

## Engineering Notes: EWP-Floors



MHP 23034



PLEASE READ AND FOLLOW INSTRUCTIONS PRIOR TO INSTALLATION OF THE COMPONENT

**RESPONSIBILITIES**

THE RESPONSIBILITY OF THE UNDERSIGNED ENGINEER IS ONLY LIMITED TO THE CALCULATION OF THIS BUILDING COMPONENT FOR THE LOADS AND CONDITIONS SHOWN ON THIS DRAWING.

THE RESPONSIBILITY OF THE UNDERSIGNED IS LIMITED TO THE VERIFICATION OF THE STRUCTURAL CAPACITY OF THE FLOOR JOISTS AND LVL BEAMS BASED ON PLACEMENT AS SHOWN ON THE LAYOUT. THE LOADS APPLIED ARE LIMITED TO THE GRAVITY EFFECTS OF THE SPECIFIED LOADS. THE STRUCTURAL INTEGRITY OF THE BUILDING AND THE EFFECT OF WIND, UPLIFT, SEISMIC, LATERAL OR OTHER FORCES, CALCULATION OF ADEQUATE SUPPORT AND ANCHORAGE OF COMPONENTS, AS WELL AS THE DIMENSIONS AND DESIGN LOADS USED TO CALCULATE COMPONENTS ARE THE RESPONSIBILITY OF THE OVERALL BUILDING DESIGNER. FLOOR JOISTS AND OSB RIM BOARD ARE DESIGNED TO CARRY UNIFORMLY DISTRIBUTED LOADS ONLY. POINT LOADS SHOULD BE TRANSFERRED THROUGH THE FLOOR CAVITY WITH TRANSFER BLOCKS. STRUCTURAL ELEMENTS SUCH AS WALLS, POSTS, CONNECTORS, AND TRANSFER BLOCKS ARE THE RESPONSIBILITY OF THE OVERALL BUILDING DESIGNER.

THE UNDERSIGNED ENGINEER DISCLAIMS ANY RESPONSIBILITY FOR DAMAGES AS A RESULT OF BEING FURNISHED FAULTY OR INCORRECT INFORMATION, SPECIFICATIONS AND/OR DESIGNS.

**COMPONENT DESIGN INFORMATION**

1. THIS BUILDING COMPONENT IS CERTIFIED AS AN INDIVIDUAL COMPONENT FOR THE LOADS AND CONDITIONS SHOWN ON THE CALCULATION PAGE BASED ON INFORMATION PROVIDED BY KOTT DESIGN.
2. THE BUILDING COMPONENT USED IN CONSTRUCTION MUST BE THE SAME AS INDICATED ON THE DRAWINGS.
3. UNLESS NOTED OTHERWISE ON THE LAYOUT OR BEAM CALCULATION SHEET, MEMBERS CONSISTING OF MULTIPLE PLIES MUST BE CONNECTED AS PER THE DOCUMENT "MULTIPLE MEMBER CONNECTION DETAILS" SHOWN ON PAGE 2 OF THIS DOCUMENT.
4. PASS-THRU TRANSFER BLOCK FRAMING IS REQUIRED AT ALL POINT LOADS OVER BEARINGS.
5. IT IS ASSUMED THAT EACH LVL BEAM WHERE NOT SEATED IN A HANGER IS ATTACHED USING (4) FOUR 3-1/4" COMMON SPIRAL NAILS FOR UP TO 5.5" LONG BEARINGS AND USING (6) SIX 3-1/4" COMMON SPIRAL NAILS FOR BEARINGS EQUAL TO OR LONGER THAN 5.5", UNLESS INDICATED OTHERWISE.

**CODE**

THIS BUILDING COMPONENT IS DESIGNED IN ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA, THE ONTARIO BUILDING CODE, CCMC AND CANADIAN STANDARDS ASSOCIATION GUIDELINES.

**HANDLING AND INSTALLATION**

1. DO NOT DRILL ANY HOLE, CUT OR NOTCH A CERTIFIED BUILDING COMPONENT WITHOUT A WRITTEN PRE-AUTHORIZATION.
2. INSTALLATION AND ASSEMBLY OF FLOOR JOISTS AND LVL BEAMS IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUFACTURER'S LITERATURE.

# MHP 23034

CORPORATION OF THE CITY OF OSHAWA  
TRUE COPY  
OF PERMIT PLANS  
Nov 14 2023  
*C. M...*  
PER: CHIEF BUILDING OFFICIAL

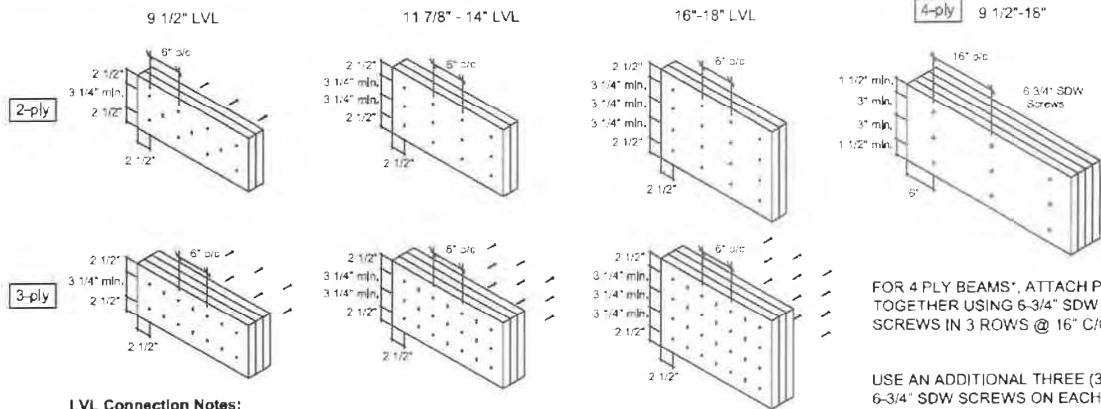
ENG-IM0723-118-KTF-GREENPARK-ZADORRA ESTATES-VILLA 2-3

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## MULTIPLE MEMBER CONNECTIONS FOR BEAMS SHOWN ON KOTT LAYOUTS

### MULTIPLE MEMBER CONNECTIONS FOR UNIFORMLY DISTRIBUTED TOP & SIDE LOADED LVL BEAMS SHOWN ON KOTT LAYOUTS



#### LVL Connection Notes:

- LVL ply width is 1-3/4"
- Nails to be 3 1/2" common wire nails.
- Nails to be located 2 1/2" min. from the top and bottom of the member. Start all nails 2 1/2" min. from ends.
- Minimum 3 1/4" spacing between rows.
- Number of rows and spacing as per details shown, unless noted otherwise.
- "X" represents nail driven from the opposite side.
- Head of all specified screws must be on the loaded side.

FOR 4 PLY BEAMS\*, ATTACH PLYS TOGETHER USING 6-3/4" SDW SCREWS IN 3 ROWS @ 16" C/C.

USE AN ADDITIONAL THREE (3) 6-3/4" SDW SCREWS ON EACH SIDE (OF EACH FACE) AT POINT LOAD LOCATIONS @ 1/2 SPACING, WHERE APPLICABLE.

\*UNLESS NOTED OTHERWISE ON LAYOUT OR CALCULATION SHEET OF BEAM IN THE FLOOR PACKAGE

FOR MULTIPLE MEMBER CONNECTION OF BOISE ALLJOISTS REFER TO THE BOISE CASCADE INSTALLATION GUIDE

#### Installation Guide



(Open your phone's camera and hover over this QR code to access it)

Last Revised January 13, 2023



MHP 23034

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Nov 14 2023

PER:   
CHIEF BUILDING OFFICIAL

ENG-M0723-11-KT- GREENPARK ZADORRA ESTATES VILLA 2-3

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Ground Floor

Installation Guide



(Open your phone's camera and  
hover over this QR code to access it)

Hatch Area represents where  
additional load has been applied.  
(e.g. 5 psf for ceramic tile)

1. All blocking to be cut from 12' joists
2. 2' & 4' Lengths to be cut from 8' Length, 6' Lengths to be cut from 12' Length
3. Ends of joists to be laterally supported
4. Packing of Steel beams and attachment by others
5. Shower and water closet flange locations are approximate only, consult architectural drawing for exact locations
6. Beams identified as "R" are dropped and supplied by others
7. Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls
8. Load transfer blocks to be installed under all point loads
9. Refer to Multiple Member Connection Detail for ply to ply nailing or bolting requirements
10. Hangers and Fasteners to be installed as per manufacturer
11. Framing shown on this layout may deviate from architectural drawings. Arch / Eng to review and approve the deviation prior to construction.
12. Multi ply beams with side loading to have all fasteners installed with the head on the side of the applied load
13. Confirmation of adequate support & anchorage of components is the responsibility of the building designer; suggested uplift connectors are as shown
14. Where beam hangs on side of 3-ply member, it is recommended that the equivalent quantity and size of nails required for the hanger attachment also be installed on opposite side of the 3-ply member

