is	Design	Client: Signature Ho Project: Address:	nes	Date: Input by: Job Name Project #:	4/26/2023 Anthony Williams E Lot 52 Williams I J0423-1968			Page 1 of
HDR-1	Kerto-S LVL	. 1.750" X 9.25	50" 2-Ply -	PASSED	Level: Level			
	2							
		1						
	•	• •	•					7 1
	and the second se						X	9
•			•	•			/ V	
1 SPF E	nd Grain		2	2 SPF End Grain				
1		5'6"		1	,		1	3 1/2"
1		6'		·				
Nember Inf	formation			Reactions UN	PATTERNED Ib	(Uplift)		
Туре:	Girder		oor	Brg Direction	Live	Dead S	Snow Wind	
Plies: Moisture Cond	2 lition: Dry	Ũ	SD 3C/IRC 2015	1 Vertical 2 Vertical	0		1464 0 1464 0	
Deflection LL:	480	Load Sharing: N	0	2 Vertical	0	1070	1404 0	
Deflection TL:	360 Normal - II	Deck: N	ot Checked					
Importance: Temperature:	Temp <= 100°F							
				Bearings				
				Bearing Lengt	•	React D/L lb	Total Ld. Case	
				1 - SPF 3.000" End	Vert 34%	1576 / 1464	3040 L	D+S
nalysis Re	sults			Grain				
Analysis		ion Allowed Capacity	Comb. Case	2 - SPF 3.000" End	Vert 34%	1576 / 1464	3040 L	D+S
Moment	4007 ft-lb	3' 14423 ft-lb 0.278 (28%		Grain				
Unbraced Shear	4007 ft-lb 2011 lb 1' '	3' 10944 ft-lb 0.366 (37%) 1/4" 7943 lb 0.253 (25%)						
	0.031 (L/2200)	3' 0.141 (L/480) 0.218 (22%	-					
	0.064 (L/1060)	3' 0.188 (L/360) 0.340 (34%	-					
Design Not	es			]				
		ement and rotation at the end be arings by the building code.	earings. Lateral support					
-	lies using 2 rows of 10d Bo	ox nails (.128x3") at 12" o.c. Max	imum end distance not					
		asteners required for specified lo	ads.					
	designed to be supported nust be supported equally be							
	e laterally braced at end be							
	st be laterally braced at end iderness ratio based on sin	-						
ID	Load Type	Location Trib Width	Side Dead 0.9	Live 1 Snc	w 1.15 Wind 1	.6 Const. 1.2	25 Comments	
1	Uniform		Top 488 PLF	0 PLF 4	188 PLF 0 P	LF 0 PL	F B2 TRUSS	
2	Uniform		Top 30 PLF	0 PLF	0 PLF 0 P	LF 0 PL	F WALL	
	Self Weight		7 PLF					
		ehomicolo	6 Eps flat so fr and '	propor drainerre te	Manufacturer Info		Comtech, Inc.	
Notes Calculated Structured		chemicals andling & Installation	<ol> <li>For flat roofs provide ponding</li> </ol>	proper drainage to prevent	Metsä Wood		1001 S. Reilly Road, Suite Fayetteville, NC USA	#639
design criteria and responsibility of the c	loadings shown. It is the 2.	LVL beams must not be cut or drilled Refer to manufacturer's product inform regarding installation requirements, mu	nation Ilti-ply		301 Merritt 7 Building Norwalk, CT 06851	, ∠na ⊢loor	28314 910-864-TRUS	
ensure the compone application, and to veri	ent suitability of the intended ify the dimensions and loads.	fastening details, beam strength values, and approvals	code		(800) 622-5850 www.metsawood.con	n/us		
Lumber 1. Dry service condition 2. LVL pot to be treat	4.	Damaged Beams must not be used Design assumes top edge is laterally restrained Provide lateral support at bearing points to	avoid				Com	есч
L. LVL HOLIO DE TRAI	with the realizable of corrosive	lateral displacement and rotation	This design is valid	d until 11/3/2024				

		re Homes	Date:	4/26/2023	Page 2 of 8
isDesign	Project:		Input by:	Anthony Williams	
IsDesign	Address:		Job Name Project #:		
HDR-1 Kerto-S L	VL 1.750" X 9	250" 2 DIV		Level: Level	
		.250 Z-PTy	- FASSED		
• •	• •	•	• •		
				<11/2"	9 1
•••	• •	•	• • –	<u> </u>	
				<u> </u>	
1 SPF End Grain			2 SPF End Grain		
	5'6"		1		3 1/2"
1	6'		1		
Multi-Ply Analysis					
Fasten all plies using 2 rows of	of 10d Box nails ( 128v3	") at 12" oc Maxim	um end distance no	at to exceed 6"	
	.0 %		uni ena aistance no	ft to exceed 0.	
