

**CITY OF SACRAMENTO**

**1231 I Street, Sacramento, CA 95814**

**Permit No: 9808437**

**Insp Area: 2**

**Site Address: 1294 KENNADY LN SAC**

**Parcel No: 0160264007**

**Sub-Type: RES**

**Housing (Y/N): N**

CONTRACTOR

ZIMMERMAN ROOFING  
3560 RAMONA AV  
SACRAMENTO, CA

95826

OWNER

ROBERTS DAVID R/LINDA M  
1294 KENNADY LN  
SACRAMENTO CA

95822

ARCHITECT

**Nature of Work: REMOVE OLD ROOF & REROOF W/PIONEER LIGHTWEIGHT TLE 4/12 PITCH SFR 34SQS**

**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 8-31-98 Contractor Signature Jilly 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 8-31-98 Applicant/Agent Signature Jilly 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 Fund Policy Number 713 97 002021

\_\_\_\_\_, (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 8-31-98 Applicant Signature Jilly 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.**



DEPARTMENT OF  
PLANNING AND DEVELOPMENT

CITY OF SACRAMENTO  
CALIFORNIA

1231 I STREET  
ROOM 200  
SACRAMENTO, CA  
95814-2998

Permit Services  
916-264-7619  
FAX 916-264-7066

Dave Roberts  
1294 Kennady Lane  
95822

**TILE ROOF WORKSHEET**

**This worksheet must be filled out whenever any type of tile roof is applied for.**

**If the answer to question #5 is yes, a written engineering report from a registered engineer must be provided with each application.**

1. BRAND AND MODEL OF TILE Pioneer Shale
2. TILE WEIGHT PER SQUARE 730
3. WEIGHT OF ROOF SYSTEM PER SQUARE 180
4. TOTAL WEIGHT OF ROOF SYSTEM 910
5. DOES TOTAL WEIGHT OF ROOF SYSTEM EXCEED 750# PER SQUARE  YES  NO
6. ROOF SLOPE 4/12

PLEASE PROVIDE A SEPARATE WORKSHEET FOR EACH APPLICATION INVOLVING A TILE ROOF.

*please see attached  
engineering report*

**Paul Zacher-Structural Engineers**

4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: 916.961.3960  
FAX: 916.961.3960  
e-mail: pzacher@softcom.net

July 30, 1998

Zimmerman Roofing  
3560 Ramona Avenue  
Sacramento, CA 95826  
TEL: 916.454.3667  
FAX: 916.455.3784  
TEL (Jeff): 916.392.1971  
FAX (Jeff): 916.392.6853  
FAX (Framer) : 916.383.5308

Attn.: Mr. Jeff Tucker,

re: Job 98135: ROBERTS



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 violation of any City Ordinance or State Law.

Subject: Structural Investigation Report of the Roof for the Residence located at 1294 Kennady Lane, 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 July 15, 1998. 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 1950's vintage.  
Occupancy: Residential.  
No. of Stories: One.  
Dimensions: Approximately 1500 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

Roof:

The roof covering will consist of Monier Duralite Shake Tile over 1/2" solid sheathing. The living area is conventionally framed with 2x4 rafters spaced at 24" on center with 2x4 purlins supported at no more than 4'-0" on center by 2x4 struts bearing on walls below. The vaulted ceiling is constructed of 2x6 rafters spaced at 24" on center. The garage area is framed with 2x4 rafters spaced at 24" on center and 2x6 cross ties spaced at 4'-0" on center.

ISSUED

AUG 9 1998

1998 AUG 9 10 00 AM  
RECEIVED

1/9

CONCLUSIONS:

Roof:

The living and garage areas lack sufficient structural capacity for the applied live and dead loads.