Ground Floor  
LVL/LSL (Flush)

Label	Description	Width	Depth	Qty	Pieces	Pcs	Length
F16	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	1	2	2	144-0
F14	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	2	2	4	64-0
F11	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	3	2	6	64-0
FH1	Versa-Lam LVL 2.1E 3100 SP	1.75	11.875	1	2	2	40-0

Joist (Flush)

Label	Description	Width	Depth	Pcs	Length
F8	AJS 140	2.5	11.875	1	164-0
F5	AJS 140	2.5	11.875	1	144-0
F10	AJS 140	2.5	11.875	3	124-0
F3	AJS 140	2.5	11.875	1	64-0
F2	AJS 140	2.5	11.875	1	40-0
J6	AJS 140	2.5	11.875	15	164-0
J5	AJS 140	2.5	11.875	25	144-0
J4	AJS 140	2.5	11.875	11	124-0
J8	AJS 140	2.5	11.875	2	104-0
J2	AJS 140	2.5	11.875	3	64-0

Rim Board

Label	Description	Width	Depth	Pcs	Length
R1	Norbord Rimboard Plus 1.125 X 11.875	1.125	11.875	12	124-0

Blocking

Label	Description	Width	Depth	Qty	Pcs	Length
BLK1	AJS 140	2.5	11.875	1x11	Varies	384-0

Hanger

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Beam/Girder

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Supported Member

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Deflection Joist

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Deflection Flush Girder

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Deflection Dropped Girder

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Deflection Header

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Decking

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Thickness

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Fastener

Label	Pcs	Description	fasteners
H3	19	LF2511	12 100x1 1/2
H4	2	HUC410 (Min)	14 16d
H5	2	LF3511	12 10d

Nailed & Glued

JOB INFORMATION

Builder

GREENPARK

Project

Shipping

ZADORRA ESTATES

OSHAWA, ON

Sales Rep

RALPH MIRIGELLO

Designer

Plotted

July 18, 2023

Layout Name

VILLA 2-3 WOC

Job Path

8:\CUSTOMERS\GREENPARK\ZADORRA ESTATES

MODELS\BILLA 2\BILLA 2-3RF-BILLA 2-3WOC\BILLA

2-3 WOC.dwg

DESIGN CRITERIA

Ground Floor

Design Method

LSI (Canada)

Building Code

NBCC 2015

OBC 2012(2020 Update)

Floor

Live

Dead

Deflection Joist

LL Span /

TL Span /

Deflection Flush Girder

LL Span /

TL Span /

Deflection Dropped Girder

LL Span /

TL Span /

Deflection Header

LL Span /

TL Span /

Decking

Thickness

Fastener

Nailed & Glued

CCMC References

Boise - 12472-R, 12787-R

LP - 12412-R, Roseburg - 13310-R

Forex - 14026-R

Kott Inc.

3228 Woodle Dr. Ottawa

14 Anderson Blvd. Uxbridge

Ontario

613-838-2775 /

905-642-4400

KOTT

Legend

WS

-WS

PS

Point Load Support

Load from Above

Wall

Wall Opening

Norbord Rimboard Plus 1.125 X 11.875

AJS 140 11.875

Versa-Lam LVL 2.1E 3100 SP 1.75 X

11.875

1.75 X 9.5 (Dropped)

1.75 X 9.5

1.75 X 9.5

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1.75 X 9.5

1.75 X 9.5

1.75 X 9.5

1.75 X 9.5





Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

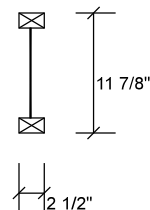
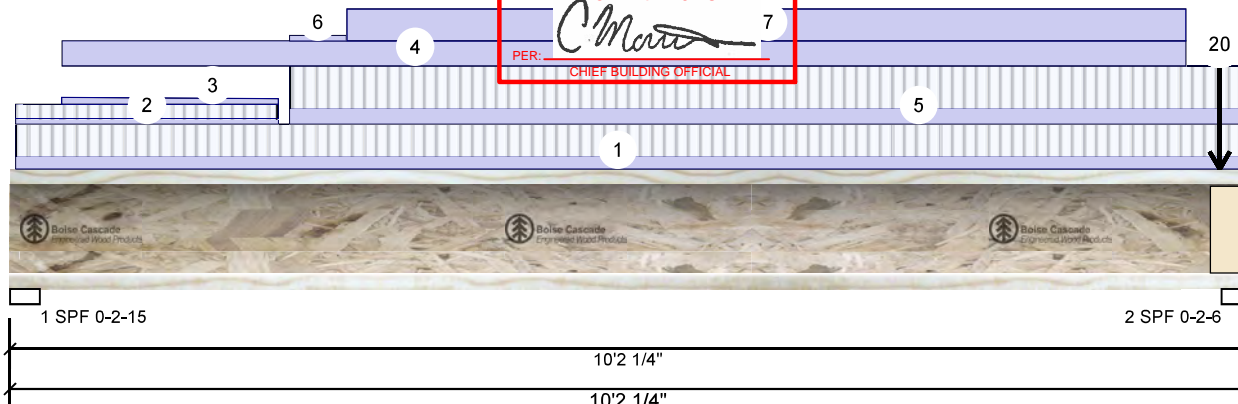
Page 1 of 36

**F10 AJS 140 11.875" - PASSED**

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TRUE COPY  
OF PERMIT PLANS  
Nov 14 2023

**MHP 23034**

Level: Ground Floor

**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	235	245	1	0
2	Vertical	586	742	115	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.943"	Vert	38%	306 / 352	658	L	1.25D+1.5L
2 - SPF	2.375"	Vert	87%	927 / 994	1921	L	1.25D+1.5L +S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1873 ft-lb	5'3 3/8"	5093 ft-lb	0.368 (37%)	1.25D+1.5L	L
Unbraced	1873 ft-lb	5'3 3/8"	5093 ft-lb	0.368 (37%)	1.25D+1.5L	L
Shear	1907 lb	10' 5/8"	2280 lb	0.837 (84%)	1.25D+1.5L +S	L
Perm Defl in.	0.051 (L/2321)	5'2 7/16"	0.329 (L/360)	0.155 (16%)	D	Uniform
LL Defl inch	0.046 (L/2578)	5'2 3/16"	0.329 (L/360)	0.140 (14%)	L+0.5S	L
TL Defl inch	0.097 (L/1221)	5'2 5/16"	0.494 (L/240)	0.197 (20%)	D+L+0.5S	L



JULY 19, 2023

**Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 4 Bottom flange must be laterally braced at bearings.
- 5 Web stiffeners required at Bearing 2.

**READ ALL NOTES ON THIS PAGE AND ON THE  
ENGINEERING NOTES: EWP-FLOORS. THE NOTE  
PAGE IS AN INTEGRAL PART OF THIS DRAWING  
AS IT CONTAINS SPECIFICATIONS AND CRITERIA  
USED IN THE DESIGN OF THIS COMPONENT.**

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-9 to 10-2-4	0-7-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-9 to 2-2-9	0-3-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tapered Start	0-5-2		Top	5 PLF	0 PLF	0 PLF	0 PLF	
	End	2-2-9			4 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-5-2 to 9-8-6		Top	18 PLF	0 PLF	0 PLF	0 PLF	

Continued on page 2...

