



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

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

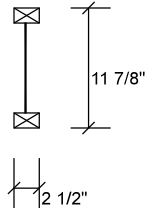
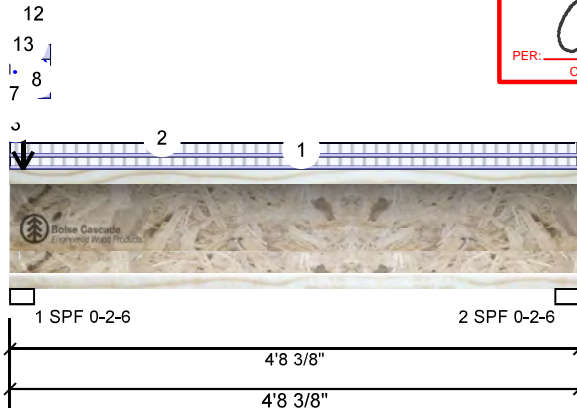
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MHP 23034

F3 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	190	489	383	0
2	Vertical	127	48	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	82%	611 / 764	1375	L	1.25D+1.5S +L
2 - SPF	2.375"	Vert	17%	60 / 191	251	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	262 ft-lb	2'4 1/16"	4721 ft-lb	0.056 (6%)	1.25D+1.5L	L
Unbraced	262 ft-lb	2'4 1/16"	4721 ft-lb	0.056 (6%)	1.25D+1.5L	L
Shear	277 lb	1 5/8"	2092 lb	0.132 (13%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/40028)	2'3 7/8"	0.147 (L/360)	0.009 (1%)	D	Uniform
LL Defl inch	0.003 (L/15454)	2'4 1/8"	0.147 (L/360)	0.023 (2%)	L+0.5S	L
TL Defl inch	0.005 (L/11150)	2'4 1/16"	0.221 (L/240)	0.022 (2%)	D+L+0.5S	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.
- 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 bearings.

READ ALL NOTES ON THIS PAGE AND ON THE
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 4-8-6	0-7-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 4-8-6	0-8-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Part. Uniform	0-0-0 to 0-1-2		Top	15 PLF	0 PLF	40 PLF	0 PLF	
4	Part. Uniform	0-0-0 to 0-1-2		Top	20 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
5	Tapered Start	0-0-0		Top	2 PLF	6 PLF	0 PLF	0 PLF	

Continued on page 2...

Notes

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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-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

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





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MHP 23034

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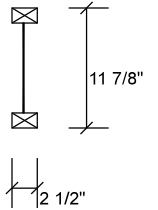
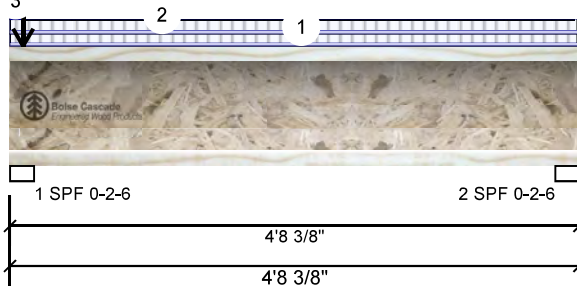
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Nov 14 2023

PER: 
CHIEF BUILDING OFFICIAL

Level: Ground Floor

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13
8
7



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	End	0-1-2			2 PLF	6 PLF	0 PLF	0 PLF	
6	Part. Uniform	0-0-0 to 0-1-2		Top	1 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
7	Part. Uniform	0-0-0 to 0-1-2		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
8	Part. Uniform	0-0-0 to 0-4-0		Top	30 PLF	0 PLF	80 PLF	0 PLF	
9	Part. Uniform	0-0-0 to 0-4-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
10	Tapered Start	0-0-0		Top	5 PLF	13 PLF	0 PLF	0 PLF	
	End	0-4-0			5 PLF	13 PLF	0 PLF	0 PLF	
11	Part. Uniform	0-0-0 to 0-4-0		Top	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
12	Part. Uniform	0-0-0 to 0-4-0		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
13	Point	0-1-5		Top	382 lb	58 lb	353 lb	0 lb	B3
	Bearing Length	0-1-8							



JULY 19, 2023

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Lumber

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

chemicals

Handling & Installation

1. Ljoist flanges must not be cut or drilled
2. Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
3. Damaged Ljoists must not be used
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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

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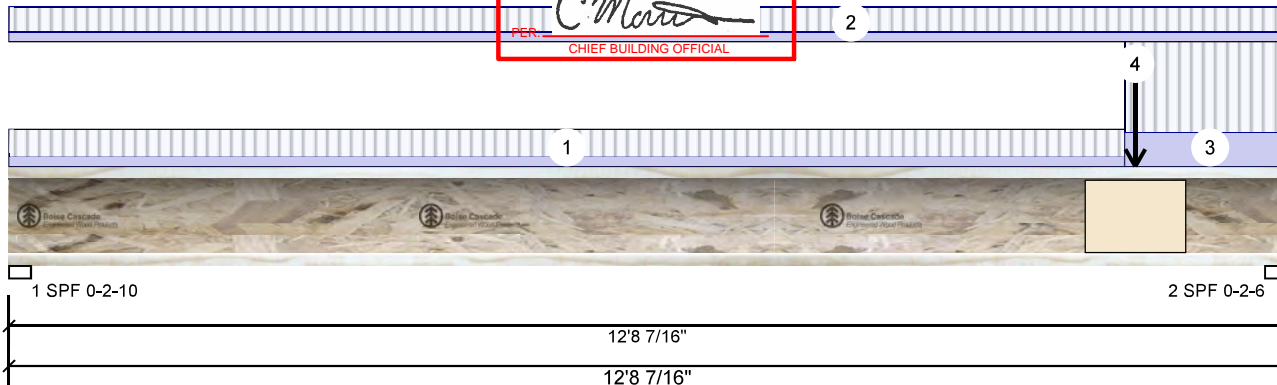
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F5 AJS 140 11.875" - PASSED

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Nov 14 2023
PER: *Chen*
CHIEF BUILDING OFFICIAL

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	269	101	0	0
2	Vertical	557	208	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	Vert	30%	126 / 403	529	L	1.25D+1.5L
2 - SPF	2.375"	Vert	65%	260 / 837	1097	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1855 ft-lb	7'3 15/16"	5305 ft-lb	0.350 (35%)	1.25D+1.5L	L
Unbraced	1855 ft-lb	7'3 15/16"	5305 ft-lb	0.350 (35%)	1.25D+1.5L	L
Shear	1075 lb	12'6 13/16"	2350 lb	0.457 (46%)	1.25D+1.5L	L
Perm Defl in.	0.037 (L/3987)	6'8"	0.414 (L/360)	0.090 (9%)	D	Uniform
LL Defl inch	0.100 (L/1493)	6'8"	0.414 (L/360)	0.241 (24%)	L	
TL Defl inch	0.137 (L/1086)	6'8"	0.620 (L/240)	0.221 (22%)	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 11'2 9/16" o.c.

