

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0000975
Insp Area: 1

Site Address: 41 SARATOGA CR SAC
Parcel No: 293-0061-011

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

CONTRACTOR
ZIMMERMAN ROOFING
3675 R ST
SACRAMENTO CA 95816

OWNER
ROBERSON G R/MARY H
41 SARATOGA CR
SACRAMENTO CA 95825

ARCHITECT

Nature of Work: 36 SQ T/O REROOF WITH MONIER 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'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 C-39 License Number 557559 Date 2/2/00 Contractor Signature Gilly Coy

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 2/2/00 Applicant/Agent Signature Gilly Coy

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 713-98-2021 Exp Date 10/01/2000

(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 2/2/00 Applicant Signature Gilly Coy

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
FEB 01 2000
NEIGHBORHOODS, PLANNING
AND DEVELOPMENT SERVICES

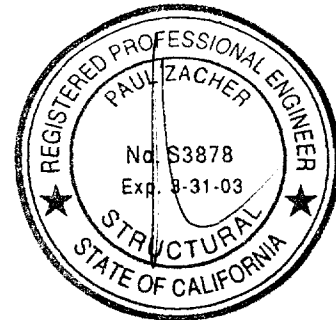
robertson

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

TEL: 916.961.3960
FAX: 916.961.3960

January 14, 2000

Zimmerman Roofing
3560 Ramona Avenue
Sacramento, CA 95826
TEL: 916.454.3667
FAX: 916.455.3784



Attn: Mr. Jeff Tucker,

re: Job 2000_001: ROBERTSON

Subject: Structural Investigation Report of the Roof for the Residence located at 41 Saratoga Way, Sacramento, CA 95864.

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 January 10, 2000. 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 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 2500 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 2x6 purlins supported at no more than 6'-0" on center by 2x4 struts bearing on walls below. The garage area is framed with 2x6 rafters spaced at 24" on center and 2x6 cross ties spaced at 4'-0" on center.

CONCLUSIONS:

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

Reviewed by Matt P. 2/2/00

1/10 Verify adequacy of ridge, hip & purlin bracing in field. Max. 12' span for 2x6 rafter, per engineering report.

robertson

Paul Zacher – Structural Engineers
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TEL: 916.961.3960
FAX: 916.961.3960

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 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

<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

100

100

200 100 p.f. = 12° = 200 p.f.
 100 100 = 82°

2 × 10² = 2

200/82

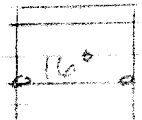


100

200 100 p.f. = 7° = 81 p.f.
 100 100 = 112°

4 × 12² = 2

81/112

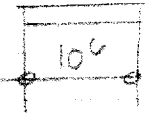


100

200 100 p.f. = 11° = 127 p.f.
 100 100 = 176°

4 × 12² = 1

127/176



100

200 100 p.f. = 5° = 58 p.f.
 100 100 = 85°

4 × 12² = 1

58/80



100

200 100 p.f. = 5° = 58 p.f.
 100 100 = 85°

4 × 8² = 1

58/80



Timber Beam & Joist

Description RAFTERS AND BEAMS

Timber Member Information

Calculations are designed to 1997 NDS and 1997 UBC Requirements

	rafter	B1:	B2:	Bm 3:	Bm 4:
Timber Section	2x6	4x12	4x12	4x12	4x8
Beam Width	in 1.500	3.500	3.500	3.500	3.500
Beam Depth	in 5.500	11.250	11.250	11.250	7.250
Le. Unbraced Length	ft 0.00	0.00	0.00	0.00	0.00
Timber Grade	Douglas Fir - Larch.	Douglas Fir - Larch.	Douglas Fir - Larch.	Douglas Fir - Larch.	Douglas Fir - Larch, Douglas Fir - Larch, Douglas Fir - Larch.
Fb - Basic Allow	psi 875.0	875.0	1,000.0	1,000.0	1,000.0
Fv - Basic Allow	psi 95.0	95.0	95.0	95.0	95.0
Elastic Modulus	ksi 1,600.0	1,600.0	1,700.0	1,700.0	1,700.0
Load Duration Factor	1.250	1.250	1.250	1.250	1.250
Member Type	Sawn	Sawn	Sawn	Sawn	Sawn
Repetitive Status	Repetitive	No	No	No	No

Center Span Data

Span	ft	12.00	16.00	10.50	15.00	5.00
Dead Load	#/ft	23.00	81.00	127.00	58.00	58.00
Live Load	#/ft	32.00	112.00	176.00	80.00	80.00

