43.8	43.5	46.5	45.5	45.1	44.7
68"	NI-68	46.1	45.2	44.8	44.5	47.5	46.5	46.1	45.7
70"	NI-70	47.1	46.2	45.8	45.5	48.5	47.5	47.1	46.7
72"	NI-72	48.1	47.2	46.8	46.5	49.5	48.5	48.1	47.7
74"	NI-74	49.1	48.2	47.8	47.5	50.5	49.5	49.1	48.7
76"	NI-76	50.1	49.2	48.8	48.5	51.5	50.5	50.1	49.7
78"	NI-78	51.1	50.2	49.8	49.5	52.5	51.5	51.1	50.7
80"	NI-80	52.1	51.2	50.8	50.5	53.5	52.5	52.1	51.7
82"	NI-82	53.1	52.2	51.8	51.5	54.5	53.5	53.1	52.7
84"	NI-84	54.1	53.2	52.8	52.5	55.5	54.5	54.1	53.7
86"	NI-86	55.1	54.2	53.8	53.5	56.5	55.5	55.1	54.7
88"	NI-88	56.1	55.2	54.8	54.5	57.5	56.5	56.1	55.7
90"	NI-90	57.1	56.2	55.8	55.5	58.5	57.5	57.1	56.7
92"	NI-92	58.1	57.2	56.8	56.5	59.5	58.5	58.1	57.7
94"	NI-94	59.1	58.2	57.8	57.5	60.5	59.5	59.1	58.7
96"	NI-96	60.1	59.2	58.8	58.5	61.5	60.5	60.1	59.7
98"	NI-98	61.1	60.2	59.8	59.5	62.5	61.5	61.1	60.7
100"	NI-100	62.1	61.2	60.8	60.5	63.5	62.5	62.1	61.7

CGMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

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

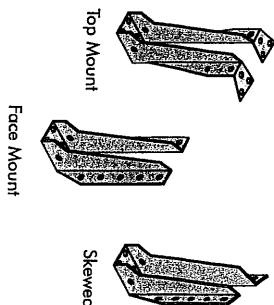
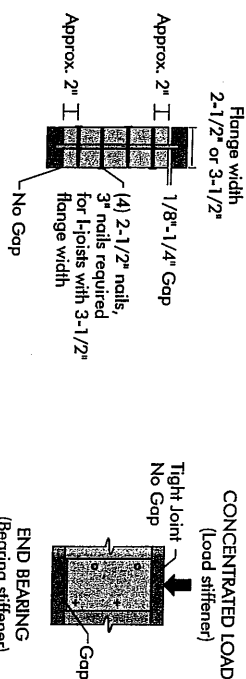


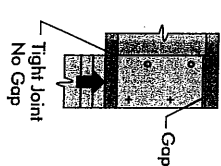
FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



See table below for web stiffener size requirements

STIFFENER SIZE REQUIREMENTS

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



NORDIC I-JOIST SERIES

S-RF No.2	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	NRG Lumber
NI-20	NI-40x	NI-60	NI-70	NI-80	NI-90	NI-10x
33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
1-1/2" OSB 3/8"	1-1/2" OSB 3/8"	1-1/2" OSB 3/8"	1-1/2" OSB 3/8"	1-1/2" OSB 3/8"	1-1/2" OSB 3/8"	1-1/2" OSB 3/8"
9-1/2" 14"	9-1/2" 14"	9-1/2" 14"	9-1/2" 14"	9-1/2" 14"	9-1/2" 14"	9-1/2" 14"
11-7/8" 16"	11-7/8" 16"	11-7/8" 16"	11-7/8" 16"	11-7/8" 16"	11-7/8" 16"	11-7/8" 16"

