



1	isDesign	Client: Weaver Develop Project: Barstow II Address: Barstow II	ment	Date: 5/4/2020 Input by: Christine Shivy Job Name: Barstow II Project #:	Page 3 of 15
BM1	Kerto-S LVL	1.750" X 24.000'	' 3-Ply - PAS	SED Level: Level	
		1			
· ·	· · · · · ·		· · · ·	· · · · · · · ·	· · · . 
1 SPF	End Grain		<u> </u>	2 SF	
			22'6" 22'6"		f5 1/4"

# Multi-Ply Analysis

Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c.. except for regions covered by concentrated load fastening. Nail from both sides. Maximum end distance not to exceed 6"

81.0 %
265.3 PLF
327.4 PLF
81.9 lb.
IV
1 1/2"
3"
D+L
1.00

## Concentrated Load

Fasten at concentrated side load at 7-1-12 with a

minimum of (16) – SDW22500 in the pattern shown.

All fasteners shall be installed with the head on the

### side of the applied load.

· · · · · · · · · · · · · · · · · · ·		
Capacity	99.1 %	
Load	5155.3lb.	
Total Yield Limit	5200.0 lb.	
Cg	1.0000	
Yield Limit per Fastener	325.0 lb.	
Yield Mode	Lookup	
Load Combination	D+L	
Duration Factor	1.00	

chemicals

3

5.

### Min/Max fastener distances for Concentrated Side Loads



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.

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

Notes

Lumber







# **Multi-Ply Analysis**

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. except for regions covered by concentrated load fastening. Maximum end distance not to exceed 6"

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

## Concentrated Load

Fasten at concentrated side load at 6-8-2 with a minimum of (18) – 10d Box nails (.128x3") in the



Notes	chemicals	6. For flat roofs provide proper drainage to prevent	Manufacturer Info	Comtech, Inc. 1001 S. Reilly Road, Suite #639
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 interded application, and to verify the dimensions and loads. <b>Lumber</b> 1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive	Handling & Installation 1. UVL 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	ponding This design is valid until 1/8/2023	Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633	Fayetteville, NC USA 28314 910-864-TRUS

