

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID		

PROJECT SUMMARY

Project Name: 25-015 Wood - Shop

Governing Codes:

Building Code: 2018 International Building Code

ASCE: ASCE 7-16

Steel: AISC 360-16

Concrete: ACI 318-14

Masonry: TMS 402/602-16

Module Location: Outlookers

Module Level: Roof

Module Type: Roof Rafter

Material Type: Solid Sawn Douglas Fir-Larch No. 2

Member Dimensions: (1) 1.5 in. X 5.5 in. X 4.5 ft @ 16 in. Spacing

Section Adequacy: 24.65%

Controlling Factor: Bending-Tension

Module Location: Trusses #1

Module Level: Roof

Module Type: Floor Joist

Material Type: Structural Composite Lumber Weyerhaeuser 2.0E Microlam
LVL

Member Dimensions: (3) 1.75 in. X 20 in. X 23 ft

Section Adequacy: 83.89%

Controlling Factor: Bearing Stress

Module Location: Trusses #2

Module Level: Roof

Module Type: Floor Joist

Material Type: Structural Composite Lumber Weyerhaeuser 2.0E Microlam
LVL

Member Dimensions: (3) 1.75 in. X 20 in. X 28.5 ft

Section Adequacy: 47.92%

Controlling Factor: Deflection Y

Module Location: Rafters #1

Module Level: Roof

Module Type: Floor Joist

Material Type: Solid Sawn Alaska Cedar Select Structural

Member Dimensions: (1) 1.5 in. X 9.25 in. X 6 ft

Section Adequacy: 51.58%

Controlling Factor: Shear Stress Y

Module Location: Beam #1

Module Level: Roof

Module Type: Roof Beam

Material Type: Glulams Stress Class Rated 24F-1.8E 24F-V4 DF/DF

Member Dimensions: (1) 5.125 in. X 10.5 in. X 6.5 ft

Section Adequacy: 74.87%

Controlling Factor: Shear Stress Y

Module Location: Beam #2

Module Level: Roof

Module Type: Roof Beam

Material Type: Glulams Stress Class Rated 24F-1.8E 24F-V4 DF/DF

Member Dimensions: (1) 5.125 in. X 13.5 in. X 10 ft

Section Adequacy: 9.43%

Controlling Factor: Shear Stress Y

Module Location: Beam #3

Module Level: Roof
 Module Type: Roof Beam
 Material Type: Glulams Stress Class Rated 24F-1.8E 24F-V4 DF/DF
 Member Dimensions: (1) 5.5 in. X 13.5 in. X 6 ft
 Section Adequacy: 21.12%
 Controlling Factor: Shear Stress Y

Module Location: Header #1
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Solid Sawn Douglas Fir-Larch No. 2
 Member Dimensions: (1) 3.5 in. X 7.25 in. X 3 ft
 Section Adequacy: 14.57%
 Controlling Factor: Bearing Stress

Module Location: Header #2
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Structural Composite Lumber Weyerhaeuser 2.0E Microlam LVL
 Member Dimensions: (3) 1.75 in. X 11.25 in. X 14 ft
 Section Adequacy: 21.38%
 Controlling Factor: Bending Stress Y

Module Location: Header #3
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Solid Sawn Douglas Fir-Larch No. 2
 Member Dimensions: (1) 5.5 in. X 9.5 in. X 3 ft
 Section Adequacy: 12.74%
 Controlling Factor: Shear Stress Y

Module Location: Header #4
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Glulams Stress Class Rated 24F-1.8E 24F-V4 DF/DF
 Member Dimensions: (1) 5.5 in. X 16.5 in. X 8 ft
 Section Adequacy: 13.87%
 Controlling Factor: Shear Stress Y

Module Location: Header #5
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Solid Sawn Douglas Fir-Larch No. 2
 Member Dimensions: (1) 5.5 in. X 9.5 in. X 3 ft
 Section Adequacy: 12.74%
 Controlling Factor: Shear Stress Y

Module Location: Header #6
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Solid Sawn Douglas Fir-Larch No. 2
 Member Dimensions: (1) 3.5 in. X 7.25 in. X 3 ft
 Section Adequacy: 53.34%
 Controlling Factor: Bearing Stress

Module Location: Header #7
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Solid Sawn Douglas Fir-Larch No. 2
 Member Dimensions: (1) 3.5 in. X 7.25 in. X 9 ft
 Section Adequacy: 55.43%
 Controlling Factor: Shear Stress Y

Module Location: Header #8
 Module Level: Headers - 1st Level
 Module Type: Roof Beam
 Material Type: Solid Sawn Douglas Fir-Larch No. 2
 Member Dimensions: (1) 5.5 in. X 9.5 in. X 4 ft

Module Location: Footing #1

Module Level: Basement
Module Type: Continuous Footing
Material Type: Concrete
Member Dimensions: 2 ft. wide X 10 in. tall
Section Adequacy: 23.4%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 0 Bars. Transversal: 6" O.C. Spacing

Module Location: Footing #2

Module Level: Basement
Module Type: Continuous Footing
Material Type: Concrete
Member Dimensions: 2 ft. wide X 10 in. tall
Section Adequacy: 23.4%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 0 Bars. Transversal: 6" O.C. Spacing

Module Location: Footing #3

Module Level: Basement
Module Type: Continuous Footing
Material Type: Concrete
Member Dimensions: 3.5 ft. wide X 10 in. tall
Section Adequacy: 13.03%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 0 Bars. Transversal: 6" O.C. Spacing

Module Location: Footing #4

Module Level: Basement
Module Type: Continuous Footing
Material Type: Concrete
Member Dimensions: 2.5 ft. wide X 10 in. tall
Section Adequacy: 19.31%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 0 Bars. Transversal: 6" O.C. Spacing

Module Location: SpotFtg Knee Brace

Module Level: Basement
Module Type: Isolated Footing
Material Type: Concrete
Member Dimensions: 1.3334 ft. wide X 10 in. tall X 4 ft long
Section Adequacy: 38.46%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 5 Bars. Transversal: 2 Bars

Module Location: SpotFtg Bm #2-1

Module Level: Basement
Module Type: Isolated Footing
Material Type: Concrete
Member Dimensions: 3.5 ft. wide X 10 in. tall X 3.5 ft long
Section Adequacy: 22.66%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 4 Bars. Transversal: 4 Bars

Module Location: SpotFtg Bm #2-2

Module Level: Basement
Module Type: Isolated Footing
Material Type: Concrete
Member Dimensions: 3.5 ft. wide X 10 in. tall X 3.5 ft long
Section Adequacy: 22.66%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 4 Bars. Transversal: 4 Bars

Module Location: SpotFtg Bm #3-1

Module Level: Basement
Module Type: Isolated Footing

Material Type: Concrete
Member Dimensions: 3.5 ft. wide X 10 in. tall X 3.5 ft long
Section Adequacy: 27.19%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 4 Bars. Transversal: 4 Bars

Module Location: SpotFtg Bm #3-2
Module Level: Basement
Module Type: Isolated Footing
Material Type: Concrete
Member Dimensions: 3.5 ft. wide X 10 in. tall X 3.5 ft long
Section Adequacy: 27.19%
Controlling Factor: Soil Bearing Pressure
Reinforcement: # 4 - Longitudinal: 4 Bars. Transversal: 4 Bars



PASS

DATE:	9/17/2025			COMPANY:	SMC Design		
STRUCALC BUILD:	StruCalc Pro			DESIGNED BY:	Stephen Curtis		
CUSTOMER:	Wood - Shop			REVIEWED BY:	Stephen Curtis		
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID			PROJECT NAME:	25-015 Wood - Shop		
LEVEL:	Roof			LOADING:	ASD		
MEMBER NAME:	Outlookers			CODE:	2018 International Building Code		
MEMBER TYPE:	ROOF RAFTER			NDS:	2018 NDS		
MATERIAL:	Solid Sawn						
Douglas Fir-Larch	No. 2	(1) 1.5 X 5.5	16 (in) O.C.	DRY			

BEAM PROPERTIES

Start (ft): 0 End (ft): 4.5 Member Slope (in): 4/12 Actual Length (ft): 4.74 Roof Pitch (in): 4/12 O.C. Spacing (in): 16

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
8.25	20.8	1.55	1.88	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	900	575	180	1350	625	1600	580
Adjusted Values	1346	748	180	1485	625	1600	580
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1.3	1.3	1	1.1	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1.15