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 DF#2 purlin to the side of the existing 2c4 cripple studs and flat 2x4 plate with 3-16d's at each location. See detail 1.
2. Provide a 2x6 DF#2 purlin with 2x4 struts from the purlins to the bearing walls below. The maximum spacing between the struts shall not exceed 6'-0" on center. The unbraced length of the struts shall not exceed 8'-0" and the minimum slope of the struts shall not be less than 45 degrees from the horizontal. See detail 1.
3. Scab a 2x4 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 8'-0". See detail 1.
4. Add a 1 3/4" x 11 7/8" x 18'-0" microlam purlin. Support the purlin with 2x4 struts to the bearing walls below. See detail 1.
5. Scab a 1 3/4" x 11 7/8" x 18'-0" microlam beam to the existing 2-2x10 beam with 16d's at 4" on center. See detail 1.

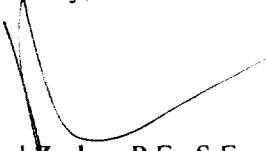
Garage:

6. Scab a 1 3/4" x 11 7/8" microlam beam to the existing 2x6 crosstie and nail together with 16d's @ 12" oc. The ends of the microlam may be clipped as required to meet the slope of the rafters. The support at the walls shall be a 2x8 x 2'-8" long nailer attached to the double top plate with 16d's @ 2" oc staggered. Support the existing ridge/valley connection to the microlam beam with a 2x4 strut. See details 1 and 2.
7. Scab a 2x4 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 8'-0". See detail 1.

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> |          |
|--------------------------------|---------------|----------|
| Monier Shake or Slate Duralite | 7.40          | 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          | 11.3 psf |
| Roof Pitch Adjustment          | <u>0.61</u>   | psf      |
| Total Load                     | 11.9          | psf      |

**BEAM DESIGN FOR UNIFORM LOAD: 2x4**

(Values for DF Larch #2)

|                                     |            |
|-------------------------------------|------------|
| Width, b                            | 1.5 inches |
| Depth, d                            | 3.5 inches |
| Length of beam                      | 8 feet     |
| Dead load roof                      | 11.9 psf   |
| Live load roof                      | 16 psf     |
| Contributory width<br>of roof load  | 2 feet     |
| Dead load floor                     | 0 psf      |
| Live load floor                     | 0 psf      |
| Contributory width<br>of floor load | 0 feet     |
| Dead load wall                      | 0 plf      |
| Live load defl ratio                | 240        |
| Total load defl ratio               | 180        |
| Total dead load                     | 23.8 plf   |
| Total live load                     | 32 plf     |

**Base design values:**

|                             |             |
|-----------------------------|-------------|
| Shear, $F_v$                | 95 psi      |
| Bending, $F_b$              | 1000 psi    |
| Comp. perp. to grain, $F_c$ | 625 psi     |
| Mod of Elasticity, E        | 1700000 psi |
| Load duration factor, $C_d$ | 1.25        |
| Size Factor, $C_f$          | 1.50        |
| Repetitive factor, $C_r$    | 1.15        |

|                     |         |
|---------------------|---------|
| Dead load reaction  | 95 lbs  |
| Live load reaction  | 128 lbs |
| Total load reaction | 223 lbs |

|                           |             |
|---------------------------|-------------|
| Allowable shear, $F_v'$   | 119 psi     |
| Actual shear, $f_v$       | 59 psi      |
| Allowable bending, $F_b'$ | 2156 psi    |
| Actual bending, $f_b$     | 1749 psi    |
| Allowable live load defl  | 0.40 inches |
| Actual live load defl     | 0.32 inches |
| Allowable total load defl | 0.53 inches |
| Actual total load defl    | 0.56 inches |

|                      |             |
|----------------------|-------------|
| Bearing length req'd | 0.24 inches |
|----------------------|-------------|

