



Client: GREENPARK  
 Project: ZADORRA ESTATES  
 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO  
 Nov 04 2023

Date: 7/5/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

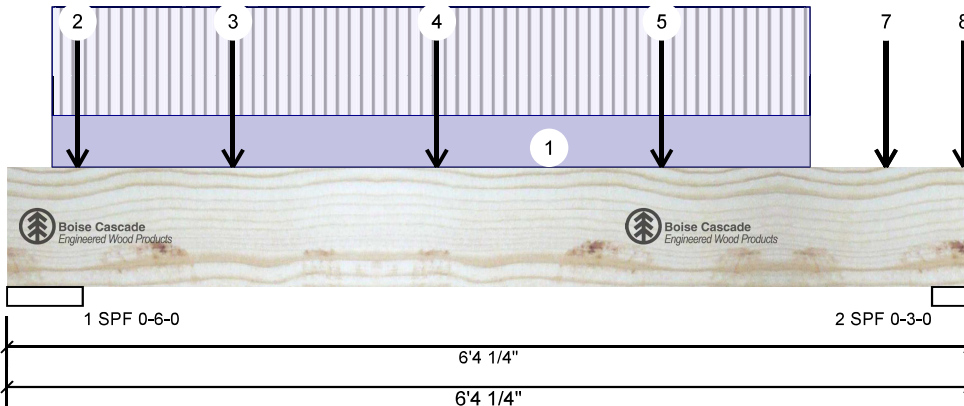
Page 3 of 4

F7-A Versa-Lam LVL 2.1E 3100 SP

3-Ply - PASSED

Level: Ground Floor

PER: *C. Moore*  
 CHIEF BUILDING OFFICIAL



9 1/2"

5 1/4"

## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	3	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	Yes
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	1475	656	0	0
2	Vertical	4559	1943	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.000"	Vert	16%	820 / 2213	3034	L	1.25D+1.5L
2 - SPF	3.000"	Vert	96%	2429 / 6838	9266	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3638 ft-lb	3'1"	36222 ft-lb	0.100 (10%)	1.25D+1.5L	L
Unbraced	3638 ft-lb	3'1"	36222 ft-lb	0.100 (10%)	1.25D+1.5L	L
Shear	3066 lb	5'3 3/4"	15860 lb	0.193 (19%)	1.25D+1.5L	L
Perm Defl in.	0.006 (L/11147)	3'3 5/8"	0.191 (L/360)	0.032 (3%)	D	Uniform
LL Defl inch	0.014 (L/5010)	3'3 5/8"	0.191 (L/360)	0.072 (7%)	L	L
TL Defl inch	0.020 (L/3457)	3'3 5/8"	0.286 (L/240)	0.069 (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.
- 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.



JULY 05, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-3-9 to 5-3-9		Far Face	87 PLF	183 PLF	0 PLF	0 PLF	
2	Point	0-5-10		Near Face	117 lb	309 lb	0 lb	0 lb	J4
3	Point	1-5-14		Near Face	126 lb	335 lb	0 lb	0 lb	F4
4	Point	2-10-0		Near Face	122 lb	326 lb	0 lb	0 lb	J3
5	Point	4-3-13		Near Face	154 lb	411 lb	0 lb	0 lb	F4

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

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

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

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



This design is valid until 4/17/2026





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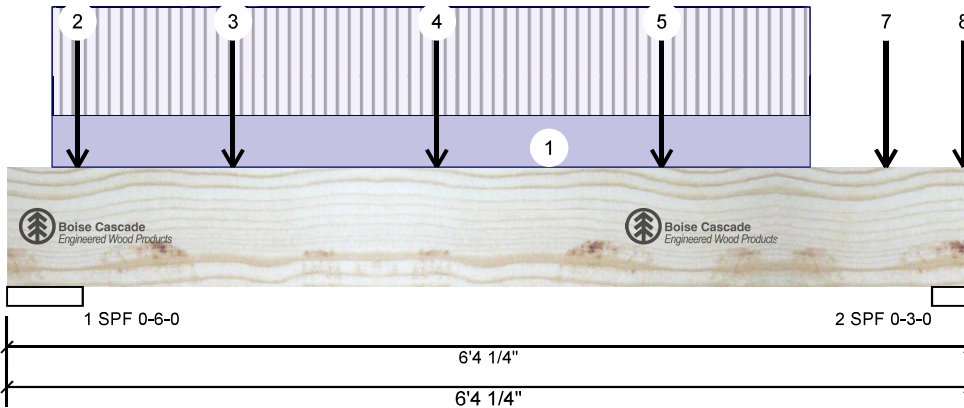
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F7-A Versa-Lam LVL 2.1E 3100 SP

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Level: Ground Floor

PER: *C. Moore*  
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...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Point	5-9-9		Far Face	73 lb	157 lb	0 lb	0 lb	J2
7	Point	5-9-10		Near Face	138 lb	368 lb	0 lb	0 lb	J4
8	Point	6-3-12		Top	1344 lb	3213 lb	0 lb	0 lb	C3
	Bearing Length	0-3-8							
	Self Weight				14 PLF				



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**Lumber**

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

**Handling & Installation**

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

6. For flat roofs provide proper drainage to prevent ponding

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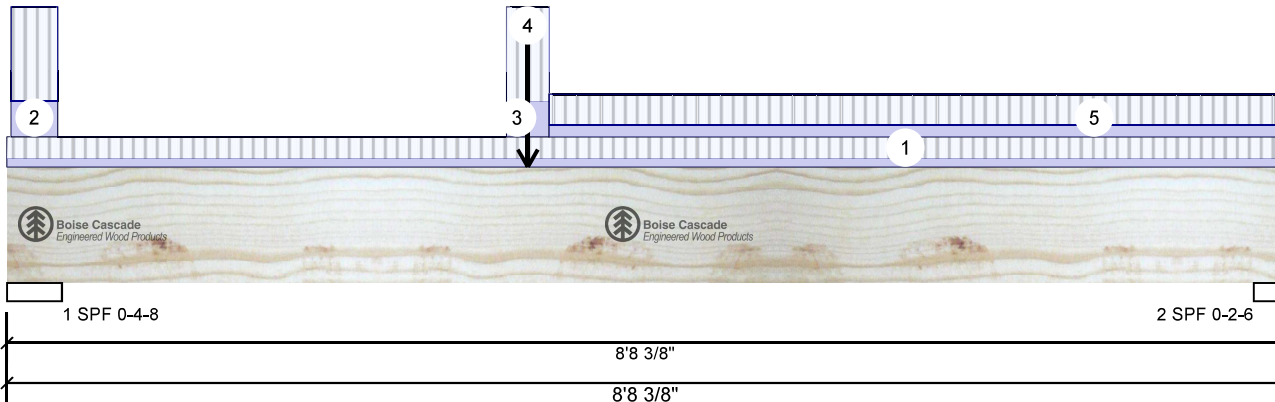
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2-Ply - PASSED

Level: Ground Floor

PER:   
 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	290	160	0	0
2	Vertical	260	144	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.500"	Vert	7%	200 / 435	636	L	1.25D+1.5L
2 - SPF	2.398"	Vert	11%	180 / 390	570	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1624 ft-lb	3'6 5/8"	23220 ft-lb	0.070 (7%)	1.25D+1.5L	L
Unbraced	1624 ft-lb	3'6 5/8"	23220 ft-lb	0.070 (7%)	1.25D+1.5L	L
Shear	546 lb	1'2"	10574 lb	0.052 (5%)	1.25D+1.5L	L
Perm Defl in. (L/11691)	0.008	4'4"	0.275 (L/360)	0.031 (3%)	D	Uniform
LL Defl inch	0.016 (L/6192)	4'3 13/16"	0.275 (L/360)	0.058 (6%)	L	L
TL Defl inch	0.024 (L/4048)	4'3 13/16"	0.412 (L/240)	0.059 (6%)	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.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be continuously laterally braced.
- Bottom must be laterally braced at a maximum of 5'1 13/16" o.c.
- 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	Tie-In	0-0 to 8-8-6	0-5-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-0-5 to 0-4-2	1-10-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	3-4-14 to 3-8-6	1-10-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Point	3-6-10		Far Face	104 lb	236 lb	0 lb	0 lb	F6
5	Tie-In	3-8-6 to 8-8-6	0-7-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				9 PLF				

## Notes

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## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