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	2	0	2	0.6666667				
2	2.5	0	2.5	0.8333333				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#8414 (,	101.2	207.0	1.98	D+S	1.15
Bending Stress Y (psi)	SDVV#581; (,	1121.3	1510.5	2.025	D+S	1.15
Deflection Y (in)	SDVV#9<18 (,	0.107	0.351 (=L/180)	4.5	S	
Compressive Stress (psi)	SDVV#< ; 1; (,	21.9	1668.9	2.025	D+S	1.15
Tensile Stress (psi)	SDVV#< : 17 (,	22.5	859.6	1.98	D+S	1.15
Bearing Stress (psi)	SDVV#; 31< (,	127.4	667.6	2	D+S	1.15
Bending-Compression (Unit)	SDVV#5819 (,	0.74	1.00	2.025	D+S	1.15
Bending-Tension (Unit)	SDVV#571; (,	0.75	1.00	1.98	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	-11	-119	-130
B	101	1067	1168
C	0	0	0

Reaction Location

A

B

C

CONNECTORS

(All connectors are Simpson Strong-Tie connectors)*

Support A	Model	Type	Adequacy (%)	Header Fastening (in)	Joist Nails (in)	Nailer Thickness (in)
Primary	LUS26	Hanger	75.78	(4) 0.148 x 3	(4) 0.148 x 3	N/A

Hanger at support A has seat sloped 0 degrees, skewed 0 degrees.

WSR = web stiffeners required

*Capacity values are adjusted based on specific gravity when members use grades other than those specified in Simpson Strong-Tie's capacity tables.

**LOAD LIST**

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft ²)	Uniform	150	150	0	4.5	Snow	Y
Uniform (lb/ft)	Uniform	17	17	0	4.5	Dead	Y
Self Weight (lb/ft)	-	1.88	1.88	0	4.5	Dead	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design		
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis		
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis		
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop		
LEVEL:	Roof	LOADING:	ASD		
MEMBER NAME:	Trusses #1	CODE:	2018 International Building Code		
MEMBER TYPE:	FLOOR JOIST	NDS:	2018 NDS		
MATERIAL:	Structural Composite Lumber				
Weyerhaeuser	2.0E Microlam LVL	(3) 1.75 X 20	0 (in) O.C.	DRY	

BEAM PROPERTIES

Start (ft): 0 End (ft): 23 Member Slope (in): 0/12 Actual Length (ft): 23 O.C. Spacing (in): 24

Area	I _x	I _y	BSW	Lams	C _{fn}	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
105	3500	26.8	30.62	3	7.35	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	2600	1895	285	2510	750	2000	1016.535
Adjusted Values	2704	1895	285	2510	750	2000	1017
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1

Bending Adjustment Factors C_V = 0.93C_r = 1.04 Volume factor is applied on a load combination basis And is Not reflected in the adjusted values

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	2.5	0	2.5	0				
2	18	0	18	0				
3	2.5	0	2.5	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#; 16 (,	41.5	327.8	2.53	D+S	1.15
Bending Stress Y (psi)	SDVV#; 81 (,	415.2	2900.8	11.5	D+S	1.15
Deflection Y (in)	SDVV#; 715 (,	0.039	0.250 (=L/240)	0	S	
Bearing Stress (psi)	SDVV#; 61 (,	129.0	801.1	20.5	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	0	0	0
B	276	3450	3726
C	276	3450	3726
D	0	0	0

Reaction Location

A	B	C	D
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LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft ²)	Uniform	150	150	0	23	Snow	Y
Uniform (lbf/ft ²)	Uniform	12	12	0	23	Dead	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design		
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis		
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis		
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop		
LEVEL:	Roof	LOADING:	ASD		
MEMBER NAME:	Trusses #2	CODE:	2018 International Building Code		
MEMBER TYPE:	FLOOR JOIST	NDS:	2018 NDS		
MATERIAL:	Structural Composite Lumber				
Weyerhaeuser	2.0E Microlam LVL	(3) 1.75 X 20	0 (in) O.C.	DRY	

BEAM PROPERTIES

Start (ft): 0 End (ft): 28.5 Member Slope (in): 0/12 Actual Length (ft): 28.5 O.C. Spacing (in): 24

Area	I _x	I _y	BSW	Lams	C _{fn}	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
105	3500	26.8	30.62	3	7.35	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	2600	1895	285	2510	750	2000	1016.535
Adjusted Values	2704	1895	285	2510	750	2000	1017
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1

Bending Adjustment Factors C_V = 0.93C_r = 1.04 Volume factor is applied on a load combination basis And is Not reflected in the adjusted values

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	26	0	26	0				
2	2.5	0	2.5	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#; 4.19 (,	60.4	327.8	25.935	D+S	1.15
Bending Stress Y (psi)	SDVV#9; 15 (,	921.4	2900.8	12.825	D+S	1.15
Deflection Y (in)	SDVV#7; 1< (,	0.130	0.250 (=L/240)	28.5	S	
Bearing Stress (psi)	SDVV#; 14 (,	175.3	801.1	26	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	309	3864	4173
B	375	4686	5061
C	0	0	0

Reaction Location

A

B

C

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft ²)	Uniform	150	150	0	28.5	Snow	Y
Uniform (lbf/ft ²)	Uniform	12	12	0	28.5	Dead	Y



PASS

DATE:	9/17/2025			COMPANY:	SMC Design	
STRUCALC BUILD:	StruCalc Pro			DESIGNED BY:	Stephen Curtis	
CUSTOMER:	Wood - Shop			REVIEWED BY:	Stephen Curtis	
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID			PROJECT NAME:	25-015 Wood - Shop	
LEVEL:	Roof			LOADING:	ASD	
MEMBER NAME:	Rafters #1			CODE:	2018 International Building Code	
MEMBER TYPE:	FLOOR JOIST			NDS:	2018 NDS	
MATERIAL:	Solid Sawn					
Alaska Cedar	Select Structural	(1) 1.5 X 9.25	0 (in) O.C.	DRY		

BEAM PROPERTIES

Start (ft): 0 End (ft): 6 Member Slope (in): 0/12 Actual Length (ft): 6 O.C. Spacing (in): 24

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lb/ft)			Creep Factor
13.88	98.93	2.6	2.98	1	0.47	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	1150	625	165	1000	525	1400	510
Adjusted Values	1455	688	165	1000	525	1400	510
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1.1	1.1	1	1	1	1	1

Bending Adjustment Factors C_{fu} = 0.86C_r = 1.15

BEAM DATA

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	2.5	0	2.5	0				
2	3.5	0	3.5	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#8419 (,	91.9	189.8	2.52	D+S	1.15
Bending Stress Y (psi)	SDVV#8<1: (,	558.4	1386.0	2.52	D+S	1.15
Deflection Y (in)	SDVV#; 81: (,	0.036	0.250 (=L/240)	0	S	
Bearing Stress (psi)	SDVV#9713 (,	202.0	560.8	2.5	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	0	0	0
B	123	1543	1666
C	21	257	278

Reaction Location

A B C

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft ²)	Uniform	150	150	0	6	Snow	Y
Uniform (lbf/ft ²)	Uniform	12	12	0	6	Dead	Y

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STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Roof	LOADING:	ASD
MEMBER NAME:	Beam #1	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Glulams		
Stress Class Rated 24F-1.8E	24F-V4 DF/DF	(1) 5.125 X 10.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 6.5 Member Slope (in): 0/12 Actual Length (ft): 6.5

Area	Ix	Iy	BSW	Lams	G	Kcr
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
53.81	494.4	117.78	12.27	1	0.5	1

STRENGTH PROPERTIES

	Fbx+	Fbx-	Fby	Ft	Fvx	Fvy	Fc	Fc _⊥	Ex	Exmin	Ey	Eymin
	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
Base Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
Adjusted Values	2400	1850	1472	1100	265	230	1650	650	1800000	950000	1600000	850000
C _M	1	1	1	1	1	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1	1	1	1	1	1

Bending Adjustment Factors C_{vr} = 1**BEAM DATA**

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	6.5	0	6.5	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#; 71< (,	76.6	304.8	0	D+S	1.15
Bending Stress Y (psi)	SDVV#; <17 (,	568.9	2760.0	3.25	D+S	1.15
Deflection Y (in)	SDVV#;<513 (,	0.035	0.433 (=L/180)	3.25	S	
Bearing Stress (psi)	SDVV#; 519 (,	97.5	560.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	240	2507	2747
B	240	2507	2747

