

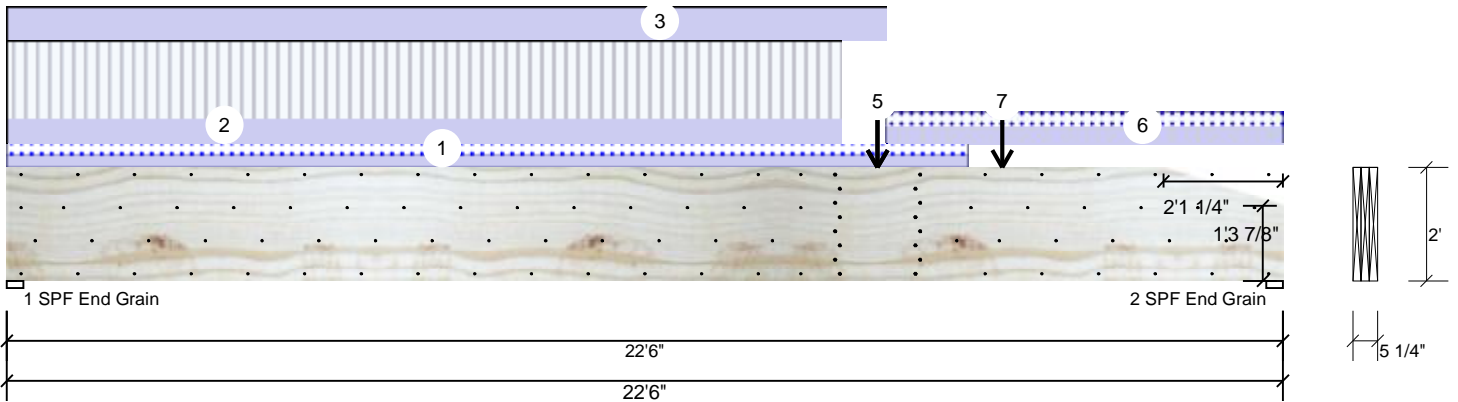


Client: Weaver Development
 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

BM1 Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	4823	3879	683	0	0
2	Vertical	5426	3803	1019	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	56%	3879 / 4823	8701	L	D+L
2 - SPF End Grain	3.500"	Vert	60%	3803 / 5426	9228	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	61310 ft-lb	14'6 5/16"	114169 ft-lb	0.537 (54%)	D+L	L
Unbraced	61310 ft-lb	14'6 5/16"	61499 ft-lb	0.997 (100%)	D+L	L
Shear	9970 lb	20'2 1/2"	26880 lb	0.371 (37%)	D+L	L
Rt. Scarf	155 psi, 9209 lb		320 psi	0.484 (48%)	D+L	L
LL Defl inch	0.283 (L/936)	11'11 7/16"	0.552 (L/480)	0.513 (51%)	L	L
TL Defl inch	0.479 (L/553)	11'9 11/16"	0.735 (L/360)	0.651 (65%)	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 4 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 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.
- Notches in LVL are in accordance with APA Form No. EWS G535, Figure 1.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 4'3 3/16" o.c.
- Bottom must be laterally braced at end bearings.
- Lateral slenderness ratio based on single ply width.

Notes

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

Lumber

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

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

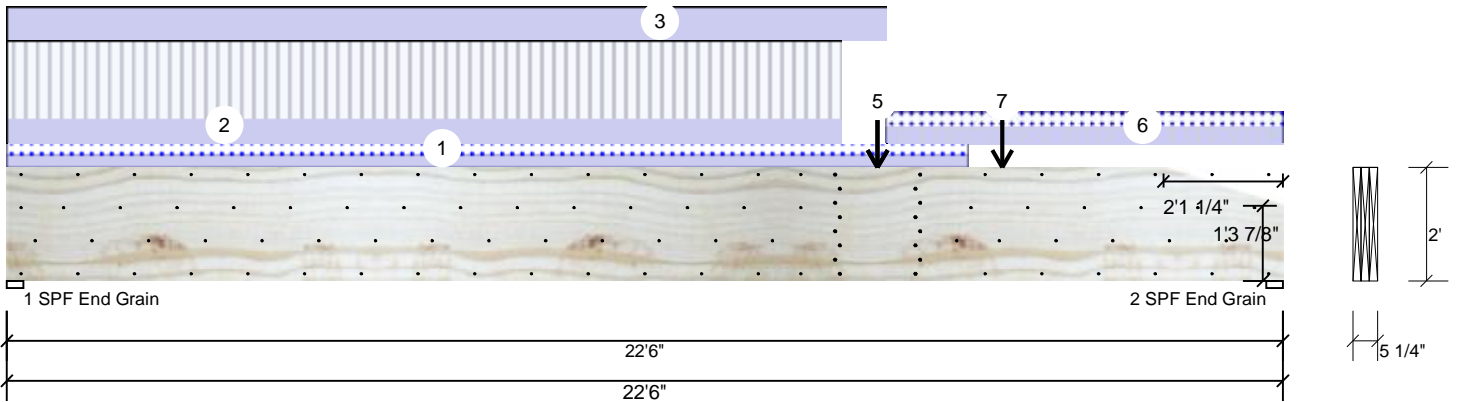
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 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
www.metsawood.com/us