	•	Clie	ent: \	Weaver Devel	opment		Da	ate:	5/4/2020				Page 7 of 15
		Pro	oject: E	Barstow II			In	put by:	Christine	Shivy			
is	Design	Ad	dress:	Barstow II			Jo	b Name:	Barstow I	I			
							Pr	oject #:					
BM3	Kerto-S LVL	1.7	'50" X	16.000	)" 2-	Ply - P	ASSE	<b>)</b>	evel: Level				
						•							
	2												
										J			$\mathbf{M}$ $\mathbf{T}$
	a sitter	No marked			Fin The	1. The	-	-	14 in				M 14"
1 SPF					and and a second second second				2 SPF	1			
/				11'6 1/2"					,	r			3 1/2"
∤				11'6 1/2"					,	ł			
Member In	formation						Reaction	ns UNP	PATTERN	ED lb (Up	lift)		
Туре:	Girder		Applicatio	on: Fl	oor		Brg	Live	Dea	ad Sr	now	Wind	Const
Plies:	2		Design M	ethod: A	SD		1	1824	11-	45	0	0	0
Moisture Con	dition: Dry		Building (	Code: IB	C/IRC 2015		2	1824	11-	45	0	0	0
Deflection LL:	480		Load Sha	ring: No									
Deflection TL:	240		Deck:	N	ot Checked								
Importance:	Normal												
Temperature:	1emp <= 100°F						Rearing	:					
							Dearings	•	0	Decet D/	II. <b>T</b> . 4.		Let Oanah
							Bearing	Length	Cap	. React D/L	ID IOTA	al Ld. Case	Ld. Comb.
							1 - SPF	3.500"	57%	1145 / 18	24 296	9 L	D+L
Analysis Re	sults	•					2 - SPF	3.500"	57%	1145 / 18.	24 296	9 L	D+L
Analysis	Actual Loc	ation All	owed	Capacity	Comb.	Case	1						
Moment	7929 ft-lb 5'9	9 1/4" 345	565 ft-lb	0.229 (23%)	) D+L	L							
Unbraced	7929 ft-lb 5'9	9 1/4" 111	118 ft-lb	0.713 (71%)	) D+L	L							
Shear	2733 lb 9'1	1 7/8" 119	947 lb	0.229 (23%)	) D+L	L							
LL Defl inch	0.055 (L/2411) 5'S	9 1/4" 0.2	278 (L/480)	0.200 (20%)	) L	L							
TL Defl inch	0.090 (L/1481) 5'S	9 1/4" 0.5	555 (L/240)	0.160 (16%)	) D+L	L							
Design Not	·····						1						
1 Girders are	designed to be supporte	d on the b	ottom edge	only.			1						
2 Multiple pli	es must be fastened toge	ther as per	r manufacti	urer's details.									
3 Top loads r	nust be supported equally	y by all plie	es.										
5 Bottom braced	ced at bearings.												
6 Lateral sler	nderness ratio based on s	single ply w	vidth.										
ID	Load Type	Lo	cation T	rib Width	Side	Dead 0.9	Live	1 Snov	w 1.15	Wind 1.6 C	onst. 1.25	Commen	ts
1	Uniform				Тор	80 PLF	0 PLF	=	0 PLF	0 PLF	0 PLF	Interior Wa	all
2	Uniform				Far Face	106 PLF	316 PI F	=	0 PLF	0 PLF	0 PL F	F7	
-	Self Weight					12 DI F	5.51 EI				5 · EI		
	Sell Weight					12 F LF							
Notes		chemicals			6. For fla	at roofs provide n	roper drainage to	prevent	Manufacture	r Info		Comtech, Inc.	Suite #630
Calculated Structured	Designs is responsible only of the	Handling &	Installation	1	pondin	g . F	0.5		Metsä Wood	D.::U		Fayetteville, NC	., cano #000
design criteria and	l loadings shown. It is the	1. LVL beams 2. Refer to	must not be cut manufacturer's	or drilled product inform	ation				301 Merritt 7 Norwalk, CT (	Building, 2nd F 06851	loor	28314 910-864-TRUS	
ensure the comport application, and to ver	ent suitability of the intended	regarding fastening d	installation r letails, beam str	equirements, mu ength values, and	u-ply code				(800) 622-58	50	┢		
Lumber		<ol> <li>Damaged B</li> <li>Design aser</li> </ol>	Beams must not t umes top edge is	be used a laterally restrained					ICC-ES: ESR	-3633			
<ol> <li>Dry service condit</li> <li>LVL not to be treat</li> </ol>	ons, unless noted otherwise ted with fire retardant or corrosive	<ol> <li>Provide late lateral displateral</li> </ol>	eral support at lacement and rot	bearing points to ation	avoid	design is volid	until 1/8/2022					con	птесн
		aiopie	1.110 1.01		Inis	uesign is valid	unui 1/8/2023						