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	12.27	12.27	0	6.5	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Rafters #1	B	61.71428	61.71428	0	6.5	Dead	Y
Uniform (lbf/ft)	Rafters #1	B	771.4285	771.4285	0	6.5	Snow	Y



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CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Roof	LOADING:	ASD
MEMBER NAME:	Beam #2	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Glulams		
Stress Class Rated 24F-1.8E	24F-V4 DF/DF	(1) 5.125 X 13.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 10 Member Slope (in): 0/12 Actual Length (ft): 10

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
69.19	1050.79	151.44	15.78	1	0.5	1

STRENGTH PROPERTIES

	F _{bx} +	F _{bx} -	F _{by}	F _t	F _{vx}	F _{vy}	F _c	F _c ⊥	E _x	E _{xmin}	E _y	E _{ymin}
	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
Base Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
Adjusted Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
C _M	1	1	1	1	1	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1	1	1	1	1	1
Bending Adjustment Factors	C _{vr} = 1											

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End		CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
		Top	Bottom	Elev. Diff (ft)					
1	10	0	10	0					

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#<17 (,	276.0	304.8	0	D+S	1.15
Bending Stress Y (psi)	SDVV#4414 (,	2453.5	2760.0	5	D+S	1.15
Deflection Y (in)	SDVV#8 ; 15 (,	0.279	0.667 (=L/180)	5	S	
Bearing Stress (psi)	SDVV#4<16 (,	451.7	560.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	1016	11715	12731
B	1016	11715	12731

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	15.78	15.78	0	10	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #2	B	187.4424	187.4424	0	10	Dead	Y
Uniform (lbf/ft)	Trusses #2	B	2343.031	2343.031	0	10	Snow	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Roof	LOADING:	ASD
MEMBER NAME:	Beam #3	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Glulams		
Stress Class Rated 24F-1.8E	24F-V4 DF/DF	(1) 5.5 X 13.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 6 Member Slope (in): 0/12 Actual Length (ft): 6

Area	Ix	Iy	BSW	Lams	G	Kcr
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
74.25	1127.67	187.17	16.93	1	0.5	1

STRENGTH PROPERTIES

	Fbx+	Fbx-	Fby	Ft	Fvx	Fvy	Fc	Fc _⊥	Ex	Exmin	Ey	Eymin
	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
Base Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
Adjusted Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
C _M	1	1	1	1	1	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1	1	1	1	1	1

Bending Adjustment Factors C_{vr} = 1

BEAM DATA

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	6	0	6	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#54.14 (,	240.4	304.8	6	D+S	1.15
Bending Stress Y (psi)	SDVV#86.18 (,	1282.1	2760.0	3	D+S	1.15
Deflection Y (in)	SDVV#; 9.1< (,	0.053	0.400 (=L/180)	3	S	
Bearing Stress (psi)	SDVV#5<1; (,	393.4	560.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	928	10971	11899
B	928	10971	11899

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	16.93	16.93	0	6	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #1	C	137.9998	137.9998	0	6	Dead	Y
Uniform (lbf/ft)	Trusses #1	C	1724.996	1724.996	0	6	Snow	Y
Uniform (lbf/ft)	Trusses #2	A	154.5576	154.5576	0	6	Dead	Y

Linked Load List CONT.

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #2	A	1931.97	1931.97	0	6	Snow	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #1	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Solid Sawn		
Douglas Fir-Larch	No. 2	(1) 3.5 X 7.25	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 3 Member Slope (in): 0/12 Actual Length (ft): 3

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lb/ft)			Creep Factor
25.38	111.15	25.9	5.79	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	900	575	180	1350	625	1600	580
Adjusted Values	1170	690	180	1418	625	1600	580
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1.3	1.2	1	1.05	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1

BEAM DATA

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	3	0	3	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#4 < 1< (,	165.7	207.0	3	D+S	1.15
Bending Stress Y (psi)	SDVV#6 ; 1< (,	822.8	1345.5	1.5	D+S	1.15
Deflection Y (in)	SDVV#< 4 15 (,	0.018	0.200 (=L/180)	1.5	S	
Bearing Stress (psi)	SDVV#4 7 19 (,	533.9	625.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	LIVE ROOF	SNOW	TOTAL
A	216	2	2587	2805
B	216	2	2587	2805

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	3	RoofLive	Y
Self Weight (lb/ft)	-	5.79	5.79	0	3	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Trusses #1	B	137.9999	137.9999	0	3	Dead	Y
Uniform (lb/ft)	Trusses #1	B	1724.999	1724.999	0	3	Snow	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #2	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Structural Composite Lumber		
Weyerhaeuser	2.0E Microlam LVL	(3) 1.75 X 11.25	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 14 Member Slope (in): 0/12 Actual Length (ft): 14

Area	I _x	I _y	BSW	Lams	C _{fn}	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
59.06	622.92	15.07	17.23	3	7.35	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	2600	1895	285	2510	750	2000	1016.535
Adjusted Values	2600	1895	285	2510	750	2000	1017
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1

Bending Adjustment Factors C_V = 1.01 C_r = 1 Volume factor is applied on a load combination basis And is Not reflected in the adjusted values

BEAM DATA

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	14	0	14	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#8418 (,	158.8	327.8	0	D+S	1.15
Bending Stress Y (psi)	SDVV#5417 (,	2371.4	3016.4	7	D+S	1.15
Deflection Y (in)	SDVV#7318 (,	0.555	0.933 (=L/180)	7	S	
Bearing Stress (psi)	SDVV#7 : 14 (,	397.0	750.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	650	5603	6253
B	650	5603	6253

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	17.23	17.23	0	14	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Outlookers	B	75.56889	75.56889	0	14	Dead	Y
Uniform (lbf/ft)	Outlookers	B	800.4514	800.4514	0	14	Snow	Y

**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #3	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Solid Sawn		
Douglas Fir-Larch	No. 2	(1) 5.5 X 9.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 3 Member Slope (in): 0/12 Actual Length (ft): 3

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lb/ft)			Creep Factor
52.25	392.96	131.71	11.92	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	875	425	170	600	625	1300	470
Adjusted Values	875	425	170	600	625	1300	470
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1	1	1	1	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1**BEAM DATA**

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	3	0	3	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#451 (,	170.6	195.5	3	D+S	1.15
Bending Stress Y (psi)	SDVV#681 (,	646.4	1006.3	1.5	D+S	1.15
Deflection Y (in)	SDVV#<618 (,	0.013	0.200 (=L/180)	1.5	S	
Bearing Stress (psi)	SDVV#7517 (,	360.1	625.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	LIVE ROOF	SNOW	TOTAL
A	457	2	5485	5944
B	457	2	5485	5944

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	3	RoofLive	Y
Self Weight (lb/ft)	-	11.92	11.92	0	3	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #1	C	137.9998	137.9998	0	3	Dead	Y
Uniform (lbf/ft)	Trusses #1	C	1724.996	1724.996	0	3	Snow	Y
Uniform (lbf/ft)	Trusses #2	A	154.5576	154.5576	0	3	Dead	Y
Uniform (lbf/ft)	Trusses #2	A	1931.97	1931.97	0	3	Snow	Y

**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #4	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Glulams		
Stress Class Rated 24F-1.8E	24F-V4 DF/DF	(1) 5.5 X 16.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 8 Member Slope (in): 0/12 Actual Length (ft): 8

Area	Ix	Iy	BSW	Lams	G	Kcr
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
90.75	2058.89	228.77	20.7	1	0.5	1

STRENGTH PROPERTIES

	Fbx+	Fbx-	Fby	Ft	Fvx	Fvy	Fc	Fc _⊥	Ex	Exmin	Ey	Eymin
	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
Base Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
Adjusted Values	2400	1850	1450	1100	265	230	1650	650	1800000	950000	1600000	850000
C _M	1	1	1	1	1	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1	1	1	1	1	1

Bending Adjustment Factors C_{vr} = 1**BEAM DATA**

Span	Length (ft)	Unbraced Length (ft)		Beam End				
		Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	8	0	8	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#461< (,	262.5	304.8	0	D+S	1.15
Bending Stress Y (psi)	SDVV#771< (,	1527.2	2760.0	4	D+S	1.15
Deflection Y (in)	SDVV#; 51< (,	0.091	0.533 (=L/180)	4	S	
Bearing Stress (psi)	SDVV#4714< (,	481.2	560.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	1253	14628	15881
B	1253	14628	15881

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	20.7	20.7	0	8	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #1	C	137.9998	137.9998	0	8	Dead	Y
Uniform (lbf/ft)	Trusses #1	C	1724.996	1724.996	0	8	Snow	Y
Uniform (lbf/ft)	Trusses #2	A	154.5576	154.5576	0	8	Dead	Y

Linked Load List CONT.