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 USA
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 910-864-TRUS



BM1 Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level



ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-0-0 to 16-11-4		Near Face	45 PLF	0 PLF	45 PLF	0 PLF	0 PLF	M7
2	Part. Uniform	0-0-0 to 14-8-8		Far Face	100 PLF	301 PLF	0 PLF	0 PLF	0 PLF	F1A
3	Part. Uniform	0-0-0 to 15-6-0		Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load
4	Point	15-4-4		Far Face	1941 lb	5821 lb	0 lb	0 lb	0 lb	BM2
5	Point	15-4-4		Top	331 lb	0 lb	331 lb	0 lb	0 lb	D1GE
	Bearing Length	0-3-8								
6	Part. Uniform	15-6-0 to 22-6-0		Far Face	62 PLF	0 PLF	62 PLF	0 PLF	0 PLF	M6
7	Point	17-6-10		Near Face	175 lb	0 lb	175 lb	0 lb	0 lb	M7GR
	Self Weight				28 PLF					

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

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

6. For flat roofs provide proper drainage to prevent ponding

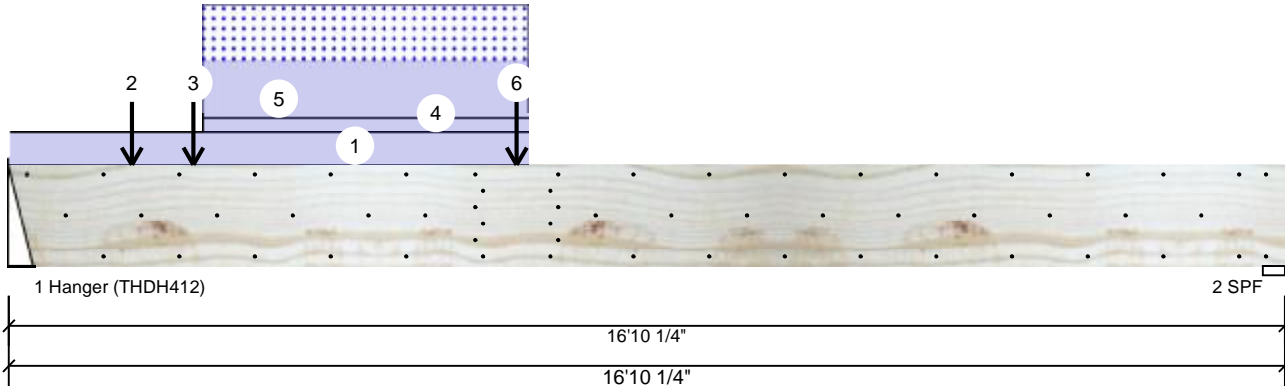
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BM2 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	878	4513	3249	0	0
2	Vertical	570	1145	619	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L Ib	Total	Ld. Case	Ld. Comb.
1 - Hanger	4.000"	Vert	66%	4513 / 3249	7761	L	D+S
2 - SPF	3.500"	Vert	39%	1145 / 892	2036	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	19624 ft-lb	6'3 1/16"	39750 ft-lb	0.494 (49%)	D+0.75(L+S)	L
Unbraced	19624 ft-lb	6'3 1/16"	19643 ft-lb	0.999 (100%)	D+0.75(L+S)	L
Shear	7518 lb	1'8"	13739 lb	0.547 (55%)	D+S	L
LL Defl inch	0.172 (L/1142)	7'4 3/16"	0.409 (L/480)	0.420 (42%)	0.75(L+S)	L
TL Defl inch	0.389 (L/505)	7'3 13/16"	0.546 (L/360)	0.713 (71%)	D+0.75(L+S)	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 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 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.
- Fill all hanger nailing holes.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 5'11 3/8" o.c.
- Bottom must be laterally braced at end bearings.
- Lateral slenderness ratio based on single ply width.

