S T R U C T U R A L D E P A R T M E N T

SECREST-SARVER RESIDENCE

4131 SE GRANT ST| PORTLAND, OR

20-153029 RS REV 01

DESIGN REVISION CALCS

25 MAY 2021

PREPARED FOR:
INK BUILT ARCHITECTURE
PORTLAND, OR

EXP. 12/31/2021

SECREST-SARVER RESIDENCE

4131 SE GRANT ST| PORTLAND, OR

PROJECT DESCRIPTION:

NEW SINGLE FAMILY RESIDENCE OF LIGHT FRAMED CONSTRUCTION ON CONCRETE FOUNDATIONS

.

DESIGN CRITERIA

1) BUILDING CODE:
   A) 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC)
2) LOADS AND ALLOWABLES
   A) LIVE LOAD:
      I) RESIDENTIAL FLOORS ..... 40 PSF
      II) DECKS ..... 60 PSF
      III) ROOF ..... 25 PSF (SNOW)
   B) WIND:
      I) BASIC WIND SPEED (LRFD, 3-SEC. GUST) ..... 100 MPH
      II) EXPOSURE CATEGORY ..... B
3) FOUNDATION DESIGN CRITERIA (DESIGN PRESSURES PER 2012 IBC, U.O.N.)
   A) ALLOWABLE FOUNDATION BEARING: ..... 1500 PSF
   B) ACTIVE EARTH PRESSURE: ..... 35 PCF
   C) PASSIVE EARTH RESISTANCE: ..... 150 PSF/FT
   D) COEFFICIENT OF FRICTION (SLIDING): 0.25

MATERIAL PROPERTIES

1) WOOD
   A) GLUE LAMINATED BEAMS ..... COMB 24F-V4 (24F-V8 WHERE NOTED)
   B) FRAMING LUMBER ..... NO.2 D.FIR/LARCH
   C) ROOF SHEATHING……..... 1/2”, “C-D”, INDEX 42/20
   D) WALL SHEATHING ..... …7/16” C-D, (1/2”, “C-D”, STRUCT 1 WHERE NOTED) INDEX 32/16
   E) FLOOR SHEATHING…… ..... 3/4”. “C-D”, INDEX 48/24
2) CONCRETE:
   A) F’C:..... 2500 PSI

SECREST-SARVER RESIDENCE

4131 SE GRANT ST| PORTLAND, OR

GRAVITY FRAMING CALCULATIONS

STRUCTURAL DEPARTMENT LLC | ZAC BLODGET, PE. SE | 516 SHAMBO DR. WHITE SALMON, WA | 503 334 1870 | ZAC@STRUCTURALDEPT.COM

FORTE WEB

JOB SUMMARY REPORT

20020 - INKBUILT - SECREST SARVER REV02

ROOF			
Member Name	Results	Current Solution	Comments
RJ210	Passed	1 piece(s) 2 x 10 DF No.2 @ 24" OC	
DBL 2X10	Passed	2 piece(s) 2 x 10 DF No.2	
2X10 STRUCT FASCIA GRID 1	Passed	1 piece(s) 2 x 10 DF No.2	
H48 grid 1	Passed	1 piece(s) 4 x 8 DF No.2	
H24-2	Passed	2 piece(s) 2 x 4 DF No.2	
GLB48 DROPPED BM. BACK PORCH	Passed	1 piece(s) 3 1/2" x 7 1/2" 24F-V4 DF Glulam	
RJ28 PORCH RAFTER	Passed	1 piece(s) 2 x 8 DF No.2 @ 24" OC	
H68 HEADER GRID 2	Passed	1 piece(s) 6 x 8 DF No.2	
UPPER FLOOR			
Member Name	Results	Current Solution	Comments
B410LSL grid 2/3	Passed	1 piece(s) 3 1/2" x 9 1/2" 1.55E TimberStrand® LSL	
B410LSL BRIDGE BEAM	Passed	1 piece(s) 1 3/4" x 9 1/2" 1.55E TimberStrand® LSL	
B410LSL grid 1	Passed	1 piece(s) 3 1/2" x 9 1/2" 1.55E TimberStrand® LSL	