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 11-1-5	0-5-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 12-8-7	0-5-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	11-1-5 to 12-8-7	1-6-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	11-2-9		Far Face	108 lb	290 lb	0 lb	0 lb	F2

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
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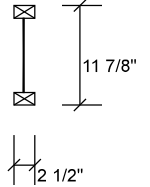
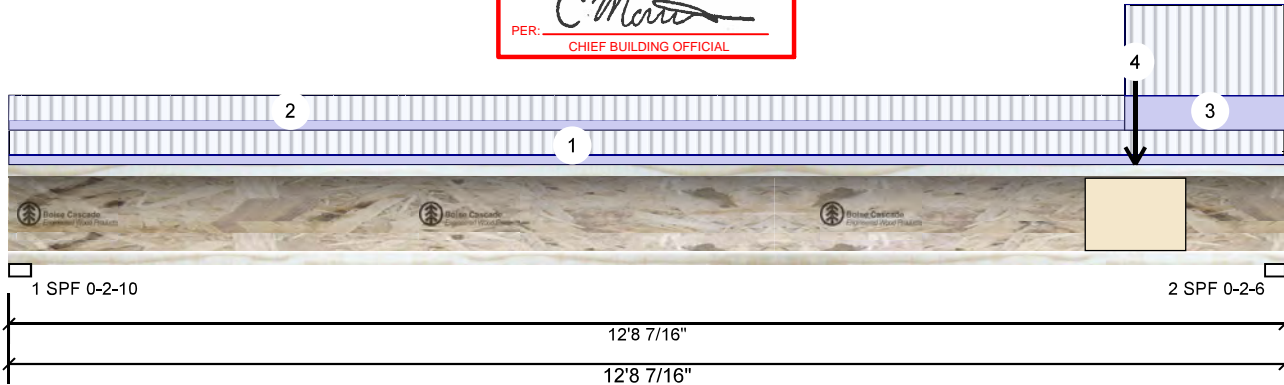
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MHP 23034

F5-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	259	97	0	0
2	Vertical	556	209	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	Vert	29%	121 / 389	510	L	1.25D+1.5L
2 - SPF	2.375"	Vert	65%	261 / 834	1095	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1809 ft-lb	7'4 13/16"	5305 ft-lb	0.341 (34%)	1.25D+1.5L	L
Unbraced	1809 ft-lb	7'4 13/16"	5305 ft-lb	0.341 (34%)	1.25D+1.5L	L
Shear	1074 lb	12'6 13/16"	2350 lb	0.457 (46%)	1.25D+1.5L	L
Perm Defl in.	0.036 (L/4082)	6'8 3/16"	0.414 (L/360)	0.088 (9%)	D	Uniform
LL Defl inch	0.097 (L/1532)	6'8 3/16"	0.414 (L/360)	0.235 (24%)	L	
TL Defl inch	0.134 (L/1114)	6'8 3/16"	0.620 (L/240)	0.215 (22%)	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.
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 12-8-7	0-5-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 11-1-5	0-5-5	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	11-1-5 to 12-8-7	1-6-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	11-2-9		Near Face	112 lb	298 lb	0 lb	0 lb	F2

Notes

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Lumber

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chemicals

Handling & Installation

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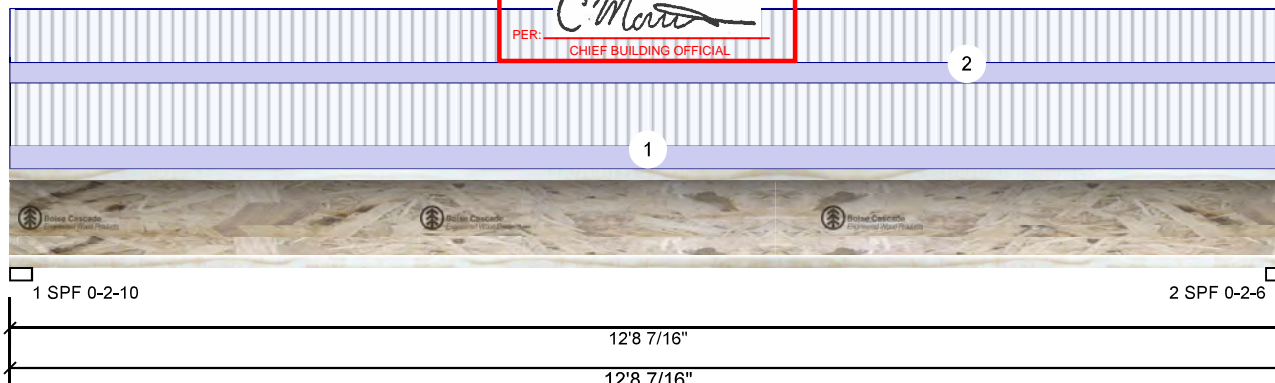
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REPRESENTATION OF THE CITY OF OSHAWA
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Level: Ground Floor



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	365	137	0	0
2	Vertical	364	136	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.625"	Vert	41%	171 / 548	719	L	1.25D+1.5L
2 - SPF	2.375"	Vert	43%	171 / 545	716	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2175 ft-lb	6'4 5/16"	5305 ft-lb	0.410 (41%)	1.25D+1.5L	L
Unbraced	2175 ft-lb	6'4 5/16"	5305 ft-lb	0.410 (41%)	1.25D+1.5L	L
Shear	701 lb	12'6 13/16"	2350 lb	0.298 (30%)	1.25D+1.5L	L
Perm Defl in.	0.043 (L/3467)	6'4 3/8"	0.414 (L/360)	0.104 (10%)	D	Uniform
LL Defl inch	0.115 (L/1300)	6'4 3/8"	0.414 (L/360)	0.277 (28%)	L	
TL Defl inch	0.158 (L/945)	6'4 3/8"	0.620 (L/240)	0.254 (25%)	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.
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2	Tie-In	0-0-0 to 12-8-7	0-8-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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Lumber

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- Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

- Ljoist flanges must not be cut or drilled
- Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
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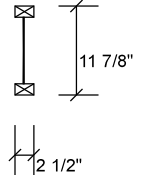
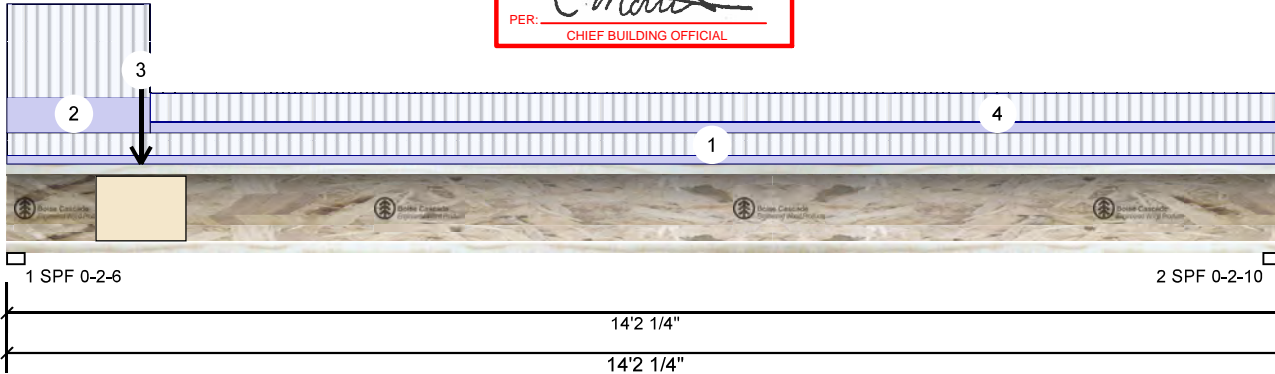
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General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	605	227	0	0
2	Vertical	283	106	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	71%	284 / 907	1191	L	1.25D+1.5L
2 - SPF	2.625"	Vert	32%	133 / 425	558	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2172 ft-lb	6'1 1/8"	5305 ft-lb	0.409 (41%)	1.25D+1.5L	L
Unbraced	2172 ft-lb	6'1 1/8"	5305 ft-lb	0.409 (41%)	1.25D+1.5L	L
Shear	1170 lb	1 5/8"	2350 lb	0.498 (50%)	1.25D+1.5L	L
Perm Defl in.	0.053 (L/3118)	6'9 5/16"	0.463 (L/360)	0.115 (12%)	D	Uniform
LL Defl inch	0.142 (L/1171)	6'9 3/8"	0.463 (L/360)	0.308 (31%)	L	
TL Defl inch	0.196 (L/851)	6'9 3/8"	0.695 (L/240)	0.282 (28%)	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.
- 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 12'8 3/8" o.c.