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

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

2015-04-16

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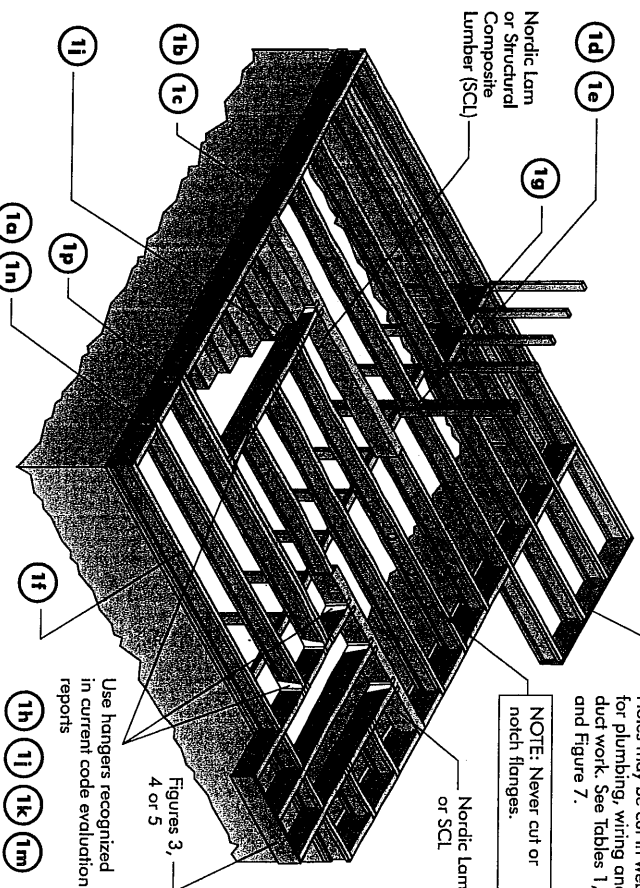
INSTALLING NORDIC I-JOISTS

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

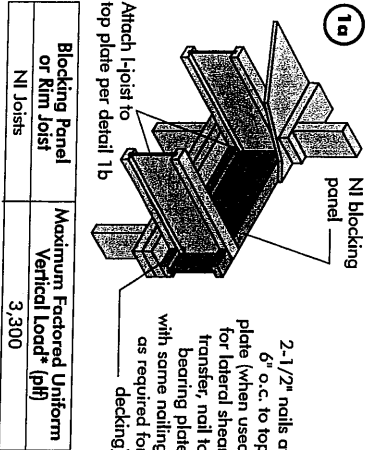
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FIGURE 1
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

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

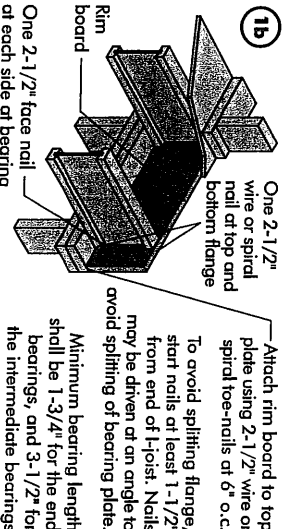


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for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



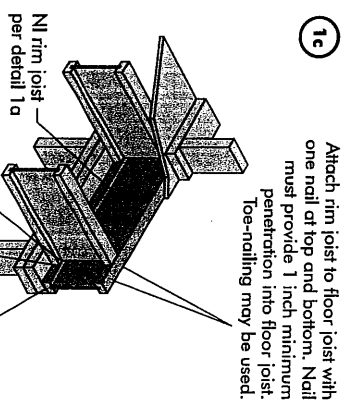
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pff)
NI Joists	3,300

*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.



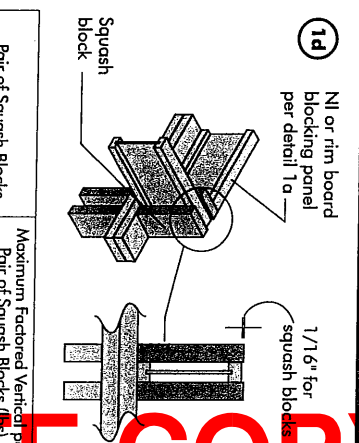
Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (pff)
1-1/8" Rim Board Plus	8,090

*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* (pff)
1-1/8" Rim Board Plus	8,090

