CORPORATION OF THE CITY OF OSHAWA ENG-I M0723-135-KTF-GREEN M0723-KTF-GREEN M0725-KTF-GREEN M0 OF PERMIPPE PLANGREEN PARK Nov 03 e 2023 OF RA ESTATES

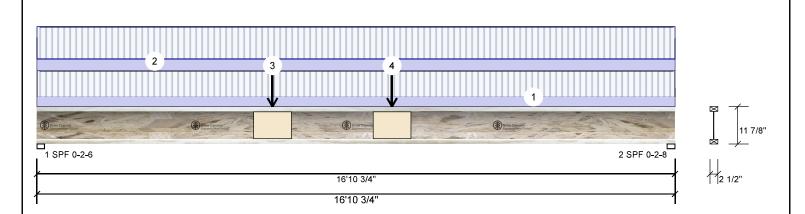
HAV<mark>VA,ON</mark>

Job Name: VILLA 5-3 STD

Project #

AJS 140

Level: Ground Floor



Member Infor	mation			Unfactored Reactions UNPATTERNED lb (Uplift)							
Type:	Girder	Application:	Floor (Residential)	Brg	Direction	L	ive	Dead	S	Snow	Wind
Plies:	1	Design Method:	LSD	1	Vertical		516	193		0	0
Moisture Conditio	n: Dry 360	Building Code:	NBCC 2015 OBC 2012(2020 Update)	2	Vertical		510	191		0	0
Deflection TL:	240	Load Sharing:	No								
Importance: General Load	Normal - II	Deck: Vibration:	Not Checked Not Checked								
Floor Live:	40 PSF			Bea	rings and Fa	actored	l Rea	ctions			
Dead:	15 PSF			Be	aring Length	Dir.	Сар.	React D/L Ib	Total Lo	d. Case	Ld. Comb.
				1 -	SPF 2.375"	Vert	60%	242 / 773	1015 L		1.25D+1.5L
				1 2-	SPF 2.518"	Vert	59%	239 / 765	1004 L		1.25D+1.5L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4345 ft-lb	8'6"	5305 ft-lb	0.819 (82%)	1.25D+1.5L	L
Unbraced	4345 ft-lb	8'6"	5305 ft-lb	0.819 (82%)	1.25D+1.5L	L
Shear	1000 lb	1 5/8"	2350 lb	0.426 (43%)	1.25D+1.5L	L
Perm Defl in.	0.143 (L/1395)	8'5 3/16"	0.554 (L/360)	0.258 (26%)	D	Uniform
LL Defl inch	0.381 (L/523)	8'5 3/16"	0.554 (L/360)	0.689 (69%)	L	L
TL Defl inch	0.524 (L/380)	8'5 3/16"	0.831 (L/240)	0.631 (63%)	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 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 7'5 15/16" o.c.



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 16-10-12	0-7-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-0 to 16-10-12	0-9-3	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	6-2-13		Near Face	16 l b	43 lb	0 l b	0 l b	F1
4	Point	9-4-13		Near Face	16 lb	43 lb	0 lb	0 l b	F1

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.

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

Handling & Installation

- Handling & Installation

 1. Noist flanges must not be cut or drilled

 2. Refer to latest copy of the Juoist product information details for framing details, stifferer tables, web hole chart, bridging details, multi-ray fastening details and handling/erection details

 3. Damaged Juoists must not be used

 4. 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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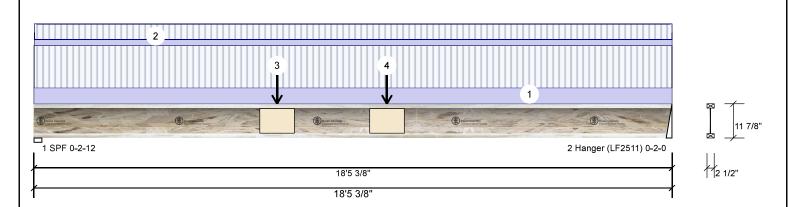
NO,AVVAF

Project #

AJS 140

Level: Ground Floor

Job Name: VILLA 5-3 STD



Member Information **Unfactored Reactions UNPATTERNED lb (Uplift)** Application: Floor (Residential) Wind Type: Brg Direction Live Dead Snow Plies: 1 Design Method: LSD Vertical 437 164 0 1 Moisture Condition: Dry **Building Code: NBCC 2015** 2 Vertical 429 161 0 OBC 2012(2020 Update) Deflection LL: 360 Load Sharing: Deflection TL: 240 Not Checked Deck: Importance: Normal - II Vibration: Not Checked General Load **Bearings and Factored Reactions** Floor Live: 40 PSF 15 PSF Dead: Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 2.750" Vert 49% 205 / 656 861 L 1.25D+1.5L 2 -2.000" Vert 53% 201 / 643 844 L 1.25D+1.5L Analysis Results Hanger

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4073 ft-lb	9'3 15/16"	5305 ft-lb	0.768 (77%)	1.25D+1.5L	L
Unbraced	4073 ft-lb	9'3 15/16"	5305 ft-lb	0.768 (77%)	1.25D+1.5L	L
Shear	847 l b	2"	2350 lb	0.360 (36%)	1.25D+1.5L	L
Perm Defl in.	0.158 (L/1383)	9'2 7/8"	0.606 (L/360)	0.260 (26%)	D	Uniform
LL Defl inch	0.421 (L/518)	9'2 7/8"	0.606 (L/360)	0.695 (69%)	L	L
TL Defl inch	0.579 (L/377)	9'2 7/8"	0.909 (L/240)	0.637 (64%)	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 Right Header: DF, Thickness: 3 1/2"
- 4 Girders are designed to be supported on the bottom edge only.
- 5 If sheathing is not attached to the top flange, top flange must be laterally braced at maximum 2' o.c.

6 Bottom flange must be laterally braced at a maximum of 8'2 15/16" o.c.



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	I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	1	Tie-In	0-0-0 to 18-5-6	0-9-3	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	2	Tie-In	0-0-2 to 18-5-6	0-3-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
:	3	Point	7-0-6		Near Face	16 l b	43 lb	0 lb	0 lb	F1
١.	4	Point	10-2-8		Near Face	16 l b	43 lb	0 lb	0 l b	F1

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

Handling & Installation

- Handling & Installation

 1. Noist flanges must not be out or drilled

 2. Refer to latest copy of the IJoist product information
 details for framing details, stiffener tables, web hole
 chart, bridging details, multi-rily fastening details and
 handling/erection details

 3. Damaged IJoists must not be used
 4. 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

This design is valid until 4/17/2026

Manufacturer Info

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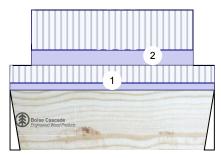
Job Name: VILLA 5-3 STD

Project #:

Versa-Lam LVL 2.1F-3-1000-PFFICIAL 750" X 11.875"

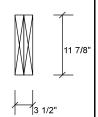
2-Ply - PASSED

Level: Ground Floor



1 Hanger (LF3511) 0-2-0 2 Hanger (LF3511) 0-2-0 3'4 7/16'

3'4 7/16'



Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	VVind
1	Vertical	186	89	0	0
2	Vertical	186	89	0	0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	330 ft-lb	1'8 1/4"	35392 ft-lb	0.009 (1%)	1.25D+1.5L	L
Unbraced	330 ft-lb	1'8 1/4"	35392 ft-lb	0.009 (1%)	1.25D+1.5L	L
Shear	287 lb	1'1 7/8"	13217 l b	0.022 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/255365)	1'8 1/4"	0.105 (L/360)	0.001 (0%)	D	Uniform
LL Defl inch	0.000 (L/118926)	1'8 1/4"	0.105 (L/360)	0.003 (0%)	L	L
TL Defl inch	0.000 (L/81139)	1'8 1/4"	0.158 (L/240)	0.003 (0%)	D+L	L

, analysis	/ totaai	Location	, movica	Cupucity	Comb.	Cucc
Moment	330 ft-lb	1'8 1/4"	35392 ft-lb	0.009 (1%)	1.25D+1.5L	L
Unbraced	330 ft-lb	1'8 1/4"	35392 ft-lb	0.009 (1%)	1.25D+1.5L	L
Shear	287 l b	1'1 7/8"	13217 l b	0.022 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/255365)	1'8 1/4"	0.105 (L/360)	0.001 (0%)	D	Uniform
LL Defl inch	0.000 (L/118926)	1'8 1/4"	0.105 (L/360)	0.003 (0%)	L	L
TL Defl inch	0.000 (L/81139)	1'8 1/4"	0.158 (L/240)	0.003 (0%)	D+L	L

Bearings and Factored Reactions

Bearing Leng	th Dir.	Cap. F	React D/L I b	Total	Ld. Case	Ld. Comb.
1 - 2.000 Hanger	" Vert	5%	111 / 279	390	L	1.25D+1.5L
2 - 2.000	" Vert	5%	112 / 279	391	L	1.25D+1.5L
Hanger						



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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 Right Header: DF, Thickness: 3 1/2"
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Multiple plies must be fastened together as per manufacturer's details.
- 7 Top loads must be supported equally by all plies.
- 8 Top must be continuously laterally braced.
- 9 Bottom must have sheathing attached or be continuously braced.
- 10 Lateral slenderness ratio based on full section width.

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and badings 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.

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

Handling & Installation

1. UVL 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

Dariga 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

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





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OF RA ESTATES NO,AVVAF

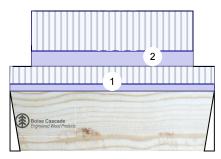
Job Name: VILLA 5-3 STD

Project #:

Versa-Lam LVL 2.1F-3-1000-PFICIAL 750" X 11.875"

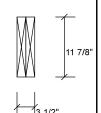
2-Ply - PASSED

Level: Ground Floor



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1 Hanger (LF3511) 0-2-0 2 Hanger (LF3511) 0-2-0 3'4 7/16" 3'4 7/16'



I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-4-7		Тор	15 PLF	40 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-4-4 to 3-0-4		Far Face	33 PLF	89 PLF	0 PLF	0 PLF	
	Self Weight				12 PLF				



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

Handling & Installation

Handling & Installation

1. IVI 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

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OF RA ESTATES

NO,AVVAF

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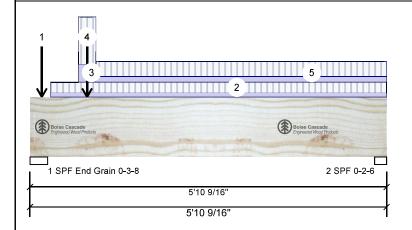
Job Name: VILLA 5-3 STD

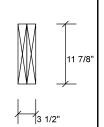
Project #:

Versa-Lam LVI 2 1F 3 100 SP FICIAL 750" X 11.875"

2-Ply - PASSED

Level: Ground Floor





Member Information Application: Floor (Residential) Type: Plies: 2 Design Method: LSD Moisture Condition: Dry Building Code: **NBCC 2015** OBC 2012(2020 Update) Deflection LL: 360 Load Sharing: Deflection TL: 240 Not Checked Deck: Importance: Normal - II Vibration: Not Checked General Load Floor Live: 40 PSF 15 PSF Dead:

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	862	439	0	0
2	Vertical	141	90	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L I b	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	14%	548 / 1292	1841	L	1.25D+1.5L

Grain

2 - SPF 2.375" Vert 112 / 211 323 L 1.25D+1.5L



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Analysis Results

Ana l ysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	516 ft-lb	2'5 1/16"	35392 ft-lb	0.015 (1%)	1.25D+1.5L	L
Unbraced	516 ft-lb	2'5 1/16"	35392 ft-lb	0.015 (1%)	1.25D+1.5L	L
Shear	512 lb	1'3 3/8"	13217 l b	0.039 (4%)	1.25D+1.5L	L
Perm Defl in	0.001 (L/83928)	2'10 1/2"	0.184 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch	0.001 (L/50491)	2'10 1/8"	0.184 (L/360)	0.007 (1%)	L	L
TL Defl inch	0.002 (L/31527)	2'10 1/4"	0.276 (L/240)	0.008 (1%)	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 4'11 1/4" o.c.
- 7 Lateral slenderness ratio based on full section width.

I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-2-5		Near Face	285 lb	591 l b	0 l b	0 lb	F17
2	Tie-In	0-4-1 to 5-10-9	0-5-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	0-9-9 to 1-1-1	1-10-0	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	0-11-5		Far Face	89 lb	186 lb	0 lb	0 lb	F6

Continued on page 2...

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

Handling & Installation

- 1. UVL beams must not be cut or drilled
 2. Refer to manufacturer's product information regarding installation requirements, multi-rily fastening details, beam strength values, and code approvals
 3. 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

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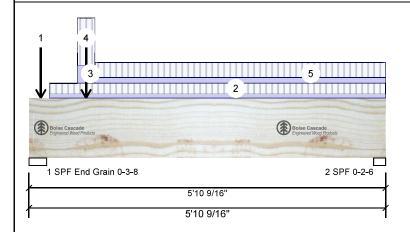
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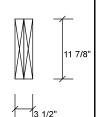
Project #:

Versa-Lam LVL 2.1F-3-1000-PFFICIAL 750" X 11.875"

2-Ply - PASSED

Level: Ground Floor





.Continued from page 1

Load Type ID Location Trib Width Side Comments Dead Live Wind Snow 1-1-1 to 5-10-9 0-7-0 15 PSF 40 PSF 0 PSF 0 PSF 5 Tie-In Тор Self Weight 12 PLF



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Notes

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

Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product information regarding installation requirements, multi-pty 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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OF RA ESTATES NO,AVVAF

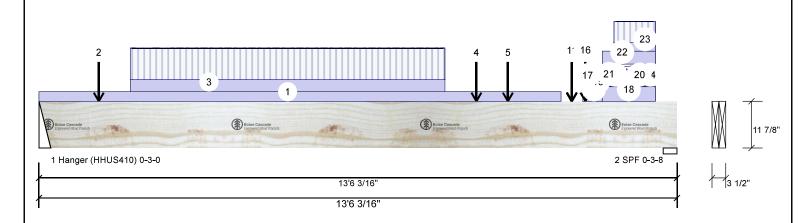
Job Name: VILLA 5-3 STD

Project #:

Versa-Lam LVL 2.1F 3100 SP FICIAL 750" X 11.875"

2-Ply - PASSED

Level: Ground Floor



Member Inform	nation			Unf
Туре:	Girder	Application:	Floor (Residential)	Brg
Plies:	2	Design Method:	LSD	1
Moisture Condition: Deflection LL:	Dry 360	Building Code:	NBCC 2015 OBC 2012(2020 Update)	2
Deflection TL:	240 Normal - II	Load Sharing: Deck:	No Not Checked	
General Load		Vibration:	Not Checked	
Floor Live:	40 PSF			Bea
Dead:	15 PSF			Bea
				1 - Ha