READ ALL NOTES ON THIS PAGE AND ON THE
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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 14-2-4	0-4-10	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 1-7-2	1-7-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-5-14		Near Face	121 lb	321 lb	0 lb	0 lb	F2
4	Tie-In	1-7-2 to 14-2-4	0-5-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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
- Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

- Ljoist flanges must not be cut or drilled
- Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Ljoists 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

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



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 #:

Page 28 of 36

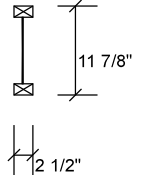
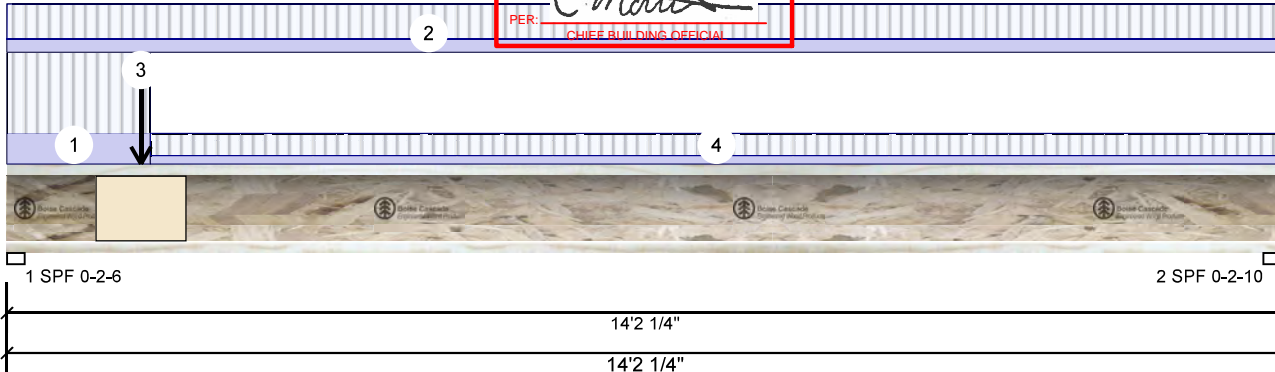
F6-A AJS 140 11.875" - PASSED

SEAL OF THE CITY OF OSHAWA
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Nov 14 2023

PER: *Ch...*
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	693	260	0	0
2	Vertical	356	134	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	81%	326 / 1039	1365	L	1.25D+1.5L
2 - SPF	2.625"	Vert	40%	167 / 534	701	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2666 ft-lb	6'3 5/16"	5305 ft-lb	0.503 (50%)	1.25D+1.5L	L
Unbraced	2666 ft-lb	6'3 5/16"	5305 ft-lb	0.503 (50%)	1.25D+1.5L	L
Shear	1341 lb	1 5/8"	2350 lb	0.571 (57%)	1.25D+1.5L	L
Perm Defl in.	0.066 (L/2543)	6'9 15/16"	0.463 (L/360)	0.142 (14%)	D	Uniform
LL Defl inch	0.175 (L/955)	6'9 15/16"	0.463 (L/360)	0.377 (38%)	L	
TL Defl inch	0.240 (L/694)	6'9 15/16"	0.695 (L/240)	0.346 (35%)	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.
- 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 12'8 3/8" o.c.

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-7-2	1-7-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 14-2-4	0-8-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-5-14		Far Face	127 lb	337 lb	0 lb	0 lb	F2
4	Tie-In	1-7-2 to 14-2-4	0-5-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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
- Ljoist not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

- Ljoist flanges must not be cut or drilled
- Refer to latest copy of the Ljoist product information details for framing details, stiffener tables, web hole chart, bridging details, multi-ply fastening details and handling/erection details
- Damaged Ljoists 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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www.bc.com
CCMC: 12787

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

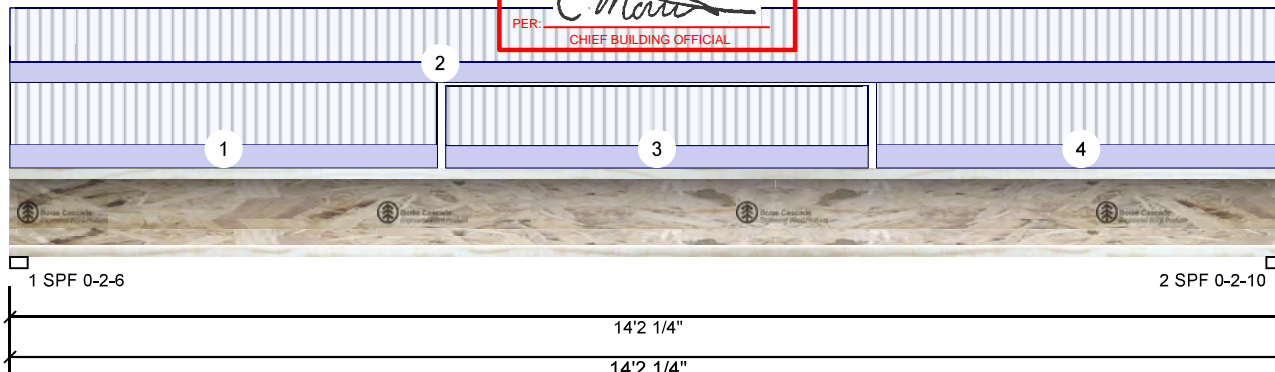
Date: 7/18/2023
Input by: W C
Job Name: VILLA 2-3 STD
Project #:

Page 29 of 36

F6-B 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 CBC 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	401	150	0	0
2	Vertical	402	151	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	2.375"	Vert	47%	188 / 602	790	L	1.25D+1.5L
2 - SPF	2.625"	Vert	46%	188 / 604	792	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2671 ft-lb	7'1"	5305 ft-lb	0.503 (50%)	1.25D+1.5L	L
Unbraced	2671 ft-lb	7'1"	5305 ft-lb	0.503 (50%)	1.25D+1.5L	L
Shear	774 lb	1 5/8"	2350 lb	0.329 (33%)	1.25D+1.5L	L
Perm Defl in.	0.064 (L/2593)	7'1 1/16"	0.463 (L/360)	0.139 (14%)	D	Uniform
LL Defl inch	0.171 (L/972)	7'1 1/16"	0.463 (L/360)	0.370 (37%)	L	
TL Defl inch	0.236 (L/707)	7'1 1/16"	0.695 (L/240)	0.339 (34%)	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 bearings.



