	Project: Magnolia Elev. C	Input by:	Christine Shivy	
isDesign	Address: Magnolia Elev. C	Job Nam Project #	e: Magnolia Elev. C	
BM1 Kerto-S LVL	1.750" X 16.000" 3-Ply	- PASSED	Level: Level	
		3		
		3		
2	1			
• • • •	· · · ·	• • •	• •	
	and the second	7 7 6	2 SPF	1'
1 SPF	12'			5 1/4"
ļ	12			5 1/4
1	12		I	
Iember Information		Reactions UN	IPATTERNED Ib (Uplift)	
Type: Girder	Application: Floor	Brg Liv		Wind Const
Plies: 3 Moisture Condition: Dry	Design Method: ASD Building Code: IBC/IRC 2015	1 189 2 189		0 0 0 0
Deflection LL: 480	Load Sharing: Yes	2 103	1930	0 0
Deflection TL: 360 Importance: Normal	Deck: Not Checked			
Temperature: Temp <= 100°F				
		Bearings		
		Bearing Lengt		Total Ld. Case Ld. Comb.
		1 - SPF 3.500 2 - SPF 3.500		6333 L D+0.75(L+S) 6333 L D+0.75(L+S)
nalysis Results				
,	n Allowed Capacity Comb. Cas 6' 62010 ft-lb 0.284 (28%) D+0.75(L+S) L	se		
	6' 17648 ft-lb 0.999 D+0.75(L+S) L			
Shear 4524 lb 1'6 5/8	(100%) 3" 17920 lb 0.252 (25%) D+L L			
	3" 17920 lb 0.252 (25%) D+L L 6' 0.289 (L/480) 0.220 (22%) 0.75(L+S) L			
	6' 0.385 (L/360) 0.370 (37%) D+0.75(L+S) L			
esign Notes				
 Fasten all plies using 4 rows of 10d Box to exceed 6". 	nails (.128x3") at 12" o.c. Maximum end distance	e not		
2 Refer to last page of calculations for fast				
3 Girders are designed to be supported or4 Top loads must be supported equally by				
5 Top must be laterally braced at a maxim6 Bottom braced at bearings.	um of 10'4 7/8" o.c.			
7 Lateral slenderness ratio based on singl				
ID Load Type			ow 1.15 Wind 1.6 Const.	
1 Uniform 2 Uniform		5 PLF 0 PLF 5 PLF 0 PLF		0 PLF Exterior Wall 0 PLF A2
2 Uniform	•	SPLF 0PLF		0 PLF F1
Self Weight		PLF		
Notes d	emicals 6. For flat roofs p	provide proper drainage to prevent	Manufacturer Info	Comtech, Inc.
Calculated Structured Designs is responsible only of the Han structural adequacy of this component based on the	a sea dha a		Metsä Wood 301 Merritt 7 Building, 2nd Floor	1001 S. Reilly Road, Suite #639 Fayetteville, NC USA
design criteria and loadings shown. It is the 2 Ri esponsibility of the customer and/or the contractor to ensure the component suitability of the intended	adding for the cut of childer effer to manufacturer's product information garding installation requirements, multi-ply stening details, beam strength values, and code		Norwalk, CT 06851 (800) 622-5850	28314 910-864-TRUS
application, and to verify the dimensions and loads.	provals amaged Beams must not be used		www.metsawood.com/us ICC-ES: ESR-3633	
	esign assumes top edge is laterally restrained			соттесн

		Clie Proj					4/2021 stine Shivy		Page 1 of
	sDesign	Add	tress: Magnolia	Elev. C		b Name: Mag	nolia Elev. C		
BM2	Kerto-S LVI	17	50" X 16 0(יער "2_DIv		roject #: Level: I	evel		
		_ 1./、		50 Z-FTy	- FAGGLI				
	2								
_			1		· · ·				
									M
1	Contraction of the second		-	atter a	the the	(1'4"
	•		•	• •		2 SPF			
			10'9 1/2"						3 1/2"
			10'9 1/2"						0 1/2
1			100 1/2						
/lember li	nformation				Reactior	ns UNPATT	ERNED Ib (Uplift)	
Туре:	Girder		Application:	Floor	Brg	Live	Dead Snow	Wind	Const
Plies: Moisture Co	2 ndition: Drv		Design Method: Building Code:	ASD IBC/IRC 2015	1	3389 3389	1200 0 1200 0	0	0 0
Deflection L	-		Load Sharing:	No	2	3309	1200 0	0	0
Deflection T			Deck:	Not Checked					
Importance:		_							
Temperature	e: Temp <= 100°F				Bearings	6			
					Bearing		Cap. React D/L lb	Total Ld. Case	Ld. Comb.
					1 - SPF	3.500"	88% 1200 / 3389	4589 L	D+L
nalysis R	losi Ilts				2 - SPF	3.500"	88% 1200 / 3389	4589 L	D+L
Analysis		_ocation Allo	wed Capacity	/ Comb. Ca	ase				
Moment	11397 ft-lb	5'4 3/4" 3456	65 ft-lb 0.330 (33	8%) D+L L					
Unbraced	11397 ft-lb		46 ft-lb 0.970 (97	,					
Shear	4386 lb	1'6 5/8" 1194							
	h 0.085 (L/1457)		59 (L/480) 0.330 (33						
I L Defl inc	h 0.115 (L/1076)	5'4 3/4" 0.34	45 (L/360) 0.330 (33	3%) D+L L					
	otes		128x3") at 12" o.c. N	laximum end distance	e not				
Design No	I plies using 3 rows of 1	0d Box nails (
1 Fasten al to exceed				la a da					
1 Fasten al to exceed 2 Refer to l		for fasteners re		loads.					
 Fasten al to exceed Refer to la Girders a Top brace 	i 6". ast page of calculations re designed to be suppo ed at bearings.	for fasteners re		loads.					