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC

ForteWEB v3.2

File Name: 20020 - INKBUILT - SECREST SARVER REV02

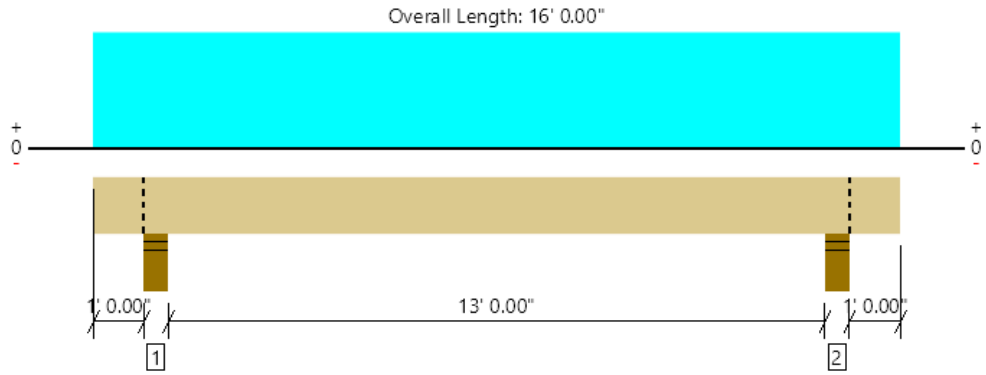
FORTE WEB

MEMBER REPORT

PASSED

ROOF, RJ210

1 piece(s) 2 x 10 DF No.2 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	721 @ 1' 3.00"	3825 (6.00")	Passed (19%)	--	1.0 D + 1.0 S (Adj Spans)
Shear (lbs)	517 @ 2' 3.25"	1915	Passed (27%)	1.15	1.0 D + 1.0 S (Adj Spans)
Moment (Ft-lbs)	2000 @ 8' 0.00"	2334	Passed (86%)	1.15	1.0 D + 1.0 S (Alt Spans)
Live Load Defl. (in)	0.231 @ 8' 0.00"	0.675	Passed (L/701)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.412 @ 8'	0.900	Passed (L/393)	--	1.0 D + 1.0 S (Alt Spans)

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Stud wall - SPF	6.00"	6.00"	1.50"	320	401	721	Blocking
2 - Stud wall - SPF	6.00"	6.00"	1.50"	320	401	721	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 8.00" o/c	
Bottom Edge (Lu)	16' 0.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 16' 0.00"	24"	20.0	25.0	25PSF SNOW

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

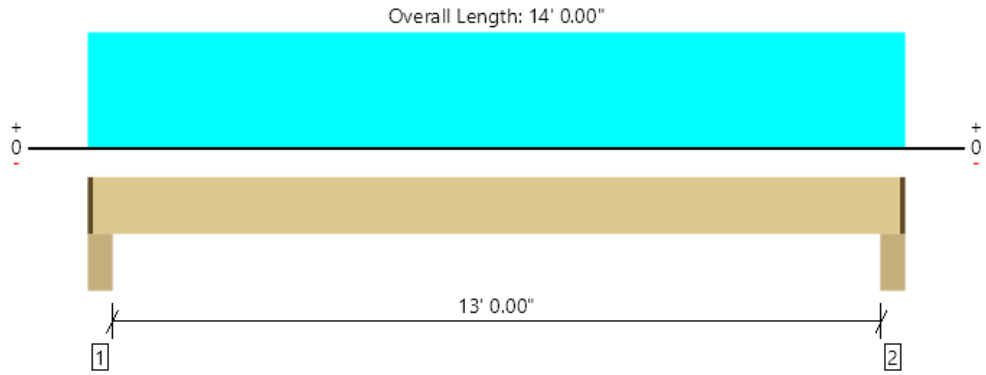
5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

FORTE WEB

MEMBER REPORT

PASSED

ROOF, DBL 2X10
2 piece(s) 2 x 10 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1152 @ 4.50"	8906 (4.75")	Passed (13%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	957 @ 1' 3.25"	3830	Passed (25%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	3666 @ 7' 0.00"	4059	Passed (90%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.219 @ 7'	0.663	Passed (L/726)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.366 @ 7' 0.00"	0.883	Passed (L/435)	--	1.0 D + 1.0 S (All Spans)

System : Roof
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Beam - DF	6.00"	4.75"	1.50"	468	700	1168	1 1/4" Rim Board
2 - Beam - DF	6.00"	4.75"	1.50"	468	700	1168	1 1/4" Rim Board

• Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	7' 8.00" o/c	
Bottom Edge (Lu)	13' 10.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	1.25" to 13' 10.75"	N/A	7.0	--	
1 - Uniform (PSF)	0 to 14' 0.00" (Front)	4' 0.00"	15.0	25.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

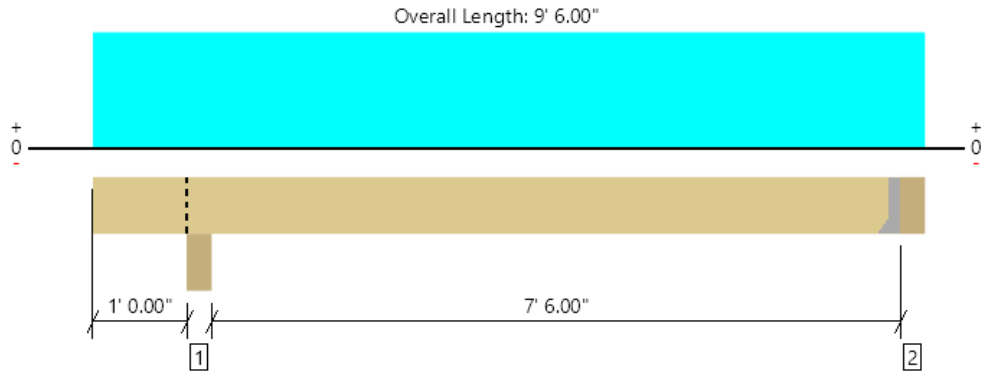
5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

FORTE WEB

MEMBER REPORT

PASSED

ROOF, 2X10 STRUCT FASCIA GRID 1
1 piece(s) 2 x 10 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	851 @ 9' 0.00"	1406 (1.50")	Passed (60%)	--	1.0 D + 1.0 S (Alt Spans)
Shear (lbs)	678 @ 8' 2.75"	1915	Passed (35%)	1.15	1.0 D + 1.0 S (Alt Spans)
Moment (Ft-lbs)	1618 @ 5' 2.34"	2029	Passed (80%)	1.15	1.0 D + 1.0 S (Alt Spans)
Live Load Defl. (in)	0.068 @ 5' 1.68"	0.387	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.110 @ 5' 1.76"	0.517	Passed (L/848)	--	1.0 D + 1.0 S (Alt Spans)