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 4-9-1	0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 14-2-4	0-8-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	4-10-3 to 9-6-8	0-8-14	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	9-7-10 to 14-2-4	0-9-3	Top	15 PSF	40 PSF	0 PSF	0 PSF	

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-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 & WOC
Project #:

Page 30 of 36

FH1 Versa-Lam LVL 2.1E 3100 SP

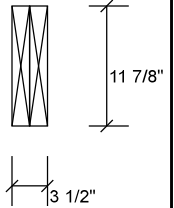
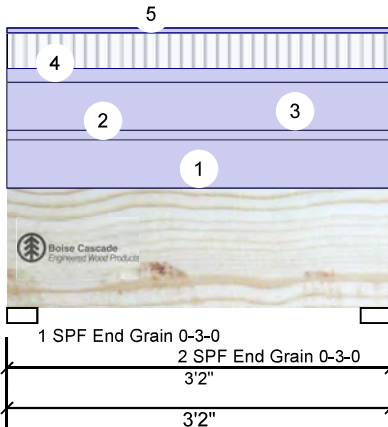
1.750' X 11.875' 2-Ply

PASSED

Level: Ground Floor

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Nov 14 2023

PER: 
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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	48	182	0	0
2	Vertical	48	182	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	4%	227 / 71	299	L	1.25D+1.5L
2 - SPF End Grain	3.000"	Vert	4%	227 / 71	299	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	184 ft-lb	1'7"	25128 ft-lb	0.007 (1%)	1.25D+1.5L	L
Unbraced	184 ft-lb	1'7"	25128 ft-lb	0.007 (1%)	1.25D+1.5L	L
Shear	202 lb	1'11 1/8"	9384 lb	0.022 (2%)	1.25D+1.5L	L
Perm Defl in. (L/183529)	0.000	1'7"	0.093 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch (L/702510)	0.000	1'7"	0.093 (L/360)	0.001 (0%)	L	L
TL Defl inch (L/145514)	0.000	1'7"	0.140 (L/240)	0.002 (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 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.



JULY 19, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-2-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-2-0		Near Face	8 PLF	0 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 3-2-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Tapered Start	0-0-0		Near Face	11 PLF	30 PLF	0 PLF	0 PLF	

Continued on page 2...

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

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
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:
Address: ZADORRA ESTATES
OSHAWA, ON

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

Page 31 of 36

FH1 Versa-Lam LVL 2.1E 3100 SP

1.750' X 11.875' 2-Ply

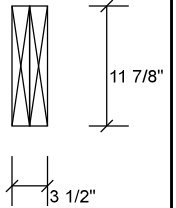
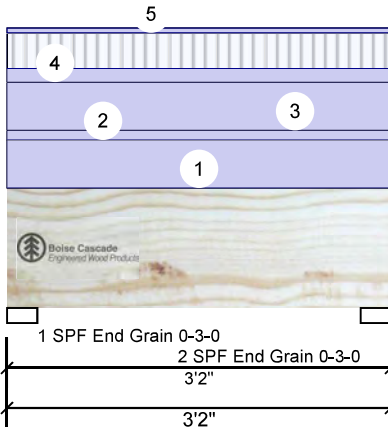
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Level: Ground Floor

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Nov 14 2023

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CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	End	3-2-0			11 PLF	30 PLF	0 PLF	0 PLF	
5	Part. Uniform	0-0-0 to 3-2-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
	Self Weight				12 PLF				



JULY 19, 2023

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

Page 18 of 49

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	84-0
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	3	2	6	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
ZADORRA ESTATES
OSHAWA, ON

Shipping
RALPH MIRIGELLO

Sales Rep
RALPH MIRIGELLO

Designer
W.C.

Plotted
July 18, 2023

Layout Name
VILLA 2-3 DC

Job Path
8:\CUSTOMERS\GREENPARK\ZADORRA ESTATES
MODELS\BILLA 2VILLA 2-3RF-VILLA 2-3DC\BILLA
2-3 DC.dwg

DESIGN CRITERIA

Ground Floor

Design Method
Bulking Code

Design Method
Bulking Code

Design Method
Bulking Code

Design Method
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Design Method
Bulking Code



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

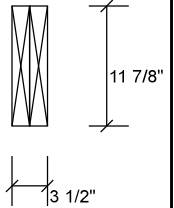
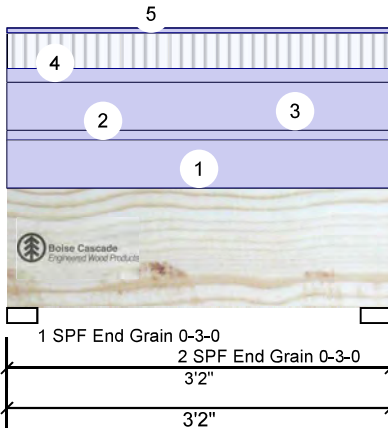
Date: 7/18/2023
Input by: W C
Job Name: VILLA 2-3 DC
Project #:

Page 1 of 7

FH1 Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply - PASSED

Level: Ground Floor



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	48	182	0	0
2	Vertical	48	182	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	4%	227 / 71	299	L	1.25D+1.5L
2 - SPF End Grain	3.000"	Vert	4%	227 / 71	299	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	184 ft-lb	1'7"	25128 ft-lb	0.007 (1%)	1.25D+1.5L	L
Unbraced	184 ft-lb	1'7"	25128 ft-lb	0.007 (1%)	1.25D+1.5L	L
Shear	202 lb	1'11 1/8"	9384 lb	0.022 (2%)	1.25D+1.5L	L
Perm Defl in. (L/183529)	0.000	1'7"	0.093 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch (L/702510)	0.000	1'7"	0.093 (L/360)	0.001 (0%)	L	L
TL Defl inch (L/145514)	0.000	1'7"	0.140 (L/240)	0.002 (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 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.



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	Part. Uniform	0-0-0 to 3-2-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-2-0		Near Face	8 PLF	0 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 3-2-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Tapered Start	0-0-0		Near Face	11 PLF	30 PLF	0 PLF	0 PLF	

Continued on page 2...

