

**CITY OF SACRAMENTO**

1231 I Street, Sacramento, CA 95814

Permit No: 0406016

Insp Area: 3

Thos Bros: 318B7

Site Address: 22 LOMA MAR CT SAC

Parcel No: 040-0200-025

Sub-Type: RES

Housing (Y/N): N

**CONTRACTOR**

BRIGGS ROOFING AND REPAIR  
STEVE BRIGGS  
3451 I ST STE 8 95660

**OWNER**

MR. & MRS SOLTIS  
22 LOMA MAR CT  
SACRAMENTO CA 95828

**ARCHITECT**

**Nature of Work:** T/O R/R RESHEET 27 SQ W/ LITE WT TILE, SEE ENGINEERING

**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 PC39 License Number 642413 Date 4-20-04 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 \_\_\_\_\_

**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 4-20-04 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 STATE FUND Policy Number 285-0002373 Exp Date 03/01/2005

(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 4-20-04 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.**

Lito

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

TEL: 916.961.3960  
FAX: 916.961.6552

April 17, 2004

Briggs Roofing  
3451 I Street, Suite 8  
North Highlands, CA 95660  
TEL: (916) 726-6012  
FAX: (916) 339-1003

Attn.: Mr. Steve Briggs,

re: Job 2004186: LITO

Subject: Structural Investigation Report of the Roof for the Residence located at 22 Loma Mar Court, Sacramento, CA 95828.



As requested by Mr. Steve Briggs, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site April 16, 2004. 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: Two.  
Dimensions: Approximately 3000 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 conventionally framed with 2x6 rafters spaced at 24" on center with pre-engineered wood trusses spaced at 24" on center except for the vaulted ceiling area. The vaulted ceiling is constructed of 4x6 beams spaced at 48" on center. The garage area is framed with pre-engineered wood trusses spaced at 24" on center.

**CONCLUSIONS:**

Roof:  
The living and garage areas have sufficient structural capacity for the applied live and dead loads.

PREPARED BY: PAUL ZACHER

0406016

APR 20 2004  
RECEIVED

1/15 CITY COPY

ISSUED  
CITY OF SACRAMENTO  
APR 20 2004  
NORTH PERMIT  
CENTER

Lito



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

TEL: 916.961.3960  
FAX: 916.961.6552

RECOMMENDATIONS:

None.

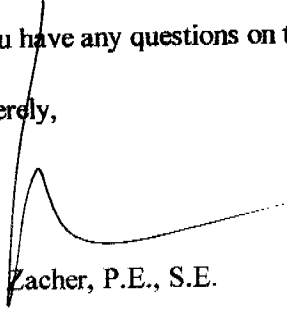
It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and 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	<u>1.00</u>	psf
Load	10.9	psf
Roof Pitch Adjustment	<u>0.59</u>	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	<u>0.64</u>	psf
Load	10.5	psf
Roof Pitch Adjustment	<u>0.57</u>	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	<u>2.50</u>	psf
Load	4.3	psf

**DESIGN LOADING:**

Roof Pitch 10 in 12  
Pitch Adjustment Factor 1.30

**LOCATION: VAULT**

<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
4x6 rafters @ 48" oc	1.00	psf
Batt/blown insul	0.50	psf
1/2" Gypboard	<u>2.50</u>	psf
	Load	13.9 psf
Roof Pitch Adjustment	<u>4.19</u>	psf
Total Load	18.1	psf

4

Job #: \_\_\_\_\_

Date: \_\_\_\_\_

LOADING

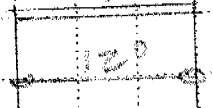
RAFTER

DR = 11.5 p.s.f.  $2^\circ = 11.5$  p.s.f.

$2 \times 6^{\#} 2$

LR = 16.0 " " " " = 32 "

20/02



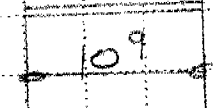
RAFTER

DR = 18.1 p.s.f.  $4^\circ = 72.4$  p.s.f.

$4 \times 6^{\#} 1$

LR = 16.0 " " " " = 64 "

72.4/04



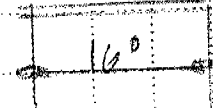
PSI

DR = 15.4 p.s.f.  $4^\circ = 62$  p.s.f.