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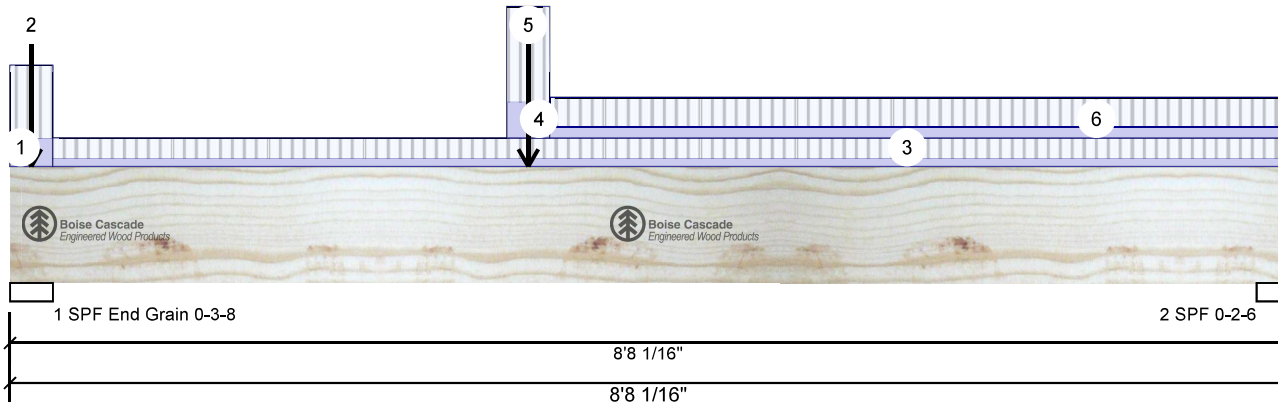
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F8-B Versa-Lam LVL 2.1E 3100 SP

2-Ply - PASSED

Level: Ground Floor

PER: *C. Motta*  
 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	540	266	0	0
2	Vertical	254	142	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	9%	333 / 810	1143	L	1.25D+1.5L
2 - SPF	2.398"	Vert	11%	178 / 380	558	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1629 ft-lb	3'6 5/16"	23220 ft-lb	0.070 (7%)	1.25D+1.5L	L
Unbraced	1629 ft-lb	3'6 5/16"	23220 ft-lb	0.070 (7%)	1.25D+1.5L	L
Shear	539 lb	1'1"	10574 lb	0.051 (5%)	1.25D+1.5L	L
Perm Defl in. (L/11595)	0.009	4'3 5/16"	0.277 (L/360)	0.031 (3%)	D	Uniform
LL Defl inch	0.016 (L/6188)	4'3 1/16"	0.277 (L/360)	0.058 (6%)	L	L
TL Defl inch	0.025 (L/4035)	4'3 1/8"	0.415 (L/240)	0.059 (6%)	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 5'1 13/16" o.c.
- 7 Lateral slenderness ratio based on full section width.



JULY 04, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 0-3-8	1-5-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-1-12		Far Face	113 lb	268 lb	0 lb	0 lb	F6
3	Tie-In	0-3-8 to 8-8-1	0-4-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	3-4-8 to 3-8-0	1-10-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
5	Point	3-6-4		Near Face	106 lb	240 lb	0 lb	0 lb	F6

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 &amp; Installation

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

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3228 Moodie Dr, Ottawa, Ontario  
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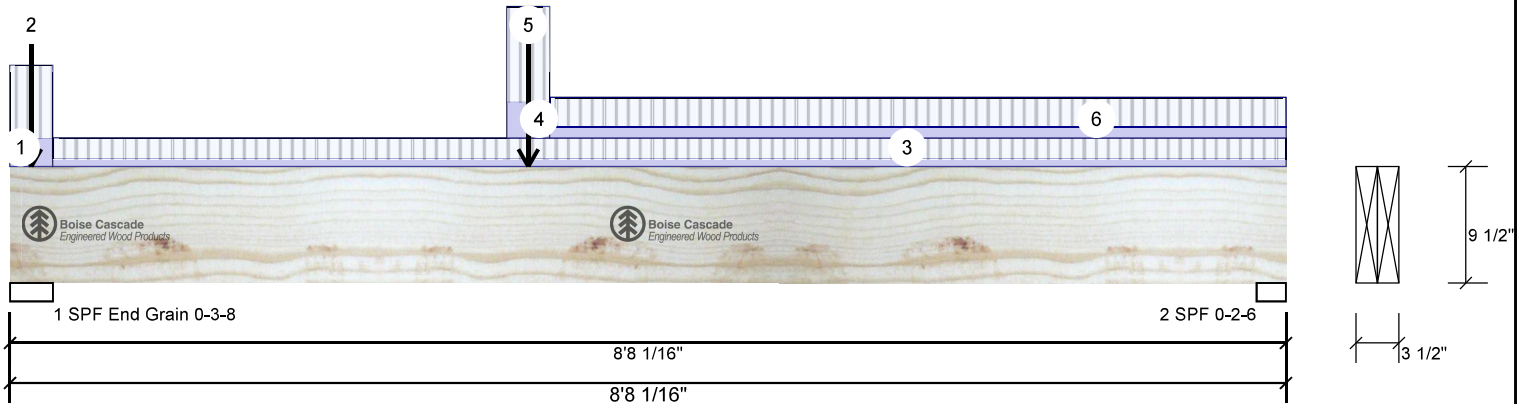
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F8-B Versa-Lam LVL 2.1E 3100 SP

2-Ply - PASSED

Level: Ground Floor

PER: *C. Maitre*  
 CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
6	Tie-In	3-8-0 to 8-8-1	0-6-13	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				9 PLF				



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**Lumber**

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

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

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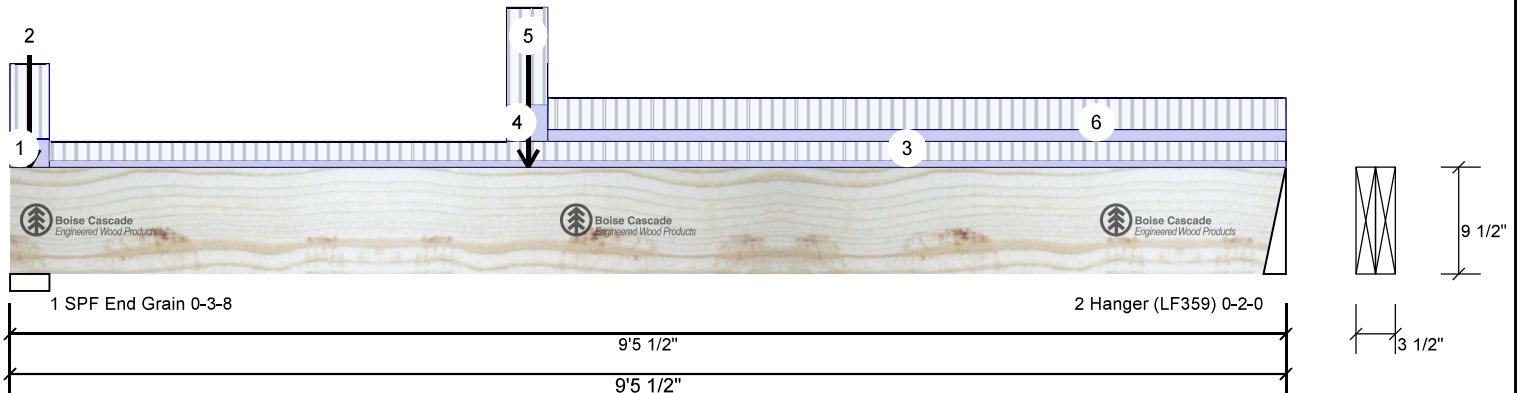
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F8-C Versa-Lam LVL 2.1E 3100 SP

2-Ply - PASSED

Level: Ground Floor

PER: *C. Moore*  
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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	570	281	0	0
2	Vertical	266	151	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L	lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	9%	351 / 855	1206	L		1.25D+1.5L
2 - Hanger	2.000"	Vert	8%	188 / 399	588	L		1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1873 ft-lb	3'10 1/8"	23220 ft-lb	0.081 (8%)	1.25D+1.5L	L
Unbraced	1873 ft-lb	3'10 1/8"	23220 ft-lb	0.081 (8%)	1.25D+1.5L	L
Shear	566 lb	1'1"	10574 lb	0.054 (5%)	1.25D+1.5L	L
Perm Defl in.	0.012 (L/9097)	4'8 3/16"	0.304 (L/360)	0.040 (4%)	D	Uniform
LL Defl inch	0.022 (L/4909)	4'7 15/16"	0.304 (L/360)	0.073 (7%)	L	
TL Defl inch	0.034 (L/3188)	4'8 1/16"	0.456 (L/240)	0.075 (8%)	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 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 5'7 7/16" o.c.
- 9 Lateral slenderness ratio based on full section width.