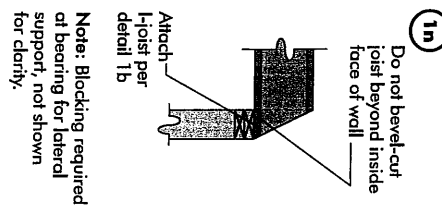
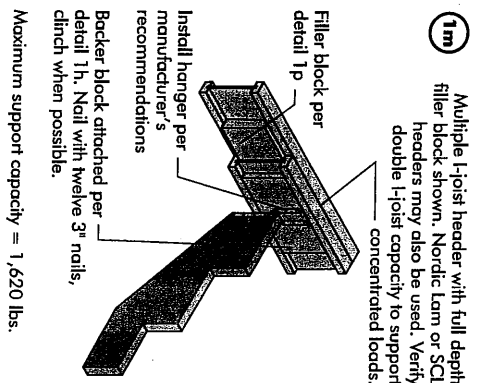
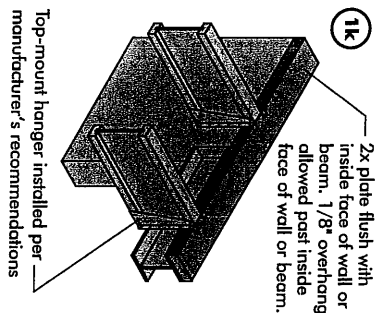
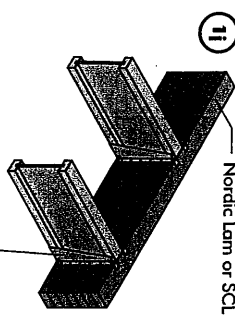
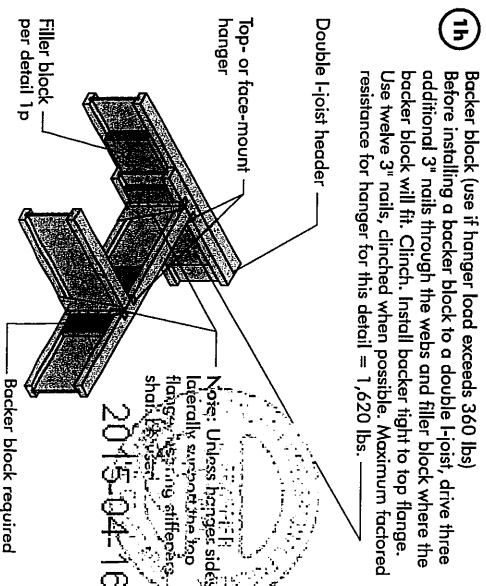
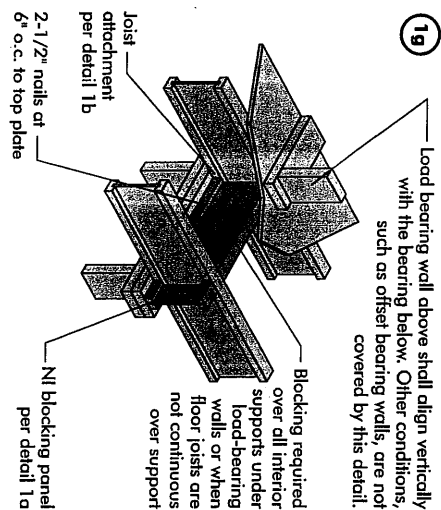
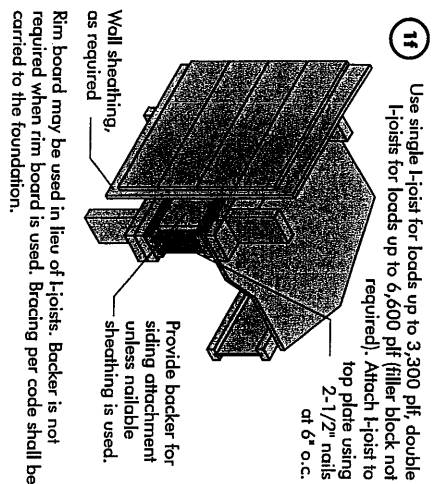
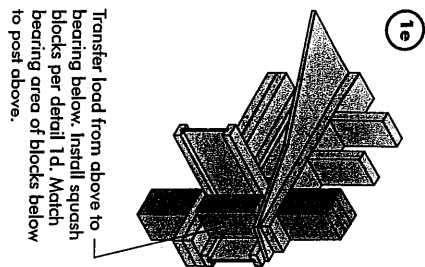
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.