Notes

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

Lumber

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

chemicals

Handling & Installation

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

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

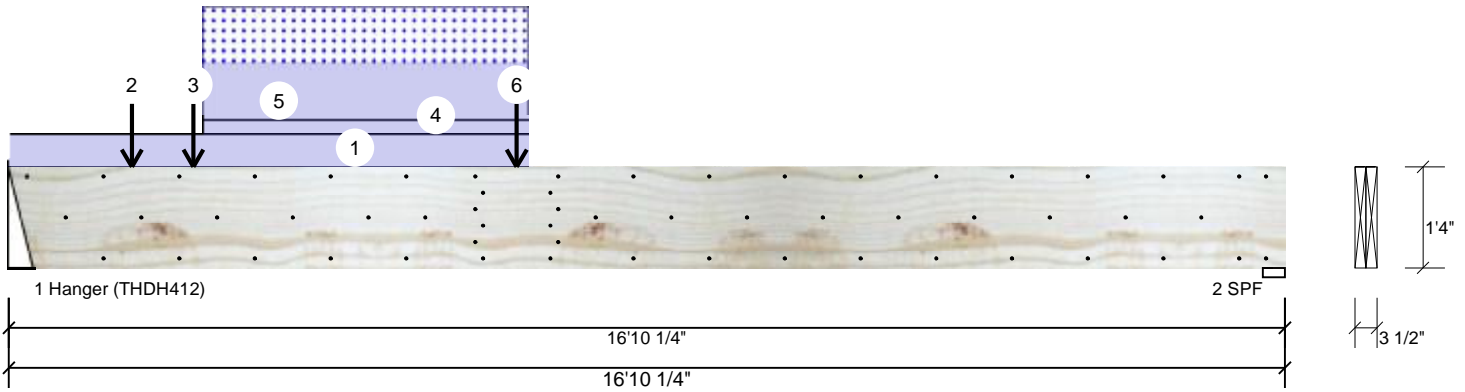
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BM2 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Part. Uniform	0-0-0 to 6-10-4		Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall
2	Point	1-7-8		Top	500 lb	0 lb	500 lb	0 lb	0 lb	B1GE
	Bearing Length	0-3-8								
3	Point	2-5-4		Top	2436 lb	0 lb	2436 lb	0 lb	0 lb	B1GR
	Bearing Length	0-3-8								
4	Part. Uniform	2-6-12 to 6-10-4		Top	56 PLF	0 PLF	0 PLF	0 PLF	0 PLF	A7GE
5	Part. Uniform	2-6-12 to 6-10-4		Top	217 PLF	0 PLF	217 PLF	0 PLF	0 PLF	A7GE
6	Point	6-8-8		Near Face	483 lb	1448 lb	0 lb	0 lb	0 lb	BM4
	Self Weight				12 PLF					

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

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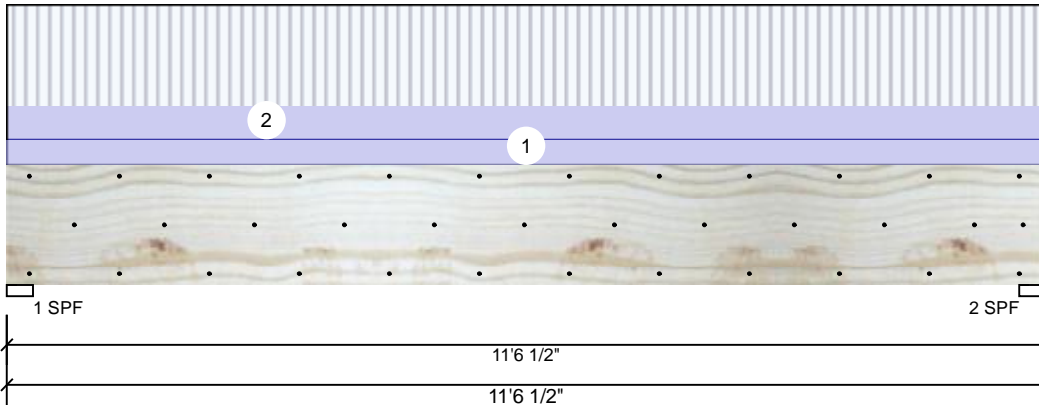


