CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 9906195

Insp Area: 2

Site Address: 27 WINDSTONE CT SAC

Parcel No: 031-0750-032

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR
MONARCH ROOFING
8250 ALPINE AVE STE H
SACRAMENTO CA 95826

OWNER
AU DONALD MK/DORA
27 WINDSTONE CT
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: 23 SQ TEAR OFF AND REROOF WITH LTWT 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'sAddress _____

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.

X License Class C-39 License Number 684798 Date 6/14/99 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);

____ 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 herby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

X Date 6/14/99 Applicant/Agent 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 AMERICAN ZURICH INS Policy Number WC292350700 Exp Date 09/01/1999

____ (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.

X Date 6/14/99 Applicant 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.

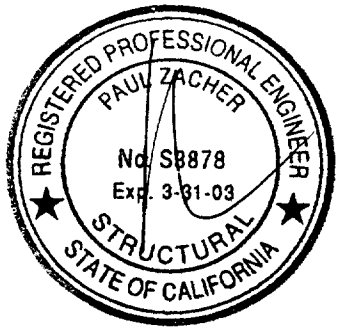
THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

Au

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

TEL: 916.961.3960
FAX: 916.961.3960

June 10, 1999



Monarch Roofing
8250 Alpine Avenue, Suite H
Sacramento, CA 95826
TEL: (916) 452-5032
FAX: (916) 452-5140

Attn.: Mr. Neal Weber,

re: Job 99133: AU

Subject: Structural Investigation Report of the Roof for the Residence located at 27 Windstone Court, Sacramento, CA 95831.

As requested by Mr. Neal Weber, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site June 10, 1999. The investigation was made to determine the existing condition of the structure. All information, data and analysis contained within this report is based on the 1994 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 2300 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

Roof:

The roof covering will consist of Monier 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 areas. There is no access to the vaulted ceiling. The garage area is framed with pre-engineered wood trusses spaced at 24" on center.

Verify in field. Contractor to provide access.

CONCLUSIONS:

Roof:

The living area has sufficient structural capacity for the applied live and dead loads except for the vaulted ceiling area for which there was no access. No Conclusions were drawn for the vaulted ceiling area. The garage has sufficient structural capacity for the applied live and dead loads.

Reviewed by MBTT P 6/14/99

See engineer's note on p. 2 for this issue

Au

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

TEL: 916.961.3960
FAX: 916.961.3960

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. After the roofing material has been removed, the contractor shall verify that the framing in the non-accessible of the structure does not exceed the following:
   Vaulted Ceiling Portion:
   a. 2-2x8 @ 16" oc - max span = 21'-3"
   b. 2x10 @ 16" oc - max span = 21'-9"
   If the framing differs from the above, the contractor shall supply the engineer with diagrams showing the member sizes and span lengths. The engineer shall then determine if the structure can adequately support the applied dead and live loads and a supplemental report shall be issued. See detail 1.

Verify in field

It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls which 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 which 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 BATTEN SYTEM

MATERIAL	WEIGHT	
Monier Duralite	6.00	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
Batten system	1.00	psf
2x6 rafters @ 24" oc	1.00	psf
Load	9.4	psf
Roof Pitch Adjustment	0.51	psf
Total Load	9.9	psf

LOCATION: VAULT BATTEN SYSTEM

MATERIAL	WEIGHT	
Monier Duralite	6.00	psf
Roofing felt	0.30	psf
Batten system	1.00	psf
1x4 skip sht'g	1.09	psf
2x6 rafters @ 24" oc	1.00	psf
Batt/blown insul	0.50	psf
1/2" Gypboard	2.50	psf
Load	12.4	psf
Roof Pitch Adjustment	0.67	psf
Total Load	13.1	psf

LOCATION: TOP CHORD BATTEN SYSTEM

MATERIAL	WEIGHT	
Monier Duralite	6.00	psf
Roofing felt	0.30	psf
Batten system	1.00	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	1.28	psf
Load	9.7	psf
Roof Pitch Adjustment	0.52	psf
Total Load	10.2	psf