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

*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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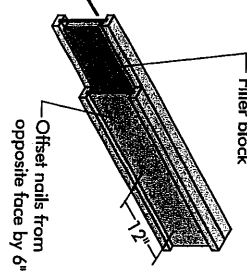


BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

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".

1p

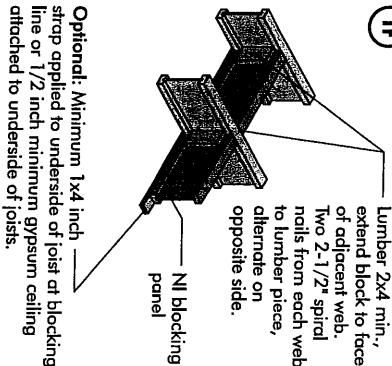


- Notes:**
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
 2. Leave a 1/8" to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
 3. Filler block is required between joists for full length of span.
 4. Nail joists together with two rows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

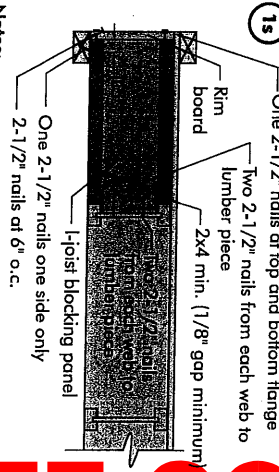
FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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

1r



1s

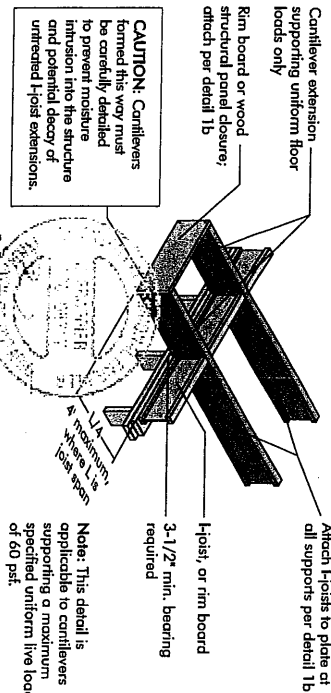


- Notes:**
- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
 - All nails are common spiral in this detail.

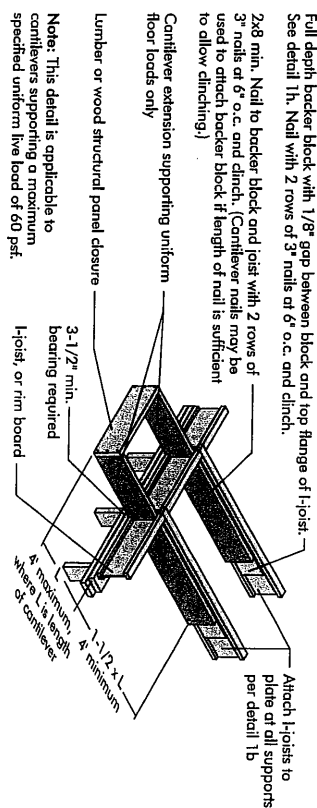
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CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