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #2	A	1931.97	1931.97	0	8	Snow	Y

**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #5	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Solid Sawn		
Douglas Fir-Larch	No. 2	(1) 5.5 X 9.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 3 Member Slope (in): 0/12 Actual Length (ft): 3

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
52.25	392.96	131.71	11.92	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	875	425	170	600	625	1300	470
Adjusted Values	875	425	170	600	625	1300	470
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1	1	1	1	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1**BEAM DATA**

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	3	0	3	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#451: (,	170.6	195.5	3	D+S	1.15
Bending Stress Y (psi)	SDVV#681: (,	646.4	1006.3	1.5	D+S	1.15
Deflection Y (in)	SDVV#<618 (,	0.013	0.200 (=L/180)	1.5	S	
Bearing Stress (psi)	SDVV#7517 (,	360.1	625.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	457	5485	5942
B	457	5485	5942

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	11.92	11.92	0	3	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #1	C	137.9998	137.9998	0	3	Dead	Y
Uniform (lbf/ft)	Trusses #1	C	1724.996	1724.996	0	3	Snow	Y
Uniform (lbf/ft)	Trusses #2	A	154.5576	154.5576	0	3	Dead	Y
Uniform (lbf/ft)	Trusses #2	A	1931.97	1931.97	0	3	Snow	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #6	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Solid Sawn		
Douglas Fir-Larch	No. 2	(1) 3.5 X 7.25	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 3 Member Slope (in): 0/12 Actual Length (ft): 3

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lb/ft)			Creep Factor
25.38	111.15	25.9	5.79	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	900	575	180	1350	625	1600	580
Adjusted Values	1170	690	180	1418	625	1600	580
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1.3	1.2	1	1.05	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1

BEAM DATA

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	3	0	3	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#8916 (,	90.5	207.0	3	D+S	1.15
Bending Stress Y (psi)	SDVV#9919 (,	449.4	1345.5	1.5	D+S	1.15
Deflection Y (in)	SDVV#<815 (,	0.010	0.200 (=L/180)	1.5	S	
Bearing Stress (psi)	SDVV#8616 (,	291.6	625.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	LIVE ROOF	SNOW	TOTAL
A	137	2	1394	1533
B	137	2	1394	1533

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	3	RoofLive	Y
Self Weight (lb/ft)	-	5.79	5.79	0	3	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Outlookers	B	75.56889	75.56889	0	3	Dead	Y
Uniform (lbf/ft)	Outlookers	B	800.4514	800.4514	0	3	Snow	Y
Uniform (lbf/ft)	Rafters #1	C	10.28572	10.28572	0	3	Dead	Y
Uniform (lbf/ft)	Rafters #1	C	128.5715	128.5715	0	3	Snow	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #7	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Solid Sawn		
Douglas Fir-Larch	No. 2	(1) 3.5 X 7.25	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 9 Member Slope (in): 0/12 Actual Length (ft): 9

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lbf/ft)			Creep Factor
25.38	111.15	25.9	5.79	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	900	575	180	1350	625	1600	580
Adjusted Values	1170	690	180	1418	625	1600	580
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1.3	1.2	1	1.05	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1

BEAM DATA

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	3	0	3	0				
2	3	0	3	0				
3	3	0	3	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#8 8 17 (,	92.3	207.0	2.97	D+S	1.15
Bending Stress Y (psi)	SDVV#- : 15 (,	292.1	1339.3	2.97	D+S	1.15
Deflection Y (in)	SDVV#< : 1 (,	0.004	0.200 (=L/180)	1.35	S	
Bearing Stress (psi)	SDVV#9 3 19 (,	277.1	703.1	3	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	SNOW	TOTAL
A	98	961	1059
B	268	2641	2909
C	268	2641	2909
D	98	961	1059

Reaction Location

A B C D

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Self Weight (lbf/ft)	-	5.79	5.79	0	9	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Outlookers	B	75.56889	75.56889	0	9	Dead	Y
Uniform (lbf/ft)	Outlookers	B	800.4514	800.4514	0	9	Snow	Y



PASS

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Headers - 1st Level	LOADING:	ASD
MEMBER NAME:	Header #8	CODE:	2018 International Building Code
MEMBER TYPE:	ROOF BEAM	NDS:	2018 NDS
MATERIAL:	Solid Sawn		
Douglas Fir-Larch	No. 2	(1) 5.5 X 9.5	DRY

BEAM PROPERTIES

Start (ft): 0 End (ft): 4 Member Slope (in): 0/12 Actual Length (ft): 4

Area	I _x	I _y	BSW	Lams	G	K _{cr}
(in ²)	(in ⁴)	(in ⁴)	(lb/ft)			Creep Factor
52.25	392.96	131.71	11.92	1	0.5	1

STRENGTH PROPERTIES

	F _b (psi)	F _t (psi)	F _v (psi)	F _c (psi)	F _c ⊥ (psi)	E (psi) x10 ³	E _{min} (psi) x10 ³
Base Values	875	425	170	600	625	1300	470
Adjusted Values	875	425	170	600	625	1300	470
C _M	1	1	1	1	1	1	1
C _T	1	1	1	1	1	1	1
C _i	1	1	1	1	1	1	1
C _F	1	1	1	1	1	1	1

Bending Adjustment Factors C_{fu} = 1 C_r = 1

BEAM DATA

		Unbraced Length (ft)		Beam End				
Span	Length (ft)	Top	Bottom	Elev. Diff (ft)	CL(Top)	CL(Bottom)	CL(Left)	CL(Right)
1	4	0	4	0				

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOCATION (ft)	LOAD COMBO	DURATION FACTOR CD
Shear Stress Y (psi)	SDVV#5816 (,	146.0	195.5	0	D+S	1.15
Bending Stress Y (psi)	SDVV#591: (,	737.6	1006.3	2	D+S	1.15
Deflection Y (in)	SDVV#<314 (,	0.026	0.267 (=L/180)	2	S	
Bearing Stress (psi)	SDVV#831: (,	308.2	625.0	0	D+S	1.15

REACTIONS

Units for V: lbf Units for M: lbf-ft

Y axis	DEAD	LIVE ROOF	SNOW	TOTAL
A	399	2	4686	5087
B	399	2	4686	5087

Reaction Location

A

B

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	4	RoofLive	Y
Self Weight (lb/ft)	-	11.92	11.92	0	4	Dead	Y

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lbf/ft)	Trusses #2	B	187.4424	187.4424	0	4	Dead	Y
Uniform (lbf/ft)	Trusses #2	B	2343.031	2343.031	0	4	Snow	Y

**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	Footing #1	CODE:	2018 International Building Code
MEMBER TYPE:	CONTINUOUS FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
2 (ft) Wide X 10 (in) Deep		Soil Depth TOF : 0 (ft)	Long.(3) #4 Bars, Transv:#4 @6(in) O.C.

