

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0216842

Insp Area: 4

Thos Bros: 277 E5

Site Address: 2940 VECINO DR SAC

Parcel No: 262-0333-002

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR

OWNER

BARRERAS CECIL L JR/ADELA
2940 VECINO DR
SACRAMENTO CA 95833

ARCHITECT

Nature of Work: TEAR OFF & RESHEET ROOF 26 SQ'S INSTALL LITE 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 _____ License Number _____ Date _____ Contractor 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);

AB ✓ 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 or 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 work (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 11/21/02 Owner Signature *Cecil L. Jr. Barreras*

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 above-mentioned property for inspection purposes.

Date 11/21/02 Applicant/Agent Signature *Cecil L. Jr. Barreras*

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 _____ Policy Number _____ Exp Date _____

X (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 11/21/02 Applicant Signature *Cecil L. Jr. Barreras*

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.

PAID
CITY OF SACRAMENTO
NOV 21 2002
PERMIT CENTER

ROOFING QUESTIONNAIRE

hm. 927-1695

Applicant's name: Adela Barreras Phone: 203-1230

Project Address: 2940 Vecino dr.

Please check the appropriate boxes. Only check a box if it accurately and completely describes your proposed work, otherwise leave boxes blank.

1. ROOFING TYPE

a. The existing roofing material is composition shingle, wood shake or shingle, tile or metal. The new roofing material shall be:

Existing Proposed

- | | | |
|-------------------------------------|-------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | 25 year laminated dimensional composition |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | wood shake or shingle |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | tile |
| <input type="checkbox"/> | <input type="checkbox"/> | metal that simulates one of the above listed materials |

b. The existing roofing material is built up, foam or membrane with a roof pitch of 2:12 or less. The new roofing material shall be:

Existing Proposed

- | | | |
|--------------------------|--------------------------|----------|
| <input type="checkbox"/> | <input type="checkbox"/> | Built up |
| <input type="checkbox"/> | <input type="checkbox"/> | Foam |
| <input type="checkbox"/> | <input type="checkbox"/> | Membrane |

2. GUTTERS

a. The existing gutters are fascia gutters.

- There is no change proposed to existing gutters.
- New fascia gutters shall be provided.
- Gutters shall be repaired and/or replaced to match existing.

b. The existing gutters are Ogee gutters.

- There is no change proposed to existing gutters.
- New Ogee gutters shall be provided.
- Gutters shall be repaired and/or replaced to match existing.

c. There are no existing gutters.

- No new gutters are proposed.
- New Ogee gutters shall be provided.

3. RAFTER TAILS

a. There are no exposed rafter tails.

b. There are exposed rafter tails.

- There is no change or cutting proposed to existing rafter tails.
- Rafter tails shall be repaired and replaced to match existing.

By signing below, the applicant certifies that this form accurately describes the proposed work.

Applicant's signature: Adela Barreras Date: 11/21/07

For City Staff use only

Counter Staff Beth Maynard

- In a DR District Meets DR criteria? Yes No (route to DR staff)
- In a P area or listed (route to P staff)
- Not in DR/P area

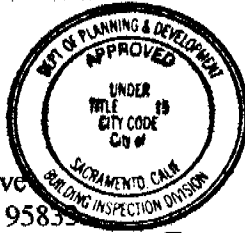
Barrera std wt

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

OFFICE COPY TEL: 916.961.3960
FAX: 916.961.6552

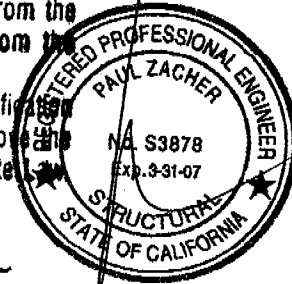
June 27, 2003

Barrera
2940 Vecino Drive
Sacramento, CA 95833
TEL: (916) 927-1695
FAX:



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 any violation of any City Ordinance or State



Attn.: Mr. Barrera

10/8/03 *Simz, all work subject to field inspection*

re: Job 2002502: BARRERA

Subject: Structural Investigation Report of the Roof for the Residence located at 2940 Vecino Drive, Sacramento, CA 95833.

As requested by Mr. Barrera, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site November 5, 2002. 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 1980's vintage.
Occupancy: Residential.
No. of Stories: One.
Dimensions: Approximately 2000 square feet.