System : Roof
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Beam - DF	6.00"	6.00"	1.50"	449	719	1168	Blocking
2 - Hanger on 9 1/4" DF beam	6.00"	Hanger[1]	1.50"	366	595	961	See note [1]

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' 7.00" o/c	
Bottom Edge (Lu)	9' 0.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie						
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
2 - Face Mount Hanger	LUS28	1.75"	N/A	6-10dx1.5	3-10d	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9' 0.00"	N/A	3.5	--	
1 - Uniform (PSF)	0 to 9' 6.00" (Top)	5' 6.00"	15.0	25.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

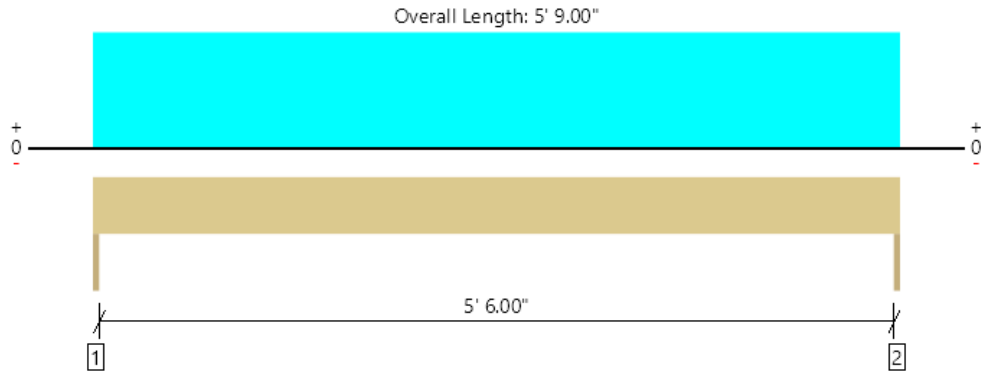
5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

FORTE WEB

MEMBER REPORT

PASSED

ROOF, H48 grid 1
1 piece(s) 4 x 8 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	536 @ 0	3281 (1.50")	Passed (16%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	400 @ 8.75"	3045	Passed (13%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	770 @ 2' 10.50"	2989	Passed (26%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.014 @ 2' 10.50"	0.192	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.026 @ 2' 10.50"	0.287	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Trimmer - DF	1.50"	1.50"	1.50"	248	288	536	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	248	288	536	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	5' 9.00" o/c	
Bottom Edge (Lu)	5' 9.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 5' 9.00"	N/A	6.4	--	
1 - Uniform (PSF)	0 to 5' 9.00"	4' 0.00"	20.0	25.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

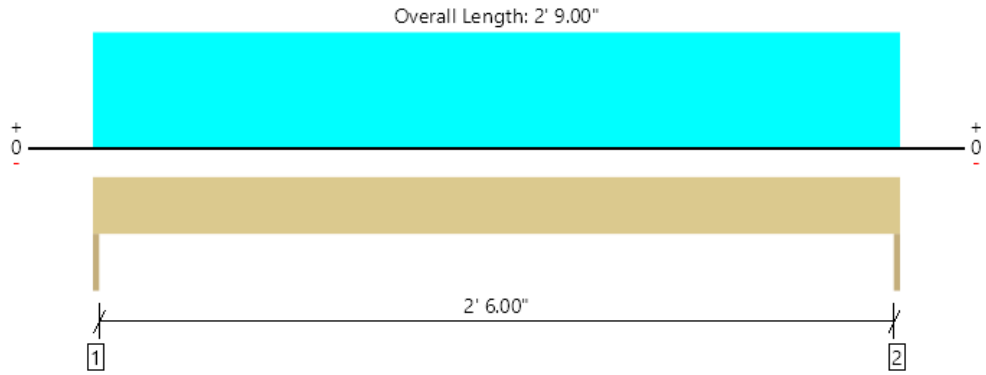
5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

FORTE WEB

MEMBER REPORT

PASSED

ROOF, H24-2
2 piece(s) 2 x 4 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	313 @ 0	2813 (1.50")	Passed (11%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	218 @ 5.00"	1260	Passed (17%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	215 @ 1' 4.50"	689	Passed (31%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.009 @ 1' 4.50"	0.092	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.017 @ 1' 4.50"	0.138	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Trimmer - DF	1.50"	1.50"	1.50"	141	172	313	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	141	172	313	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	2' 9.00" o/c	
Bottom Edge (Lu)	2' 9.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 2' 9.00"	N/A	2.7	--	
1 - Uniform (PSF)	0 to 2' 9.00"	5' 0.00"	20.0	25.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