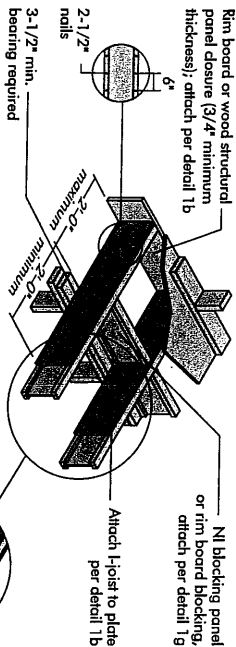


39) LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

40) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

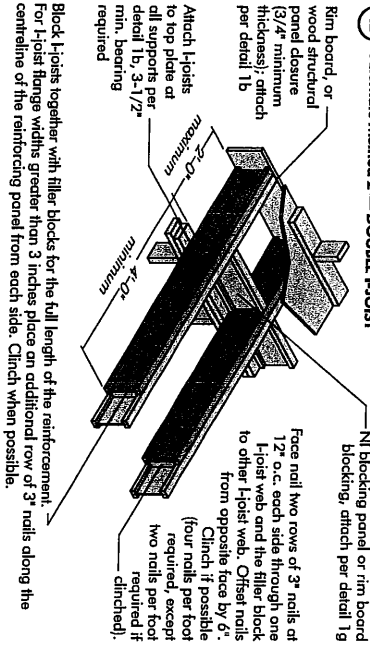


Method 2 — SHEATHING REINFORCEMENT TWO SIDES

- 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: Condition 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 inch nails at 6 inch on center, 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



CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)		ROOF LOADING (UNFACTORED)					
	12	16	19.2	24	12	16	19.2	24
9'-2"	26	26	26	26	26	26	26	26
	28	28	28	28	28	28	28	28
	30	30	30	30	30	30	30	30
	32	32	32	32	32	32	32	32
	34	34	34	34	34	34	34	34
	36	36	36	36	36	36	36	36
	38	38	38	38	38	38	38	38
	40	40	40	40	40	40	40	40
	42	42	42	42	42	42	42	42
	11'-6"	26	26	26	26	26	26	26
28		28	28	28	28	28	28	28
30		30	30	30	30	30	30	30
32		32	32	32	32	32	32	32
34		34	34	34	34	34	34	34
36		36	36	36	36	36	36	36
38		38	38	38	38	38	38	38
40		40	40	40	40	40	40	40
42		42	42	42	42	42	42	42
13'-0"		26	26	26	26	26	26	26
	28	28	28	28	28	28	28	28
	30	30	30	30	30	30	30	30
	32	32	32	32	32	32	32	32
	34	34	34	34	34	34	34	34
	36	36	36	36	36	36	36	36
	38	38	38	38	38	38	38	38
	40	40	40	40	40	40	40	40
	42	42	42	42	42	42	42	42
	15'-0"	26	26	26	26	26	26	26
28		28	28	28	28	28	28	28
30		30	30	30	30	30	30	30
32		32	32	32	32	32	32	32
34		34	34	34	34	34	34	34
36		36	36	36	36	36	36	36
38		38	38	38	38	38	38	38
40		40	40	40	40	40	40	40
42		42	42	42	42	42	42	42

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

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RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

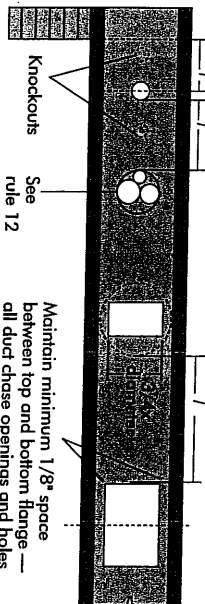
RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

1. The distance between the inside edge of the support and the centerline 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 centered on the middle of the web.
4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
7. A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
8. Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

See Table 1 for minimum distance from bearing γ

2x duct chase — 2x duct chase length or hole diameter, whichever is

Duct chase opening (see Table 2 for minimum distance from bearing)



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

[illegible]

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

$$\text{Reduced } D = \frac{\text{Actual } D}{\text{S.F.}} \times D$$

Where: $D_{reduced}$

Lactual
SAF

D

If $\frac{\text{SAF}_{\text{actual}}}{\text{SAF}_{\text{actual}}}$ is greater than 1, use 1 in the above calculation for $\frac{\text{SAF}_{\text{actual}}}{\text{SAF}_{\text{actual}}}$.

