



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM1 2.0E PWLVL 1.750" X 20.000" 2-Ply - PASSED

Level: Level



1 SPF End Grain 0-4-8

2 SPF End Grain 0-4-8

19'1"

1'8"
3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	3817	4658	0	0	0
2	Vertical	3817	4658	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	Vert	63%	4658 / 3817	8475	L	D+L
2 - SPF End Grain	4.500"	Vert	63%	4658 / 3817	8475	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	38513 ft-lb	9'6 1/2"	54424 ft-lb	71%	D+L	L
Unbraced	38513 ft-lb	9'6 1/2"	38605 ft-lb	100%	D+L	L
Shear	6661 lb	2' 1/2"	13300 lb	50%	D+L	L
LL Defl inch	0.232 (L/963)	9'6 9/16"	0.466 (L/480)	50%	L	L
TL Defl inch	0.515 (L/434)	9'6 9/16"	0.621 (L/360)	83%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 3'7" o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	400	400
Uniform	Top	PLF	70	
Self Weight		PLF	18	

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



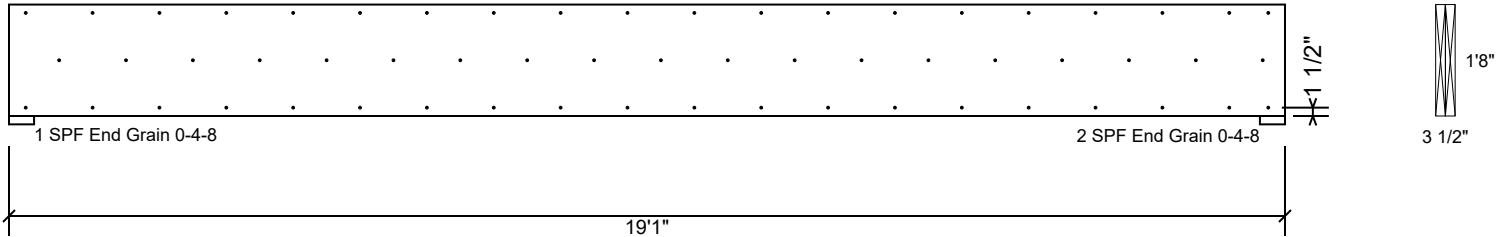
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BM1 2.0E PWLVL 1.750" X 20.000" 2-Ply - PASSED

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	0.0 %
Load	0.0 PLF
Yield Limit per Foot	271.6 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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Lumber

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

chemicals

Handling & Installation

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

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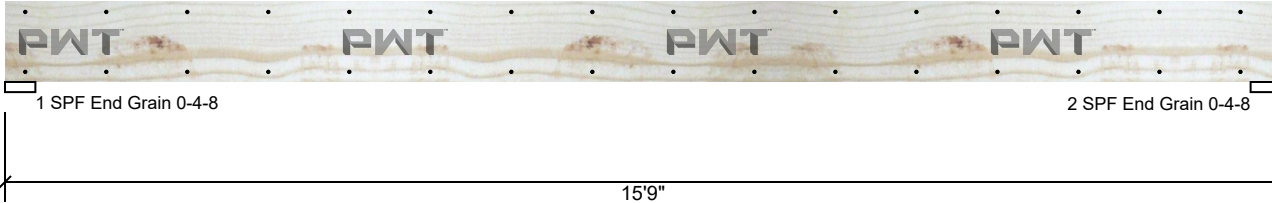
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BM2 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	315	1975	0	0	0
2	Vertical	315	1975	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	Vert	17%	1975 / 315	2290	L	D+L
2 - SPF End Grain	4.500"	Vert	17%	1975 / 315	2290	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8500 ft-lb	7'10 1/2"	21295 ft-lb	40%	D+L	L
Unbraced	8500 ft-lb	7'10 1/2"	8515 ft-lb	100%	D+L	L
Shear	1893 lb	1'4 3/8"	7897 lb	24%	D+L	L
LL Defl inch	0.050 (L/3642)	7'10 9/16"	0.382 (L/480)	13%	L	L
TL Defl inch	0.366 (L/501)	7'10 9/16"	0.510 (L/360)	72%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 11' o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	40	40
Uniform	Top	PLF	200	
Self Weight		PLF	11	

Notes

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Lumber

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

chemicals

Handling & Installation

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

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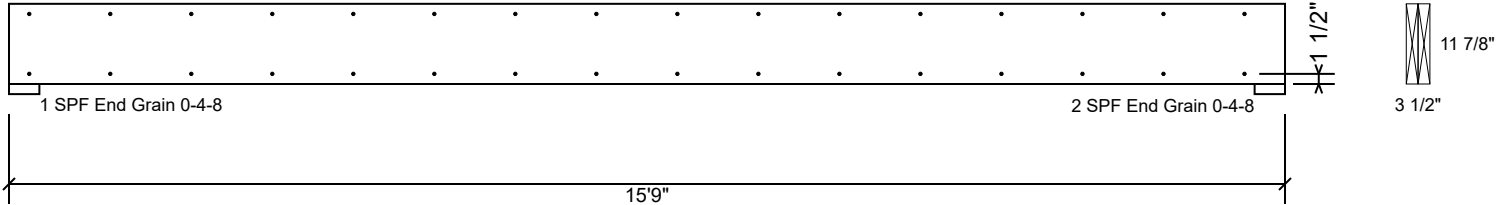
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BM2 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 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

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

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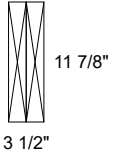
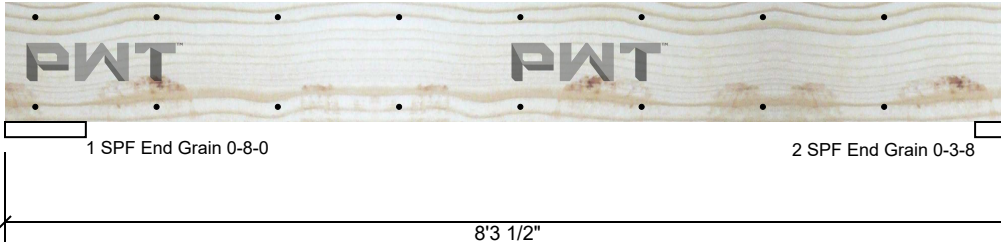
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BM3 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	217	393	0	0	0
2	Vertical	198	359	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	3%	393 / 217	610	L	D+L
2 - SPF End Grain	3.500"	Vert	5%	359 / 198	557	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1023 ft-lb	4'4"	21295 ft-lb	5%	D+L	L
Unbraced	1023 ft-lb	4'4"	11272 ft-lb	9%	D+L	L
Shear	377 lb	1'7 7/8"	7897 lb	5%	D+L	L
LL Defl inch (L/23503)	0.004	4'4 1/16"	0.191 (L/480)	2%	L	L
TL Defl inch	0.011 (L/8347)	4'4 1/16"	0.254 (L/360)	4%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 7'8" o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	50	50
Uniform	Top	PLF	30	
Self Weight		PLF	11	