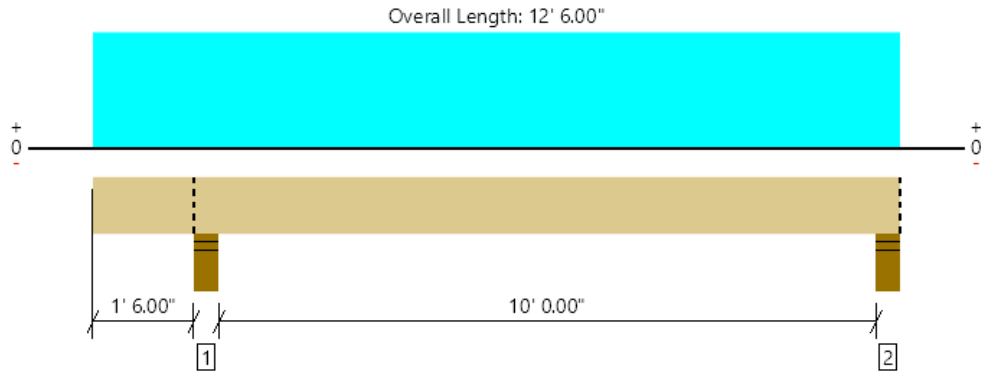
FORTE WEB

MEMBER REPORT

PASSED

ROOF, GLB48 DROPPED BM. BACK PORCH

1 piece(s) 3 1/2" x 7 1/2" 24F-V4 DF Glulam



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2808 @ 1' 9.00"	11865 (6.00")	Passed (24%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	1768 @ 2' 7.50"	5333	Passed (33%)	1.15	1.0 D + 1.0 S (All Spans)
Pos Moment (Ft-lbs)	5146 @ 7' 0.35"	7547	Passed (68%)	1.15	1.0 D + 1.0 S (Alt Spans)
Neg Moment (Ft-lbs)	-607 @ 1' 9.00"	5817	Passed (10%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.341 @ 6' 11.56"	0.519	Passed (L/365)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.447 @ 6' 11.64"	0.692	Passed (L/279)	--	1.0 D + 1.0 S (Alt Spans)

System : Roof
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Critical positive moment adjusted by a volume factor of 1.00 that was calculated using length L = 10' 2.30".
- Critical negative moment adjusted by a volume factor of 1.00 that was calculated using length L = 2' 0.54".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Stud wall - SYP	6.00"	6.00"	1.50"	683	2126	2809	Blocking
2 - Stud wall - DF	6.00"	6.00"	1.50"	522	1647	2169	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	12' 6.00" o/c	
Bottom Edge (Lu)	12' 6.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 12' 6.00"	N/A	6.4	--	
1 - Uniform (PSF)	0 to 12' 6.00" (Front)	6' 0.00"	15.0	50.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

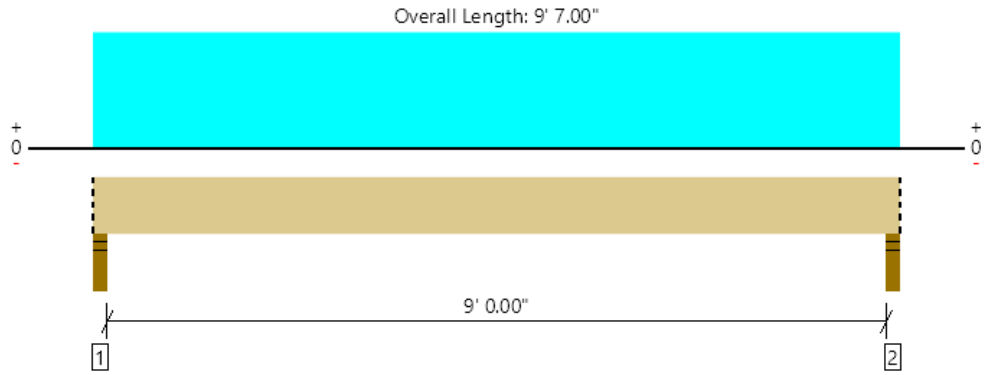
FORTE WEB

MEMBER REPORT

PASSED

ROOF, RJ28 PORCH RAFTER

1 piece(s) 2 x 8 DF No.2 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	527 @ 2.50"	2231 (3.50")	Passed (24%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	429 @ 10.75"	1501	Passed (29%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	1155 @ 4' 9.50"	1564	Passed (74%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.167 @ 4' 9.50"	0.458	Passed (L/660)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.229 @ 4' 9.50"	0.611	Passed (L/480)	--	1.0 D + 1.0 S (All Spans)

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Total	
1 - Stud wall - SPF	3.50"	3.50"	1.50"	144	383	527	Blocking
2 - Stud wall - SPF	3.50"	3.50"	1.50"	144	383	527	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	8' 1.00" o/c	
Bottom Edge (Lu)	9' 7.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 9' 7.00"	24"	15.0	40.0	25PSF SNOW

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

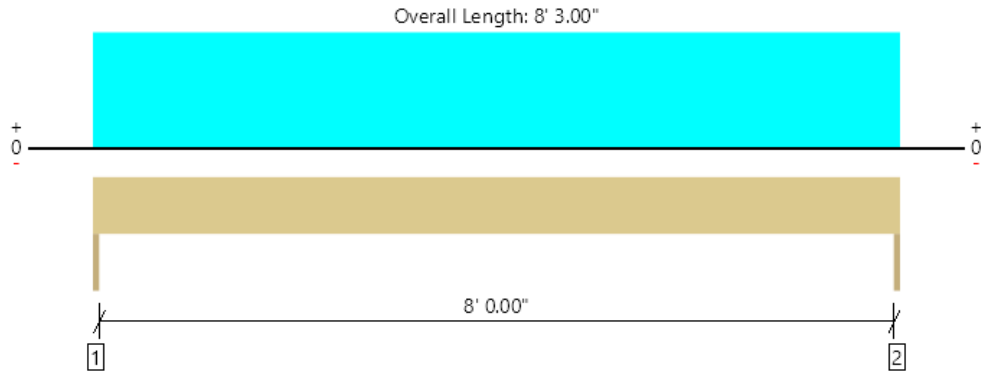
5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

