

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0013197
Insp Area: 2

Site Address: 7135 LYNHOLLEN WY SAC
Parcel No: 031-0240-058

Sub-Type: RES
Housing (Y/N): N

CONTRACTOR
ZIMMERMAN ROOFING, INC
3675 R STREET
SACRAMENTO, CA 95816

OWNER
SONG JASON YINUO/JENNY SH
7135 LYNHOLLEN WY
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: REROOF T/O 33SQ INSTALL LIGHT WEIGHT TILE

CONSTRUCTION LENDING AGENCY: I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender's Address _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class C39 License Number 557559 Date 11-3-00 Contractor Signature [Signature]

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code: any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00).

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. _____ B & PC for this reason: _____
Date _____ Owner Signature _____

PAID
CITY OF SACRAMENTO
NOV 03 2000

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 11-3-00 Applicant/Agent Signature [Signature]

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier PENNSYLVANIA GENERAL INSU. CO. Policy Number 713-00-2021 Exp Date 10/01/2001

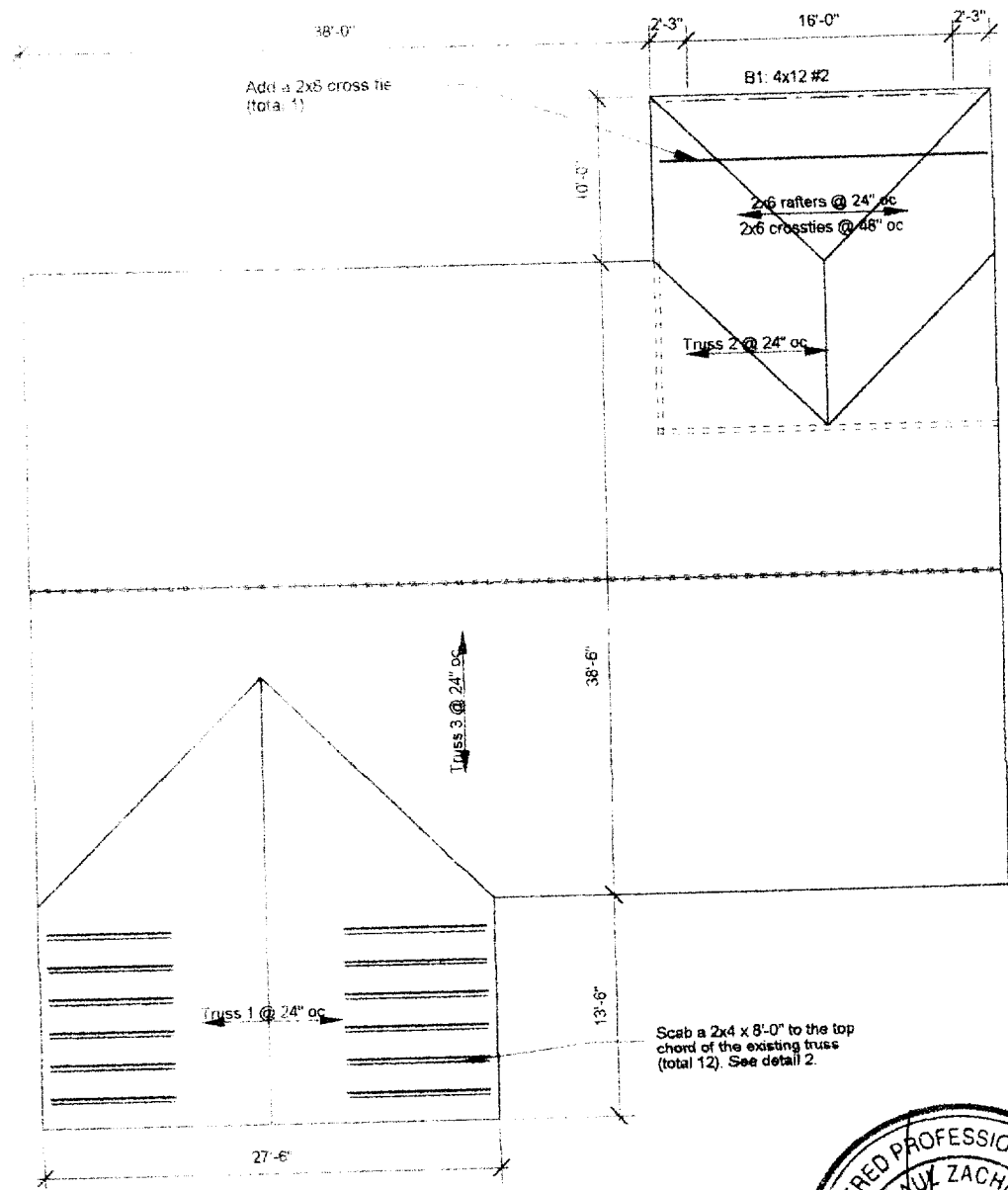
(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 11-3-00 Applicant Signature [Signature]

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

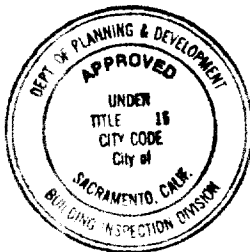
7135 LYN HOLLEN WAY



ISSUED

NOV 03 2010

Sacramento Building Division



This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division.