**Notes**

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

1. Dry service conditions, unless noted otherwise
2. Joist not to be treated with fire retardant or corrosive

**chemicals****Handling & Installation**

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400





Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

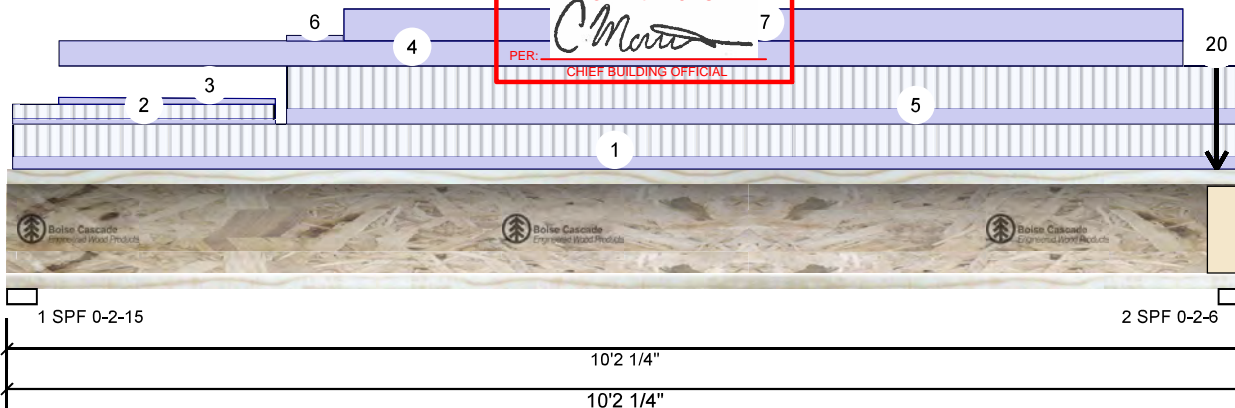
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MHP 23034

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Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Tie-In	2-3-11 to 10-2-4	0-9-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Part. Uniform	2-3-11 to 2-9-4		Top	4 PLF	0 PLF	0 PLF	0 PLF	
7	Part. Uniform	2-9-6 to 9-8-6		Top	23 PLF	0 PLF	0 PLF	0 PLF	
8	Point	9-11-11		Top	6 lb	0 lb	0 lb	0 lb	Rim Board Self Weight
	Bearing Length	0-1-8							
9	Point	9-11-11		Top	72 lb	192 lb	0 lb	0 lb	J4
	Bearing Length	0-1-8							
10	Point	9-11-11		Top	108 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							
12	Point	9-11-11		Top	0 lb	1 lb	0 lb	0 lb	
	Bearing Length	0-1-8							
13	Point	9-11-11		Top	29 lb	78 lb	0 lb	0 lb	J1
	Bearing Length	0-1-8							
14	Point	9-11-11		Top	108 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							
15	Point	9-11-11		Top	67 lb	0 lb	116 lb	0 lb	Header Column
	Bearing Length	0-1-8							
16	Point	9-11-11		Top	1 lb	0 lb	0 lb	0 lb	Rim Board Self Weight
	Bearing Length	0-1-8							
17	Point	9-11-11		Top	27 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							
19	Point	9-11-11		Top	18 lb	49 lb	0 lb	0 lb	J1
	Bearing Length	0-1-8							
20	Point	9-11-11		Top	27 lb	0 lb	0 lb	0 lb	Wall Self Weig
	Bearing Length	0-1-8							

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USED IN THE DESIGN OF THIS COMPONENT.



JULY 19, 2023

**Notes**

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

1. Dry service conditions, unless noted otherwise
2. Joist not to be treated with fire retardant or corrosive

chemicals

**Handling & Installation**

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

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Kott Inc.  
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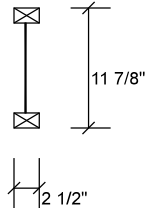
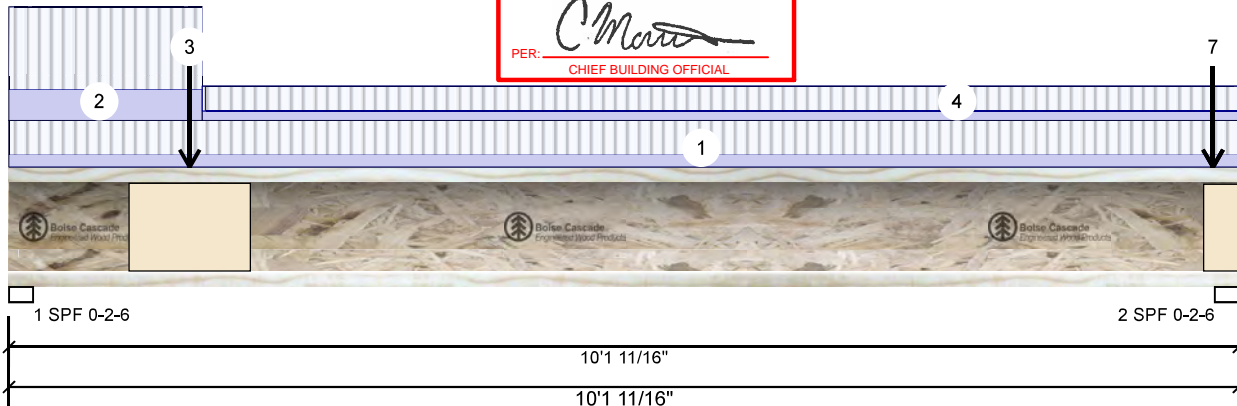
Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

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**F10-A AJS 140 11.875" - PASSED**



Level: Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	504	208	0	0
2	Vertical	860	416	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	60%	261 / 755	1016	L	1.25D+1.5L
2 - SPF	2.375"	Vert	79%	520 / 1290	1810	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1537 ft-lb	4'3 3/4"	5305 ft-lb	0.290 (29%)	1.25D+1.5L	L
Unbraced	1537 ft-lb	4'3 3/4"	5305 ft-lb	0.290 (29%)	1.25D+1.5L	L
Shear	1798 lb	10' 1/16"	2350 lb	0.765 (77%)	1.25D+1.5L	L
Perm Defl in.	0.022 (L/5280)	4'9 11/16"	0.329 (L/360)	0.068 (7%)	D	Uniform
LL Defl inch	0.056 (L/2122)	4'10"	0.329 (L/360)	0.170 (17%)	L	
TL Defl inch	0.078 (L/1513)	4'9 15/16"	0.494 (L/240)	0.159 (16%)	D+L	L

### Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Girders are designed to be supported on the bottom edge only.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- Bottom flange must be laterally braced at a maximum of 8'7 13/16" o.c.
- Web stiffeners required at Bearing 2.



JULY 19, 2023

**READ ALL NOTES ON THIS PAGE AND ON THE ENGINEERING NOTES: EWP-FLOORS. THE NOTE PAGE IS AN INTEGRAL PART OF THIS DRAWING AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.**

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 10-1-11	0-7-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-7-2	1-6-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-5-14		Near Face	111 lb	238 lb	0 lb	0 lb	F2
4	Tie-In	1-7-2 to 10-1-11	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	9-11-2		Top	143 lb	379 lb	0 lb	0 lb	J7
	Bearing Length	0-1-8							

Continued on page 2...

### Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

### Lumber

- Dry service conditions, unless noted otherwise
- Joist not to be treated with fire retardant or corrosive

### chemicals

### Handling & Installation

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-plate fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

### Manufacturer Info

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12787

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400





Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

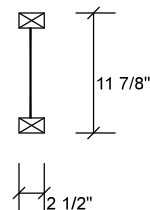
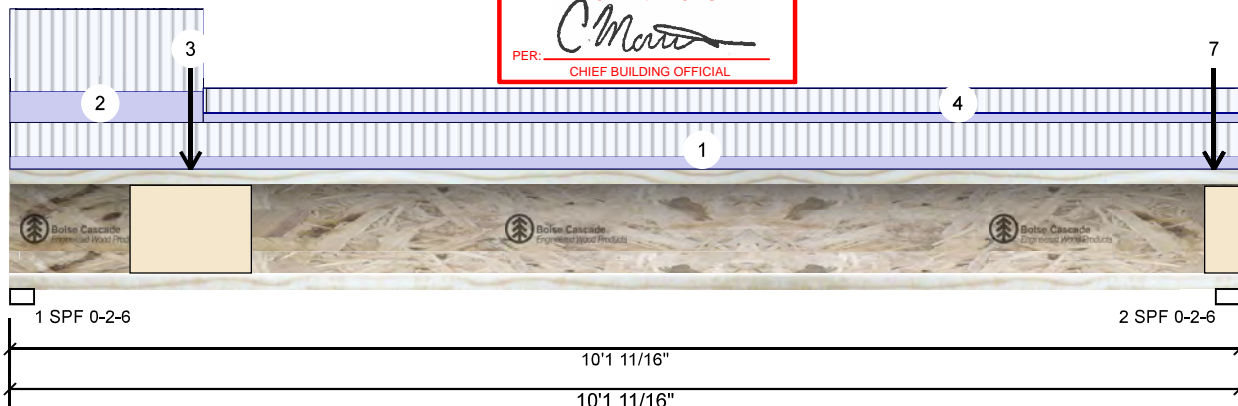
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MHP 23034