FORTE WEB

MEMBER REPORT

PASSED

ROOF, H68 HEADER GRID 2
1 piece(s) 6 x 8 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1528 @ 0	5156 (1.50")	Passed (30%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1250 @ 9.00"	4675	Passed (27%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	3152 @ 4' 1.50"	3222	Passed (98%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.083 @ 4' 1.50"	0.275	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.154 @ 4' 1.50"	0.412	Passed (L/644)	--	1.0 D + 1.0 L (All Spans)

System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Trimmer - DF	1.50"	1.50"	1.50"	703	825	1528	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	703	825	1528	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	8' 3.00" o/c	
Bottom Edge (Lu)	8' 3.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 8' 3.00"	N/A	10.4	--	
1 - Uniform (PSF)	0 to 8' 3.00"	8' 0.00"	20.0	25.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

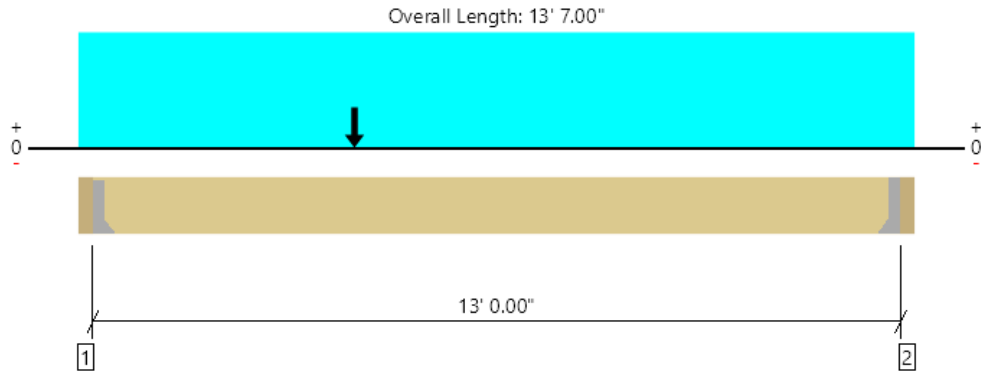
FORTE WEB

MEMBER REPORT

PASSED

UPPER FLOOR, B410LSL grid 2/3

1 piece(s) 3 1/2" x 9 1/2" 1.55E TimberStrand® LSL



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2163 @ 3.50"	4725 (1.50")	Passed (46%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1969 @ 1' 1.00"	6872	Passed (29%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	7104 @ 5' 8.01"	10422	Passed (68%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.429 @ 6' 7.70"	0.433	Passed (L/364)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.582 @ 6' 7.71"	0.650	Passed (L/268)	--	1.0 D + 1.0 L (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Hanger on 9 1/2" SPF beam	3.50"	Hanger[1]	1.50"	583	1648	2231	See note [1]
2 - Hanger on 9 1/2" SPF beam	3.50"	Hanger[1]	1.50"	506	1426	1932	See note [1]

- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	13' 0.00" o/c	
Bottom Edge (Lu)	13' 0.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie						
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	HHUS48	3.00"	N/A	22-10d	8-10d	
2 - Face Mount Hanger	HHUS48	3.00"	N/A	22-10d	8-10d	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	3.50" to 13' 3.50"	N/A	10.4	--	
1 - Uniform (PSF)	0 to 13' 7.00" (Front)	4' 6.00"	12.0	40.0	Default Load
2 - Point (lb)	4' 6.00" (Front)	N/A	220	629	Linked from: B410LSL BRIDGE BEAM, Support 1

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

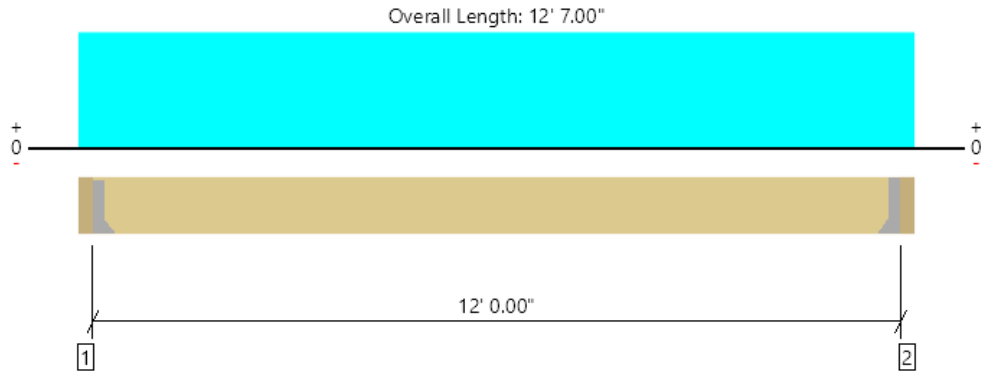
FORTE WEB

MEMBER REPORT

PASSED

UPPER FLOOR, B410LSL BRIDGE BEAM

1 piece(s) 1 3/4" x 9 1/2" 1.55E TimberStrand® LSL



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	811 @ 3.50"	2363 (1.50")	Passed (34%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	704 @ 1' 1.00"	3436	Passed (20%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2433 @ 6' 3.50"	5211	Passed (47%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.257 @ 6' 3.50"	0.300	Passed (L/561)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.347 @ 6' 3.50"	0.600	Passed (L/415)	--	1.0 D + 1.0 L (All Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Total	
1 - Hanger on 9 1/2" SPF beam	3.50"	Hanger[1]	1.50"	220	629	849	See note [1]
2 - Hanger on 9 1/2" SPF beam	3.50"	Hanger[1]	1.50"	220	629	849	See note [1]

- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	11' 11.00" o/c	
Bottom Edge (Lu)	12' 0.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie						
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	IUS1.81/9.5	2.00"	N/A	8-10d	2-10dx1.5	
2 - Face Mount Hanger	IUS1.81/9.5	2.00"	N/A	8-10d	2-10dx1.5	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	3.50" to 12' 3.50"	N/A	5.2	--	
1 - Uniform (PSF)	0 to 12' 7.00" (Front)	2' 6.00"	12.0	40.0	Default Load

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

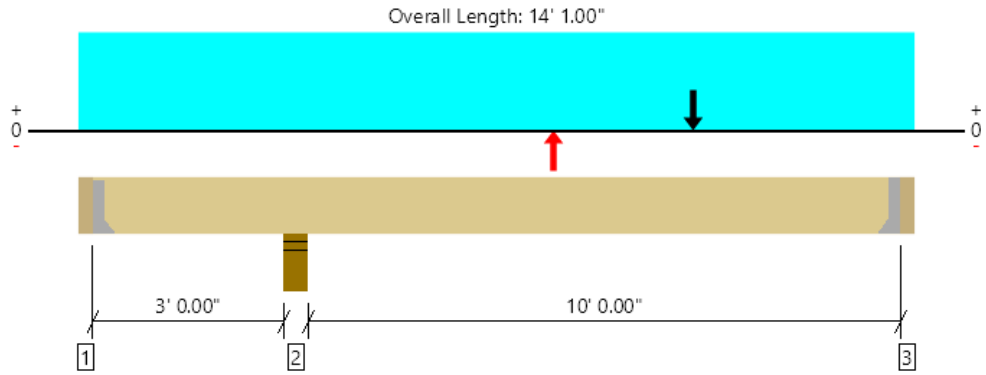
FORTE WEB

MEMBER REPORT

PASSED

UPPER FLOOR, B410LSL grid 1

1 piece(s) 3 1/2" x 9 1/2" 1.55E TimberStrand® LSL



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3237 @ 3' 6.50"	8925 (6.00")	Passed (36%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1508 @ 4' 7.00"	6872	Passed (22%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	-3050 @ 3' 6.50"	10422	Passed (29%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.091 @ 9' 2.12"	0.342	Passed (L/999+)	--	1.0 D + 1.0 L (Alt Spans)
Total Load Defl. (in)	0.121 @ 9' 2.20"	0.512	Passed (L/999+)	--	1.0 D + 1.0 L (Alt Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -709 lbs uplift at support located at 3.50". Strapping or other restraint may be required.

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Wind	Total	
1 - Hanger on 9 1/2" SPF beam	3.50"	Hanger[1]	1.50"	-98	400/-611	205	605/-709	See note [1]
2 - Stud wall - SPF	6.00"	6.00"	2.18"	834	2402	-726	3236/-726	None
3 - Hanger on 9 1/2" SPF beam	3.50"	Hanger[1]	1.50"	334	978	520	1832	See note [1]

- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	13' 6.00" o/c	
Bottom Edge (Lu)	13' 6.00" o/c	

•Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie						
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	LUS48	2.00"	N/A	6-16d	4-16d	
3 - Face Mount Hanger	LUS410	2.00"	N/A	8-10d	6-10d	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Wind (1.60)	Comments
0 - Self Weight (PLF)	3.50" to 13' 9.50"	N/A	10.4	--	--	
1 - Uniform (PSF)	0 to 14' 1.00" (Front)	5' 6.00"	12.0	40.0	-	Default Load
2 - Point (lb)	8' 0.00" (Front)	N/A	-	-	-2000	HOLDOWN STRAP
3 - Point (lb)	10' 4.01" (Front)	N/A	-	-	2000	HOLDOWN STRAP

ForteWEB Software Operator	Job Notes
Zachary Blodget Structural Dept LLC (503) 334-1870 zac@structuraldept.com	

Weyerhaeuser

5/25/2021 9:46:04 PM UTC
ForteWEB v3.2, Engine: V8.2.0.17, Data: V8.1.0.16
File Name: 20020 - INKBUILT - SECREST SARVER REV02

Weyerhaeuser Notes

Weyerhaeuser warrants that the sizing of its products will be in accordance with Weyerhaeuser product design criteria and published design values. Weyerhaeuser expressly disclaims any other warranties related to the software. Use of this software is not intended to circumvent the need for a design professional as determined by the authority having jurisdiction. The designer of record, builder or framer is responsible to assure that this calculation is compatible with the overall project. Accessories (Rim Board, Blocking Panels and Squash Blocks) are not designed by this software. Products manufactured at Weyerhaeuser facilities are third-party certified to sustainable forestry standards. Weyerhaeuser Engineered Lumber Products have been evaluated by ICC-ES under evaluation reports ESR-1153 and ESR-1387 and/or tested in accordance with applicable ASTM standards. For current code evaluation reports, Weyerhaeuser product literature and installation details refer to www.weyerhaeuser.com/woodproducts/document-library.