CONSTRUCTION:

Roof:
The roof covering will consist of a Standard Weight Concrete Tile over 1/2" solid sheathing. The roof structure is framed with pre-engineered wood trusses spaced at 24" on center.

CONCLUSIONS:

Roof:
The roof structure has sufficient structural capacity for the applied live and dead loads.

RECOMMENDATIONS:

None.

1/23

APR 27 2003 10:50 AM FAX

Barrera std wt



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

TEL: 916.961.3960
FAX: 916.961.6552

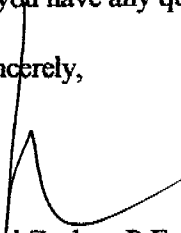
It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and 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	

The dead and live load on truss top chord is placed along the length of the top chord. Therefore, the live load is as follows:

Live Load on top chord	15.2
------------------------	------

LOCATION: TOP CHORD

<u>MATERIAL</u>	<u>WEIGHT</u>	
Standard Weight Tile	10.30	psf
Roofing felt	0.30	psf
7/16" OSB/ plywood	1.30	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	<u>0.64</u>	psf
Total Load	13.6	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

Job #: 02-502

Date: 6/27/02

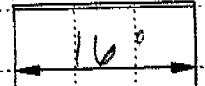
LOADING:

B1

$Dr = 17.9 \text{ pWF} \times 4^{\circ} = 72 \text{ pWF} \quad 4 \times 12^{\circ} 2$

$Lr = 16.0 \quad - \quad - \quad - \quad 64$

72/64

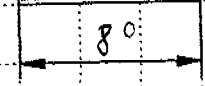


B2

$Dr = 17.9 \text{ pWF} \times 4^{\circ} = 72 \text{ pWF} \quad 4 \times 8^{\circ} 2$

$Lr = 16.0 \quad - \quad - \quad - \quad 64$

72/64



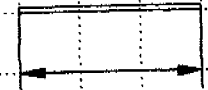
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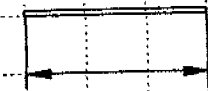
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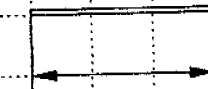
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Lr =



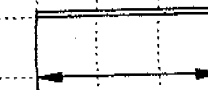
Dr =

Lr =



Dr =

Lr =



Paul Zacher - Structural Engr's
 4701 Lakeside Way
 Fair Oaks, CA 95628
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :

Job #
 Date: 6:06PM, 27 JUN 03

Scope :

Timber Beam & Joist

Rev: 580100
 User: KW-0602844, Ver 5.0.1, 25-Oct-2002
 (c)1983-2002 ENERCALC Engineering Software

c:\paulpk and assoc\test.ecw:Calculations

Description BEAMS

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

		B1	B2
Timber Section		4x12	4x8
Beam Width	in	3.500	3.500
Beam Depth	in	11.250	7.250
Le: 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		No	No

Center Span Data

		B1	B2
Span	ft	16.00	8.00
Dead Load	#/ft	72.00	72.00
Live Load	#/ft	64.00	64.00

Results Ratio = 0.5879 0.2995

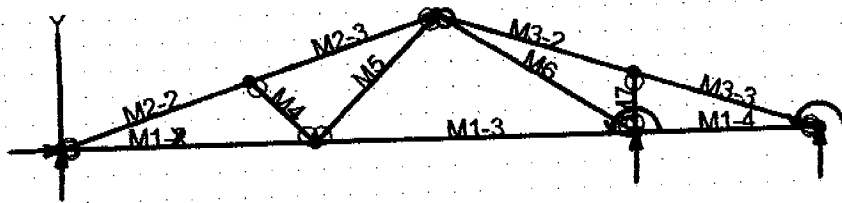
Mmax @ Center	in-k	52.22	13.06
@ X =	ft	8.00	4.00
fb : Actual	psi	707.4	425.8
Fb : Allowable	psi	1,203.1	1,421.9
		Bending OK	Bending OK
fv : Actual	psi	36.8	27.5
Fv : Allowable	psi	118.8	118.8
		Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	576.00	288.00
	LL	lbs	512.00	256.00
	Max. DL+LL	lbs	1,088.00	544.00
@ Right End	DL	lbs	576.00	288.00
	LL	lbs	512.00	256.00
	Max. DL+LL	lbs	1,088.00	544.00