F10-A AJS 140 11.875" - PASSED

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Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	9-11-2		Top	83 lb	220 lb	0 lb	0 lb	J8
	Bearing Length	0-1-8							
7	Point	9-11-2		Top	90 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							



READ ALL NOTES ON THIS PAGE AND ON THE  
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**Notes**

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**Lumber**

1. Dry service conditions, unless noted otherwise
2. Joist not to be treated with fire retardant or corrosive

**chemicals****Handling & Installation**

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

**Manufacturer Info**

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**Kott Inc.**

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Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

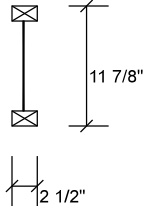
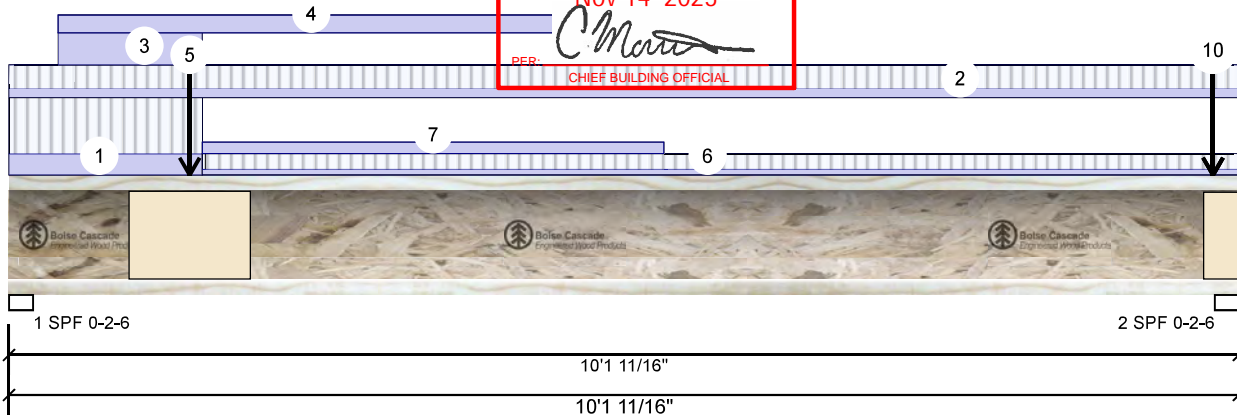
Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

Page 5 of 36

**F10-B AJS 140 11.875" - PASSED**

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PER: *Chen*  
CHIEF BUILDING OFFICIAL

Level: Ground Floor



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	509	399	0	0
2	Vertical	845	465	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	75%	499 / 764	1263	L	1.25D+1.5L
2 - SPF	2.375"	Vert	81%	581 / 1267	1848	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1906 ft-lb	4'1"	5305 ft-lb	0.359 (36%)	1.25D+1.5L	L
Unbraced	1906 ft-lb	4'1"	5305 ft-lb	0.359 (36%)	1.25D+1.5L	L
Shear	1836 lb	10' 1/16"	2350 lb	0.781 (78%)	1.25D+1.5L	L
Perm Defl in.	0.042 (L/2800)	4'7 5/16"	0.329 (L/360)	0.129 (13%)	D	Uniform
LL Defl inch	0.056 (L/2132)	4'9 7/8"	0.329 (L/360)	0.169 (17%)	L	
TL Defl inch	0.098 (L/1211)	4'8 11/16"	0.494 (L/240)	0.198 (20%)	D+L	L



JULY 19, 2023

### Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- 4 Bottom flange must be laterally braced at a maximum of 8'7 13/16" o.c.
- 5 Web stiffeners required at Bearing 2.

**READ ALL NOTES ON THIS PAGE AND ON THE ENGINEERING NOTES: EWP-FLOORS. THE NOTE PAGE IS AN INTEGRAL PART OF THIS DRAWING AS IT CONTAINS SPECIFICATIONS AND CRITERIA USED IN THE DESIGN OF THIS COMPONENT.**

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-7-2	1-6-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 10-1-11	0-8-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-4-14 to 1-7-2		Top	36 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-4-14 to 5-4-13		Top	20 PLF	0 PLF	0 PLF	0 PLF	
5	Point	1-5-14		Far Face	167 lb	247 lb	0 lb	0 lb	F2
6	Tie-In	1-7-2 to 10-1-11	0-5-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

### Notes

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### Lumber

1. Dry service conditions, unless noted otherwise
2. Joist not to be treated with fire retardant or corrosive

### chemicals

### Handling & Installation

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
7. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

### Manufacturer Info

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CCMC: 12787

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Client: GREENPARK  
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Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

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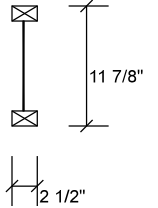
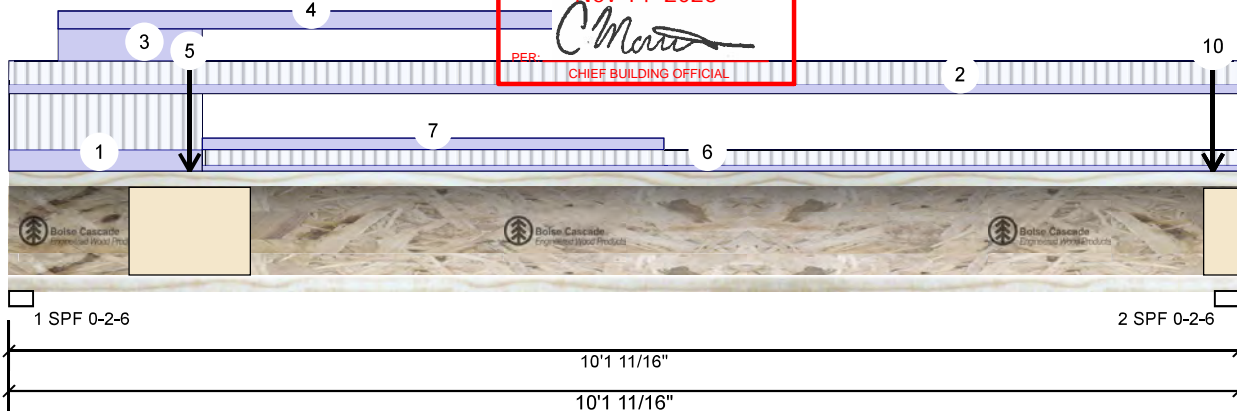
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PER: *C. M...*  
CHIEF BUILDING OFFICIAL

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Part. Uniform	1-7-2 to 5-4-13		Top	13 PLF	0 PLF	0 PLF	0 PLF	
8	Point	9-11-2		Top	140 lb	371 lb	0 lb	0 lb	J7
	Bearing Length	0-1-8							
9	Point	9-11-2		Top	82 lb	216 lb	0 lb	0 lb	J8
	Bearing Length	0-1-8							
10	Point	9-11-2		Top	88 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-1-8							



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#### Notes

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#### Lumber

1. Dry service conditions, unless noted otherwise
2. Joist not to be treated with fire retardant or corrosive

#### chemicals

#### Handling & Installation

1. Joist flanges must not be cut or drilled
2. Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Joists must not be used
4. Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

5. Provide lateral support at bearing points to avoid lateral displacement and rotation
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7. For flat roofs provide proper drainage to prevent ponding

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3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400





Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

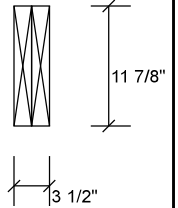
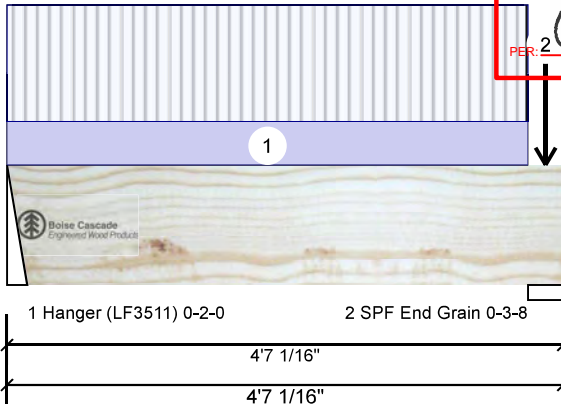
Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

Page 7 of 36

**F11 Versa-Lam LVL 2.1E 3100 SP****1.750" X 11.875" 2-Ply - PASSED**

Level: Ground Floor

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**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	41	42	0	0
2	Vertical	191	124	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	1%	52 / 61	113	L	1.25D+1.5L
2 - SPF End Grain	3.500"	Vert	3%	155 / 286	441	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	115 ft-lb	2'2 3/4"	35392 ft-lb	0.003 (0%)	1.25D+1.5L	L
Unbraced	115 ft-lb	2'2 3/4"	35392 ft-lb	0.003 (0%)	1.25D+1.5L	L
Shear	69 lb	3'3 11/16"	13217 lb	0.005 (1%)	1.25D+1.5L	L
Perm Defl in. (L/351327)	0.000	2'2 13/16"	0.142 (L/360)	0.001 (0%)	D	Uniform
LL Defl inch (L/359843)	0.000	2'2 13/16"	0.142 (L/360)	0.001 (0%)	L	L
TL Defl inch (L/177767)	0.000	2'2 13/16"	0.213 (L/240)	0.001 (0%)	D+L	L

**Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fill all hanger nailing holes.
- 3 Left Header: DF, Thickness: 3 1/2"
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Multiple plies must be fastened together as per manufacturer's details.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be continuously laterally braced.
- 8 Bottom must be laterally braced at a maximum of 4'5 5/16" o.c.
- 9 Lateral slenderness ratio based on full section width.