Horizontal Shear OK

Bending OK

Live Load Deflection OK

Beam Fails under Total Load Deflection  
OK. Less than 1/32" over

**BEAM DESIGN FOR UNIFORM LOAD: 2-2x4**

(Values for DF Larch #2)

|                                  |            |
|----------------------------------|------------|
| Width, b                         | 3 inches   |
| Depth, d                         | 3.5 inches |
| Length of beam                   | 10 feet    |
| Dead load roof                   | 11.9 psf   |
| Live load roof                   | 16 psf     |
| Contributory width of roof load  | 2 feet     |
| Dead load floor                  | 0 psf      |
| Live load floor                  | 0 psf      |
| Contributory width of floor load | 0 feet     |
| Dead load wall                   | 0 plf      |
| Live load defl ratio             | 240        |
| Toal load defl ratio             | 180        |
| Total dead load                  | 23.8 plf   |
| Total live load                  | 32 plf     |

**Base design values:**

|                          |             |
|--------------------------|-------------|
| Shear, Fv                | 95 psi      |
| Bending, Fb              | 1000 psi    |
| Comp. perp. to grain, Fc | 625 psi     |
| Mod of Elasticity, E     | 1700000 psi |
| Load duration factor, Cd | 1.25        |
| Size Factor, Cf          | 1.50        |
| Repetitive factor, Cr    | 1.15        |

|                     |         |
|---------------------|---------|
| Dead load reaction  | 119 lbs |
| Live load reaction  | 160 lbs |
| Total load reaction | 279 lbs |

|                           |             |
|---------------------------|-------------|
| Allowable shear, Fv'      | 119 psi     |
| Actual shear, fv          | 38 psi      |
| Allowable bending, Fb'    | 2156 psi    |
| Actual bending, fb        | 1367 psi    |
| Allowable live load defl  | 0.50 inches |
| Actual live load defl     | 0.40 inches |
| Allowable total load defl | 0.67 inches |
| Actual total load defl    | 0.69 inches |

Bearing length req'd 0.15 inches

Horizontal Shear OK

Bending OK

Live Load Deflection OK

Beam Fails under Total Load Deflection  
OK. Less than 1/32" over

**MICROLAM BEAM DESIGN FOR UNIFORM LOAD:**

|                                     |               |
|-------------------------------------|---------------|
| Width                               | 1.75 inches   |
| Depth                               | 11.875 inches |
| Length of beam                      | 18 feet       |
| Dead load roof                      | 11.9 psf      |
| Live load roof                      | 16 psf        |
| Contributory width<br>of roof load  | 8 feet        |
| Dead load floor                     | 0 psf         |
| Live load floor                     | 0 psf         |
| Contributory width<br>of floor load | 0 feet        |
| Dead load wall                      | 0 plf         |
| Live load defl ratio                | 240           |
| Toal load defl ratio                | 180           |
| Total dead load                     | 95.2 plf      |
| Total live load                     | 128 plf       |

## Base design values:

|                             |             |
|-----------------------------|-------------|
| Shear, $F_v$                | 285 psi     |
| Bending, $F_b$              | 2600 psi    |
| Comp. perp. to grain, $F_c$ | 750 psi     |
| Mod of Elasticity, $E$      | 1800000 psi |
| Load duration factor, $C_d$ | 1.25        |
| Volume factor, $C_v$        | 1.00        |

|                     |          |
|---------------------|----------|
| Dead load reaction  | 857 lbs  |
| Live load reaction  | 1152 lbs |
| Total load reaction | 2009 lbs |

|                           |             |                       |    |
|---------------------------|-------------|-----------------------|----|
| Allowable shear, $F_v'$   | 356 psi     | Horizontal Shear      | OK |
| Actual shear, $f_v$       | 129 psi     |                       |    |
| Allowable bending, $F_b'$ | 3250 psi    | Bending               | OK |
| Actual bending, $f_b$     | 2637 psi    |                       |    |
| Allowable live load defl  | 0.90 inches | Live Load Deflection  | OK |
| Actual live load defl     | 0.69 inches |                       |    |
| Allowable total load defl | 1.20 inches | Total Load Deflection | OK |
| Actual total load defl    | 1.20 inches |                       |    |
| Bearing length req'd      | 1.53 inches |                       |    |



