

**CITY OF SACRAMENTO**

1231 I Street, Sacramento, CA 95814

Permit No: 0405969

Insp Area: 2

Thos Bros: 336F1

Site Address: 150 AUDUBON CR SAC

Parcel No: 031-1090-022

Sub-Type: RES

Housing (Y/N): N

**CONTRACTOR**

MONARCH ROOFING INC  
8262 ALPINE AVE SUITE A  
SACRAMENTO, CA 95826

**OWNER**

FUJII GILBERT J/SHERRY  
150 AUDUBON CR  
SACRAMENTO CA 95831

**ARCHITECT**

**Nature of Work:** T/O SHAKE, INSTALL METAL BATTEN SYSTEM, REROOF WITH 32 SQ LIGHT CONCRETE 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 689 License Number 806787 Date 4/19/04 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 project with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_

Date \_\_\_\_\_ Owner Signature \_\_\_\_\_

**CITY OF SACRAMENTO**

PAID  
APR 19 2004

NORTH PERMIT

**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 April 19<sup>th</sup> 2004 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 VIRGINIA SURETY COMPANY, INC Policy Number 005-00016796 Exp Date 01/01/2005

(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 April 14, 2004 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.**

Fuji

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

TEL: 916.961.3960  
FAX: 916.961.6552

April 17, 2004

Monarch Roofing  
8262 Alpine Avenue, Suite A  
Sacramento, CA 95826  
TEL: (916) 978-3182  
FAX: (916) 456-1703

Attn.: Mr. Neal Weber,

re: Job 2004166: FUJJI

Subject: Structural Investigation Report of the Roof for the Residence located at 150 Audubon Circle, 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 April 16, 2004. 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 with 2001 CBC Title 24 Amendments.

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 3000 square feet.

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**CONSTRUCTION:**

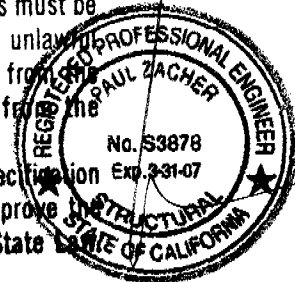
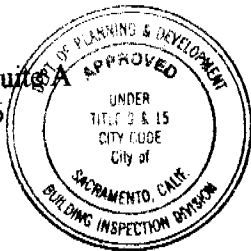
Roof:  
The roof covering will consist of a Light Weight Concrete Tile over a batten system. The roof structure is conventionally framed with 2x8 rafters spaced at 24" on center with 2x6 purlins supported at no more than 14'-0" on center by 2x4 struts bearing on walls below. The garage area is framed with 2x8 rafters spaced at 24" on center and 2x8 cross ties spaced at 4'-0" on center.

**CONCLUSIONS:**

Roof:  
The roof structure currently lacks sufficient structural capacity for the applied live and dead loads. See "Recommendations" for location and repair to bring the roof structure up to the required capacity.

*(Signature)*

1/6



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.

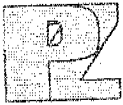
The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State

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SPB 422-04

Fujji



Paul Zacher - Structural Engineers, Inc  
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.

Roof Structure:

1. Provide additional 2x4 struts from the existing purlins to the bearing walls below. The maximum spacing between the new and existing 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.

It shall be noted that small hairline cracking may occur at exterior stucco and interior gyboard 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.

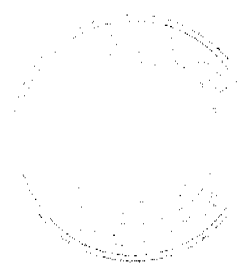
The inspection consisted of visual observation only, made solely to determine the structural capacity of the existing roof. Analysis does not determine any effects on the overall structure under lateral forces or effects on the foundation unless specifically noted in the calculations and in this document. 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

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NORTH PLUMBING  
CENTER



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The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

LOADING:

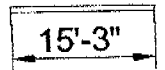
Rafter:

$Dr = 11.8 \text{ psf} \times 2'-0" = 23.6 \text{ plf}$

$Lr = 16.0 \text{ psf} \times 2'-0" = 32.0 \text{ plf}$

2x8 #2

23.6 / 32.0



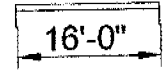
B1:

$Dr = 11.8 \text{ psf} \times 7'-0" = 83 \text{ plf}$

$Lr = 16.0 \text{ psf} \times 7'-0" = 112 \text{ plf}$

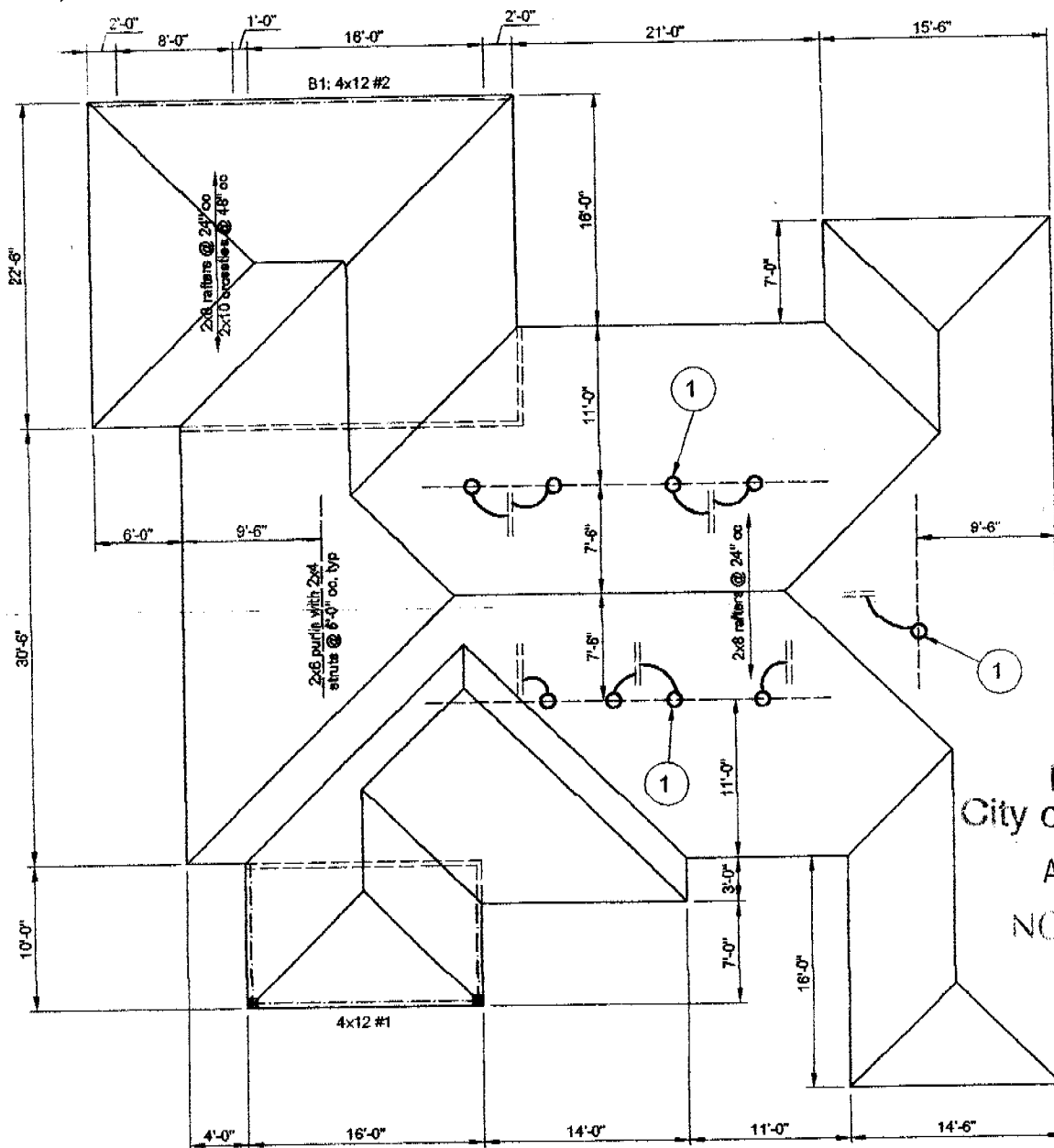
4x12 #2

83 / 112

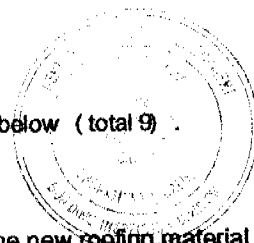
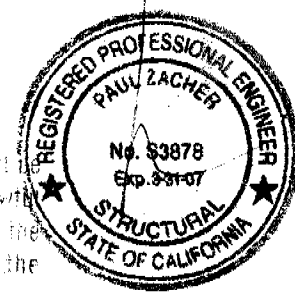


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CITY ENGINEER  
CITY CENTER

... shall be held responsible for  
violation of any City Ordinance or State Law.