JULY 19, 2023

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**Notes**

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**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

**chemicals****Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

Boise Cascade Wood Products  
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www.bc.com  
CCMC: 12472

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400



This design is valid until 4/17/2026



Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

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F11 Versa-Lam LVL 2.1E 3100 SP

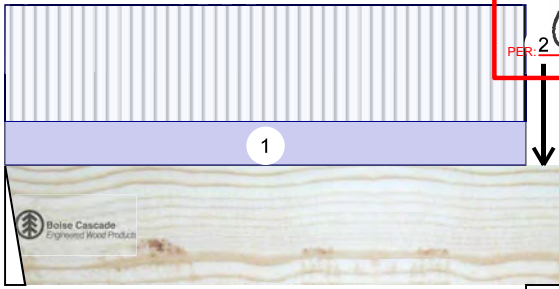
1.750" X 11.875" 2-Ply - PASSED

Level: Ground Floor

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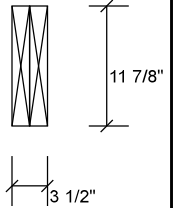


1 Hanger (LF3511) 0-2-0

2 SPF End Grain 0-3-8

4'7 1/16"

4'7 1/16"



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-3-9	0-5-8	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	4-5-5		Near Face	82 lb	153 lb	0 lb	0 lb	F11
	Self Weight				12 PLF				



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## Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

## chemicals

## Handling &amp; Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
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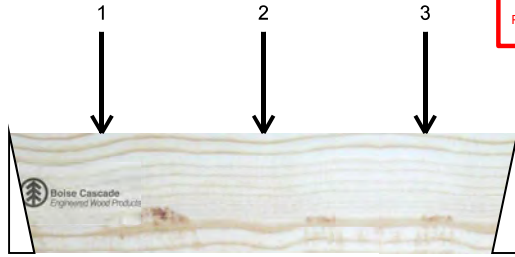
F11-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

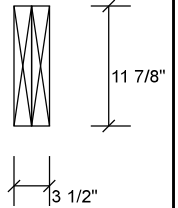
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1 Hanger (HUC410 (Min)) 0-2-8  
2 Hanger (HUC410 (Min)) 0-2-8  
4'2 5/16"  
4'2 5/16"



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	153	82	0	0
2	Vertical	154	82	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	Vert	3%	103 / 230	333	L	1.25D+1.5L
2 - Hanger	2.500"	Vert	3%	103 / 231	333	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	366 ft-lb	2'1 3/16"	35392 ft-lb	0.010 (1%)	1.25D+1.5L	L
Unbraced	366 ft-lb	2'1 3/16"	35392 ft-lb	0.010 (1%)	1.25D+1.5L	L
Shear	330 lb	2'11 15/16"	13217 lb	0.025 (2%)	1.25D+1.5L	L
Perm Defl in. (L/193691)	0.000	2'1 3/16"	0.130 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch (L/99832)	0.000	2'1 3/16"	0.130 (L/360)	0.004 (0%)	L	L
TL Defl inch (L/65877)	0.001	2'1 3/16"	0.195 (L/240)	0.004 (0%)	D+L	L

## Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Left Header: DF, Thickness: 3 1/2"
- Right Header: DF, Thickness: 3 1/2"
- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top must be continuously laterally braced.
- Bottom must have sheathing attached or be continuously braced.
- Lateral slenderness ratio based on full section width.



JULY 19, 2023

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## Lumber

- Dry service conditions, unless noted otherwise
- LVL not to be treated with fire retardant or corrosive

## chemicals

## Handling &amp; Installation

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support at bearing points to avoid lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

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F11-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

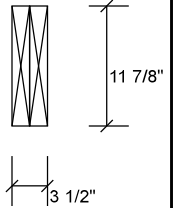
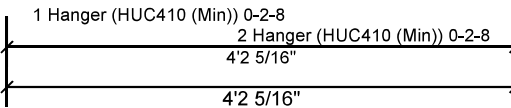
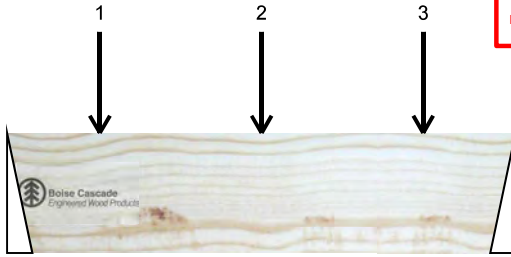
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-9-3		Near Face	36 lb	96 lb	0 lb	0 lb	J2
2	Point	2-1-3		Near Face	43 lb	115 lb	0 lb	0 lb	J2
3	Point	3-5-3		Near Face	36 lb	96 lb	0 lb	0 lb	J2
	Self Weight				12 PLF				



JULY 19, 2023

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**Notes**

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**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400





Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

Page 11 of 36

MHP 23034

F11-B Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

PASSED

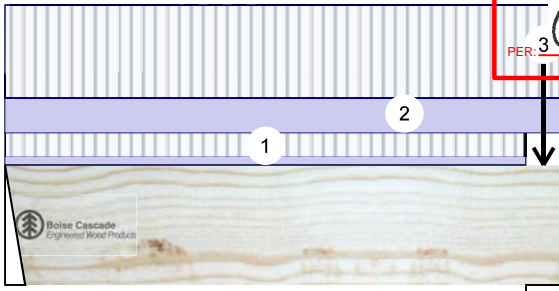
Level: Ground Floor

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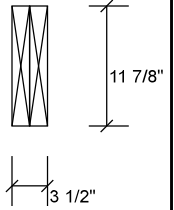
Nov 14 2023

PER: 3

CHIEF BUILDING OFFICIAL



1 Hanger (LF3511) 0-2-0 2 SPF End Grain 0-3-8  
4'7 1/16"  
4'7 1/16"



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	201	102	0	0
2	Vertical	361	188	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	6%	127 / 302	429	L	1.25D+1.5L
2 - SPF End Grain	3.500"	Vert	6%	234 / 542	776	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	435 ft-lb	2'2 3/4"	35392 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	435 ft-lb	2'2 3/4"	35392 ft-lb	0.012 (1%)	1.25D+1.5L	L
Shear	221 lb	3'3 11/16"	13217 lb	0.017 (2%)	1.25D+1.5L	L
Perm Defl in. (L/143784)	0.000	2'2 13/16"	0.142 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch (L/72806)	0.001	2'2 13/16"	0.142 (L/360)	0.005 (0%)	L	L
TL Defl inch (L/48333)	0.001	2'2 13/16"	0.213 (L/240)	0.005 (0%)	D+L	L

## Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Left Header: DF, Thickness: 3 1/2"
- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be continuously laterally braced.
- Bottom must be laterally braced at a maximum of 4'5 5/16" o.c.
- Lateral slenderness ratio based on full section width.