LOCATION: BOTTOM CHORD BATTEN SYSTEM

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

PAUL ZACHER - STRUCTURAL ENGINEERS
4701 LAKESIDE WAY
FAIR OAKS, CA 95628
TEL: 916.961.3960
FAX: 916.961.3960

Title :
Dsgnr:
Description :

Scope :

Job #
Date: 7:12PM, 10 JUN 99

Rev. 510001

Timber Beam & Joist

Description RAFTERS AND BEAMS

Timber Member Information

		2x6 rafter	2x10 @ 16	2-2x8 @ 16
Timber Section		2x6	2x10	2-2x8
Beam Width	in	1.500	1.500	3.000
Beam Depth	in	5.500	9.250	7.250
Le: Unbraced Length	ft	2.00	0.00	0.00
Timber Grade		Douglas Fir - Larch,	Douglas Fir - Larch,	Douglas Fir - Larch,
Fb - Basic Allow	psi	875.0	875.0	875.0
Fv - Basic Allow	psi	95.0	95.0	95.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0
Load Duration Factor		1.250	1.250	1.250
Member Type		Sawn	Sawn	Sawn
Repetitive Status		Repetitive	Repetitive	Repetitive

Center Span Data

Span	ft	12.25	21.75	21.25
Dead Load	#/ft	19.80	13.20	13.20
Live Load	#/ft	32.00	21.33	21.33

Results

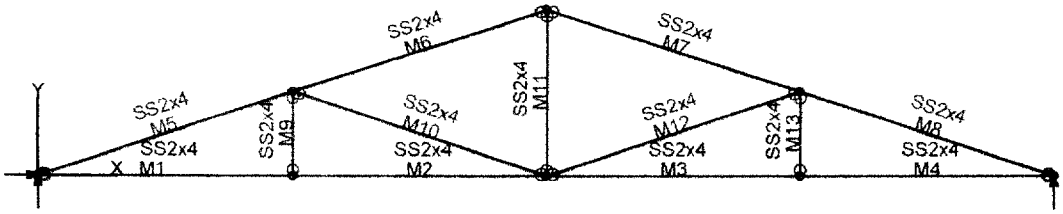
	Ratio =	0.9592	0.8279	0.5896
Mmax @ Center	in-k	11.66	24.50	23.39
@ X =	ft	6.12	10.87	10.62
fb : Actual	psi	1,541.8	1,145.5	889.9
Fb : Allowable	psi	1,607.3	1,383.6	1,509.4
		Bending OK	Bending OK	Bending OK
fv : Actual	psi	53.5	38.0	23.9
Fv : Allowable	psi	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	121.27	143.55	140.25
	LL	lbs	196.00	231.96	226.63
	Max. DL+LL	lbs	317.27	375.51	366.88
@ Right End	DL	lbs	121.27	143.55	140.25
	LL	lbs	196.00	231.96	226.63
	Max. DL+LL	lbs	317.27	375.51	366.88

Deflections

Center DL Defl	in	-0.301	-0.420	-0.397
L/Defl Ratio		487.6	621.6	641.8
Center LL Defl	in	-0.487	-0.678	-0.642
L/Defl Ratio		301.7	384.7	397.2
Center Total Defl	in	-0.789	-1.098	-1.039
Location	ft	6.125	10.875	10.625
L/Defl Ratio		186.4	237.6	245.4


Y
X
SS2x4
M1
SS2x4
M2
SS2x4
M3
SS2x4
M4
SS2x4
M5
SS2x4
M6
SS2x4
M7
SS2x4
M8
SS2x4
M9
SS2x4
M10
SS2x4
M11
SS2x4
M12
SS2x4
M13

VisualAnalysis 3.50.c Report

06/10/99 18:45:20
Project:
File: C:\Program Files\IES\VA35\Untitled.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	12.00	0.00	"	"	"
N4	18.00	0.00	"	"	"
N5	24.00	0.00	"	Yes	"
N6	6.00	2.00	"	No	"
N7	18.00	2.00	"	"	"
N8	12.00	4.00	"	"	"