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1	Tie-In	0-0-0 to 0-3-8	1-5-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	0-1-12		Near Face	120 lb	288 lb	0 lb	0 lb	F6
3	Tie-In	0-3-8 to 9-5-8	0-4-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	3-8-3 to 3-11-14	1-10-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

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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 &amp; Installation

1. LVL beams must not be cut or drilled
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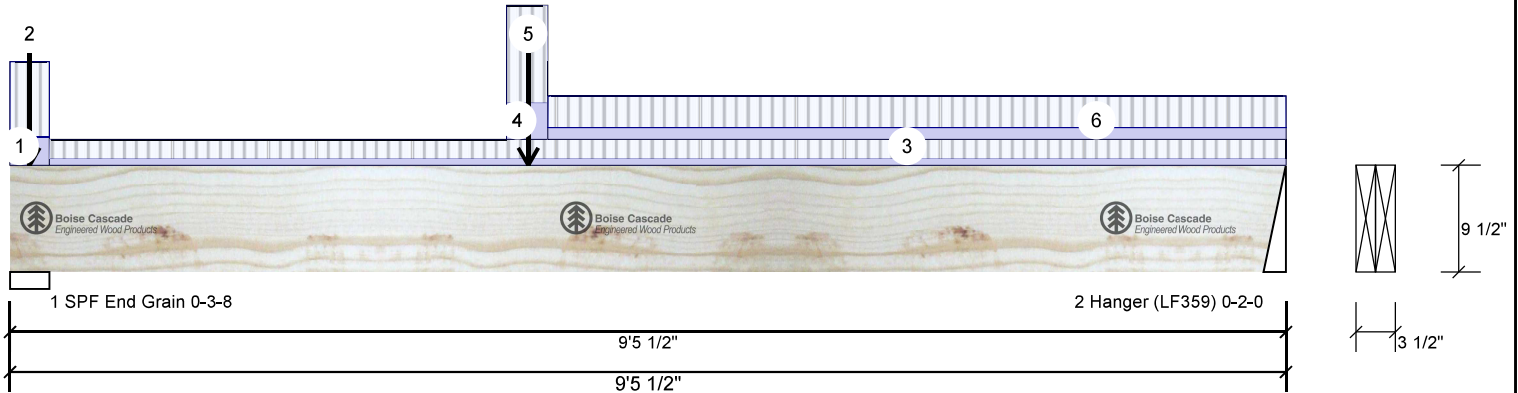
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2-Ply - PASSED

Level: Ground Floor

PER: *C. Moore*  
 CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	3-10-2		Far Face	110 lb	249 lb	0 lb	0 lb	F6
6	Tie-In	3-11-14 to 9-5-8	0-7-2	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				9 PLF				



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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

**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: ZADORRA ESTATES  
Address: ZADORRA ESTATES  
OSHAWA, ONTARIO  
Nov 04 2023

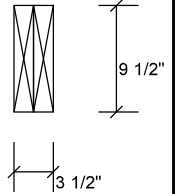
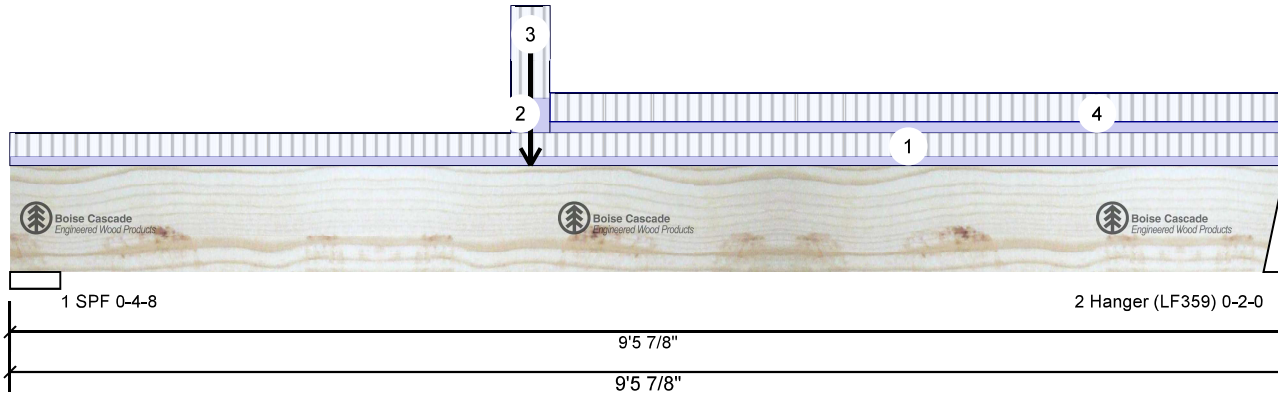
Date: 7/3/2023  
Input by: W C  
Job Name: RIVER 6-3 STD & DC  
Project #: MHP 23025

F8-D Versa-Lam LVL 2.1E 3100 SP

2-Ply - PASSED

Level: Ground Floor

PER:   
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	295	167	0	0
2	Vertical	285	157	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.500"	Vert	7%	208 / 442	650	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	8%	197 / 427	624	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1947 ft-lb	3'10 7/16"	23220 ft-lb	0.084 (8%)	1.25D+1.5L	L
Unbraced	1947 ft-lb	3'10 7/16"	23220 ft-lb	0.084 (8%)	1.25D+1.5L	L
Shear	602 lb	1'2"	10574 lb	0.057 (6%)	1.25D+1.5L	L
Perm Defl in.	0.012 (L/8860)	4'8 7/8"	0.302 (L/360)	0.041 (4%)	D	Uniform
LL Defl inch	0.023 (L/4689)	4'8 5/8"	0.302 (L/360)	0.077 (8%)	L	L
TL Defl inch	0.036 (L/3066)	4'8 11/16"	0.454 (L/240)	0.078 (8%)	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 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 5'7 7/16" o.c.
- 9 Lateral slenderness ratio based on full section width.



JULY 04, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 9-5-14	0-5-11	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	3-8-11 to 4-0-3	1-10-1	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Point	3-10-7		Near Face	111 lb	252 lb	0 lb	0 lb	F6
4	Tie-In	4-0-3 to 9-5-14	0-6-15	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				9 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 &amp; Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
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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 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO  
 Nov 04 2023

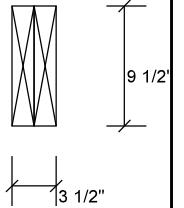
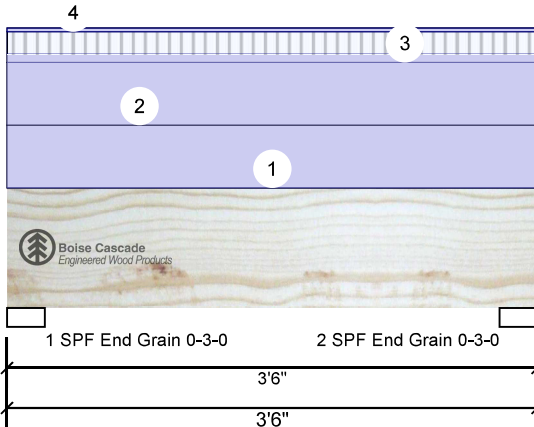
Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

FH5 Versa-Lam LVL 2.1E 3100 SP

1 2-Ply - PASSED

Level: Ground Floor

PER: *C. Moore*  
 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	32	213	0	0
2	Vertical	32	213	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%	266 / 47	313	L	1.25D+1.5L
2 - SPF End Grain	3.000"	Vert	4%	266 / 47	313	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	218 ft-lb	1'9"	15093 ft-lb	0.014 (1%)	1.25D+1.5L	L
Unbraced	218 ft-lb	1'9"	15093 ft-lb	0.014 (1%)	1.25D+1.5L	L
Shear	218 lb	1' 1/2"	6873 lb	0.032 (3%)	1.25D+1.5L	L
Perm Defl in.	0.001 (L/68776)	1'9"	0.104 (L/360)	0.005 (1%)	D	Uniform
LL Defl inch	0.000 (L/464113)	1'9"	0.104 (L/360)	0.001 (0%)	L	L
TL Defl inch	0.001 (L/59900)	1'9"	0.156 (L/240)	0.004 (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 laterally braced at a maximum of 3'6" o.c.
- 6 Bottom must be laterally braced at a maximum of 3'6" o.c.
- 7 Lateral slenderness ratio based on full section width.