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**FRAMING NOTES:**

1. Add 2x4 struts to bearing below (total 9)

**NOTES:**

- A. 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 7.3 psf.
- B. All rafters are 2x6 DF#2 and hips and valleys are 2x8 DF#2 unless otherwise noted.
- C. All existing rafter, hips, valleys, rafter ties, and purlins are braced per UBC Section 2320.1 "Roof and Ceiling Framing" unless otherwise shown.
- D. All structural wood members that were observed appear to be in sound condition and without structural defect.

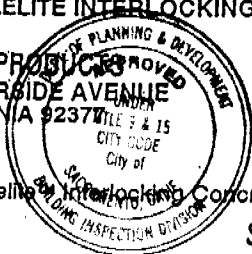
**1** ROOF PLAN - FUJJI  
 Not to Scale

The approval of this plan and specification SHALL NOT be held to permit or excuse the violation of any City Ordinance or State Law.

Filing Category: ROOF COVERING AND ROOF DECK CONSTRUCTION—Roof Covering (202)

## EAGLE AND EAGLELITE INTERLOCKING CONCRETE ROOFING TILES

EAGLE ROOFING PRODUCTS  
3546 NORTH RIVERSIDE AVENUE  
RIALTO, CALIFORNIA 92377



This set of plans and specifications must be kept on the job at all times and must be approved by the local building official. No changes or alterations shall be made without written permission from the Building Inspection Division. The approval of this plan shall NOT be held to permit a violation of any City Ordinance.

### 1.0 SUBJECT

Eagle and Eaglelite Interlocking Concrete Roofing Tiles

### 2.0 DESCRIPTION

#### 2.1 General:

**2.1.1 Eagle Tiles:** Eagle conventional-weight interlocking concrete roofing tiles are produced in high-profile (Capistrano), low-profile (Mallibu), and flat-profile styles with either smooth surfaces (Bel Air Standard, Bel Air Estate or Bel Air Double Eagle) or textured surfaces (Ponderosa Standard, Ponderosa Estate, Ponderosa Double Eagle or Ponderosa Golden Eagle). Ridge and rake trim units are produced to match each product.

The tiles are composed of Type II portland cement, washed sand, and proprietary additives. Mineral coloring oxides are added to or are mixed with portland cement and water for surface application following extrusion. Units are cured under controlled temperature and humidity conditions. Tiles are 17 inches (432 mm) long, 12<sup>3</sup>/<sub>8</sub> inches (315 mm) wide, and nominally 1/2 inch (12.7 mm) thick. They are manufactured in either flat or profile style with 3/4-inch-wide (19 mm) interlocking sidelaps designed to resist surface water penetration and maintain proper alignment. All tiles have protruding head lugs on the underside, which provide for mechanical attachment over wooden battens, or provide a stable foundation for nail attachment to solid decking. Two nail holes are provided in each tile for use where half tiles are needed at roof edges, chimneys, skylights, etc. Approximate installed dry weights with 3-inch (76 mm) head laps are 9.5 psf (46 kg/m<sup>2</sup>) for Capistrano tiles, 9.5 psf (46 kg/m<sup>2</sup>) for Mallibu tiles and 10.0 psf (49 kg/m<sup>2</sup>) for Ponderosa and Bel Air tiles.