$4 \times 12^{\#} 2$

LR = 16.0 " " " " = 64 "

62/04



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

Title :  
 Dsgnr:  
 Description :  
 Scope :

Job #  
 Date: 4:16PM, 13 SEP 00

Rev: 510304  
 User: KW-0602844, Ver 5.1.3, 22-Jun-1999, Win32  
 (c) 1983-99 ENERCALC

**Timber Beam & Joist**

c:\enercalc\test.ecw\Calculations

Description RAFTERS AND BEAMS

**Timber Member Information** Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Section		rafter 2x6	rafter 4x6	B1 4x12
Beam Width	in	1.500	3.500	3.500
Beam Depth	in	5.500	5.500	11.250
Le: Unbraced Length	ft	0.00	0.00	0.00
Timber Grade		Douglas Fir - Larch, Douglas Fir - Larch, Douglas Fir - Larch		
Fb - Basic Allow	psi	875.0	1,000.0	875.0
Fv - Basic Allow	psi	95.0	95.0	95.0
Elastic Modulus	ksi	1,600.0	1,700.0	1,600.0
Load Duration Factor		1.250	1.250	1.250
Member Type		Sawn	Sawn	Sawn
Repetitive Status		Repetitive	No	No

**Center Span Data**

	ft	12.00	10.75	16.00
Span				
Dead Load	#/ft	23.00	72.40	62.00
Live Load	#/ft	32.00	64.00	64.00

**Results** Ratio = 0.9607 0.8246 0.5447

Mmax @ Center	in-k	11.88	23.64	48.38
@ X =	ft	6.00	5.37	8.00
fb : Actual	psi	1,570.9	1,339.9	655.4
Fb : Allowable	psi	1,635.2	1,625.0	1,203.1
		Bending OK	Bending OK	Bending OK
fv : Actual	psi	55.7	52.6	34.1
Fv : Allowable	psi	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK

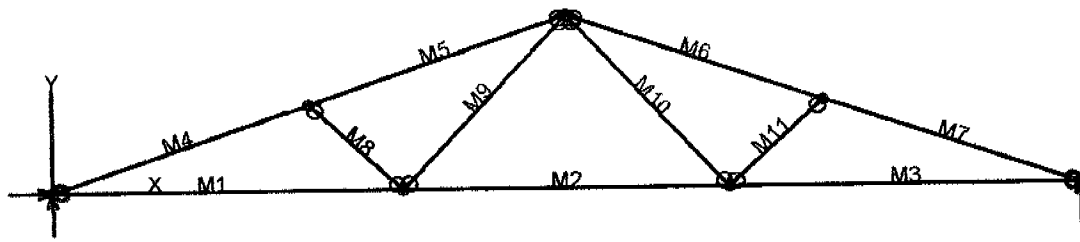
**Reactions**

@ Left End	DL	lbs	138.00	389.15	496.00
	LL	lbs	192.00	344.00	512.00
	Max. DL+LL	lbs	330.00	733.15	1,008.00
@ Right End	DL	lbs	138.00	389.15	496.00
	LL	lbs	192.00	344.00	512.00
	Max. DL+LL	lbs	330.00	733.15	1,008.00

**Deflections** Ratio OK Deflection OK Deflection OK

Center DL Defl	in	-0.322	-0.264	-0.138
L/Defl Ratio		446.5	489.2	1,395.5
Center LL Defl	in	-0.449	-0.233	-0.142
L/Defl Ratio		320.9	553.4	1,351.9
Center Total Defl	in	-0.771	-0.497	-0.280
Location	ft	6.000	5.375	8.000
L/Defl Ratio		186.7	259.7	686.7