Results

Ratio = 0.9607 0.8344 0.4936 0.4588 0.1305

Mmax @ Center	in-k	11.88	74.11	50.11	46.57	5.17
@ X =	ft	6.00	8.00	5.25	7.50	2.50
f _b Actual	psi	1,570.9	1,003.8	678.7	630.9	168.8
F _b Allowable	psi	1,635.2	1,203.1	1,375.0	1,375.0	1,500.0
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
f _v Actual	psi	55.7	52.2	49.9	34.7	15.5
F _v Allowable	psi	118.8	118.8	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	138.00	648.00	666.75	435.00	145.00
	LL	lbs	192.00	896.00	924.00	600.00	200.00
	Max. DL+LL	lbs	330.00	1,544.00	1,590.75	1,035.00	345.00
@ Right End	DL	lbs	138.00	648.00	666.75	435.00	145.00
	LL	lbs	192.00	896.00	924.00	600.00	200.00
	Max. DL+LL	lbs	330.00	1,544.00	1,590.75	1,035.00	345.00

Deflections

Ratio OK Deflection OK Deflection OK Deflection OK Deflection OK

Center DL Defl	in	-0.322	-0.180	-0.049	-0.094	-0.004
L/Defl Ratio		446.5	1,068.1	2,561.1	1,923.5	13,900.2
Center LL Defl	in	-0.449	-0.249	-0.068	-0.129	-0.006
L/Defl Ratio		320.9	772.5	1,848.1	1,394.6	10,077.7
Center Total Defl	in	-0.771	-0.428	-0.117	-0.223	-0.010
Location	ft	6.000	8.000	5.250	7.500	2.500
L/Defl Ratio		186.7	448.3	1,073.5	808.4	5,842.1

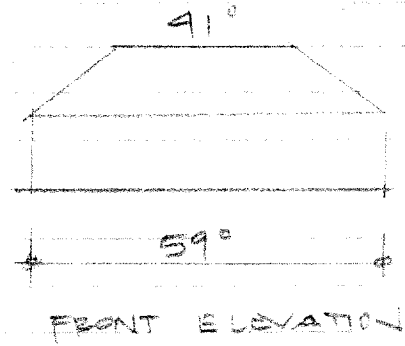
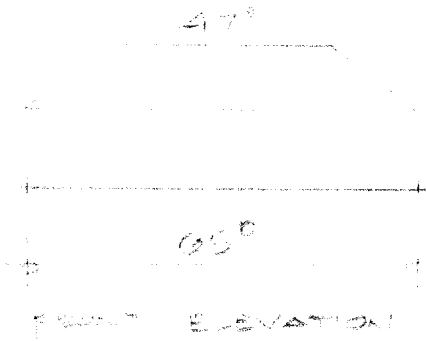
FD2

12-20

00_001

INTERIOR WALL

12-20



CEILING

$$\begin{aligned}
 \text{AREA} &= 19' \times 18' + 52' \times 19' + 22' \times 90 + 55' \times 65' = 6001 \text{ ft}^2 \\
 &= (54.8) \text{ ft}
 \end{aligned}$$

WIND FORCE DISTRIBUTION

DESCRIPTION: Lateral Design Front - Rear Direction

METHOD 2: Primary Frames and Systems

$P = C_e C_q q_s I$ Formula 18-1
 $C_e =$ Exposure factor B Table 16-G
 $C_q =$ Pressure coeff. 1.3 or 1.4 Table 16-H
 Basic wind speed 75 Figure 16-1
 $q_s =$ wind stag. pressure 14.5 Table 16-F
 $I_w =$ Importance factor 1 Table 16-K
 Roof Pitch: N Ex: enter 6 if 6:12. For gabled end or hip roof elevation only. Otherwise, enter N

Level	Story Ht feet	Exposed Width (ft)	Projected Area (sf)	Diaphragm Shear (lbs)	Story Shear
Top of Roof	15	47			
1st floor top plate	8	65	589	7439	
1st floor	0	65			7439

$P_{uplift} = C_e C_q q_s I$ 6.29 psf Note: The exposure coefficient, C_e is taken at the mean roof height

METHOD 1: Elements and Components

Not in areas of discontinuities (enclosed or unenclosed):

Interpolate between tributary areas of 10 and 100 sf

Wall Elements:			
	Direction of wind	Tributary Area (sf)	Pressure, p (psf)
Slope > 12:12	Inward	10	10.79
		100	8.09
	Outward	10	10.79
		100	8.09

Roof Elements:			
	Direction of wind	Tributary Area (sf)	Pressure, p (psf)
Slope < 7:12	Outward	10	11.69
		100	8.99
Slope 7:12 to 12:12	Inward	10	11.69
		100	8.99
	Outward	10	11.69
		100	8.99

WIND FORCE DISTRIBUTION

DESCRIPTION: Lateral Design Left -Right Direction

METHOD 2: Primary Frames and Systems

$P = C_e C_q q_s I$ Formula 18-1
 $C_e =$ Exposure factor B Table 16-G
 $C_q =$ Pressure coeff. 1.3 or 1.4 Table 16-H
 Basic wind speed 75 Figure 16-1
 $q_s =$ wind stag. pressure 14.5 Table 16-F
 $I_w =$ Importance factor 1 Table 16-K
 Roof Pitch: N Ex: enter 6 if 6:12. For gabled end or hip roof elevation only. Otherwise, enter N