Unfactored	Reactions	UNPATTERNED IL	(Uplift)
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Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1179	964	61	0
2	Vertical	994	1157	454	0

arings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L I b	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	26%	1205 / 1829	3034	L	1.25D+1.5L +S
2 - SPF	3.500"	Vert	45%	1446 / 1944	3391	L	1.25D+1.5L +S

Analysis Results

Analysis	Actua l	Location	Allowed	Capacity	Comb.	Case
Moment	10480 ft-lb	6'9 15/16"	35392 ft-lb	0.296 (30%)	1.25D+1.5L +S	L
Unbraced	10480 ft-lb	6'9 15/16"	35392 ft-lb	0.296 (30%)	1.25D+1.5L +S	L
Shear	2937 lb	1'2 7/8"	13217 lb	0.222 (22%)	1.25D+1.5L +S	L
Perm Defl in	0.100 (L/1565)	6'9 7/16"	0.437 (L/360)	0.230 (23%)	D	Uniform
LL Defl inch	0.127 (L/1235)	6'8 7/8"	0.437 (L/360)	0.292 (29%)	L+0.5S	L
TL Defl inch	0.228 (L/690)	6'9 1/8"	0.655 (L/240)	0.348 (35%)	D+L+0.5S	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 3'7" o.c.
- 9 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.

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.

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

Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product information regarding installation requirements, multi-pty 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

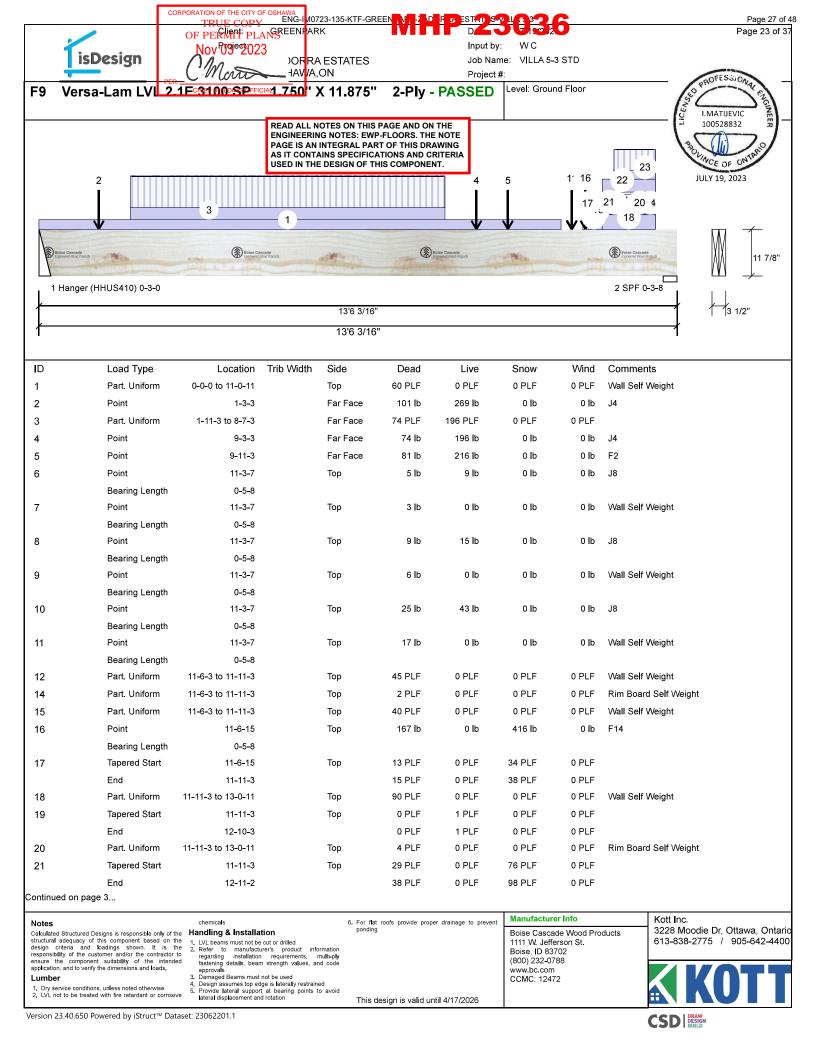
Manufacturer Info

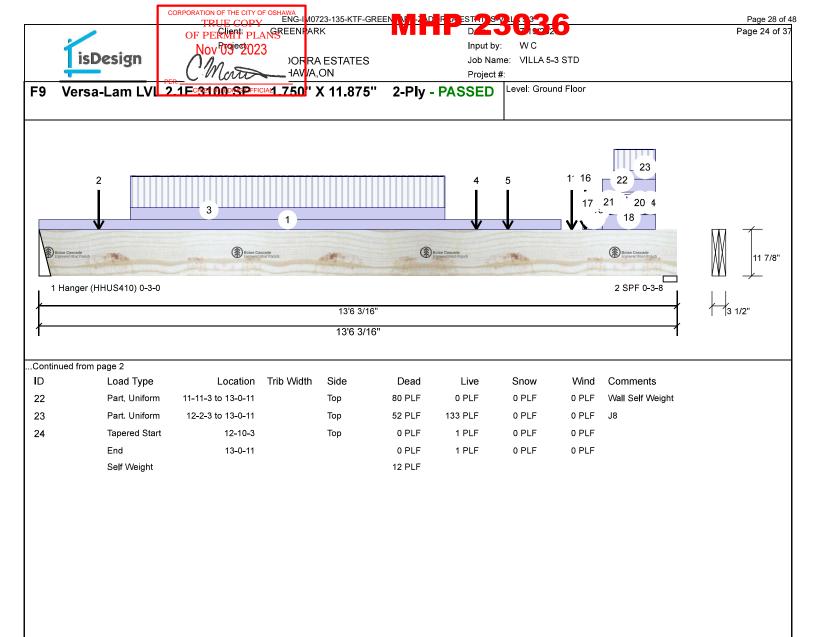
Boise Cascade Wood Products 1111 W. Jefferson St. Boise, ID 83702 (800) 232-0788 www.bc.com CCMC: 12472

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











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Notes

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Dry service conditions, unless noted otherwise
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Handling & Installation

Handling & Installation

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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





Nov 03e 2023

Page 25 of 37

Job Name: VILLA 5-3 STD & WOC

Project #:

Versa-Lam LVL 24 ₽ 2400 SP

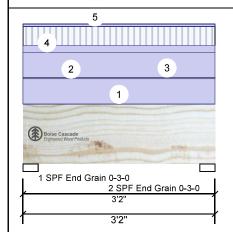
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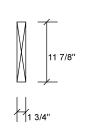
1.750" X 11.875" - PASSED

OF RA ESTATES

HAV<mark>VA,ON</mark>

Level: Ground Floor





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

	Unfactored	Reactions	UNPATTERNED	lb	(Uplift)	
--	------------	-----------	-------------	----	----------	--

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	48	163	0	0
2	Vertical	48	163	0	0

Analysis Results

Member Information

Analysis	Actua l	Location	Allowed	Capacity	Comb.	Case
Moment	169 ft-lb	1'7"	12918 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	169 ft-lb	1'7"	12918 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	182 lb	1'2 7/8"	4824 lb	0.038 (4%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/102390)	1'7"	0.093 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch	0.000 (L/351255)	1'7"	0.093 (L/360)	0.001 (0%)	L	L
TL Defl inch	0.000 (L/79280)	1'7"	0.140 (L/240)	0.003 (0%)	D+L	L

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	7%	204 / 71	275	L	1.25D+1.5L
2 - SPF End Grain	3.000"	Vert	7%	204 / 71	275	L	1.25D+1.5L



- 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 Top must be continuously laterally braced.