Load 0	.0 PLF				
	63.7 PLF 1.9 lb.				
Yield Mode IV					
	1/2"				
Min. End Distance 3 Load Combination					
	.00				
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	<ol> <li>LVL beams must not be cut or drilled</li> <li>Refer to manufacturer's product</li> <li>regarding installation requirement</li> </ol>	ponding information Is, multi-ply	vide proper drainage to prevent	Manufacturer Info Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (200) 622 650	Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetterville, NC USA 28314 910-864-TRUS
ensure the component suitability of the intended application, and to verify the dimensions and loads.	<ul> <li>fastening details, beam strength valuapprovals</li> <li>Damaged Beams must not be used</li> </ul>	es, and code		(800) 622-5850 www.metsawood.com/us	
Lumber					
<ol> <li>Dry service conditions, unless noted otherwise</li> <li>LVL not to be treated with fire retardant or corrosive</li> </ol>	<ol> <li>Design assumes top edge is laterally re</li> <li>Provide lateral support at bearing p</li> </ol>	bints to avoid	valid until 11/3/2024		соттесн

es: 2 bilding Code: II 6C/RC 2015 Load Sharing: No Deck: Net Checked		Design	F	Client: Project:	Signature H	iomes		In	ate: put by:		y Willian				Page 3 of 8
DR-2     Kerto-S LVL     1.750" X 9.250"     2-Ply - PASSED     Level Level       2     Image: Control of the second of the seco	IS	Design	A	Address:								Farms			
2         SPE End Crain       2 SPE End Crain         2         SPE End Crain       2 SPE End Crain         2       2         SPE End Crain       2 SPE End Crain         2       2         SPE End Crain       2 SPE End Crain         2       2         SPE End Crain       Application:         Resctions UNPATTERNED Ib (Uplift)         mission (1):       40         Building Code:       BC/REC 2015         Building Code:       BC/REC 2015<									<u> </u>						
Image: Start Internation         Application:         Provide and the start of th	HDR-2	Kerto-S	LVL	1.750	° X 9.2	50" 2	-Ply - I	PASSE	D	Level. Lev	CI				
		2													
Application:       Provide support of provent later of response of the bottom edge of t															
Part End Gran       2 SPF End Gran       2 SPF End Gran       Image: Control of the second of the															
Application:       Provide support of provent later of response of the bottom edge of t															
19FE End Grain       2 SFF End Grain					1									N A	1 1
19FE End Grain       2 SPF End Grain														IVIY	
Age:	-	Contra .	-		•	at the second		-							9 1
Age:						the second s	2	SDE End Cr						<u> </u>	
Bearings       Bearings     Bearings       Bearings     Bearings       Addition to the state state of the state o					5'6"		2	SPF Ella Gia						/	3 1/2"
Best     Girder (see Condition: Dy basize Condition: Dy Building Code: Bounding Code:	/								·	·				I	10 172
periodic status Condition: Dry     Application: Floor     Floor       backing Condition: Dry     Design Method: ABD     Application: Floor       backing Condition: Dry     Design Method: ABD     Building Code: IB-CRR 2015       Load Sharing: No     Desix: Not Checked       and price and code: IB-CRR 2015     Load Sharing: No       portance: Normal -II mperced to the subconder of the	•				Ŭ										
est:       2       Design Method:       ASD         isture Condition:       Dry       Building Code:       BC/RC 2015         Load Sharing:       No       Design Method:       ASD         mperature:       Temp <= 100°F	lember Inf	formation						Reaction	ns UN	PATTER	NED I	b (Uplift)			
wishure Condition: Dy faction LL:       450 (add Sharing: No Dec:       Building Code:       IBC/IRC 2015 (add Sharing: No Dec:       2       Vertical       0       1498       1386       0       1         Maging Results:       Dec:       No Dec:       No Dec:       No Dec:       No Dec:       No Dec:       Bearing Length Dir.       Dir.       Cap. React DI/Lib       Total Ld. Case Ld. Comb Dec:         Alysis Results:       II-SPF 3.000°       Vert       33%       1498 / 1386       284 L       D+S         Alysis Results:       II-SPF 3.000°       Vert       33%       1498 / 1386       284 L       D+S         End       Grain       2       SPF 3.000°       Vert       33%       1498 / 1386       284 L       D+S         End       10.416 (Moved Capacity Comb, Case Def (noh 0.0261 (UT117)       3       0.141 (V48) L0.0247 (25%) D+S       L       Def       D	Туре:														
Include     480 feetoin TL: 380 portance:     Addition     Lead Sharing: Deck:     No Deck:     No     No <deck:< th="">     Deck:     No<deck:< th="">     Deck:     Deck:     Deck:</deck:<></deck:<>	Plies: Moisture Cond						i	-						-	
portance:       Normal - II         mperature:       Temp <= 100°F	Deflection LL:			-				2 ven	ICal		0	1490	1300	0	,
Importature:     Temp <= 100°F       alysis Results       alysis Results       alysis Actual     Location     Allowed     Capacity Comb.       alysis Actual     Location     Allowed     Capacity Comb.       alysis Actual     Location     Allowed     Capacity Comb.       bearing     Service       Definich     0.260 (22324)     3'     0.444 file     0.327 (23%) D+S     L       Definich     0.260 (22324)     3'     0.414 (1480)     0.247 (25%) D+S     L       Definich     0.260 (22324)     3'     0.138 (1/380)     0.322 (32%) D+S     L       Sign Notes     End     End     End     End     End       Provide support to prevent lateral movement and rotation at the end bearings.     Literal stance not to accord 0'.       Refer to has page of calculations for fasteners required for specified loads.     End       Grind     Top bad smalls of advanta/1 (1234) 12' 0.c. Maximum end distance not to accord 0'.       Not based on aling 12 rows of 106 box mils (12357) 11' 12' 0.c. Maximum end distance not to accord 0'.       Rest material standardenes supported quality braid bias.       Literal stendardenes trade to abearings.       Literal stendardenes trade to abearings.       Literal stendardenes trade to abearings.       Uniform     Top     30 PLF     OPLF     OP	Deflection TL:	360		Deck:		Not Checked									