Level	Story Ht feet	Exposed Width (ft)	Projected Area (sf)	Diaphragm Shear (lbs)	Story Shear
Top of Roof	15	41			
1st floor top plate	8	59	523	6605	
1st floor	0	59			6605

$P_{\text{uplift}} = C_e C_q q_s I$ 6.29 psf Note: The exposure coefficient, C_e is taken at the mean roof height

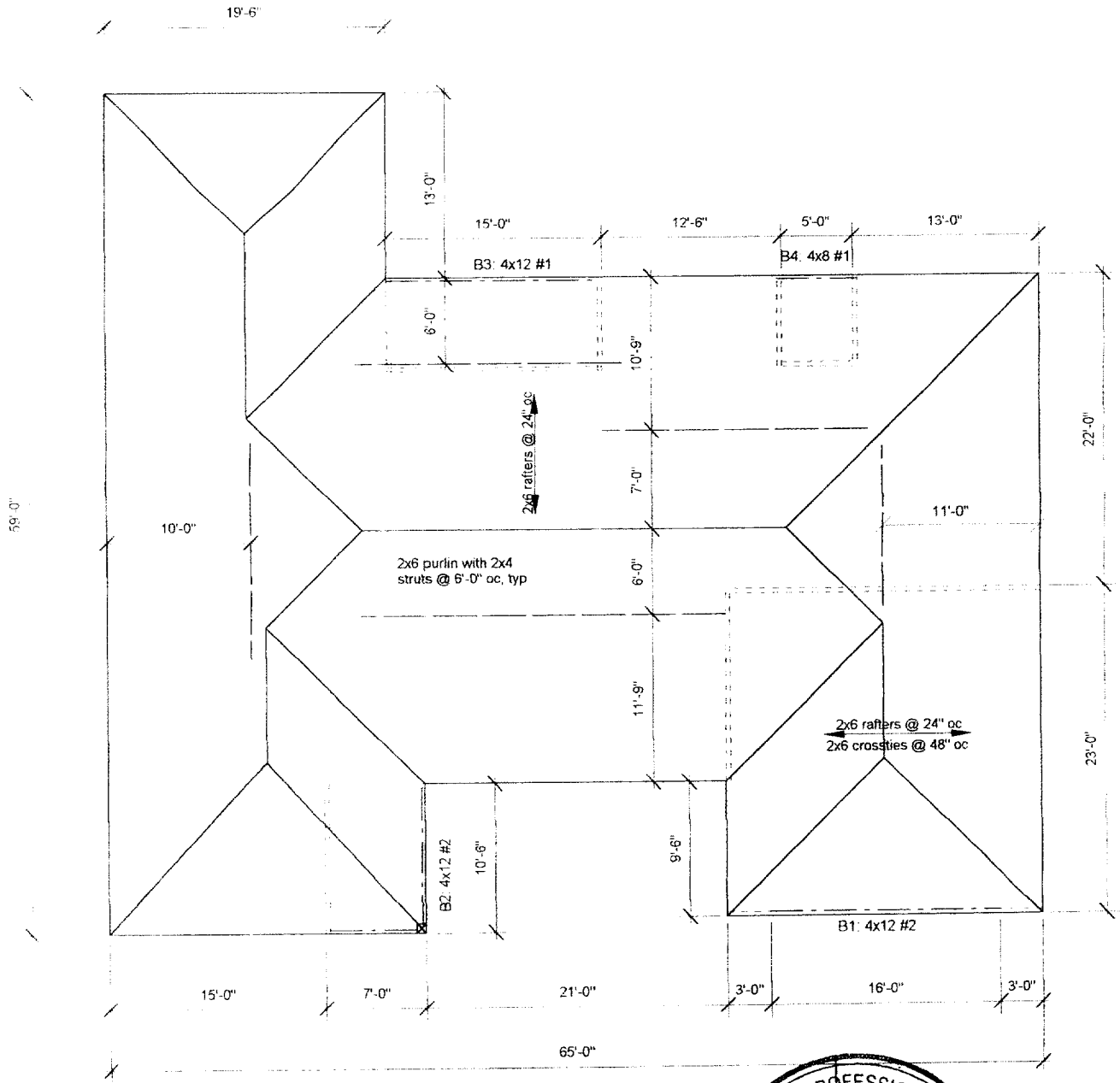
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Roof Elements:			
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Slope < 7:12	Outward	10	11.69
		100	8.99
Slope 7:12 to 12:12	Inward	10	11.69
		100	8.99
	Outward	10	11.69
		100	8.99



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 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 2320.12 "Roof and Ceiling Framing" unless otherwise shown.
4. All structural wood members that were observed appear to be in sound condition and without structural defect.

1

ROOF PLAN - ROBERTSON

Not to Scale

10