		С	lient:	Weaver Dev	velopment		D	ate:	5/4/2020					Page 8 of 1
		Р	Project:	Barstow II			In	put by:	Christine	Shivy				
IS	Design	A	ddress:	Barstow I			Jo	b Name	: Barstow I	I				
							P	roject #:						
BM4 I	Kerto-S LVL	1.	/50" 2	K 16.00	0" 2	2-PIy - I	ASSEI	ן נ						
4														
				3										
	2													
		. 1												$\square \neq$
					•••									M
•		·	•	1										1'4"
1.	· ·	. Maren	- ALLER	•										
1 SPF			2 Ha	inger (HD412	(Min))									
·		7'												3 1/2"
,		' 7'												
I		1			I									
Mombor In	formation						Reaction		DATTERN	ED Ih (II	nlift)			
Type:	Girder		Applica	tion:	Floor		Bra	Live	De	ad 3	Snow		Nind	Const
Plies:	2		Design	Method:	ASD		1	627	12	80	584		0	0
Moisture Con	dition: Dry		Building	g Code:	IBC/IRC 20	15	2	612	12	50	571		0	0
Deflection LL:	480		Load SI	haring:	No									
Deflection IL:	360		Deck:		Not Checke	d								
Importance:	Normal													
Temperature:	1emp <= 100°F						Bearing	c						
							Dearing	<b>3</b>	Car	Decet D	// //-	Tatal		
							Bearing	Length		. React D		10tai	Ld. Case	
							1-SPF	3.500	42%	1260/	908	2109	L .	D+0.75(L+S)
Analysis Re	sults						Hanger	2.500	28%	1250/	887	2137	L	D+0.75(L+S)
Analysis	Actual Loo	cation A	llowed	Capacity	Comb.	Case								
Moment	2973 ft-lb 3	3'6 1/2" 34	4565 ft-lb	0.086 (9%	) D+L	L								
Unbraced	3412 ft-lb 3	3'6 1/2" 1 <sup>°</sup>	7666 ft-lb	0.193 (19	%) D+0.75(l	L+S) L								
Shear	1467 lb 5	5'6 3/8" 1 <sup>.</sup>	1947 lb	0.123 (12	%) D+L	L								
LL Defl inch	0.008 3	8'6 1/2" 0	.166 (L/480	0) 0.050 (5%	) 0.75(L+8	S) L								
TL Deflinch	(L/10459)	"6 1/2" 0	222 (1/36)	)) 0 080 (8%	) D+0 75(I	1+5)1								
Decian Not	0.010 (E/+0+1) 0	0 1/2 0	.222 (1/000	) 0.000 (0 /	<i>i)</i> D:0.70(1	L:0) L	-							
1 Fasten all p	blies using 3 rows of 10d	Box nails	s (.128x3")	at 12" o.c. M	aximum end	distance not	-							
to exceed 6	6".			for an acified	laada									
3 Fill all hand	st page of calculations to	or tastener	s required	for specified	loads.									
4 Girders are	e designed to be support	ed on the	bottom edg	ge only.										
5 Top loads r	nust be supported equal	lly by all pl	lies.											
6 Top braced	at bearings.													
8 Lateral sler	rderness ratio based on	single plv	width.											
ID	Load Type	L	ocation	Trib Width	Side	Dead 0.9	D Live	1 Snov	w 1.15	Wind 1.6	Const.	1.25	Comment	ts
1	Uniform				Near Fac	e 61 PLF	= 0 PL	F (	61 PLF	0 PLF	0	PLF	M4	
2	Uniform				Тор	104 PLF	= 0 PL	F 10	04 PLF	0 PLF	0	PLF	C1	
3	Uniform				Far Face	59 PLF	= 177 PL	F	0 PLF	0 PLF	0	PLF	F3	
4	Uniform				Тор	125 PLF	= 0 PL	F	0 PLF	0 PLF	0	PLF	Exterior W	all
7	Self Weight					12 PLF	=		0.2.	0.1 2.	Ū		Externet fr	
	co Worght					, <u>2</u> 1 LI								
									Manufacture	r Info		Co	mtech, Inc.	
Notes Calculated Structured	Designs is responsible only of the	chemicals Handling	s & Installati	on	<ol><li>For por</li></ol>	r flat roofs provide nding	proper drainage to	prevent	Metsä Wood				1 S. Reilly Road etteville, NC	, Suite #639
structural adequacy design criteria and	of this component based on the loadings shown. It is the	1. LVL beam 2. Refer to	ns must not be c o manufacture	ut or drilled er's product info	ormation				301 Merritt 7	Building, 2nd	l Floor	US/ 283	A \$14	
responsibility of the ensure the comport application and to use	customer and/or the contractor to nent suitability of the intended	regarding fastening	installation details, beam	requirements, strength values, a	multi-ply nd code				(800) 622-58	50		910	-004-1KUS	
Lumber	and annonatoris and IOBUS.	approvals 3. Damaged	s d Beams must no ssumes top edge	ot be used	ed				www.metsaw ICC-ES: ESR	-3633		)		
<ol> <li>Dry service condit</li> <li>LVL not to be treat</li> </ol>	ions, unless noted otherwise ated with fire retardant or corrosive	5. Provide I lateral dis	lateral support	at bearing points rotation	to avoid	nis design is val	id until 1/8/2022						con	птесн
					11	na neardi ia Agi	ia anui 1/0/2023							