MATERIAL PROPERTIES

FOOTING				
Width (ft)	Depth (in)	Footing Weight (lb/ft)	Stemwall Weight (lb/ft)	
2	10	241.6667	193.3333	
CONCRETE				
fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia. (in)	
3000	3122019	145	0.75	
STEM WALL				
Width (in)	Height (in)	Material	Stemwall Offset(in)	
8	24	Concrete	0	
SOIL				
Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0
REBAR				
Bottom Bar Size #	Bottom Bar Spacing(in)	fy (psi)	Es (psi)	
4	6	60000	2.9E+07	
COVER				
Top Cover (in)	Bottom Cover (in)	Side Cover (in)		
3	3	3		

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft ²)	SDVV#5617 (,	1149.0	1500.0	D+S	ASD
One-Way Shear (lb/ft)	SDVV#<917 (,	564.0	15774.4	1.2D+1.6S+L	LRFD
Moment (lb/ft)	SDVV#<:14 (,	325.2	11245.8	1.2D+1.6S+L	LRFD
Compression (ft ²)	SDVV#43313 (,	2.0	2.0	D	LRFD

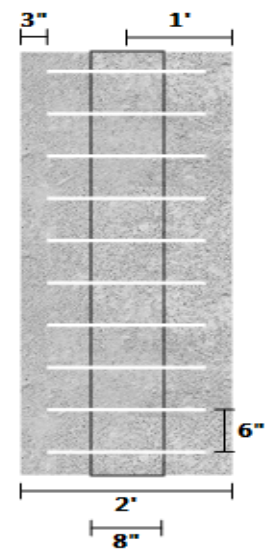
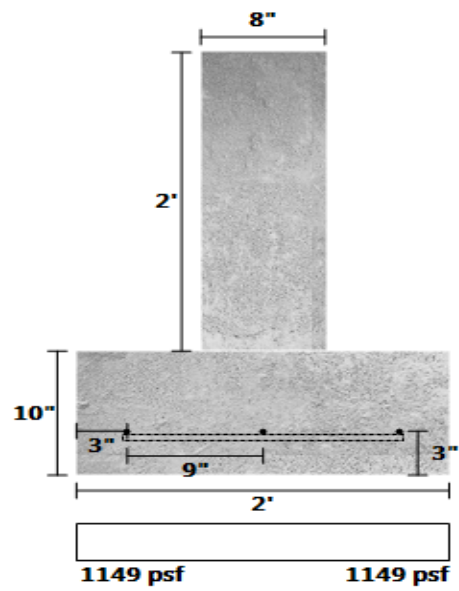
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	1	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Trusses #1	B	137.9999	137.9999	0	1	Dead	Z
Uniform (lb/ft)	Trusses #1	B	1724.999	1724.999	0	1	Snow	Z

Footing #1 DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	Footing #2	CODE:	2018 International Building Code
MEMBER TYPE:	CONTINUOUS FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
2 (ft) Wide X 10 (in) Deep		Soil Depth TOF : 0 (ft)	Long.(3) #4 Bars, Transv:#4 @6(in) O.C.

MATERIAL PROPERTIES

FOOTING				
Width (ft)	Depth (in)	Footing Weight (lb/ft)	Stemwall Weight (lb/ft)	
2	10	241.6667	193.3333	
CONCRETE				
fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia. (in)	
3000	3122019	145	0.75	
STEM WALL				
Width (in)	Height (in)	Material	Stemwall Offset(in)	
8	24	Concrete	0	
SOIL				
Bearing Strength(lb/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0
REBAR				
Bottom Bar Size #	Bottom Bar Spacing(in)	fy (psi)	Es (psi)	
4	6	60000	2.9E+07	
COVER				
Top Cover (in)	Bottom Cover (in)	Side Cover (in)		
3	3	3		

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft ²)	SDVV#5617 (,	1149.0	1500.0	D+S	ASD
One-Way Shear (lb/ft)	SDVV#<917 (,	564.0	15774.4	1.2D+1.6S+L	LRFD
Moment (lb/ft)	SDVV#<:14 (,	325.2	11245.8	1.2D+1.6S+L	LRFD
Compression (ft ²)	SDVV#43313 (,	2.0	2.0	D	LRFD

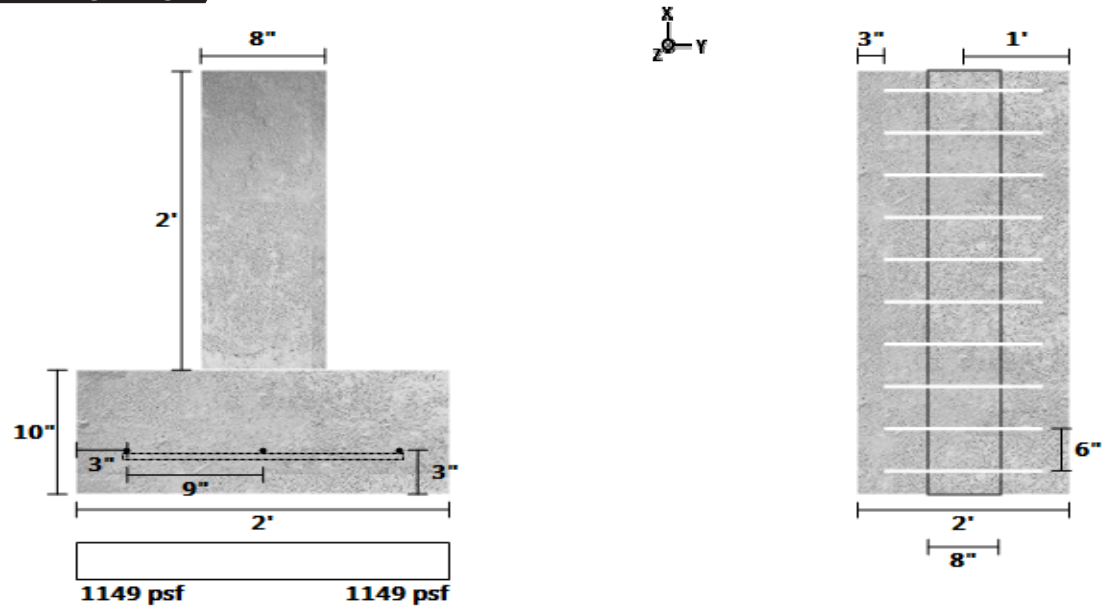
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	1	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Trusses #1	C	137.9998	137.9998	0	1	Dead	Z
Uniform (lb/ft)	Trusses #1	C	1724.996	1724.996	0	1	Snow	Z

Footing #2 DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	Footing #3	CODE:	2018 International Building Code
MEMBER TYPE:	CONTINUOUS FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
3.5 (ft) Wide X 10 (in) Deep		Soil Depth TOF : 0 (ft)	Long.(5) #4 Bars, Transv:#4 @6(in) O.C.

MATERIAL PROPERTIES

FOOTING				
Width (ft)	Depth (in)	Footing Weight (lb/ft)	Stemwall Weight (lb/ft)	
3.5	10	422.9167	193.3333	
CONCRETE				
fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia. (in)	
3000	3122019	145	0.75	
STEM WALL				
Width (in)	Height (in)	Material	Stemwall Offset(in)	
8	24	Concrete	0	
SOIL				
Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0
REBAR				
Bottom Bar Size #	Bottom Bar Spacing(in)	fy (psi)	Es (psi)	
4	6	60000	2.9E+07	
COVER				
Top Cover (in)	Bottom Cover (in)	Side Cover (in)		
3	3	3		

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft ²)	SDVV#4613 (,	1304.5	1500.0	D+S	ASD
One-Way Shear (lb/ft)	SDVV#<51: (,	2012.4	27605.2	1.2D+1.6S+L	LRFD
Moment (lb/ft)	SDVV#; 715 (,	1778.5	11245.8	1.2D+1.6S+L	LRFD
Compression (ft ²)	SDVV#43313 (,	3.5	3.5	D	LRFD