Client: Weaver Development
 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

BM3 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1824	1145	0	0	0
2	Vertical	1824	1145	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500'	Vert	57%	1145 / 1824	2969	L	D+L
2 - SPF	3.500'	Vert	57%	1145 / 1824	2969	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7929 ft-lb	5'9 1/4"	34565 ft-lb	0.229 (23%)	D+L	L
Unbraced	7929 ft-lb	5'9 1/4"	11133 ft-lb	0.712 (71%)	D+L	L
Shear	2712 lb	9'11"	11947 lb	0.227 (23%)	D+L	L
LL Defl inch	0.055 (L/2411)	5'9 1/4"	0.278 (L/480)	0.199 (20%)	L	L
TL Defl inch	0.090 (L/1481)	5'9 1/4"	0.370 (L/360)	0.243 (24%)	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 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 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			Top	80 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Interior Wall
2	Uniform			Far Face	106 PLF	316 PLF	0 PLF	0 PLF	0 PLF	F7
	Self Weight				12 PLF					

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

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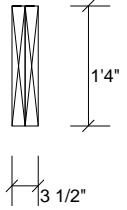
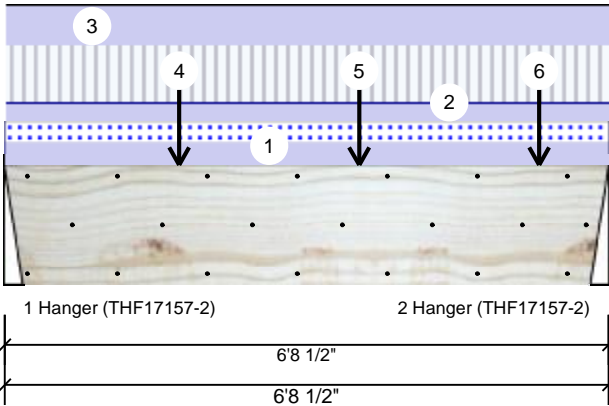


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 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

BM4 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	597	1130	471	0	0
2	Vertical	597	1267	608	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	2.500"	Vert	26%	1130 / 801	1930	L	D+0.75(L+S)
2 - Hanger	2.500"	Vert	30%	1267 / 904	2170	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3353 ft-lb	3'8 5/8"	39750 ft-lb	0.084 (8%)	D+0.75(L+S)	L
Unbraced	3353 ft-lb	3'8 5/8"	18251 ft-lb	0.184 (18%)	D+0.75(L+S)	L
Shear	1495 lb	5'2"	11947 lb	0.125 (13%)	D+L	L
LL Defl inch (L/10783)	0.007	3'5 3/4"	0.161 (L/480)	0.045 (4%)	0.75(L+S)	L
TL Defl inch (L/4489)	0.017	3'5 11/16"	0.215 (L/360)	0.080 (8%)	D+0.75(L+S)	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 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- Refer to last page of calculations for fasteners required for specified loads.
- Fill all hanger nailing holes.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at end bearings.
- Bottom must be laterally braced at end bearings.
- Lateral slenderness ratio based on single ply width.

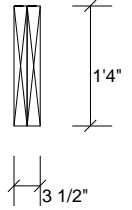
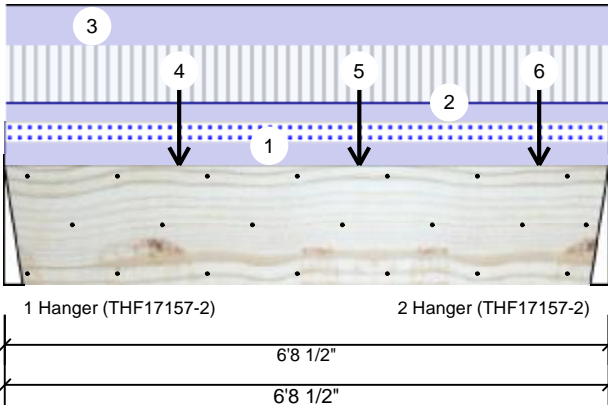
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Near Face	67 PLF	0 PLF	67 PLF	0 PLF	0 PLF	M6
2	Uniform			Far Face	59 PLF	178 PLF	0 PLF	0 PLF	0 PLF	F3
3	Uniform			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall
4	Point	1-11-4		Top	153 lb	0 lb	153 lb	0 lb	0 lb	C1

Continued on page 2...