	Client: Weaver Develop	oment Date:	5/4/2020	Page 9 of 15
TisDesign	Project: Barstow II Address: Barstow II	Input by Job Nan	Christine Shivy	
		Project #	t:	
BM4 Kerto-S L	/L 1.750" X 16.000'	2-Ply - PASSED	Level: Level	
	• • • • •	•		M
• • •		·// 😤		1'4"
				M .
1 SPF	2 Hanger (HD412 (Mi			
,				
ļ	ľ			3 1/2"
1	7'	1		
Multi-Ply Analysis				
asten all plies using 3 row	s of 10d Box nails (.128x3") at 12	2" o.c Maximum end distance r	not to exceed 6"	
apacity	48.1 %			
oad ield Limit per Foot	118.0 PLF 245.6 PLF			
ield Limit per Fastener	81.9 lb.			
eld Mode	IV 1 1/01			
dge Distance lin. End Distance	1 1/2" 3"			
oad Combination	D+L			
Ouration Factor	1.00			
	ale and a le		Manufacturer Info	Comtech, Inc.
Notes Calculated Structured Designs is responsible only	of the Handling & Installation	<ol> <li>For flat roots provide proper drainage to prevent ponding</li> </ol>	Metsä Wood	1001 S. Reilly Road, Suite #639 Fayetteville, NC
structural adequacy of this component based of design criteria and loadings shown. It is responsibility of the customer and/or the control	on the 1. LVL beams must not be cut or drilled the 2. Refer to manufacturer's product information	on	301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851	USA 28314 910-864-TRUS
ensure the component suitability of the int application, and to verify the dimensions and loads	ended regarding installation requirements, multi-p fastening details, beam strength values, and cor approvals	ly le	(800) 622-5850 www.metsawood.com/us	
Lumber 1. Dry service conditions, unless noted otherwise	<ol> <li>Damaged Beams must not be used</li> <li>Design assumes top edge is laterally restrained</li> </ol>		ICC-ES: ESR-3633	
<ol> <li>LVL not to be treated with fire retardant or cor</li> </ol>	tosive 5. Provide lateral support at bearing points to avoid lateral displacement and rotation	<sup>ia</sup> This design is valid until 1/8/2023		соттесн
/ersion 20.20.002 Powered by iStruct™				CEDIRAW