SAF

TABLE 2

DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of any support to centre of opening (ft-in.)									
		Duct chase length (ft-in.)									
		8	10	12	14	16	18	20	22	24	
10	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
12	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
14	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
16	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
18	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
20	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
22	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
24	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
26	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
28	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
30	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
32	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
34	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
36	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
38	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
40	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
42	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
44	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
46	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
48	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
50	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
52	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
54	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
56	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
58	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
60	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
62	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
64	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
66	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
68	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
70	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
72	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
74	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
76	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
78	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
80	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
82	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
84	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
86	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
88	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
90	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
92	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
94	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
96	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
98	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
100	100	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	

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

Maximum Price: \$1000.00
 Minimum Price: \$100.00
 Auction Type: English Auction
 Auction Date: 2015-04-16

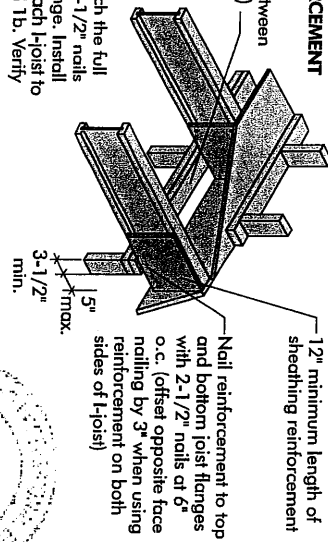
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BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

5a SHEATHING REINFORCEMENT

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

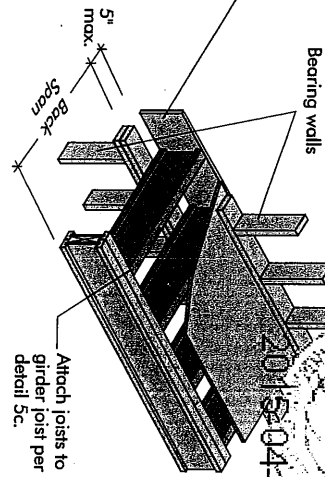
Note: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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



5b SET-BACK DETAIL

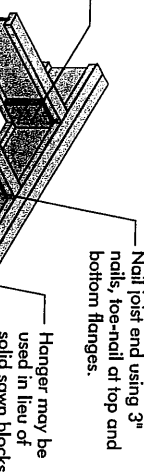
Kim board or wood structural panel closure (3/4" minimum thickness), attach per detail 1b.

Note: 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.



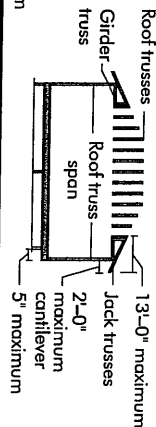
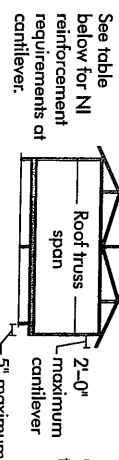
5c SET-BACK CONNECTION

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.



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

FIGURE 5 (continued)



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

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)				ROOF LOADING (UNFACTORED)				LL = 50 psf, DL = 15 psf			
	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
24 1/2	26	1	X	X	2	X	X	X	2	X	X	X
	28	1	X	X	2	X	X	X	2	X	X	X
	30	2	X	X	2	X	X	X	2	X	X	X
	32	2	X	X	2	X	X	X	2	X	X	X
	34	2	X	X	2	X	X	X	2	X	X	X
	36	2	X	X	2	X	X	X	2	X	X	X
31 7/8	26	N	X	X	2	X	X	X	1	X	X	X
	28	N	X	X	2	X	X	X	1	X	X	X
	30	1	X	X	2	X	X	X	2	X	X	X
	32	1	X	X	2	X	X	X	2	X	X	X
	34	1	X	X	2	X	X	X	2	X	X	X
	36	1	X	X	2	X	X	X	2	X	X	X
14	26	Z	X	X	2	X	X	X	1	X	X	X
	28	Z	X	X	2	X	X	X	1	X	X	X
	30	Z	X	X	2	X	X	X	1	X	X	X
	32	Z	X	X	2	X	X	X	1	X	X	X
	34	Z	X	X	2	X	X	X	1	X	X	X
	36	Z	X	X	2	X	X	X	1	X	X	X
16 1/2	26	Z	X	X	2	X	X	X	2	X	X	X
	28	Z	X	X	2	X	X	X	2	X	X	X
	30	Z	X	X	2	X	X	X	2	X	X	X
	32	Z	X	X	2	X	X	X	2	X	X	X
	34	Z	X	X	2	X	X	X	2	X	X	X
	36	Z	X	X	2	X	X	X	2	X	X	X