Notes

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Lumber

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

chemicals

Handling & Installation

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

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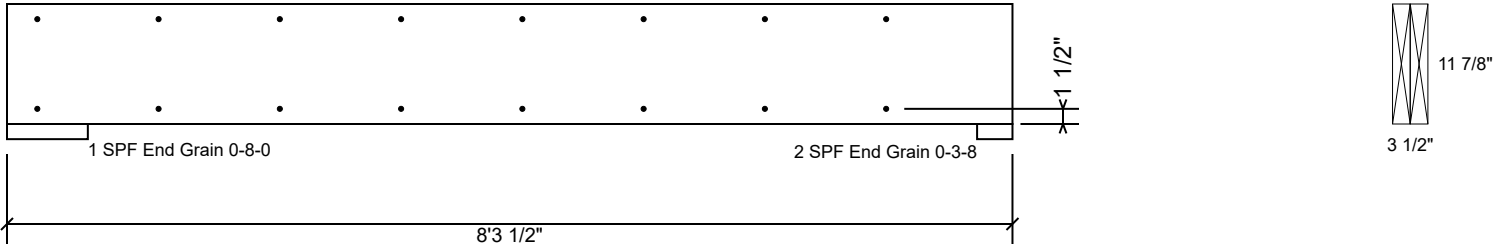
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BM3 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 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

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

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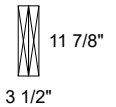
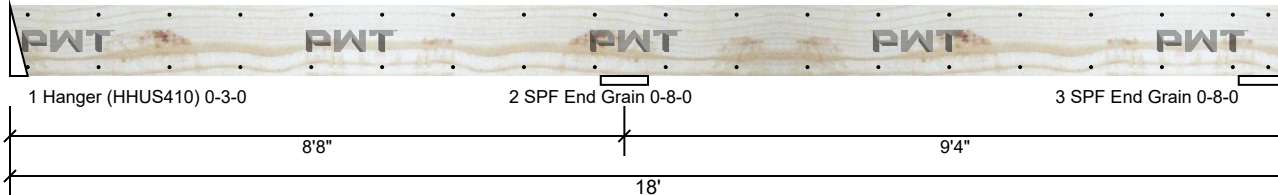
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BM4 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 480
Deflection TL: 360
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 20 PSF
Dead: 20 PSF

Application: Floor
Design Method: ASD
Building Code: IBC/IRC 2015
Load Sharing: No
Deck: Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	329	365	0	0	0
2	Vertical	1085	1202	0	0	0
3	Vertical	386	427	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	8%	365 / 387	752	L_	D+L
2 - SPF End Grain	8.000"	Vert	10%	1202 / 1085	2287	LL	D+L
3 - SPF End Grain	8.000"	Vert	4%	427 / 437	864	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1985 ft-lb	8'8"	21295 ft-lb	9%	D+L	LL
Unbraced	-1985 ft-lb	8'8"	5640 ft-lb	35%	D+L	LL
Pos Moment	1350 ft-lb	13'10 13/16"	21295 ft-lb	6%	D+L	_L
Unbraced	1350 ft-lb	13'10 13/16"	5640 ft-lb	24%	D+L	_L
Shear	875 lb	9'11 7/8"	7897 lb	11%	D+L	LL
LL Defl inch (L/10903)	0.010	13'3 7/8"	0.220 (L/480)	4%	L	_L
TL Defl inch (L/6485)	0.016	13'6 1/16"	0.294 (L/360)	6%	D+L	_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Fill all hanger nailing holes.
- 5 Left Header: LVL, Thickness: 3 1/2"
- 6 Girders are designed to be supported on bottom edge only and across their full width.
- 7 Top loads must be supported equally by all plies.
- 8 Compression edge bracing required at 17'4" o.c. or less.
- 9 Lateral slenderness ratio based on single ply width.

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

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

This design is valid until 2/18/2027

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BM4 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	100	100
Self Weight		PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

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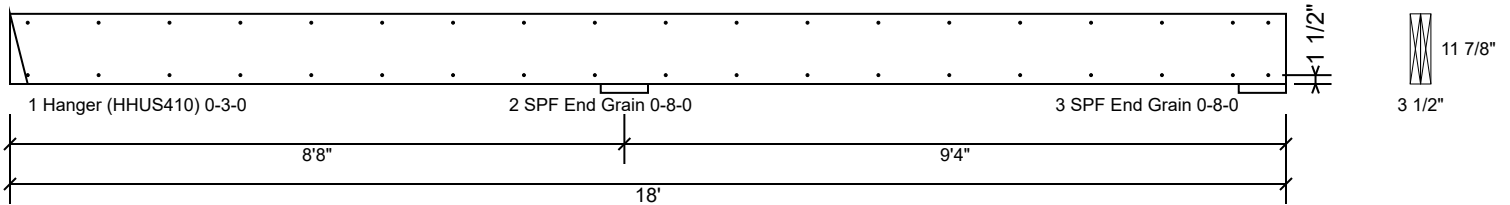
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BM4 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 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

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

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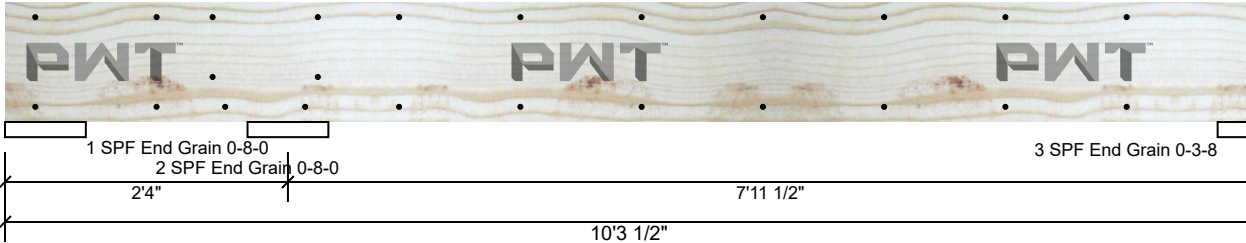
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BM5 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0 (-610)	(-632)	0	0	0
2	Vertical	3109	3185	0	0	0
3	Vertical	975	1010	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	0%	-632 / -868	-1500 (-1500)	_L	D+L(D+L)
2 - SPF End Grain	8.000"	Vert	26%	3185 / 3109	6295	LL	D+L
3 - SPF End Grain	3.500"	Vert	19%	1010 / 978	1988	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-3830 ft-lb	2'4"	21295 ft-lb	18%	D+L	LL
Unbraced	-3830 ft-lb	2'4"	9449 ft-lb	41%	D+L	LL
Pos Moment	2951 ft-lb	7' 7/16"	21295 ft-lb	14%	D+L	_L
Unbraced	2951 ft-lb	7' 7/16"	9449 ft-lb	31%	D+L	_L
Shear	2253 lb	1'7 7/8"	7897 lb	29%	D+L	LL
LL Defl inch	0.013 (L/6976)	6'8 1/16"	0.195 (L/480)	7%	L	_L
TL Defl inch	0.027 (L/3446)	6'8 1/8"	0.260 (L/360)	10%	D+L	_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on bottom edge only and across their full width.
- 6 Top loads must be supported equally by all plies.
- 7 Tie-down connection required at bearing 1 for uplift 1500 lb (Combination D+L, Load Case _L).
- 8 Compression edge bracing required at 9'8" o.c. or less.
- 9 Lateral slenderness ratio based on single ply width.