Bearings       alysis Results       alysis Actual     Location     Allowed     Capacity     Comb     Case       alysis Actual     Location     Allowed (26%) D+S     L     Case     Care       Lear     1998 ib     1'14''     7943 ib     0.240 (24%) D+S     L       Defl inch     0.050 (U1117)     3'     0.141 (U460)     0.227 (21%) S     L       Lofel inch     0.050 (U1117)     3'     0.188 (U360)     0.322 (32%) D+S     L       Cofficience     desings b     building code.     Code     Code       Fasterial plies using 2 rows of 10d Box nails (128:3') at 12'' or. Maximum end distance not to exceed 5''.     Descretal     Descretal       Top task be absorpted to be supported on the bottome edge only.     Top de22 PLF     0 PLF     0 PLF     0 PLF       Uniform     Top     30 PLF     0 PLF     0 PLF     0 PLF     0 PLF       Uniform	Importance:														
alysis     Actual     Location     Allowed     Capacity     Comb     Case       alysis     Actual     Location     Allowed     Capacity     Comb     Case       bibraced     3802 ft-b     3'     14423 ft-b     0.264 (26%) D+S     L       bibraced     3802 ft-b     3'     14423 ft-b     0.264 (26%) D+S     L       bibraced     3802 ft-b     3'     10444 ft-b     0.247 (25%) D+S     L       bear     1908 lb     1' 14"     7943 lb     0.240 (24%) D+S     L       befinch     0.600 (L/1117)     3'     0.141 (L460 0.207 (21%) S     L       case     tigg     Notes     L     L       Provide support     prevent lateral movement and rotation at the end bearings. Lateral support     name       faster all prevent lateral movement and rotation at the end bearings. Lateral support     name     name       rater all support to prevent lateral movement and rotation at the end bearings. Lateral support     name     name       to backraig     target of last page of calculations for fasteners required for specified loads.     End distance not to exceed for.       Gilders are designed to be supported on the bottom edge ony. Top data trans beardeners attack back on single pt width.     Top data trans beardeners attack back on single pt width.       Least Standeners attack back on single pt width	Temperature:	Temp <= 100°	Ϋ́F					Popring							
alysis Results          1SPF 3.000 <sup>-</sup> Vert 33% 1498 / 1386 2884 L D-S         End         Grain            alysis Results           1SPF 3.000 <sup>-</sup> Vert 33% 1498 / 1386 2884 L D-S         End         Grain            alysis Results           1SPF 3.000 <sup>-</sup> Vert 33% 1498 / 1386 2884 L D-S         End         Grain            alysis Results           3.02 ft-b         3.02 ft-b         3.02 ft-b         3.02 ft-b         3.02 ft-b         0.22 (J2324)         3.0 ft-11 (J400) 0.227 (21%) S         L         Loef inch 0.020 (J/21234)         3.0 ft-14 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J/1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J/1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J/1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Loef inch 0.020 (J1177)         3.0 ft-18 (J400) 0.322 (32%) D-S         L         Letral stenderses required for specified loads.         Griden         Side supported quarket and bearings.         Letral stenderses required at and bearings.         Letral stenderses ratio based on single pty width.         Letral stenderses ratio based on single pty width         Top 30 PLF         PLF         OPLF         OP															
alsysis     Actual     Location     Allowed     Capacity     Comb     Case       alwysis     Actual     Location     Allowed     Capacity     Comb     Case       bitraced     3802 A+lb     3' 14423 A+lb     0.246 (26%) D+S     L       bitraced     3802 A+lb     3' 10944 A+lb     0.347 (35%) D+S     L       beer     1908 lb     1'14''     7494 A/sb     0.244 (26%) D+S     L       beer     1908 lb     1'14''     7494 A/sb     0.247 (25%) S     L       certain     3' 0044 A+lb     0.347 (35%) D+S     L       certain     3' 0044 A+lb     0.247 (25%) S     L       certain     3' 0141 (L/480)     0.207 (21%) S     L       certain     3' 0141 (L/480)     0.227 (21%) S     L       certain     3' 0141 (L/480)     0.227 (21%) S     L       certain     3' 0141 (L/480)     0.227 (21%) S     L       certain     3' 0140 (Das nais (-1548))     1.25 (Das nais (-1548))       certain     segonded to be supported output be and bearings.       cortain darge of calculations for fasteners required for specified loads.       Griden targe of calculations for fasteners required for specified loads.       Circle targe of calculations for fasteners required for specified loads.       Circle targe of calc								J v	•		•				