<p>Notes</p> <p>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.</p> <p>Lumber</p> <p>1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive chemicals</p> <p>Handling & Installation</p> <p>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</p>	<p>6. For flat roofs provide proper drainage to prevent ponding</p>	<p>Manufacturer Info</p> <p>Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us</p>	<p>Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS</p>
		<p>This design is valid until 11/3/2024</p>	

BM4 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
	Bearing Length	0-3-8								
5	Point	3-11-4		Top	286 lb	0 lb	286 lb	0 lb	0 lb	C2
	Bearing Length	0-3-8								
6	Point	5-11-4		Top	190 lb	0 lb	190 lb	0 lb	0 lb	C3
	Bearing Length	0-3-8								
	Self Weight				12 PLF					

Notes

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

Lumber

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

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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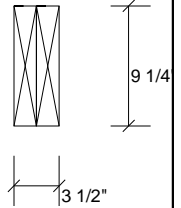
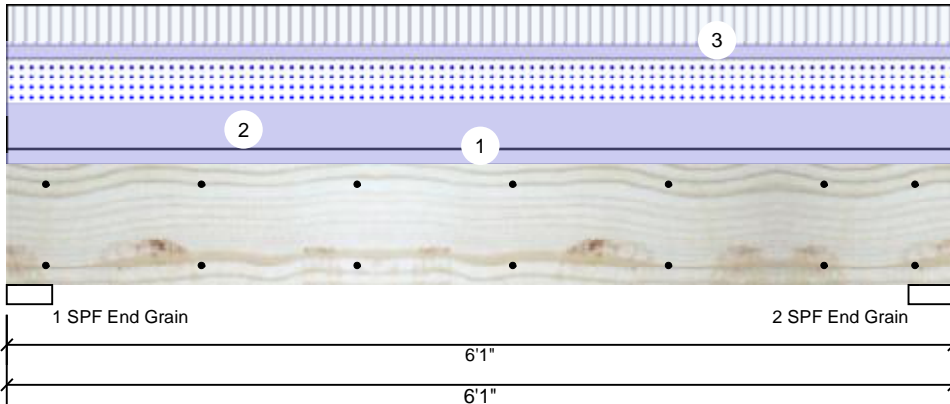


Client: Weaver Development
 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

BM5 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	961	1780	1055	0	0
2	Vertical	961	1780	1055	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	32%	1780 / 1512	3292	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	Vert	32%	1780 / 1512	3292	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4281 ft-lb	3' 1/2"	14423 ft-lb	0.297 (30%)	D+0.75(L+S)	L
Unbraced	4281 ft-lb	3' 1/2"	10944 ft-lb	0.391 (39%)	D+0.75(L+S)	L
Shear	2148 lb	1' 3/4"	7943 lb	0.270 (27%)	D+0.75(L+S)	L
LL Defl inch	0.031 (L/2159)	3' 1/2"	0.141 (L/480)	0.222 (22%)	0.75(L+S)	L
TL Defl inch	0.068 (L/992)	3' 1/2"	0.188 (L/360)	0.363 (36%)	D+0.75(L+S)	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 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 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			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall
2	Uniform			Top	347 PLF	0 PLF	347 PLF	0 PLF	0 PLF	A1
3	Uniform			Top	106 PLF	316 PLF	0 PLF	0 PLF	0 PLF	F7
	Self Weight				7 PLF					

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

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

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info
 Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
www.metsawood.com/us

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

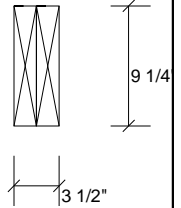
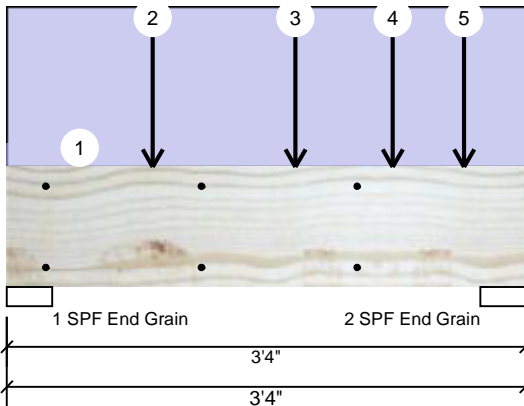


Client: Weaver Development
 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