Project:       Barstow II       Input by:       Christine Shivy         Address:       Barstow II       Job Name:       Barstow II         Project:       I.750" X 9.250"       2-Ply - PASSED       Level:         BM5       Kerto-S LVL       1.750" X 9.250"       2-Ply - PASSED       Level:         Image: Comparison of the state of the st	y j
Address: Barstow II Project #: BM5 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED Level: Level	
BMS       Kerto-S LVL       1.750" X 9.250"       2-Ply - PASSED       Level: Level         2       1       3       3       4	9
BM5       Kerto-S LVL       1.750" X 9.250"       2-Ply - PASSED       Level         2       1       3       3       3       3         2       1       3       3       3       3       3         1       2       1	9
2         3           2         1           1         9           1         SPF End Grain           6'1"         6'1"           6'1"         6'1"           6'1"         6'1"           6'1"         6'1"           6'1"         6'1"           9         Girder           Application:         Floor           Design Method:         ASD           1         961         1783           1         961         1783         1059         0           Visture Condition: Dry         Building Code:         IBC/IRC 2015         2         961         1783         1059         0	9
2         1           2         1           3         3           2         1           3         3           3         3           2         1           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           3         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3           4         3	
2         1           2         1           1         2           1         SPF End Grain           6'1"         6'1"           6'1"         6'1"           6'1"         6'1"           9         Constructions           1         SPF End Grain           6'1"         6'1"           6'1"         6'1"           6'1"         6'1"           1         961         1783           1         961         1783         1059         0           Aoisture Condition: Dry         Building Code:         IBC/IRC 2015         2         961         1783         1059         0	y je
2       1         1       1         1       SPF End Grain         1       6'1"         6'1"       6'1"         6'1"       6'1"         6'1"       6'1"         6'1"       6'1"         1       SPF End Grain         6'1"       6'1"         6'1"       6'1"         6'1"       6'1"         1       961       1783         1       961       1783       1059       0         Voisture Condition: Dry       Building Code:       IBC/IRC 2015       2       961       1783       1059       0	<b>9</b>
1 SPF End Grain       2 SPF End Grain         1 SPF End Grain       6'1"         6'1"       6'1"         6'1"       6'1"         1       6'1"         6'1"       6'1"         1       6'1"         6'1"       6'1"         1       96'1         1       96'1         1       96'1         1       96'1         1       96'1         1       1         1       96'1         1       1         1       96'1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1         1       1       1	
1 SPF End Grain       2 SPF End Grain         6'1"       6'1"         6'1"       6'1"         6'1"       6'1"         Ember Information       Reactions UNPATTERNED Ib (Uplift)         Type:       Girder         Plies:       2         2       961         1       1783 <th>9</th>	9
I SPF End Grain       2 SPF End Grain         6'1"       6'1"         6'1"       6'1"         6'1"       6'1"         Fember Information       Reactions UNPATTERNED Ib (Uplift)         Type:       Girder         Plies:       2         2       Brg       Live       Dead       Snow       Wind         Plies:       2       Design Method:       ASD       1       961       1783       1059       0         Moisture Condition: Dry       Building Code:       IBC/IRC 2015       2       961       1783       1059       0	
1 SPF End Grain       2 SPF End Grain         6'1"       6'1"         6'1"       6'1"         1 SPF End Grain       6'1"         6'1"       6'1"         Pember Information       Reactions UNPATTERNED Ib (Uplift)         Type:       Girder         Plies:       2         Design Method:       ASD         Building Code:       IBC/IRC 2015         2       961       1783         1059       0	
6'1"         6'1"         6'1"         6'1"         Girder       Application: Floor       Brg       Live       Dead       Snow       Wind         Piles:       2       Design Method:       ASD       1       961       1783       1059       0         Moisture Condition:       Dry       Building Code:       IBC/IRC 2015       2       961       1783       1059       0	
6'1"         mber Information       Reactions UNPATTERNED Ib (Uplift)         Type:       Girder       Application:       Floor       Brg       Live       Dead       Snow       Wind         Plies:       2       Design Method:       ASD       1       961       1783       1059       0         Moisture Condition:       Dry       Building Code:       IBC/IRC 2015       2       961       1783       1059       0	3 1/2"
Reactions UNPATTERNED Ib (Uplift)Type:GirderApplication:FloorBrgLiveDeadSnowWindPlies:2Design Method:ASD1961178310590Moisture Condition:DryBuilding Code:IBC/IRC 20152961178310590	
member InformationReactions UNPATTERNED Ib (Uplift)Type:GirderApplication:FloorBrgLiveDeadSnowWindPlies:2Design Method:ASD1961178310590Noisture Condition:DryBuilding Code:IBC/IRC 20152961178310590	
Type:GirderApplication:FloorBrgLiveDeadSnowWindPlies:2Design Method:ASD1961178310590Moisture Condition:DryBuilding Code:IBC/IRC 20152961178310590	
Ines.         Image: 2         Design Methol.         ASD         Image: 3         1059         0           Aoisture Condition: Dry         Building Code:         IBC/IRC 2015         2         961         1783         1059         0	Const
	0
Deflection LL: 480 Load Sharing: No	0
Deflection TL: 360 Deck: Not Checked	
nportance: Normal	
emperature: Temp <= 100°F	
Bearings	
Bearing Length Cap. React D/L lb Total Ld. Cas	e Ld. Comb.
1 - SPF 3.500" 31% 1783 / 1515 3298 L	D+0.75(L+S)
End Grain	
Valuation Actual Location Allowed Consolity Comb. Conc. 2 - SPF 3.500" 31% 1783 / 1515 3298 L	D+0.75(L+S)
Moment $4288$ ft.lb $3' 1/2''$ $14423$ ft.lb $0.207 (30\%)$ D=0.75/L+S L	
Johrsend 4288 ft.lb 3' 1/2' 10044 ft.lb 0.302 (30%) D+0.75(L+S) L	
Shear 2214 lb $5'1''$ 7043 lb 0.270 (28%) D+0.75(L+S) L	
$\int \text{Defl inch} 0.031 (1/2156) \qquad 3' 1/2'' 0.141 (1/480) 0.220 (22%) 0.75(1+S) = 1$	
$ \begin{array}{c} \text{L}  \text{Defined}  0.068 \ (L/200)  0.122  0.141 \ (L/400)  0.220 \ (22.0)  0.16(L/0)  L  0.16(L/0)  L  0.161 \ (L/200)  0.16(L/0)  0.16(L/0) $	
esign Notes 1. Easten all plice using 2 rows of 10d Box pails ( 129x2") at 12" o.e. Maximum and distance pat	
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.	
/ Lateral sienderness ratio based on single ply width.	
Local type Local on the width Side Dead 0.9 Live 1 Show 1.15 Wind 1.6 Const. 1.25 Comme	511(5
	vvali
2 Uniform Iop 348 PLF 0 PLF 348 PLF 0 PLF 0 PLF A1	
3 Uniform Top 106 PLF 316 PLF 0 PLF 0 PLF 0 PLF 7	
Self Weight 7 PLF	
otes chemicals 6. For flat roofs provide proper drainage to prevent Manufacturer Info Comtech, inc.	and Suite #620
alculated Structured Designs is responsible only of the Handling & Installation ponding Fayetteville, NC ruleural adequacy of this component based on the 1 LVL begins must not be suffer defined.	
sign criteria and loadings shown. It is the 2. Refer to manufacturer's product information sponsibility of the customer and/or the contractor to regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information regarding installation requirements multi-nely 2. Refer to manufacturer's product information requirements mult	
sure the component suitability of the intended plication, and to verify the dimensions and loads. approvals approvals (800) 622-5850 (800) 622-580 (800) 622-580 (800) 622-580 (800) 622-580 (800) 622-580 (800) 622-580 (800) 622-580 (800) 622-580 (	
umber     3. Damaged Beams must not be used       Dry service conditions unless noted otherwise     4. Design assumes top edge is laterally restrained	
LVL not to be treated with fire retardant or corrosive 5. Provide lateral support at bearing points to avoid lateral displacement and rotation This design is valid until 1/8/2023	