JULY 19, 2023

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## Notes

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## Lumber

- Dry service conditions, unless noted otherwise
- LVL not to be treated with fire retardant or corrosive chemicals

chemicals

## Handling &amp; Installation

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support at bearing points to avoid lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400



This design is valid until 4/17/2026



Client: GREENPARK  
Project: ZADORRA ESTATES  
Address: OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

Page 12 of 36

MHP 23034

F11-B Versa-Lam LVL 2.1E 3100 SP

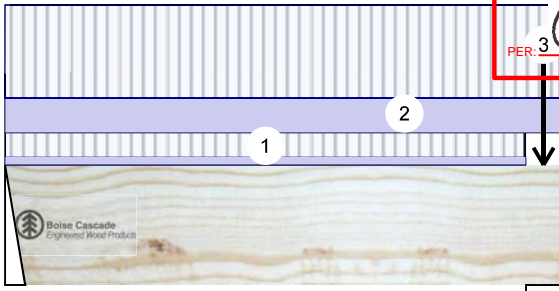
1.750" X 11.875" 2-Ply

PASSED

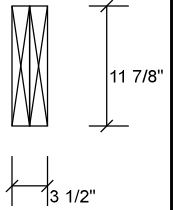
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1 Hanger (LF3511) 0-2-0 2 SPF End Grain 0-3-8  
4'7 1/16"  
4'7 1/16"



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-3-9	0-5-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 4-7-1	1-9-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	4-5-5		Far Face	82 lb	154 lb	0 lb	0 lb	F11
	Self Weight				12 PLF				



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**Lumber**

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2. LVL not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
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5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

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Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
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Job Name: VILLA 2-3 STD  
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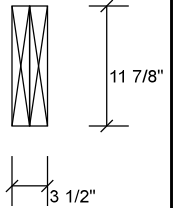
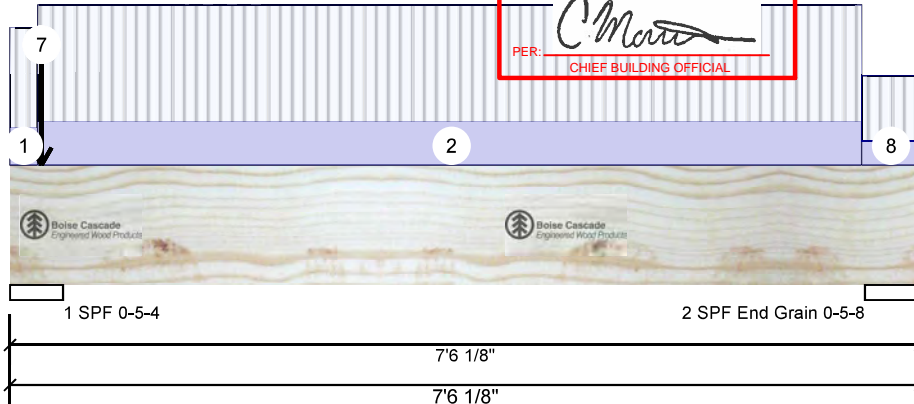
Page 13 of 36

F14 Versa-Lam LVL 2.1E 3100 SP 1.750 X 11.875" OF OSB 2-Ply - PASSED Level: Ground Floor

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## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	2125	1061	0	0
2	Vertical	85	76	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	40%	1327 / 3188	4515	L	1.25D+1.5L
2 - SPF	5.500"	Vert	1%	95 / 127	222	L	1.25D+1.5L
End Grain							

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	350 ft-lb	3'8 15/16"	35392 ft-lb	0.010 (1%)	1.25D+1.5L	L
Unbraced	350 ft-lb	3'8 15/16"	35392 ft-lb	0.010 (1%)	1.25D+1.5L	L
Shear	158 lb	6' 3/4"	13217 lb	0.012 (1%)	1.25D+1.5L	L
Perm Defl in. (L/83334)	0.001	3'8 15/16"	0.225 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch (L/72625)	0.001	3'8 15/16"	0.225 (L/360)	0.005 (0%)	L	L
TL Defl inch (L/38806)	0.002	3'8 15/16"	0.337 (L/240)	0.006 (1%)	D+L	L

## Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 4.5.
- 2 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Multiple plies must be fastened together as per manufacturer's details.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be continuously laterally braced.
- 7 Bottom must be laterally braced at bearings.
- 8 Lateral slenderness ratio based on full section width.



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## Notes

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## Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

## Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

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(800) 232-0788  
www.bc.com  
CCMC: 12472

Kott Inc.  
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613-838-2775 / 905-642-4400



This design is valid until 4/17/2026



Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

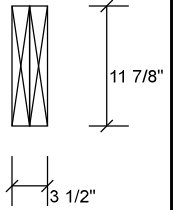
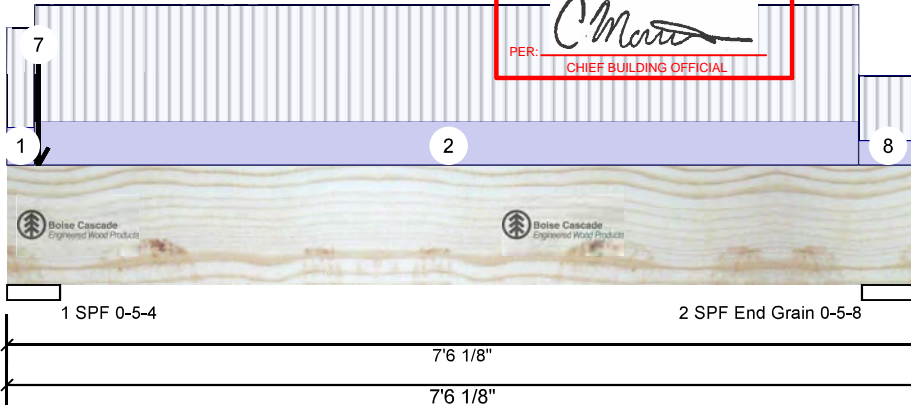
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MHP 23034

F14 Versa-Lam LVL 2.1E 3100 SP 1.750' X 11.875" OF OSB 2-Ply - PASSED Level: Ground Floor

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PER: *C. Mante*  
CHIEF BUILDING OFFICIAL



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-2-12	0-6-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-2-12 to 7-0-4	0-7-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-3-2		Top	928 lb	1968 lb	0 lb	0 lb	F16
	Bearing Length	0-5-8							
4	Point	0-3-2		Top	10 lb	27 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
5	Point	0-3-2		Top	12 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
6	Point	0-3-2		Top	16 lb	42 lb	0 lb	0 lb	
	Bearing Length	0-5-8							
7	Point	0-3-2		Top	18 lb	0 lb	0 lb	0 lb	Wall Self Weight
	Bearing Length	0-5-8							
8	Tie-In	7-0-4 to 7-6-2	0-4-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				12 PLF				



JULY 19, 2023

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**Lumber**

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2. LVL not to be treated with fire retardant or corrosive

chemicals

**Handling & Installation**

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6. For flat roofs provide proper drainage to prevent ponding

**Manufacturer Info**

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Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

Page 15 of 36

MHP 23034

## F14-A Versa-Lam LVL 2.1E 3100 SP

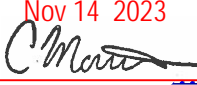
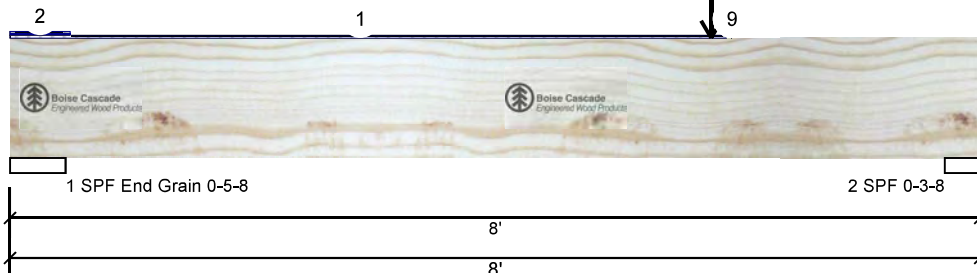
1.750" X 11.875" 2-Ply

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Level: Ground Floor

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PER:   
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## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	208	445	504	0
2	Vertical	457	1224	1578	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	Vert	8%	556 / 964	1520	L	1.25D+1.5S +L
2 - SPF	3.500"	Vert	58%	1530 / 2823	4353	L	1.25D+1.5S +L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7628 ft-lb	5'9 3/8"	35392 ft-lb	0.216 (22%)	1.25D+1.5S +L	L
Unbraced	7628 ft-lb	5'9 3/8"	35392 ft-lb	0.216 (22%)	1.25D+1.5S +L	L
Shear	3819 lb	6'8 5/8"	13217 lb	0.289 (29%)	1.25D+1.5S +L	L
Perm Defl in.	0.016 (L/5465)	4'6 3/16"	0.246 (L/360)	0.066 (7%)	D	Uniform
LL Defl inch	0.024 (L/3733)	4'6 7/16"	0.246 (L/360)	0.096 (10%)	S+0.5L	L
TL Defl inch	0.040 (L/2218)	4'6 3/8"	0.369 (L/240)	0.108 (11%)	D+S+0.5L	L

## Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 2'1 1/8" o.c.
- 6 Bottom must be laterally braced at bearings.
- 7 Lateral slenderness ratio based on full section width.



