

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0010576
Insp Area: 2

Site Address: 1 ANGEL ISLAND CR SAC
Parcel No: 031-0690-010

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

CONTRACTOR
ZIMMERMAN ROOFING
3675 R ST
SACRAMENTO CA 95816

OWNER
TAM
1 ANGEL ISLAND CR
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: 30 SQ T/O REROOF W LT WT 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 9/11/00 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
SEP 11 2000
NEIGHBORHOODS, PLANNING
& DEVELOPMENT SERVICES

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 9/11/00 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 STATE COMP INS FUND Policy Number 713-99-2021 Exp Date 10/1/2000

____ (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 9/11/00 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.

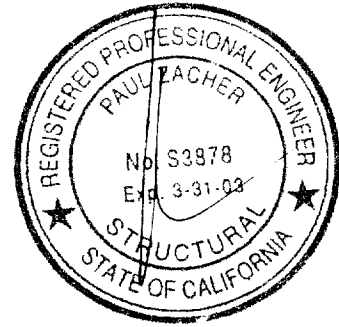
Tam

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

TEL: 916.961.3960
FAX: 916.961.6552

August 28, 2000

Zimmerman Roofing
3675 R Street
Sacramento, CA 95816
TEL: 916.454.3667
FAX: 916 455 3784



Attn: Mr. Jeff Tucker.

re: Job 2000_278: TAM

Subject: Structural Investigation Report of the Roof for the Residence located at 1 Angel Island, 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 August 28, 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:

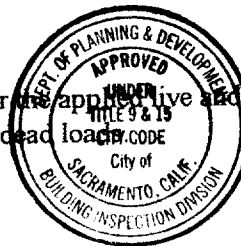
Roof:

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 except for the vaulted ceiling area. The vaulted ceiling is constructed of 2x8 rafters spaced at 16" on center supported at the ridge by a 4x beam. The garage area is framed with pre-engineered wood trusses spaced at 24" on center.

CONCLUSIONS:

Roof:

The living area lacks sufficient structural capacity for the applied live and dead loads. The garage has sufficient structural capacity for the applied live and dead loads.



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
9/7/00
O.K.

M/G

Tam

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 2x6 rafter to the existing 2x8 rafters with 16d's @ 12" on center. See detail 1.
2. Scab a 1 3/4" x 11 1/4" LVL beam to the existing pony wall above the existing 4x12 beam. See details 1 and 2

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: 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
2x8 rafters @ 16" oc	1.99	psf
Batt/blown insul	0.50	psf
1/2" Gypboard	2.50	psf
Load	14.9	psf
Roof Pitch Adjustment	0.80	psf
Total Load	15.7	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	1.28	psf
Load	11.2	psf
Roof Pitch Adjustment	0.60	psf
Total Load	11.8	psf

LOCATION: BOTTOM CHORD

<u>MATERIAL</u>	<u>WEIGHT</u>	
Batt/blown insul	0.50	psf
2x4 truss @ 24" oc	0.64	psf
1/2" Gypboard	2.50	psf
Load	3.6	psf

P K Zacher S.E.

4701 Lakeside Way
Fair Oaks, CA 95628
TEL: (916) 961-3960
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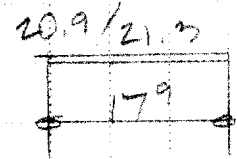
Job # 02-278
Date: 8/28/00

2049-20

VALT

OE = 57 DF = 4 20.9 DF
LE = 50 DF = 5 21.3

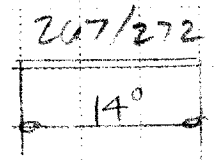
2x8*2 +
2x6*2



B1

OE = 57 DF = 17 207 DF
LE = 50 DF = 17 272

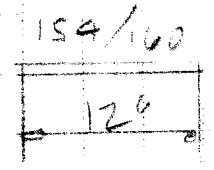
4x12*2 +
3/4 x 1 1/4 WL



B2

OE = 57 DF = 10 154 DF
LE = 50 DF = 10 160

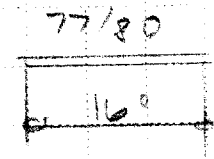
4x12*1



B3

OE = 57 DF = 5 77 DF
LE = 50 DF = 5 80

4x12*2



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

Title :
 Dsgnr:
 Description :
 Scope :