BM6 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	860	977	545	0	0
2	Vertical	1882	1609	836	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	20%	977 / 1054	2031	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	Vert	35%	1609 / 2039	3647	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2225 ft-lb	1'10 1/4"	12542 ft-lb	0.177 (18%)	D+L	L
Unbraced	2225 ft-lb	1'10 1/4"	11972 ft-lb	0.186 (19%)	D+L	L
Shear	2237 lb	2'3 1/4"	6907 lb	0.324 (32%)	D+L	L
LL Defl inch	0.009 (L/3873)	1'10 1/4"	0.072 (L/480)	0.124 (12%)	L	L
TL Defl inch	0.014 (L/2383)	1'10 1/4"	0.096 (L/360)	0.151 (15%)	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 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 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			Top	80 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Interior Wall
2	Point	0-11-4		Top	668 lb	0 lb	668 lb	0 lb	0 lb	A7GE
	Bearing Length	0-3-8								
3	Point	1-10-4		Top	405 lb	1215 lb	0 lb	0 lb	0 lb	F3
	Bearing Length	0-3-8								

Continued on page 2...

Notes

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Lumber

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

chemicals

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

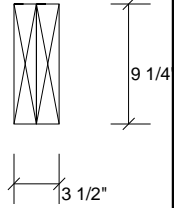
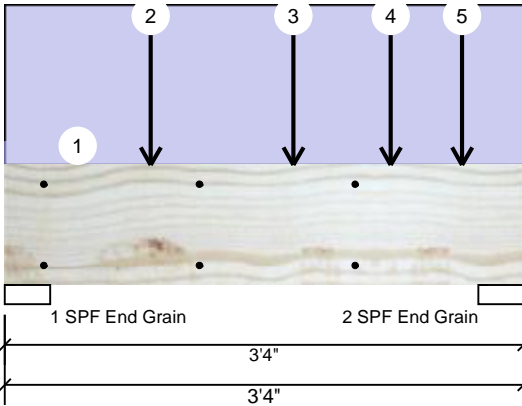
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BM6 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
4	Point	2-5-12		Top	509 lb	1527 lb	0 lb	0 lb	0 lb	BM2
	Bearing Length	0-3-8								
5	Point	2-11-4		Top	713 lb	0 lb	713 lb	0 lb	0 lb	C1
	Bearing Length	0-3-8								
	Self Weight					7 PLF				

Notes

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Lumber

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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
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6. For flat roofs provide proper drainage to prevent ponding

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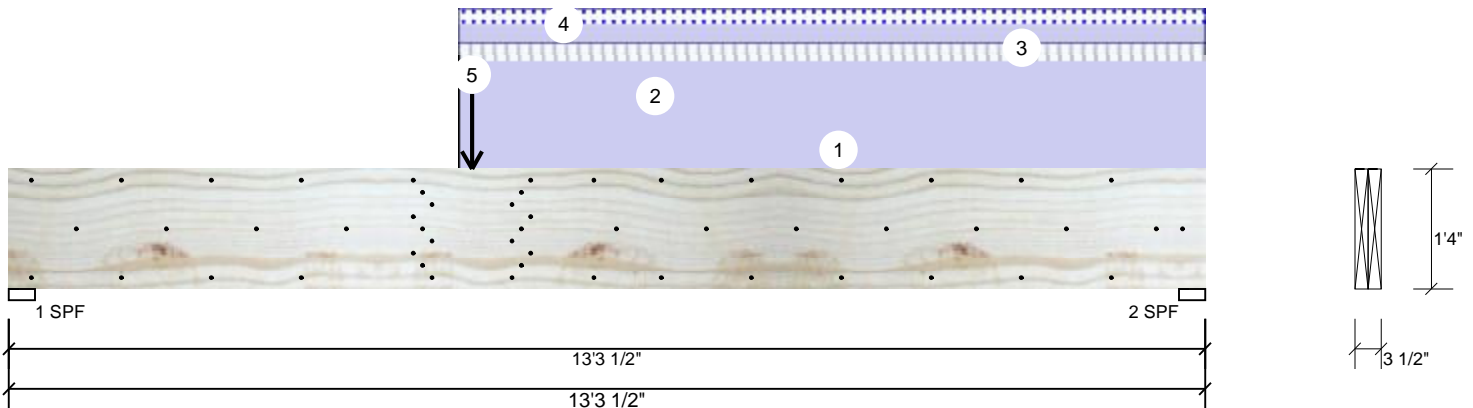
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This design is valid until 11/3/2024