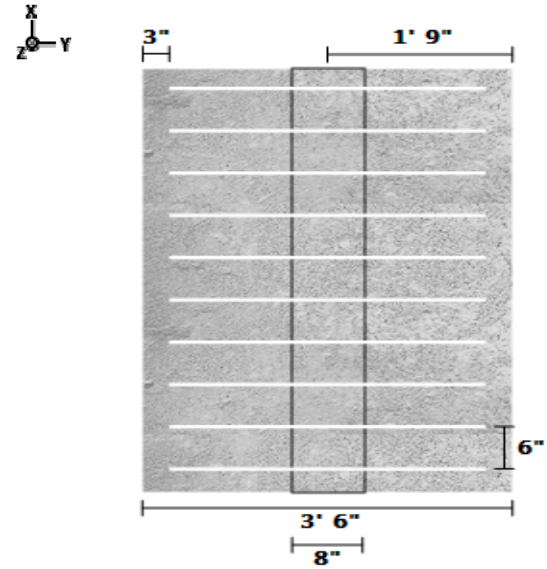
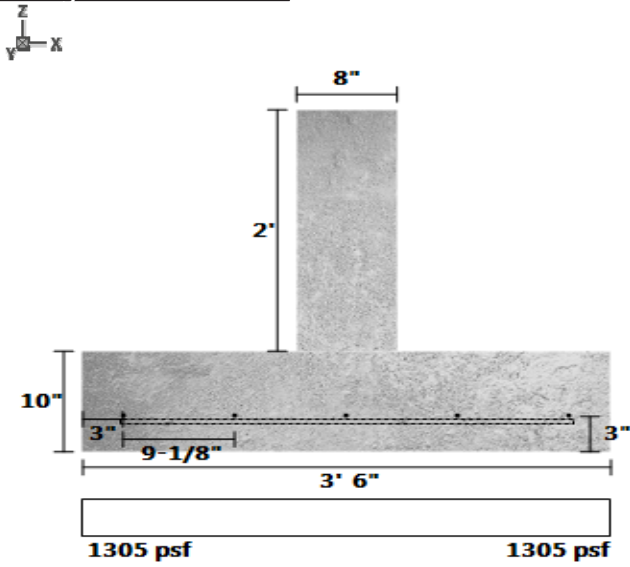
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	1	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Trusses #1	C	137.9998	137.9998	0	1	Dead	Z
Uniform (lb/ft)	Trusses #1	C	1724.996	1724.996	0	1	Snow	Z
Uniform (lb/ft)	Trusses #2	A	154.5576	154.5576	0	1	Dead	Z
Uniform (lb/ft)	Trusses #2	A	1931.97	1931.97	0	1	Snow	Z

Footing #3 DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	Footing #4	CODE:	2018 International Building Code
MEMBER TYPE:	CONTINUOUS FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
2.5 (ft) Wide X 10 (in) Deep		Soil Depth TOF : 0 (ft)	Long.(4) #4 Bars, Transv:#4 @6(in) O.C.

MATERIAL PROPERTIES

FOOTING				
Width (ft)	Depth (in)	Footing Weight (lb/ft)	Stemwall Weight (lb/ft)	
2.5	10	302.0833	193.3333	
CONCRETE				
fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia. (in)	
3000	3122019	145	0.75	
STEM WALL				
Width (in)	Height (in)	Material	Stemwall Offset(in)	
8	24	Concrete	0	
SOIL				
Bearing Strength(lb/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0
REBAR				
Bottom Bar Size #	Bottom Bar Spacing(in)	fy (psi)	Es (psi)	
4	6	60000	2.9E+07	
COVER				
Top Cover (in)	Bottom Cover (in)	Side Cover (in)		
3	3	3		

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft ²)	SDVV#4<16 (,	1210.4	1500.0	D+S	ASD
One-Way Shear (lb/ft)	SDVV#<71< (,	1010.3	19718.0	1.2D+1.6S+L	LRFD
Moment (lb/ft)	SDVV#<714 (,	668.0	11245.8	1.2D+1.6S+L	LRFD
Compression (ft ²)	SDVV#43313 (,	2.5	2.5	D	LRFD

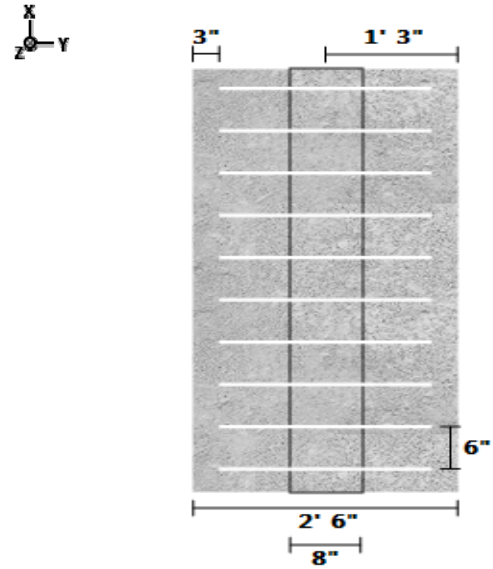
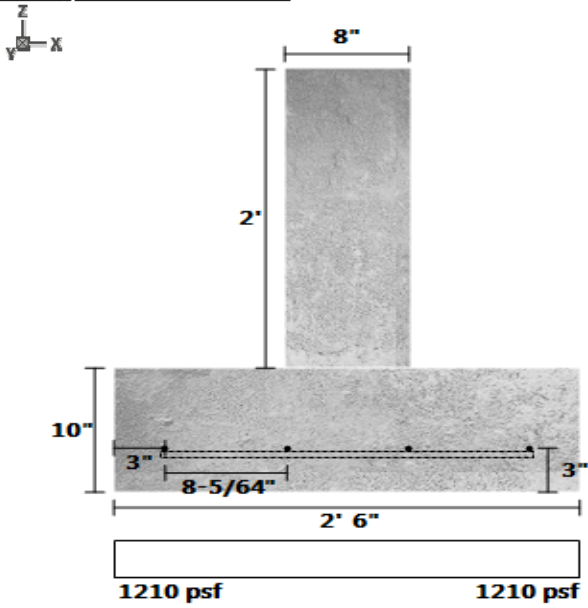
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Uniform	1	1	0	1	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Uniform (lb/ft)	Trusses #2	B	187.4424	187.4424	0	1	Dead	Z
Uniform (lb/ft)	Trusses #2	B	2343.031	2343.031	0	1	Snow	Z

Footing #4 DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	SpotFtg Knee Brace	CODE:	2018 International Building Code
MEMBER TYPE:	ISOLATED FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
1.33 (ft) X 4.00 (ft) X 10 (in)		Soil Depth TOF : 0 (ft)	Bot.(5) #4 Long, (2) #4 Short

MATERIAL PROPERTIES**FOOTING**

Width (ft)	Length (ft)	Depth (in)	Volume (ft³)	Footing Weight (lb/ft)
1.3334	4	10	4.44	644.48

CONCRETE

fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia.(in)
3000	0	145	0.75

CALCULATION VARIABLES

Bo (in)	Rankine Coefficient(Kp)
0	3

COLUMN

Width (in)	length (in)	Material	Offset X (in)	Offset Y (in)
8	8	Concrete	0	0

SOIL

Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0

REBAR

Bottom Bar Size #	fy (psi)	Es (psi)
4	60000	2.9E+07

COVER

Top Cover (in)	Bottom Cover (in)	Side Cover (in)
3	3	3

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft²)	SDVV #6 ; 38 (,	923.0	1500.0	D+S	ASD
One-Way Shear X (lb/ft)	SDVV #< 35 (,	261.7	31548.8	1.2D+1.6S+L	LRFD
One-Way Shear Y (lb/ft)	SDVV #< : 38 (,	261.7	10516.8	1.2D+1.6S+L	LRFD
Two-Way Shear (lb/ft)	SDVV #< 61; (,	4798.9	77557.5	1.2D+1.6S+L	LRFD
Moment X (lb/ft)	SDVV #< : 39 (,	2324.9	11416.5	1.2D+1.6S+L	LRFD
Moment Y (lb/ft)	SDVV #< 33 (,	279.0	28754.4	1.2D+1.6S+L	LRFD
Crushing (psi)	SDVV #< 91; (,	6695.6	212160.0	1.2D+1.6S+L	LRFD
Compression (ft²)	SDVV #4 3 3 13 (,	5.3	5.3	D	LRFD