JULY 19, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 5-10-14	0-3-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 0-5-15	0-4-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	5-6-8 to 7-6-8		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	5-9-6		Top	1211 lb	596 lb	1617 lb	0 lb	F15

Continued on page 2...

## Notes

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## Lumber

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2. LVL not to be treated with fire retardant or corrosive chemicals

chemicals

## Handling &amp; Installation

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Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

MHP 23034

F14-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

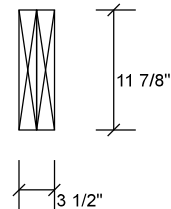
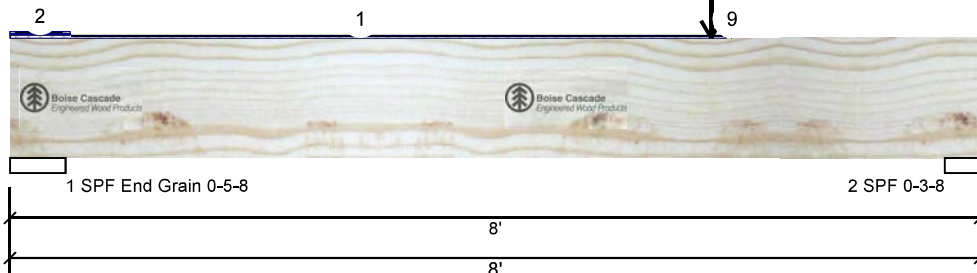
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PER: *C. Mart*  
CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	Bearing Length	0-8-0							
5	Part. Uniform	5-10-4 to 7-6-8		Top	105 PLF	0 PLF	275 PLF	0 PLF	
6	Part. Uniform	5-11-7 to 5-11-7		Top	100 PLF	0 PLF	260 PLF	0 PLF	
7	Part. Uniform	5-11-7 to 5-11-7		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
9	Part. Uniform	5-11-7 to 5-11-7		Top	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
	Self Weight				12 PLF				



JULY 19, 2023

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**chemicals****Handling & Installation**

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613-838-2775 / 905-642-4400







Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

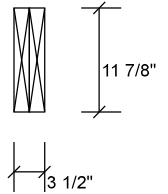
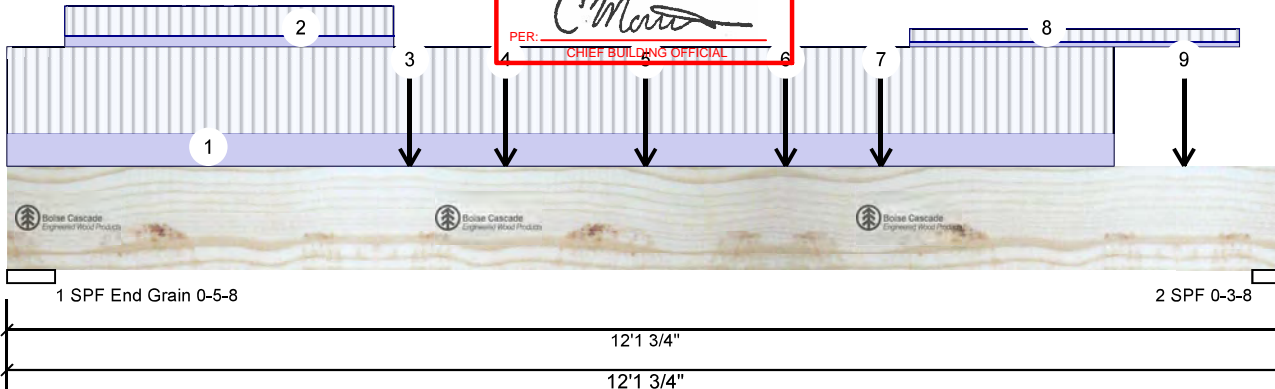
Page 17 of 36

**F16 Versa-Lam LVL 2.1E 3100 SP**

1.750' X 11.875" OF OSAL 2-Ply - PASSED

Level: Ground Floor

TRUE COPY  
OF PERMIT PLANS  
Nov 14 2023  
PER: *Chen*  
CHIEF BUILDING OFFICIAL

**Member Information**

Type:	Girder	Application:	Floor (Residential)
Plies:	2	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

**Unfactored Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	2129	899	0	0
2	Vertical	1921	818	0	0

**Bearings and Factored Reactions**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	Vert	21%	1124 / 3193	4317	L	1.25D+1.5L
2 - SPF	3.500"	Vert	52%	1022 / 2881	3903	L	1.25D+1.5L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11988 ft-lb	6' 15/16"	35392 ft-lb	0.339 (34%)	1.25D+1.5L	L
Unbraced	11988 ft-lb	6' 15/16"	35392 ft-lb	0.339 (34%)	1.25D+1.5L	L
Shear	4345 lb	10'10 3/8"	13217 lb	0.329 (33%)	1.25D+1.5L	L
Perm Defl in.	0.059 (L/2343)	6'1 15/16"	0.384 (L/360)	0.154 (15%)	D	Uniform
LL Defl inch	0.139 (L/996)	6'1 15/16"	0.384 (L/360)	0.361 (36%)	L	L
TL Defl inch	0.198 (L/699)	6'1 15/16"	0.576 (L/240)	0.343 (34%)	D+L	L

**Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be continuously laterally braced.
- 6 Bottom must have sheathing attached or be continuously braced.
- 7 Lateral slenderness ratio based on full section width.



READ ALL NOTES ON THIS PAGE AND ON THE  
ENGINEERING NOTES: EWP-FLOORS. THE NOTE  
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 10-6-7		Near Face	99 PLF	264 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-6-10 to 3-8-3		Top	34 PLF	90 PLF	0 PLF	0 PLF	
3	Point	3-10-0		Far Face	42 lb	41 lb	0 lb	0 lb	F11
4	Point	4-8-15		Far Face	36 lb	96 lb	0 lb	0 lb	J2
5	Point	6-0-15		Far Face	43 lb	115 lb	0 lb	0 lb	J2

Continued on page 2...

**Notes**

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

**Manufacturer Info**

Boise Cascade Wood Products  
1111 W. Jefferson St.  
Boise, ID 83702  
(800) 232-0788  
www.bc.com  
CCMC: 12472

Kott Inc.  
3228 Moodie Dr, Ottawa, Ontario  
613-838-2775 / 905-642-4400





Client: GREENPARK  
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Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

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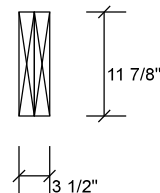
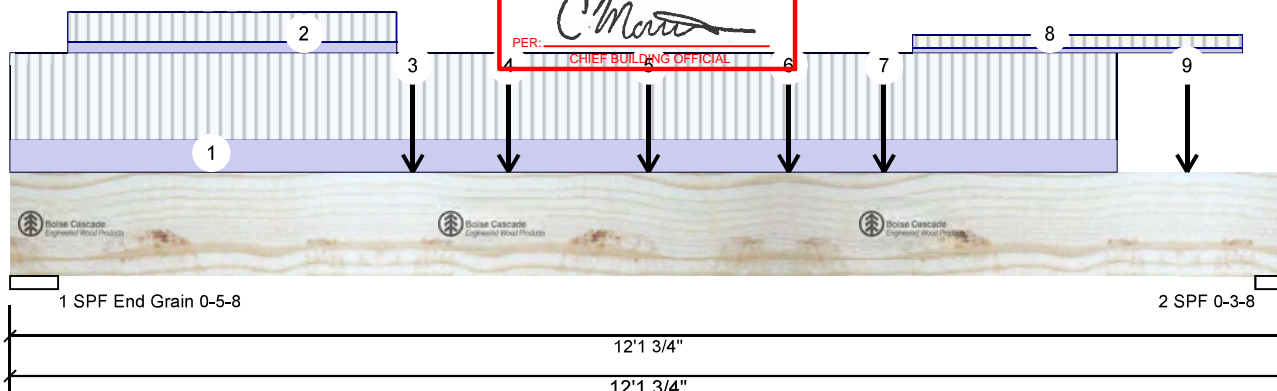
F16 Versa-Lam LVL 2.1E 3100 SP 1.750 X 11.875" OF OSB 2-Ply - PASSED Level: Ground Floor