Any six Results     Grain       alaysis Actual on the subsect of the based and please theread using 2 rows of 10d Box nulls (128x37) at 12° o.c. Maximum end distance not to exceed 6°.     Case of the based at and bearings. Lateral support.       Defined - 0.029 (U/2324)     3'     0.141 (U/480) 0.207 (21%) §     L       Defined - 0.029 (U/2324)     3'     0.141 (U/480) 0.207 (21%) §     L       Defined - 0.029 (U/2324)     3'     0.141 (U/480) 0.207 (21%) §     L       Defined - 0.029 (U/2324)     3'     0.141 (U/480) 0.207 (21%) §     L       Defined - 0.029 (U/2324)     3'     0.141 (U/480) 0.207 (21%) §     L       Defined - 0.029 (U/2324)     3'     0.141 (U/480) 0.207 (21%) §     L       Sign Nots:     End     End     End       Provide support to prevent lateral movement and rotation at the end bearings. Lateral support do to beach on single 19 width.     End the end bearings.       Top loads must be supported equality by all plies.     For the rows of 10d Box nails (128x37) at 12° o.c. Maximum end distance not to exceed 6°.       Top loads must be laterally braced at end bearings.     Lateral braced at end bearings.       Exitemation beased on single phy width.     Top     30 PLF     0 PLF									3.000"	Vert	33%	1498 / 1386	2884	L	D+S
alysis       Actual       Location       Allowed       Capacity       Comb.       Case         ment       3802 ft-lb       3' 14423 ft-lb       0.284 (26%) D+S       L         bibraced       3802 ft-lb       3' 10944 ft-lb       0.247 (25%) D+S       L         Defl inch       0.029 (L/2324)       3' 0.141 (L/480)       0.207 (21%) S       L         Defl inch       0.060 (L/1117)       3' 0.148 (L/380)       0.322 (32%) D+S       L         sign Notes       Florida support       To prevent lateral movement and rotation at the end bearings. Lateral support         Faster all plice suing 2 rows of 10d Box nalls (128x3") at 12" o.c. Maximum end distance not to exceed 0".       Refer to last page of calculations for fasteners required of the bottom edge only.         Top must be laterally braced at end bearings.       Lateral stendermess ratio based on single ply width.       Live 1       Snow 1.15       Wind 1.6       Const. 1.25       Comments         Uniform       Top       30 PLF       0 PLF <t< td=""><td>nalysis Re</td><td>sults</td><td></td><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	nalysis Re	sults		•											
assource in the stand stand of the stan	Analysis		Location A	Allowed	Capacity	Comb.	Case		3.000"	Vert	33%	1498 / 1386	2884	L	D+S
ear       1908 lb       1' 1/4''       7943 lb       0.240 (24%) D+S       L         Definet       0.029 (L/2324)       3'       0.141 (L/480)       0.207 (21%) S       L         sign       Montes       Provide support       State and L/3800 (0.322 (32%) D+S       L         register       State and L/3800 (0.322 (32%) D+S       L       L         sign       Montes       Provide support to prevent lateral movement and rotation at the end bearings. Lateral support         Provide support to prevent lateral movement and rotation at the end bearings. Lateral support to on the bottom edge only.       To bask must be supported on the bottom edge only.         Top bask must be supported quality by all piles.       Bottom must be laterally braced at end bearings.       Bottom must be laterally braced at end bearings.       Bottom must be laterally braced at end bearings.         Lateral stendeness ratio based on single ply width.       Top       462 PLF       0 PLF       462 PLF       0 PLF       0 PLF       0 PLF       B2 TRUSS         Uniform       Top       462 PLF       0 PLF       0 PLF       0 PLF       0 PLF       WALL         Self Weight       Top       30 PLF       0 PLF       0 PLF       0 PLF       0 PLF       WALL         Self Weight       Top       10 PLF       0 PLF       0 PLF	Moment	3802 ft-lb	3'1	14423 ft-lb	0.264 (26	%) D+S	L								
Define 0.029 (L/2324)       3'       0.141 (L/480)       0.207 (21%)       S       L         Lefine 0.060 (L/1117)       3'       0.188 (L/360)       0.322 (32%)       D+S       L         sign Notes       Provide support to prevent lateral movement and rotation at the end bearings. Lateral support on many also be required at the interior bearings by the building code.       Easten all plies using 2 rows of 10d Box nails (.128/37) at 12" o.c. Maximum end distance not occreded ".         Refer to last page of calculations for fasteners required for specified loads.       Giffers are designed to be supported on the bottom edge only.       Easten all plies using 2 rows of 10d Box nails (.128/37) at 12" o.c. Maximum end distance not occreded ".       Easten all plies using 2 rows of 10d Box nails (.128/37) at 12" o.c. Maximum end distance not occreded ".         Ciffers are designed to be supported on the bottom edge only.       Top bads must be supported at end bearings.       Easten all plies using 2 rows of 10d Box nails (.128/37) at 12" o.c. Maximum end distance not bearding by more than the laterally braced at end bearings.       Easten all plies using 2 rows of 10d Box nails (.128/37) at 12" o.c. Maximum end distance not bear distance not bear distance on single ply width.       Easten all plies using 2 rows of 10d Box nails (.128/37) at 12" o.c. Maximum end distance not bear distance not not bear distance not or distance nor maximum end to aror distance not or distance not presting and b	Unbraced	3802 ft-lb	3'1	10944 ft-lb	0.347 (35	%) D+S	L								
Define h 0.060 (L/117) 3' 0.188 (L/360) 0.322 (32%) D+S 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. Fasten all plies using 2 rows of 10d Box nails (.128X3') at 12" o.c. Maximum end distance not to exceed 0'. Refer to last page of calculations for fasteners required for specified loads. Gif base supported equally by all plies. Top must be laterally braced at end bearings. Bottom must be laterally braced at end bearings. Location Trip d 462 PLF 0 PLF 4 62 PLF 0	Shear	1908 lb	1' 1/4" 7	7943 lb	0.240 (24	%) D+S	L								