BM7 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1105	1158	101	0	0
2	Vertical	854	1972	230	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	43%	1158 / 1105	2263	L	D+L
2 - SPF	3.500"	Vert	54%	1972 / 854	2826	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10983 ft-lb	5'1 3/4"	34565 ft-lb	0.318 (32%)	D+L	L
Unbraced	10983 ft-lb	5'1 3/4"	11001 ft-lb	0.998 (100%)	D+L	L
Shear	2333 lb	1'7 1/2"	11947 lb	0.195 (20%)	D+L	L
LL Defl inch	0.066 (L/2350)	5'11 3/4"	0.321 (L/480)	0.204 (20%)	L	L
TL Defl inch	0.149 (L/1035)	6'5 1/4"	0.428 (L/360)	0.348 (35%)	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 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be laterally braced at a maximum of 11'3 1/4" o.c.
- 8 Bottom must be laterally braced at end bearings.
- 9 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	Part. Uniform	5-0-0 to 13-3-8		Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load
2	Part. Uniform	5-0-0 to 13-3-8		Top	112 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Gable Dead Load
3	Part. Uniform	5-0-0 to 13-3-8		Far Face	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	1'-0" Floor Load

Continued on page 2...

Notes

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Lumber

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

Handling & Installation

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

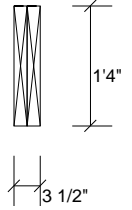
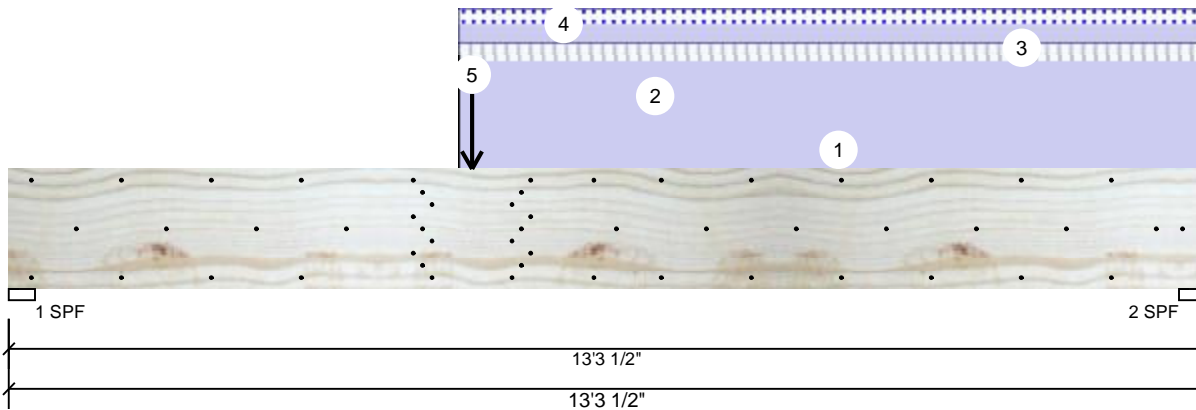
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 301 Merritt 7 Building, 2nd Floor
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 USA
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 910-864-TRUS



BM7 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED

Level: Level



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
4	Part. Uniform	5-0-0 to 13-3-8		Top	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	Gable Live Load
5	Point	5-1-12		Far Face	543 lb	1628 lb	0 lb	0 lb	0 lb	BM4
	Self Weight				12 PLF					

Notes

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Lumber

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

Handling & Installation

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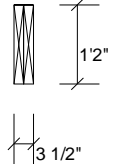
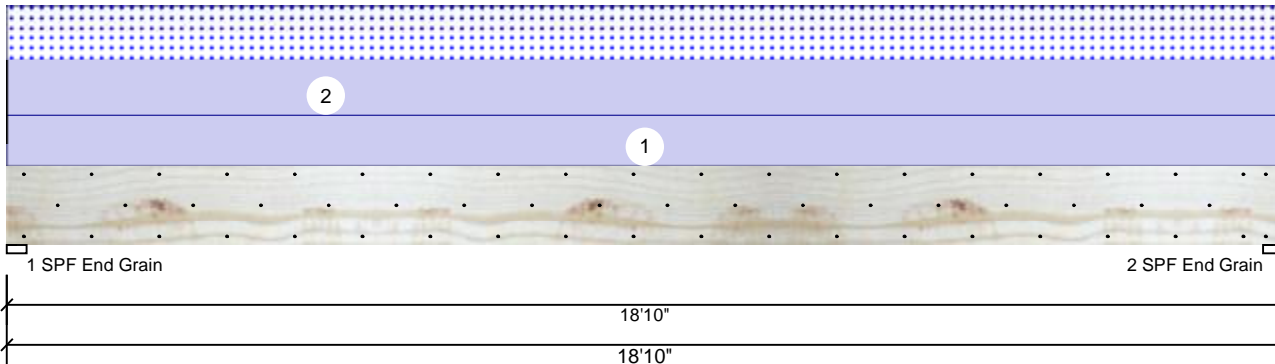