The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

REVIEWED BY: *Paul Zacher* 11/11/10



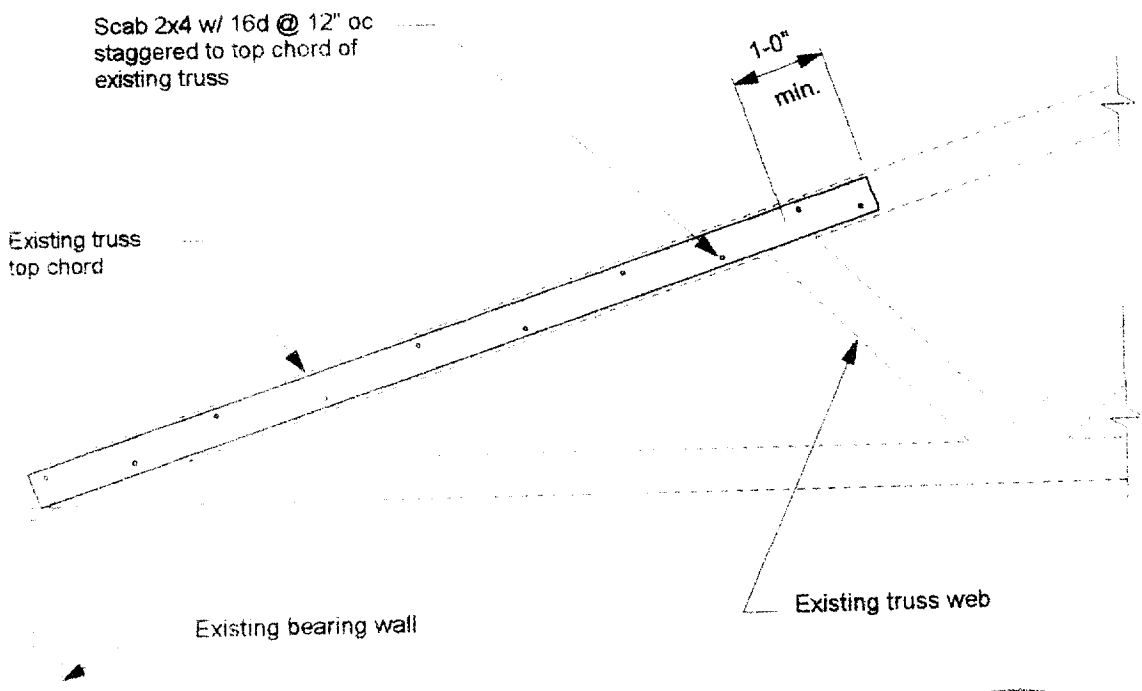
Notes

- 1 This is a reroof project. The new roofing material shall be a Light weight Concrete Tile. The tile shall weigh less than or equal to 7.0 psf.
- 2 All structural wood members that were observed appear to be in sound condition and without structural defect.



ROOF PLAN - SONG

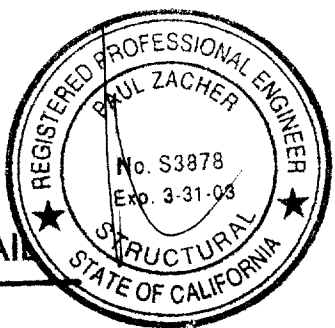
Not to Scale



2

TRUSS REINFORCEMENT DETAIL

scale: 1/2" = 1'-0"



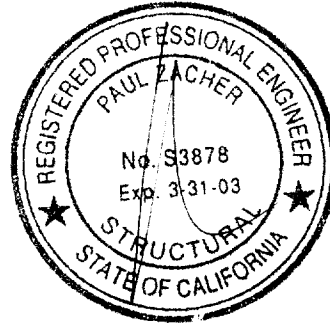
Song

Paul Zacher - Structural Engineers
4701 Lakeside Way
Fair Oaks, CA 95628

TEL: 916.961.3960
FAX: 916.961.6552

October 20, 2000

Zimmerman Roofing
3675 R Street
Sacramento, CA 95816
TEL: (916) 454-3667
FAX: (916) 392-6853



Attn: Mr. Jeff Tucker,

re: Job 2000_357, SONG

Subject: Structural Investigation Report of the Roof for the Residence located at 7135 Lynhollen,
Sacramento, CA 95831.

As requested by Mr. Jeff Tucker, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site October 20, 2000. The investigation was made to determine the existing condition of the structure. All information, data and analysis contained within this report are based on the 1997 Uniform Building Code.

