

J.W. Sealey Client:

Project: Address:

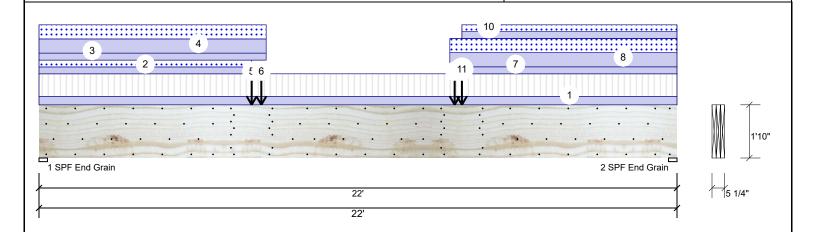
12/16/2020 Date:

David Landry Input by: Job Name: Lot 77 South Creek Project #: J1220-5656

Page 1 of 10

3-Ply - PASSED **Kerto-S LVL** 1.750" X 22.000" BM1

Level: Level



### Reactions UNPATTERNED Ib (Uplift) Member Information Type: Application: Floor Brg Live Dead Plies: 3 Design Method: ASD 6036 3190 1 Moisture Condition: Dry **Building Code: IBC/IRC 2015** 2 3190 6032 Deflection LL: 480 Load Sharing: Yes Deflection TL: 360 Deck: Not Checked Importance: Normal Ceiling: Gypsum 1/2" Temperature: Temp <= 100°F Bearings Bearing Length Cap. React D/L lb 1-SPF 3.500" 71% 6036 / 5282

Analysis Results							End Grain	
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case	2 - SPF End	3.500"
Moment	58931 ft-lb	11' 3/8"	111772 ft-lb	0.527 (53%)	D+0.75(L+S)	L	Grain	
Unbraced	58931 ft-lb	11' 3/8"	59148 ft-lb	0.996	D+0.75(L+S)	L		

(100%)10323 lb 2' 5/8" 28336 lb 0.364 (36%) D+0.75(L+S) L Shear LL Defl inch 0.286 (L/904) 11' 1/16" 0.539 (L/480) 0.530 (53%) 0.75(L+S) L TL Defl inch 0.606 (L/427) 11' 1/16" 0.719 (L/360) 0.840 (84%) D+0.75(L+S) L

## Design Notes

- 1 Fasten all plies using 4 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is
- 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 a maximum of 4' 3/8" o.c.

/ Lateral Steriue	Lateral sieriderness ratio based on single ply width.										
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Tie-In	0-0-0 to 22-0-0	7-3-0	Near Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor	
2	Part. Uniform	0-0-0 to 7-4-0		Near Face	88 PLF	0 PLF	88 PLF	0 PLF	0 PLF	M1	
3	Part. Uniform	0-0-0 to 7-10-0		Тор	90 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
4	Part. Uniform	0-0-0 to 7-10-0		Тор	182 PLF	0 PLF	182 PLF	0 PLF	0 PLF	A6	
5	Point	7-4-0		Near Face	894 lb	0 lb	894 lb	0 lb	0 lb	M1-GR	

Continued on page 2...

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.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
  Refer to manufacturer's product information
  regarding installation requirements, multi-ply
  fastening details, beam strength values, and code
  approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

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

ICC-ES: ESR-3633

**Manufacturer Info** 

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





Wind

Total Ld. Case

11319 L

11311 L

0

0

Const

0

0

Ld. Comb.

D+0.75(L+S)

D+0.75(L+S)