4. Bottom must have sheathing attached or he continuously braced



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4 Dollom must i	lave sileatiling attached	or be continuou	Siy biaceu.						
I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-2-0		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-2-0		Near Face	2 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	
	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				6 PLF				

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and badings 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.

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

Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product 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

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





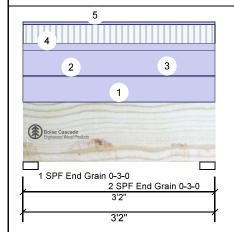
Project #:

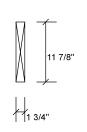
Job Name: VILLA 5-3 DC

isDesign OF RA ESTATES HAV<mark>VA,ON</mark> Versa-Lam LVL 244 E 3400 SP

1.750" X 11.875" - PASSED

Level: Ground Floor





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

Unf	actored	Reactions	UNPAT	TERNED l b	(Uplift)
Bra	Direction	n I	ive	Dead	Sne

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	48	163	0	0
2	Vertical	48	163	0	0

Analysis Results

Ana l ysis	Actua l	Location	Allowed	Capacity	Comb.	Case
Moment	169 ft-lb	1'7"	12918 ft-lb	0.013 (1%)	1.25D+1.5L	L
Unbraced	169 ft-lb	1'7"	12918 ft-lb	0.013 (1%)	1.25D+1.5L	L
Shear	182 lb	1'2 7/8"	4824 lb	0.038 (4%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/102390)	1'7"	0.093 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch	0.000 (L/351255)	1'7"	0.093 (L/360)	0.001 (0%)	L	L
TL Defl inch	0.000 (L/79280)	1'7"	0.140 (L/240)	0.003 (0%)	D+L	L

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L I b	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	7%	204 / 71	275	L	1.25D+1.5L
2 - SPF End Grain	3.000"	Vert	7%	204 / 71	275	L	1.25D+1.5L



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.

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 Top must be continuously laterally braced.
- 4 Bottom must have sheathing attached or be continuously braced.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-2-0		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-2-0		Near Face	2 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	
	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				6 PLF				

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

Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product 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

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





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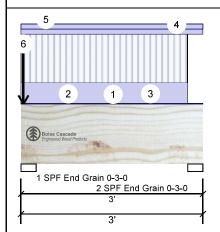
Page 2 of 5

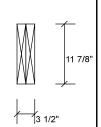
Job Name: VILLA 5-3 DC

Project #:

1.750" X 11.875" Versa-Lam LVL 2.1 PER 1000 SPCIAL

2-Ply - PASSED Level: Ground Floor





\\/ind

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

Unfa	ctored I	Reactions	UNPAT	TERNED	lb (Uplift)
Dra	Direction		ivo	Dood	Cn/

lbià	Direction	Live	Deau	SHOW	vviriu
1	Vertical	1191	906	285	0
2	Vertical	482	348	0	0

Analysis Results

Design Notes

Member Information

Ana l ysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	775 ft-lb	1'6"	35392 ft-lb	0.022 (2%)	1.25D+1.5L	L
Unbraced	775 ft-lb	1'6"	35392 ft-lb	0.022 (2%)	1.25D+1.5L	L
Shear	1077 l b	1'9 1/8"	13217 l b	0.082 (8%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/95986)	1'6"	0.088 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch	0.000 (L/64562)	1'6"	0.088 (L/360)	0.006 (1%)	L+0.5S	L
TL Defl inch	0.001 (L/38599)	1'6"	0.131 (L/240)	0.006 (1%)	D+L+0.5S	L

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L Ib	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	29%	1133 / 2072	3204	L	1.25D+1.5L +S
2 - SPF End Grain	3.000"	Vert	11%	435 / 723	1157	L	1.25D+1.5L



JULY 19, 2023

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.

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-0-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
2	Tapered Start	0-0-0		Near Face	0 PLF	1 PLF	0 PLF	0 PLF	
	End	3-0-0			0 PLF	1 PLF	0 PLF	0 PLF	
3	Part. Uniform	0-0-0 to 2-9-0		Near Face	163 PLF	384 PLF	0 PLF	0 PLF	J2

Continued on page 2...

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

Handling & Installation

- Handling & Installation

 1. UVI beams must not be cut or drilled

 2. Refer to manufacturer's product 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

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



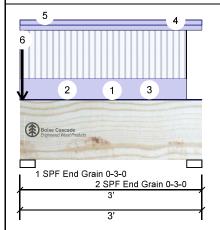


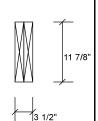
Job Name: VILLA 5-3 DC

Project #:

1.750" X 11.875" 2-Ply - PASSED Level: Ground Floor Versa-Lam LVL 2_14 PER 100 SPCIAL

HAV<mark>VA,ON</mark>





ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Part. Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
5	Part. Uniform	0-0-0 to 3-0-0		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Point	0-0-8		Тор	518 lb	614 l b	285 lb	0 l b	Header Column Header Column

Bearing Length

12 PLF Self Weight

0-3-8



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Dry service conditions, unless noted otherwise
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Handling & Installation

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

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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Page 4 of 5

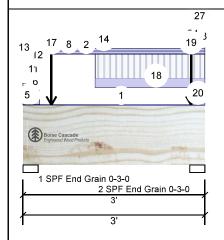
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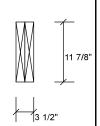
Job Name: VILLA 5-3 DC

Project #:

Versa-Lam VI 2.4F-3100 SPIAL 1.750" X 11.875" 2-Ply - PASSED

Level: Ground Floor





Member Information

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

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1056	827	236	0
2	Vertical	1066	871	244	0

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	865 ft-lb	1'4 1/4"	35392 ft-lb	0.024 (2%)	1.25D+1.5L +S	L
Unbraced	865 ft-lb	1'4 1/4"	35392 ft-lb	0.024 (2%)	1.25D+1.5L +S	L
Shear	1375 lb	1'2 7/8"	13217 l b	0.104 (10%)	1.25D+1.5L +S	L
Perm Defl in.	0.000 (L/82054)	1'5 3/16"	0.088 (L/360)	0.004 (0%)	D	Uniform
LL Defl inch	0.001 (L/57179)	1'5 5/16"	0.088 (L/360)	0.006 (1%)	L+0.5S	L
TL Defl inch	0.001 (L/33698)	1'5 5/16"	0.131 (L/240)	0.007 (1%)	D+L+0.5S	L

Bearings and Factored Reactions

Bearing Le	ength [Dir. Cap	. React D/I	L I b Total	Ld. Case	Ld. Comb.
1 - SPF 3. End Grain	000" \	√ert 30%	6 1034 / 1	820 2854	L	1.25D+1.5L +S
2 - SPF 3. End Grain	000" \	√ert 27º	6 1089 / 1	843 2932	L	1.25D+1.5L +S



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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.
- 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 have sheathing attached or be continuously braced.
- 9 Lateral slenderness ratio based on full section width.

