

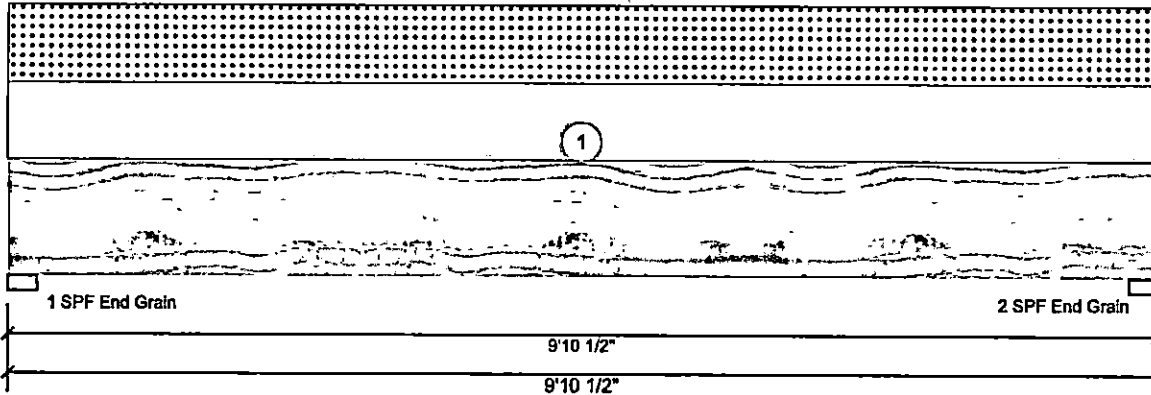


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Client: Red Door  
Project: Kipling Road  
Address: Kipling Road

Date: 1/3/2019  
Designer: Marshall Naylor  
Job Name: 09-18-185 Houser  
Project #:

**BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED** Level: Level



**Member Information**

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

Application:	Floor
Design Method:	ASD
Building Code:	IBC 2012
Load Sharing:	No
Deck:	Not Checked

**Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind	Const
1	0	3378	3333	0	0
2	0	3378	3333	0	0

**Bearings**

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	73% 3378 / 3333	6711 L	D+S
2 - SPF End Grain	3.000"	73% 3378 / 3333	6711 L	D+S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15334 ft-lb	4'11 1/4"	22897 ft-lb	0.670 (67%)	D+S	L
Unbraced	15334 ft-lb	4'11 1/4"	15384 ft-lb	0.997 (100%)	D+S	L
Shear	5111 lb	1'2 1/8"	10197 lb	0.501 (50%)	D+S	L
LL Def inch	0.148 (L/772)	4'11 1/4"	0.238 (L/480)	0.620 (62%)	S	L
TL Def inch	0.298 (L/383)	4'11 1/4"	0.317 (L/360)	0.940 (94%)	D+S	L

**Design Notes**

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 5'4 1/8" o.c.
- Bottom braced at bearings.
- 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			Top	675 PLF	0 PLF	675 PLF	0 PLF	0 PLF	A-TRUSSES
	Self Weight				9 PLF					

**Notes**  
 Calculated Structural 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.

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

**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

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

Comtech, Inc.  
 1001 S. Reilly Road, Suite #639  
 Fayetteville, NC  
 USA  
 28314  
 910-664-TRUS

This design is valid until 10/18/2021





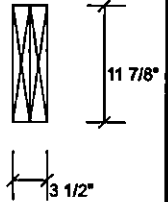
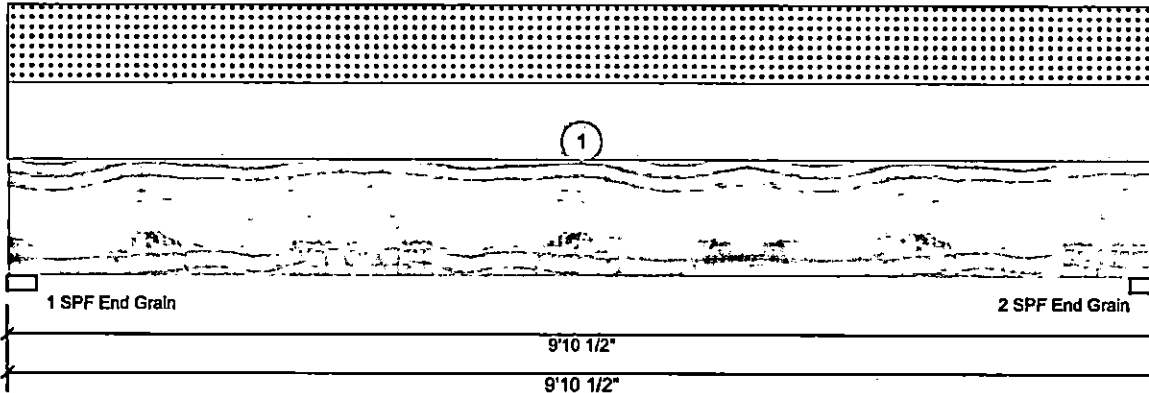
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Client: Red Door  
Project: Kipling Road  
Address: Kipling Road