The product application, input design loads, dimensions and support information have been provided by ZJB

	COMPANY	PROJECT
WoodWorks® SOFTWARE FOR WOOD DESIGN	May 25, 2021 14:49:24	4 2X8 COL 20FT.wwc

Design Check Calculation Sheet

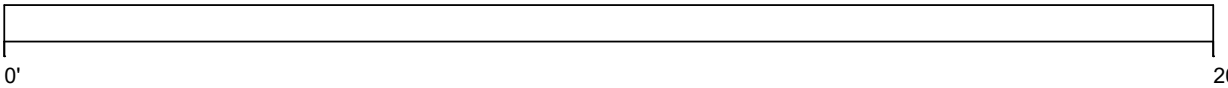
Sizer 2004

LOADS: (lbs, psf, or plf)

Load	Type	Distribution	Magnitude Start	Magnitude End	Location [ft] Start	Location [ft] End	Pattern Load?
W	Wind	Full Area	20.00 (5.00)*				No

*Tributary Width (ft)

MAXIMUM REACTIONS (lbs):



Dead			
Live	1000		1000
Total	1000		1000

Lumber n-ply, D.Fir-L, No.2, 2x8", 4-Plys

Self Weight of 10.33 plf automatically included in loads;

Pinned base; Loadface = width(b); Built-up fastener: nails; Ke x Lb: 1.00 x 0.00= 0.00 [ft]; Ke x Ld: 1.00 x 20.00= 20.00 [ft]; Lateral support: top = Lb, bottom = Lb; Load combinations: ICC-IBC;

WARNING: Member length exceeds typical stock length of 18.0 [ft]

SECTION vs. DESIGN CODE NDS-2001: (stress=psi, and in)

Criterion	Analysis Value	Design Value	Analysis/Design
Shear	fv = 34	Fv' = 288	fv/Fv' = 0.12
Bending(+)	fb = 1141	Fb' = 1728	fb/Fb' = 0.66
Axial	fc = 5	Fc' = 402	fc/Fc' = 0.01
Axial Bearing	fc = 5	Fc* = 1276	fc/Fc* = 0.00
Combined (axial compression + side load bending)			Eq.3.9-3 = 0.67
Live Defl'n	1.18 = L/203	1.33 = L/180	0.89
Total Defl'n	1.18 = L/203	1.33 = L/180	0.89

ADDITIONAL DATA:

FACTORS: F	CD	CM	Ct	CL/CP	CF	Cfu	Cr	Cfrt	Ci	LC#
Fb'+ 900	1.60	1.00	1.00	1.000	1.200	1.00	1.00	1.00	1.00	2
Fv' 180	1.60	1.00	1.00	-	-	-	-	1.00	1.00	2
Fcp' 625	-	1.00	1.00	-	-	-	-	1.00	1.00	-
Fc' 1350	0.90	1.00	1.00	0.315	1.050	-	-	1.00	1.00	1
Fc'comb 1350	1.60	-	-	0.185	-	-	-	-	-	2
E' 1.6 million		1.00	1.00	-	-	-	-	1.00	1.00	2
Fc* 1350	0.90	1.00	1.00	-	1.050	-	-	1.00	1.00	1

Bending(+): LC# 2 = .6D+W, M = 5000 lbs-ft
Shear : LC# 2 = .6D+W, V = 1000, V design = 1000 lbs
Deflection: LC# 2 = .6D+W EI= 76.21e06 lb-in2/ply
Total Deflection = 1.50(Dead Load Deflection) + Live Load Deflection.
Axial : LC# 1 = D only, P = 207 lbs Kf = 1.00
Combined : LC# 2 = .6D+W; (1 - fc/FcE) = 0.99
(D=dead L=live S=snow W=wind I=impact C=construction CLd=concentrated)
(All LC's are listed in the Analysis output)

DESIGN NOTES:

1. Please verify that the default deflection limits are appropriate for your application.
2. BUILT-UP COLUMNS: nailed or bolted built-up columns shall conform to the provisions of NDS Clause 15.3.
3. SCL - Columns (Structural Composite Lumber): the attached SCL selection is for preliminary design only. For final member design contact your local SCL manufacturer.