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM5 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Location	Side	units	Dead 0.9	Live 1
Type	Start			+	+
Uniform		Top	PLF	300	300
Point	2-1-12	Near Face	lb	365	387
Self Weight			PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

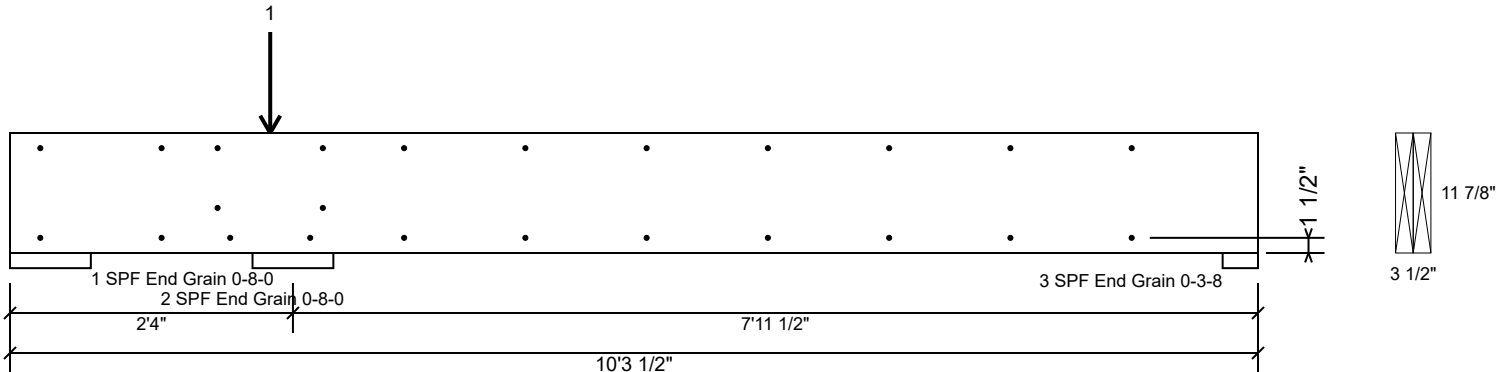
This design is valid until 2/18/2027

Manufacturer Info

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1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909

BM5 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 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".

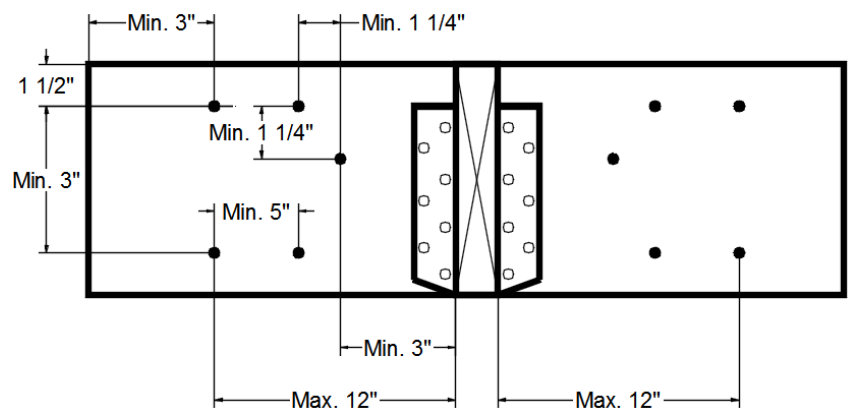
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 2-1-12 with a minimum of (6) – 10d Box nails (.128x3") in the pattern shown.

Capacity	69.2 %
Load	376.0lb.
Total Yield Limit	543.3 lb.
C _g	1.0000
C _m	1
Yield Limit per Fastener	90.5 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



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

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

This design is valid until 2/18/2027

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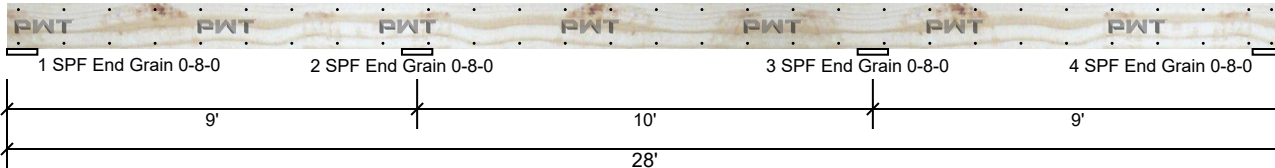
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM6 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



11 7/8"
3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	187	640	0	0	0
2	Vertical	513	1751	0	0	0
3	Vertical	513	1751	0	0	0
4	Vertical	187	640	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	4%	640 / 219	859	L_L	D+L
2 - SPF End Grain	8.000"	Vert	10%	1751 / 548	2299	LL_	D+L
3 - SPF End Grain	8.000"	Vert	10%	1751 / 548	2299	_LL	D+L
4 - SPF End Grain	8.000"	Vert	4%	640 / 219	859	L_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1952 ft-lb	19'	21295 ft-lb	9%	D+L	_LL
Unbraced	-1952 ft-lb	19'	3658 ft-lb	53%	D+L	_LL
Pos Moment	1255 ft-lb	24'1 5/16"	21295 ft-lb	6%	D+L	L_L
Unbraced	1255 ft-lb	24'1 5/16"	3658 ft-lb	34%	D+L	L_L
Shear	874 lb	7'8 1/8"	7897 lb	11%	D+L	LL_
LL Defl inch (L/21312)	0.006	14'	0.250 (L/480)	2%	L	_L_
TL Defl inch (L/7477)	0.014	4'3 7/16"	0.283 (L/360)	5%	D+L	L_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 27' o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	50	50
Uniform	Top	PLF	110	
Self Weight		PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

This design is valid until 2/18/2027

Manufacturer Info

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Burlington, WA 98233
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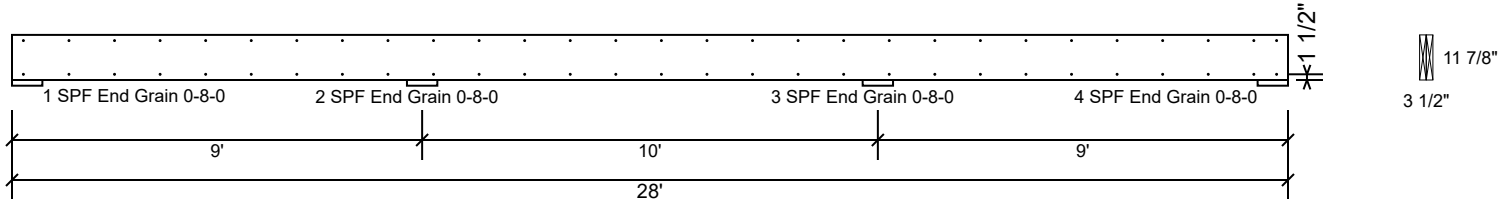
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM6 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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

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

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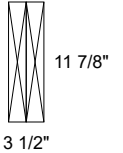
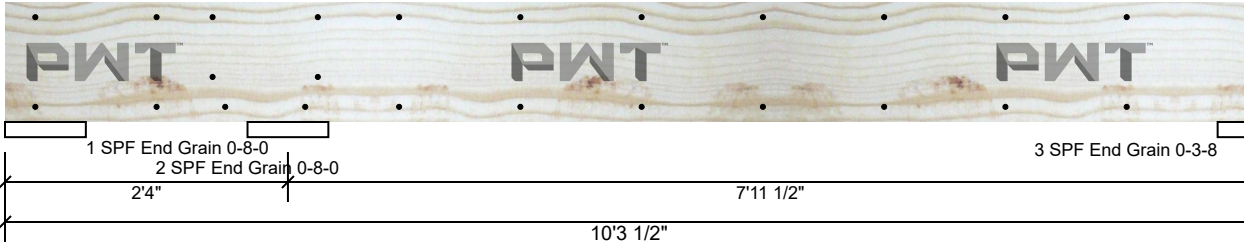
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM7 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0 (-610)	(-632)	0	0	0
2	Vertical	3109	3185	0	0	0
3	Vertical	975	1010	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	0%	-632 / -868	-1500 (-1500)	_L	D+L(D+L)
2 - SPF End Grain	8.000"	Vert	26%	3185 / 3109	6295	LL	D+L
3 - SPF End Grain	3.500"	Vert	19%	1010 / 978	1988	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-3830 ft-lb	2'4"	21295 ft-lb	18%	D+L	LL
Unbraced	-3830 ft-lb	2'4"	9449 ft-lb	41%	D+L	LL
Pos Moment	2951 ft-lb	7' 7/16"	21295 ft-lb	14%	D+L	_L
Unbraced	2951 ft-lb	7' 7/16"	9449 ft-lb	31%	D+L	_L
Shear	2253 lb	1'7 7/8"	7897 lb	29%	D+L	LL
LL Defl inch	0.013 (L/6976)	6'8 1/16"	0.195 (L/480)	7%	L	_L
TL Defl inch	0.027 (L/3446)	6'8 1/8"	0.260 (L/360)	10%	D+L	_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on bottom edge only and across their full width.
- 6 Top loads must be supported equally by all plies.
- 7 Tie-down connection required at bearing 1 for uplift 1500 lb (Combination D+L, Load Case _L).
- 8 Compression edge bracing required at 9'8" o.c. or less.
- 9 Lateral slenderness ratio based on single ply width.