sign 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.         Provide support to prevent lateral movement and rotation at the end bearings.         Easten all plies using 2 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.         Girders are designed to be supported on the bottom edge only.         Top must be laterally braced at end bearings.         Lateral slenderness ratio based on single ply width.         Load Type       Location Trib Width Side       Dead 0.9         Uniform       Top       462 PLF       0 PLF       462 PLF       0 PLF       0 PLF       0 PLF       B 2 TRUSS         Uniform       Top       30 PLF       0 PLF       0 PLF       0 PLF       Wall       100 FLF       10 FLF	LL Defl inch	0.029 (L/2324)	3' 0	0.141 (L/480	) 0.207 (21	%) S	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. Fasten all plies using 2 rows of 10d Box nalls (128x3") at 12° o.c. Maximum end distance not to exceed 6°. Refer to last page of calculations for fasteners required for specified loads. Griders are designed to be supported equally by all plies. Top must be laterally braced at end bearings. Lateral senderness ratio based on single ply width. Lateral senderness ratio based on single ply width. Lateral senderness ratio based on single ply width. Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments Uniform Top 462 PLF 0 PLF 0 PLF 0 PLF 0 PLF B2 TRUSS Uniform Top 30 PLF 0 PLF 0 PLF 0 PLF 0 PLF 0 PLF WALL Self Weight 7 PLF	TL Defl inch	0.060 (L/1117)	3' 0	).188 (L/360	) 0.322 (32	%) D+S	L								
may also be required at the interior bearings by the building code. Fasten all plies using 2 rows of 10d Box nails (12833") at 12" o.c. Maximum end distance not to exceed 6". Refer to last page of calculations for fasteners required for specified loads. 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. Lateral slenderness ratio based on single ply width. Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments Uniform Top 462 PLF 0 PLF 462 PLF 0 PLF 0 PLF 0 PLF B2 TRUSS Uniform Top 30 PLF 0 PLF WALL Self Weight 7 PLF entering to the source of the so						· · · · ·		1							
to exceed 6°. Refer to last page of calculations for fasteners required for specified loads. 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. Lateral stenderness ratio based on single ply width. Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments Uniform Top 462 PLF 0 PLF 462 PLF 0 PLF 0 PLF 0 PLF 0 PLF 0 PLF B 2 TRUSS Uniform Top 30 PLF 0						bearings. Late	eral support								
Refer to last page of calculations for fasteners required for specified loads. Girders are designed to be supported on the bottom edge only. Top loads must be laterally braced at end bearings. Bottom must be laterally braced at end bearings. Lateral sienderness ratio based on single ply width. Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments Uniform Top 462 PLF 0 PLF 0 PLF 0 PLF 0 PLF 0 PLF B2 TRUSS Uniform Top 30 PLF 0 PLF 0 PLF 0 PLF 0 PLF 0 PLF 0 PLF WALL Self Weight 7 PLF			10d Box nails	s (.128x3") a	at 12" o.c. M	aximum end d	istance not								
Top loads must be supported equally by all plies. Top must be laterally braced at end bearings. Lateral slenderness ratio based on single ply width. Lateral slenderness ratio based on single ply width. Load Type Location Trib Width Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments Uniform Top 462 PLF 0 PLF 462 PLF 0 PLF 0 PLF 0 PLF B2 TRUSS Uniform Top 30 PLF 0 PLF 0 PLF 0 PLF 0 PLF 0 PLF WALL Self Weight 7 PLF eternicals developed and bearings is responsible only of the interest of the opposent based on the interest of the component based and the interest of the component based on the interest of the component based and the interest of the c			s for fastene	rs required	for specified	loads.									
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Uniform       Top       30 PLF       0 PLF <t< td=""><td>ID</td><td></td><td>L</td><td>ocation</td><td>Trib Width</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	ID		L	ocation	Trib Width										
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65       Chemicals       6. For that 100's provide proper dialing to prove       1001 Section 100 Sectio		Self Weight					7 PLF								
es       Chemicals       Chemicals       Chemicals       Chemicals       Chemicals       Chemicals       1001 S. Relity Road, Suite #639         laded Structured Designs is responsible only of the and loadings shown. It is the construction and loadings shown. It is the term anufacturer's product information requirements, multi-ply fastening details, beam strength values, and code approvals       Metsä Wood       301 Merritt 7 Building, 2nd Floor       USA       28314         no rite or omponent suitability of the intended ation, requirements, multi-ply fastening details, beam strength values, and code approvals       Damaged Beams must not be used       Norwalk, CT 06851       (800) 622-5850       Www.metsawood.com/us       USA         10 to be freaded with fire relardant or corrosite       Damaged Beams must not be used       Design assumes top edge is laterally prestrained       Provide laterally support at bearing points to avoid       For mat roots provide proper dialing to prevent provide proper dialing to provide proper dialing to prevent provide provide proper dialing to prevent provide provide proper dialing to prevent															