Notes

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

Handling & Installation

1. UVL 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

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

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





Job Name: VILLA 5-3 DC

Project #:

Versa-Lam VI 2.4F-3100 SPIAL

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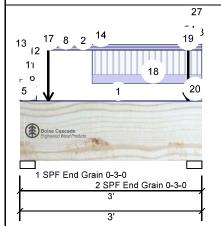
1.750" X 11.875"

OF RA ESTATES

HAV<mark>VA,ON</mark>

2-Ply - PASSED

Level: Ground Floor





11 7/8"

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I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tapered Start	0-0-0		Near Face	2 PLF	4 PLF	0 PLF	0 PLF	
	End	3-0-0			0 PLF	1 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-0-0 to 3-0-0		Near Face	4 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
4	Part. Uniform	0-0-0 to 0-3-4		Тор	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
5	Part. Uniform	0-0-0 to 0-3-4		Тор	64 PLF	130 PLF	0 PLF	0 PLF	J1
6	Part. Uniform	0-0-0 to 0-3-4		Тор	30 PLF	0 PLF	80 PLF	0 PLF	
7	Part. Uniform	0-0-0 to 0-3-4		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
8	Part. Uniform	0-0-0 to 3-0-0		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
10	Part. Uniform	0-0-0 to 0-3-4		Near Face	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
11	Part. Uniform	0-0-0 to 0-3-4		Near Face	64 PLF	130 PLF	0 PLF	0 PLF	J1
12	Part. Uniform	0-0-0 to 0-3-4		Near Face	30 PLF	0 PLF	80 PLF	0 PLF	
13	Part. Uniform	0-0-0 to 0-3-4		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
14	Part, Uniform	0-0-0 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
17	Point	0-5-10		Тор	607 lb	902 lb	216 lb	0 lb	Header Column Header Column F4
	Bearing Length	0-3-8							
18	Part. Uniform	1-2-4 to 3-0-0		Near Face	131 PLF	349 PLF	0 PLF	0 PLF	J1
19	Point	2-9-4		Тор	434 lb	432 lb	221 lb	0 lb	Header Column Header Column Header Column Header Column
	Bearing Length	0-3-8							
20	Part. Uniform	2-9-4 to 3-0-0		Тор	80 PLF	170 PLF	0 PLF	0 PLF	J1
22	Part. Uniform	2-9-4 to 3-0-0		Тор	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
23	Part. Uniform	2-9-4 to 3-0-0		Тор	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
24	Part. Uniform	2-9-4 to 3-0-0		Near Face	80 PLF	170 PLF	0 PLF	0 PLF	J1
26	Part. Uniform	2-9-4 to 3-0-0		Near Face	2 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
27	Part. Uniform	2-9-4 to 3-0-0		Near Face	40 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				12 PLF				

Notice 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.

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

Handling & Installation

Handling & Installation

1. IVI 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

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





CORPORATION OF THE CITY OF OSHAWA ENG-I M0723-135-KTF-GREEN OF PERWIT PLANSREEN ARK

OF RA ESTATES

NO,AVVAF

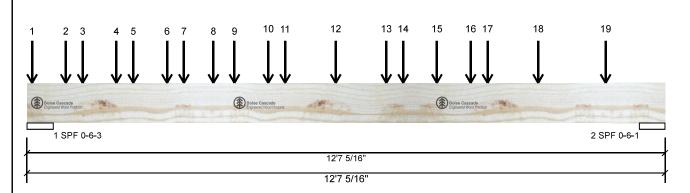
Job Name: VILLA 5-3 STD

Project #

Versa-Lam LVL 2 1FE3-1000SPCIAL 1.750" X 9.500"

3-Ply - PASSED

Level: Second Floor



Floor (Residential)

OBC 2012(2020 Update)

NBCC 2015

Not Checked

Not Checked

LSD

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	4329	1950	0	0
2	Vertical	4088	1711	0	0

Bearings and Factored Reactions

Bearing Length	Dir.	Сар.	React D/L Ib	Total	Ld. Case	Ld. Comb.
1 - SPF 6.217"	Vert	44%	2438 / 6494	8932	L	1.25D+1.5L
2 - SPF 6.080"	Vert	42%	2138 / 6132	8270	L	1.25D+1.5L

Analysis Results

Member Information

Moisture Condition: Dry

360

240

Normal - II

40 PSF 15 PSF

Deflection LL:

Deflection TL:

General Load

Importance:

Floor Live:

Dead:

Type: Plies:

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	24869 ft-lb	6'1 3/16"	36222 ft-lb	0.687 (69%)	1.25D+1.5L	L
Unbraced	24869 ft-lb	6'1 3/16"	36222 ft-lb	0.687 (69%)	1.25D+1.5L	L
Shear	7968 l b	11'3 11/16"	15860 lb	0.502 (50%)	1.25D+1.5L	L
Perm Defl in.	0.165 (L/853)	6'3 3/8"	0.390 (L/360)	0.422 (42%)	D	Uniform
LL Defl inch	0.384 (L/366)	6'3 11/16"	0.390 (L/360)	0.983 (98%)	L	L
TL Defl inch	0.548 (L/256)	6'3 9/16"	0.585 (L/240)	0.937 (94%)	D+L	L

Application:

Design Method:

Building Code:

Load Sharing:

Deck:

Vibration:

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.

ROFESSION LMATHEVIC 100528832 JULY 19, 2023

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I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments	
1	Point	0-1-3		Тор	81 l b	166 l b	0 lb	0 lb	J1	
	Bearing Length	0-3-8								
2	Point	0-9-3		Тор	160 l b	370 lb	0 lb	0 lb	J2	
	Bearing Length	0-3-8								

Continued on page 2...

Notes

Notes

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

- 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.

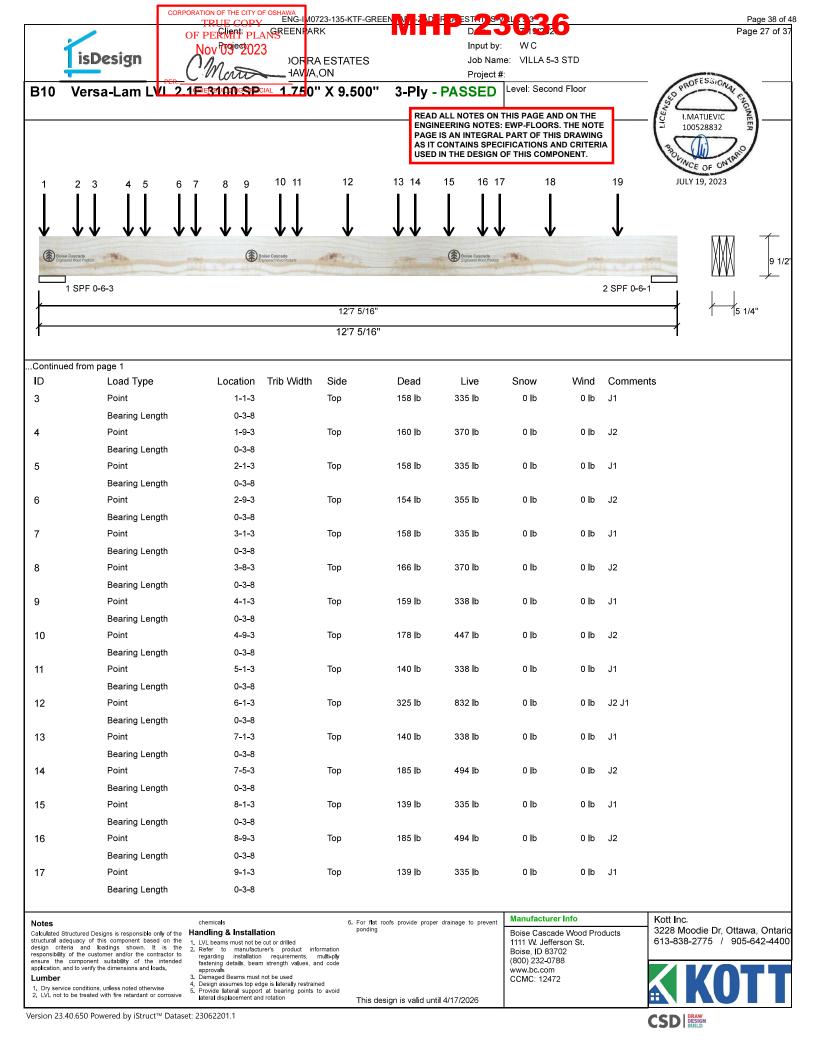
Boise. ID 83702 (800) 232-0788 www.bc.com CCMC: 12472