Member Elements

Member	Section	Material	Length ft	Weight lbs	Theta deg
M1	SS2x4	Wood	6.00	8.85	0.00
M2	"	"	6.00	8.85	0.00
M3	"	"	6.00	8.85	0.00
M4	"	"	6.00	8.85	0.00
M5	"	"	6.32	9.33	0.00
M6	"	"	6.32	9.33	0.00
M7	"	"	6.32	9.33	0.00
M8	"	"	6.32	9.33	0.00
M9	"	"	2.00	2.95	0.00
M10	"	"	6.32	9.33	0.00
M11	"	"	4.00	5.90	0.00
M12	"	"	6.32	9.33	0.00
M13	"	"	2.00	2.95	0.00

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 ksi	Elasticity ksi	Poisson	Density lb/ft^3	Therm. /F
Wood	-NA-	1700.00	0.36	40.47	0.00

VisualAnalysis 3.50.c Report

06/10/99 18:43:44
Project:
File: C:\Program Files\IES\VA35\Untitled.vap
Company: PK Associates Engineers
Engineer: Paul Zacher
Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

Load Cases

Load Case	Strength	Service	Results
(1)Service Case 1	No	No	None
(2)Service Case 2	"	"	"
(3)Equation Case 1	"	"	1st Ord

Service Load Cases

Load Case	Load Source	Self Weight	Loads
Service Case 1	Dead loads	None	
Service Case 2	Roof Live 1	"	

Load Combination Summary

Equation Case: Equation Case 1
Combination: +1D+1L+1Lr+1R+1W+1S+1E+1H+1F+1TS+1T+1TC+1I+1U+1LE
Contributing Cases & Source
Service Case 1 (Dead loads)
Service Case 2 (Roof Live loads)

Equation Case Combinations

Load Case	Cases	Equation
Equation Case 1	0.00	0.00

Member Uniform Loads

Load Case	Member	Direction	Offset End *ft*	Off *ft*	Magnitude
Service Case 1	M1	DY proj.	0.00	6.00	-0.01 K/ft
"	M2	"	0.00	6.00	-0.01 K/ft
"	M3	"	0.00	6.00	-0.01 K/ft
"	M4	"	0.00	6.00	-0.01 K/ft
"	M5	"	0.00	6.32	-0.02 K/ft
"	M6	"	0.00	6.32	-0.02 K/ft
"	M7	"	0.00	6.32	-0.02 K/ft
"	M8	"	0.00	6.32	-0.02 K/ft
Service Case 2	M5	"	0.00	6.32	-0.03 K/ft
"	M6	"	0.00	6.32	-0.03 K/ft
"	M7	"	0.00	6.32	-0.03 K/ft
"	M8	"	0.00	6.32	-0.03 K/ft

VisualAnalysis 3.50.c Report

06/10/99 18:43:50
Project:
File: C:\Program Files\IES\VA35\Untitled.vap
Company: PK Associates Engineers
Engineer: Paul Zacher
Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

Load Cases

Load Case	Strength	Service	Results
(1)Service Case 1	No	No	None
(2)Service Case 2	"	"	"
(3)Equation Case 1	"	"	1st Ord