Deflections Ratio OK Deflection OK

Center DL Defl	in	-0.160	-0.037
L/Defl Ratio		1,201.7	2,572.9
Center LL Defl	in	-0.142	-0.033
L/Defl Ratio		1,351.9	2,894.5
Center Total Defl	in	-0.302	-0.070
Location	ft	8.000	4.000
L/Defl Ratio		636.2	1,362.1



6

Truss 1

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Paul\PK and Assoc\ROOF PROJECTS\Truss 1.vap

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	29.00	0.00	No	"	Yes
N3	14.50	4.83	"	No	No
N4	9.67	0.00	"	"	"
N5	22.00	0.00	"	Yes	Yes
N6	7.25	2.42	"	No	No
N7	22.00	2.33	"	"	"

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	9.67
M1-3	"	"	12.33
M1-4	"	"	7.00
M2-2	"	"	7.64
M2-3	"	"	7.64
M3-2	"	"	7.91
M3-3	"	"	7.38
M4	"	"	3.42
M5	"	"	6.83
M6	"	"	8.92
M7	"	"	2.33

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sz(+y) in ³	Sz(-y) in ³
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	-NA-	1700000.00	0.36	40.47

Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	676.67	-NA-
N2	"	-NA-	81.11	0.00
N5	"	-NA-	1162.02	-79.42

Member Results

Member	Fx lb	VY lb	Mz lb-ft	Dx in	Dy in
M1-2	1454.44	-50.34	-84.78	0.02	-0.11
"	1454.44	-22.63	32.73	0.01	-0.14
"	1454.44	5.08	60.99	0.01	-0.12
"	1454.44	32.80	0.00	0.00	0.00
M1-3	579.70	-56.87	-132.10	0.03	0.00
"	579.70	-21.51	28.97	0.03	-0.11
"	579.70	13.84	44.74	0.02	-0.16
"	579.70	49.20	-84.78	0.02	-0.11
M1-4	-262.68	-22.57	0.00	0.03	0.00
"	-262.68	-2.51	29.25	0.03	-0.02
"	-262.68	17.56	11.69	0.03	-0.01
"	-262.68	37.63	-52.68	0.03	0.00
M2-2	-1583.3	151.23	0.00	0.00	0.00
"	-1539.3	19.16	216.88	-0.01	-0.22
"	-1495.4	-112.90	97.49	-0.01	-0.21
"	-1451.4	-244.97	-358.16	-0.02	-0.11
M2-3	-1206.1	244.97	-358.16	-0.02	-0.11
"	-1162.1	112.90	97.49	-0.02	-0.23
"	-1118.1	-19.16	216.88	-0.02	-0.27
"	-1074.1	-151.23	0.00	-0.03	-0.07
M3-2	192.16	-254.17	-389.43	0.02	0.01
"	237.70	-117.56	100.24	0.02	-0.17
"	283.23	19.05	230.05	0.02	-0.25
"	328.77	155.66	0.00	0.02	-0.07
M3-3	230.75	-138.50	0.00	0.02	0.01
"	273.19	-10.98	183.67	0.02	-0.12
"	315.64	116.55	53.86	0.02	-0.08
"	358.09	244.07	-389.43	0.02	0.01
M4	-547.92	0.00	0.00	0.09	-0.06
"	-547.92	0.00	0.00	0.09	-0.06
"	-547.92	0.00	0.00	0.09	-0.06
"	-547.92	0.00	0.00	0.09	-0.06
M5	688.73	0.00	0.00	-0.06	-0.09
"	688.73	0.00	0.00	-0.06	-0.07
"	688.73	0.00	0.00	-0.06	-0.06
"	688.73	0.00	0.00	-0.05	-0.05
M6	-1001.9	0.00	0.00	0.02	0.02
"	-1001.9	0.00	0.00	0.03	-0.04
"	-1001.9	0.00	0.00	0.03	-0.01
"	-1001.9	0.00	0.00	0.04	-0.06
M7	-525.03	0.00	0.00	-0.00	-0.03
"	-525.03	0.00	0.00	0.00	-0.03
"	-525.03	0.00	0.00	-0.00	-0.02
"	-525.03	0.00	0.00	-0.00	-0.02