JULY 04, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-6-0		Top	51 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
2	Part. Uniform	0-0-0 to 3-6-0		Near Face	51 PLF	0 PLF	0 PLF	0 PLF	Wall Self Weight
3	Tapered Start	0-0-0		Near Face	7 PLF	18 PLF	0 PLF	0 PLF	
	End	3-6-0			7 PLF	18 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 &amp; Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
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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 Boise, ID 83702  
 (800) 232-0788  
 www.bc.com  
 CCMC: 12472

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



This design is valid until 4/17/2026





Client: GREENPARK  
 Project: ZADORRA ESTATES  
 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO  
 Nov 04 2023

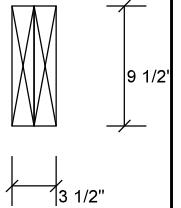
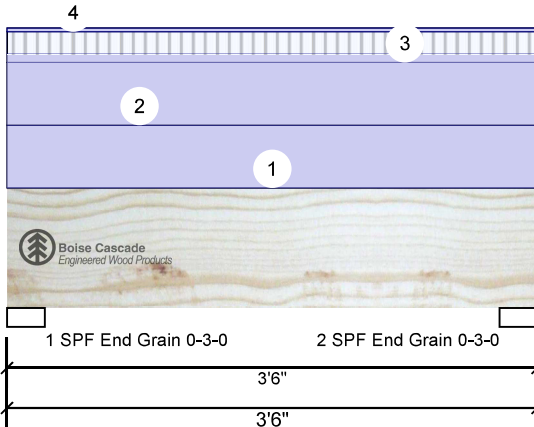
Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

FH5 Versa-Lam LVL 2.1E 3100 SP

1 2-Ply - PASSED

Level: Ground Floor

PER: CHIEF BUILDING OFFICIAL



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Part. Uniform	0-0-0 to 3-6-0		Near Face	3 PLF	0 PLF	0 PLF	0 PLF	Rim Board Self Weight
	Self Weight				9 PLF				



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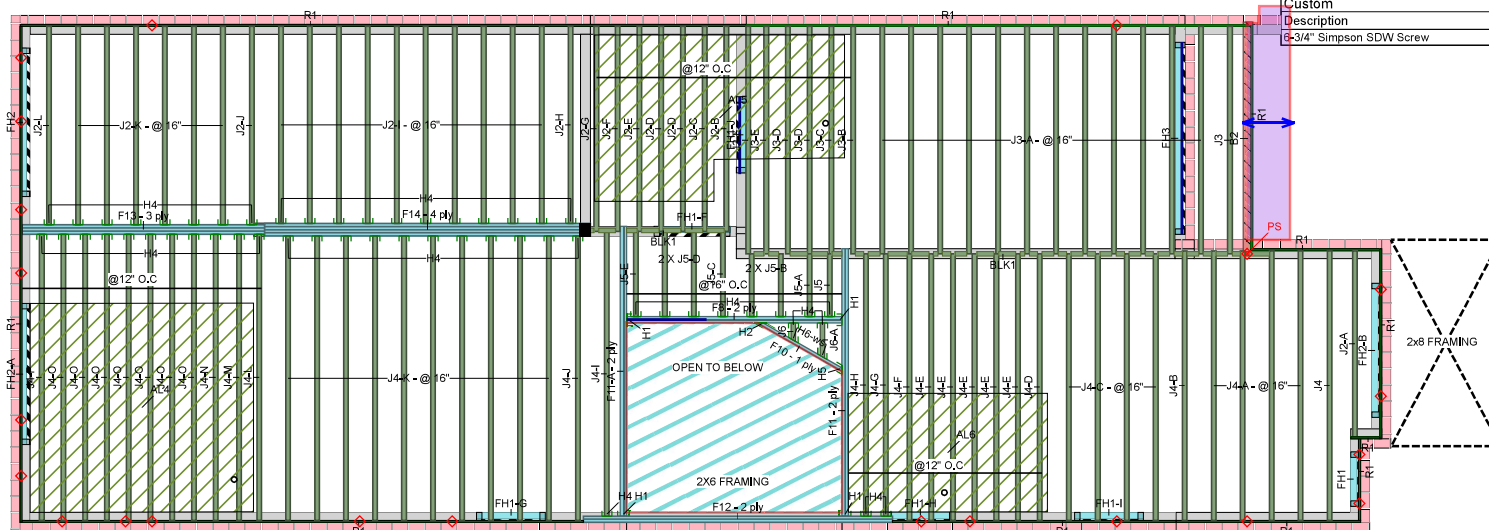


(Open your phone's camera and hover over this QR code to access it)

Fasten at concentrated side load each side of concentrated  
load at 14-0-15 with 1 column 2 rows of SDW22634

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 "B" 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 hangers on side of 3-ply member, it is recommended that the equivalent quantity and size of nail required for the hanger attachment also be installed on opposite side of the 3-ply member.

WS Web Stiffener  
 -WS In Hanger Label Denotes Web Stiffeners  
 PS Point Load Support  
 ◇ Load from Above  
 Wall  
 Wall Opening  
 Norbord Rimboard Plus 1,125 X 9,5  
 AUS 140 9,5  
 Versa-Lam LVL 2.1E 3100 SP 1,75 X 9,5  
 1,75 X 9,5 (Dropped)  
 5,25 X 8 (Dropped)



DESIGN BY OTHERS

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

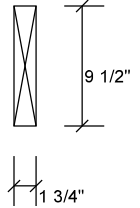
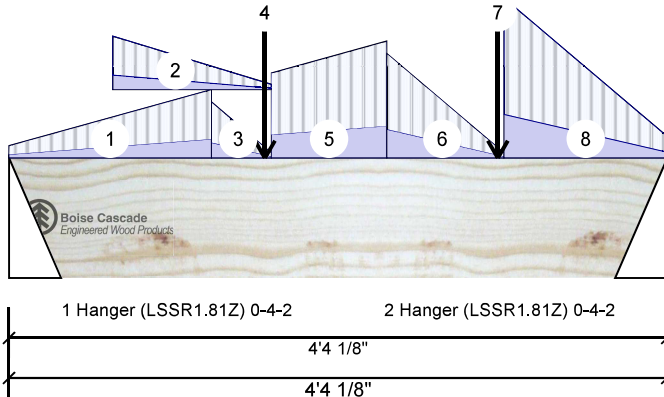




Client: GREENPARK  
 Project: ZADORRA ESTATES  
 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO  
 Nov 04 2023

Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

**F10 Versa-Lam LVL 2.1E 3100 SP 00" - PASSED** Level: Second Floor  
 PER: *C. Motta*  
 CHIEF BUILDING OFFICIAL



### 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	58	32	0	0
2	Vertical	80	40	0	0

### Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.125"	Vert	2%	40 / 88	128	L	1.25D+1.5L
2 - Hanger	4.125"	Vert	2%	51 / 120	171	L	1.25D+1.5L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	144 ft-lb	2'2 3/4"	11610 ft-lb	0.012 (1%)	1.25D+1.5L	L
Unbraced	144 ft-lb	2'2 3/4"	11610 ft-lb	0.012 (1%)	1.25D+1.5L	L
Shear	116 lb	3'2 1/2"	5287 lb	0.022 (2%)	1.25D+1.5L	L
Perm Defl in.	0.000 (L/126762)	2'2 3/8"	0.126 (L/360)	0.003 (0%)	D	Uniform
LL Defl inch	0.001 (L/63209)	2'2 7/16"	0.126 (L/360)	0.006 (1%)	L	L
TL Defl inch	0.001 (L/42178)	2'2 7/16"	0.189 (L/240)	0.006 (1%)	D+L	L

### Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fill all hanger nailing holes.
- Left Header: DF, Thickness: 3 1/2"
- Right Header: DF, Thickness: 3 1/2"
- Girders are designed to be supported on the bottom edge only.
- Top must be continuously laterally braced.
- Bottom must have sheathing attached or be continuously braced.