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
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:
Address: ZADORRA ESTATES
OSHAWA, ON

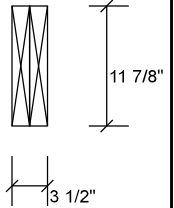
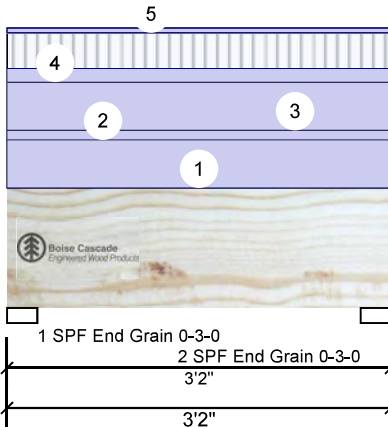
Date: 7/18/2023
Input by: W C
Job Name: VILLA 2-3 DC
Project #:

Page 2 of 7

FH1 Versa-Lam LVL 2.1E 3100 SP

1.750' X 11.875' 2-Ply - PASSED

Level: Ground Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	End	3-2-0			11 PLF	30 PLF	0 PLF	0 PLF	
5	Part. Uniform	0-0-0 to 3-2-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
	Self Weight				12 PLF				



JULY 19, 2023

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CCMC: 12472

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This design is valid until 4/17/2026



Date: 7/18/2023
Input by: WC
Job Name: VILLA 2-3 DO
Project #: 2303

Job Name: VILLA 2-3 DC
Project #: 23034

Versa-Lam LVL 2.1E 3100 SP 1.750" X 11.875" 2-Plv - PASSED Level: Ground Floor

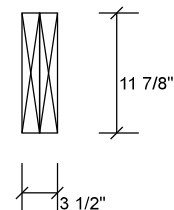
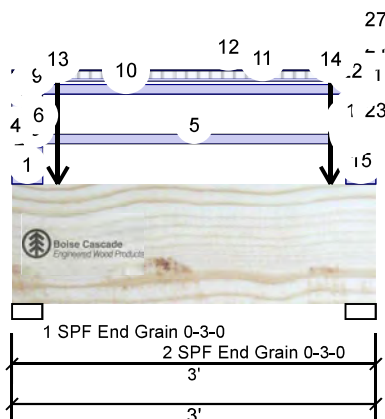
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Nov 14 2023

Nov 14 2023

PER: _____
CHIEF BUILDING OFFICIAL



Unfactored Reactions UNPATTERNED lb (Uplift)

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		

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	76	410	239	0
2	Vertical	75	410	239	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	9%	512 / 434	946	L	1.25D+1.5S +L
2 - SPF End Grain	3.000"	Vert	9%	512 / 434	946	L	1.25D+1.5S +L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	213 ft-lb	1'5 15/16"	23005 ft-lb	0.009 (1%)	1.25D+1.5L	L
Unbraced	213 ft-lb	1'5 15/16"	23005 ft-lb	0.009 (1%)	1.25D+1.5L	L
Shear	222 lb	1'9 1/8"	8591 lb	0.026 (3%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/154042)	1'6"	0.088 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch	0.000 (L/359167)	1'6"	0.088 (L/360)	0.001 (0%)	S+0.5L	L
TL Defl inch	0.000 (L/107806)	1'6"	0.131 (L/240)	0.002 (0%)	D+S+0.5L	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.
- 2 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.
- 3 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.
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JULY 19, 2023

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Notes

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Lumber

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chemicals

Handling & Installation

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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

Manufacturer Info

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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:
Address: ZADORRA ESTATES
OSHAWA, ON

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

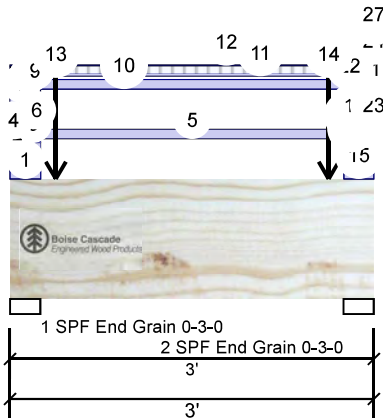
Page 4 of 7

MHP 23034

Versa-Lam LVL 2.1E 3100 SP

1.750' X 11.875' 2-Ply - PASSED

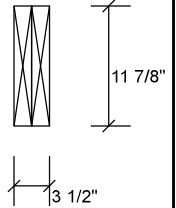
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 0-3-1		Top	30 PLF	0 PLF	80 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 0-3-1		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Tapered Start	0-0-0		Top	4 PLF	10 PLF	0 PLF	0 PLF	
	End	0-3-1			4 PLF	10 PLF	0 PLF	0 PLF	
4	Part. Uniform	0-0-0 to 0-3-1		Top	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
5	Part. Uniform	0-0-0 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Part. Uniform	0-0-0 to 0-3-1		Near Face	30 PLF	0 PLF	80 PLF	0 PLF	
7	Part. Uniform	0-0-0 to 0-3-1		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
8	Tapered Start	0-0-0		Near Face	4 PLF	10 PLF	0 PLF	0 PLF	
	End	0-3-1			4 PLF	10 PLF	0 PLF	0 PLF	
9	Part. Uniform	0-0-0 to 0-3-1		Near Face	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
10	Part. Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
11	Tapered Start	0-0-0		Near Face	12 PLF	31 PLF	0 PLF	0 PLF	
	End	3-0-0			12 PLF	31 PLF	0 PLF	0 PLF	
12	Part. Uniform	0-0-0 to 3-0-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
13	Point	0-4-9		Top	210 lb	24 lb	199 lb	0 lb	Header Column Header Column
	Bearing Length	0-3-8							
14	Point	2-7-9		Top	210 lb	24 lb	199 lb	0 lb	Header Column Header Column
	Bearing Length	0-3-8							
15	Part. Uniform	2-9-1 to 3-0-0		Top	30 PLF	0 PLF	80 PLF	0 PLF	
16	Part. Uniform	2-9-1 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
17	Tapered Start	2-9-1		Top	4 PLF	10 PLF	0 PLF	0 PLF	
	End	3-0-0			4 PLF	10 PLF	0 PLF	0 PLF	
18	Part. Uniform	2-9-1 to 3-0-0		Top	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
19	Part. Uniform	2-9-1 to 3-0-0		Near Face	30 PLF	0 PLF	80 PLF	0 PLF	
20	Part. Uniform	2-9-1 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
21	Tapered Start	2-9-1		Near Face	4 PLF	10 PLF	0 PLF	0 PLF	
	End	3-0-0			4 PLF	10 PLF	0 PLF	0 PLF	

Continued on page 3...

Notes

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Lumber

1. Dry service conditions, unless noted otherwise
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chemicals

Handling & Installation

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2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
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4. Design assumes top edge is laterally restrained
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Client: GREENPARK
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Address: ZADORRA ESTATES
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Date: 7/18/2023
Input by: W C
Job Name: VILLA 2-3 DC
Project #:

Page 5 of 7

MHP 23034

Versa-Lam LVL 2.1E 3100 SP

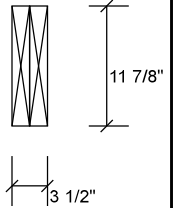
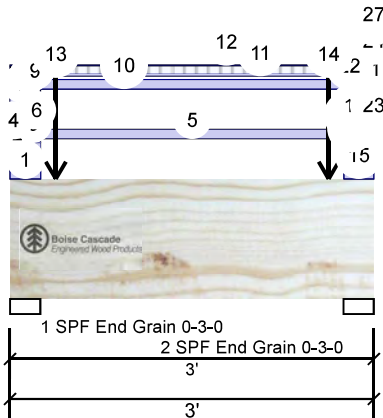
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Level: Ground Floor