**MICROLAM BEAM DESIGN FOR UNIFORM LOAD:**

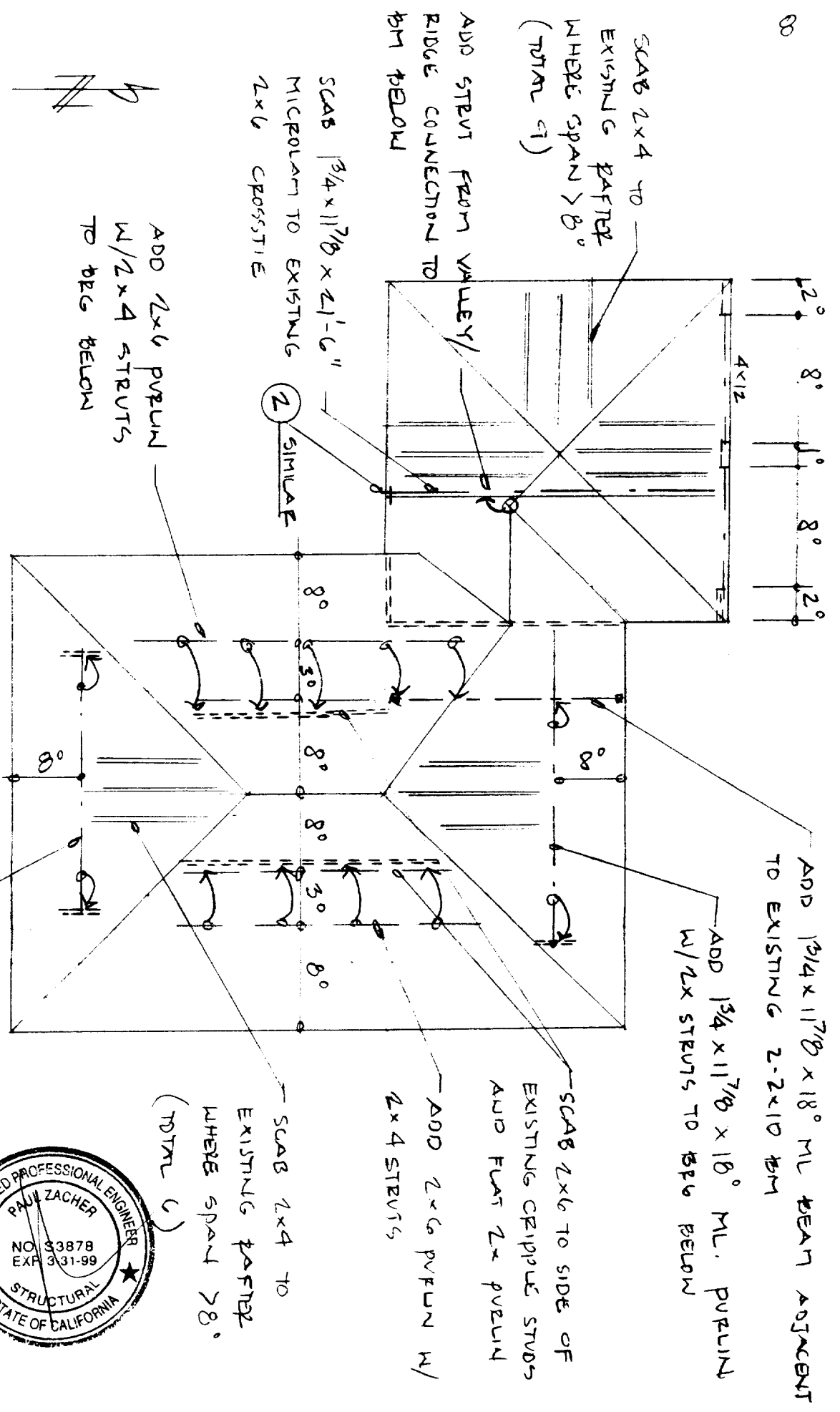
|                                     |               |
|-------------------------------------|---------------|
| Width                               | 1.75 inches   |
| Depth                               | 11.875 inches |
| Length of beam                      | 21 feet       |
| Dead load roof                      | 11.9 psf      |
| Live load roof                      | 16 psf        |
| Contributory width<br>of roof load  | 5 feet        |
| Dead load floor                     | 0 psf         |
| Live load floor                     | 0 psf         |
| Contributory width<br>of floor load | 0 feet        |
| Dead load wall                      | 0 plf         |
| Live load defl ratio                | 240           |
| Toal load defl ratio                | 180           |
| Total dead load                     | 59.5 plf      |
| Total live load                     | 80 plf        |

