GDH       Kerto-S LVL       1.750" X 11.875"       2-Ply - PASSED         Image: straight of the straighto	Il         337         877         0         0           II         337         877         0         0           ength         Dir.         Cap.         React D/L lb         Total         Ld. Case         Ld. Com           .500"         Vert         23%         877 / 337         1214         L         D+L	
Image: constraint of the superior of the superi	2 SPF         Image: Constraint of the second s	
Image: constraint of the set of the	2 SPF         Image: Constraint of the second s	
1 SPF       16'10"         1 SPF       16'10"         Member Information       Reaction:         Type:       Girder         Plies:       2         Moisture Condition: Dry       Design Method:       ASD         Deflection LL:       480         Deflection LL:       480         Deflection LL:       360         Importance:       Normal - II         Temperature:       Temp <= 100"F         Malysis       Actual       Location         Analysis       Actual       Location         Moment       5365 ft-lb       85"         Safe To 1087 lb       156 56"       8867 lb       0.123 (12%) D+L         Ubbraced       5365 ft-lb       85"       19911 ft-lb       0.269 (27%) D+L       L         Ubbraced       5365 ft-lb       85"       19913 (12%) D+L       L       L         Ubbraced       5365 ft-lb       85"       19913 (12%) D+L       L       L         Ubbraced       037 (16"       0.409 (L/480) 0.171 (17%) L       L       L         LD Edl inch       0.276 (L/712)       85 1/16"       0.546 (L/360) 0.506 (51%) D+L       L         Design Notes       1       Provide support to preve	2 SPF         Image: Constraint of the second s	
1 SPF         1spr         1spr      <	2 SPF         Image: Constraint of the second s	
I SPF       16'10"         Member Information       Reaction         Type:       Girder         Plies:       2         Moisture Condition:       Dry         Deflection LL:       480         Deflection TL:       360         Importance:       Normal - II         Temperature:       Temp <= 100"F	Image: 2 spr       Image: 2 spr	
Ide "10"         Reaction:         Type:       Girder       Plesi:       Participation:       Floor       Brig Direct         Design Method:       ASD         Building Code:       IBC 2012       Load Sharing:       No         Deflection TL:       480       Deck:       Not Checked         Importance:       Normal - II         Temp <= 100°F         Bearings         Bearings         Talysis Results         Analysis Actual Location Allowed Capacity Comb. Case         Moment       5365 ft-lb       8'5"       19911 ft-lb       0.269 (27%) D+L       L         Liber inch       0.276 (L/712)         Notes       Interest indecal tred	UNPATTERNED Ib (Uplift) ion Live Dead Snow Wind Col al 337 877 0 0 al 337 877 0 0 ength Dir. Cap. React D/L lb Total Ld. Case Ld. Com .500" Vert 23% 877 / 337 1214 L D+L	
Aember Information       Reactions         Type:       Girder       Application:       Floor       Brg       Dires         Moisture Condition:       Dry       Building Code:       IBC 2012       Load Sharing:       No         Deflection LL:       480       Deflection TL:       360       Deck:       Not Checked       Importance:       Normal - II         Temperature:       Temp <= 100°F	ion Live Dead Snow Wind Con 1 337 877 0 0 1 337 877 0 0 ength Dir. Cap. React D/L lb Total Ld. Case Ld. Con 500" Vert 23% 877 / 337 1214 L D+L	
Type:       Girder       Application:       Floor       Brg       Direr         Plies:       2       Deflection IL:       480       Deflection IL:       480       Deflection TL:       360       Building Code:       IBC 2012       Load Sharing:       No       Deck:       Not Checked       Plies:       2       Vertix         Deflection TL:       360       Deck:       Not Checked       Deck:       Not Checked       Bearings         Importance:       Temp <= 100°F	ion Live Dead Snow Wind Con 1 337 877 0 0 1 337 877 0 0 ength Dir. Cap. React D/L lb Total Ld. Case Ld. Con 500" Vert 23% 877 / 337 1214 L D+L	