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

chemicals

Handling & Installation

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
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APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
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Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM7 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Location	Side	units	Dead 0.9	Live 1
Type	Start			+	+
Uniform		Top	PLF	300	300
Point	2-1-12	Far Face	lb	365	387
Self Weight			PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

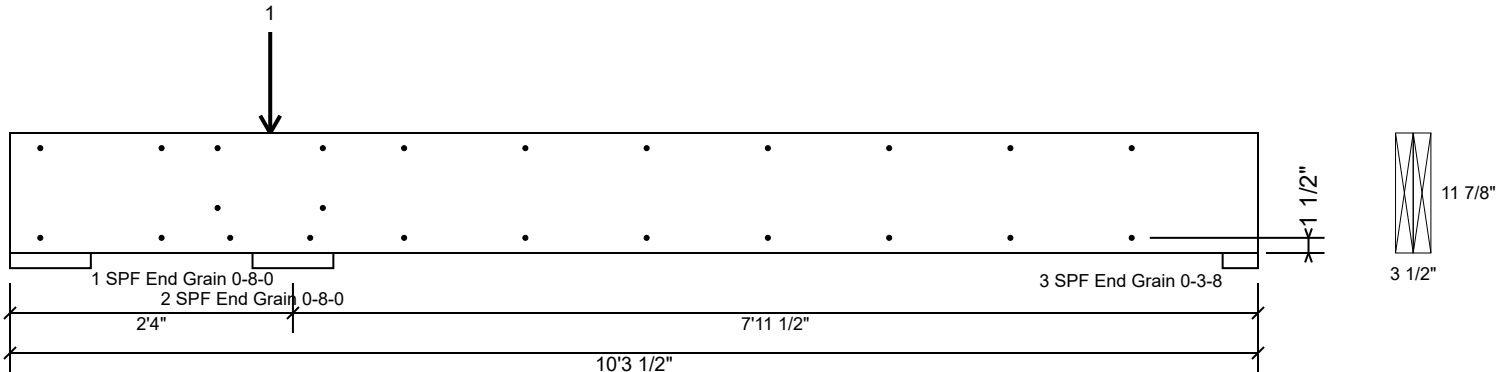
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APA: PR-L233, ICC-ES: ESR-2909

BM7 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 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".

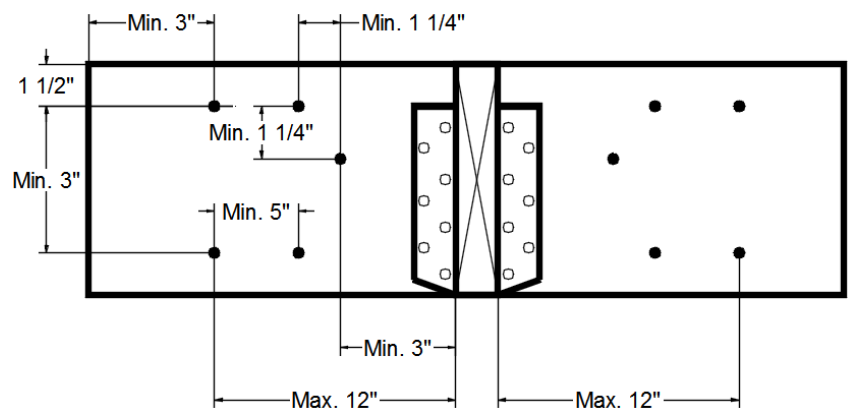
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 2-1-12 with a minimum of (6) – 10d Box nails (.128x3") in the pattern shown.

Capacity	69.2 %
Load	376.0lb.
Total Yield Limit	543.3 lb.
C _g	1.0000
C _m	1
Yield Limit per Fastener	90.5 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



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

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

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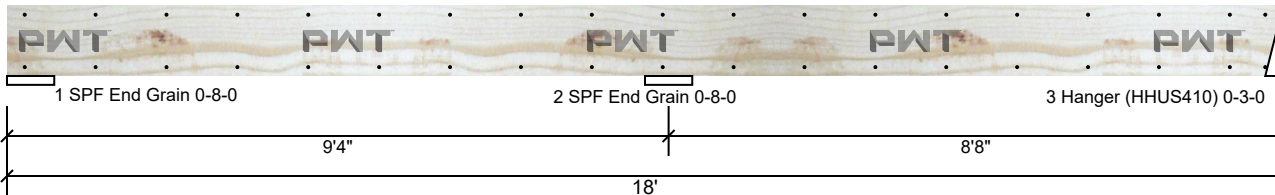
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM8 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



11 7/8"
3 1/2"

Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 480
Deflection TL: 360
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 20 PSF
Dead: 20 PSF

Application: Floor
Design Method: ASD
Building Code: IBC/IRC 2015
Load Sharing: No
Deck: Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	386	427	0	0	0
2	Vertical	1085	1202	0	0	0
3	Vertical	329	365	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	4%	427 / 437	864	L_	D+L
2 - SPF End Grain	8.000"	Vert	10%	1202 / 1085	2287	LL	D+L
3 - Hanger	3.000"	Vert	8%	365 / 387	752	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1985 ft-lb	9'4"	21295 ft-lb	9%	D+L	LL
Unbraced	-1985 ft-lb	9'4"	5640 ft-lb	35%	D+L	LL
Pos Moment	1350 ft-lb	4'1 3/16"	21295 ft-lb	6%	D+L	L_
Unbraced	1350 ft-lb	4'1 3/16"	5640 ft-lb	24%	D+L	L_
Shear	875 lb	8' 1/8"	7897 lb	11%	D+L	LL
LL Defl inch (L/10903)	0.010	4'8 3/16"	0.220 (L/480)	4%	L	L_
TL Defl inch	0.016 (L/6485)	4'6"	0.294 (L/360)	6%	D+L	L_

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Fill all hanger nailing holes.
- 5 Right Header: LVL, Thickness: 3 1/2"
- 6 Girders are designed to be supported on bottom edge only and across their full width.
- 7 Top loads must be supported equally by all plies.
- 8 Compression edge bracing required at 17'4" o.c. or less.
- 9 Lateral slenderness ratio based on single ply width.