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...Continued from page 2

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
22	Part. Uniform	2-9-1 to 3-0-0		Near Face	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
23	Part. Uniform	3-0-0 to 3-0-0		Near Face	61 PLF	0 PLF	159 PLF	0 PLF	
24	Part. Uniform	3-0-0 to 3-0-0		Near Face	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
25	Tapered Start	3-0-0		Near Face	7 PLF	19 PLF	0 PLF	0 PLF	
	End	3-0-0			7 PLF	19 PLF	0 PLF	0 PLF	
26	Part. Uniform	3-0-0 to 3-0-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
27	Part. Uniform	3-0-0 to 3-0-0		Near Face	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				12 PLF				



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Lumber

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chemicals

Handling & Installation

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Client: GREENPARK
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Project #:

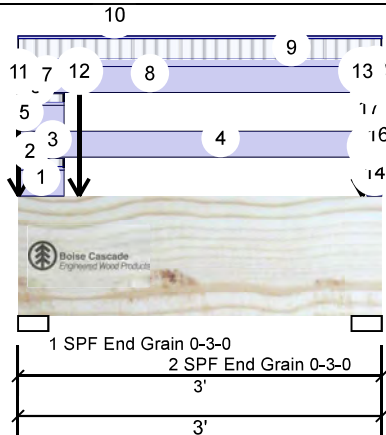
Page 6 of 7

MHP 23034

Versa-Lam LVL 2.1E 3100 SP

1.750' X 11.875' 2-Ply - PASSED

Level: Ground Floor

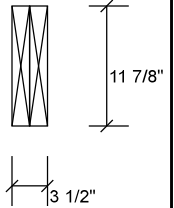


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Member Information

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	84	439	252	0
2	Vertical	86	449	252	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	10%	549 / 462	1011	L	1.25D+1.5S +L
2 - SPF End Grain	3.000"	Vert	10%	562 / 464	1025	L	1.25D+1.5S +L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	194 ft-lb	1'4 3/16"	23005 ft-lb	0.008 (1%)	1.25D+1.5L	L
Unbraced	194 ft-lb	1'4 3/16"	23005 ft-lb	0.008 (1%)	1.25D+1.5L	L
Shear	220 lb	1'9 1/8"	8591 lb	0.026 (3%)	1.25D+1.5L	L
Perm Defl in. (L/179787)	0.000	1'5 5/16"	0.088 (L/360)	0.002 (0%)	D	Uniform
LL Defl inch (L/651480)	0.000	1'5 7/16"	0.088 (L/360)	0.001 (0%)	L+0.5S	L
TL Defl inch (L/140904)	0.000	1'5 3/8"	0.131 (L/240)	0.002 (0%)	D+L+0.5S	L

Design Notes

- 1 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.
- 2 Performed Secondary Bearing Check (CSA 086-14 6.5.7.3). Assumed point load size: beam width X 3.
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- 7 Top must be continuously laterally braced.
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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 DC
Project #:

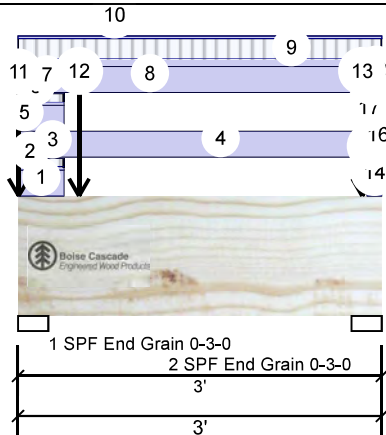
Page 7 of 7

MHP 23034

Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply - PASSED

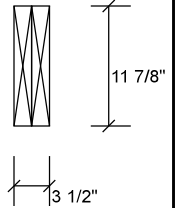
Level: Ground Floor



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USED IN THE DESIGN OF THIS COMPONENT.



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 0-4-9		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Tapered Start	0-0-0		Top	5 PLF	13 PLF	0 PLF	0 PLF	
	End	0-4-9			5 PLF	13 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 0-4-9		Top	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
4	Part. Uniform	0-0-0 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
5	Part. Uniform	0-0-0 to 0-4-9		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Tapered Start	0-0-0		Near Face	5 PLF	13 PLF	0 PLF	0 PLF	
	End	0-4-9			5 PLF	13 PLF	0 PLF	0 PLF	
7	Part. Uniform	0-0-0 to 0-4-9		Near Face	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
8	Part. Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
9	Tapered Start	0-0-0		Near Face	12 PLF	31 PLF	0 PLF	0 PLF	
	End	3-0-0			12 PLF	31 PLF	0 PLF	0 PLF	
10	Part. Uniform	0-0-0 to 3-0-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
11	Point	0-0-1		Top	122 lb	0 lb	252 lb	0 lb	Header Column Header Column
	Bearing Length	0-3-8							
12	Point	0-6-1		Top	137 lb	32 lb	0 lb	0 lb	Header Column Header Column
	Bearing Length	0-3-8							
13	Point	2-10-1		Top	259 lb	32 lb	252 lb	0 lb	Header Column Header Column Header Column
	Bearing Length	0-3-8							
14	Part. Uniform	2-10-9 to 3-0-0		Top	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
15	Tapered Start	2-10-9		Top	5 PLF	13 PLF	0 PLF	0 PLF	
	End	3-0-0			5 PLF	13 PLF	0 PLF	0 PLF	
16	Part. Uniform	2-10-9 to 3-0-0		Top	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
17	Part. Uniform	2-10-9 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
18	Tapered Start	2-10-9		Near Face	5 PLF	13 PLF	0 PLF	0 PLF	
	End	3-0-0			5 PLF	13 PLF	0 PLF	0 PLF	
19	Part. Uniform	2-10-9 to 3-0-0		Near Face	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
	Self Weight				12 PLF				

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

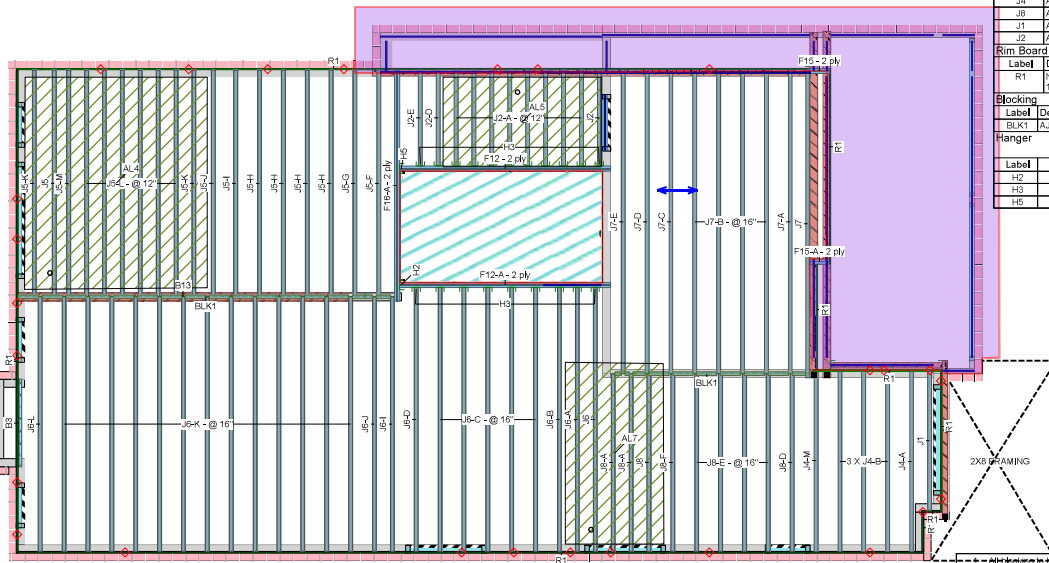


CORPORATION OF THE CITY OF OSHAWA
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Nov 14 2023
PER: *C. M...*
CHIEF BUILDING OFFICIAL