Piles:       2         Moisture Condition: Dry       Design Method:       ASD         Building Code:       IBC 2012         Load Sharing:       No         Deflection TL:       360         Importance:       Normal - II         Temperature:       Temp <= 100°F	ength Dir. Cap. React D/L lb Total Ld. Case Ld. Com 500" Vert 23% 877/337 1214 L D+L	
Moisture Condition: Dry Deflection LL: 480       Building Code: IBC 2012       2       Vertice         Deflection TL: 360       Building Code: Not Checked       Deck: Not Checked       Bearings         Importance: Normal - II       Temperature: Temp <= 100°F	<td>ength Dir. Cap. React D/L lb Total Ld. Case Ld. Com 500" Vert 23% 877 / 337 1214 L D+L</td>	ength Dir. Cap. React D/L lb Total Ld. Case Ld. Com 500" Vert 23% 877 / 337 1214 L D+L
Deflection TL:       360         Importance:       Normal - II         Temperature:       Temp <= 100°F	.500" Vert 23% 877 / 337 1214 L D+L	
Importance:       Normal - II         Temperature:       Temp <= 100°F	.500" Vert 23% 877 / 337 1214 L D+L	
Bearings         Bearings         Bearing         1 - SPF         2 - SPF         Analysis       Actual       Location       Allowed       Capacity       Comb.       Case         Moment       5365 ft-lb       8'5"       19911 ft-lb       0.269 (27%) D+L       L       L         Unbraced       5365 ft-lb       8'5"       6063 ft-lb       0.885 (88%) D+L       L       L         Shear       1087 lb       15'6 5/8"       8867 lb       0.123 (12%) D+L       L       L         LL Defl inch       0.070 (L/2809)       8'5 1/16"       0.409 (L/480)       0.171 (17%) L       L       L         TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%) D+L       L         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         2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".       3       3         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         5 Top loads must be laterally braced at end bearings.       3       1 <td< td=""><td>.500" Vert 23% 877 / 337 1214 L D+L</td></td<>	.500" Vert 23% 877 / 337 1214 L D+L	
Bearing 1 - SPF         analysis Results         Analysis Actual Location Allowed Capacity Comb. Case Moment 5365 ft-lb 8'5" 19911 ft-lb 0.269 (27%) D+L L         Unbraced 5365 ft-lb 8'5" 6063 ft-lb 0.885 (88%) D+L L         Shear 1087 lb 15'6 5/8" 8867 lb 0.123 (12%) D+L L         LL Defl inch 0.070 (L/2809) 8'5 1/16" 0.409 (L/480) 0.171 (17%) L         L Defl inch 0.276 (L/712) 8'5 1/16" 0.546 (L/360) 0.506 (51%) D+L L         vesign 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 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         11       Tapered Start       0-0-0	.500" Vert 23% 877 / 337 1214 L D+L	
I - SPF         analysis Results         Analysis Actual Location Allowed Capacity Comb. Case         Moment 5365 ft-lb       8'5" 19911 ft-lb       0.269 (27%) D+L       L         Unbraced 5365 ft-lb       8'5" 6063 ft-lb       0.885 (88%) D+L       L         Shear       1087 lb       15'6 5/8" 8867 lb       0.123 (12%) D+L       L         LL Defl inch       0.070 (L/2809)       8'5 1/16"       0.409 (L/480)       0.171 (17%) L       L         TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%) D+L       L         Vesign 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         2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".       3         3 Refer to last page of calculations for fasteners required for specified loads.       4         4 Girders are designed to be supported on the bottom edge only.       5         5 Top loads must be laterally braced at end bearings.       8         8 Lateral slenderness ratio based on single ply width.       1         ID       Load Type       Location Trib Width       Side       Dead 0.9       Live 1         1	.500" Vert 23% 877 / 337 1214 L D+L	