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es       Chemicals       Chemicals       Chemicals       Chemicals       Chemicals       Chemicals       1001 S. Relity Road, Suite #639         laded Structured Designs is responsible only of the and loadings shown. It is the construction and loadings shown. It is the term anufacturer's product information requirements, multi-ply fastening details, beam strength values, and code approvals       Metsä Wood       301 Merritt 7 Building, 2nd Floor       USA       28314         no rite or omponent suitability of the intended ation, requirements, multi-ply fastening details, beam strength values, and code approvals       Damaged Beams must not be used       Norwalk, CT 06851       (800) 622-5850       Www.metsawood.com/us       USA         10 to be freaded with fire relardant or corrosite       Damaged Beams must not be used       Design assumes top edge is laterally prestrained       Provide laterally support at bearing points to avoid       For mat roots provide proper dialing to prevent provide proper dialing to provide proper dialing provide proper dialing to prevent provide proper dialing to prevent provide provide proper dialing provide proper dialing to prevent provide proper dis       Metsä Wood       Mets															
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<ul> <li>Installation requirements, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening documents, multi-ply fastening documents, multi-ply fastening details, beam strength values, and code approvals</li> <li>In and documents, multi-ply fastening documents, multi-ply f</li></ul>	tructural adequacy of	of this component based on	the 1. LVL bear	ms must not be ci	ut or drilled		-			301 Merrit	7 Buildin	g, 2nd Floor	USA	C, INC	
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<ul> <li>4. Design assumes top edge is laterally restrained</li> <li>5. Provide lateral support at bearing points to avoid</li> <li>6. Provide lateral support at bearing points to avoid</li> </ul>	application, and to veri Lumber	ify the dimensions and loads.	approval	ls	-							m/us			
Lateral displacement and rotation This design is valid until 11/3/2024	1. Dry service condition	ons, unless noted otherwise ted with fire retardant or corro	<ol> <li>Design a</li> <li>Provide</li> </ol>	assumes top edge lateral support a	is laterally restrain t bearing points	to avoid								от	есн
on 21.80.417 Powered by iStruct™ Dataset: 22111501.1			laterar di		ordliUII	This	design is valio	until 11/3/2024	4						

		Client: Project:	Signature Homes		Date: Input by:	4/26/2023 Anthony Williams	Page 4 of 8
isDesign	l	Address:			Job Nam	e: Lot 52 Williams Farms	
		4 750			Project #	J0423-1968 Level: Level	
HDR-2 Kerto	)-3 LVL	1.750	X 9.20U	2-Piy	- PASSED		
						1	
•		•	•	•	• •	<11/2"	
		•		_		$\overline{\nabla}$	9 1/
		•	•	•	• • =	<u> </u>	
1 SPF End Grain					2 SPF End Grain		
			5'6"		1		3 1/2"
			6'			I	
Multi-Ply Analysis							
Fasten all plies using 2	2 rows of 10d	Box nails	(.128x3") at 12'	o.c Maxim	um end distance n	ot to exceed 6".	
Capacity	0.0 %		(				
Load Yield Limit per Foot	0.0 PLF 163.7 PL	F					
Yield Limit per Fastener	81.9 lb.						
Yield Mode Edge Distance	IV 1 1/2"						
Min. End Distance	3"						
Load Combination Duration Factor	1.00						
Notes Calculated Structured Designs is respons structural adequacy of this component design criteria and loadings show responsibility of the customer and/or the application, and to verify the dimensions of Lumber 1. Dry service conditions, unless noted of 2. LVL not be the reated with fire related	sible only of the based on the n. It is the e contractor to the intended and loads. therwise the reas fast 3. Dan 4. Des 5. Prov	rding installation ening details, beam ovals naged Beams must r ign assumes top edg ride lateral support	cut or drilled rer's product information requirements, multi-ply strength values, and code not be used ge is laterally restrained at bearing points to avoid	ponding	vide proper drainage to prevent	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
- EVE NOT TO BE ITCARED WITH THE PERIOD	later	al displacement and	rotation	This design is	valid until 11/3/2024		

lis	Design	P	lient: roject: ddress:	Signature H	lomes		In	ate: put by: ob Name	4/26/20 Anthor e: Lot 52	y William				Page 5 of 8
	-		du 035.					roject #:			anns			
HDR-3	Kerto-S L	VL	1.750'	" X 9.2	250" 2	2-Ply -		-	Level: Lev	el				
	2													
									-					
				1										
	-	•		•		•	•	•					M/	1 1
	a ritte		-		al Mine The								IXIX	9 1
			a distance			Carried Property	•		]				V V V	
	End Grain		Ę	5'6"			SPF End Gr							3 1/2"
· · · · · · · · · · · · · · · · · · ·				6'				,	ł					
lember In Type:	formation Girder		Applicat	ion:	Floor		Reaction	ns UN	PATTER Liv		<b>) (Uplift)</b> Dead	Snow	Wind	Cons
Plies:	2		Design I		ASD		1 Vert			0	2044	1932	0	Cons
Moisture Cond	•		Building		IBC/IRC 201	15	2 Vert	ical		0	2044	1932	0	
Deflection LL:	480		Load Sh	naring:	No	J								
Deflection TL:	360 Normal - II		Deck:		Not Checked	a								
mportance: Temperature:	Temp <= 100°F	=												
remperature.	1emp <= 100 1						Bearing	5						
							Bearing		h Dir.	Cap.	React D/L lb	Total I	Ld. Case	Ld. Comb
							1 - SPF	-		45%	2044 / 1932			D+S
							End						_	
nalysis Re	sults						Grain	0.000		450/	004444000	0070		<b>D</b> . 0
Analysis		ocation A		Capacity	Comb.	Case	2 - SPF End	3.000	Vert	45%	2044 / 1932	3976 I	L	D+S
Moment	5241 ft-lb		4423 ft-lb	0.363 (36	-	L	Grain							
Unbraced	5241 ft-lb		0944 ft-lb	0.479 (48		L								
Shear	2628 lb	1' 1/4" 7		0.331 (33		L								
	0.040 (L/1667)			0) 0.288 (29		L								
	0.083 (L/810)	3' 0	.188 (L/360	0) 0.444 (44	·%) D+S	L	-							
esign Not	port to prevent latera	I movement	and rotatio	n at the end	boorings I o	toral support	4							
	e required at the interi				bearings. La	iteral support								
2 Fasten all p to exceed 6	olies using 2 rows of 1	0d Box nails	s (.128x3") a	at 12" o.c. M	aximum end	distance not								
	, . It page of calculations	for fastener	s required f	for specified	loads.									