Snow

3853

3848

6032 / 5279

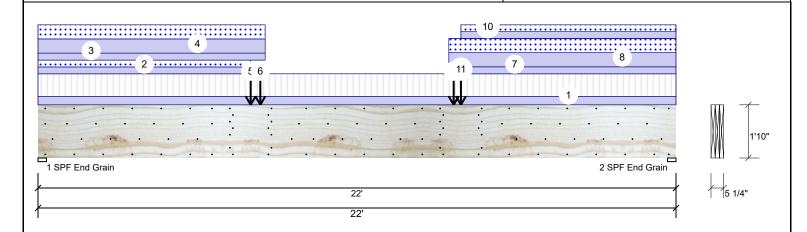
Client: J.W. Sealey

Project: Address: 12/16/2020

Input by: David Landry Job Name: Lot 77 South Creek Project #: J1220-5656

1.750" X 22.000" 3-Ply - PASSED **Kerto-S LVL** BM<sub>1</sub>

Level: Level



Continued from	ontinued from page 1										
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
6	Point	7-8-0		Тор	882 lb	0 lb	882 lb	0 lb	0 lb	G1-GR	
7	Part. Uniform	14-2-0 to 22-0-0		Тор	90 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
8	Part. Uniform	14-2-0 to 22-0-0		Тор	182 PLF	0 PLF	182 PLF	0 PLF	0 PLF	A6	
9	Point	14-4-0		Тор	882 lb	0 lb	882 lb	0 lb	0 lb	G1-GR	
10	Part. Uniform	14-7-0 to 22-0-0		Near Face	88 PLF	0 PLF	88 PLF	0 PLF	0 PLF	M1	
11	Point	14-7-0		Near Face	894 lb	0 lb	894 lb	0 lb	0 lb	M1-GR	
	Self Weight				26 PLF						

NOtes
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# Handling & Installation

- Handling & Installation

  1. UVI 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

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  5. Provide lateral support at bearing points to avoid lateral displacement and rotation

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Page 2 of 10

Client:

Project: Address: J.W. Sealey

12/16/2020

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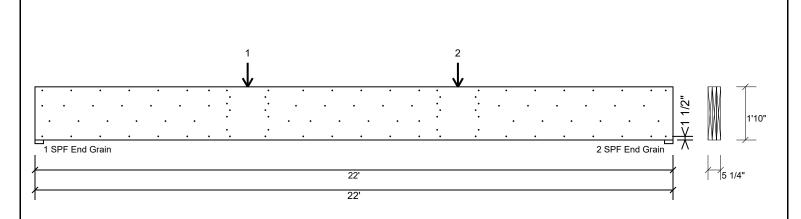
Page 3 of 10

**Kerto-S LVL** BM<sub>1</sub>

1.750" X 22.000"

3-Ply - PASSED

Level: Level



## 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"

Capacity	99.1 %
Load	324.5 PLF
Yield Limit per Foot	327.4 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

### Concentrated Load

Fasten at concentrated side load at 7-4-0 with a minimum of (14) - 10d Box nails (.128x3") in the pattern shown. Repeat fasteners on both sides.

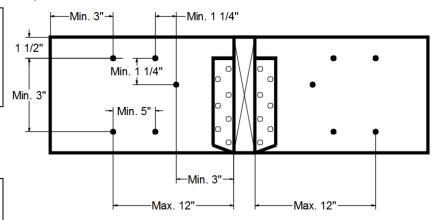
Capacity	90.5 %
Load	1192.0lb.
Total Yield Limit	1317.0 lb.
Cg	0.9994
Yield Limit per Fastener	94.1 lb.
Yield Mode	IV
Load Combination	D+S
Duration Factor	1.15

### Concentrated Load

Fasten at concentrated side load at 14-7-0 with a minimum of (14) - 10d Box nails (.128x3") in the pattern shown. Repeat fasteners on both sides.

Capacity	90.5 %	
Load	1192.0lb.	
Total Yield Limit	1317.0 lb.	
Cg	0.9994	
Yield Limit per Fastener	94.1 lb.	
Yield Mode	IV	
Load Combination	D+S	
Duration Factor	1.15	

## Min/Max fastener distances for Concentrated Side Loads



### Notes

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  Provide lateral support at bearing points to avoid
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6. For flat roofs provide proper drainage to prevent ponding