6





# VisualAnalysis 3.50.c Report

09/13/00 16:21:26

Project: Truss 1

File: C:\Program Files\IES\VA35\truss 1.vap

Company: PK Associates Engineers

Engineer: Paul Zacher

Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

## Nodes

Node	X ft	Y ft	Fix	DX Fix	DY Fix	RZ Fix
N1	0.00	0.00	Yes	Yes	No	No
N2	7.50	0.00	No	No	"	"
N3	14.50	0.00	"	"	"	"
N4	22.00	0.00	"	Yes	"	"
N5	5.50	1.83	"	No	"	"
N6	16.50	1.83	"	"	"	"
N7	11.00	3.67	"	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	7.50
M2	"	"	7.00
M3	"	"	7.50
M4	"	"	5.80
M5	"	"	5.80
M6	"	"	5.80
M7	"	"	5.80
M8	"	"	2.71
M9	"	"	5.07
M10	"	"	5.07
M11	"	"	2.71

## Section Properties

Category	Section	Ax in <sup>2</sup>	Iz in <sup>4</sup>	Sy+ in <sup>3</sup>	Sy- in <sup>3</sup>
Wood	Sha SS2x4	5.25	5.36	3.06	3.06

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1700000.00	0.36	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
N1	Equation Case 1	0.00	723.11	-NA-
N4	"	-NA-	723.11	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1716.98	-36.02	-28.31	-0.1483
"	1716.98	-14.52	34.7444	-0.1385
"	1716.98	6.9758	44.1800	-0.0928
"	<b>1716.98</b>	28.4758	0.0000	-0.0000
M2	1077.16	-30.10	-28.31	-0.1483
"	1077.16	-10.03	18.3984	-0.1633
"	1077.16	10.0333	18.3984	-0.1633
"	1077.16	30.1000	-28.31	-0.1483
M3	1716.98	-28.48	0.0000	-0.0000
"	1716.98	-6.9758	44.1800	-0.0928
"	1716.98	14.5242	34.7444	-0.1385
"	1716.98	36.0242	-28.31	-0.1483
M4	<b>-1848.47</b>	117.04	0.0000	-0.0000
"	-1815.41	17.6694	129.66	-0.1123
"	-1782.35	-81.70	67.7999	-0.1440
"	-1749.29	<b>-181.06</b>	<b>-185.57</b>	-0.1388
M5	-1546.31	181.05	-185.57	-0.1388
"	-1513.07	81.6798	67.9045	-0.1935
"	-1479.83	-17.69	<b>129.76</b>	<b>-0.2111</b>
"	-1446.58	-117.05	0.0000	-0.1480
M6	-1546.31	-181.05	-185.57	-0.1246
"	-1513.07	-81.68	67.9045	-0.1793
"	-1479.83	17.6869	129.76	-0.1969
"	-1446.58	117.05	0.0000	-0.1338
M7	-1848.47	-117.04	-0.0000	<b>0.0141</b>
"	-1815.41	-17.67	129.66	-0.0981
"	-1782.35	81.6973	67.7999	-0.1299
"	-1749.29	<b>181.06</b>	-185.57	-0.1247
M8	-417.47	0.0000	0.0000	-0.0977
"	-417.47	0.0000	0.0000	-0.0918
"	-417.47	0.0000	0.0000	-0.0858
"	-417.47	0.0000	0.0000	-0.0798
M9	480.80	0.0000	0.0000	-0.1187
"	480.80	0.0000	0.0000	-0.1175
"	480.80	0.0000	0.0000	-0.1162
"	480.80	0.0000	0.0000	-0.1149
M10	480.80	-0.0000	0.0000	-0.0864
"	480.80	-0.0000	-0.0000	-0.0851
"	480.80	-0.0000	-0.0000	-0.0838
"	480.80	-0.0000	-0.0000	-0.0825
M11	-417.47	-0.0000	0.0000	-0.1279
"	-417.47	-0.0000	-0.0000	-0.1220
"	-417.47	-0.0000	-0.0000	-0.1160
"	-417.47	-0.0000	-0.0000	-0.1100

**BENDING & COMP: TRUSS 1 - MEMBER 4**

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

Grading:

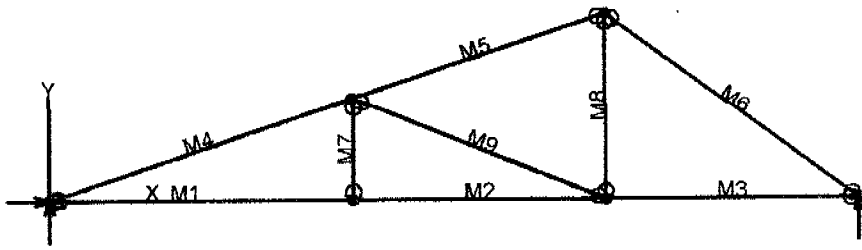
2x or 4x

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	5.8 feet
Max Axial Comp, C	1749 lbs
Max Reaction, R	181 lbs
Max Moment, M	185 ft-lbs
Max LL Deflection	0.06 inches
Max TL Deflection	0.13 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 =	1.16
fc =	333 psi
Fce =	1496 psi
Fc* =	2084 psi
F'c =	1184 psi
fb =	725 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.44 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.51 < 1.0, Member OK
Live Load defl ratio	0.21 < 1.0, Member OK
Total Load defl ratio	0.34 < 1.0, Member OK



11

# VisualAnalysis 3.50.c Report

09/13/00 16:24:53

Project: Truss 2

File: C:\Program Files\IES\VA35\truss 2.vap

Company: PK Associates Engineers

Engineer: Paul Zacher

Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

## Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	6.00	0.00	No	No	"
N3	11.00	0.00	"	"	"
N4	16.00	0.00	"	Yes	"
N5	6.00	2.00	"	No	"
N6	11.00	3.67	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	6.00
M2	"	"	5.00
M3	"	"	5.00
M4	"	"	6.32
M5	"	"	5.27
M6	"	"	6.20
M7	"	"	2.00
M8	"	"	3.67
M9	"	"	5.39

## Section Properties

Category	Section	Ax in <sup>2</sup>	Iz in <sup>4</sup>	Sy+ in <sup>3</sup>	Sy- in <sup>3</sup>
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1700000.00	0.36	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
N1	Equation Case 1	-0.00	533.77	-NA-
N4	"	-NA-	568.50	-NA-

### Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1112.40	-26.74	-5.6571	-0.0654
"	1112.40	-9.5428	30.5426	-0.0651
"	1112.40	7.6572	32.4283	-0.0438
"	<b>1112.40</b>	24.8572	0.0000	-0.0000
M2	1112.40	-24.52	-20.78	-0.0401
"	1112.40	-10.19	8.0933	-0.0527
"	1112.40	4.1431	13.1327	-0.0620
"	1112.40	18.4764	-5.6571	-0.0654
M3	521.90	-17.34	-0.0000	-0.0000
"	521.90	-3.0116	16.9041	-0.0200
"	521.90	11.3217	9.9790	-0.0322
"	521.90	25.6550	-20.78	-0.0401
M4	<b>-1216.25</b>	131.03	0.0000	-0.0000
"	-1180.11	22.6290	161.40	-0.1233
"	-1143.98	-85.77	94.8411	-0.1266
"	-1107.85	<b>-194.17</b>	<b>-199.67</b>	-0.0655
M5	-608.15	<b>173.38</b>	-199.67	-0.0655
"	-577.97	83.0442	25.2196	-0.0759
"	-547.80	-7.2891	91.7770	-0.0791
"	-517.63	-97.62	0.0000	-0.0361
M6	-746.85	-135.50	0.0000	0.0118
"	-680.55	-45.17	186.29	-0.1413
"	-614.24	45.1667	<b>186.29</b>	<b>-0.1560</b>
"	-547.94	135.50	0.0000	-0.0322
M7	45.2192	-0.0000	-0.0000	0.0090
"	45.2192	-0.0000	-0.0000	0.0098
"	45.2192	-0.0000	-0.0000	0.0106
"	45.2192	-0.0000	0.0000	0.0113
M8	286.38	0.0000	0.0000	-0.0017
"	286.38	0.0000	0.0000	0.0043
"	286.38	0.0000	0.0000	0.0104
"	286.38	0.0000	0.0000	<b>0.0165</b>
M9	-635.99	0.0000	0.0000	-0.0564
"	-635.99	0.0000	0.0000	-0.0480
"	-635.99	0.0000	0.0000	-0.0396
"	-635.99	0.0000	0.0000	-0.0311