Member Extreme Results

Member	Fx(lc)	Fy(lc)	Mz(lc)	fc max(lc)	fc min(lc)	Dx(lc)	Dy(lc)
	K	*K*	*K-ft*	*ksi*	*ksi*	*in*	*in*
M1	**1.72(3)**	-0.02(3)	0.00(3)	0.33(3)	0.18(3)	-0.00(3)	-0.16(3)
"	1.72(3)	0.02(3)	0.04(3)	0.48(3)	**0.33(3)**	0.01(3)	-0.00(3)
M2	1.72(3)	-0.03(3)	-0.03(3)	0.33(3)	0.19(3)	0.01(3)	-0.17(3)
"	1.72(3)	0.02(3)	0.02(3)	0.46(3)	0.32(3)	0.03(3)	-0.16(3)
M3	1.72(3)	-0.02(3)	-0.03(3)	0.33(3)	0.19(3)	0.03(3)	-0.17(3)
"	1.72(3)	0.03(3)	0.02(3)	0.46(3)	0.32(3)	0.04(3)	-0.16(3)
M4	1.72(3)	-0.02(3)	0.00(3)	0.33(3)	0.18(3)	0.04(3)	-0.16(3)
"	1.72(3)	0.02(3)	0.04(3)	0.48(3)	0.33(3)	0.06(3)	-0.00(3)
M5	**-1.85(3)**	**-0.18(3)**	**-0.20(3)**	**-0.35(3)**	**-1.13(3)**	-0.02(3)	-0.17(3)
"	-1.75(3)	0.12(3)	**0.14(3)**	0.47(3)	-0.35(3)	-0.00(3)	-0.00(3)
M6	-1.21(3)	-0.12(3)	-0.20(3)	-0.21(3)	-1.03(3)	-0.03(3)	**-0.25(3)**
"	-1.11(3)	**0.18(3)**	0.14(3)	**0.57(3)**	-0.21(3)	-0.02(3)	-0.16(3)
M7	-1.21(3)	-0.18(3)	-0.20(3)	-0.21(3)	-1.03(3)	0.07(3)	-0.24(3)
"	-1.11(3)	0.12(3)	0.14(3)	0.57(3)	-0.21(3)	0.08(3)	-0.14(3)
M8	-1.85(3)	-0.12(3)	-0.20(3)	-0.35(3)	-1.13(3)	0.05(3)	-0.16(3)
"	-1.75(3)	0.18(3)	0.14(3)	0.47(3)	-0.35(3)	0.07(3)	0.02(3)
M9	0.04(3)	-0.00(3)	-0.00(3)	0.01(3)	0.01(3)	0.16(3)	0.01(3)
"	0.04(3)	-0.00(3)	0.00(3)	0.01(3)	0.01(3)	0.16(3)	0.04(3)
M10	-0.66(3)	-0.00(3)	-0.00(3)	-0.13(3)	-0.13(3)	0.08(3)	-0.15(3)
"	-0.66(3)	-0.00(3)	0.00(3)	-0.13(3)	-0.13(3)	0.08(3)	-0.14(3)

3)							
M11	0.48(3)	-0.00(3)	-0.00(3)	0.09(3)	0.09(3)	**-0.17(3)**	-0.03(
3)							
"	0.48(3)	-0.00(3)	0.00(3)	0.09(3)	0.09(3)	-0.16(3)	-0.03(
3)							
M12	-0.66(3)	0.00(3)	0.00(3)	-0.13(3)	-0.13(3)	-0.03(3)	-0.17(
3)							
"	-0.66(3)	0.00(3)	0.00(3)	-0.13(3)	-0.13(3)	-0.03(3)	-0.16(
3)							
M13	0.04(3)	0.00(3)	0.00(3)	0.01(3)	0.01(3)	**0.16(3)**	0.02(
3)							
"	0.04(3)	0.00(3)	0.00(3)	0.01(3)	0.01(3)	0.16(3)	**0.04(**
3)							