The following is based on visual observations with no subsurface investigation being made.

DESCRIPTION:

Type of Facility:	Residence
Year Built:	Estimated 1970's vintage.
Occupancy:	Residential
No. of Stories:	One.
Dimensions:	Approximately 2000 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

Roof:

The roof covering will consist of a Light Weight Concrete Tile over 1/2" solid sheathing. The living area is framed with pre-engineered wood trusses spaced at 24" on center. The garage area is framed with 2x6 rafters spaced at 24" on center and with pre-engineered wood trusses spaced at 24" on center.

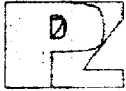
CONCLUSIONS:

Roof:

The living and garage areas lack sufficient structural capacity for the applied live and dead loads.

1/20

Song



Paul Zacher - Structural Engineers
 4701 Lakeside Way
 Fair Oaks, CA 95628

TEL: 916.961.3960
 FAX: 916.961.6552

RECOMMENDATIONS:

If any of the following recommendations do not correspond to actual field conditions, the engineer of record shall be notified for further investigation and evaluation before continuing work.

Living Area:

1. Scab a 2x4 DF#2 x 8'-0" long rafter to the top chord of the existing truss. See details 1 and 2.

Garage:

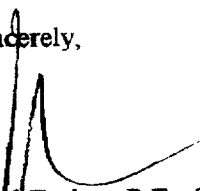
2. Add a 2x8 cross tie as required so that the maximum spacing does not exceed 4'-0" on center. Nail the cross ties to the existing rafters with 4 -16d's at each connection. See detail 1.

It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and are not an indication of a structural hazard or failure.

It shall be noted that some deflection of the rafters may be evident after installation of the tile. The existing roof framing has deflected but this may not be readily evident due to the uneven nature of the existing roofing material. Concrete tile is a very consistent and uniform product and when installed in an even plane, even small deflections can become apparent. This is only a cosmetic issue and not a structural concern.

The inspection consisted of visual observation only, made solely to determine the structural capacity of the existing roof. Analysis does not determine any effects on the overall structure under lateral forces or effects on the foundation unless specifically noted in the calculations and in this document. No warranties, expressed or implied, are made or intended in conjunction with this report. The inspection was made only to the portions that were accessible. The specific items noted were those that were observable and there may be defects that are not observable, or are hidden by architectural and structural materials.

If you have any questions on the above, do not hesitate to call.

Sincerely,

 Paul Zacher, P.E., S.E.
 file

DESIGN LOADING:

Roof Pitch	4	in 12
Pitch Adjustment Factor	1.05	

LOCATION: ROOF

<u>MATERIAL</u>		<u>WEIGHT</u>
Light Weight Tile	7.00	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
1/2" OSB/ plywood	1.50	psf
2x6 rafters @ 24" oc	1.00	psf
	Load	10.9 psf
	Roof Pitch Adjustment	0.59 psf
	Total Load	11.5 psf

LOCATION: TOP CHORD

<u>MATERIAL</u>		<u>WEIGHT</u>
Light Weight Tile	7.00	psf
Roofing felt	0.30	psf
1/2" OSB/ plywood	1.50	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	0.64	psf
	Load	10.5 psf
	Roof Pitch Adjustment	0.57 psf
	Total Load	11.1 psf

LOCATION: BOTTOM CHORD

<u>MATERIAL</u>		<u>WEIGHT</u>
Batt/blown insul	0.50	psf
2x4 truss @ 24" oc	1.28	psf
1/2" Gypboard	2.50	psf
	Load	4.3 psf

Paul Zacher - Structural Engineers
 4701 Lakeside Way
 Fair Oaks
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :

Job #
 Date: 11:18AM, 11 OCT 00

Scope :

Timber Beam & Joist

c:\enercalc\test.ecw\Calculations

Description RAFTERS AND BEAMS

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Member Information

	rafter	B1
Timber Section	2x6	4x12
Beam Width	in: 1.500	3.500
Beam Depth	in: 5.500	11.250
Lc Unbraced Length	ft: 0.00	0.00
Timber Grade	Douglas Fir - Larch	Douglas Fir - Larch
Fb - Basic Allow	psi: 875.0	875.0
Fv - Basic Allow	psi: 95.0	95.0
Elastic Modulus	ksi: 1,600.0	1,600.0
Load Duration Factor	1.250	1.250
Member Type	Sawn	Sawn
Repetitive Status	Repetitive	No

Center Span Data

	ft	12.00	16.00
Span	ft	12.00	16.00
Dead Load	#/ft	23.00	81.00
Live Load	#/ft	32.00	112.00