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**BENDING & COMP: TRUSS 2 - MEMBER 4**

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

Grading:

2x or 4x

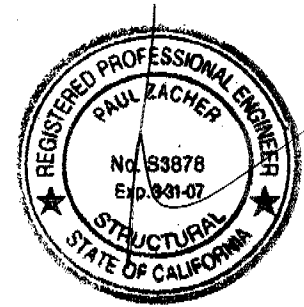
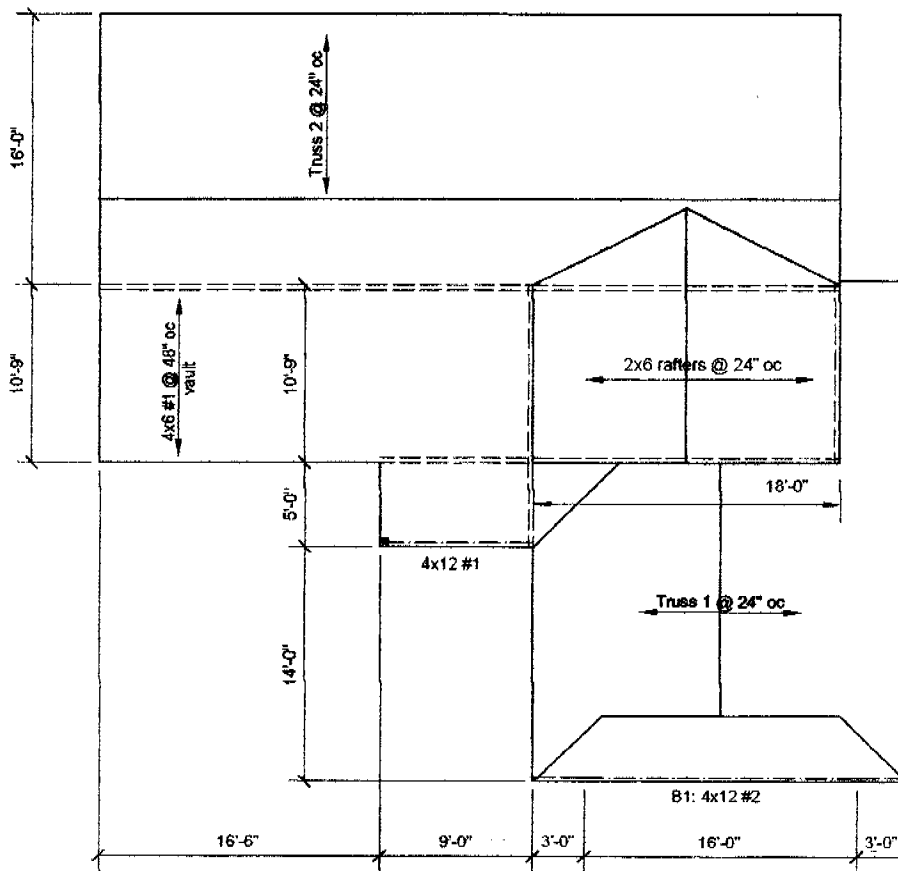
Doug-fir larch: No. 2

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	6.32 feet
Max Axial Comp, C	1107 lbs
Max Reaction, R	194 lbs
Max Moment, M	199 ft-lbs
Max LL Deflection	0.03 inches
Max TL Deflection	0.06 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 =	1.17
fc =	211 psi
Fce =	1275 psi
Fc* =	2084 psi
F'c =	1057 psi
fb =	780 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.47 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.47 < 1.0, Member OK
Live Load defl ratio	0.09 < 1.0, Member OK
Total Load defl ratio	0.14 < 1.0, Member OK



**NOTES:**

- A. 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.
- B. All rafters are 2x6 DF#2 and hips and valleys are 2x8 DF#2 unless otherwise noted.
- C. All existing rafter, hips, valleys, rafter ties, and purlins are braced per UBC Section 2320.1 "Roof and Ceiling Framing" unless otherwise shown.
- D. All structural wood members that were observed appear to be in sound condition and without structural defect.

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**ROOF PLAN - LITO**

Not to Scale

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