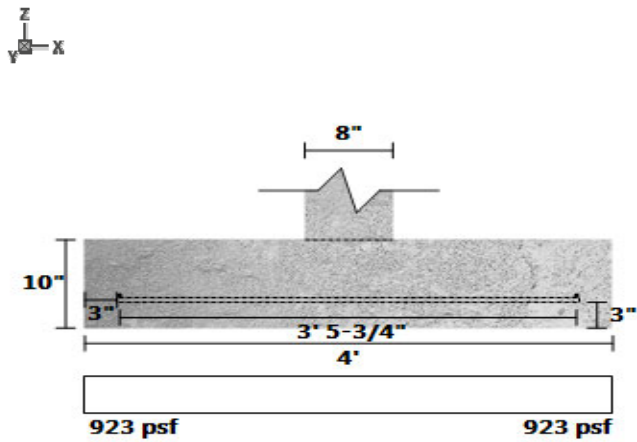
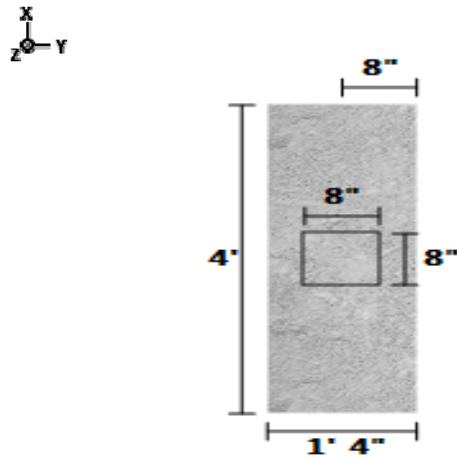
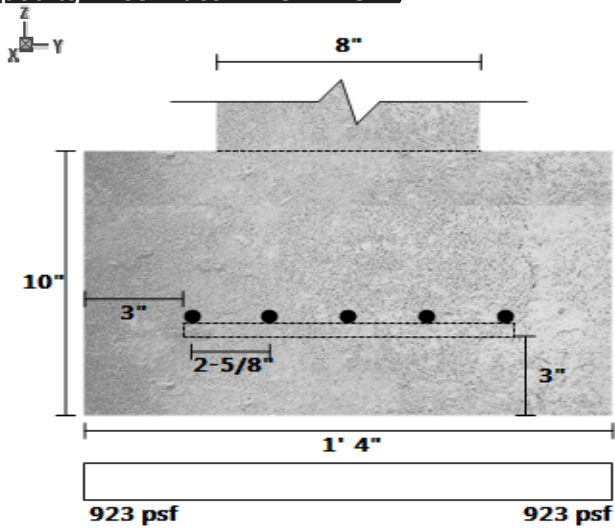
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Point	1	-	0	-	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Header #6	A	137.4628	-	0	-	Dead	Z
Point (lb/ft)	Header #6	A	1393.534	-	0	-	Snow	Z
Point (lb/ft)	Beam #1	A	240.4587	-	0	-	Dead	Z
Point (lb/ft)	Beam #1	A	2507.143	-	0	-	Snow	Z

SpotFtg Knee Brace DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	SpotFtg Bm #2-1	CODE:	2018 International Building Code
MEMBER TYPE:	ISOLATED FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
3.50 (ft) X 3.50 (ft) X 10 (in)		Soil Depth TOF : 0 (ft)	Bot.(4) #4 Long, (4) #4 Short

MATERIAL PROPERTIES

FOOTING				
Width (ft)	Length (ft)	Depth (in)	Volume (ft³)	Footing Weight (lb/ft)
3.5	3.5	10	10.21	1480.21
CONCRETE				
fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia.(in)	
3000	0	145	0.75	
CALCULATION VARIABLES				
Bo (in)	Rankine Coefficient(Kp)			
0	3			
COLUMN				
Width (in)	length (in)	Material	Offset X (in)	Offset Y (in)
8	8	Concrete	0	0
SOIL				
Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0
REBAR				
Bottom Bar Size #	fy (psi)	Es (psi)		
4	60000	2.9E+07		
COVER				
Top Cover (in)	Bottom Cover (in)	Side Cover (in)		
3	3	3		

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft²)	SDVV #551: (,	1160.1	1500.0	D+S	ASD
One-Way Shear X (lb/ft)	SDVV #: 918 (,	6476.6	27605.2	1.2D+1.6S+L	LRFD
One-Way Shear Y (lb/ft)	SDVV #: 918 (,	6476.6	27605.2	1.2D+1.6S+L	LRFD
Two-Way Shear (lb/ft)	SDVV #: : 17 (,	17502.3	77557.5	1.2D+1.6S+L	LRFD
Moment X (lb/ft)	SDVV #: 815 (,	5724.0	23076.6	1.2D+1.6S+L	LRFD
Moment Y (lb/ft)	SDVV #: 815 (,	5724.0	23076.6	1.2D+1.6S+L	LRFD
Crushing (psi)	SDVV #<319 (,	19964.6	212160.0	1.2D+1.6S+L	LRFD
Compression (ft²)	SDVV #43313 (,	12.3	12.3	D	LRFD

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Point	1	-	0	-	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Beam #2	A	1016.11	-	0	-	Dead	Z
Point (lb/ft)	Beam #2	A	11715.15	-	0	-	Snow	Z



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	SpotFtg Bm #2-2	CODE:	2018 International Building Code
MEMBER TYPE:	ISOLATED FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
3.50 (ft) X 3.50 (ft) X 10 (in)		Soil Depth TOF : 0 (ft)	Bot.(4) #4 Long, (4) #4 Short

MATERIAL PROPERTIES**FOOTING**

Width (ft)	Length (ft)	Depth (in)	Volume (ft³)	Footing Weight (lb/ft)
3.5	3.5	10	10.21	1480.21

CONCRETE

fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia.(in)
3000	0	145	0.75

CALCULATION VARIABLES

Bo (in)	Rankine Coefficient(Kp)
0	3

COLUMN

Width (in)	length (in)	Material	Offset X (in)	Offset Y (in)
8	8	Concrete	0	0

SOIL

Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0

REBAR

Bottom Bar Size #	fy (psi)	Es (psi)
4	60000	2.9E+07

COVER

Top Cover (in)	Bottom Cover (in)	Side Cover (in)
3	3	3

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft²)	SDVV#551: (,	1160.1	1500.0	D+S	ASD
One-Way Shear X (lb/ft)	SDVV#9: 918 (,	6476.6	27605.2	1.2D+1.6S+L	LRFD
One-Way Shear Y (lb/ft)	SDVV#9: 918 (,	6476.6	27605.2	1.2D+1.6S+L	LRFD
Two-Way Shear (lb/ft)	SDVV#9: 917 (,	17502.3	77557.5	1.2D+1.6S+L	LRFD
Moment X (lb/ft)	SDVV#8: 815 (,	5724.0	23076.6	1.2D+1.6S+L	LRFD
Moment Y (lb/ft)	SDVV#8: 815 (,	5724.0	23076.6	1.2D+1.6S+L	LRFD
Crushing (psi)	SDVV#<3: 319 (,	19964.6	212160.0	1.2D+1.6S+L	LRFD
Compression (ft²)	SDVV#4: 43313 (,	12.3	12.3	D	LRFD

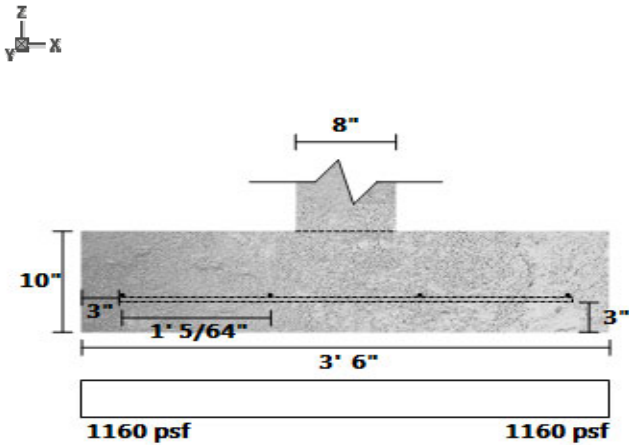
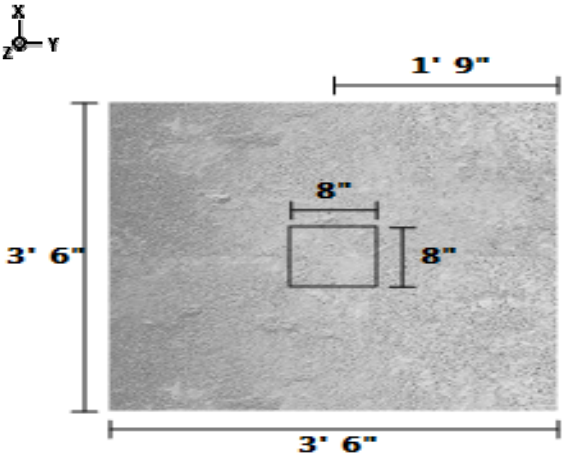
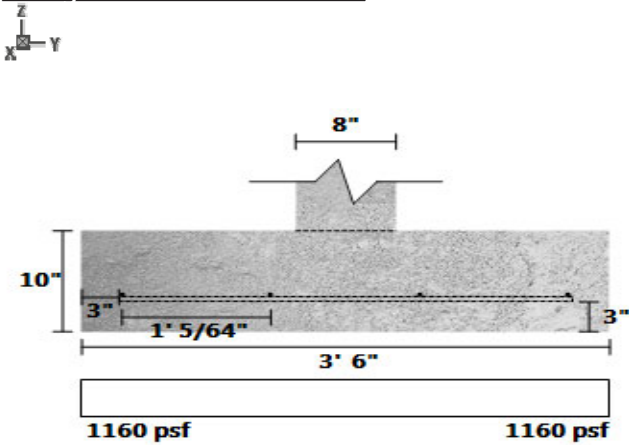
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Point	1	-	0	-	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Beam #2	B	1016.11	-	0	-	Dead	Z
Point (lb/ft)	Beam #2	B	11715.15	-	0	-	Snow	Z