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

chemicals

Handling & Installation

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
- 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 2/18/2027

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Job Name: CLIFTON
Project #: 24061913

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BM8 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	100	100
Self Weight		PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

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APA: PR-L233, ICC-ES: ESR-2909



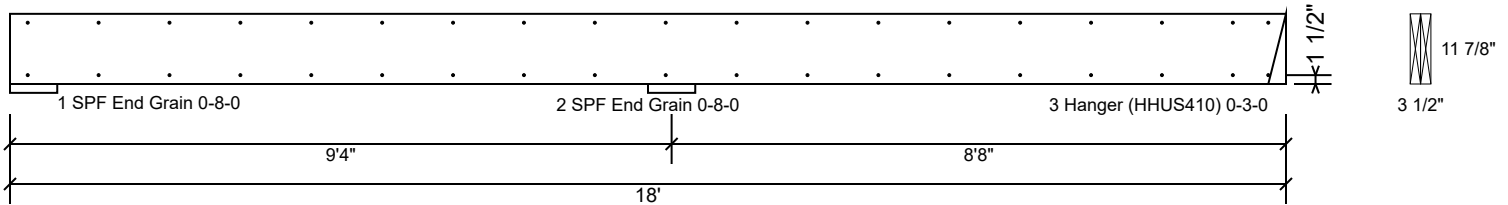
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM8 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
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APA: PR-L233, ICC-ES: ESR-2909



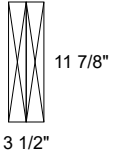
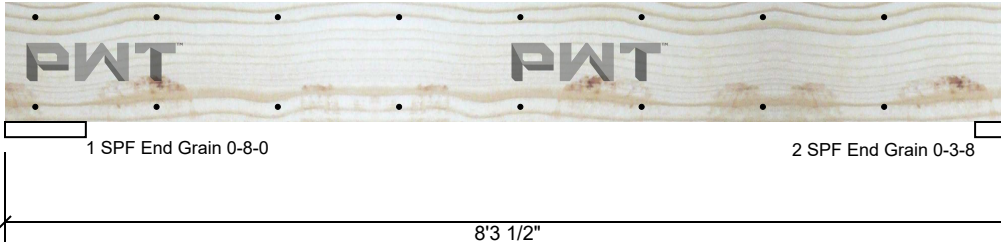
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM9 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	217	393	0	0	0
2	Vertical	198	359	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	3%	393 / 217	610	L	D+L
2 - SPF End Grain	3.500"	Vert	5%	359 / 198	557	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1023 ft-lb	4'4"	21295 ft-lb	5%	D+L	L
Unbraced	1023 ft-lb	4'4"	11272 ft-lb	9%	D+L	L
Shear	377 lb	1'7 7/8"	7897 lb	5%	D+L	L
LL Defl inch (L/23503)	0.004	4'4 1/16"	0.191 (L/480)	2%	L	L
TL Defl inch	0.011 (L/8347)	4'4 1/16"	0.254 (L/360)	4%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 7'8" o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	50	50
Uniform	Top	PLF	30	
Self Weight		PLF	11	

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
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APA: PR-L233, ICC-ES: ESR-2909



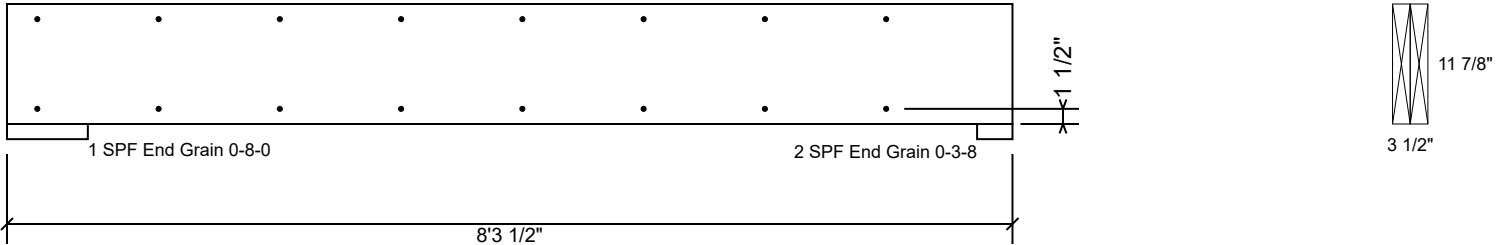
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM9 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 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

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

This design is valid until 2/18/2027

Manufacturer Info

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Client: SWIFT CREEK
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Job Name: CLIFTON
Project #: 24061913

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BM10 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

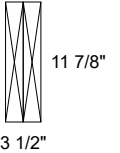
Level: Level



1 SPF End Grain 0-3-8

2 SPF End Grain 0-8-0

8'3 1/2"



11 7/8"

3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	198	359	0	0	0
2	Vertical	217	393	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	5%	359 / 198	557	L	D+L
2 - SPF End Grain	8.000"	Vert	3%	393 / 217	610	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1023 ft-lb	3'11 1/2"	21295 ft-lb	5%	D+L	L
Unbraced	1023 ft-lb	3'11 1/2"	11272 ft-lb	9%	D+L	L
Shear	377 lb	1'3 3/8"	7897 lb	5%	D+L	L
LL Defl inch (L/23503)	0.004	3'11 9/16"	0.191 (L/480)	2%	L	L
TL Defl inch (L/8347)	0.011	3'11 9/16"	0.254 (L/360)	4%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 7'8" o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	50	50
Uniform	Top	PLF	30	
Self Weight		PLF	11	

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
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APA: PR-L233, ICC-ES: ESR-2909



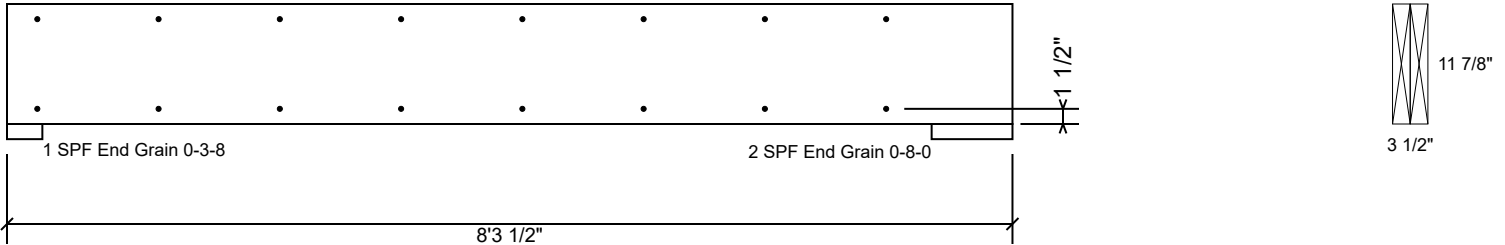
Client: SWIFT CREEK
Project:
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Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM10 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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

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

This design is valid until 2/18/2027

Manufacturer Info

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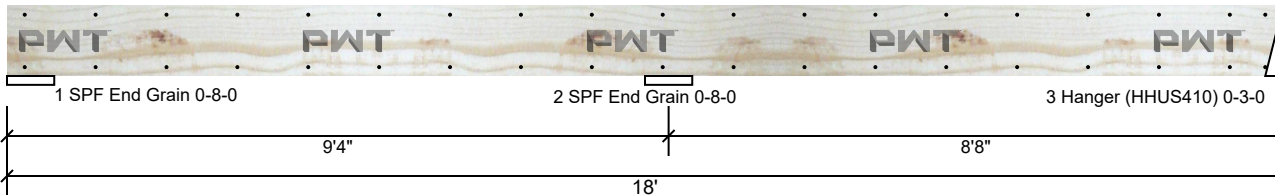
Client: SWIFT CREEK
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Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM11 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



11 7/8"
3 1/2"

Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 480
Deflection TL: 360
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 20 PSF
Dead: 20 PSF

Application: Floor
Design Method: ASD
Building Code: IBC/IRC 2015
Load Sharing: No
Deck: Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	386	427	0	0	0
2	Vertical	1085	1202	0	0	0
3	Vertical	329	365	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	4%	427 / 437	864	L_	D+L
2 - SPF End Grain	8.000"	Vert	10%	1202 / 1085	2287	LL	D+L
3 - Hanger	3.000"	Vert	8%	365 / 387	752	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1985 ft-lb	9'4"	21295 ft-lb	9%	D+L	LL
Unbraced	-1985 ft-lb	9'4"	5640 ft-lb	35%	D+L	LL
Pos Moment	1350 ft-lb	4'1 3/16"	21295 ft-lb	6%	D+L	L_
Unbraced	1350 ft-lb	4'1 3/16"	5640 ft-lb	24%	D+L	L_
Shear	875 lb	8' 1/8"	7897 lb	11%	D+L	LL
LL Defl inch (L/10903)	0.010	4'8 3/16"	0.220 (L/480)	4%	L	L_
TL Defl inch (L/6485)	0.016	4'6"	0.294 (L/360)	6%	D+L	L_

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Fill all hanger nailing holes.
- 5 Right Header: LVL, Thickness: 3 1/2"
- 6 Girders are designed to be supported on bottom edge only and across their full width.
- 7 Top loads must be supported equally by all plies.
- 8 Compression edge bracing required at 17'4" o.c. or less.
- 9 Lateral slenderness ratio based on single ply width.