	Client: Weaver Developm	ent Date:	5/4/2020	Page 11 of 1
LicDocign	Project: Barstow II	Input by:	Christine Shivy	
Ispesign	Address: Barstow II	Proiect #:	Barstow II	
BM5 Kerto-SIVI	1 750" X 9 250"	2-Ply - PASSED	Level: Level	
	1.700 X 3.200			
			7	
	• •	• • •		
				9 1/4
• •	• •	• • • -		
1 SPF End Grain		2 SPF End Grain		
×	6'1"		7	3 1/2"
/ <u>/</u>	6'1"		+	
	01		1	
Mult: Dhe Analysis				
Fasten all plies using 2 rows of 10d	Box nails (.128x3") at 12"	o.c Maximum end distance no	ot to exceed 6"	
Load 0.0 PLF				
Yield Limit per Foot 163.7 Pl	_F			
Yield Limit per Fastener81.9 lb.Yield ModeIV				
Edge Distance 1 1/2"				
Min. End Distance 3" Load Combination				
Duration Factor 1.00				
Notes che	micals	6. For flat roofs provide proper drainage to prevent	Manufacturer Info	Comtech, Inc. 1001 S. Reilly Road, Suite #639
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the 1. LVL	ling & Installation beams must not be cut or drilled	ponding	Metsä Wood 301 Merritt 7 Building, 2nd Floor	Fayetteville, NC USA
design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended	er to manufacturer's product information arding installation requirements, multi-ply		Norwalk, CT 06851 (800) 622-5850	28314 910-864-TRUS
application, and to verify the dimensions and loads. app Lumber 3. Dar	rovals naged Beams must not be used		www.metsawood.com/us ICC-ES: ESR-3633	
1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive late	sign assumes top edge is laterally restrained vide lateral support at bearing points to avoid ral displacement and rotation	This design is velid with \$10,0000		соттесн
		mis design is valid until 1/8/2023		