Results

Ratio = 0.9607 0.8344

Mmax @ Center	in-k	11.88	74.11
@ X =	ft	6.00	3.00
Fb Actual	psi	1,570.9	1,003.8
Fb Allowable	psi	1,635.2	1,203.1
		Bending OK	Bending OK
Fv Actual	psi	55.7	52.2
Fv Allowable	psi	118.8	118.8
		Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	138.00	648.00
	LL	lbs	192.00	896.00
	Max. DL+LL	lbs	330.00	1,544.00
@ Right End	DL	lbs	138.00	648.00
	LL	lbs	192.00	896.00
	Max. DL+LL	lbs	330.00	1,544.00

Deflections

Ratio OK Deflection OK

Center DL Defl	in	-0.322	-0.180
L/Defl Ratio		446.5	1,066.1
Center LL Defl	in	-0.449	-0.249
L/Defl Ratio		320.9	772.5
Center Total Defl	in	-0.771	-0.428
Location	ft	6.000	8.000
L/Defl Ratio		186.7	448.3

P K Zacher S E

4701 Lakeside Way
Fair Oaks, CA 95628
TEL: (916) 961-3960
FAX: (916) 961-6552

Job #

Date

~~2x 12~~
2x 12 #2

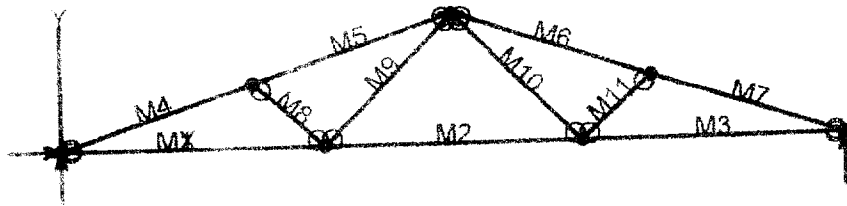
2-12 #2

12/12
12°

2x 12 #2

4-12 #2

8-12
16°



VisualAnalysis 3.50.c Report

Project: Truss 1
 Path: C:\Program Files\JES\VA35\Truss 1\Truss 1.dwg
 Company: PK Associates Engineers
 Designer: Paul Zacher
 Units: Feet, Pounds, Degrees, Fahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
1	0.00	0.00	Yes	Yes	No			
2	9.75	0.00	No					
3	19.50	0.00						
4	27.50	0.00		Yes				
5	36.75	0.25			Yes			
6	40.75	0.25						
7	43.75	0.58						

Member Elements

Member	Section	Material	Length ft
1	SS2x4	Wood	9.75
2	"	"	9.75
3	"	"	9.75
4	"	"	7.50
5	"	"	7.50
6	"	"	7.50
7	"	"	7.50
8	"	"	7.50
9	"	"	7.50
10	"	"	7.50
11	"	"	7.50
12	"	"	7.50
13	"	"	7.50
14	"	"	7.50
15	"	"	7.50
16	"	"	7.50
17	"	"	7.50
18	"	"	7.50
19	"	"	7.50
20	"	"	7.50
21	"	"	7.50
22	"	"	7.50
23	"	"	7.50
24	"	"	7.50
25	"	"	7.50
26	"	"	7.50
27	"	"	7.50
28	"	"	7.50
29	"	"	7.50
30	"	"	7.50
31	"	"	7.50
32	"	"	7.50
33	"	"	7.50
34	"	"	7.50
35	"	"	7.50
36	"	"	7.50
37	"	"	7.50
38	"	"	7.50
39	"	"	7.50
40	"	"	7.50
41	"	"	7.50
42	"	"	7.50
43	"	"	7.50
44	"	"	7.50
45	"	"	7.50
46	"	"	7.50
47	"	"	7.50
48	"	"	7.50
49	"	"	7.50
50	"	"	7.50
51	"	"	7.50
52	"	"	7.50
53	"	"	7.50
54	"	"	7.50
55	"	"	7.50
56	"	"	7.50
57	"	"	7.50
58	"	"	7.50
59	"	"	7.50
60	"	"	7.50
61	"	"	7.50
62	"	"	7.50
63	"	"	7.50
64	"	"	7.50
65	"	"	7.50
66	"	"	7.50
67	"	"	7.50
68	"	"	7.50
69	"	"	7.50
70	"	"	7.50
71	"	"	7.50
72	"	"	7.50
73	"	"	7.50
74	"	"	7.50
75	"	"	7.50
76	"	"	7.50
77	"	"	7.50
78	"	"	7.50
79	"	"	7.50
80	"	"	7.50
81	"	"	7.50
82	"	"	7.50
83	"	"	7.50
84	"	"	7.50
85	"	"	7.50
86	"	"	7.50
87	"	"	7.50
88	"	"	7.50
89	"	"	7.50
90	"	"	7.50
91	"	"	7.50
92	"	"	7.50
93	"	"	7.50
94	"	"	7.50
95	"	"	7.50
96	"	"	7.50
97	"	"	7.50
98	"	"	7.50
99	"	"	7.50
100	"	"	7.50