Date: 1/3/2019  
Designer: Marshall Naylor  
Job Name: 09-18-185 Houser  
Project #:

### BM2 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



#### Member Information

#### Reactions UNPATTERNED lb (Uplift)

Type:	Girder	Application:	Floor
Pfies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Brg	Live	Dead	Snow	Wind	Const
1	0	3378	3333	0	0
2	0	3378	3333	0	0

#### Bearings

Bearing	Length	Cap.	React D/L lb	Total Ld.	Case	Ld. Comb.
1 - SPF End Grain	3.000"	73%	3378 / 3333	6711	L	D+S
2 - SPF End Grain	3.000"	73%	3378 / 3333	6711	L	D+S

#### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15334 ft-lb	4'11 1/4"	22897 ft-lb	0.670 (67%)	D+S	L
Unbraced	15334 ft-lb	4'11 1/4"	15384 ft-lb	0.997 (100%)	D+S	L
Shear	5111 lb	1'2 1/8"	10197 lb	0.501 (50%)	D+S	L
LL Defi inch	0.148 (L/772)	4'11 1/4"	0.238 (L/480)	0.620 (62%)	S	L
TL Defi inch	0.298 (L/383)	4'11 1/4"	0.317 (L/360)	0.940 (94%)	D+S	L

#### Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 5'4 1/8" o.c.
- Bottom braced at bearings.
- 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			Top	675 PLF	0 PLF	675 PLF	0 PLF	0 PLF	A-TRUSSES
	Self Weight				9 PLF					

<b>Notes</b> Calculated Structural 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.  <b>Lumber</b> 1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive chemicals	<b>Handling &amp; Installation</b> 1. LVL 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	6. For flat roofs provide proper drainage to prevent ponding.	<b>Manufacturer Info</b> Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633	Comtech, Inc. 1001 S. Rely Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS
			This design is valid until 10/18/2021	





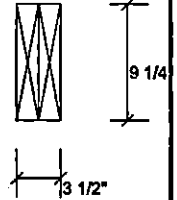
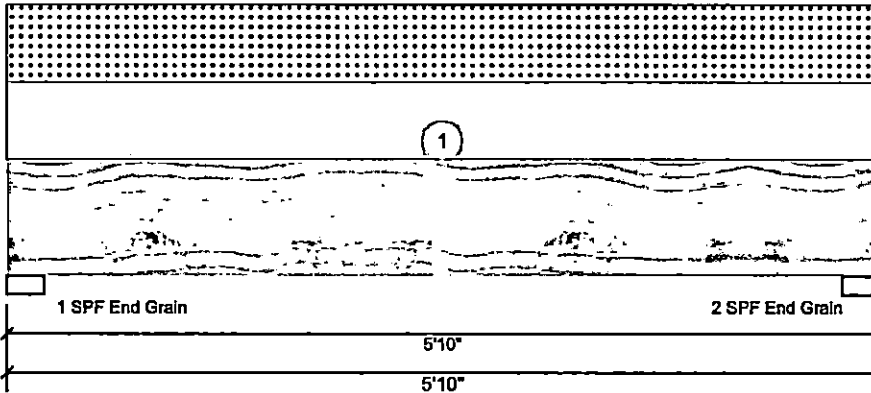
isDesign™

Client: Red Door  
Project:  
Address: Kipling Road

Date: 1/3/2019  
Designer: Marshall Naylor  
Job Name: 09-18-185 Houser  
Project #:

### BM3 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



#### Member Information

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

Application:	Floor
Design Method:	ASD
Building Code:	IBC 2012
Load Sharing:	No
Deck:	Not Checked

#### Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1771	1750	0	0
2	0	1771	1750	0	0

