Client: Weaver Development

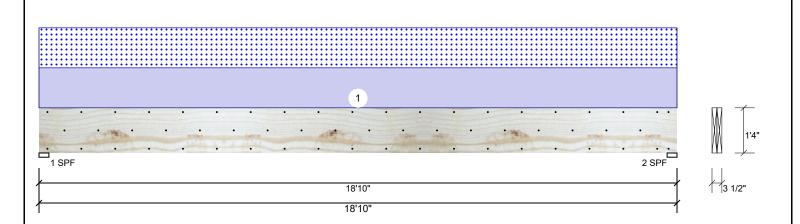
Project: Address: Date:

2/11/2020 Designer: Curtis Quick Job Name: The Lauren III Beams

Project #:

1.750" X 16.000" 2-Ply - PASSED **Kerto-S LVL**

Level: Level



Member Information Reactions UNPATTERNED Ib (Uplift) Application: Brg Live Wind Const Type: Floor Dead Snow Plies: 2 Design Method: ASD 0 1840 1723 0 0 1 Moisture Condition: Dry **Building Code:** IBC 2012 2 0 1840 1723 0 0 Deflection LL: 480 Load Sharing: No Deflection TL: 360 Deck: Not Checked Importance: Normal Temp <= 100°F Temperature: **Bearings** Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.500" D+S 1840 / 1723 3564 L 2 - SPF 3.500" 68% 1840 / 1723 3564 L D+S

Analysis Results

Analysis Actual Location Allowed Capacity Comb. Case Moment 16009 ft-lb 9'5" 39750 ft-lb 0.403 (40%) D+S L Unbraced 16009 ft-lb 9'5" 16016 ft-lb 1.000 (100%) D+S L Shear 2976 lb 17'3 3/8" 13739 lb 0.217 (22%) D+S L LL Defl inch 0.213 (L/1035) 9'5 1/16" 0.460 (L/480) 0.460 (46%) S L TL Defl inch 0.441 (L/501) 9'5 1/16" 0.613 (L/360) 0.720 (72%) D+S L	•						
Unbraced 16009 ft-lb 9'5" 16016 ft-lb 1.000 (100%) D+S L Shear 2976 lb 17'3 3/8" 13739 lb 0.217 (22%) D+S L LL Defl inch 0.213 (L/1035) 9'5 1/16" 0.460 (L/480) 0.460 (46%) S L	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
(100%) Shear 2976 lb 17'3 3/8" 13739 lb 0.217 (22%) D+S L LL Defl inch 0.213 (L/1035) 9'5 1/16" 0.460 (L/480) 0.460 (46%) S L	Moment	16009 ft-lb	9'5"	39750 ft-lb	0.403 (40%)	D+S	L
LL Defl inch 0.213 (L/1035) 9'5 1/16" 0.460 (L/480) 0.460 (46%) S L	Unbraced	16009 ft-lb	9'5"	16016 ft-lb		D+S	L
	Shear	2976 lb	17'3 3/8"	13739 lb	0.217 (22%)	D+S	L
TL Defl inch 0.441 (L/501) 9'5 1/16" 0.613 (L/360) 0.720 (72%) D+S L	LL Defl inch	0.213 (L/1035)	9'5 1/16"	0.460 (L/480)	0.460 (46%)	S	L
	TL Defl inch	0.441 (L/501)	9'5 1/16"	0.613 (L/360)	0.720 (72%)	D+S	L

Design Notes

- 1 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 7'4 1/2" o.c.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	183 PLF	0 PLF	183 PLF	0 PLF	0 PLF	A4A
	Self Weight				12 PLF					

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

- 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 Metsä Wood 3071 Commerce Dr, Suite E Fort Gratiot, MI 48059

(800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS



Page 1 of 8



Client: Weaver Development

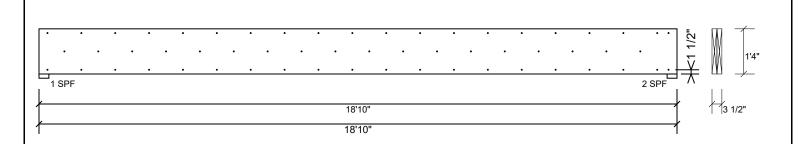
Project: Address: 2/11/2020

Designer: Curtis Quick Job Name: The Lauren III Beams Page 2 of 8

Project #:

1.750" X 16.000" 2-Ply - PASSED **Kerto-S LVL**

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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