ENG-M0723-118-KTZ-GREENPARK-ZADORRA ESTATES-VILLA 2-3

Page 14 of 49

Second Floor



Second Floor LVL/LSL (Flush)						
Label	Description	Width	Depth	Qty	Pies	Pcs Length
F16	Versa-Lam LVL 2.1E 3100 SP	1,75	11,875	1	2	14'-0"
F12	Versa-Lam LVL 2.1E 3100 SP	1,75	11,875	2	2	12'-0"
F15	Versa-Lam LVL 2.1E 3100 SP	1,75	11,875	2	2	2'-0"
Joist (Flush)						
Label	Description	Width	Depth	Pcs	Length	
J7	AJS 140	2,5	11,875	9	18'-0"	
J6	AJS 140	2,5	11,875	25	18'-0"	
J5	AJS 140	2,5	11,875	18	14'-0"	
J4	AJS 140	2,5	11,875	5	12'-0"	
J8	AJS 140	2,5	11,875	9	10'-0"	
J1	AJS 140	2,5	11,875	1	8'-0"	
J2	AJS 140	2,5	11,875	11	6'-0"	
Rim Board						
Label	Description	Width	Depth	Pcs	Length	
R1	Norbord Rimboard Plus 1.125 X 11,875	1,125	11,875	14	12'-0"	
Blocking						
Label	Description	Width	Depth	Qty	Pcs	Length
BLK1	AJS 140	2,5	11,875	Varies	27'-0"	
Hanger						
Label	Pcs	Beam/Girder		Supported Member		
H2	1	HH/S410		10 16d		
H3	20	LP2511		1 #8x1 1/4WS		
H5	1	LP3511		2 #8x1 1/4WS		

JOB INFORMATION	
Builder	GREENPARK
Project	ZADORRA ESTATES OSHAWA, ON
Sales Rep	RALPH MIRIGELLO
Designer	W.C.
Plotted	July 18, 2023
Layout Name	VILLA 2-3 ALL OPT
Job Path	S:\CUSTOMER\GREENPARK\ZADORRA ESTATES MODELS\BILL 2VILLA 2-3RF-VILLA 2-3VILLA 2-3 STD.rvt
DESIGN CRITERIA	
Second Floor	LSO (Canada)
Design Method	NBCC 2015
Building Code	IBC 2012(2020 Update)
Floor Loads	
Live	40
Dead	15
Deflection Joist	
LL Span /	360
TL Span /	240
Deflection Flush Girder	
LL Span /	360
TL Span /	240
Deflection Dropped Girder	
LL Span /	360
TL Span /	240
Deflection Header	
LL Span /	360
TL Span /	240
Decking	OSB
Thickness	5/8"
Fastener	Nailed & Glued
CCMC References	Boise - 12472-R, 12787-R LP - 12412-R, Roseburg - 13310-R Forex - 14035-R
Kott Inc.	3228 Wood Dr. Ottawa 14 Anderson Blvd. Uxbridge Ontario 613-838-2775 / 905-642-4400
Legend	
WS	Web Stiffener
WS	In Hanger Label Denotes Web Stiffener
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	

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)

- Blocking is cut from 12" joists
- 2' & 4' Lengths to be cut from 8' Length, 6' lengths to be cut from 12' Length
- Ends of joists to be laterally supported
- Packing of Steel beams and attachment by others
- Shower and water closet flange locations are approximate only, consult architectural drawing for exact locations
- Beams identified as "B" are dropped and supplied by others
- Install 2x4 blocking @ 24" o/c under parallel non-loadbearing walls
- Load transfer blocks to be installed under all point loads
- Refer to Multiple Member Connection Detail for ply nailing or bolting requirements
- Hangers and Fasteners to be installed as per manufacturer
- Framing shown on this layout may deviate from architectural drawings, Arch / Eng to review and approve the deviation prior to construction.
- Multi ply beams with side loading to have all fasteners installed with the head on the side of the applied load
- Confirmation of adequate support & anchorage of components is the responsibility of the building designer, suggested uplift connectors are as shown
- 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



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Project #:

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MHP 23034

F12 Versa-Lam LVL 2.1E 3100 SP 1.750' X 11.875' OF OSAL 2-Ply - PASSED Level: Second Floor



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	545	308	0	0
2	Vertical	631	360	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	16%	385 / 818	1203	L	1.25D+1.5L
2 - SPF	5.500"	Vert	12%	450 / 946	1397	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3671 ft-lb	5'9 1/16"	35392 ft-lb	0.104 (10%)	1.25D+1.5L	L
Unbraced	3671 ft-lb	5'9 1/16"	35392 ft-lb	0.104 (10%)	1.25D+1.5L	L
Shear	1321 lb	10'3 15/16"	13217 lb	0.100 (10%)	1.25D+1.5L	L
Perm Defl in.	0.021 (L/6304)	5'9 1/16"	0.376 (L/360)	0.057 (6%)	D	Uniform
LL Defl inch	0.037 (L/3622)	5'8 7/8"	0.376 (L/360)	0.099 (10%)	L	L
TL Defl inch	0.059 (L/2301)	5'9"	0.564 (L/240)	0.104 (10%)	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 must be continuously laterally braced.
- 7 Bottom must have sheathing attached or be continuously braced.
- 8 Lateral slenderness ratio based on full section width.



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	Point	1-1-12		Far Face	45 lb	119 lb	0 lb	0 lb	J2
2	Point	2-1-12		Far Face	41 lb	104 lb	0 lb	0 lb	J2
3	Part. Uniform	2-7-12 to 10-7-12		Far Face	49 PLF	104 PLF	0 PLF	0 PLF	
4	Point	11-1-12		Far Face	51 lb	121 lb	0 lb	0 lb	J2
	Self Weight				12 PLF				

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

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

Kott Inc.
3228 Moodie Dr, Ottawa, Ontario
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This design is valid until 4/17/2026



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OSHAWA, ON

Date: 7/18/2023
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Job Name: VILLA 2-3 STD
Project #:

Page 33 of 36

MHP 23034

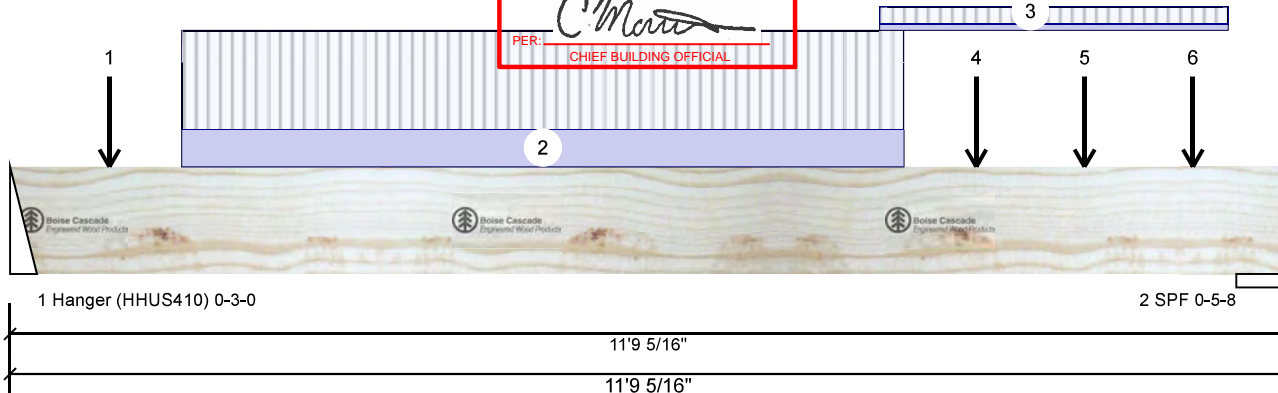
F12-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