#### Bearings

Bearing	Length	Cap.	React D/L lb	Total Ld.	Case	Ld. Comb.
1 - SPF End Grain	3.000"	39%	1771 / 1750	3521	L	D+S
2 - SPF End Grain	3.000"	39%	1771 / 1750	3521	L	D+S

#### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4496 ft-lb	2'11"	14423 ft-lb	0.312 (31%)	D+S	L
Unbraced	4496 ft-lb	2'11"	11110 ft-lb	0.405 (40%)	D+S	L
Shear	2364 lb	11 1/2"	7943 lb	0.298 (30%)	D+S	L
LL Defl inch	0.034 (L/1932)	2'11"	0.136 (L/480)	0.250 (25%)	S	L
TL Defl inch	0.068 (L/960)	2'11"	0.182 (L/360)	0.370 (37%)	D+S	L

#### Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at bearings.
- 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 Self Weight			Top	600 PLF 7 PLF	0 PLF	600 PLF	0 PLF	0 PLF	A-TRUSSES

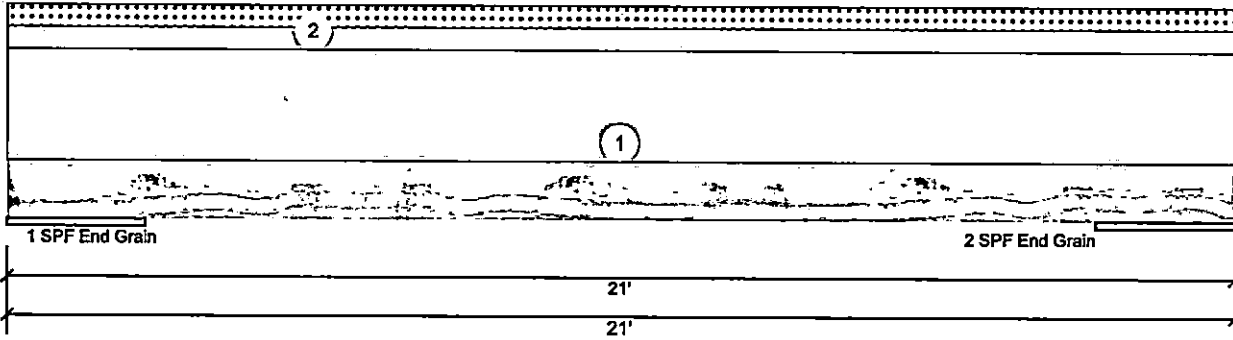
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			This design is valid until 10/18/2021.	





Front GDH Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

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

Application:	Floor
Design Method:	ASD
Building Code:	IBC 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1357	210	0	0
2	0	1357	210	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total Ld.	Case	Ld. Comb.
1 - SPF End Grain	28.500"	2%	1357 / 210	1567	L	D+S
2 - SPF End Grain	28.500"	2%	1357 / 210	1567	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4332 ft-lb	10'6"	17919 ft-lb	0.242 (24%)	D	Uniform
Unbraced	5002 ft-lb	10'6"	6086 ft-lb	0.822 (82%)	D+S	L
Shear	930 lb	3'3 5/8"	7980 lb	0.117 (12%)	D	Uniform
LL Defl Inch	0.035 (L/5617)	10'6 1/16"	0.409 (L/480)	0.090 (9%)	S	L
TL Defl Inch	0.261 (L/753)	10'6 1/16"	0.546 (L/360)	0.480 (48%)	D+S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at bearings.
- 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			Top	100 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Gable
2	Tie-In	0-0-0 to 21-0-0	(Span)2-0-0	Top	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	2' Roof
	Self Weight				9 PLF					

<p><b>Notes</b></p> <p>Calculated Structural 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.</p> <p><b>Lumber</b></p> <p>1. Dry service conditions, unless noted otherwise</p> <p>2. LVL not to be treated with fire retardant or corrosive chemicals</p> <p><b>Handling &amp; Installation</b></p> <p>1. LVL beams must not be cut or drilled</p> <p>2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals</p> <p>3. Damaged Beams must not be used</p> <p>4. Design assumes top edge to laterality restrained</p> <p>5. Provide lateral support at bearing points to avoid lateral displacement and rotation</p>	<p>6. For flat roofs provide proper drainage to prevent ponding</p>	<p><b>Manufacturer Info</b></p> <p>Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633</p>	<p>Comtech, Inc. 1001 S. RaBy Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS</p>
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