BENDING & COMP: TRUSS 1 - MEMBER 2-2

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

Grading:

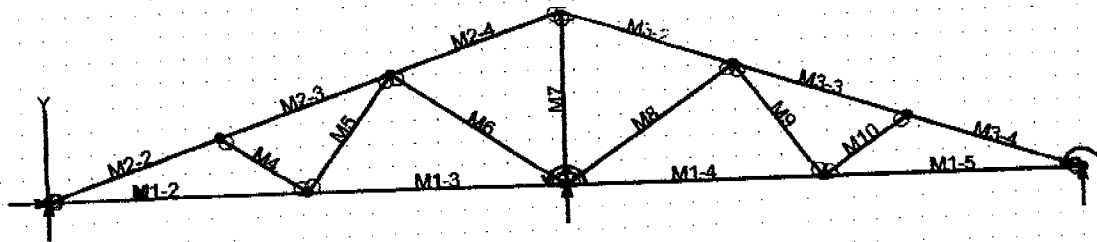
2x or 4x

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	7.64 feet
Max Axial Comp, C	1451 lbs
Max Reaction, R	244 lbs
Max Moment, M	358 ft-lbs
Max LL Deflection	0.05 inches
Max TL Deflection	0.11 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 =	1.21
fc =	276 psi
Fce =	900 psi
Fc* =	2084 psi
F'c =	800 psi
fb =	1403 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.59 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	1.06 6% over, OK
Live Load defl ratio	0.13 < 1.0, Member OK
Total Load defl ratio	0.22 < 1.0, Member OK



Truss 2

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: Untitled.Vap

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes		No	
N2	45.00	0.00	No		"		Yes	
N3	22.50	7.50	"		No		No	
N4	11.25	0.00	"		"		"	
N5	22.50	0.00	"		Yes		Yes	
N6	33.75	0.00	"		No		No	
N7	7.50	2.50	"		"		"	
N8	15.00	5.00	"		"		"	
N9	30.00	5.00	"		"		"	
N10	37.50	2.50	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	11.25
M1-3	"	"	11.25
M1-4	"	"	11.25
M1-5	"	"	11.25
M2-2	"	"	7.91
M2-3	"	"	7.91
M2-4	"	"	7.91
M3-2	"	"	7.91
M3-3	"	"	7.91
M3-4	"	"	7.91
M4	"	"	4.51
M5	"	"	6.25
M6	"	"	9.01
M7	"	"	7.50
M8	"	"	9.01
M9	"	"	6.25
M10	"	"	4.51

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sz(+y) in ³	Sz(-y) in ³
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	-NA-	1700000.00	0.36	40.47

Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	413.66	-NA-
N2	"	-NA-	413.66	0.00
N5	"	-NA-	2151.69	0.00

Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	602.94	-58.10	-109.42	0.01	-0.04
"	602.94	-25.85	47.94	0.01	-0.16
"	602.94	6.40	84.42	0.00	-0.18
"	602.94	38.65	0.00	0.00	0.00
M1-3	-187.01	-46.33	-86.38	0.01	0.00
"	-187.01	-14.08	26.83	0.01	-0.05
"	-187.01	18.17	19.15	0.01	-0.06
"	-187.01	50.42	-109.42	0.01	-0.04
M1-4	-187.01	-50.42	-109.42	0.00	-0.04
"	-187.01	-18.17	19.15	0.00	-0.06
"	-187.01	14.08	26.83	0.01	-0.05
"	-187.01	46.33	-86.38	0.01	0.00
M1-5	602.94	-38.65	0.00	0.01	0.00
"	602.94	-6.40	84.42	0.01	-0.18
"	602.94	25.85	47.94	0.01	-0.16
"	602.94	58.10	-109.42	0.00	-0.04
M2-2	-690.58	165.10	0.00	0.00	0.00
"	-645.05	28.49	254.93	-0.00	-0.27
"	-599.51	-108.12	150.00	-0.00	-0.24
"	-553.97	-244.73	-314.78	-0.01	-0.05
M2-3	-205.43	203.40	-314.78	-0.01	-0.05
"	-159.89	66.79	41.07	-0.01	-0.05
"	-114.35	-69.82	37.07	-0.01	-0.05
"	-68.82	-206.43	-326.79	-0.01	-0.03
M2-4	952.79	246.25	-326.79	-0.01	-0.03
"	998.32	109.64	142.00	-0.00	-0.22
"	1043.86	-26.97	250.93	-0.00	-0.26
"	1089.40	-163.58	0.00	0.00	-0.01
M3-2	952.79	-246.25	-326.79	0.02	-0.02
"	998.32	-109.64	142.00	0.02	-0.21
"	1043.86	26.97	250.93	0.01	-0.26
"	1089.40	163.58	0.00	0.01	-0.01
M3-3	-205.43	-203.40	-314.78	0.02	-0.04
"	-159.89	-66.79	41.07	0.02	-0.05
"	-114.35	69.82	37.07	0.02	-0.04
"	-68.82	206.43	-326.79	0.02	-0.02
M3-4	-690.58	-165.10	0.00	0.01	0.00
"	-645.05	-28.49	254.93	0.01	-0.26
"	-599.51	108.12	150.00	0.02	-0.23
"	-553.97	244.73	-314.78	0.02	-0.04
M4	-567.72	0.00	0.00	0.03	-0.03