2 - SPF         malysis Results         Analysis Actual Location Allowed Capacity Comb. Case         Moment 5365 ft-lb 8'5" 19911 ft-lb 0.269 (27%) D+L L         Unbraced 5365 ft-lb 8'5" 6063 ft-lb 0.885 (88%) D+L L         Shear 1087 lb 15'6 5/8" 8867 lb 0.123 (12%) D+L L         LL Defl inch 0.070 (L/2809) 8'5 1/16" 0.409 (L/480) 0.171 (17%) L       L         The Defl inch 0.276 (L/712) 8'5 1/16" 0.546 (L/360) 0.506 (51%) D+L 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.         8 Lateral slenderness ratio based on single ply width.         ID       Load Type       Location Trib Width Side       Dead 0.9       Live 1         1       Tapered Start       0-0-0       Top       45 PLF       0 PLF		
Analysis       Actual       Location       Allowed       Capacity       Comb.       Case         Moment       5365 ft-lb       8'5"       19911 ft-lb       0.269 (27%)       D+L       L         Unbraced       5365 ft-lb       8'5"       6063 ft-lb       0.885 (88%)       D+L       L         Shear       1087 lb       15'6 5/8"       8867 lb       0.123 (12%)       D+L       L         LL Defl inch       0.070 (L/2809)       8'5 1/16"       0.409 (L/480)       0.171 (17%) L       L         TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%)       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 laterally braced at end bearings.       8       Eateral slenderness ratio based on single ply width.       1         ID       Load Type       Location       Trib Width       Side       Dead 0.9 <td< td=""><td></td></td<>		
Moment       5365 ft-lb       8'5"       19911 ft-lb       0.269 (27%) D+L       L         Unbraced       5365 ft-lb       8'5"       6063 ft-lb       0.885 (88%) D+L       L         Shear       1087 lb       15'6 5/8"       8867 lb       0.123 (12%) D+L       L         LL Defl inch       0.070 (L/2809)       8'5 1/16"       0.409 (L/480)       0.171 (17%) L       L         TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%) 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         2       Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".       3         3       Refer to last page of calculations for fasteners required for specified loads.       4         4       Girders are designed to be supported on the bottom edge only.       5         5       Top loads must be laterally braced at end bearings.       8         7       Bottom must be laterally braced at end bearings.       8         8       Lateral slenderness ratio based on single ply width.       1         ID       Load Type       Location       Trib Widt		
Shear       1087 lb       15'6 5/8"       8867 lb       0.123 (12%) D+L       L         LL Defl inch       0.070 (L/2809)       8'5 1/16"       0.409 (L/480)       0.171 (17%) L       L         TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%) 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       Letral slenderness ratio based on single ply width.         ID       Load Type       Location       Trib Width       Side       Dead 0.9       Live 1         1       Tapered Start       0-0-0       Top       45 PLF       0 PLF		
LL Defl inch       0.070 (L/2809)       8'5 1/16"       0.409 (L/480)       0.171 (17%) L       L         TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%)       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       5       Top loads must be supported equally by all plies.       6       6       5       7       8       5       1       1       Dead Type       Location       Trib Width       Side       Dead 0.9       Live 1         1       Tapered Start       0-0-0       Top       45 PLF       0 PLF		
TL Defl inch       0.276 (L/712)       8'5 1/16"       0.546 (L/360)       0.506 (51%)       D+L       L         testing 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         1       Tapered Start       0-0-0       Top       45 PLF       0 PLF		