		Client:	Weaver Dev	elopment		Dat	e:	5/4/2020				Page 12 of 1
		Project:	Barstow II			Inpu	ut by:	Christine S	hivy			
is	Design	Address:	Barstow II			Job	Name:	Barstow II				
						Pro	ject #:					
BM6	Kerto-S LV	L 1.750	" X 9.2	50" 2·	-Plv -	PASSE	D L	evel: Level				
				-	,							
	3	4										
		-										
			5									
	1											
			and a second second second									$\overline{1}$
												N/N/I
												Å   Å     9 1/-
	a risis		-									
	C. C											
1 SPF	End Grain	2 SPF End (	Grain									I I
	014		/									2 4/0"
	3.4"											3 1/2 <sup>-1</sup>
1	3'4"											
ļ												
Member In	formation					Reactions	SUNP.	ATTERNE	D lb (Upl	lift)		
Туре:	Girder	Appli	cation:	Floor		Brg	Live	Dead	d Sn	OW	Wind	Const
Plies:	2	Desig	n Method:	ASD		1	1026	914	4 4	426	0	0
Moisture Cond	dition: Dry	Buildi	ng Code:	IBC/IRC 2015		2	1738	1120	D 3	395	0	0
Deflection LL:	480	Load	Sharing:	No								
Deflection TL:	360	Deck	: 1	Not Checked								
Importance:	Normal											
Temperature:	Temp <= 100°F											
						Bearings						
						Bearing L	enath	Cap.	React D/L	lb Tota	Ld. Case	Ld. Comb.
						1-SPF 3	3.500"	19%	914 / 108	39 2003	3 L	D+0.75(L+S)
						End			0117.100	2000	, <b>-</b>	2 00(2 0)
Analysis Re	sults					Grain						
Analysis	Actual Lo	cation Allowed	Canacity	Comb	Case	2-SPF 3	3.500"	27%	1120 / 173	38 2858	3 L	D+L
Momont	2272 ft lb	1'5 3/4" 12542 ft II	0 191 (199		1	End						
	2272 It-ID	15 3/4 12342 11-1	0.101 (10)		L 1	Grain						
Unbraced		153/4 119/211-1	0.190 (19	%) D+L	L							
Shear	2273 lb	2'4" 6907 lb	0.329 (339	%) D+L	L							
LL Defl inch	0.009 (L/4053)	1'5 3/4" 0.072 (L/4	80) 0.120 (129	%) 0.75(L+S)	L							
TL Defl inch	0.015 (L/2321)	1'5 3/4" 0.096 (L/3	60) 0.160 (169	%) D+0.75(L+8	S) L							
Design Not	es											
1 Fasten all r	blies using 2 rows of 10	d Box nails (.128x3	") at 12" o.c. Ma	aximum end dis	stance not	4						
to exceed 6	)".		,									
2 Refer to las	t page of calculations f	or fasteners require	d for specified I	oads.								
3 Girders are	designed to be suppor	ted on the bottom e	edge only.									
4 Top loads r	nust be supported equa	ally by all plies.										
6 Bottom bra	ced at bearings.											
7 Lateral sler	iderness ratio based or	n single ply width.										
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow	v 1.15 W	/ind 1.6 Co	onst. 1.25	Commen	ts
1	Liniform			Top	80 PI F					이 며 ㅌ	Interior W/	all
	Delint			 T	301 L			740 "	о н о н			
2	Point	1-4-12		юр	/13 lb	0 lb		/13 lb	0 lb	0 lb	02	
3	Point	1-5-12		Тор	408 lb	1222 lb		0 lb	0 lb	0 lb	F3	
4	Point	2-5-12		Тор	514 lb	1542 lb		0 lb	0 lb	0 lb	BM2	
5	Part Uniform	2-10-0 to 3-4-0		Тор	216 PI F	0 PI F	21	6 PLF	0 PI F	0 PI F	A4GF	
Ĭ		0 0 10 0-4-0		٣		5 T E1	21	- • =1	ч. LI			
	Seir weight				/ PLF							
								Married Control of Control			Comtach In	
Notes		chemicals	otion	6. For flat	roofs provide p	roper drainage to pr	revent	wanutacturer	INTO		1001 S. Reilly Road	, Suite #639
Calculated Structured structural adequacy	Designs is responsible only of the of this component based on the	1. LVL beams must not b	e cut or drilled	F 8				vietsa vvood 301 Merritt 7 Bi	uilding, 2nd Fl	oor	JSA	
design criteria and responsibility of the o	ustomer and/or the contractor to	<ol> <li>Refer to manufact regarding installation</li> </ol>	turer's product info n requirements, r	rmation nulti-ply			ľ	Norwalk, CT 06	851		910-864-TRUS	
ensure the compon application, and to ver	enc suitability of the intended ify the dimensions and loads.	fastening details, bea approvals	m strength values, ar	nd code			( V	ooo) ozz-5850 www.metsawoo	d.com/us	Г		
1. Dry service condition	ons, unless noted otherwise	<ol> <li>Damaged Beams musical</li> <li>Design assumes top et</li> </ol>	t not be used dge is laterally restrain	ed			1	CC-ES: ESR-3	633			
2. LVL not to be treat	ted with fire retardant or corrosive	<ol> <li>Provide lateral support lateral displacement a</li> </ol>	rt at bearing points t nd rotation	o avoid This c	lesian is valid	until 1/8/2023					con	лтесн
L				1113 0								