	designed to be suppo			je only.										
	nust be supported equ e laterally braced at e													
-	st be laterally braced at e	-												
8 Lateral sler	nderness ratio based o	on single ply	width.											
ID	Load Type	L	ocation	Trib Width	Side	Dead 0.9	Live	1 Snc	ow 1.15	Wind '	1.6 Const. 1	.25 Com	ments	
1	Uniform				Тор	644 PLF	0 PL	F 6	644 PLF	0 P	LF 01	PLF A2 TH	RUSS	
2	Uniform				Тор	30 PLF	0 PL	F	0 PLF	0 F	LF 01	PLF WALI	L	
	Self Weight					7 PLF								
-4		ab!- *			0 F	flat racks and	monor drain	provent	Manufact	urer Info		Comtech, In	c.	
lotes alculated Structured	Designs is responsible only of t		& Installation		6. For pon	flat roofs provide ding	noper arainage to	prevent	Metsä Wo	bc		<ul> <li>1001 S. Reil Fayetteville,</li> </ul>	ly Road, Suite #6	539
tructural adequacy of esign criteria and	of this component based on t loadings shown. It is t	he 1. LVL bean	ns must not be cu o manufacture	ut or drilled r's product int						t 7 Building	g, 2nd Floor	USA 28314 910-864-TR	us	
esponsibility of the c insure the compon application, and to ver	customer and/or the contractor ent suitability of the intend ify the dimensions and loads.	to regarding ed fastening	installation details, beam s	requirements, strength values, a	multi-ply				(800) 622-	5850	n/us	510-004-1R		
umber		<ol><li>Design as</li></ol>	I Beams must no ssumes top edge	is laterally restrai	ned				www.mets	awoou.cor	1,45			
. Dry service conditi . LVL not to be trea	ons, unless noted otherwise ted with fire retardant or corrosi	5. Provide	ateral support a placement and r	at bearing points	to avoid	is design is valio	until 11/3/202	4				C	отт	есн
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Version 21.80.417 Powered by iStruct<sup>™</sup> Dataset: 22111501.1

	Client: Signatu Project:	ire Homes	Date: Input by:	4/26/2023 Anthony Williams	Page 6 of 8
isDesign	Address:		Job Name		
			Project #:		
HDR-3 Kerto-S LV	/L 1.750" X 9	9.250" 2-Ply	- PASSED	Level: Level	
• •	• •	•	• •	5.	$\overline{M}$
				<1 1/2"	
• •	• •	•	• • –	<u> </u>	
1 SPF End Grain			2 SPF End Grain	<u> </u>	
	5'6"				3 1/2"
	6'		ı ,	1	0 1/2
	0				
Multi-Ply Analysis					
Fasten all plies using 2 rows of	f 10d Box nails ( 128x3	") at 12" oc Maxim	um end distance no	at to exceed 6"	
Capacity 0.0	) %				
	) PLF 3.7 PLF				
Yield Limit per Fastener 81	.9 lb.				
Yield Mode IV Edge Distance 1 1	1/2"				
Min. End Distance 3"					
Load Combination Duration Factor 1.0	00				
				Manufacture 1.4	Constaab Inc
Notes Calculated Structured Designs is responsible only of the	chemicals Handling & Installation	<ol><li>For flat roofs pro ponding</li></ol>	ovide proper drainage to prevent	Manufacturer Info Metsä Wood	Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC
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	1. LVL beams must not be cut or drilled 2. Refer to manufacturer's produc	t information		301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851	USA 28314 910-864-TRUS
ensure the component suitability of the intended application, and to verify the dimensions and loads.	regarding installation requirement fastening details, beam strength val approvals	ues, and code		(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 corrosive	<ol> <li>Damaged Beams must not be used</li> <li>Design assumes top edge is laterally</li> <li>Provide lateral support at bearing provide lateral support provide lateral support at bearing provide lateral support provide lateral support at bearing provide lateral support provide</li></ol>	restrained points to avoid			соттесн
2. LVL HOLIO DE l'Eated with fire retardant or corrosive	lateral displacement and rotation		s valid until 11/3/2024		

i a	Docien	Client: Signature Homes Project:		Date: Input by:	4/26/2023 Anthony Williams			Page 7 of 8
	Design	Address:		Job Name Project #:	<ul> <li>Lot 52 Williams Farms J0423-1968</li> </ul>	8		
GDH-18	Kerto-S LVL	1.750" X 14.000" 2	2-Ply - P	,	Level: Level			
	2							
			1	-	No.			1'2"
1 SPF End	Grain	18'3"			2	SPF End Grain		1/2"
		183"					3	1/2*
I							1	
Member Inf	ormation			Reactions UNI	PATTERNED Ib (U	olift)		
Туре:	Girder	Application: Floor		Brg Direction	Live Dea		Wind	Cons
Plies: Moisture Cond	2 ition: Dry	Design Method: ASD Building Code: IBC/IRC 2015	;	1 Vertical 2 Vertical	377 250 377 250		0	
Deflection LL: Deflection TL: Importance: Temperature:	480 360 Normal - II Temp <= 100°F	Load Sharing: No Deck: Not Checked			577 200	+ 011	0	
