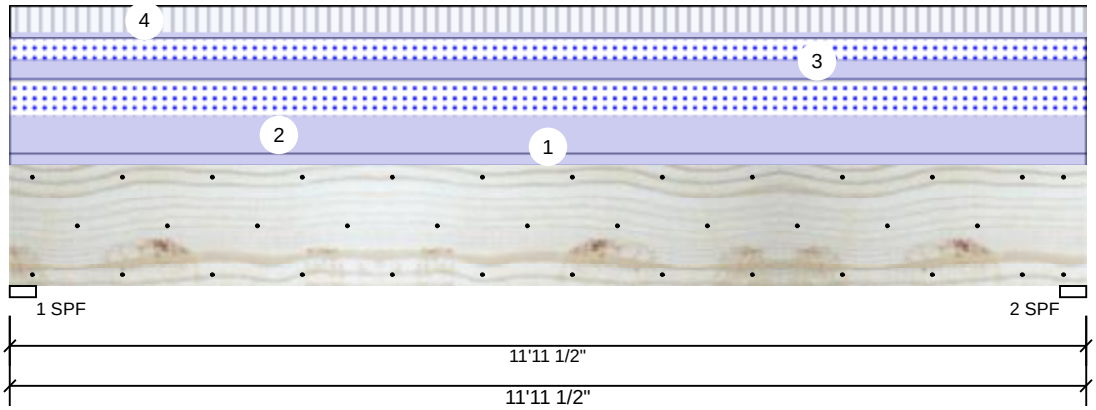
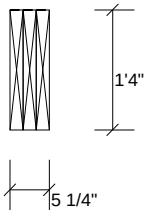
Client:	Weaver Development	Date:	3/24/2021
Project:	Poplar Elev. C	Input by:	Christine Shivy
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

BM1 Kerto-S LVL 1.750" X 16.000" 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	1046	3287	2350	0	0
2	1046	3287	2350	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	75%	3287 / 2547	5834	L	D+0.75(L+S)
2 - SPF	3.500"	75%	3287 / 2547	5834	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16187 ft-lb	5'11 3/4"	62010 ft-lb	0.261 (26%)	D+0.75(L+S)	L
Unbraced	16187 ft-lb	5'11 3/4"	16274 ft-lb	0.995 (99%)	D+0.75(L+S)	L
Shear	4898 lb	1'6 5/8"	20608 lb	0.238 (24%)	D+0.75(L+S)	L
LL Defl inch	0.057 (L/2434)	5'11 3/4"	0.288 (L/480)	0.200 (20%)	0.75(L+S)	L
TL Defl inch	0.130 (L/1063)	5'11 3/4"	0.384 (L/360)	0.340 (34%)	D+0.75(L+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 braced at bearings.
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			Top	80 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load
2	Uniform			Top	253 PLF	0 PLF	253 PLF	0 PLF	0 PLF	B1
3	Uniform			Near Face	140 PLF	0 PLF	140 PLF	0 PLF	0 PLF	M1
4	Uniform			Far Face	58 PLF	175 PLF	0 PLF	0 PLF	0 PLF	F4
	Self Weight				19 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 1/8/2023

Manufacturer Info

Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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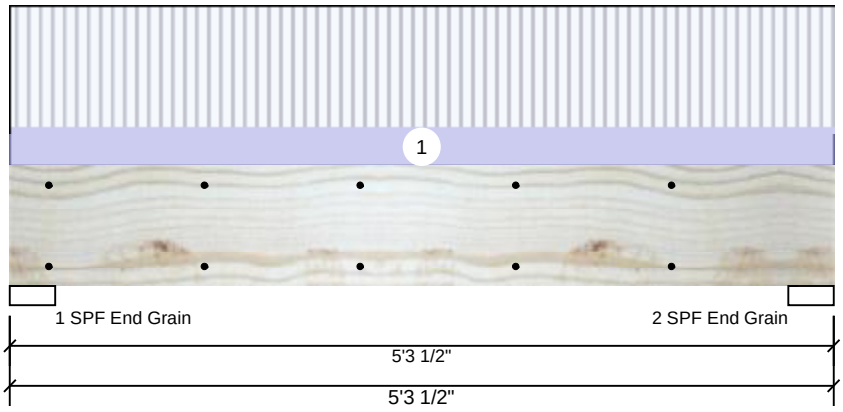
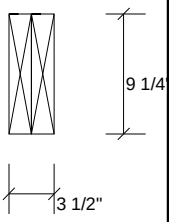
USA
28314
910-864-TRUS