Section Properties

Category	Section	Ax in ²	Ix in ⁴	Sy+ in ³	Sy- in ³
WOOD	SS2x4	3.25	5.00	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
WOOD	1700000.00	1700000.00	0.30	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combination: 1D+1L+1Lr
 Contributing Cases & Source
 Service Case 1 (Dead loads)
 Service Case 2 (Roof Live loads)

Member Uniform Loads

Printed on 11/11/11. Check the status of state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
1	Equation Case 1	0.00	903.76	-NA-
2		-NA	903.76	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
1	2167.49	45.65	54.31	-0.1326
1	2167.49	-19.14	45.314	-0.1356
1	2167.49	13814	63.4349	-0.1488
1	2167.49	31.8981	0.0000	0.0000
2	1349.43	38.70	-54.31	-0.1326
2	1349.43	-13.90	22.8453	0.1409
2	1349.43	11.9000	22.8453	0.1409
2	1349.43	39.7000	-54.31	-0.1326
2	2167.49	-33.90	0.0000	-0.0000
2	2167.49	13814	63.4349	0.1689
2	2167.49	19.1352	45.3145	-0.1356
2	2167.49	45.6519	-54.31	-0.1326
2	-2331.33	139.80	0.0000	-0.0000
2	-2290.68	17.8501	186.23	-0.2092
2	-2250.01	-104.10	83.5473	-0.2233
2	-2209.38	226.05	-306.84	-0.1948
2	-1950.18	231.29	-306.84	-0.2170
2	-1908.09	-104.82	105.67	-0.3312
2	-1865.99	-21.64	207.95	-0.3751
2	-1823.90	-148.11	0.0000	-0.2324
2	-1950.18	-231.29	-306.84	-0.2349
2	-1908.09	-104.82	105.67	-0.3312
2	-1865.99	21.642	207.95	-0.3751
2	-1823.90	148.11	0.0000	-0.23102
2	-2331.33	-139.80	0.0000	0.0222
2	-2290.68	-17.85	186.23	0.1871
2	-2250.01	104.10	83.5473	-0.2233
2	-2209.38	226.05	-306.84	-0.1948
3	524.91	0.0000	0.0000	-0.1549
3	-524.91	0.0000	0.0000	-0.1453
3	-524.91	0.0000	0.0000	-0.1356
3	-524.91	0.0000	0.0000	-0.1260
3	610.53	0.0000	0.0000	-0.1885
3	610.53	0.0000	0.0000	-0.1864
3	610.53	0.0000	0.0000	-0.1844
3	610.53	0.0000	0.0000	-0.1823
3	610.53	0.0000	0.0000	-0.1804
3	610.53	0.0000	0.0000	-0.1785
3	610.53	0.0000	0.0000	-0.1764
3	610.53	0.0000	0.0000	-0.1743
3	610.53	0.0000	0.0000	-0.1722
3	-524.91	0.0000	0.0000	-0.2019
3	-524.91	0.0000	0.0000	-0.1922
3	-524.91	0.0000	0.0000	-0.1825
3	-524.91	0.0000	0.0000	-0.1730

BENDING & COMP: TRUSS 1 - MEMBER 4

Design based on 1997 CBC 2321 Division V and ANSI/TPI 1-1995

Grading

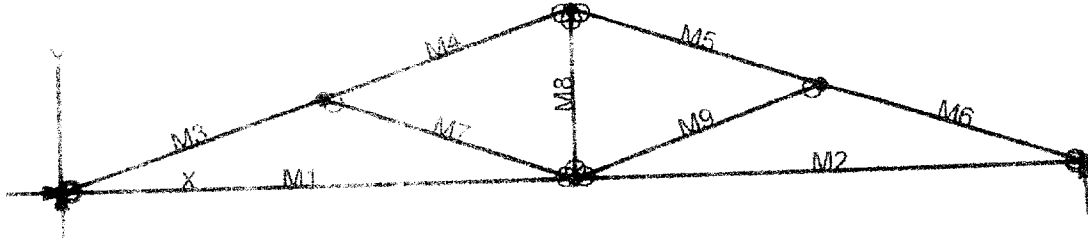
2x or 4x

Doug-fir larch No. 2

Assumptions

Solid sheathing on top chord of truss. Therefore continuous lateral support is provided along compression face
Maximum center-center spacing = 24"

Width, b	5 inches
Depth, d	3.5 inches
Length	7.12 feet
Max Axial Comp. C	2209 lbs
Max Reaction, R	226 lbs
Max Moment, M	306 ft-lbs
Max LL Deflection	0.09 inches
Max TL Deflection	0.21 inches
LL Defl Criteria = L _v	240
TL Defl Criteria = L _t	180
Duration factor, C _d	1.25
Repetitive Factor, C _r	1.15
Size Factor, C _f bending	1.5 1.5 for 2x4, 1.3 for 2x6
Size Factor, C _f comp	1.15 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, C _T	1.20
F _c	210 psi
F _{ce}	1025 psi
F _{c*}	2084 psi
F _{ce}	890 psi
F _b	600 psi
F _b *=F _b *	2136 psi
Shear D/C ratio	0.27 < 1.0, Member OK
Interaction equation, (F _c /F _c) ² +	
(F _b /(F _b (1-F _c /F _{ce}))) ²	0.41 < 1.0, Member OK
Live Load defl ratio	0.25 < 1.0, Member OK
Total Load defl ratio	0.44 < 1.0, Member OK