PASSED

Level: Second Floor

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PER: *Chen*
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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	1631	683	0	0
2	Vertical	1820	784	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	29%	854 / 2446	3300	L	1.25D+1.5L
2 - SPF	5.500"	Vert	31%	980 / 2730	3710	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9495 ft-lb	5'10 1/2"	35392 ft-lb	0.268 (27%)	1.25D+1.5L	L
Unbraced	9495 ft-lb	5'10 1/2"	35392 ft-lb	0.268 (27%)	1.25D+1.5L	L
Shear	3613 lb	10'3 15/16"	13217 lb	0.273 (27%)	1.25D+1.5L	L
Perm Defl in.	0.044 (L/3056)	5'9 13/16"	0.373 (L/360)	0.118 (12%)	D	Uniform
LL Defl inch	0.105 (L/1280)	5'9 3/4"	0.373 (L/360)	0.281 (28%)	L	
TL Defl inch	0.149 (L/902)	5'9 3/4"	0.560 (L/240)	0.266 (27%)	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 have sheathing attached or be continuously braced.
- Lateral slenderness ratio based on full section width.



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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-11-0		Near Face	144 lb	384 lb	0 lb	0 lb	J6
2	Part. Uniform	1-7-0 to 8-3-0		Near Face	109 PLF	291 PLF	0 PLF	0 PLF	
3	Part. Uniform	8-0-5 to 11-2-15		Top	19 PLF	50 PLF	0 PLF	0 PLF	
4	Point	8-11-0		Near Face	131 lb	339 lb	0 lb	0 lb	J6

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
- LVL not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & 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

6. 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





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

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

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MHP 23034

F12-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

PASSED

Level: Second Floor

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Nov 14 2023

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CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	9-11-0		Near Face	124 lb	291 lb	0 lb	0 lb	J6
6	Point	10-11-0		Near Face	141 lb	336 lb	0 lb	0 lb	J6
	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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This design is valid until 4/17/2026

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MHP 23034

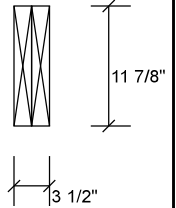
F15-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

PASSED

Level: Second 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	0	22	0	0
2	Vertical	0	21	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	0%	30 / 0	30	Uniform	1.4D
2 - SPF	4.125"	Vert	1%	30 / 0	30	Uniform	1.4D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3 ft-lb	7 1/16"	23005 ft-lb	0.000 (0%)	1.4D	Uniform
Unbraced	3 ft-lb	7 1/16"	23005 ft-lb	0.000 (0%)	1.4D	Uniform
Shear	19 lb	1'5 1/8"	8591 lb	0.002 (0%)	1.4D	Uniform
Perm Defl in.	0.000 (L/8467373)	7 1/16"	0.014 (L/360)	0.000 (0%)	D	Uniform
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.000 (L/8467373)	7 1/16"	0.021 (L/240)	0.000 (0%)	D	Uniform



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.
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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-4-14 to 0-9-6		Top	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				12 PLF				

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

chemicals

Handling & Installation

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MHP 23034

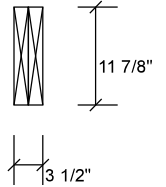
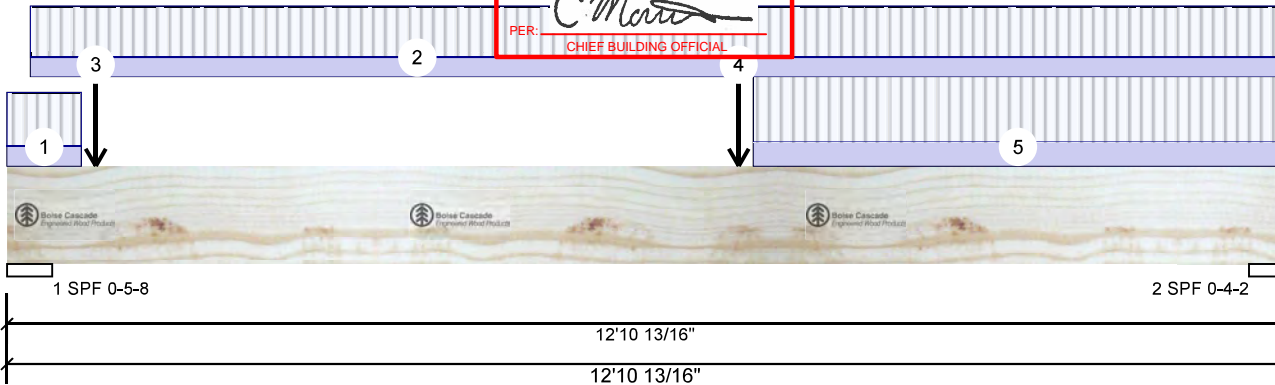
F16-A Versa-Lam LVL 2.1E 3100 SP

1.750" X 11.875" 2-Ply

PASSED

Level: Second 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	1968	928	0	0
2	Vertical	621	371	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	5.500"	Vert	35%	1160 / 2952	4111	L	1.25D+1.5L
2 - SPF	4.125"	Vert	16%	463 / 931	1395	L	1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5685 ft-lb	7'4 13/16"	35392 ft-lb	0.161 (16%)	1.25D+1.5L	L
Unbraced	5685 ft-lb	7'4 13/16"	35392 ft-lb	0.161 (16%)	1.25D+1.5L	L
Shear	4024 lb	1'5 3/8"	13217 lb	0.304 (30%)	1.25D+1.5L	L
Perm Defl in.	0.036 (L/4052)	6'7 1/16"	0.408 (L/360)	0.089 (9%)	D	Uniform
LL Defl inch	0.062 (L/2365)	6'6 11/16"	0.408 (L/360)	0.152 (15%)	L	
TL Defl inch	0.098 (L/1493)	6'6 13/16"	0.611 (L/240)	0.161 (16%)	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 be laterally braced at a maximum of 6'6" o.c.
- 7 Lateral slenderness ratio based on full section width.



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 0-9-0	0-6-6	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-2-13 to 12-10-13	0-6-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	0-10-12		Near Face	683 lb	1631 lb	0 lb	0 lb	F12
4	Point	7-4-13		Near Face	308 lb	545 lb	0 lb	0 lb	F12
5	Tie-In	7-6-9 to 12-10-13	0-7-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				12 PLF				

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
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Boise, ID 83702
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CCMC: 12472

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