- Handling & Installation

 1. UVI 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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Client:

Project: Address: Weaver Development

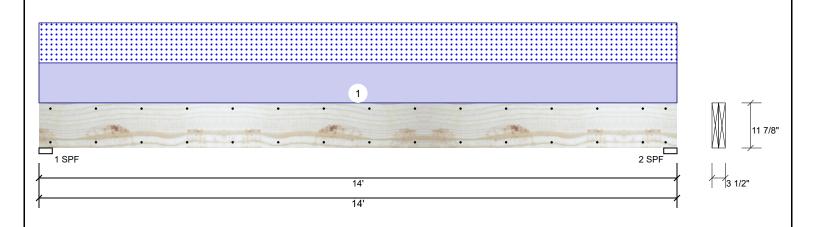
2/11/2020 Designer:

Curtis Quick Job Name: The Lauren III Beams Page 3 of 8

Project #:

1.750" X 11.875" 2-Ply - PASSED **Kerto-S LVL**

Level: Level



Member Inform	nation			Reactio	ns UNPAT	TERNED II	(Uplift)		
Туре:	Girder	Application:	Floor	Brg	Live	Dead	Snow	Wind	Const
Plies:	2	Design Method:	ASD	1	0	1696	1631	0	0
Moisture Condition	: Dry	Building Code:	IBC 2012	2	0	1696	1631	0	0
Deflection LL:	480	Load Sharing:	No						
Deflection TL:	360	Deck:	Not Checked						
Importance:	Normal								
Temperature:	Temp <= 100°F								
				Bearing	S				
				Bearing	Length	Cap. Rea	ct D/L lb	Total Ld. Case	Ld. Comb.
				1 - SPF	3.500"	64% 16	96 / 1631	3327 L	D+S
				2 - SPF	3.500"	64% 16	96 / 1631	3327 L	D+S

Analysis Results

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10893 ft-lb	7'	22897 ft-lb	0.476 (48%)	D+S	L
Unbraced	10893 ft-lb	7'	10911 ft-lb	0.998 (100%)	D+S	L
Shear	2747 lb	1'2 5/8"	10197 lb	0.269 (27%)	D+S	L
LL Defl inch	0.195 (L/832)	7' 1/16"	0.339 (L/480)	0.580 (58%)	S	L
TL Defl inch	0.398 (L/408)	7' 1/16"	0.451 (L/360)	0.880 (88%)	D+S	L

Design Notes

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 8'2 5/8" o.c.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	233 PLF	0 PLF	233 PLF	0 PLF	0 PLF	G1
	Self Weight				9 PLF					

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

- 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
 2 Damaged Beams must not be used
- Danaged 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

Metsä Wood 3071 Commerce Dr, Suite E Fort Gratiot, MI 48059 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Manufacturer Info





Client: Weaver Development

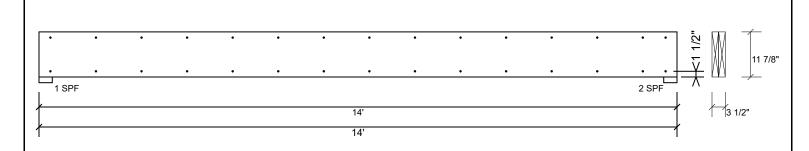
Project: Address: 2/11/2020

Designer: Curtis Quick Job Name: The Lauren III Beams Page 4 of 8

Project #:

1.750" X 11.875" 2-Ply - PASSED **Kerto-S LVL**

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

, ,		,	,
Capacity	0.0 %		
Load	0.0 PLF		
Yield Limit per Foot	163.7 PLF		
Yield Limit per Fastener	81.9 lb.		
Yield Mode	IV		
Edge Distance	1 1/2"		
Min. End Distance	3"		
Load Combination			
Duration Factor	1.00		

Notes

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

- Handling & Installation

 1. UVI 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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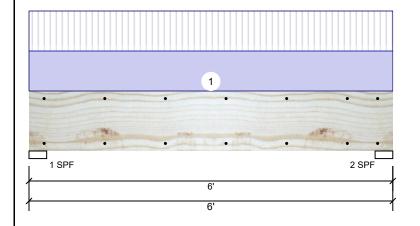
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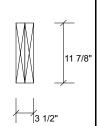
Project: Address: Weaver Development

Date: 2/11/2020 Designer: Curtis Quick Job Name: The Lauren III Beams

1.750" X 11.875" 2-Ply - PASSED **Kerto-S LVL**

_evel: Level





Page 5 of 8

iviellibel illiolillatio	Member Inf	ormatio	n
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Girder Type: Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal

Temperature: Temp <= 100°F

Application: Floor Design Method: ASD **Building Code:** IBC 2012 Load Sharing: No Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	2247	2275	0	0	0
2	2247	2275	0	0	0