VisualAnalysis 3.50.c Report

11/17/00 11:30
Project: Truss 2
File: C:\Program Files\IES\VA35\truss\truss2.vbp
Company: TK Associates Engineers
Engineer: Paul Secher
Default Units: Feet, Pounds, Degrees, Fahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Y Fix	DX Fix	DY Fix	RZ
1	0.00	1.00	Yes	Yes	No	
2	10.75	0.00	No	No	No	
3	20.50	0.00	No	No	No	
4	5.25	1.75	No	No	No	
5	15.75	1.75	No	No	No	
6	10.75	1.42	No	No	No	

Member Elements

Member	Section	Material	Length ft
M	SS2x4	Wood	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75
M	"	"	10.75

Section Properties

Category	Section	Ax in ²	Ix in ⁴	Sy+ in ³	Sy- in ³
Wood Sha	SS2x4	5.25	9.14	1.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
WOOD	NA	1700000.00	0.34	40.47

Load Combination Summary

Equation Case: Equation Case 1
Combination: +1D+1L+1Lr
Contributing Cases & Source
Service Case 1 (Dead Loads)
Service Case 2 (Roof Live Loads)

Member Uniform Loads

7. Press the **REPORT** key to display report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
1	Equation Case 1	-0.00	673.81	-NA-
2	"	NA	673.81	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
1	1555.52	34.19	93.44	0.1196
2	1555.52	33.81	37.8498	-0.1750
3	1555.52	5.6757	68.9958	0.1547
4	1555.52	34.9590	0.0000	0.0000
5	1555.52	34.96	0.0000	0.0000
6	1555.52	5.6757	68.9958	0.1547
7	1555.52	33.8076	37.8498	-0.1750
8	1555.52	33.1910	-93.44	0.1196
9	-1677.72	4.17	0.0000	0.0000
10	-1646.10	19.3175	122.68	0.1004
11	-1614.48	75.53	70.8313	-0.1310
12	-1582.87	-170.38	-155.55	-0.1251
13	-1148.52	165.01	-155.55	-0.1251
14	-1118.35	39.6736	54.6387	-0.1505
15	-1088.18	-19.66	106.49	0.1714
16	-1058.01	105.99	0.0000	-0.1376
17	-1148.52	165.01	-155.55	-0.1251
18	-1118.35	39.67	54.6387	0.1459
19	-1088.18	15.6597	106.49	0.1578
20	-1058.01	105.99	0.0000	-0.1140
21	-1677.72	-4.17	0.0000	0.0136
22	-1646.10	-19.32	122.68	-0.0849
23	-1614.48	75.5325	70.8313	-0.1175
24	-1582.87	170.38	155.55	0.1115
25	-549.26	0.0000	0.0000	-0.1150
26	-549.26	0.0000	0.0000	0.1123
27	-549.26	0.0000	0.0000	-0.1093
28	549.26	0.0000	0.0000	-0.1064
29	469.28	0.0000	-0.0000	-0.0214
30	469.28	0.0000	0.0000	0.0214
31	469.28	0.0000	-0.0000	-0.0214
32	469.28	0.0000	0.0000	0.0214
33	549.26	0.0000	0.0000	-0.1294
34	-549.26	0.0000	-0.0000	0.1264
35	549.26	0.0000	0.0000	0.1235
36	549.26	0.0000	-0.0000	-0.1205

BENDING & COMP: TRUSS 2 - MEMBER 3

Design based on 1997 UBC 2321 Division V and ANSI/TPI 1-1995

Grading:

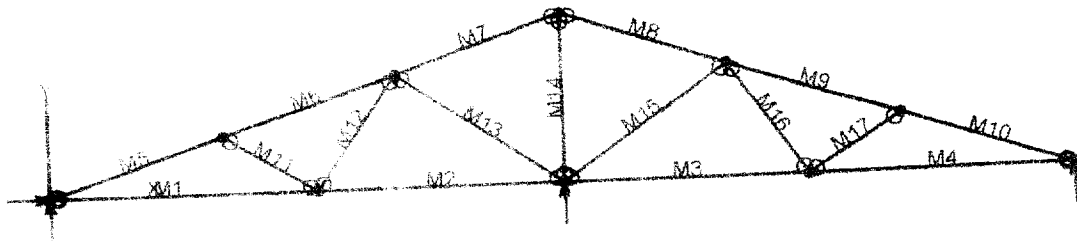
2x or 4x

Doug-fir larch: No. 2

Assumptions:

Solid sheathing on top chord of truss. Therefore,
continuous lateral support is provided along compression face
Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	3.5 inches
Length	5.53 feet
Max Axial Comp. C	1582 lbs
Max Reaction, R	170 lbs
Max Moment, M	155 ft-lbs
Max LL Deflection	0.05 inches
Max TL Deflection	0.12 inches
LL Defl Criteria = L/	240
TL Defl Criteria = L/	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
Size Factor, Cf bending	1.5 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.15 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.15
fc =	301 psi
Fce =	1635 psi
Fc* =	2084 psi
F'c =	1255 psi
fb =	607 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.41 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.40 < 1.0, Member OK
Live Load defl ratio	0.18 < 1.0, Member OK
Total Load defl ratio	0.33 < 1.0, Member OK



VisualAnalysis 3.50.c Report

Date: 06/11/97
 Project: Truss 3
 File: C:\Program Files\VisualAnalysis\truss3.dwg
 Company: PE Associates Engineering
 Engineer: Paul Farns
 Units: Feet, Pounds, Degrees, Wahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Flx DX	Flx DY	Flx RZ
1	0.00	0.00	Yes	Yes	No
2	10.00	0.00	No	No	No
3	19.25	0.00	Yes	Yes	No
4	28.50	0.00	Yes	Yes	No
5	38.00	0.00	Yes	Yes	No
6	4.00	2.17	No	No	No
7	12.00	2.17	No	No	No
8	18.00	4.33	No	No	No
9	25.00	4.33	No	No	No
10	32.00	4.33	No	No	No

Member Elements

Member	Section	Material	Length ft
1	SS2x4	Wood	10.00
2	"	"	9.25
3	"	"	9.25
4	"	"	10.00
5	"	"	9.25
6	"	"	8.75
7	"	"	8.75
8	"	"	8.75
9	"	"	8.75
10	"	"	8.75
11	"	"	8.75
12	"	"	8.75
13	"	"	8.75
14	"	"	8.75
15	"	"	8.75
16	"	"	8.75
17	"	"	8.75
18	"	"	8.75
19	"	"	8.75
20	"	"	8.75
21	"	"	8.75
22	"	"	8.75
23	"	"	8.75
24	"	"	8.75
25	"	"	8.75
26	"	"	8.75
27	"	"	8.75
28	"	"	8.75
29	"	"	8.75
30	"	"	8.75
31	"	"	8.75
32	"	"	8.75
33	"	"	8.75
34	"	"	8.75
35	"	"	8.75
36	"	"	8.75
37	"	"	8.75
38	"	"	8.75
39	"	"	8.75
40	"	"	8.75
41	"	"	8.75
42	"	"	8.75
43	"	"	8.75
44	"	"	8.75
45	"	"	8.75
46	"	"	8.75
47	"	"	8.75
48	"	"	8.75
49	"	"	8.75
50	"	"	8.75
51	"	"	8.75
52	"	"	8.75
53	"	"	8.75
54	"	"	8.75
55	"	"	8.75
56	"	"	8.75
57	"	"	8.75
58	"	"	8.75
59	"	"	8.75
60	"	"	8.75
61	"	"	8.75
62	"	"	8.75
63	"	"	8.75
64	"	"	8.75
65	"	"	8.75
66	"	"	8.75
67	"	"	8.75
68	"	"	8.75
69	"	"	8.75
70	"	"	8.75
71	"	"	8.75
72	"	"	8.75
73	"	"	8.75
74	"	"	8.75
75	"	"	8.75
76	"	"	8.75
77	"	"	8.75
78	"	"	8.75
79	"	"	8.75
80	"	"	8.75
81	"	"	8.75
82	"	"	8.75
83	"	"	8.75
84	"	"	8.75
85	"	"	8.75
86	"	"	8.75
87	"	"	8.75
88	"	"	8.75
89	"	"	8.75
90	"	"	8.75
91	"	"	8.75
92	"	"	8.75
93	"	"	8.75
94	"	"	8.75
95	"	"	8.75
96	"	"	8.75
97	"	"	8.75
98	"	"	8.75
99	"	"	8.75
100	"	"	8.75

Section Properties

Category	Section	Ax in ²	Ix in ⁴	Sy+ in ³	Sy- in ³
Wood Sha	SS2x4	5.25	3.75	2.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
WOOD	NA	1700000.00	0.3	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combination: +1D+1L+1Lr
 Contributing Cases & Source
 Service Case 1 (Dead loads)
 Service Case 2 (Roof Live loads)