Client:	Weaver Development	Date:	3/24/2021
Project:	Poplar Elev. C	Input by:	Christine Shivy
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

BM2 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	2469	842	0	0	0
2	2469	842	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	31%	842 / 2469	3310	L	D+L
2 - SPF End Grain	3.500"	31%	842 / 2469	3310	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3654 ft-lb	2'7 3/4"	12542 ft-lb	0.291 (29%)	D+L	L
Unbraced	3654 ft-lb	2'7 3/4"	10922 ft-lb	0.335 (33%)	D+L	L
Shear	2059 lb	1'	6907 lb	0.298 (30%)	D+L	L
LL Defl inch	0.035 (L/1681)	2'7 3/4"	0.121 (L/480)	0.290 (29%)	L	L
TL Defl inch	0.046 (L/1253)	2'7 3/4"	0.161 (L/360)	0.290 (29%)	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	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	311 PLF	933 PLF	0 PLF	0 PLF	0 PLF	F3
	Self Weight				7 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 1/8/2023

Manufacturer Info

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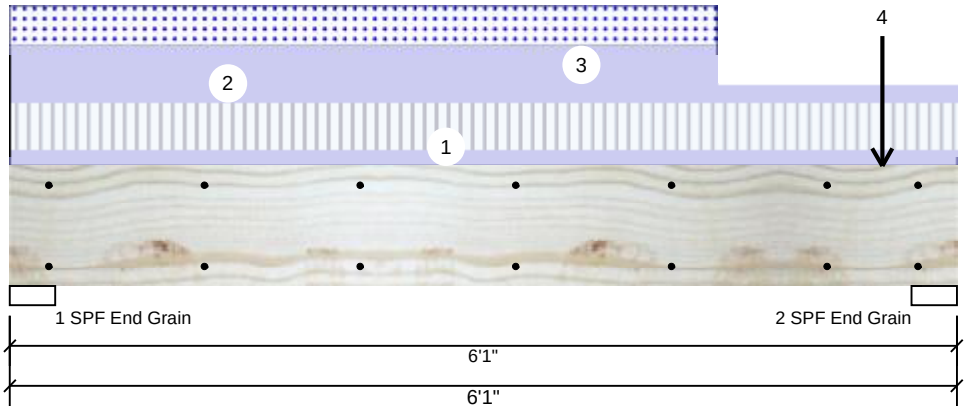
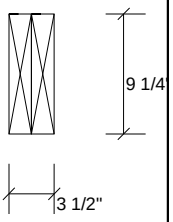
Client:	Weaver Development	Date:	3/24/2021
Project:	Poplar Elev. C	Input by:	Christine Shivy
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

F. Room W. Hdr. 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	973	1523	795	0	0
2	973	1871	1144	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	27%	1523 / 1327	2850	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	32%	1871 / 1588	3459	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3235 ft-lb	3' 3/8"	12542 ft-lb	0.258 (26%)	D+L	L
Unbraced	3685 ft-lb	3' 5/16"	10944 ft-lb	0.337 (34%)	D+0.75(L+S)	L
Shear	2105 lb	5'1"	7943 lb	0.265 (26%)	D+0.75(L+S)	L
LL Defl inch	0.027 (L/2474)	3' 1/2"	0.141 (L/480)	0.190 (19%)	0.75(L+S)	L
TL Defl inch	0.059 (L/1152)	3' 1/2"	0.188 (L/360)	0.310 (31%)	D+0.75(L+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 braced at bearings.
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			Top	107 PLF	320 PLF	0 PLF	0 PLF	0 PLF	F4
2	Uniform			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load
3	Part. Uniform	0-0-0 to 4-6-8		Top	264 PLF	0 PLF	264 PLF	0 PLF	0 PLF	B1
4	Point	5-7-4		Top	740 lb	0 lb	740 lb	0 lb	0 lb	A1SE
	Self Weight				7 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 1/8/2023