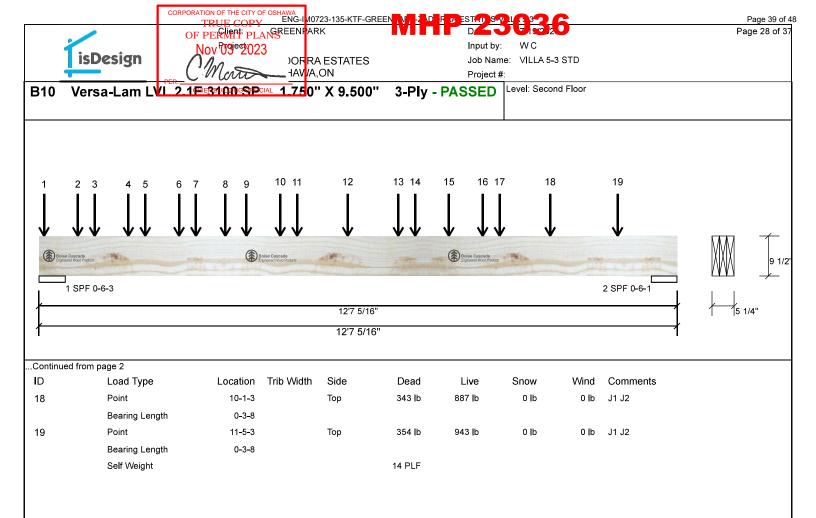
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Dry service conditions, unless noted otherwise
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Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product 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

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Kott Inc.

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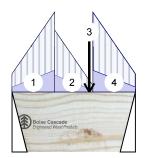
Job Name: VILLA 5-3 STD

OF RA ESTATES Project #

Versa-Lam LVL 2#15#1000SP

1.750" X 11.875" - PASSED

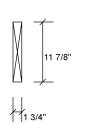
Level: Second Floor



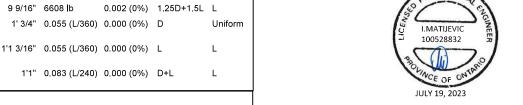
1 Hanger (SUR/L1.81/9 (Min)) 0-3-0 2 Hange (SUR/L1.81/9 (Min)) 0-3-0

2' 7/16'

2' 7/16'



Member Information **Unfactored Reactions UNPATTERNED lb (Uplift)** Application: Floor (Residential) Type: Brg Direction Live Dead Snow Wind Plies: Design Method: LSD Vertical 0 1 14 11 0 Moisture Condition: Dry Building Code: **NBCC 2015** 2 Vertical 17 12 n 0 OBC 2012(2020 Update) Deflection LL: 360 Load Sharing: Deflection TL: 240 Not Checked Deck: Importance: Normal - II Vibration: Not Checked General Load **Bearings and Factored Reactions** Floor Live: 40 PSF 15 PSF Dead: Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 -3.000" Vert 1% 14 / 21 35 L 1.25D+1.5L Hanger Analysis Results 2 -3.000" Vert 1% 15 / 25 40 L 1.25D+1.5L Hanger Location Allowed Case Analysis Actual Capacity Comb. 1.25D+1.5L L Moment 16 ft-lb 1'3 5/16" 17696 ft-lb 0.001 (0%) OROFESSION Unbraced 16 ft-lb 1'3 5/16" 17696 ft-lb 0.001 (0%) 1.25D+1.5L L



Design Notes

LL Defl inch

Perm Defl in 0.000

TL Defl inch 0.000

Shear

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.

9 9/16" 6608 lb

- 2 Fill all hanger nailing holes.
- 3 Left Header: DF, Thickness: 3 1/2"

16 lb

0.000

(L/2911345)

(L/2019394)

(L/1192891)

- 4 Right Header: DF, Thickness: 3 1/2"
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top must be continuously laterally braced.
- 7 Bottom must have sheathing attached or be continuously braced.

I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-8-7	0-1-4 to 0-5-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-8-7 to 1-4-0	0-4-4 to 0-0-7	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	1-3-5		Far Face	4 lb	10 l b	0 lb	0 lb	J7
4	Tie-In	1-4-0 to 2-0-7	0-5-7 to 0-1-4	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				6 PLF				

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

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

This design is valid until 4/17/2026

Boise Cascade Wood Products 1111 W. Jefferson St. Boise. ID 83702

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

Manufacturer Info

READ ALL NOTES ON THIS PAGE AND ON THE

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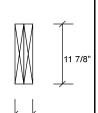
OF RA ESTATES

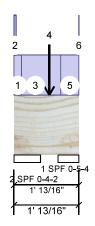
NO,AVVAF

Project #:

Versa-Lam LVL 2.1F 3400 SPCAL 1.750" X 11.875"

2-Ply - PASSED Level: Second Floor





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Member Information Type:

Plies: 2 Moisture Condition: Dry Deflection LL: 360 Deflection TL: 240 Importance: Normal - II

General Load

Floor Live: 40 PSF Dead: 15 PSF

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	64	80	0	0
2	Vertical	65	69	0	0

Floor (Residential)

OBC 2012(2020 Update)

NBCC 2015

Not Checked

Not Checked

LSD

Bearings	s and Fa	actore	d React	ions			
Bearing	Length	Dir.	Cap. F	React D/L I b	Total	Ld. Case	Ld. Comb.
1 - SPF	5.250"	Vert	2%	100 / 97	197	L	1.25D+1.5L
2 - SPF	4.125"	Vert	2%	86 / 97	183	L	1.25D+1.5L

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JULY 19, 2023

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USED IN THE DESIGN OF THIS COMPONENT.

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	29 ft-lb	7"	34330 ft-lb	0.001 (0%)	1.25D+1.5L	L
Unbraced	29 ft-lb	7"	34330 ft-lb	0.001 (0%)	1.25D+1.5L	L
Shear	108 lb	-(3 3/16")	12820 lb	0.008 (1%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/2493078)	7"	0.014 (L/360)	0.000 (0%)	D	Uniform
LL Defl inch	0.000 (L/1305590)	7"	0.014 (L/360)	0.000 (0%)	L	L
TL Defl inch	0.000 (L/856863)	7"	0.021 (L/240)	0.000 (0%)	D+L	L

Application:

Design Method:

Building Code:

Load Sharing:

Deck:

Vibration:

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.