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

chemicals

Handling & Installation

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
- 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 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
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APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM11 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	100	100
Self Weight		PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
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APA: PR-L233, ICC-ES: ESR-2909



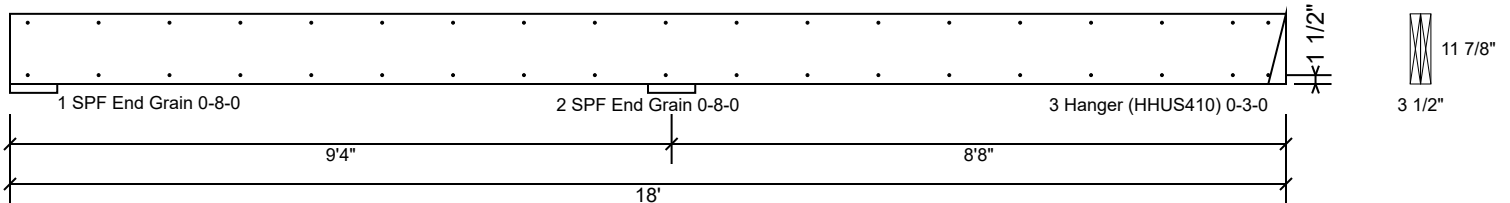
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM11 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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

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

This design is valid until 2/18/2027

Manufacturer Info

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APA: PR-L233, ICC-ES: ESR-2909



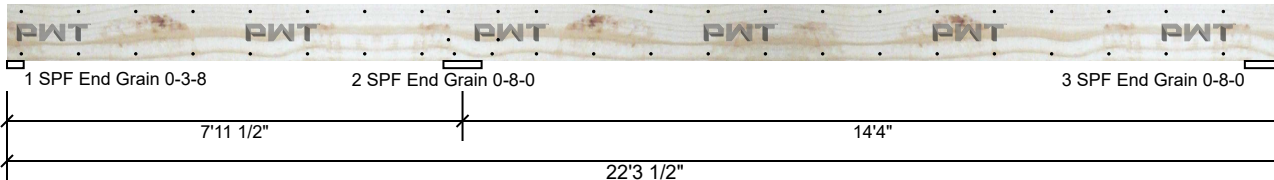
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM12 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



11 7/8"
3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	525	544	0	0	0
2	Vertical	4712	4846	0	0	0
3	Vertical	1837	1904	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	16%	544 / 1110	1654	L_	D+L
2 - SPF End Grain	8.000"	Vert	40%	4846 / 4712	9558	LL	D+L
3 - SPF End Grain	8.000"	Vert	16%	1904 / 1897	3801	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-10987 ft-lb	7'11 1/2"	21295 ft-lb	52%	D+L	LL
Unbraced	-10987 ft-lb	7'11 1/2"	11010 ft-lb	100%	D+L	LL
Pos Moment	9929 ft-lb	16' 13/16"	21295 ft-lb	47%	D+L	_L
Unbraced	9929 ft-lb	16' 13/16"	9941 ft-lb	100%	D+L	_L
Shear	4206 lb	9'3 3/8"	7897 lb	53%	D+L	LL
LL Defl inch	0.156 (L/1060)	15'4 3/4"	0.345 (L/480)	45%	L	_L
TL Defl inch	0.301 (L/551)	15'5 11/16"	0.460 (L/360)	65%	D+L	_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on bottom edge only and across their full width.
- 6 Top loads must be supported equally by all plies.
- 7 Compression edge bracing required at 7'10" o.c. or less.
- 8 Lateral slenderness ratio based on single ply width.

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

chemicals

Handling & Installation

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

BM12 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Location	Side	units	Dead 0.9	Live 1
Type	Start			+	+
Uniform		Top	PLF	300	300
Point	8-1-12	Far Face	lb	365	387
Self Weight			PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

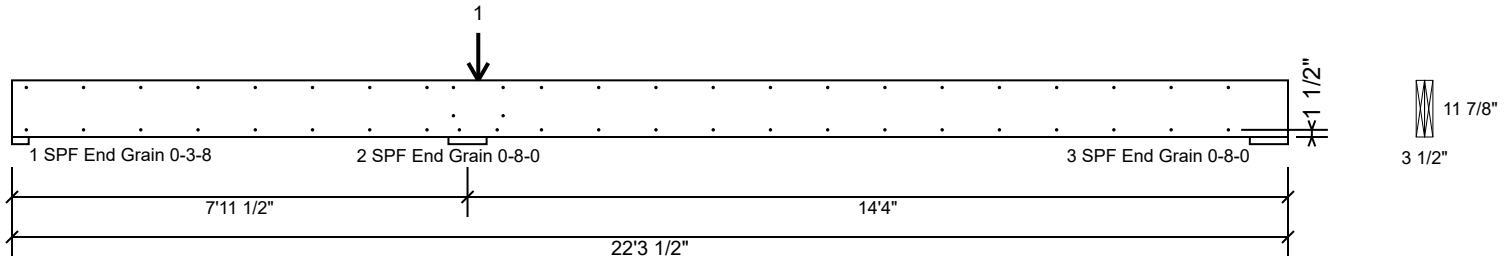
This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909

BM12 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 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".

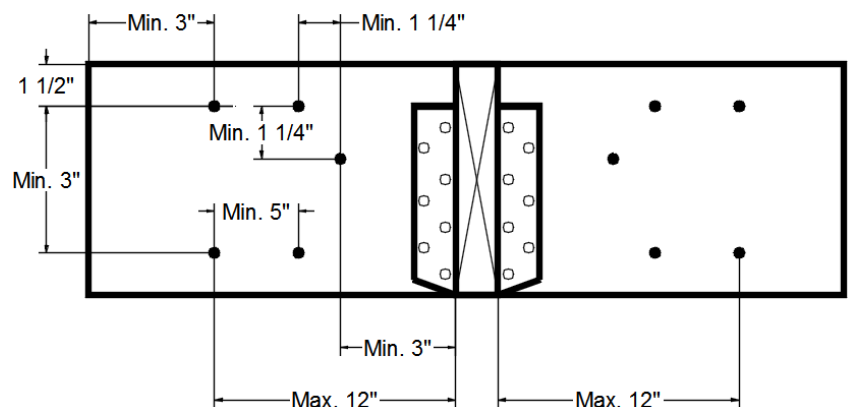
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 8-1-12 with a minimum of (6) – 10d Box nails (.128x3") in the pattern shown.