remperature.	Temp <= 100 P			Bearings				
				Bearing Length 1 - SPF 3.500" End			I Ld. Case 9 L	Ld. Com D+0.75(L·
Analysis Res	sults			Grain		04/505 000	0.1	D . 0 75/1
Analysis Moment Unbraced	Actual         Location           12910 ft-lb         9'5"           13754 ft-lb         9'5"	1 5	Case L ·S) L	2 - SPF 3.500" End Grain	Vert 30% 25	04 / 565 306	9 L	D+0.75(L-
Shear	2447 lb 1'5 1/2"	10453 lb 0.234 (23%) D+L	L					
LL Defl inch TL Defl inch		0.459 (L/480) 0.222 (22%) 0.75(L+S)						
Design Note	. ,	0.612 (L/360) 0.905 (91%) D+0.75(L+	-5) L					
<ol> <li>Provide sup may also be</li> <li>Fasten all pl to exceed 6'</li> <li>Refer to last</li> </ol>	port to prevent lateral movement required at the interior bearin lies using 3 rows of 10d Box n ".	ails (.128x3") at 12" o.c. Maximum end di ners required for specified loads.						
6 Top must be 7 Bottom mus	ust be supported equally by a e laterally braced at a maximur t be laterally braced at end be derness ratio based on single	n of 7'5 9/16" o.c. arings.						
ID	Load Type	Location Trib Width Side	Dead 0.9	Live 1 Sno			omments	
1	Uniform	Тор	55 PLF		40 PLF 0 PLF 0 PLF 0 PLF		+ F	
2	Uniform Self Weight	Тор	200 PLF 11 PLF	0 PLF	VELE VELE	0 PLF W		
structural adequacy of	Designs is responsible only of the <b>Handl</b> f this component based on the headlens achieved by the the	ing & Installation pondin beams must not be cut or drilled		per drainage to prevent	Manufacturer Info Metsä Wood 301 Merritt 7 Building, 2nd	Fayette USA	sh, Inc. . Reilly Road, Suite ∔ ville, NC	#639
responsibility of the cu ensure the compone application, and to verifi Lumber 1. Dry service conditio	loadings shown. It is the 2. Referred regations and loads. by the dimensions and loads. approver the state of the state of the state approver the state of the state of the state approver the state of the state of the state approver the state of the state of the state of the state approver the state of the state of the state of the state approver the state of the state of the state of the state approver the state of the state of the state of the state approver the state of the state of the state of the state approver the state of the state of the state of the state of the state approver the state of the state	r to manufacturer's product information (ding) installation requirements, multi-ply ning details, beam strength values, and code vota aged Beams must not be used gn assumes top edge is laterally restrained de lateral support at bearing points to avoid	d	until 11/3/2024	(800) 622-5850 www.metsawood.com/us	910-86		есн

Cii	ient: Signature Homes		)ate:	4/26/2023	Page 8 of a
	oject: ldress:	J	nput by: ob Name:		
GDH-18 Kerto-S LVL 1	I.750" X 14.000"	2-Ply - PASSE	Project #:	J0423-1968 evel: Level	
· · · · · ·	· · · ·	• • • •	•	· · · · ·	
1 SPF End Grain	· · ·	<u></u>	•	· · · · · · · 2 SPF End 0	
		18'3"			3 1/2"
<u>∤</u>		18'10"			
Multi-Ply Analysis					
Fasten all plies using 3 rows of 10d Bo	x nails (.128x3") at 12"	o.c Maximum end dista	ance no	t to exceed 6".	
Capacity 0.0 % Load 0.0 PLF					
Yield Limit per Foot245.6 PLFYield Limit per Fastener81.9 lb.					
Yield Mode IV					
Edge Distance 1 1/2" Min. End Distance 3"					
Load Combination					
Duration Factor 1.00					
				Manufacture 1.6	Constaals Inc
Notes chemicals Calculated Structured Designs is responsible only of the Handling 8	& Installation	<ol><li>For flat roofs provide proper drainage to ponding</li></ol>	prevent	Manufacturer Info Metsä Wood	Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC
structural adequacy of this component based on the 1. LVL beams design criteria and loadings shown. It is the 2 Refer to	s must not be cut or drilled			301 Merritt 7 Building, 2nd Floor	USA 28314
responsibility of the customer and/or the contractor to ensure the component suitability of the intended fastening of	manufacturer's product information installation requirements, multi-ply details, beam strength values, and code			Norwalk, CT 06851 (800) 622-5850	910-864-TRUS
application, and to verify the dimensions and loads. Lumber 3. Damaged B	Beams must not be used			www.metsawood.com/us	
1. Dry service conditions, unless noted otherwise 2. U/l, part to be tracted with fire retardent as services 5. Provide lat	sumes top edge is laterally restrained teral support at bearing points to avoid accement and rotation	This desire is well. If the form			соттесн
iateral disp		This design is valid until 11/3/202	4		