I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 0-1-7		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 0-0-7		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Part. Uniform	0-1-7 to 0-9-4		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
4	Point	0.7.0		Far Face	48 lh	120 lb	0 lb	n Ih	M

Continued on page 2...

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.

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

Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product 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

www.bc.com CCMC: 12472

Manufacturer Info

Boise Cascade Wood Products 1111 W. Jefferson St. Boise. ID 83702 (800) 232-0788

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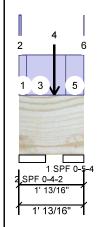
HAV<mark>VA,ON</mark>

Input by: Job Name: VILLA 5-3 STD

Project #:

Versa-Lam L<mark>VL 2.1F 3400 SPCAL 1.75</mark>0" X 11.875"

2-Ply - PASSED Level: Second Floor



11 7/8"

Continued	from	page	1	
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I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Part. Uniform	0-9-4 to 1-0-13		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
6	Part. Uniform	1-0-13 to 1-0-13		Тор	80 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
	Self Weight				12 PLF				



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Dry service conditions, unless noted otherwise
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Handling & Installation

Handling & Installation

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OF RA ESTATES

NO,AVVAF

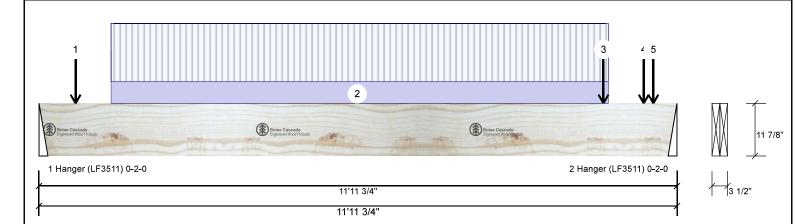
Job Name: VILLA 5-3 STD

Project #

Versa-Lam L<mark>VL 2.1F:3400\SP□₄ 1.75</mark>0" X 11.875"

2-Ply - PASSED

Level: Second Floor



Member Information **Unfactored Reactions UNPATTERNED lb (Uplift)** Application: Floor (Residential) Type: Brg Direction Live Dead Plies: 2 Design Method: LSD Vertical 328 193 1 Moisture Condition: Dry Building Code: **NBCC 2015** 2 Vertica 351 206 OBC 2012(2020 Update) Deflection LL: 360 Load Sharing: Deflection TL: 240 Deck: Not Checked Importance: Normal - II Vibration: Not Checked General Load **Bearings and Factored Reactions** Floor Live: 40 PSF Dead: 15 PSF Bearing Length Dir. Cap. React D/L lb Total Ld. Case 1 -2.000" Vert 10% 241 / 492 733 L Hanger Analysis Results 2 -2.000" Vert 10% 258 / 527 784 L Hanger Canacity

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2200 ft-lb	6' 1/4"	35392 ft-lb	0.062 (6%)	1.25D+1.5L	L
Unbraced	2200 ft-lb	6' 1/4"	35392 ft-lb	0.062 (6%)	1.25D+1.5L	L
Shear	782 l b	10'9 7/8"	13217 l b	0.059 (6%)	1.25D+1.5L	L
Perm Defl in.	0.014 (L/10012)	6' 1/16"	0.392 (L/360)	0.036 (4%)	D	Uniform
LL Defl inch	0.024 (L/5809)	6'	0.392 (L/360)	0.062 (6%)	L	L
TL Defl inch	0.038 (L/3676)	6'	0.588 (L/240)	0.065 (7%)	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.
- 2 Fill all hanger nailing holes.
- 3 Left Header: DF, Thickness: 3 1/2"
- 4 Right Header: DF, Thickness: 3 1/2"
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Multiple plies must be fastened together as per manufacturer's details.
- 7 Top must be continuously laterally braced.
- 8 Bottom must have sheathing attached or be continuously braced.
- 9 Lateral slenderness ratio based on full section width.

I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-8-4		Far Face	23 lb	62 l b	0 l b	0 lb	J6
2	Part. Uniform	1-4-4 to 10-8-4		Far Face	21 PLF	57 PLF	0 PLF	0 PLF	
3	Point	10-7-3		Near Face	11 l b	14 l b	0 lb	0 lb	F12

Continued on page 2...

Notes

Notes

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

Handling & Installation

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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

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www.bc.com CCMC: 12472

Manufacturer Info

PROFESSION

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JULY 19, 2023

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Snow

0

n

Wind

Ld. Comb.

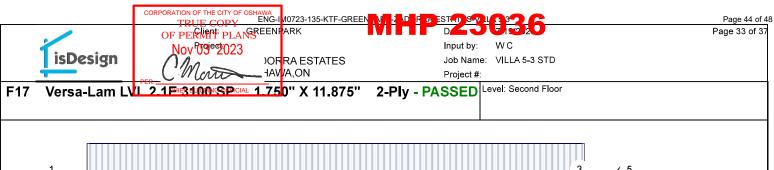
1.25D+1.5L

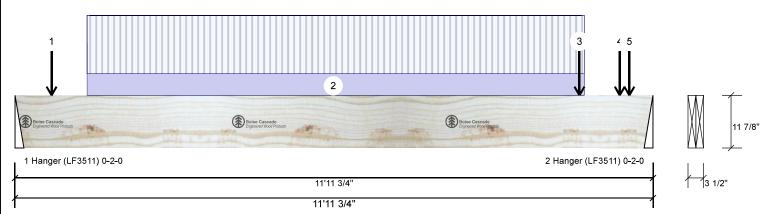
1.25D+1.5L

0

0







ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Point	11-4-4		Far Face	23 lb	60 lb	0 lb	0 l b	J6
5	Point	11-6-6		Near Face	4 lb	11 l b	0 lb	0 lb	J7
	Self Weight				12 PLF				



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Continued from page 1

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

Handling & Installation

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



2 - SPF 5.500"

Vert

8%

345 / 644

ROFESSION

I MATHEVIC 100528832

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.

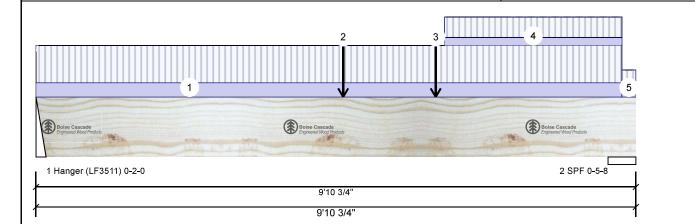
Job Name: VILLA 5-3 STD

Project #

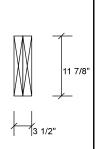
Versa-Lam LVI 2 1F 3 100 SP FICIAL 750" X 11.875"

2-Ply - PASSED

Level: Second Floor



OF RA ESTATES NO,AVVAF



Wind

Ld. Comb.