Manufacturer Info

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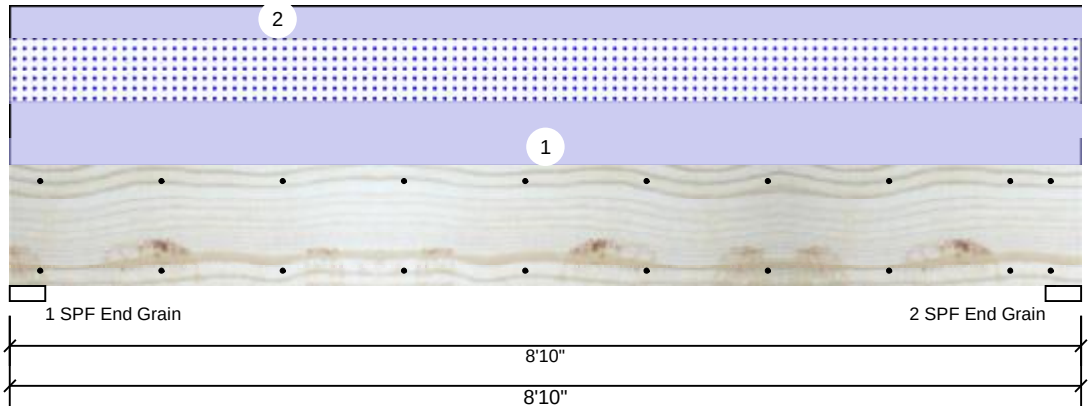
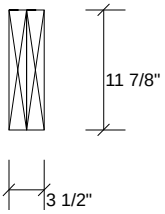
Client:	Weaver Development	Date:	3/24/2021
Project:	Poplar Elev. C	Input by:	Christine Shivy
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

GDH Kerto-S LVL 1.750" X 11.875" 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	827	521	0	0
2	0	827	521	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	13%	827 / 521	1348	L	D+S
2 - SPF End Grain	3.500"	13%	827 / 521	1348	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2676 ft-lb	4'5"	22897 ft-lb	0.117 (12%)	D+S	L
Unbraced	2676 ft-lb	4'5"	10756 ft-lb	0.249 (25%)	D+S	L
Shear	976 lb	1'2 5/8"	10197 lb	0.096 (10%)	D+S	L
LL Defl inch	0.016 (L/6189)	4'5 1/16"	0.209 (L/480)	0.080 (8%)	S	L
TL Defl inch	0.042 (L/2392)	4'5 1/16"	0.279 (L/360)	0.150 (15%)	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 braced at bearings.
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			Top	118 PLF	0 PLF	118 PLF	0 PLF	0 PLF	M1
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