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
"	-567.72	0.00	0.00	0.03	-0.03
"	-567.72	0.00	0.00	0.03	-0.03
"	-567.72	0.00	0.00	0.03	-0.03
M5	529.30	0.00	0.00	-0.03	-0.03
"	529.30	0.00	0.00	-0.03	-0.03
"	529.30	0.00	0.00	-0.02	-0.02
"	529.30	0.00	0.00	-0.02	-0.02
M6	-955.17	0.00	0.00	0.01	-0.01
"	-955.17	0.00	0.00	0.01	-0.01
"	-955.17	0.00	0.00	0.01	0.00
"	-955.17	0.00	0.00	0.02	-0.02
M7	-999.36	0.00	0.00	-0.01	-0.01
"	-999.36	0.00	0.00	-0.01	-0.01
"	-999.36	0.00	0.00	0.00	-0.01
"	-999.36	0.00	0.00	-0.00	-0.01
M8	-955.17	0.00	0.00	-0.01	-0.03
"	-955.17	0.00	0.00	-0.00	-0.02
"	-955.17	0.00	0.00	0.00	-0.01
"	-955.17	0.00	0.00	0.01	-0.00
M9	529.30	0.00	0.00	0.03	-0.02
"	529.30	0.00	0.00	0.03	-0.02
"	529.30	0.00	0.00	0.03	-0.01
"	529.30	0.00	0.00	0.03	-0.01
M10	-567.72	0.00	0.00	-0.02	-0.04
"	-567.72	0.00	0.00	-0.02	-0.04
"	-567.72	0.00	0.00	-0.02	-0.04
"	-567.72	0.00	0.00	-0.02	-0.04

BENDING & COMP: TRUSS 2 - MEMBER 3-2

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

Grading:

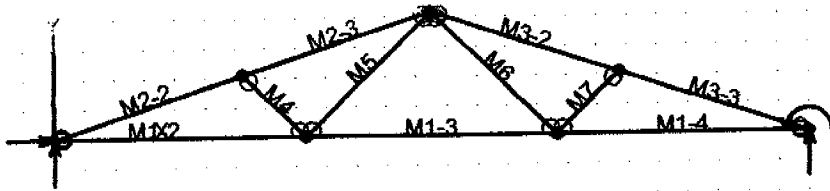
2x or 4x

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	7.91 feet
Max Axial Comp, C	952 lbs
Max Reaction, R	246 lbs
Max Moment, M	326 ft-lbs
Max LL Deflection	0.01 inches
Max TL Deflection	0.02 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 =	1.22
fc =	181 psi
Fce =	844 psi
Fc* =	2084 psi
F'c =	758 psi
fb =	1277 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.59 < 1.0, Member OK
Interaction equation:	
(fc/F'c) ² +	
fb / (F'b(1-fc/Fce)) =	0.81 < 1.0, Member OK
Live Load defl ratio	0.03 < 1.0, Member OK
Total Load defl ratio	0.04 < 1.0, Member OK