## Base design values:

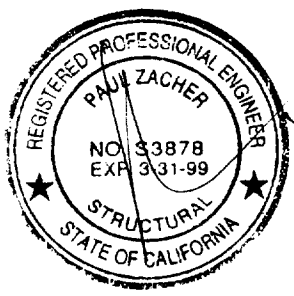
|                             |             |
|-----------------------------|-------------|
| Shear, $F_v$                | 285 psi     |
| Bending, $F_b$              | 2600 psi    |
| Comp. perp. to grain, $F_c$ | 750 psi     |
| Mod of Elasticity, $E$      | 1800000 psi |
| Load duration factor, $C_d$ | 1.25        |
| Volume factor, $C_v$        | 1.00        |

|                     |          |
|---------------------|----------|
| Dead load reaction  | 625 lbs  |
| Live load reaction  | 840 lbs  |
| Total load reaction | 1465 lbs |

|                           |             |                       |    |
|---------------------------|-------------|-----------------------|----|
| Allowable shear, $F_v'$   | 356 psi     | Horizontal Shear      | OK |
| Actual shear, $f_v$       | 96 psi      |                       |    |
| Allowable bending, $F_b'$ | 3250 psi    | Bending               | OK |
| Actual bending, $f_b$     | 2244 psi    |                       |    |
| Allowable live load defl  | 1.05 inches | Live Load Deflection  | OK |
| Actual live load defl     | 0.80 inches |                       |    |
| Allowable total load defl | 1.40 inches | Total Load Deflection | OK |
| Actual total load defl    | 1.39 inches |                       |    |
| Bearing length req'd      | 1.12 inches |                       |    |



1 ROOF PLAN - ROBERTS  
N.T.S.



Ledger

9

**LEDGER DESIGN:**

WOOD TO WOOD CONNECTION: Ledger to double top plate

Assumptions:

- 1. Point load from beam is equally distributed to each supporting stud.
- 2. Allowable foundation pressure is 1000 plf.

|                           |                                    |                     |
|---------------------------|------------------------------------|---------------------|
| Width, b                  | 1.5 inches                         |                     |
| Depth, d                  | 7.25 inches                        |                     |
| Maximum reaction          | 1465 lbs                           |                     |
| Base design values:       |                                    |                     |
| Shear, Fv                 | 95 psi                             |                     |
| Bending, Fb               | 875 psi                            |                     |
| Comp. perp. to grain, Fc  | 625 psi                            |                     |
| Mod of elasticity, E      | 1600000 psi                        |                     |
| Load duration factor, Cd  | 1.25                               |                     |
| Size factor, Cf           | 1.20                               |                     |
| Allowable shear, Fv'      | 119 psi                            | Horizontal Shear OK |
| Actual shear, fv          | 54 psi                             |                     |
| Allowable bending, Fb'    | 1313 psi                           | Bending OK          |
| Actual bending, fb        | 111 psi                            |                     |
| Length of ledger required | 1.465 feet                         |                     |
| Length of ledger used     | 2.67 feet                          |                     |
| Number of nails required  | 19 16d commons ledger to top plate |                     |

2'-0" long blocking both sides with  
 4 - 16d commons to each existing stud

Beam

Existing double  
 top plate

Existing stud wall

16d commons @ 2" oc staggered -total 19,  
 ledger to existing dbl top plate

2x8 DF#2 ledger x 2'-8" long centered  
 under beam

2

DETAIL

N.T.S.