JULY 04, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Tie-In	0-0-0 to 1-4-0	0-1-0 to 0-5-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Tie-In	0-8-3 to 1-8-12	0-4-6 to 0-0-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
3	Tie-In	1-4-0 to 1-8-12	0-4-9 to 0-0-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

### Notes

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### Lumber

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

chemicals

### Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

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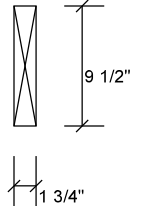
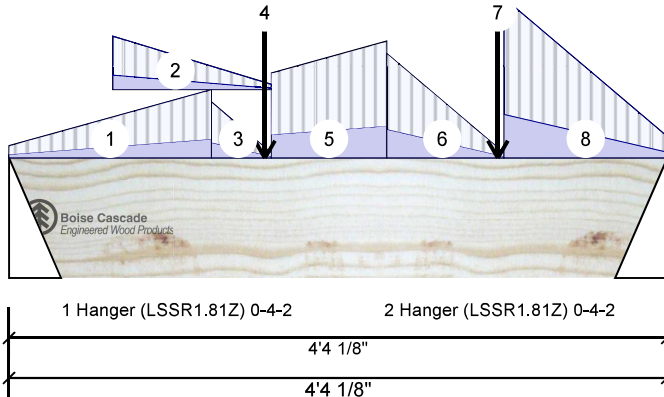
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 OSHAWA, ONTARIO  
 Nov 04 2023

Date: 7/3/2023  
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 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F10 Versa-Lam LVL 2.1E 3100

SP 00" - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Point	1-8-4		Far Face	7 lb	19 lb	0 lb	0 lb	J6
5	Tie-In	1-8-12 to 2-5-15	0-6-15 to 0-9-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
6	Tie-In	2-5-15 to 3-3-3	0-8-9 to 0-0-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Point	3-2-11		Far Face	13 lb	34 lb	0 lb	0 lb	J6
8	Tie-In	3-3-3 to 4-4-2	1-1-1 to 0-1-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
Self Weight					5 PLF				



JULY 04, 2023

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**Lumber**

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

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

1. LVL beams must not be cut or drilled
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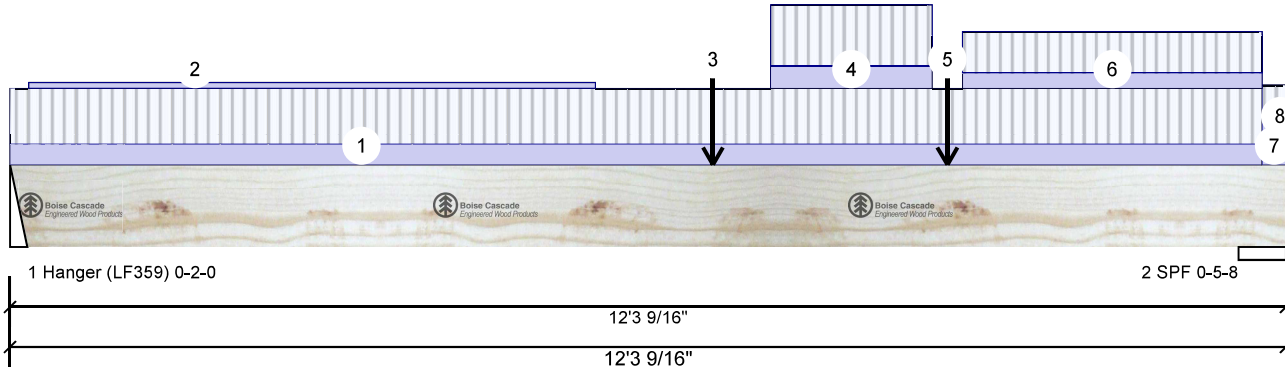
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 OSHAWA, ONTARIO  
 Nov 04 2023

Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F11 Versa-Lam LVL 2.1E 3100 SP

1. *C. Motta* 2-Ply - PASSED  
 PER: CHIEF BUILDING OFFICIAL

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	272	184	0	0
2	Vertical	558	317	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	8%	230 / 408	638	L	1.25D+1.5L
2 - SPF	5.500"	Vert	10%	396 / 837	1233	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3169 ft-lb	8'4"	23220 ft-lb	0.136 (14%)	1.25D+1.5L	L
Unbraced	3169 ft-lb	8'4"	23220 ft-lb	0.136 (14%)	1.25D+1.5L	L
Shear	1152 lb	11' 9/16"	10574 lb	0.109 (11%)	1.25D+1.5L	L
Perm Defl in.	0.038 (L/3771)	6'4 7/16"	0.393 (L/360)	0.095 (10%)	D	Uniform
LL Defl inch	0.063 (L/2236)	6'5 5/8"	0.393 (L/360)	0.161 (16%)	L	
TL Defl inch	0.101 (L/1404)	6'5 1/8"	0.590 (L/240)	0.171 (17%)	D+L	L

## Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fill all hanger nailing holes.
- 3 Left Header: DF, Thickness: 3 1/2"
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Multiple plies must be fastened together as per manufacturer's details.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be continuously laterally braced.
- 8 Bottom must be laterally braced at a maximum of 6'7 13/16" o.c.
- 9 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	Tie-In	0-0-0 to 12-0-13	0-5-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Part. Uniform	0-2-3 to 5-7-11		Top	2 PLF	0 PLF	0 PLF	0 PLF	
3	Point	6-9-5		Far Face	40 lb	80 lb	0 lb	0 lb	F10
4	Tie-In	7-4-0 to 8-10-11	0-6-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	

Continued on page 2...

## Notes

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

## Lumber

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

## chemicals

## Handling &amp; Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 4/17/2026

## Manufacturer Info

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

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







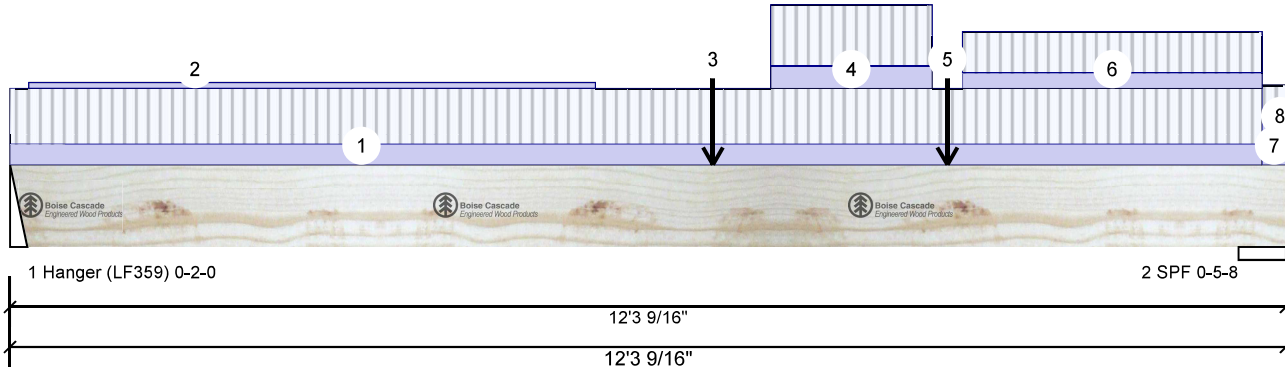
Client: GREENPARK  
 Project: ZADORRA ESTATES  
 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO  
 Nov 04 2023

Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F11 Versa-Lam LVL 2.1E 3100 SP

1. *C. Motta*  
 PER: CHIEF BUILDING OFFICIAL  
 2-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
5	Point	9-0-7		Far Face	218 lb	440 lb	0 lb	0 lb	F8
6	Tie-In	9-2-3 to 12-0-13	0-4-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
7	Tie-In	12-0-13 to 12-3-9	0-2-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	
8	Tie-In	12-0-13 to 12-3-9	0-3-12	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				9 PLF				



JULY 04, 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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 OSHAWA, ONTARIO