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CSD DESIGN



Client: J.W. Sealey

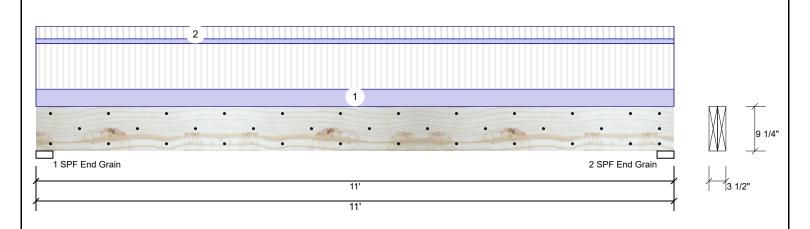
Project: Address: 12/16/2020

Input by: David Landry Job Name: Lot 77 South Creek Project #: J1220-5656

Page 4 of 10

1.750" X 9.250" 2-Ply - PASSED **Kerto-S LVL** BM<sub>2</sub>

Level: Level



Member Info	Member Information					Reactions UNPATTERNED lb (Uplift)					
Type:	Girder	Application:	Floor	Brg	Live	Dead	Snow	Wind			
Plies:	2	Design Method:	ASD	1	2035	803	0	0			
Moisture Conditi	ion: Dry	Building Code:	IBC/IRC 2015	2	2035	803	0	0			
Deflection LL:	480	Load Sharing:	No								
Deflection TL:	360	Deck:	Not Checked								
Importance:	Normal	Ceiling:	Gypsum 1/2"								
Temperature:	Temp <= 100°F										
				Bearin	gs						
				Bearin	a Lenath	Can Rea	ct D/L lb	Total I.d Case			

### **Analysis Results**

•						
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7167 ft-lb	5'6"	12542 ft-lb	0.571 (57%)	D+L	L
Unbraced	7167 ft-lb	5'6"	7168 ft-lb	1.000 (100%)	D+L	L
Shear	2714 lb	1'	6907 lb	0.393 (39%)	D+L	L
LL Defl inch	0.241 (L/525)	5'6"	0.264 (L/480)	0.910 (91%)	L	L
TL Defl inch	0.336 (L/376)	5'6"	0.351 (L/360)	0.960 (96%)	D+L	L

## **Design Notes**

- 1 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top must be laterally braced at a maximum of 10'3" o.c.

Tie-In

Reactions	UNPATTERNED	lb	(Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	2035	803	0	0	0
2	2035	803	0	0	0

l	Bearing	Length	Cap. R	eact D/L lb	Total	Ld. Case	Ld. Comb.
Į	1 - SPF End Grain	3.500"	27%	803 / 2035	2838	L	D+L
l	2 - SPF End Grain	3.500"	27%	803 / 2035	2838	L	D+L

5 Later	5 Lateral sienderness ratio based on single ply width.									
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Tie-In	0-0-0 to 11-0-0	7-3-0	Near Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor

Far Face

15 PSF

40 PSF

0 PSF

Self Weight 7 PLF

0-0-0 to 11-0-0 2-0-0

2

NOtes
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- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive

- Handling & Installation
- Informing & Installation

  I. VIL beams must not be cut or drilled

  Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals

  Damaged Beams must not be used

  Design assumes top edge is laterally restrained

  Design assumes top edge is laterally restrained is provide lateral support at bearing points to avoid lateral displacement and rotation

For flat roofs provide proper drainage to prevent ponding

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Manufacturer Info

0 PSF

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This design is valid until 2/26/2023

0 PSF Floor

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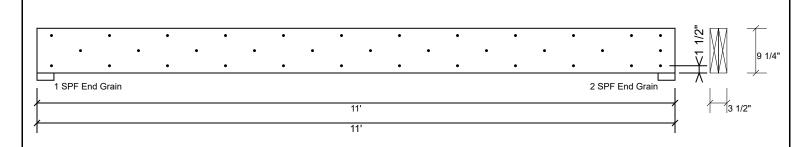
Page 5 of 10

**Kerto-S LVL** BM<sub>2</sub>

1.750" X 9.250"

2-Ply - PASSED

Level: Level



## Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6"

		,	,
Capacity	81.2 %		
Load	199.4 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	D+L		
Duration Factor	1.00		

### Notes

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# Handling & Installation

- Handling & Installation

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  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