Member Uniform Loads

This item is empty. Check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
81	Equation Case 1	0.00	352.84	-NA-
82	"	-NA-	1825.11	-NA-
83	"	-NA-	352.84	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
81	504.91	-51.18	-81.78	-0.0278
82	504.91	-22.51	40.7991	-0.1072
83	504.91	6.1557	68.0579	-0.1169
84	504.91	34.8224	0.0000	-0.0000
85	-171.73	-37.01	-56.23	-0.0000
86	-171.73	-10.50	16.8082	-0.0225
87	-171.73	16.0198	8.2936	-0.0267
88	-171.73	42.5365	-81.78	-0.0278
89	-171.73	-42.54	-81.78	-0.0278
90	-171.73	-16.02	8.2936	-0.0267
91	-171.73	10.4969	16.8082	-0.0225
92	-171.73	37.0135	-56.23	-0.0000
93	504.91	-34.82	0.0000	-0.0000
94	504.91	6.1557	68.0579	-0.1169
95	504.91	22.5110	40.7991	-0.1072
96	504.91	51.1776	-81.78	-0.0278
97	-579.63	141.76	0.0000	-0.0000
98	-540.42	24.3305	189.03	-0.1506
99	-501.22	-93.10	110.48	-0.1364
100	-462.01	-210.54	-235.64	-0.0342
101	-139.90	176.80	-235.64	-0.0342
102	-100.88	59.3690	33.3025	-0.0411
103	-61.85	-58.06	34.7918	-0.0366
104	-22.83	175.50	-231.17	-0.0192
105	807.15	204.45	-231.17	-0.0191
106	844.91	91.5360	93.3151	-0.1059
107	882.67	-21.38	170.37	-0.1257
108	920.43	-134.30	0.0000	-0.0083
109	807.15	-204.45	-231.17	-0.0162
110	844.91	-91.54	93.3151	-0.1030
111	882.67	21.3807	170.37	-0.1227
112	920.43	134.30	0.0000	-0.0054
113	-139.90	-176.80	-235.64	-0.0312
114	-100.88	-59.37	33.3025	-0.0382
115	-61.85	58.0644	34.7918	-0.0336
116	-22.83	175.50	-231.17	-0.0162
117	-579.63	-141.76	0.0000	0.0029

	540.4	24.53	189.03	0.0131
	503.47	9.1038	110.40	0.0134
	-503.47	210.54	-235.64	-0.0131
M	503.47	0.0000	0.0000	-0.0155
	503.47	0.0000	0.0000	-0.0127
	-503.47	0.0000	0.0000	-0.0119
	503.47	0.0000	0.0000	-0.0101
M	436.76	0.0000	0.0000	-0.0114
	436.76	0.0000	0.0000	-0.0123
	436.76	0.0000	0.0000	-0.0152
	436.76	0.0000	0.0000	-0.0126
M	801.21	-0.0000	0.0000	-0.0159
	801.21	-0.0000	-0.0000	-0.0197
	801.21	-0.0000	-0.0000	-0.0235
	801.21	-0.0000	-0.0000	0.0026
M	838.54	-0.0000	-0.0000	0.0047
	838.54	-0.0000	-0.0000	0.0047
	-838.54	-0.0000	-0.0000	-0.0047
	-838.54	-0.0000	0.0000	-0.0047
M	801.21	0.0000	0.0000	-0.0112
	801.21	0.0000	0.0000	-0.0150
	-801.21	0.0000	0.0000	-0.0080
	801.21	0.0000	0.0000	-0.0026
M	436.76	0.0000	0.0000	-0.0138
	436.76	0.0000	0.0000	-0.0106
	436.76	0.0000	0.0000	-0.0075
	436.76	0.0000	0.0000	-0.0044
M	503.47	-0.0000	-0.0000	-0.0304
	503.47	-0.0000	-0.0000	-0.0286
	503.47	-0.0000	-0.0000	-0.0268
	-503.47	-0.0000	0.0000	-0.0250

BENDING & COMP: TRUSS 3 - MEMBER 5

Design based on 1997 IBC 2321 Division V and ANSI/TPI 1-1995

Grading:

2x or 4x

Doug-fir (arch) No. 2

Assumptions:

Solid sheathing on top chord of truss. Therefore
continuous lateral support is provided along compression face
Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	3.5 inches
Length	6.85 feet
Max Axial Comp. C	462 lbs
Max Reaction, R	210 lbs
Max Moment, M	234 ft-lbs
Max LL Deflection	0.03 inches
Max TL Deflection	0.05 inches
LL Defl Criteria = L	240
TL Defl Criteria = L	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
Size Factor, Cf bending	1.5 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.15 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.19
fc	88 psi
Fcc=	1099 psi
Fc* =	2084 psi
F'c=	945 psi
Fb=	923 psi
F'b=Fb* =	2156 psi
Shear D/C ratio	0.51 < 1.0, Member OK
interaction equation	
$(fc/F'c)^2 +$	
$F'b/(F'b(1-fc/Fcc)) =$	0.47 < 1.0, Member OK
Live Load defl ratio	0.06 < 1.0, Member OK
Total Load defl ratio	0.07 < 1.0, Member OK