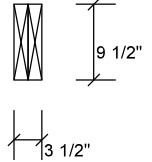
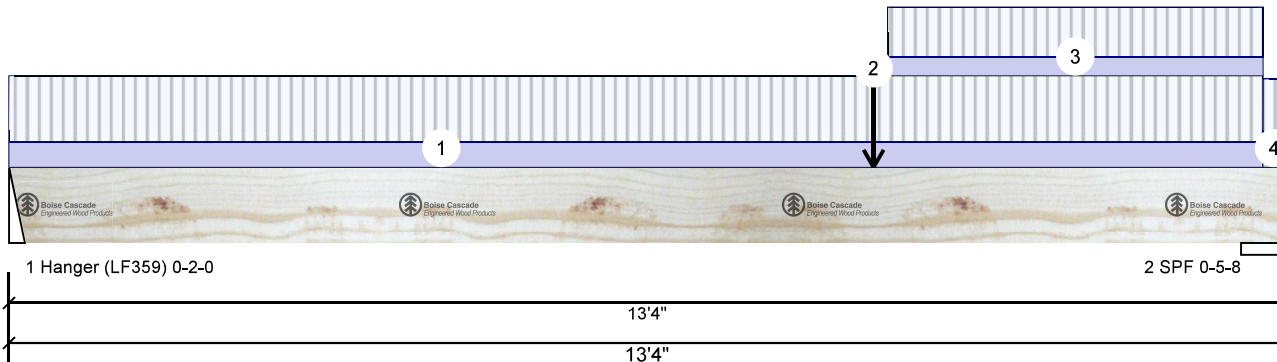
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 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F11-A Versa-Lam LVL 2.1E 3100 SP

1. *C. Motta* 2-Ply - PASSED

Level: Second Floor

PER: *C. Motta*  
 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	312	195	0	0
2	Vertical	613	331	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	9%	243 / 468	711	L	1.25D+1.5L
2 - SPF	5.500"	Vert	11%	414 / 920	1335	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4640 ft-lb	9' 7/16"	23220 ft-lb	0.200 (20%)	1.25D+1.5L	L
Unbraced	4640 ft-lb	9' 7/16"	23220 ft-lb	0.200 (20%)	1.25D+1.5L	L
Shear	1269 lb	12'1"	10574 lb	0.120 (12%)	1.25D+1.5L	L
Perm Defl in.	0.055 (L/2809)	6'11 5/8"	0.428 (L/360)	0.128 (13%)	D	Uniform
LL Defl inch	0.100 (L/1537)	7' 13/16"	0.428 (L/360)	0.234 (23%)	L	L
TL Defl inch	0.155 (L/994)	7' 7/16"	0.642 (L/240)	0.242 (24%)	D+L	L



JULY 04, 2023

## Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 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 9' 7/16" o.c.
- 9 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	Tie-In	0-0-0 to 13-1-4	0-4-9	Top	15 PSF	40 PSF	0 PSF	0 PSF	
2	Point	9-0-7		Near Face	307 lb	677 lb	0 lb	0 lb	F8
3	Tie-In	9-2-3 to 13-1-4	0-3-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
4	Tie-In	13-1-4 to 13-4-0	0-4-7	Top	15 PSF	40 PSF	0 PSF	0 PSF	
	Self Weight				9 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 &amp; Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
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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 CCMC: 12472

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 Project: ZADORRA ESTATES  
 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO  
 Nov 04 2023

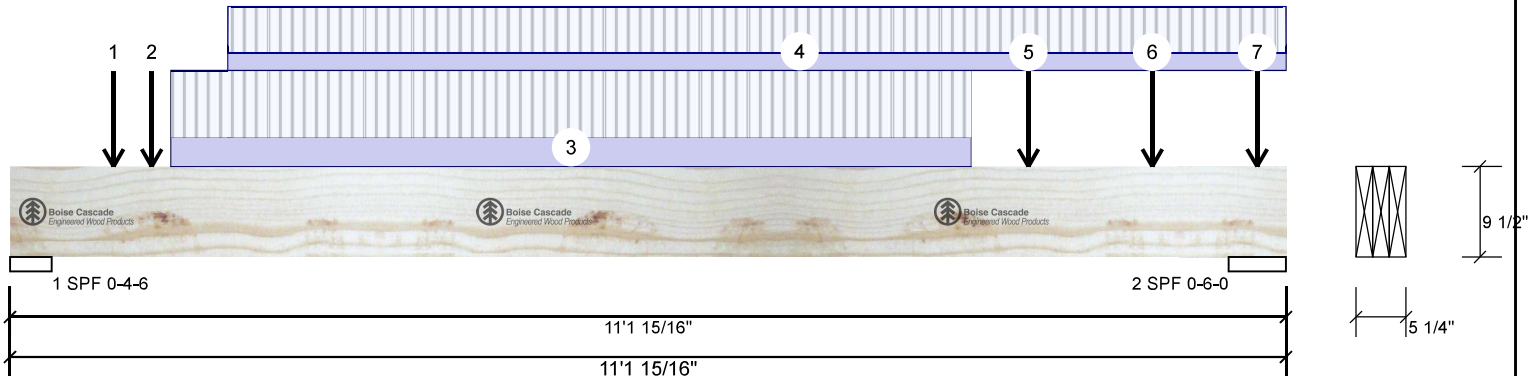
Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F13 Versa-Lam LVL 2.1E 3100 SP

3-Ply - PASSED

Level: Second Floor

PER: *C. Motta*  
 CHIEF BUILDING OFFICIAL



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	3	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	Yes
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	2199	978	0	0
2	Vertical	2483	1091	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.375"	Vert	32%	1223 / 3299	4522	L	1.25D+1.5L
2 - SPF	6.010"	Vert	26%	1364 / 3725	5088	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	12186 ft-lb	5'6 3/16"	36222 ft-lb	0.336 (34%)	1.25D+1.5L	L
Unbraced	12186 ft-lb	5'6 3/16"	36222 ft-lb	0.336 (34%)	1.25D+1.5L	L
Shear	4796 lb	1'1 7/8"	15860 lb	0.302 (30%)	1.25D+1.5L	L
Perm Defl in.	0.066 (L/1907)	5'6 3/16"	0.347 (L/360)	0.189 (19%)	D	Uniform
LL Defl inch	0.149 (L/841)	5'6 3/16"	0.347 (L/360)	0.428 (43%)	L	L
TL Defl inch	0.214 (L/584)	5'6 3/16"	0.521 (L/240)	0.411 (41%)	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.
- Multiple plies must be fastened together as per manufacturer's details.
- Top must be continuously laterally braced.
- Bottom must have sheathing attached or be continuously braced.
- Lateral slenderness ratio based on full section width.



JULY 04, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Point	0-10-14		Near Face	110 lb	253 lb	0 lb	0 lb	J4
2	Point	1-2-14		Far Face	88 lb	234 lb	0 lb	0 lb	J2
3	Part. Uniform	1-4-14 to 8-4-14		Near Face	112 PLF	259 PLF	0 PLF	0 PLF	
4	Part. Uniform	1-10-14 to 11-1-15		Far Face	67 PLF	180 PLF	0 PLF	0 PLF	
5	Point	8-10-14		Near Face	120 lb	270 lb	0 lb	0 lb	J4
6	Point	9-11-14		Near Face	116 lb	259 lb	0 lb	0 lb	J4

Continued on page 2...

## Notes

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## Lumber

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

## chemicals

## Handling &amp; Installation

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

- For flat roofs provide proper drainage to prevent ponding

## Manufacturer Info

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

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



This design is valid until 4/17/2026





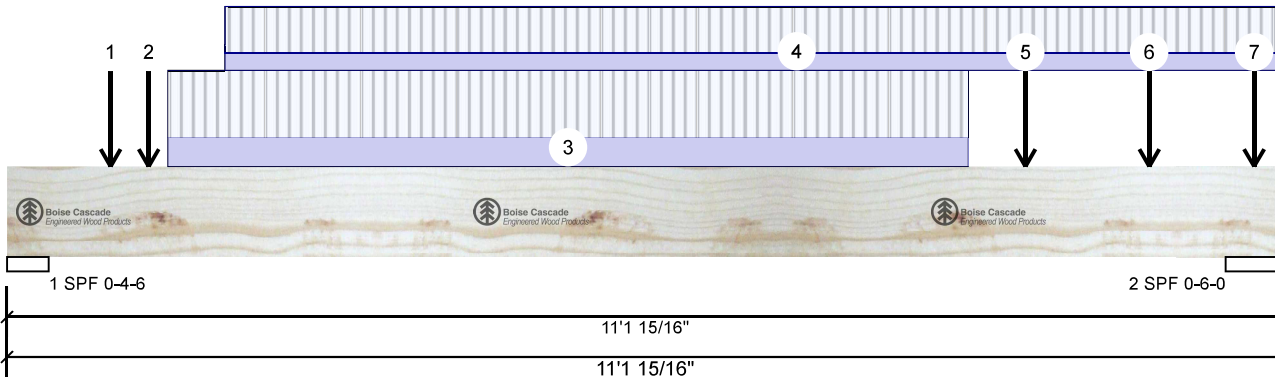
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 Project: ZADORRA ESTATES  
 Address: ZADORRA ESTATES  
 OSHAWA, ONTARIO

Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F13 Versa-Lam LVL 2.1E 3100 SP

1. *C. Motta*  
 PER: CHIEF BUILDING OFFICIAL  
 3-Ply - PASSED

Level: Second Floor



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
7	Point	10-10-14		Near Face	73 lb	188 lb	0 lb	0 lb	J4
	Self Weight				14 PLF				



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**Lumber**

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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

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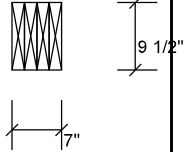
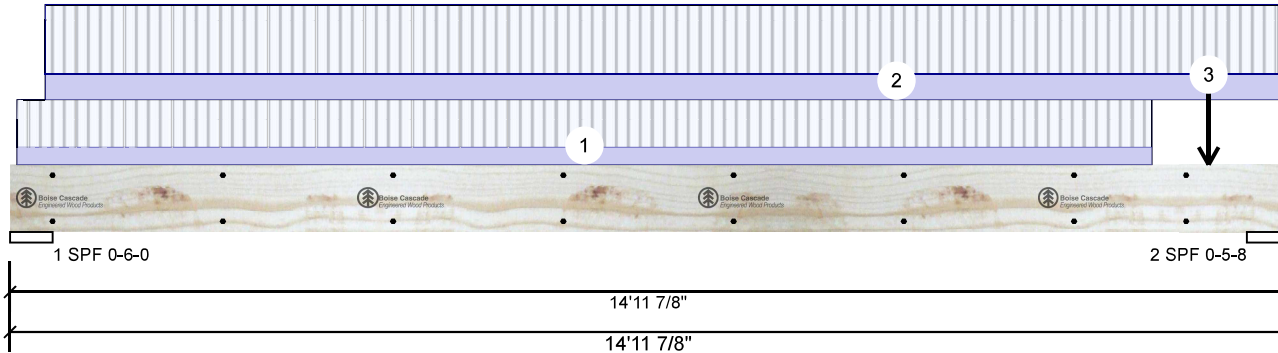
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 Project #: MHP 23025

F14 Versa-Lam LVL 2.1E 3100 SP

1. *C. Motta*  
 PER: CHIEF BUILDING OFFICIAL  
 4-Ply - PASSED

Level: Second Floor



## Member Information

Type:	Girder	Application:	Floor (Residential)
Plies:	4	Design Method:	LSD
Moisture Condition:	Dry	Building Code:	NBCC 2015 OBC 2012(2020 Update)
Deflection LL:	360	Load Sharing:	Yes
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	3155	1322	0	0
2	Vertical	3203	1340	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.000"	Vert	25%	1652 / 4732	6384	L	1.25D+1.5L
2 - SPF	5.500"	Vert	27%	1675 / 4805	6480	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	22070 ft-lb	7'6 3/16"	48297 ft-lb	0.457 (46%)	1.25D+1.5L	L
Unbraced	22070 ft-lb	7'6 3/16"	48297 ft-lb	0.457 (46%)	1.25D+1.5L	L
Shear	6511 lb	13'8 7/8"	21147 lb	0.308 (31%)	1.25D+1.5L	L
Perm Defl in.	0.157 (L/1081)	7'6 1/4"	0.472 (L/360)	0.333 (33%)	D	Uniform
LL Defl inch	0.377 (L/451)	7'6 1/8"	0.472 (L/360)	0.798 (80%)	L	
TL Defl inch	0.534 (L/318)	7'6 1/4"	0.708 (L/240)	0.754 (75%)	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.
- Fasten all plies using 2 rows of SDW22634 at 24" o.c. Maximum end distance not to exceed 12".
- Refer to last page of calculations for fasteners required for specified loads.
- Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- Simpson fasteners applied from a single side of the member use tip values where published.
- Girders are designed to be supported on the bottom edge only.
- Top must be continuously laterally braced.
- Bottom must have sheathing attached or be continuously braced.
- Lateral slenderness ratio based on full section width.



JULY 04, 2023

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## Notes

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## Lumber

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

chemicals

## Handling &amp; Installation

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
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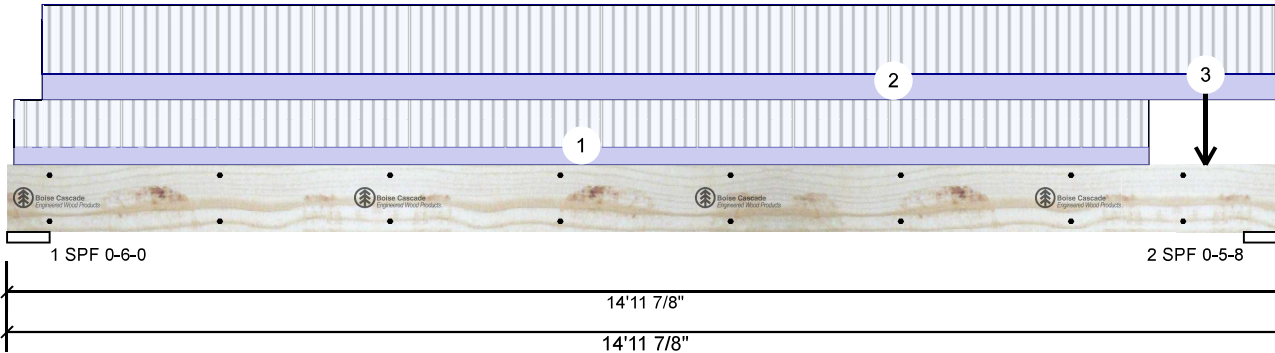
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 Nov 04 2023

Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

F14 Versa-Lam LVL 2.1E 3100 SP

1. *C. Mata*  
 PER: CHIEF BUILDING OFFICIAL  
 4-Ply - PASSED

Level: Second Floor



ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-15 to 13-4-15		Far Face	66 PLF	177 PLF	0 PLF	0 PLF	
2	Part. Uniform	0-4-15 to 14-11-14		Near Face	97 PLF	259 PLF	0 PLF	0 PLF	
3	Point	14-0-15		Far Face	84 lb	223 lb	0 lb	0 lb	J2
	Self Weight				19 PLF				



JULY 04, 2023

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 OSHAWA, ONTARIO  
 Nov 04 2023

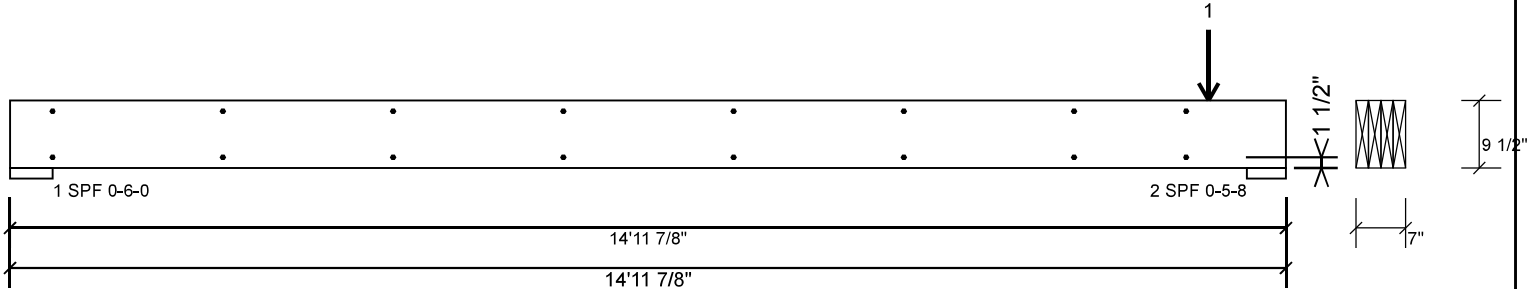
Date: 7/3/2023  
 Input by: W C  
 Job Name: RIVER 6-3 STD & DC  
 Project #: MHP 23025

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F14 Versa-Lam LVL 2.1E 3100 SP

1. *C. Maitre*  
 PER: CHIEF BUILDING OFFICIAL  
 4-Ply - PASSED

Level: Second Floor



### Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22634 at 24" o.c.. except for regions covered by concentrated load fastening. Maximum end distance not to exceed 12".