Job #
 Date: 2:08PM, 28 AUG 00

Rev: 610304
 User: KW_0602844, ver: 5.1.3, 02-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

	vault	B1	B2	B3
Timber Section	2x6 +2x8	4x12 + 1.7	4x12	4x12
Beam Width	in 3.000	5.250	3.500	3.500
Beam Depth	in 6.500	11.250	11.250	11.250
Le. Unbraced Length	ft 0.00	0.00	0.00	0.00
Timber Grade	Douglas Fir - Larch	stom. DF#2 + LVI	Douglas Fir - Larch	Douglas Fir - Larch
Fb - Basic Allow	psi 875.0	1,450.0	1,000.0	875.0
Fv - Basic Allow	psi 95.0	158.0	95.0	95.0
Elastic Modulus	ksi 1,600.0	1,666.7	1,700.0	1,600.0
Load Duration Factor	1.250	1.250	1.250	1.250
Member Type	Sawn	Manuf/Pine	Sawn	Sawn
Repetitive Status	Repetitive	No	No	No

Center Span Data

Span	ft	17.75	14.00	12.50	16.00
Dead Load	#/ft	20.90	267.00	154.00	77.00
Live Load	#/ft	21.30	272.00	160.00	80.00

Results

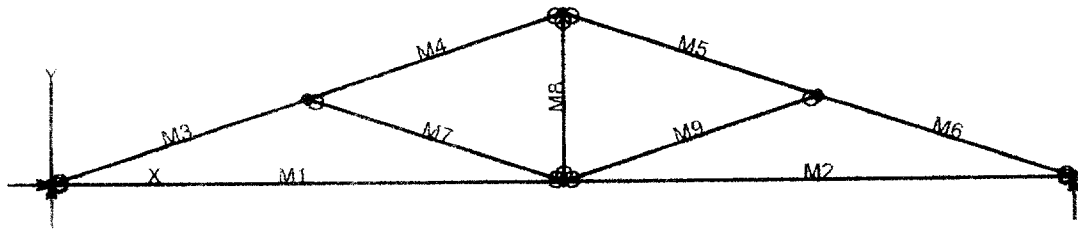
	Ratio =	0.5774	0.7895	0.7250	0.6787
Mmax @ Center	in-k	19.94	158.47	73.59	60.29
@ X =	ft	8.87	7.00	6.25	8.00
Fb : Actual	psi	944.1	1,430.9	996.8	816.6
Fb : Allowable	psi	1,635.2	1,812.5	1,375.0	1,203.1
		Bending OK	Bending OK	Bending OK	Bending OK
Fv : Actual	psi	27.2	83.6	64.0	42.5
Fv : Allowable	psi	118.8	197.5	118.8	118.8
		Shear OK	Shear OK	Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	185.49	1,869.00	962.50	616.00
	LL	lbs	189.04	1,904.00	1,000.00	640.00
	Max DL+LL	lbs	374.52	3,773.00	1,962.50	1,256.00
@ Right End	DL	lbs	185.49	1,869.00	962.50	616.00
	LL	lbs	189.04	1,904.00	1,000.00	640.00
	Max DL+LL	lbs	374.52	3,773.00	1,962.50	1,256.00

Deflections

		Ratio OK	Deflection OK	Deflection OK	Deflection OK
Center DL Defl	in	-0.425	-0.222	-0.120	-0.171
L/Defl Ratio		501.3	755.8	1,251.9	1,123.6
Center LL Defl	in	-0.433	-0.226	-0.124	-0.178
L/Defl Ratio		491.9	741.9	1,204.9	1,081.5
Center Total Defl	in	-0.858	-0.449	-0.244	-0.348
Location	ft	8.875	7.000	6.250	8.000
L/Defl Ratio		248.3	374.4	614.0	551.1



VisualAnalysis 3.50.c Report

08/28/00 14:11:43

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
N1	0.00	0.00	Yes		Yes		No	
N2	10.50	0.00	No		No		"	
N3	11.00	0.00	"		Yes		"	
N4	5.25	1.75	"		No		"	
N5	15.75	1.75	"		"		"	
N6	10.50	3.50	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.50
M2	"	"	10.50
M3	"	"	5.53
M4	"	"	5.53
M5	"	"	5.53
M6	"	"	5.53
M7	"	"	5.53
M8	"	"	3.50
M9	"	"	5.53