PERMIT NO. 11-875" OF OSB 2-Ply - PASSED

TRUE COPY  
OF PERMIT PLANS

Nov 14 2023

PER: *Chen*  
CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	7-4-15		Far Face	36 lb	96 lb	0 lb	0 lb	J2
7	Point	8-3-14		Far Face	102 lb	201 lb	0 lb	0 lb	F11
8	Part. Uniform	8-7-2 to 11-8-13		Top	15 PLF	40 PLF	0 PLF	0 PLF	
9	Point	11-2-7		Near Face	117 lb	311 lb	0 lb	0 lb	J5
	Self Weight				12 PLF				



JULY 19, 2023

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#### Notes

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#### Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

#### chemicals

#### Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

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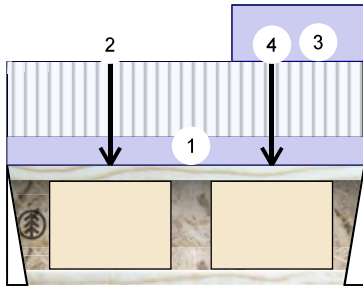
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Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

Page 19 of 36

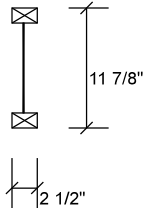
F2 AJS 140 11.875" - PASSED

INCORPORATION OF THE CITY OF OSHAWA  
TRUE COPY  
OF PERMIT PLANS  
Nov 14 2023  
PER: *Chen*  
CHIEF BUILDING OFFICIAL

Level: Ground Floor



1 Hanger (LF2511) 0-2-0  
2 Hanger (LF2511) 0-2-0  
2'11 3/8"  
2'11 3/8"



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	238	111	0	0
2	Vertical	247	167	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	31%	138 / 357	495	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	36%	208 / 370	578	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	367 ft-lb	1'7 5/8"	5305 ft-lb	0.069 (7%)	1.25D+1.5L	L
Unbraced	367 ft-lb	1'7 5/8"	5305 ft-lb	0.069 (7%)	1.25D+1.5L	L
Shear	569 lb	2'10 1/8"	2350 lb	0.242 (24%)	1.25D+1.5L	L
Perm Defl in. (L/18015)	0.002	1'10 7/16"	0.091 (L/360)	0.020 (2%)	D	Uniform
LL Defl inch (L/10181)	0.003	1'4 5/8"	0.091 (L/360)	0.035 (4%)	L	L
TL Defl inch (L/6579)	0.005	1'6 5/8"	0.137 (L/240)	0.036 (4%)	D+L	L

### Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Left Header: SPF, Thickness: 2 1/2"
- Right Header: SPF, Thickness: 2 1/2"
- Girders are designed to be supported on the bottom edge only.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- If sheathing is not attached to the bottom flange, bottom flange must be laterally braced at maximum 2' o.c.



JULY 19, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-11-6	0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-10-3		Far Face	76 lb	201 lb	0 lb	0 lb	J8
3	Part. Uniform	1-10-4 to 2-11-6		Top	23 PLF	0 PLF	0 PLF	0 PLF	
4	Point	2-2-3		Far Face	142 lb	193 lb	0 lb	0 lb	J8

### Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

### Lumber

- Dry service conditions, unless noted otherwise
- Joist not to be treated with fire retardant or corrosive chemicals

### chemicals

### Handling & Installation

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

### Manufacturer Info

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CCMC: 12787

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This design is valid until 4/17/2026



Client: GREENPARK  
Project:  
Address: ZADORRA ESTATES  
OSHAWA, ON

Date: 7/18/2023  
Input by: W C  
Job Name: VILLA 2-3 STD  
Project #:

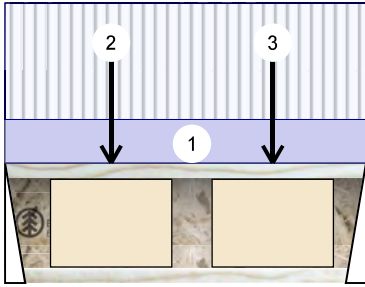
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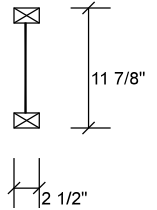
F2-A AJ5 140 11.875" - PASSED



Level: Ground Floor



1 Hanger (LF2511) 0-2-0  
2 Hanger (LF2511) 0-2-0  
2'11 3/4"  
2'11 3/4"



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

## Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	321	121	0	0
2	Vertical	337	127	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	39%	151 / 482	633	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	41%	158 / 506	664	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	466 ft-lb	1' 5/16"	5305 ft-lb	0.088 (9%)	1.25D+1.5L	L
Unbraced	466 ft-lb	1' 5/16"	5305 ft-lb	0.088 (9%)	1.25D+1.5L	L
Shear	657 lb	2'10 1/2"	2350 lb	0.280 (28%)	1.25D+1.5L	L
Perm Defl in. (L/19548)	0.002	1'4 3/8"	0.092 (L/360)	0.018 (2%)	D	Uniform
LL Defl inch	0.005 (L/7342)	1'4 3/8"	0.092 (L/360)	0.049 (5%)	L	L
TL Defl inch	0.006 (L/5338)	1'4 3/8"	0.138 (L/240)	0.045 (4%)	D+L	L

## Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Left Header: SPF, Thickness: 2 1/2"
- Right Header: SPF, Thickness: 2 1/2"
- Girders are designed to be supported on the bottom edge only.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- If sheathing is not attached to the bottom flange, bottom flange must be laterally braced at maximum 2' o.c.



JULY 19, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 2-11-12	0-9-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-10-8		Far Face	109 lb	290 lb	0 lb	0 lb	J5
3	Point	2-2-8		Far Face	104 lb	277 lb	0 lb	0 lb	J5

## Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

## Lumber

- Dry service conditions, unless noted otherwise
- Joist not to be treated with fire retardant or corrosive chemicals

## chemicals

## Handling &amp; Installation

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

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CCMC: 12787

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This design is valid until 4/17/2026



Client: GREENPARK  
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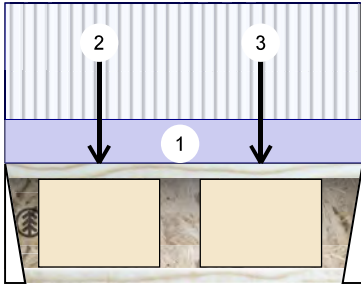
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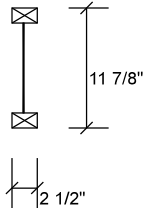
F2-B AJS 140 11.875" - PASSED



Level: Ground Floor



1 Hanger (LF2511) 0-2-0  
2 Hanger (LF2511) 0-2-0  
2'11 7/16"  
2'11 7/16"



### Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	1	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	No
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II	Vibration:	Not Checked
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

### Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	298	112	0	0
2	Vertical	290	108	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	37%	140 / 447	587	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	35%	135 / 435	570	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	404 ft-lb	1'8 11/16"	5305 ft-lb	0.076 (8%)	1.25D+1.5L	L
Unbraced	404 ft-lb	1'8 11/16"	5305 ft-lb	0.076 (8%)	1.25D+1.5L	L
Shear	580 lb	1 1/4"	2350 lb	0.247 (25%)	1.25D+1.5L	L
Perm Defl in. (L/22356)	0.001	1'6 9/16"	0.091 (L/360)	0.016 (2%)	D	Uniform
LL Defl inch	0.004 (L/8367)	1'6 5/8"	0.091 (L/360)	0.043 (4%)	L	L
TL Defl inch	0.005 (L/6088)	1'6 5/8"	0.137 (L/240)	0.039 (4%)	D+L	L



JULY 19, 2023

### Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Left Header: SPF, Thickness: 2 1/2"
- Right Header: SPF, Thickness: 2 1/2"
- Girders are designed to be supported on the bottom edge only.
- If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.
- If sheathing is not attached to the bottom flange, bottom flange must be laterally braced at maximum 2' o.c.

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0 to 2-11-7	0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-9-5		Near Face	92 lb	245 lb	0 lb	0 lb	J4
3	Point	2-1-5		Near Face	94 lb	252 lb	0 lb	0 lb	J4

### Notes

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### Lumber

- Dry service conditions, unless noted otherwise
- Joist not to be treated with fire retardant or corrosive chemicals

chemicals

### Handling & Installation

- Joist flanges must not be cut or drilled
- Refer to latest copy of the Joist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Joists must not be used
- Design assumes top flange to be laterally restrained by attached sheathing or as specified in engineering notes.

- Provide lateral support at bearing points to avoid lateral displacement and rotation
- Web stiffeners for point load as shown Minimum point load bearing length >= 3.5 inches
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