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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         1       Tapered Start       0-0-0         Top       45 PLF       0 PLF		
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         1       Tapered Start       0-0-0         Top       45 PLF       0 PLF		
7 Bottom must be laterally braced at end bearings.         8 Lateral slenderness ratio based on single ply width.         ID       Load Type         1       Tapered Start         0-00       Top         45 PLF       0 PLF		
ID         Load Type         Location         Trib Width         Side         Dead 0.9         Live 1           1         Tapered Start         0-0-0         Top         45 PLF         0 PLF		
1 Tapered Start 0-0-0 Top 45 PLF 0 PLF	Snow 1.15 Wind 1.6 Const. 1.25 Comments	
	0 PLF 0 PLF 0 PLF Gable	
2 Tie-In 0-0-0 to 16-10-0 1-0-0 Top 5 PSF 40 PSF	0 PLF 0 PLF 0 PLF	
3 Tapered Start 8-5-0 Top 135 PLF 0 PLF	0 PLF 0 PLF 0 PLF 0 PSF 0 PSF 0 PSF Roof	
End         16-10-0         45 PLF         0 PLF           Self Weight         9 PLF		
	0 PSF 0 PSF 0 PSF Roof	
Calculated Structured Designs is responsible only of the Handling & Installation ponding	0 PSF 0 PSF 0 PSF Roof 0 PLF 0 PLF 0 PLF Gable 0 PLF 0 PLF 0 PLF	
esign criteria and loadings shown. It is the 2. Refer to manufacturer's product information esponsibility of the customer and/or the contractor to regarding installation requirements, multi-ply	0 PSF     0 PSF     0 PSF     Roof       0 PLF     0 PLF     0 PLF     Gable       0 PLF     0 PLF     0 PLF     O PLF	
Insure the component suitability of the intended approvals fastening details, beam strength values, and code approvals	0 PSF     0 PSF     0 PSF     Roof       0 PLF     0 PLF     0 PLF     Gable       0 PLF     0 PLF     0 PLF     O PLF       went     Manufacturer Info     Corntech, Inc.       Metsä Wood     301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851     USA 28314	
Umber         3. Darlaged Deams must not be deed Deams must	0 PSF     0 PSF     0 PSF     Roof       0 PLF     0 PLF     0 PLF     Gable       0 PLF     0 PLF     0 PLF     0 PLF	

	Client: Watermark Home Project:		e: 3/31/2023 ut by: Curtis Quick	Page 2 of 2
isDesign	Address:	Job	Name: The Eucalyptus Beams	
GDH Kerto-S L	/L 1.750" X 11.875"	2-Ply - PASSED	ject #: Level: Level	
• • • •	· · · ·	• • • •	· · · · ·	
1 SPF	• • • •	• • • •	• • • •	
		16'10"		3 1/2"
· · · · · · · · · · · · · · · · · · ·		16'10"		
				·
Multi-Ply Analysis				
	s of 10d Box nails (.128x3") at 12	" o.c Maximum end distan	ce not to exceed 6".	
Capacity Load	0.0 % 0.0 PLF			
Yield Limit per Foot Yield Limit per Fastener	163.7 PLF 81.9 lb.			
Yield Mode	IV			
Edge Distance Min. End Distance	1 1/2" 3"			
Load Combination	3			
Duration Factor	1.00			
Notes	chemicals	<ol> <li>For flat roofs provide proper drainage to p ponding</li> </ol>		Comtech, Inc. 1001 S. Reilly Road, Suite #639
Calculated Structured Designs is responsible only or structural adequacy of this component based or design criteria and loadings shown. It is responsibility of the customer and/or the contract	the 1. LVL beams must not be cut or drilled	n	Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851	Fayetteville, NC USA 28314 910-864-TRUS
responsibility of the customer and/or the contract ensure the component suitability of the inte application, and to verify the dimensions and loads.	approvals	y e	(800) 622-5850 www.metsawood.com/us	
Lumber 1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corr	3. Damaged Beams must not be used     4. Design assumes top edge is laterally restrained     5. Provide lateral support at bearing points to avoi     lateral displacement and rotation	<sup>d</sup> This design is valid until 11/3/2024		соттесн
Version 21 80 417 Powered by iStruct™ [			L	