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Client: J.W. Sealey

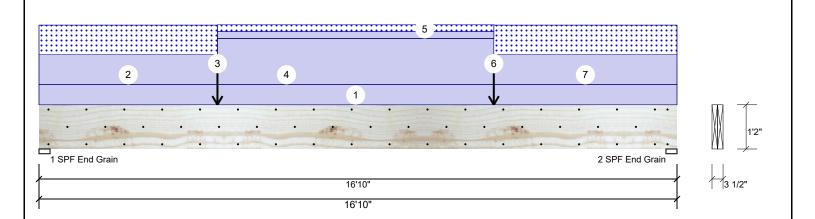
Project: Address: 12/16/2020

Input by: David Landry Job Name: Lot 77 South Creek Project #: J1220-5656

Page 6 of 10

1.750" X 14.000" **Kerto-S LVL** 2-Ply - PASSED **GDH** 

Level: Level



Member Infor	mation			Read
Туре:	Girder	Application:	Floor	Brg
Plies:	2	Design Method:	ASD	1
Moisture Condition	n: Dry	Building Code:	IBC/IRC 2015	2
Deflection LL:	480	Load Sharing:	No	
Deflection TL:	360	Deck:	Not Checked	
Importance:	Normal	Ceiling:	Gypsum 1/2"	
Temperature:	Temp <= 100°F			
				Bear
		1		Pos

Reaction	ons UNPAT	TERNED IL	(Uplift)		
Brg	Live	Dead	Snow	Wind	Const
1	0	2410	1317	0	0
2	0	2394	1309	0	0

### rings Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.500" 2410 / 1317 3727 L End Grain 2 - SPF 3.500" 2394 / 1309 3702 L D+S End Grain

### **Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15725 ft-lb	8'5 5/8"	31049 ft-lb	0.506 (51%)	D+S	L
Unbraced	15725 ft-lb	8'5 5/8"	15781 ft-lb	0.996 (100%)	D+S	L
Shear	3386 lb	1'4 3/4"	12021 lb	0.282 (28%)	D+S	L
LL Defl inch	0.178 (L/1106)	8'5 1/8"	0.409 (L/480)	0.430 (43%)	S	L
TL Defl inch	0.528 (L/372)	8'5 1/16"	0.546 (L/360)	0.970 (97%)	D+S	L

## **Design Notes**

- 1 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 6'5 1/4" o.c.
- 6 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Part. Uniform	0-0-0 to 4-8-8		Тор	87 PLF	0 PLF	87 PLF	0 PLF	0 PLF	M1
3	Point	4-8-8		Тор	825 lb	0 lb	825 lb	0 lb	0 lb	M1-GR
4	Part. Uniform	4-8-8 to 12-0-0		Тор	135 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
5	Tie-In	4-8-8 to 12-0-0	1-0-0	Тор	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	Roof
6	Point	12-0-0		Тор	825 lb	0 lb	825 lb	0 lb	0 lb	M1-GR

Continued on page 2...

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  2 Damaged Beams must not be used

- Design assumes top edge is laterally restrained
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This design is valid until 2/26/2023 CSD DESIGN

Manufacturer Info

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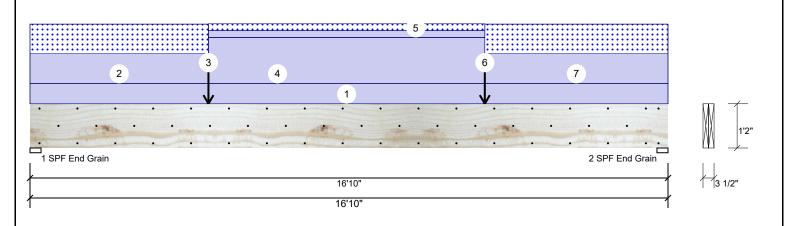
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Page 7 of 10

1.750" X 14.000" 2-Ply - PASSED **Kerto-S LVL GDH** 

Level: Level



.Continued from page 1

Location Trib Width ID Load Type Side Dead 0.9 Live 1 Snow 1.15 Wind 1.6 Const. 1.25 Comments 7 Part. Uniform 12-0-0 to 16-10-0 Тор 87 PLF 0 PLF 87 PLF 0 PLF 0 PLF M1