1.25D+1.5L

1.25D+1.5L

0

0

Snow

Total Ld. Case

609 L

989 L

0

n

Member Information **Unfactored Reactions UNPATTERNED Ib (Uplift)** Application: Floor (Residential) Type: Brg Direction Live Dead Plies: 2 Design Method: LSD 257 179 Vertical 1 Moisture Condition: Dry Building Code: **NBCC 2015** 2 Vertica 429 276 OBC 2012(2020 Update) Deflection LL: 360 Load Sharing: Deflection TL: 240 Deck: Not Checked Importance: Normal - II Vibration: Not Checked General Load **Bearings and Factored Reactions** 40 PSF Floor Live: 15 PSF Dead: Bearing Length Dir. Cap. React D/L lb 224 / 385 2.000" Vert 8% Hanger

Analysis	Results
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Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2373 ft-lb	6'7 1/8"	35392 ft-lb	0.067 (7%)	1.25D+1.5L	L
Unbraced	2373 ft-lb	6'7 1/8"	35392 ft-lb	0.067 (7%)	1.25D+1.5L	L
Shear	871 l b	8'5 3/8"	13217 l b	0.066 (7%)	1.25D+1.5L	L
Perm Defl in.	0.009 (L/11998)	5' 7/8"	0.313 (L/360)	0.030 (3%)	D	Uniform
LL Defl inch	0.014 (L/7852)	5'1 3/8"	0.313 (L/360)	0.046 (5%)	L	L
TL Defl inch	0.024 (L/4746)	5'1 3/16"	0.470 (L/240)	0.051 (5%)	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.
- 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 4'10 5/16" o.c.
- 9 Lateral slenderness ratio based on full section width.

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-8-0	0-8-6	Тор	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	5-0-13		Far Face	12 l b	17 b	0 lb	0 lb	F12
3	Point	6-7-2		Far Face	206 lb	351 lb	0 lb	0 l b	F17

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.

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

Handling & Installation

1. UVL 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

Dariga 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

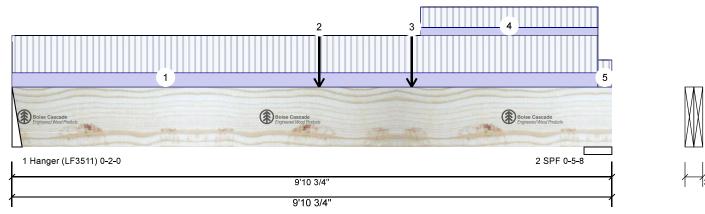
Manufacturer Info

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

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



This design is valid until 4/17/2026 CSD DESIG



.Continued from page 1 Side ID Location Trib Width Comments Load Type Live Snow Wind Dead 6-8-14 to 9-8-0 0-4-10 15 PSF 40 PSF 0 PSF 0 PSF Tie-In Тор 5 Tie-In 9-8-0 to 9-10-12 0-4-6 Тор 15 PSF 40 PSF 0 PSF 0 PSF Self Weight 12 PLF



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 LVL not to be treated with fire retardant or corrosive

Handling & Installation

Handling & Installation

1. UVI beams must not be cut or drilled

2. Refer to manufacturer's product 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

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6. For flat roofs provide proper drainage to prevent ponding

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11 7/8'



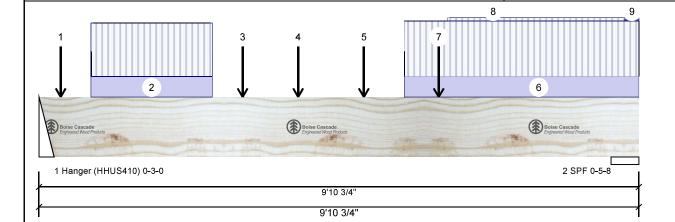
Job Name: VILLA 5-3 STD

Project #

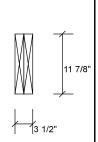
Versa-Lam LVL 2.1F-3100-SP-ICAL 1.750 X 11.875"

2-Ply - PASSED

Level: Second Floor



OF RA ESTATES NO,AVVAF



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Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	360
Deflection TL:	240
Importance:	Normal - II
General Load	

Floor Live: 40 PSF 15 PSF Dead:

Application: Floor (Residential) Design Method: LSD

> **Building Code: NBCC 2015** OBC 2012(2020 Update)

Load Sharing: Deck: Not Checked

Vibration: Not Checked

Unfactored Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind
1	Vertical	1901	809	0	0
2	Vertical	2166	927	0	0

Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L I b	Total	Ld. Case	Ld. Comb.
•	3.000"	Vert	34%	1012 / 2852	3864	L	1.25D+1.5L
Hanger							
2 - SPF	5 500"	Vert	37%	1159 / 3249	4408	1	1 25D+1 5I

Analysis Results

Analysis	Actua l	Location	Allowed	Capacity	Comb.	Case
Moment	9390 ft-lb	5'4 5/16"	35392 ft-lb	0.265 (27%)	1.25D+1.5L	L
Unbraced	9390 ft-lb	5'4 5/16"	35392 ft-lb	0.265 (27%)	1.25D+1.5L	L
Shear	4324 lb	1'2 7/8"	13217 l b	0.327 (33%)	1.25D+1.5L	L
Perm Defl in.	0.031 (L/3656)	4'11"	0.310 (L/360)	0.098 (10%)	D	Uniform
LL Defl inch	0.071 (L/1582)	4'10 7/8"	0.310 (L/360)	0.228 (23%)	L	L
TL Defl inch	0.101 (L/1104)	4'10 15/16"	0.466 (L/240)	0.217 (22%)	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 have sheathing attached or be continuously braced.
- 9 Lateral slenderness ratio based on full section width.



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I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-4-5		Far Face	120 l b	310 lb	0 l b	0 l b	J2
2	Part. Uniform	0-10-5 to 2-10-5		Far Face	142 PLF	368 PLF	0 PLF	0 PLF	
3	Point	3-4-5		Far Face	137 l b	353 lb	0 l b	0 l b	J2
4	Point	4-3-5		Far Face	143 l b	368 lb	0 l b	0 lb	J2

Continued on page 2...

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

Handling & Installation

- Handling & Installation

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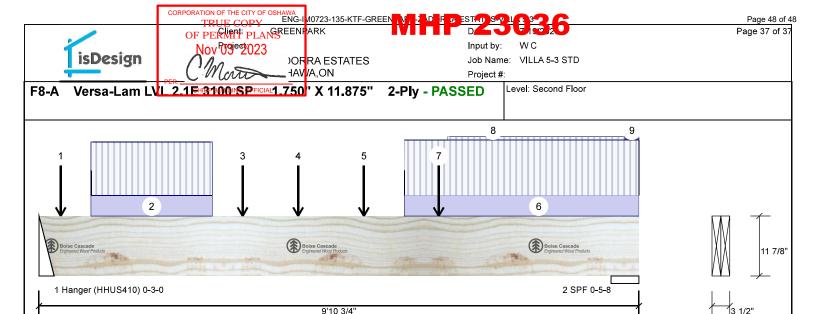
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143 PLF

381 PLF

		1								
٠ا	Continued from p	age 1								
	I D	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
	5	Point	5-4-5		Far Face	169 lb	445 lb	0 l b	0 lb	J2

Far Face

Point 6-7-2 193 lb 328 lb 0 lb 0 lb F17 7 Near Face 6-8-14 to 9-8-0 0-5-0 15 PSF 40 PSF 0 PSF 0 PSF 8 Tie-In Top 9-8-0 to 9-10-12 0-6-0 Тор 15 PSF 40 PSF 0 PSF 0 PSF Tie-In Self Weight 12 PLF



0 PLF

0 PLF

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6

Part. Uniform

6-0-5 to 9-10-12

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Handling & Installation

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