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- 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: 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	659.40	-NA-
N2	"	-NA-	659.40	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1541.17	-45.46	-80.48	-0.1307
"	1541.17	-20.26	34.3285	-0.1709
"	1541.17	4.9356	61.1540	-0.1480
"	1541.17	30.1356	0.0000	-0.0000
M2	1541.17	-30.14	0.0000	-0.0000
"	1541.17	-4.9356	61.1540	-0.1480
"	1541.17	20.2644	34.3285	-0.1709
"	1541.17	45.4644	-80.48	-0.1307
M3	-1661.08	109.61	0.0000	-0.0000
"	-1630.31	17.3037	116.63	-0.0968
"	-1599.54	-75.00	63.4133	-0.1276
"	-1568.77	-167.31	-159.65	-0.1262
M4	-1122.61	167.31	-159.65	-0.1262
"	-1091.84	75.0032	63.4133	-0.1705
"	-1061.07	-17.30	116.63	-0.1828
"	-1030.30	-109.61	-0.0000	-0.1289
M5	-1122.61	-167.31	-159.65	-0.1125
"	-1091.84	-75.00	63.4133	-0.1568
"	-1061.07	17.3037	116.63	-0.1690
"	-1030.30	109.61	0.0000	-0.1151
M6	-1661.08	-109.61	-0.0000	0.0138
"	-1630.31	-17.30	116.63	-0.0831
"	-1599.54	75.0032	63.4133	-0.1138
"	-1568.77	167.31	-159.65	-0.1125
M7	-557.70	0.0000	0.0000	-0.1171
"	-557.70	0.0000	0.0000	-0.1141
"	-557.70	0.0000	0.0000	-0.1112
"	-557.70	0.0000	0.0000	-0.1082
M8	443.65	0.0000	0.0000	-0.0218
"	443.65	0.0000	0.0000	-0.0218
"	443.65	0.0000	0.0000	-0.0218
"	443.65	0.0000	0.0000	-0.0218
M9	-557.70	-0.0000	0.0000	-0.1309
"	-557.70	-0.0000	-0.0000	-0.1279
"	-557.70	-0.0000	-0.0000	-0.1249
"	-557.70	-0.0000	-0.0000	-0.1219

BENDING & COMP: TRUSS 1 - MEMBER 3

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

Grading:

2x or 4x

Doug-fir larch: No. 2

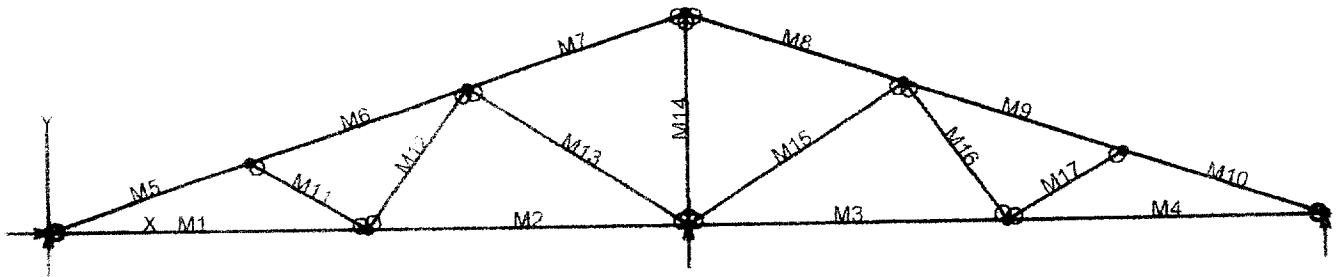
Assumptions:

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	1568 lbs
Max Reaction, R	167 lbs
Max Moment, M	159 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 =	1.16
fc =	299 psi
Fcc =	1551 psi
Fc* =	1869 psi
F'c =	1165 psi
fb =	623 psi
F'b = Fb* =	1887 psi
Shear D/C ratio	0.40 < 1.0, Member OK
Interaction equation:	
$(fc/F'c)^2 +$	
$fb/(F'b(1-fc/Fcc)) =$	0.47 < 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

08/28/00 14:17:24

Project: Truss 2

File: C:\Program Files\IES\VAS35\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	9.50	0.00	No	No	"
N3	19.00	0.00	"	Yes	"
N4	28.50	0.00	"	No	"
N5	38.00	0.00	"	Yes	"
N6	8.00	2.00	"	No	"
N7	32.00	2.00	"	"	"
N8	12.50	4.17	"	"	"
N9	25.50	4.17	"	"	"
N10	19.00	6.33	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.50
M2	"	"	9.50
M3	"	"	9.50
M4	"	"	9.50
M5	"	"	6.32
M6	"	"	6.85
M7	"	"	6.85
M8	"	"	6.85
M9	"	"	6.85
M10	"	"	6.32
M11	"	"	4.03
M12	"	"	5.14
M13	"	"	7.72
M14	"	"	6.33
M15	"	"	7.72
M16	"	"	5.14
M17	"	"	4.03