BENDING & COMP: TRUSS 1; MEMBER 5

Buckling Factor. CT is negelected due to small contribution

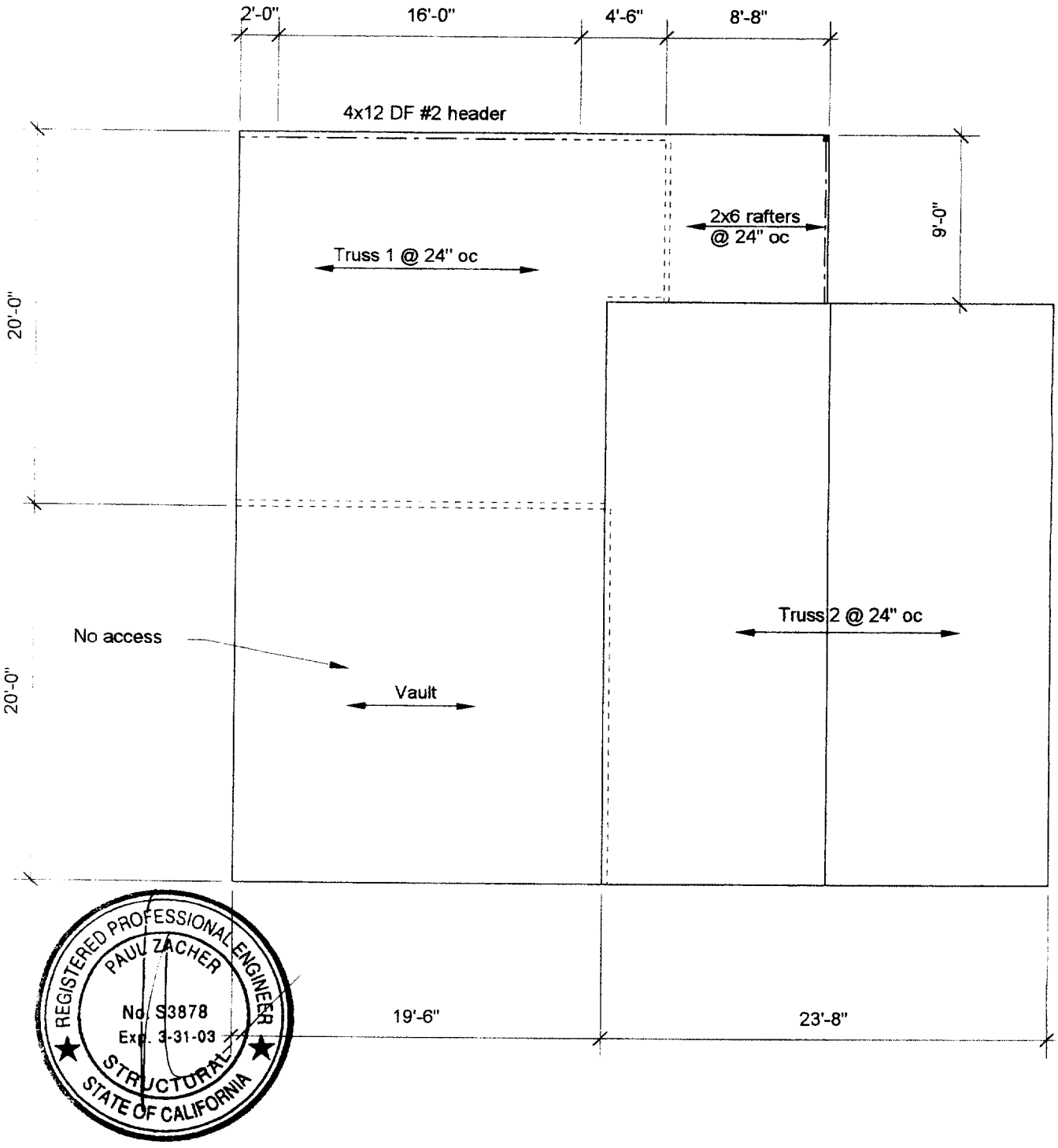
Grading:

2x4, 6 or 8 Doug-fir larch: No. 2

Assumptions:

Lateral support at points of bearing
SPS or gypboard attached to 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	1850	lbs
Max Reaction. R	180	lbs
Max Moment. M	200	ft-lbs
Max LL Deflection	0.09	inches
Max TL Deflection	0.17	inches
LL Defl Criteria = L/	240	
TL Defl Criteria = L/	180	
Duration factor. Cd	1.25	
Repetitive Factor. Cr	1.15	
fc =	352	psi
Fce=	1597	psi
Fc*=	1094	psi
F'c=	879	psi
fb=	65	psi
F'b=	1258	psi
Shear D/C ratio	0.43 < 1.0. Member	OK
Interaction equation:		
(fc/F'c)^2 +		
fb/ (F'b(1-fc/Fce)) =	0.23 < 1.0. Member	OK
Live Load defl ratio	0.28 < 1.0. Member	OK
Total Load defl ratio	0.40 < 1.0. Member	OK



Notes:
1. This is a reroof project. The new roofing material shall be a Monier Light Weight Concrete Tile.
2. All rafters are 2x6 DF#2 and hips and valleys are 2x8 DF#2 unless otherwise noted.
3. All existing rafter, hips, valleys, rafter ties, and purlins are braced per UBC Section 2326.12 "Roof and Ceiling Framing" unless otherwise shown.

1 ROOF PLAN - AU

Not to Scale