Capacity	69.2 %
Load	376.0lb.
Total Yield Limit	543.3 lb.
C _g	1.0000
C _m	1
Yield Limit per Fastener	90.5 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



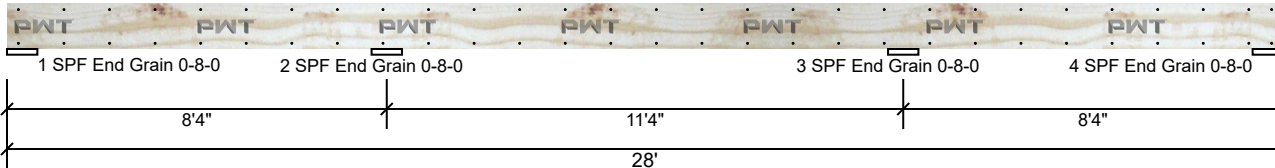
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM13 2.0E PWLV 1.750" X 11.875" 2-Ply - PASSED

Level: Level



11 7/8"
3 1/2"

Member Information

Type: Girder
Plies: 2
Moisture Condition: Dry
Deflection LL: 480
Deflection TL: 360
Importance: Normal - II
Temperature: Temp <= 100°F
General Load
Floor Live: 20 PSF
Dead: 20 PSF

Application: Floor
Design Method: ASD
Building Code: IBC/IRC 2015
Load Sharing: No
Deck: Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	159	543	0	0	0
2	Vertical	541	1848	0	0	0
3	Vertical	541	1848	0	0	0
4	Vertical	159	543	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	Vert	3%	543 / 206	749	L_L	D+L
2 - SPF End Grain	8.000"	Vert	10%	1848 / 567	2415	LL_	D+L
3 - SPF End Grain	8.000"	Vert	10%	1848 / 567	2415	_LL	D+L
4 - SPF End Grain	8.000"	Vert	3%	543 / 206	749	L_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-2200 ft-lb	8'4"	21295 ft-lb	10%	D+L	LL_
Unbraced	-2200 ft-lb	8'4"	3658 ft-lb	60%	D+L	LL_
Pos Moment	1515 ft-lb	14'	21295 ft-lb	7%	D+L	_L_
Unbraced	1515 ft-lb	14'	3658 ft-lb	41%	D+L	_L_
Shear	979 lb	18'4 1/8"	7897 lb	12%	D+L	_LL
LL Defl inch (L/15840)	0.009	14'	0.283 (L/480)	3%	L	_L_
TL Defl inch (L/5178)	0.026	14'	0.378 (L/360)	7%	D+L	_L_

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 27' o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	50	50
Uniform	Top	PLF	110	
Self Weight		PLF	11	

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.

Lumber

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

Handling & Installation

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



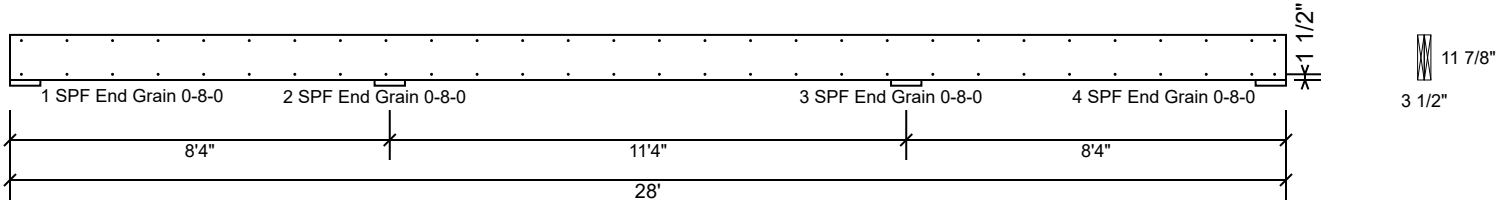
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM13 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM14 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



11 7/8"
3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	525	544	0	0	0
2	Vertical	4712	4846	0	0	0
3	Vertical	1837	1904	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	16%	544 / 1110	1654	L_	D+L
2 - SPF End Grain	8.000"	Vert	40%	4846 / 4712	9558	LL	D+L
3 - SPF End Grain	8.000"	Vert	16%	1904 / 1897	3801	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-10987 ft-lb	7'11 1/2"	21295 ft-lb	52%	D+L	LL
Unbraced	-10987 ft-lb	7'11 1/2"	11010 ft-lb	100%	D+L	LL
Pos Moment	9929 ft-lb	16' 13/16"	21295 ft-lb	47%	D+L	_L
Unbraced	9929 ft-lb	16' 13/16"	9941 ft-lb	100%	D+L	_L
Shear	4206 lb	9'3 3/8"	7897 lb	53%	D+L	LL
LL Defl inch	0.156 (L/1060)	15'4 3/4"	0.345 (L/480)	45%	L	_L
TL Defl inch	0.301 (L/551)	15'5 11/16"	0.460 (L/360)	65%	D+L	_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on bottom edge only and across their full width.
- 6 Top loads must be supported equally by all plies.
- 7 Compression edge bracing required at 7'10" o.c. or less.
- 8 Lateral slenderness ratio based on single ply width.

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

chemicals

Handling & Installation

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

This design is valid until 2/18/2027

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Burlington, WA 98233
(800) 515-7570
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APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM14 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Location	Side	units	Dead 0.9	Live 1
Type	Start			+	+
Uniform		Top	PLF	300	300
Point	8-1-12	Near Face	lb	365	387
Self Weight			PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

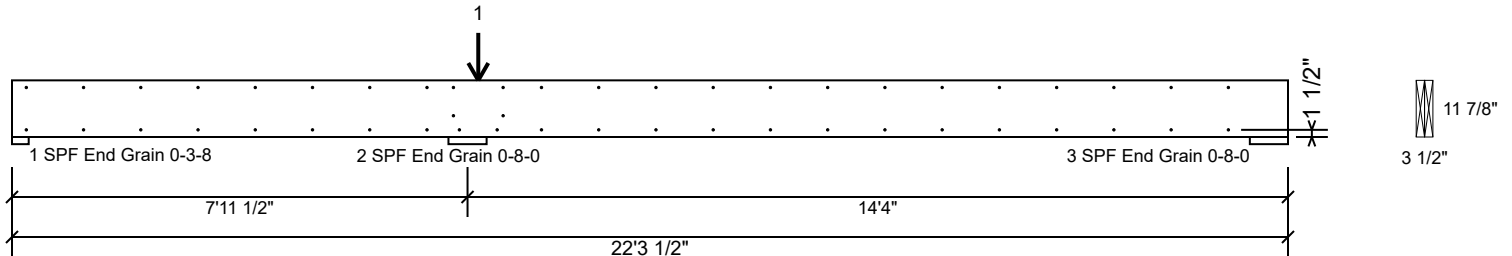
This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909

BM14 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 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".

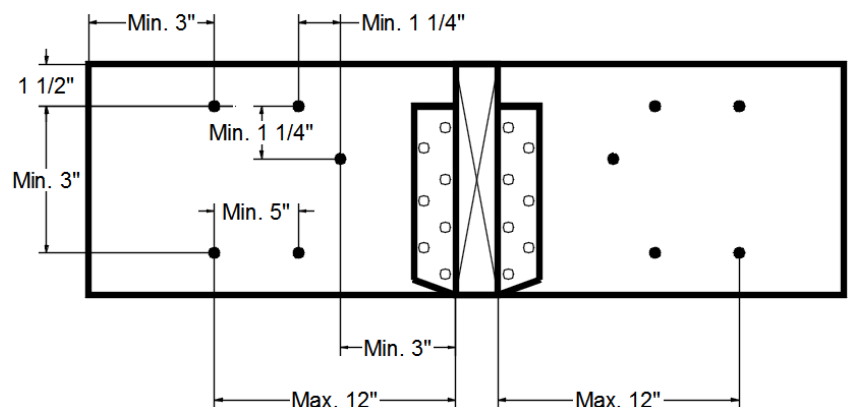
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 8-1-12 with a minimum of (6) – 10d Box nails (.128x3") in the pattern shown.