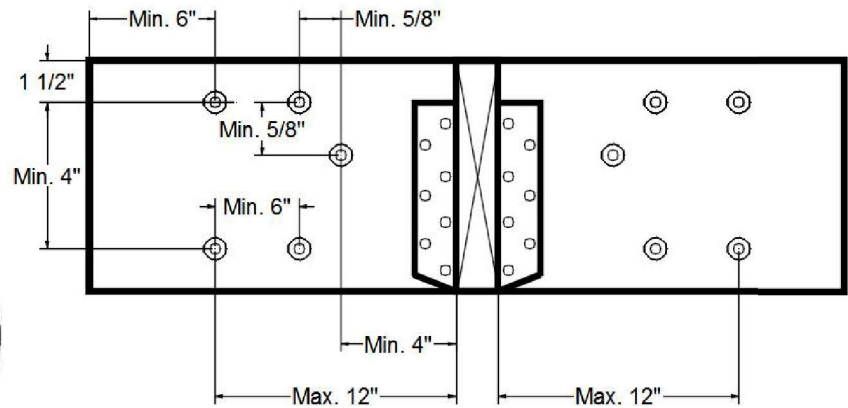
Capacity	92.1 %
Load	382.3 PLF
Yield Limit per Foot	415.0 PLF
Yield Limit per Fastener	415.0 lb.
Yield Mode	Lookup
Edge Distance	1 1/2"
Min. End Distance	6"
Load Combination	1.25D+1.5L
Duration Factor	1.00

### Concentrated Load

Fasten at concentrated side load at 14-0-15 with a minimum of (2) – SDW22634 in the pattern shown. All fasteners shall be installed with the head on the side of the applied load.

Capacity	33.3 %
Load	329.6lb.
Total Yield Limit	990.0 lb.
Yield Limit per Fastener	495.0 lb.
Yield Mode	Lookup
Load Combination	1.25D+1.5L
Duration Factor	1.00

### Min/Max fastener distances for Concentrated Side Loads



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### Notes

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### Lumber

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

### 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





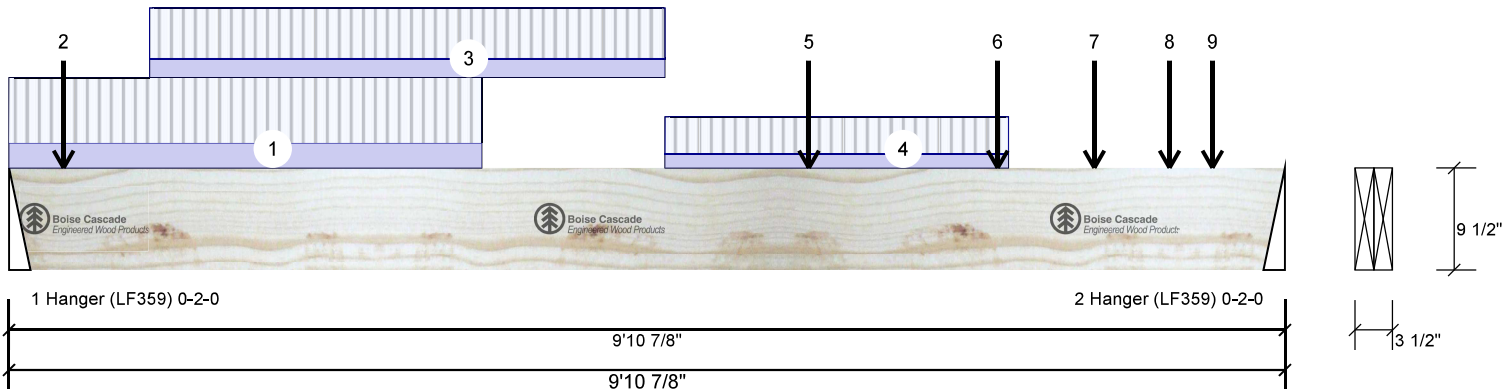
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F8 Versa-Lam LVL 2.1E 3100 SP

1.7 *C. Moore* - Ply - PASSED  
 PER: CHIEF BUILDING OFFICIAL

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	677	307	0	0
2	Vertical	440	218	0	0

## Bearings and Factored Reactions

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.000"	Vert	18%	383 / 1015	1399	L	1.25D+1.5L
2 - Hanger	2.000"	Vert	12%	272 / 660	932	L	1.25D+1.5L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2633 ft-lb	4'3"	23220 ft-lb	0.113 (11%)	1.25D+1.5L	L
Unbraced	2633 ft-lb	4'3"	23220 ft-lb	0.113 (11%)	1.25D+1.5L	L
Shear	1208 lb	11 1/2"	10574 lb	0.114 (11%)	1.25D+1.5L	L
Perm Defl in.	0.020 (L/5920)	4'10 3/16"	0.323 (L/360)	0.061 (6%)	D	Uniform
LL Defl inch	0.041 (L/2828)	4'9 11/16"	0.323 (L/360)	0.127 (13%)	L	L
TL Defl inch	0.061 (L/1914)	4'9 7/8"	0.485 (L/240)	0.125 (13%)	D+L	L

## Design Notes

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



JULY 04, 2023

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ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
1	Part. Uniform	0-0-0 to 3-8-1		Top	38 PLF	100 PLF	0 PLF	0 PLF	
2	Point	0-5-1		Far Face	28 lb	73 lb	0 lb	0 lb	J5
3	Part. Uniform	1-1-1 to 5-1-1		Far Face	29 PLF	77 PLF	0 PLF	0 PLF	

Continued on page 2...

## Notes

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## Lumber

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chemicals

## Handling &amp; Installation

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## Manufacturer Info

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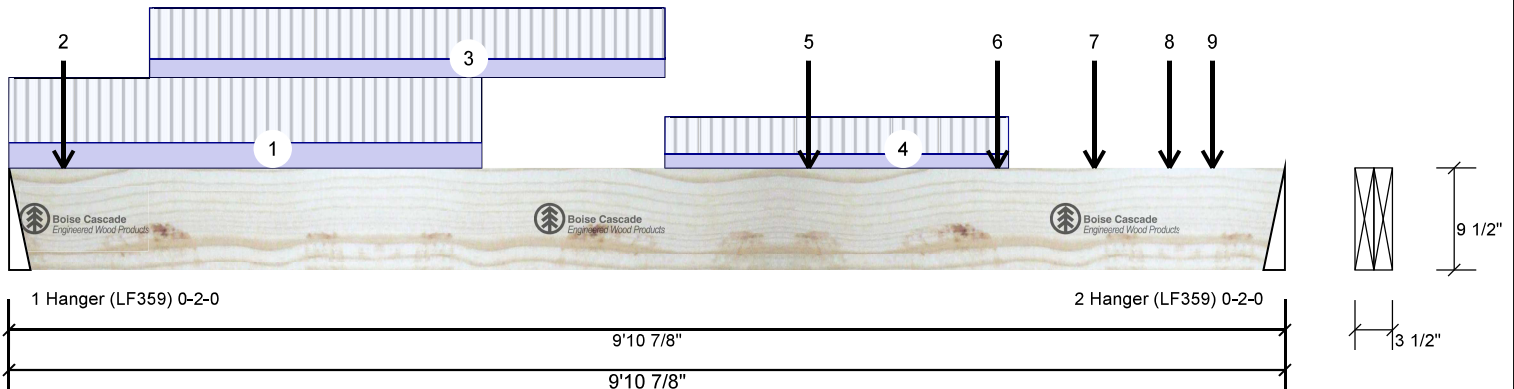
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...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead	Live	Snow	Wind	Comments
4	Part. Uniform	5-1-1 to 7-9-1		Far Face	21 PLF	57 PLF	0 PLF	0 PLF	
5	Point	6-2-8		Near Face	32 lb	58 lb	0 lb	0 lb	F10
6	Point	7-8-1		Near Face	6 lb	16 lb	0 lb	0 lb	J6
7	Point	8-5-1		Far Face	24 lb	64 lb	0 lb	0 lb	J5
8	Point	9-0-1		Near Face	12 lb	33 lb	0 lb	0 lb	J6
9	Point	9-4-1		Far Face	17 lb	46 lb	0 lb	0 lb	J5
	Self Weight				9 PLF				



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