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

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

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

IMPORTANT NOTE:

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

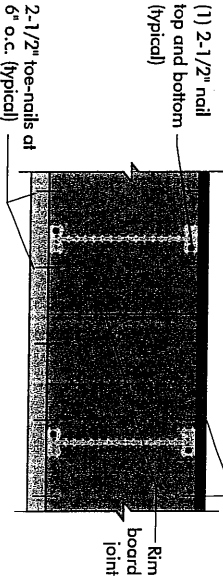
RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

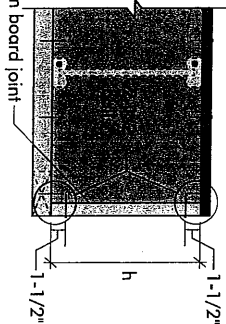
Rim board Joint Between Floor Joists

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

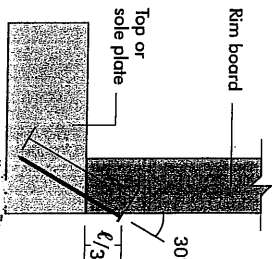
(1) 2-1/2" nail top and bottom (typical)



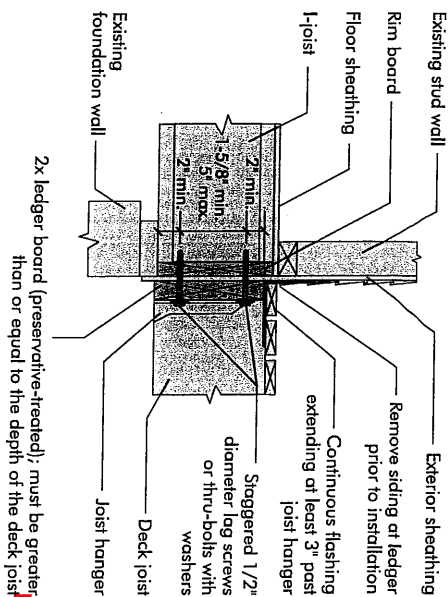
Rim board Joint at Corner



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



2015-04-16

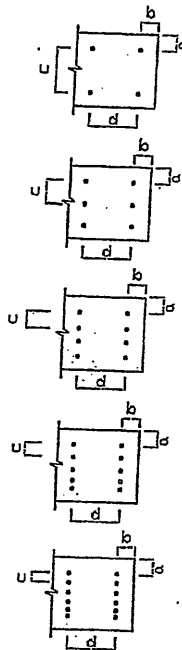
PRODUCT WARRANTY

Customer acknowledges that this warranty is given in accordance with the specifications, terms and conditions of the product, and that the product is not to be used in any manner not intended by the manufacturer.

Furthermore, Customer acknowledges that this warranty is given in accordance with the specifications, terms and conditions of the product, and that the product is not to be used in any manner not intended by the manufacturer.

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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 PLIES FOR MULTI-PLY MEMBERS (3 PLY OR MORE)
- (5) ALL NAILS ARE 3-1/2" ARDOX SPIRAL NAILS
- (6) DO NOT USE AIR-DRIVEN NAILS



DWG NO TAMN1001.14

STRUCTURAL
COMPONENT ONLY

TO BE USED ONLY
WITH BEAM CALCS
BEARING THE
STAMP BELOW

PROVIDE NAILING
DETAIL # X SEE
DWG # TAMN1001-14

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