Capacity	69.2 %
Load	376.0lb.
Total Yield Limit	543.3 lb.
C _g	1.0000
C _m	1
Yield Limit per Fastener	90.5 lb.
Yield Mode	IV
Load Combination	D+L
Duration Factor	1.00

Min/Max fastener distances for Concentrated Side Loads



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

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

This design is valid until 2/18/2027

Manufacturer Info

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Burlington, WA 98233
(800) 515-7570
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APA: PR-L233, ICC-ES: ESR-2909



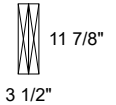
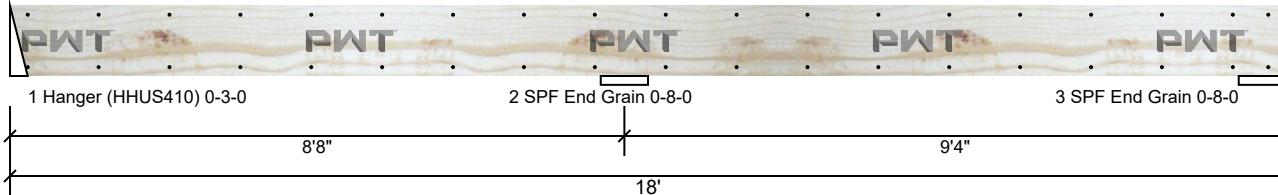
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM15 2.0E PWLVL 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 - II
Temperature: Temp <= 100°F
General Load
Floor Live: 20 PSF
Dead: 20 PSF

Application: Floor
Design Method: ASD
Building Code: IBC/IRC 2015
Load Sharing: No
Deck: Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	329	365	0	0	0
2	Vertical	1085	1202	0	0	0
3	Vertical	386	427	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - Hanger	3.000"	Vert	8%	365 / 387	752	L_	D+L
2 - SPF End Grain	8.000"	Vert	10%	1202 / 1085	2287	LL	D+L
3 - SPF End Grain	8.000"	Vert	4%	427 / 437	864	_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1985 ft-lb	8'8"	21295 ft-lb	9%	D+L	LL
Unbraced	-1985 ft-lb	8'8"	5640 ft-lb	35%	D+L	LL
Pos Moment	1350 ft-lb	13'10 13/16"	21295 ft-lb	6%	D+L	_L
Unbraced	1350 ft-lb	13'10 13/16"	5640 ft-lb	24%	D+L	_L
Shear	875 lb	9'11 7/8"	7897 lb	11%	D+L	LL
LL Defl inch (L/10903)	0.010	13'3 7/8"	0.220 (L/480)	4%	L	_L
TL Defl inch	0.016 (L/6485)	13'6 1/16"	0.294 (L/360)	6%	D+L	_L

Design Notes

- 1 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.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Fill all hanger nailing holes.
- 5 Left Header: LVL, Thickness: 3 1/2"
- 6 Girders are designed to be supported on bottom edge only and across their full width.
- 7 Top loads must be supported equally by all plies.
- 8 Compression edge bracing required at 17'4" o.c. or less.
- 9 Lateral slenderness ratio based on single ply width.

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM15 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	100	100
Self Weight		PLF	11	

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.

Lumber

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

chemicals

Handling & Installation

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
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APA: PR-L233, ICC-ES: ESR-2909



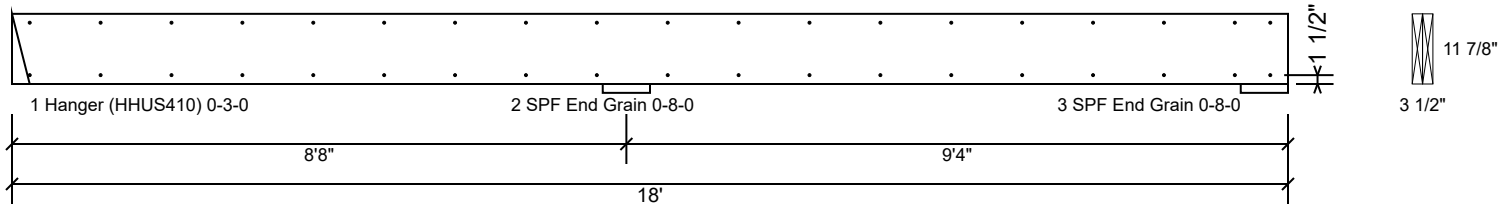
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM15 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 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

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

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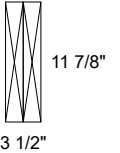
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM16 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



8'3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	20 PSF		
Dead:	20 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	198	359	0	0	0
2	Vertical	217	393	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	5%	359 / 198	557	L	D+L
2 - SPF End Grain	8.000"	Vert	3%	393 / 217	610	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1023 ft-lb	3'11 1/2"	21295 ft-lb	5%	D+L	L
Unbraced	1023 ft-lb	3'11 1/2"	11272 ft-lb	9%	D+L	L
Shear	377 lb	1'3 3/8"	7897 lb	5%	D+L	L
LL Defl inch (L/23503)	0.004	3'11 9/16"	0.191 (L/480)	2%	L	L
TL Defl inch (L/8347)	0.011	3'11 9/16"	0.254 (L/360)	4%	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on bottom edge only and across their full width.
- 5 Top loads must be supported equally by all plies.
- 6 Compression edge bracing required at 7'8" o.c. or less.
- 7 Lateral slenderness ratio based on single ply width.

Loads

Load	Side	units	Dead 0.9	Live 1
Type			+	+
Uniform	Top	PLF	50	50
Uniform	Top	PLF	30	
Self Weight		PLF	11	

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

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

This design is valid until 2/18/2027

Manufacturer Info

Pacific Woodtech Corp
1850 Park Lane
Burlington, WA 98233
(800) 515-7570
www.pwtewp.com
APA: PR-L233, ICC-ES: ESR-2909



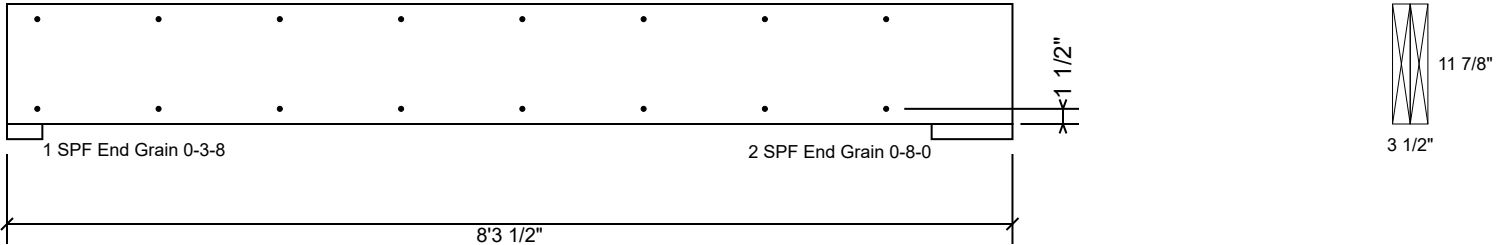
Client: SWIFT CREEK
Project:
Address:

Date: 9/16/2025
Input by: KIRK ROBERTSON
Job Name: CLIFTON
Project #: 24061913

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BM16 2.0E PWLVL 1.750" X 11.875" 2-Ply - PASSED

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	181.1 PLF
Yield Limit per Fastener	90.5 lb.
C _m	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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

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