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 1/8/2023

Manufacturer Info

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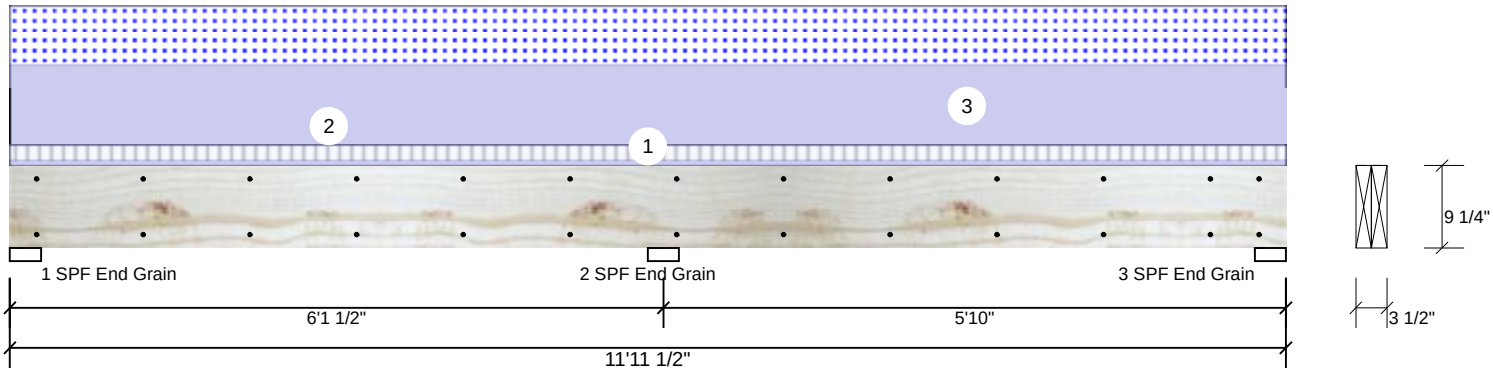
Client:	Weaver Development	Date:	3/24/2021
Project:	Poplar Elev. C	Input by:	Christine Shivy
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

PB1 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	238	1352	936	0	0
2	665	3780	2618	0	0
3	221	1256	870	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	22%	1322 / 976	2298	L_	D+S
2 - SPF End Grain	3.500"	61%	3841 / 2661	6502	LL	D+S
3 - SPF End Grain	3.500"	20%	1225 / 922	2146	_L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-3744 ft-lb	6'1 1/2"	14423 ft-lb	0.260 (26%)	D+S	LL
Unbraced	-3744 ft-lb	6'1 1/2"	10676 ft-lb	0.351 (35%)	D+S	LL
Pos Moment	2417 ft-lb	2'6 1/2"	14423 ft-lb	0.168 (17%)	D+S	L_
Unbraced	2417 ft-lb	2'6 1/2"	10676 ft-lb	0.226 (23%)	D+S	L_
Shear	2604 lb	5'4 1/4"	7943 lb	0.328 (33%)	D+S	LL
LL Defl inch	0.019 (L/3767)	2'11 7/8"	0.147 (L/480)	0.130 (13%)	S	L_
TL Defl inch	0.042 (L/1677)	2'11 5/16"	0.197 (L/360)	0.210 (21%)	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 braced at bearings.
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			Top	32 PLF	94 PLF	0 PLF	0 PLF	0 PLF	F1, F2 & F5
2	Uniform			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load
3	Uniform			Top	370 PLF	0 PLF	370 PLF	0 PLF	0 PLF	A2
	Self Weight				7 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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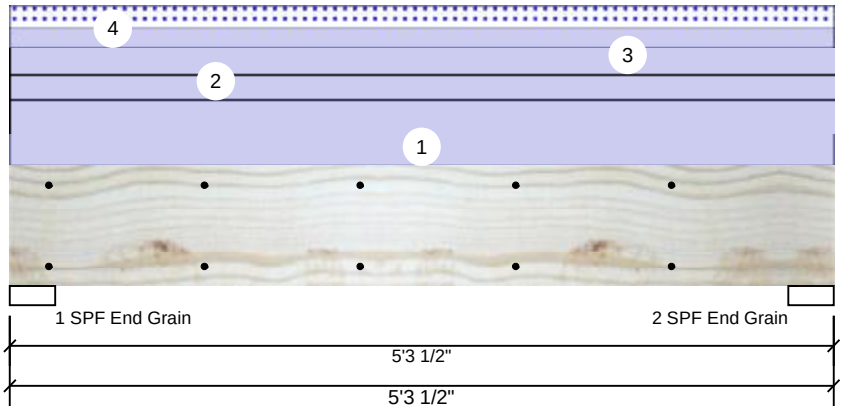
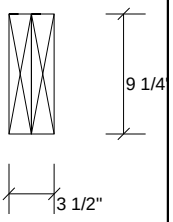
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