Bearings

Bearing	Length	Cap. I	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	87%	2275 / 2247	4522	L	D+L
2 - SPF	3 500"	87%	2275 / 2247	4522	1	D+I

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5786 ft-lb	3'	19911 ft-lb	0.291 (29%)	D+L	L
Unbraced	5786 ft-lb	3'	14445 ft-lb	0.401 (40%)	D+L	L
Shear	2685 lb	1'2 5/8"	8867 lb	0.303 (30%)	D+L	L
LL Defl inch	0.024 (L/2743)	3'	0.139 (L/480)	0.170 (17%)	L	L
TL Defl inch	0.049 (L/1363)	3'	0.185 (L/360)	0.260 (26%)	D+L	L

Design Notes

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 Lateral slenderness ratio based on single ply width.

ID Load Type Trib Width Side Dead 0.9 Wind 1.6 Const. 1.25 Comments Location Live 1 Snow 1.15 1 Uniform Top 749 PLF 749 PLF 0 PLF 0 PLF 0 PLF

> Self Weight 9 PLF

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

- 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

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Client:

Project: Address: Weaver Development

2/11/2020 Designer: Curtis Quick

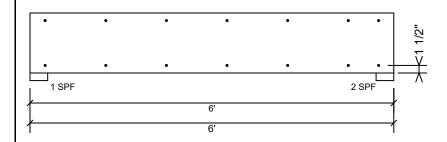
Job Name: The Lauren III Beams

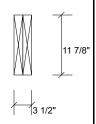
Project #:

Kerto-S LVL

1.750" X 11.875" 2-Ply - PASSED

Level: Level





Page 6 of 8

Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

rasterrain pries asing 2 rows	or roa box rians (. 120x5) at
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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

- Handling & Installation

 1. UVI 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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Client:

Project: Address: Weaver Development

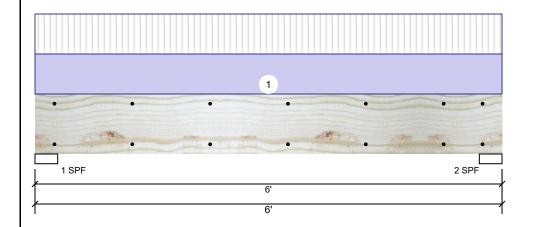
Date: 2/11/2020 Designer: Curtis Quick

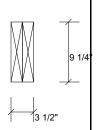
Job Name: The Lauren III Beams

Project #:

1.750" X 9.250" 2-Ply - PASSED **Kerto-S LVL**

Level: Level





Page 7 of 8

Member Information

Type: Plies: 2 Moisture Condition: Dry Deflection LL: 360 Deflection TL: 240 Importance: Normal Temperature: Temp <= 100°F

Application: Design Method:

Building Code: IBC 2012 Load Sharing: No

Floor

ASD

Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	1503	1525	0	0	0
2	1503	1525	0	0	0

Bearings

Bearing Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF 3.500"	58% 1525 / 1503	3028 L	D+L
2 SDE 3500"	58% 1525 / 1503	3028 I	D+I

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3874 ft-lb	3'	12542 ft-lb	0.309 (31%)	D+L	L
Unbraced	3874 ft-lb	3'	10359 ft-lb	0.374 (37%)	D+L	L
Shear	2018 lb	5'	6907 lb	0.292 (29%)	D+L	L
LL Defl inch	0.030 (L/2226)	3'	0.185 (L/360)	0.160 (16%)	L	L
TL Defl inch	0.060 (L/1105)	3'	0.277 (L/240)	0.220 (22%)	D+L	L

Design Notes

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.

Uniform

6 Botton	n braced at bearings.									
7 Latera	l slenderness ratio based on sir	ngle ply width.								
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments

501 PLF

501 PLF

Top

Self Weight 7 PLF

1

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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 Metsä Wood 3071 Commerce Dr, Suite E Fort Gratiot, MI 48059 (800) 622-5850

0 PLF

0 PLF

0 PLF

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Client: Weaver Development

Project: Address:

Date: 2/11/2020

Designer: Curtis Quick Job Name: The Lauren III Beams

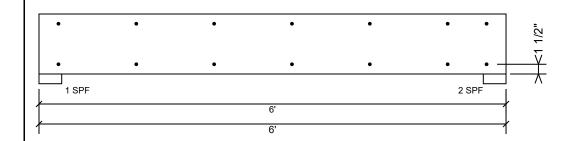
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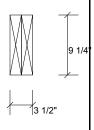
Kerto-S LVL

1.750" X 9.250"

2-Ply - PASSED

Level: Level





Page 8 of 8

Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

	` ,
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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

- Handling & Installation

 1. UVI 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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