Client: Weaver Development
 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

GDH Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1270	603	0	0
2	Vertical	0	1270	603	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	18%	1270 / 603	1873	L	D+S
2 - SPF End Grain	3.500"	Vert	18%	1270 / 603	1873	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8394 ft-lb	9'5"	31049 ft-lb	0.270 (27%)	D+S	L
Unbraced	8394 ft-lb	9'5"	8403 ft-lb	0.999 (100%)	D+S	L
Shear	1596 lb	1'5 1/2"	12021 lb	0.133 (13%)	D+S	L
LL Defl inch	0.109 (L/2025)	9'5 1/16"	0.459 (L/480)	0.237 (24%)	S	L
TL Defl inch	0.338 (L/652)	9'5 1/16"	0.612 (L/360)	0.553 (55%)	D+S	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 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 13'7 5/8" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 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			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Load
2	Uniform			Top	64 PLF	0 PLF	64 PLF	0 PLF	0 PLF	M7
	Self Weight				11 PLF					

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

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

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

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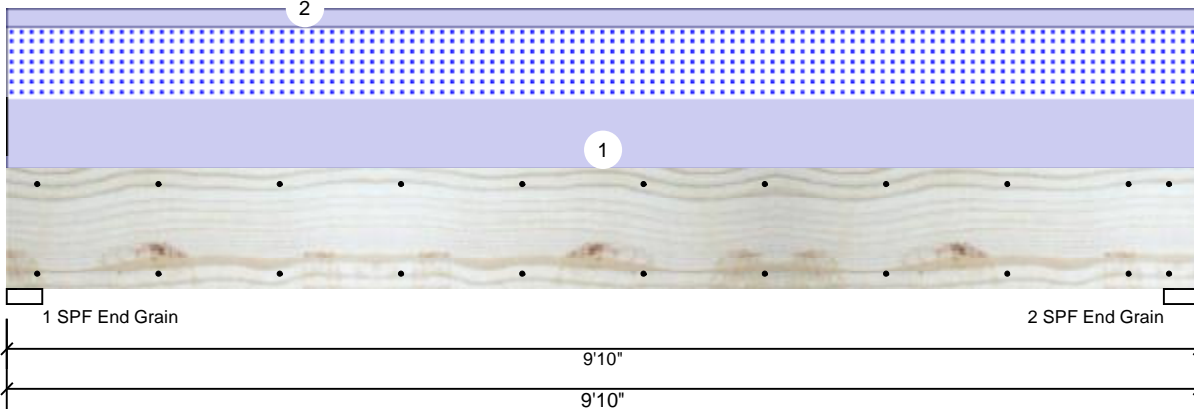


Client: Weaver Development
 Project: Barstow II Elev. A w/ 3rd Car
 Address: Barstow II Elev. A w/ 3rd Car

Date: 2/9/2022
 Input by: Christine Shivy
 Job Name: Barstow II Elev. A w/ 3rd Car
 Project #:

GDH-3 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1476	1136	0	0
2	Vertical	0	1476	1136	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	25%	1476 / 1136	2612	L	D+S
2 - SPF End Grain	3.500"	Vert	25%	1476 / 1136	2612	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5836 ft-lb	4'11"	22897 ft-lb	0.255 (25%)	D+S	L
Unbraced	5836 ft-lb	4'11"	9857 ft-lb	0.592 (59%)	D+S	L
Shear	1940 lb	1'3 3/8"	10197 lb	0.190 (19%)	D+S	L
LL Defl inch	0.048 (L/2337)	4'11"	0.234 (L/480)	0.205 (21%)	S	L
TL Defl inch	0.111 (L/1016)	4'11"	0.312 (L/360)	0.354 (35%)	D+S	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 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
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- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 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			Top	231 PLF	0 PLF	231 PLF	0 PLF	0 PLF	G1
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Loads
	Self Weight				9 PLF					

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