PB2 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	720	106	0	0
2	0	720	106	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	8%	720 / 106	826	L	D+S
2 - SPF End Grain	3.500"	8%	720 / 106	826	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	795 ft-lb	2'7 3/4"	11288 ft-lb	0.070 (7%)	D	Uniform
Unbraced	795 ft-lb	2'7 3/4"	10138 ft-lb	0.078 (8%)	D	Uniform
Shear	448 lb	4'3 1/2"	6216 lb	0.072 (7%)	D	Uniform
LL Defl inch	0.001 (L/39203)	2'7 3/4"	0.121 (L/480)	0.010 (1%)	S	L
TL Defl inch	0.012 (L/5023)	2'7 3/4"	0.161 (L/360)	0.070 (7%)	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 braced at bearings.
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			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load
2	Uniform			Top	50 PLF	0 PLF	0 PLF	0 PLF	0 PLF	A1GE
3	Uniform			Top	50 PLF	0 PLF	0 PLF	0 PLF	0 PLF	KW5
4	Uniform			Top	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	Roof Load
	Self Weight				7 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 1/8/2023

Manufacturer Info

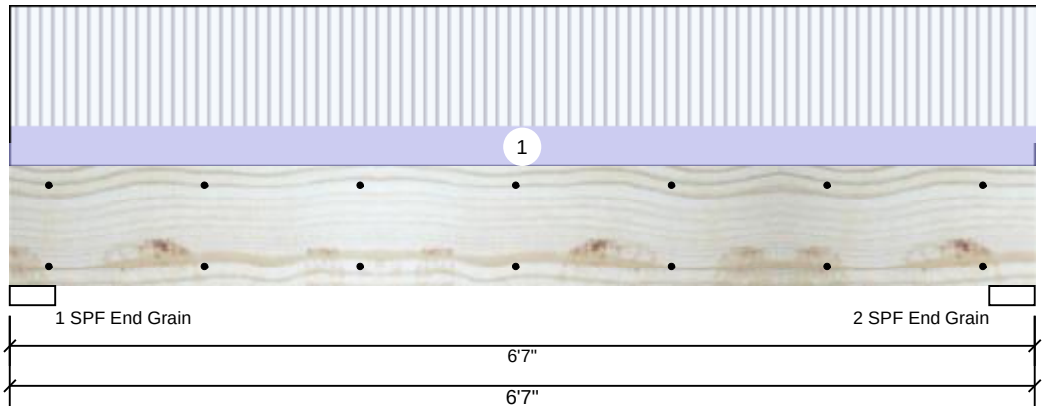
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

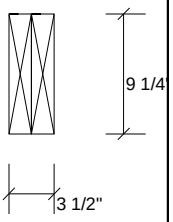
Comtech, Inc.
1001 S. Reilly Road, Suite #639
Fayetteville, NC
USA
28314
910-864-TRUS

Client:	Weaver Development	Date:	3/24/2021
Project:	Poplar Elev. C	Input by:	Christine Shivy
Address:	Poplar Elev. C	Job Name:	Poplar
		Project #:	

Sliding Door Hdr. 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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	2051	708	0	0	0
2	2051	708	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	26%	708 / 2051	2759	L	D+L
2 - SPF End Grain	3.500"	26%	708 / 2051	2759	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3931 ft-lb	3'3 1/2"	12542 ft-lb	0.313 (31%)	D+L	L
Unbraced	3931 ft-lb	3'3 1/2"	9934 ft-lb	0.396 (40%)	D+L	L
Shear	1921 lb	1'	6907 lb	0.278 (28%)	D+L	L
LL Defl inch	0.053 (L/1383)	3'3 1/2"	0.153 (L/480)	0.350 (35%)	L	L
TL Defl inch	0.071 (L/1028)	3'3 1/2"	0.204 (L/360)	0.350 (35%)	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	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	208 PLF	623 PLF	0 PLF	0 PLF	0 PLF	F1 & F2
	Self Weight				7 PLF					

Notes

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