	Client: Weaver Developm	ent Date:	5/4/2020	Page 13 of 1
TisDesign	Address: Barstow II	Input by: Job Nam	e <sup>-</sup> Barstow II	
	Darstow II	Project #		
BM6 Kerto-S LVL	1.750" X 9.250"	2-Ply - PASSED	Level: Level	
	•			
	1/2,			
	•			9 1/2
1 SPF End Grain	2 SPF End Grain			
3'4"				´  ´ 3 1/2"
1 3'4"	1			
Pasten all plies using 2 rows of 10 Capacity 0.0 %	d Box halls (.128x3") at 12"	o.c Maximum end distance n	ot to exceed 6"	
Load 0.0 PLF	F			
Yield Limit per Foot 163.7 F Yield Limit per Fastener 81.9 lb.	PLF			
Yield Mode IV				
Edge Distance1 1/2"Min. End Distance3"				
Load Combination				
Notes	hemicals	6. For flat roofs provide proper drainage to prevent	Manufacturer Info	Comtech, Inc.
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the	Idling & Installation	ponding	Metsä Wood 301 Merritt 7 Ruilding, 2nd Eleer	Fayetteville, NC USA
design criteria and loadings shown. It is the 2 R responsibility of the customer and/or the contractor to ensure the component suitability of the intended	lefer to manufacturer's product information egarding installation requirements, multi-ply		Norwalk, CT 06851 (800) 622-5850	28314 910-864-TRUS
application, and to verify the dimensions and loads. ap Lumber 3. D	asterning details, beam strength values, and code pprovals amaged Beams must not be used		www.metsawood.com/us ICC-ES: ESR-3633	
1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive	esign assumes top edge is laterally restrained rovide lateral support at bearing points to avoid tteral displacement and rotation	This design is well-t-well 4/0/0000		соттесн
la		i nis design is valid until 1/8/2023		



isDesign	Client: Weaver Deve Project: Barstow II Address: Barstow II	elopment	Date: 5/4/2020 Input by: Christine Shivy Job Name: Barstow II	Page 15 of 1
GDH Kerto-S	LVL 1.750" X 14.00	0" 2-Ply - PASSE	D Level: Level	
· · · ·	· · · · · · ·	· · · · ·	· · · · · ·	
1 SPF End Grain			••••••••••••••••••••••••••••••••••••••	
		10/10"	2011 21	
/		18'10"		3 1/2"
I				,
Multi-Ply Analysis				
Fasten all plies using 3	rows of 10d Box nails (.128x3") at	12" o.c Maximum end dist	ance not to exceed 6"	
Capacity ∟oad	0.0 % 0.0 PLF			
ïeld Limit per Foot ′ield Limit per Fastener	245.6 PLF			
ield Mode	IV			
dge Distance lin. End Distance	1 1/2" 3"			
oad Combination	0			
Juration Factor	1.00	J		
Notes	chemicals	6. For flat roofs provide proper drainage ponding	to prevent Manufacturer Info	Comtech, Inc. 1001 S. Reilly Road, Suite #639
Calculated Structured Designs is responsibl structural adequacy of this component ba design criteria and loadings shown.	e only of the <b>manualing &amp; Installation</b> used on the 1. LVL beams must not be cut or drilled It is the 2. Refer to manufacturer's product infor	, , , , , , , , , , , , , , , , , , ,	Metsa Wood 301 Merritt 7 Building, 2nd Floor	USA 28314
responsibility of the customer and/or the c ensure the component suitability of th application, and to verify the dimensions and	contractor to regarding installation requirements, m loads.	ulti-ply I code	(800) 622-5850	910-864-TRUS
Lumber	approvans 3. Damaged Beams must not be used 4. Design assumes top edge is laterally restraine	d	ICC-ES: ESR-3633	
<ol> <li>LVL not to be treated with fire retardant</li> </ol>	or corrosive 5. Provide lateral support at bearing points to lateral displacement and rotation	avoid This design is valid until 1/8/202	3	сотесн