SpotFtg Bm #2-2 DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	SpotFtg Bm #3-1	CODE:	2018 International Building Code
MEMBER TYPE:	ISOLATED FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
3.50 (ft) X 3.50 (ft) X 10 (in)		Soil Depth TOF : 0 (ft)	Bot.(4) #4 Long, (4) #4 Short

MATERIAL PROPERTIES**FOOTING**

Width (ft)	Length (ft)	Depth (in)	Volume (ft³)	Footing Weight (lb/ft)
3.5	3.5	10	10.21	1480.21

CONCRETE

fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia.(in)
3000	0	145	0.75

CALCULATION VARIABLES

Bo (in)	Rankine Coefficient(Kp)
0	3

COLUMN

Width (in)	length (in)	Material	Offset X (in)	Offset Y (in)
8	8	Concrete	0	0

SOIL

Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0

REBAR

Bottom Bar Size #	fy (psi)	Es (psi)
4	60000	2.9E+07

COVER

Top Cover (in)	Bottom Cover (in)	Side Cover (in)
3	3	3

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft²)	SDVV #5 : 15 (,	1092.2	1500.0	D+S	ASD
One-Way Shear X (lb/ft)	SDVV #6 : 14 (,	6056.2	27605.2	1.2D+1.6S+L	LRFD
One-Way Shear Y (lb/ft)	SDVV #6 : 14 (,	6056.2	27605.2	1.2D+1.6S+L	LRFD
Two-Way Shear (lb/ft)	SDVV #6 : 14 (,	16366.1	77557.5	1.2D+1.6S+L	LRFD
Moment X (lb/ft)	SDVV #6 : 91 (,	5352.4	23076.6	1.2D+1.6S+L	LRFD
Moment Y (lb/ft)	SDVV #6 : 91 (,	5352.4	23076.6	1.2D+1.6S+L	LRFD
Crushing (psi)	SDVV #6 < 4 15 (,	18668.6	212160.0	1.2D+1.6S+L	LRFD
Compression (ft²)	SDVV #4 3 3 13 (,	12.3	12.3	D	LRFD

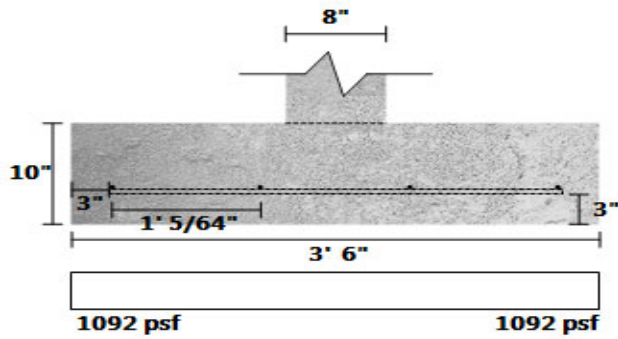
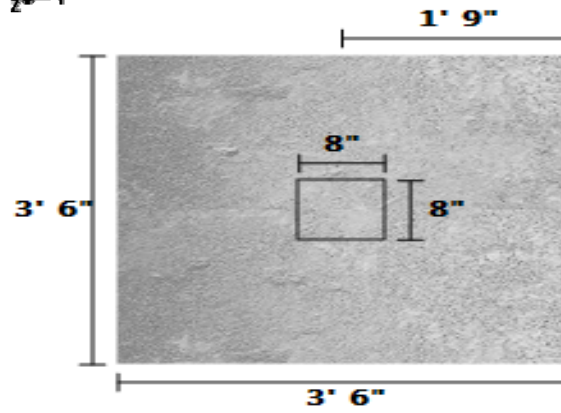
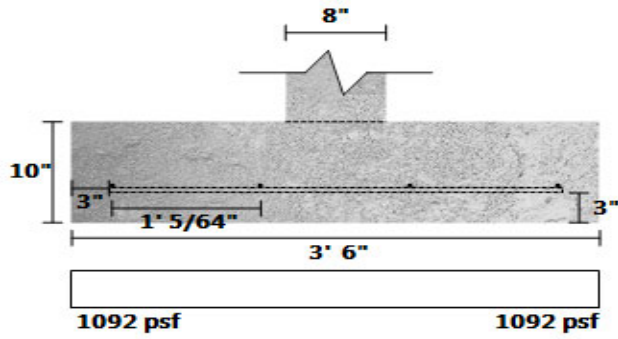
LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Point	1	-	0	-	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Beam #3	A	928.4749	-	0	-	Dead	Z
Point (lb/ft)	Beam #3	A	10970.9	-	0	-	Snow	Z

SpotFtg Bm #3-1 DIAGRAMS



**PASS**

DATE:	9/17/2025	COMPANY:	SMC Design
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Stephen Curtis
CUSTOMER:	Wood - Shop	REVIEWED BY:	Stephen Curtis
PROJ. ADDRESS:	13792 Iron Ct Valley Co, ID	PROJECT NAME:	25-015 Wood - Shop
LEVEL:	Basement	LOADING:	ASD
MEMBER NAME:	SpotFtg Bm #3-2	CODE:	2018 International Building Code
MEMBER TYPE:	ISOLATED FOOTING	ACI:	ACI 318-14
MATERIAL:	Concrete		
3.50 (ft) X 3.50 (ft) X 10 (in)		Soil Depth TOF : 0 (ft)	Bot.(4) #4 Long, (4) #4 Short

MATERIAL PROPERTIES**FOOTING**

Width (ft)	Length (ft)	Depth (in)	Volume (ft³)	Footing Weight (lb/ft)
3.5	3.5	10	10.21	1480.21

CONCRETE

fc' (psi)	Ec (psi)	Density (lb/ft³)	Agg. Dia.(in)
3000	0	145	0.75

CALCULATION VARIABLES

Bo (in)	Rankine Coefficient(Kp)
0	3

COLUMN

Width (in)	length (in)	Material	Offset X (in)	Offset Y (in)
8	8	Concrete	0	0

SOIL

Bearing Strength(lbf/ft²)	Density (lb/ft³)	Cohesion	Friction Angle	Depth (ft)
1500	140	0	30	0

REBAR

Bottom Bar Size #	fy (psi)	Es (psi)
4	60000	2.9E+07

COVER

Top Cover (in)	Bottom Cover (in)	Side Cover (in)
3	3	3

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO	CALCULATION TYPE
Soil Bearing Pressure (lb/ft²)	SDVV #5 : 15 (,	1092.2	1500.0	D+S	ASD
One-Way Shear X (lb/ft)	SDVV #8 : 14 (,	6056.2	27605.2	1.2D+1.6S+L	LRFD
One-Way Shear Y (lb/ft)	SDVV #8 : 14 (,	6056.2	27605.2	1.2D+1.6S+L	LRFD
Two-Way Shear (lb/ft)	SDVV #8 : 14 (,	16366.1	77557.5	1.2D+1.6S+L	LRFD
Moment X (lb/ft)	SDVV #8 : 91 (,	5352.4	23076.6	1.2D+1.6S+L	LRFD
Moment Y (lb/ft)	SDVV #8 : 91 (,	5352.4	23076.6	1.2D+1.6S+L	LRFD
Crushing (psi)	SDVV #4 35 (,	18668.6	212160.0	1.2D+1.6S+L	LRFD
Compression (ft²)	SDVV #4 33 13 (,	12.3	12.3	D	LRFD

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Point	1	-	0	-	Live	Z

Linked Load List

Type	Member	Support	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb/ft)	Beam #3	B	928.4749	-	0	-	Dead	Z
Point (lb/ft)	Beam #3	B	10970.9	-	0	-	Snow	Z

SpotFtg Bm #3-2 DIAGRAMS