Truss 3

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Paul\PK and Assoc\ROOF PROJECTS\Truss 3.vap

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	25.00	0.00	No	"	Yes
N3	12.50	4.17	"	No	No
N4	8.33	0.00	"	"	"
N5	16.67	0.00	"	"	"
N6	6.25	2.09	"	"	"
N7	18.75	2.09	"	"	"

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	8.33
M1-3	"	"	8.33
M1-4	"	"	8.33
M2-2	"	"	6.59
M2-3	"	"	6.59
M3-2	"	"	6.59
M3-3	"	"	6.59
M4	"	"	2.95
M5	"	"	5.89
M6	"	"	5.89
M7	"	"	2.95

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sz (+y) in ³	Sz (-y) in ³
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	-NA-	1700000.00	0.36	40.47

Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

Nodal Reactions

16

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	827.50	-NA-
N2	"	-NA-	827.50	0.00

Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	1968.77	-40.89	-42.15	0.02	-0.19
"	1968.77	-17.00	38.23	0.01	-0.18
"	1968.77	6.89	52.28	0.01	-0.13
"	1968.77	30.77	0.00	0.00	0.00
M1-3	1232.46	-35.83	-42.15	0.04	-0.19
"	1232.46	-11.94	24.18	0.03	-0.22
"	1232.46	11.94	24.18	0.03	-0.22
"	1232.46	35.83	-42.15	0.02	-0.19
M1-4	1968.77	-30.77	0.00	0.06	0.00
"	1968.77	-6.89	52.28	0.05	-0.13
"	1968.77	17.00	38.23	0.04	-0.18
"	1968.77	40.89	-42.15	0.04	-0.19
M2-2	-2119.7	132.75	0.00	0.00	0.00
"	-2081.7	18.92	166.45	-0.01	-0.17
"	-2043.7	-94.91	83.00	-0.01	-0.20
"	-2005.7	-208.75	-250.35	-0.02	-0.18
M2-3	-1797.3	208.75	-250.35	-0.02	-0.18
"	-1759.4	94.91	83.00	-0.02	-0.27
"	-1721.4	-18.92	166.45	-0.03	-0.30
"	-1683.4	-132.75	0.00	-0.03	-0.19
M3-2	-1797.3	-208.75	-250.35	0.07	-0.16
"	-1759.4	-94.91	83.00	0.08	-0.25
"	-1721.4	18.92	166.45	0.08	-0.28
"	-1683.4	132.75	0.00	0.09	-0.17
M3-3	-2119.7	-132.75	0.00	0.05	0.02
"	-2081.7	-18.92	166.45	0.06	-0.15
"	-2043.7	94.91	83.00	0.07	-0.18
"	-2005.7	208.75	-250.35	0.07	-0.16
M4	-466.62	0.00	0.00	0.15	-0.12
"	-466.62	0.00	0.00	0.15	-0.11
"	-466.62	0.00	0.00	0.15	-0.11
"	-466.62	0.00	0.00	0.15	-0.10
M5	575.08	0.00	0.00	-0.12	-0.16
"	575.08	0.00	0.00	-0.12	-0.16
"	575.08	0.00	0.00	-0.12	-0.15
"	575.08	0.00	0.00	-0.12	-0.15
M6	575.08	0.00	0.00	0.16	-0.12
"	575.08	0.00	0.00	0.16	-0.11
"	575.08	0.00	0.00	0.16	-0.11
"	575.08	0.00	0.00	0.16	-0.11
M7	-466.62	0.00	0.00	-0.11	-0.16
"	-466.62	0.00	0.00	-0.11	-0.15
"	-466.62	0.00	0.00	-0.11	-0.15
"	-466.62	0.00	0.00	-0.11	-0.14

BENDING & COMP: TRUSS 3 - MEMBER 2-2

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

Grading:

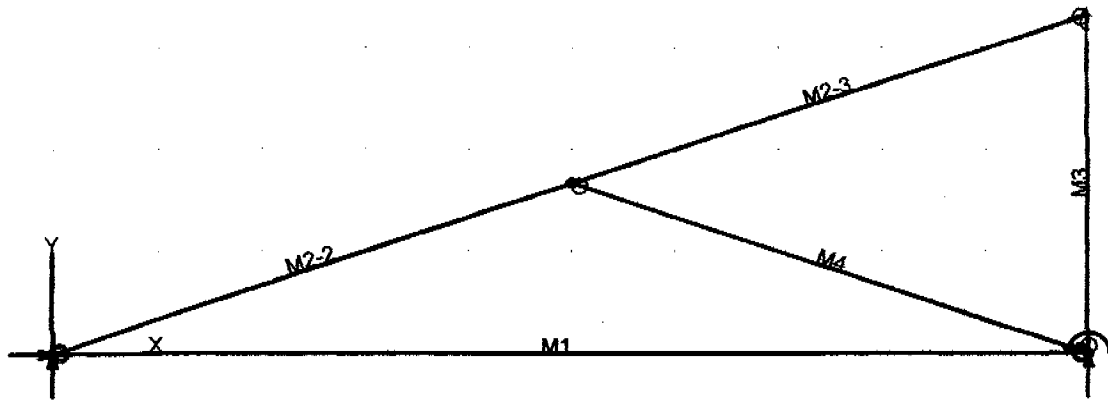
2x or 4x

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	6.59 feet
Max Axial Comp, C	2005 lbs
Max Reaction, R	208 lbs
Max Moment, M	250 ft-lbs
Max LL Deflection	0.09 inches
Max TL Deflection	0.18 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 =	1.18
fc =	382 psi
Fce =	1180 psi
Fc* =	2084 psi
F'c =	997 psi
fb =	980 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.50 < 1.0, Member OK
Interaction equation: (fc/F'c) ² +	
fb / (F'b(1-fc/Fce)) =	0.82 < 1.0, Member OK
Live Load defl ratio	0.27 < 1.0, Member OK
Total Load defl ratio	0.41 < 1.0, Member OK



Truss 4

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Paul\PK and Assoc\ROOF PROJECTS\Truss 4.vap

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes			No
N2	10.00	0.00	No		"			Yes
N3	10.00	3.33	"		No			No
N4	5.00	1.67	"		"			"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.00
M2-2	"	"	5.27
M2-3	"	"	5.27
M3	"	"	3.33
M4	"	"	5.27

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sz (+y) in ³	Sz (-y) in ³
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	-NA-	1700000.00	0.36	40.47

Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	331.00	-NA-
N2	"	-NA-	331.00	0.00

Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1	532.48	-43.00	0.00	0.01	0.00
"	532.48	-14.33	95.52	0.00	-0.18
"	532.48	14.33	95.52	0.00	-0.18
"	532.48	43.00	0.00	0.00	0.00
M2-2	-596.19	105.02	0.00	0.00	0.00
"	-565.86	13.93	104.41	-0.00	-0.05
"	-535.53	-77.15	48.89	-0.00	-0.05
"	-505.20	-168.23	-166.57	-0.00	-0.02
M2-3	-56.02	168.23	-166.57	-0.00	-0.02
"	-25.69	77.15	48.89	-0.00	-0.05
"	4.64	-13.93	104.41	-0.00	-0.05
"	34.97	-105.02	0.00	-0.00	0.00
M3	-110.69	0.00	0.00	0.00	-0.00
"	-110.69	0.00	0.00	0.00	0.00
"	-110.69	0.00	0.00	0.00	-0.00
"	-110.69	0.00	0.00	0.00	0.01
M4	-561.22	0.00	0.00	0.01	-0.02
"	-561.22	0.00	0.00	0.01	-0.01
"	-561.22	0.00	0.00	0.01	-0.01
"	-561.22	0.00	0.00	0.01	0.00

BENDING & COMP: TRUSS 4 - MEMBER 2-2

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

Grading:

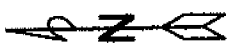
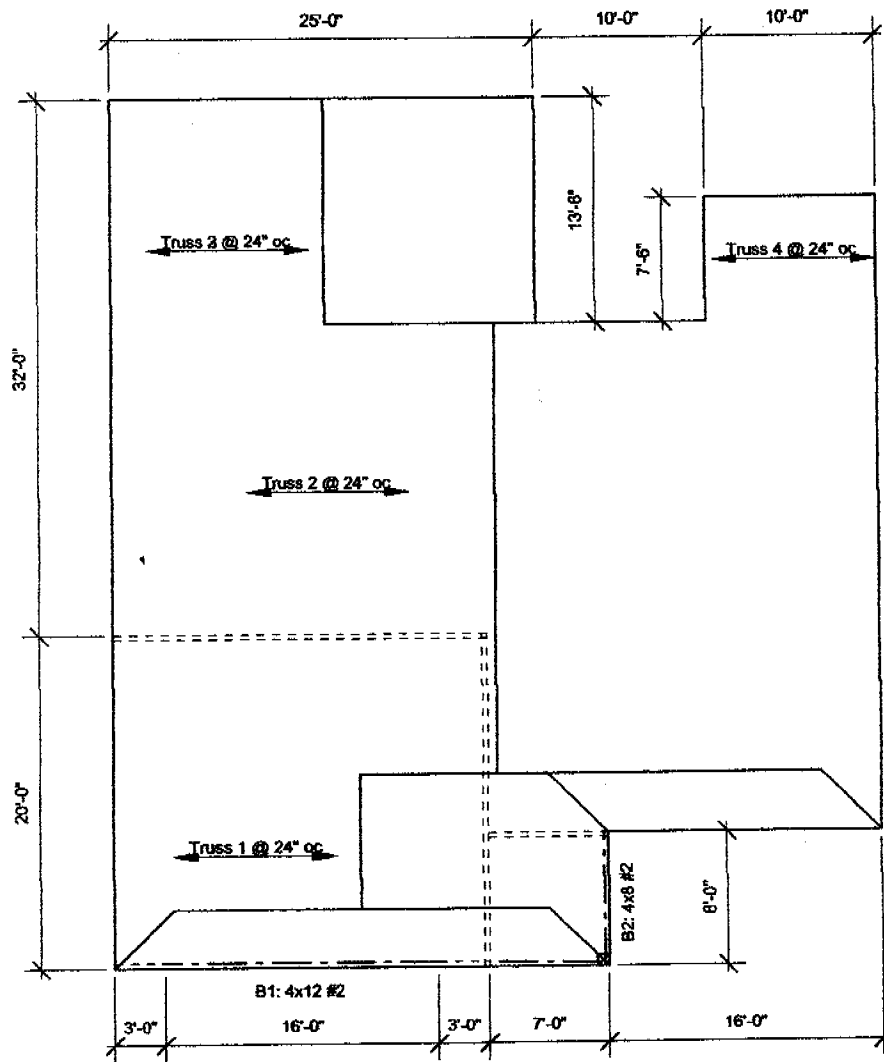
2x or 4x

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	5.27 feet
Max Axial Comp, C	505 lbs
Max Reaction, R	168 lbs
Max Moment, M	166 ft-lbs
Max LL Deflection	0.01 inches
Max TL Deflection	0.02 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 =	96 psi
Fce =	1789 psi
Fc* =	2084 psi
F'c =	1326 psi
fb =	650 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.40 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/(F'b(1-fc/Fce)) =	0.32 < 1.0, Member OK
Live Load defl ratio	0.04 < 1.0, Member OK
Total Load defl ratio	0.06 < 1.0, Member OK



Notes:

- A. This is a reroof project. The new roofing material shall be a Standard Weight Concrete Tile. The tile shall weigh less than or equal to 10.3 psf.
- B. All structural wood members that were observed appear to be in sound condition and without structural defect.

1
ROOF PLAN - BARRERA
 Not to Scale *LM*

Barrera



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

TEL: (916) 961-3960
FAX: (916) 961-6552

June 28, 2003

Barrera
2940 Vecino Drive
Sacramento, CA 95833

TEL: (916) 927-1695

FAX:

Attn.: Ms. Barrera

re: Job 2002502: BARRERA

This BILLING is for the Structural Investigation Report of the Roof for the Residence located at 2940 Vecino Drive, Sacramento, CA 95833.

<u>Services Provided</u>	<u>Charges</u>
Structural Engineering	\$200.00

Amount Due	=	\$200.00
Amount Paid	=	\$0.00
Amount Due	=	<u>\$200.00</u>

Please make check payable to Paul Zacher. Your canceled check is your receipt. If you have any questions on the above, do not hesitate to call.

Sincerely,

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

927-1695 FAX: (916) 961-6552 TEL: (916) 961-3960