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- 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: 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	329.18	-NA-
N2	"	-NA-	1728.04	-NA-
N5	"	-NA-	329.18	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	504.72	-40.80	-62.73	-0.0275
"	504.72	-18.00	30.2010	-0.0778
"	504.72	4.7971	51.1102	-0.0818
"	504.72	27.5971	0.0000	-0.0000
M2	-133.77	-33.35	-54.69	-0.0000
"	-133.77	-10.55	14.6525	-0.0242
"	-133.77	12.2464	11.9721	-0.0317
"	-133.77	35.0464	-62.73	-0.0275
M3	-133.77	-35.05	-62.73	-0.0275
"	-133.77	-12.25	11.9721	-0.0317
"	-133.77	10.5536	14.6525	-0.0242
"	-133.77	33.3536	-54.69	-0.0000
M4	504.72	-27.60	0.0000	-0.0000
"	504.72	-4.7971	51.1102	-0.0818
"	504.72	18.0029	30.2010	-0.0778
"	504.72	40.8029	-62.73	-0.0275
M5	-574.19	126.50	0.0000	-0.0000
"	-539.02	21.0044	154.93	-0.1074
"	-503.86	-84.49	88.0065	-0.0999
"	-468.69	-189.98	-200.76	-0.0333
M6	-150.97	165.13	-200.76	-0.0333
"	-112.83	50.8657	45.2853	-0.0479
"	-74.68	-63.40	30.9682	-0.0388
"	-36.53	-177.67	-243.71	-0.0199
M7	767.94	207.06	-243.71	-0.0199
"	805.93	92.7403	97.8869	-0.1184
"	843.92	-21.58	179.12	-0.1411
"	881.91	-135.90	-0.0000	-0.0081
M8	767.94	-207.06	-243.71	-0.0169
"	805.93	-92.74	97.8869	-0.1155
"	843.92	21.5796	179.12	-0.1381
"	881.91	135.90	0.0000	-0.0051
M9	-150.97	-165.13	-200.76	-0.0303
"	-112.83	-50.87	45.2853	-0.0449
"	-74.68	63.4014	30.9682	-0.0358
"	-36.53	177.67	-243.71	-0.0169
M10	-574.19	-126.50	0.0000	0.0030

	-539.02	-21.00	154.83	-0.1044
	-503.84	84.4891	88.0065	-0.0969
	-468.69	189.98	-200.78	-0.0303
M11	-476.60	0.0000	0.0000	-0.0255
	-476.60	0.0000	0.0000	-0.0339
	-476.60	0.0000	0.0000	-0.0223
	-476.60	0.0000	0.0000	-0.0207
M12	384.74	-0.0000	0.0000	-0.0213
	384.74	-0.0000	-0.0000	-0.0185
	384.74	-0.0000	-0.0000	-0.0158
	384.74	-0.0000	-0.0000	-0.0130
M13	-784.47	0.0000	0.0000	-0.0166
	-784.47	0.0000	0.0000	-0.0102
	-784.47	0.0000	0.0000	-0.0038
	-784.47	0.0000	0.0000	0.0026
M14	-814.15	0.0000	0.0000	-0.0047
	-814.15	0.0000	0.0000	-0.0047
	-814.15	0.0000	0.0000	-0.0047
	-814.15	0.0000	0.0000	-0.0047
M15	-784.47	-0.0000	-0.0000	-0.0217
	-784.47	-0.0000	-0.0000	-0.0153
	-784.47	-0.0000	-0.0000	-0.0089
	-784.47	-0.0000	0.0000	-0.0026
M16	384.74	0.0000	0.0000	-0.0136
	384.74	0.0000	0.0000	-0.0108
	384.74	0.0000	0.0000	-0.0081
	384.74	0.0000	0.0000	-0.0053
M17	-476.60	-0.0000	-0.0000	-0.0302
	-476.60	-0.0000	-0.0000	-0.0286
	-476.60	-0.0000	-0.0000	-0.0270
	-476.60	-0.0000	0.0000	-0.0254