STRUCTURALDEPARTMENT

SECREST-SARVER RESIDENCE

4131 SE GRANT ST| PORTLAND, OR

LATERAL CALCULATIONS

WALL DESIGNS - WIND				SECREST SARVER SHEAR WALL DESINGS																					
Pwind	9	WALLS			Pwind (psf)	5	ROOFS														DL's based on shortest(lightest) pier on grid lin				
GRID	STORY	Atrib walls	Atrib roof	PLATE HT	Vtotal (lbs)	Length of Wall Piers (ft.)									Vpiers (plf)	SW Design	Mo (ft-k)	T/C (k)	.6dl Wall Pier (k) 12psf	rf/flr trib (ft)	.6dl rf./flr 12 psf(k)	sum DL	Sum Mo (ft-k)	SUM T/C (k)	Holdown
						1	2	3	4	5	6	7	8	SUM											
A	R	125	0	10	1125	12.0	12.0	--	--	--	--	--	--	24	47	SW6	11.3	0.5	0.9	8.5	1.5	2.4	11.3	-1.9	NOT REQ'D
	2	150	1	8	2480	8.0	--	--	--	--	--	--	--	8	310	SW4	19.8	2.5	0.5	2.0	0.2	3.1	31.1	0.8	DTT2Z
B	R	125	1	10	1130	39.0	--	--	--	--	--	--	--	39	29	SW6	11.3	0.3	2.8	8.5	5.0	7.8	11.3	-7.5	NOT REQ'D
	2	150	1	8	2485	28.0	9.0	--	--	--	--	--	--	37	67	SW6	19.9	0.5	0.6	2.0	0.2	8.6	31.2	-7.7	NOT REQ'D
1	R	75	0	7	675	2.3	2.3	--	--	--	--	--	--	4.63	146	SW6	4.7	1.0	0.1	2.0	0.1	0.2	4.7	0.8	MSTC28
	2	60	0	8	1215	2.0	--	--	--	--	--	--	--	2	608	SWSB	9.7	4.9	0.1	2.0	0.0	0.3	14.4	6.9	SWSB
2	R	0	0	9	0	0.0	--	--	--	--	--	--	--	0	0	SW6	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	NOT REQ'D
	2	96	0	8	864	2.7	--	--	--	--	--	--	--	2.67	324	SW4	6.9	2.6	0.2	2.0	0.1	0.2	6.9	2.4	HDU2
2.5	R	0	0	9	0	0.0	--	--	--	--	--	--	--	0	0	SW6	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	NOT REQ'D
	2	94	0	9	846	5.5	--	--	--	--	--	--	--	5.5	154	SW6	7.6	1.4	0.4	2.0	0.1	0.5	7.6	0.9	DTT2Z
3	R	94	0	9	846	3.5	--	--	--	--	--	--	--	3.5	242	SW4	7.6	2.2	0.2	2.0	0.1	0.3	7.6	1.9	MSTC40
	2	90	0	9	1656	2.5	2.3	--	--	--	--	--	--	4.83	343	SW4	14.9	3.1	0.2	2.0	0.1	0.5	14.9	2.6	HDU2
4	R	30	0	9	270	4.0	--	--	--	--	--	--	--	4	68	SW6	2.4	0.6	0.3	2.0	0.1	0.4	2.4	0.3	MSTC28
	2	90	0	9	1080	1.0	--	--	--	--	--	--	--	1	1080	SWSB	9.7	9.7	0.1	2.0	0.0	0.4	12.2	11.7	SWSB

WALL DESIGNS - SEISMIC																									
Vroof=	2310	lbs	V2=		1400	lbs															DL's based on shortest(lightest) pier on grid lin				
GRID	STORY	Trib width	Bldg. Width	PLATE HT	Vtotal (lbs)	Length of Wall Piers (ft.)									Vpiers (plf)	SW Design	Mo (ft-k)	T/C (k)	.6dl Wall Pier (k) 12psf	rf/flr trib (ft)	.6dl rf./flr 12 psf(k)	sum DL	Sum Mo (ft-k)	SUM T/C (k)	Holdown
						1	2	3	4	5	6	7	8	SUM											
A	R	9	18	10	1155	12.0	12.0	--	--	--	--	--	--	24.0	48	SW6	11.6	0.5	0.9	8.5	1.5	2.4	11.6	-1.9	NOT REQ'D
	2	9	18	8	1855	8.0	--	--	--	--	--	--	--	8.0	232	SW6	14.8	1.9	0.5	2.0	0.2	3.1	26.4	0.2	DTT2Z
B	R	9	18	10	1155	39.0	--	--	--	--	--	--	--	39.0	30	SW6	11.6	0.3	2.8	8.5	5.0	7.8	11.6	-7.5	NOT REQ'D
	2	9	18	8	1855	28.0	9.0	--	--	--	--	--	--	37.0	50	SW6	14.8	0.4	0.6	2.0	0.2	8.6	26.4	-7.9	NOT REQ'D
1	R	15	44	7	788	2.3	2.3	--	--	--	--	--	--	4.6	170	SW6	5.5	1.2	0.1	2.0	0.1	0.2	5.5	1.0	MSTC28
	2	6	44	8	978	2.0	--	--	--	--	--	--	--	2.0	489	SWSB	7.8	3.9	0.1	2.0	0.0	0.3	13.3	6.3	SWSB
2	R	0	44	9	0	0.0	--	--	--	--	--	--	--	0.0	0	SW6	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	NOT REQ'D
	2	10	44	8	318	2.7	--	--	--	--	--	--	--	2.7	119	SW6	2.5	1.0	0.2	2.0	0.1	0.2	2.5	0.7	DTT2Z
2.5	R	0	44	9	0	0.0	--	--	--	--	--	--	--	0.0	0	SW6	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	NOT REQ'D
	2	14	44	9	445	5.5	--	--	--	--	--	--	--	5.5	81	SW6	4.0	0.7	0.4	2.0	0.1	0.5	4.0	0.2	DTT2Z
3	R	19	44	9	998	3.5	--	--	--	--	--	--	--	3.5	285	SW4	9.0	2.6	0.2	2.0	0.1	0.3	9.0	2.3	MSTC40
	2	9	44	9	1284	2.5	2.3	--	--	--	--	--	--	4.8	266	SW4	11.6	2.4	0.2	2.0	0.1	0.5	11.6	1.9	DTT2Z
4	R	7	44	9	368	4.0	--	--	--	--	--	--	--	4.0	92	SW6	3.3	0.8	0.3	2.0	0.1	0.4	3.3	0.5	MSTC28
	2	7	44	9	590	1.0	--	--	--	--	--	--	--	1.0	590	SWSB	5.3	5.3	0.1	2.0	0.0	0.4	8.6	8.2	SWSB

STRUCTURAL DEPARTMENT LLC | ZAC BLODGET, PE. SE | 516 SHAMBO DR. WHITE SALMON, WA | 503 334 1870 | ZAC@STRUCTURALDEPT.COM