 Fasten al to exceed Refer to la Girders a Top brace Bottom base 	l 6". ast page of calculations re designed to be suppo	for fasteners re orted on the bo	ottom edge only.	loads.					
 Fasten al to exceed Refer to la Girders a Top brace Bottom ba Lateral sl 	i 6". ast page of calculations re designed to be suppo ad at bearings. raced at bearings.	for fasteners re orted on the bo on single ply wi	ottom edge only.		ad 0.9 Live	1 Snow 1.15	Wind 1.6 Cons	t. 1.25 Comment	s
 Fasten al to exceed Refer to la Girders a Top brace Bottom bit Lateral sli ID 1 	16". ast page of calculations re designed to be suppo ad at bearings. raced at bearings. <u>enderness ratio based of</u> Load Type Uniform	for fasteners re orted on the bo on single ply wi	ottom edge only.	Side Dea Far Face 8	89 PLF 267 PLI	F 0 PLF	0 PLF	0 PLF F4	s
 Fasten al to exceed Refer to la Girders a Girders a Top brace Bottom bio Lateral slip 	16". ast page of calculations re designed to be suppo ed at bearings. raced at bearings. enderness ratio based of Load Type	for fasteners re orted on the bo on single ply wi	ottom edge only.	Side Dea Far Face 8 Near Face 12		F 0 PLF	0 PLF		s



	isDesign	Project: Address:	Magnolia Elev. C Magnolia Elev. C		Job Pro	o Name: Ma oject #:	rristine Shivy agnolia Elev. C		
GDH	Kerto-S LVL	1.750"	X 11.875"	2-Ply - F	PASSED	Level:	Level		
	2	· ·	1				• •		
		Mark Ing		•	-	C. T. Walter	••		
1 SPF	End Grain					2 SPF End	d Grain		
]			8'10"]		ິ 3 1/2"
1			8'10"				1		
lombor I	nformation				Poaction		FERNED Ib (Uplif	·+)	
Type:	Girder	Applica	ation: Floor		Brg	Live	Dead Snov		Const
Plies:	2	Design	Method: ASD		1	0	1101 17		0
Noisture Co Deflection L	ndition: Dry L: 480		g Code: IBC/IRC haring: No	2015	2	0	1101 17	7 0	0
Deflection L		Deck:	Not Che	cked					
mportance:	Normal								
emperature	e: Temp <= 100°F				Poorings				
					Bearings Bearing	Length	Cap. React D/L lb	Total Ld. Case	e Ld. Comb.
					1 - SPF	-	12% 1101 / 177	1277 L	D+S
					End Grain				
nalysis R Analysis		cation Allowed	Capacity Con	nb. Case	2 - SPF	3.500"	12% 1101 / 177	1277 L	D+S
Moment	2185 ft-lb	4'5" 17919 ft-lb	0.122 (12%) D	Uniform	End Grain				
Unbraced	2536 ft-lb	4'5" 10756 ft-lb	0.236 (24%) D+S	L	Ciuiii				
Shear		'7 3/8" 7980 lb	0.100 (10%) D	Uniform					
LL Defl inc	h 0.006 4'5 (L/18257)	5 1/16" 0.209 (L/48	0) 0.030 (3%) S	L					
TL Defl inc	h 0.040 (L/2525) 4'5	5 1/16" 0.279 (L/36	0) 0.140 (14%) D+S	L					
esign No	otes								
1 Fasten al to exceed	ll plies using 2 rows of 10d 1.6"	Box nails (.128x3")	at 12" o.c. Maximum	end distance not]				
2 Refer to I	ast page of calculations fo		•						
	re designed to be supporte s must be supported equal		ge only.						
	ed at bearings.								
	raced at bearings. enderness ratio based on	single ply width.							
D	Load Type	Location	Trib Width Side	Dead 0.9	Live 1	Snow 1.1	5 Wind 1.6 Con	st. 1.25 Comme	nts
l	Uniform		Тор	200 PLF				0 PLF Exterior I	
2	Uniform		Тор	40 PLF	0 PLF	40 PL	F 0 PLF	0 PLF 2'-0" Gat	ble End
	Self Weight			9 PLF					
2 Votes alculated Structuu tructural adequace	Uniform	 LVL beams must not be Refer to manufacture regarding installation 	Top	40 PLF	0 PLF	40 PL revent Manu Metsä 301 M Norwi		0 PLF 2'-0" Gat	ole End
pplication, and to	verify the dimensions and loads.	approvals 3. Damaged Beams must	strength values, and code			www.	metsawood.com/us		
. Dry service cor	ditions, unless noted otherwise reated with fire retardant or corrosive	Design assumes top ed	at bearing points to avoid I rotation			ICC-E	ES: ESR-3633	CO	тесн
		atorar displacement and		This design is valid	untii 1/8/2023			Research of the local division of the local	