BENDING & COMP: TRUSS 1 - MEMBER 3

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

Grading:

2x or 4x Doug-fir larch, No. 2

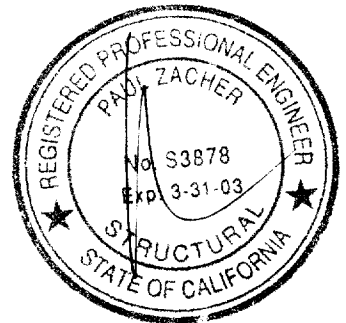
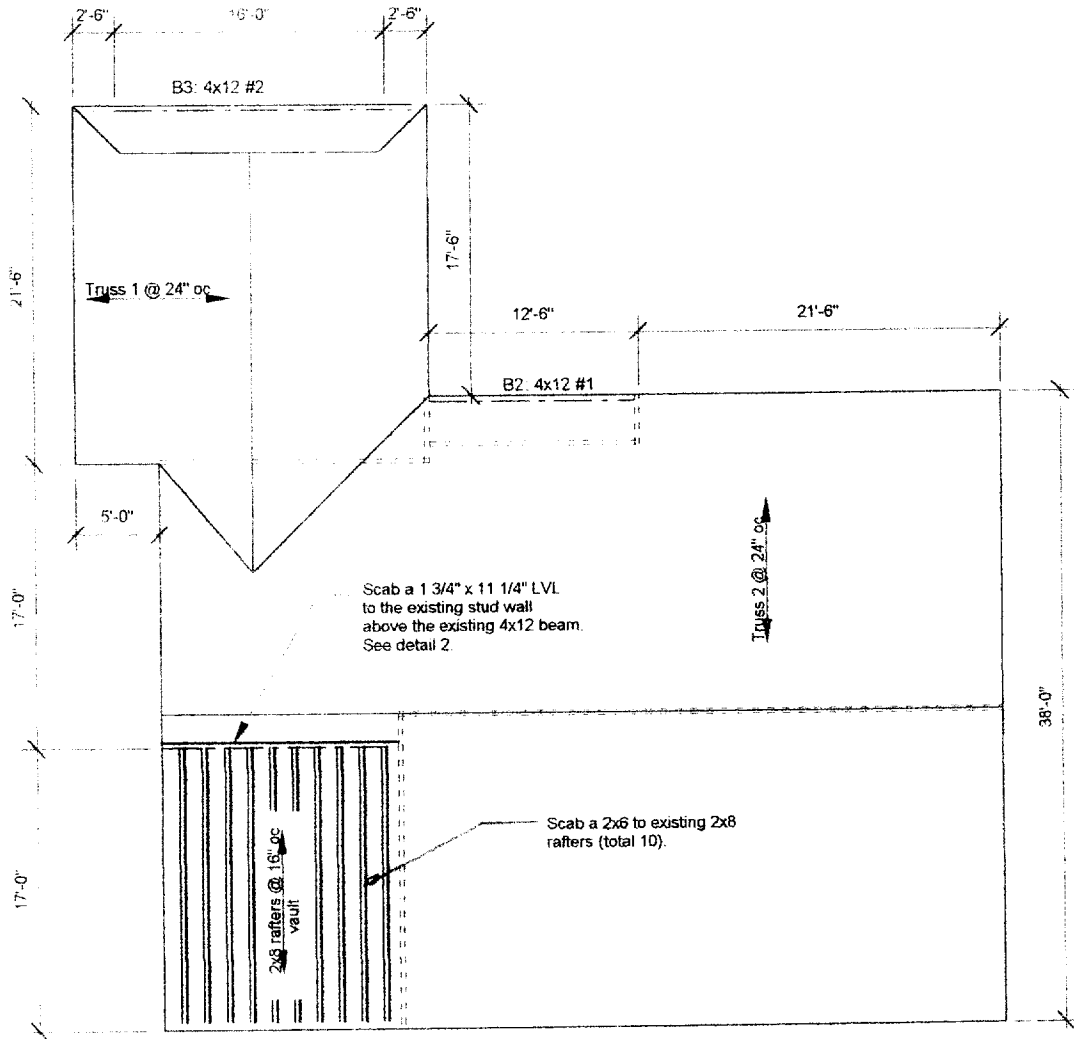
Assumptions:

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	6.32 feet
Max Axial Comp. C	468 lbs
Max Reaction, R	189 lbs
Max Moment, M	200 ft-lbs
Max LL Deflection	0.01 inches
Max TL Deflection	0.03 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 =	89 psi
Fce=	1211 psi
Fc*=	1869 psi
F'c=	989 psi
fb=	784 psi
F'b=Fb*=	1887 psi
Shear D/C ratio	0.45 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.46 < 1.0, Member OK
Live Load defl ratio	0.03 < 1.0, Member OK
Total Load defl ratio	0.07 < 1.0, Member OK



Notes:

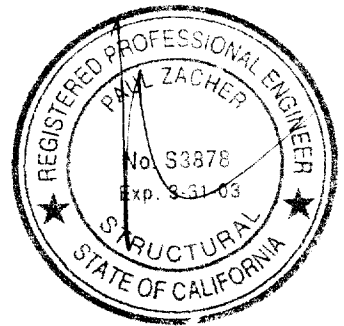
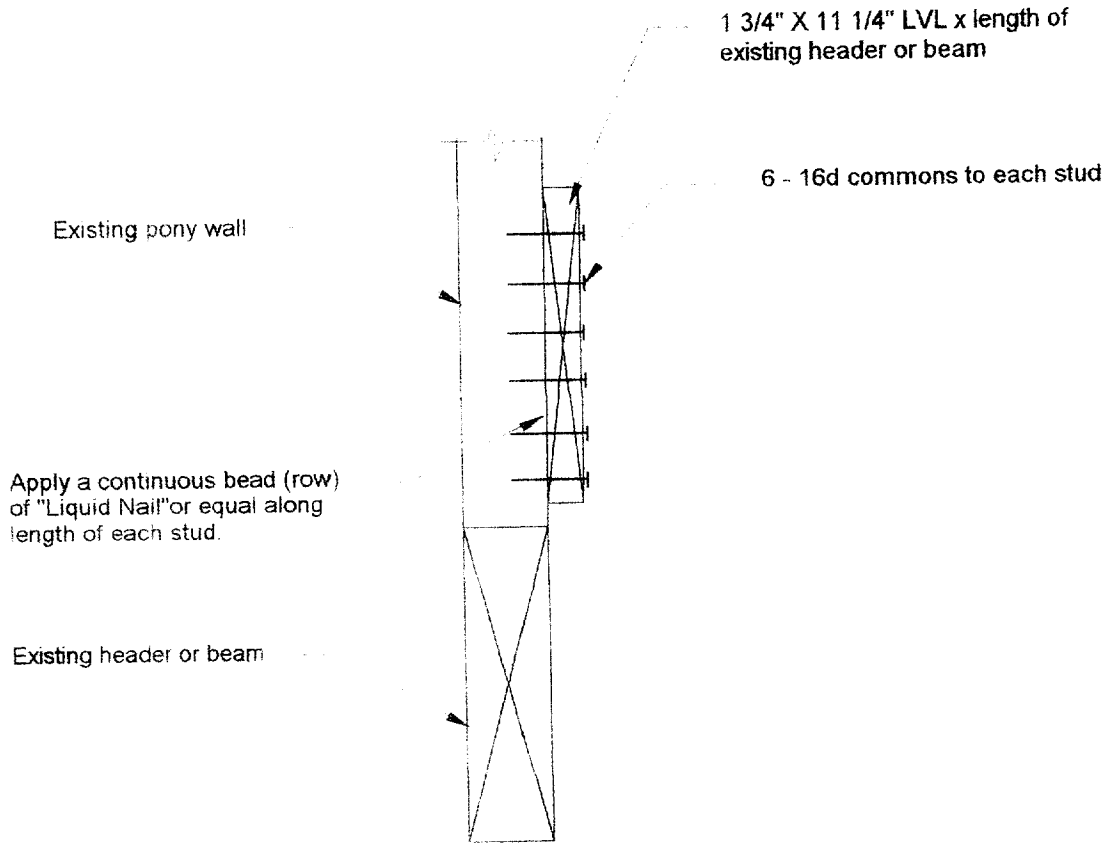
- 1 This is a reroof project. The new roofing material shall be a Light Weight Concrete Tile. The tile shall weigh less than or equal to 7.0 psf.
- 2 All structural wood members that were observed appear to be in sound condition and without structural defect.

1

ROOF PLAN - TAM

Not to Scale

15



2

HEADER DETAIL

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