Self Weight 11 PLF

### Notes

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# Handling & Installation

- Handling & Installation

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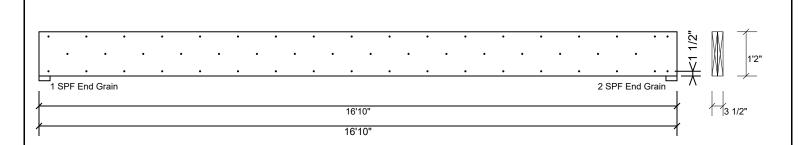
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Page 8 of 10

1.750" X 14.000" **Kerto-S LVL** 2-Ply - PASSED **GDH** 

Level: Level



## Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. 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		

### Notes

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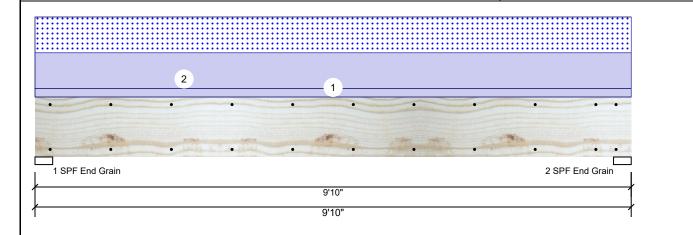
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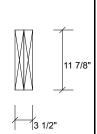
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1.750" X 11.875" 2-Ply - PASSED **Kerto-S LVL** GDH2

Level: Level





Page 9 of 10

## Member Information

Type: Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal Temp <= 100°F Temperature:

Application: Floor Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: No Not Checked Deck: Ceiling: Gypsum 1/2"

Reactions UNPATTERNED Ib (Uplift) Brg Live Wind Const Dead Snow 0 1599 1259 0 0 1 2 0 1599 1259 0 0

	Analysis Results						
I	Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
	Moment	6386 ft-lb	4'11"	22897 ft-lb	0.279 (28%)	D+S	L
ı	Unbraced	6386 ft-lb	4'11"	9857 ft-lb	0.648 (65%)	D+S	Ĺ
	Shear	2149 lb	1'2 5/8"	10197 lb	0.211 (21%)	D+S	L
	LL Defl inch	0.053 (L/2109)	4'11"	0.234 (L/480)	0.230 (23%)	S	L
ı	TI Deflinch	0 121 (1/929)	4'11"	0.312 (1/360)	0.390 (39%)	D+S	1

## **Bearings**

Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1-SPF 3.500" 1599 / 1259 2858 L D+S End Grain 2 - SPF 3.500" 1599 / 1259 2858 L D+S End Grain

## **Design Notes**

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Тор	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall	
2	Uniform			Тор	256 PLF	0 PLF	256 PLF	0 PLF	0 PLF	C1	
	Self Weight				9 PLF						

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.

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

# Handling & Installation

- LVL beams must not be cut or drilled Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code
- approvals

  Damaged Beams must not be used Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

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

Manufacturer Info

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



Client: J.W. Sealey

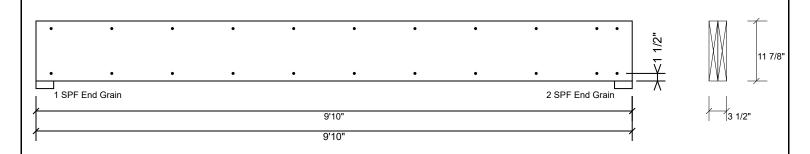
Project: Address: Date: 12/16/2020

Input by: David Landry Job Name: Lot 77 South Creek Project #: J1220-5656

Page 10 of 10

1.750" X 11.875" **Kerto-S LVL** 2-Ply - PASSED GDH<sub>2</sub>

Level: Level



## Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c., Maximum end distance not to exceed 6"

, ,		`	,
Capacity	0.0 %		
Load	0.0 PLF		
Yield Limit per Foot	163.7 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		

### Notes

NOtes
Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

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

# Handling & Installation

- Handling & Installation

  1. UVI 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

For flat roofs provide proper drainage to prevent ponding

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