Eaglelite tiles are produced in the same size, manner and shapes as the conventional-weight Eagle tiles described in Section 2.1.1, except for substitution of lightweight aggregates and additives for sand. Approximate installed dry weights with 3-inch (76 mm) head laps are 5.7 psf (28 kg/m<sup>2</sup>) for Capistrano tiles, 5.5 psf (27 kg/m<sup>2</sup>) for

#### 2.2 Installation:

##### 2.2.1 New Construction:

**2.2.1.1 Sheathing:** Sheathing must be structurally adequate to support the loads involved but not less than solid sheathing boards of nominal 1-inch-thick or nominal 1/2-inch-thick (12.7 mm) plywood or nominal 1-inch spaced sheathing or other decking material recognized in an ICBO ES evaluation

report or by the Uniform Building Code™ (UBC) and approved by the local building official.

**Underlayment:** Tiles installed on roof slopes of less than 2 1/2:12 (21% slope) are considered decorative only and must be applied over an approved roof covering, subject to local building official approval.

On roof slopes from 2 1/2:12 (21% slope) to below 3:12 (25% slope), an approved built-up roof, applied in accordance with Table 15-D-1 of the code, or a single-ply roof membrane as specified shall be installed.

Where roof slopes fall between 3:12 (25% slope) and 4:12 (33% slope), underlayment may be as described above in this section, or may be a single-layer, No. 90, granular-surfaced, asphalt roll roofing, or two layers of No. 30 felt installed shingle fashion, or an approved single-ply system installed per code or an ICBO:ES evaluation report.

Where roof slopes are 4:12 (33% slope) or greater, one layer of minimum No. 30 felt installed using 6-inch (152 mm) side and 2-inch (51 mm) head laps, complying with ASTM D 226 or equal and recognized in an ICBO ES evaluation report, shall completely cover the deck and be lapped over hips and ridges and laced through valleys. Hip and ridge nailer boards must also be covered. When installed over spaced sheathing, an underlayment recognized specifically for this type of use in an ICBO ES evaluation report must be installed with 6-inch (152 mm) side and head laps.

**2.2.1.3 Battens:** Nominal 1-by-2 wood batten strips are required where roof pitches fall below 3:12 (25% slope), in order to minimize membrane penetration, and are required where roof pitches exceed 7:12 (58.3% slope), to provide positive tile anchoring. Battens are nailed to the deck with 8d corrosion-resistant box nails at 24 inches (610 mm) on center, or No. 16 gage [0.063-inch (1.6 mm)] by 7/16-inch-crown (11.1 mm) by 1 1/2-inch-long (38 mm) corrosion-resistant staples on 12-inch (305 mm) centers, allowing a 1/2-inch (12.7 mm) separation at batten ends to provide drainage.

On roof slopes from 2 1/2:12 (21% slope) to below 3:12 (25% slope), nominal 3/8-inch-thick (9.5 mm), decay-resistant wood lath strips, installed vertically, are attached from eave to ridge at 24 inches (610 mm) on center using 8d corrosion-resistant box nails. Horizontal nominal 1-by-2 wood battens are then nailed through the vertical lath strips into the deck at proper coursing, not exceeding 14 inches (356 mm) on center. Where attaching tiles to horizontal battens, nails shall penetrate the full thickness of the battens but not the roof membrane.

Battens installed on roof slopes of 4:12 (33% slope) to 21:12 (175% slope) shall be nailed to the deck using 8d corrosion-resistant box nails at no more than 24 inches (610 mm) on center, and shall have provisions for drainage by providing a 1/2-inch (12.7 mm) separation at the batten ends every 4 feet (1219 mm), or by shimming with moisture-resistant, nominal 3/8-inch-thick (9.5 mm), decay-resistant wood lath strips or 2-inch-square (51 mm square) shims, cut from asphalt

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shingles, placed between the battens and deck to provide drainage beneath the battens. Batten placement shall not exceed 14 inches (356 mm) on center.

**2.2.1.4 Eave:** Metal eave closure strips must be installed when using Eagle Capistrano tiles. The use of eave closures with Malibu tiles is an aesthetic option. Eave riser strips of wood or metal must be installed at eaves when using Eagle Bel Air, Malibu or Ponderosa tile. Eave closures and/or eave risers elevate eave tiles to the proper height; block wind, fire, snow, vermin, or birds; and allow drainage of moisture accumulated beneath the tiles to escape through weep holes in metal or slots in wood. Where solid fascia material is attached to rafter ends and extends above the plane of the deck to act as a first course tile riser, an anti-ponding device must be used to support the underlayment.

**2.2.1.5 Fastening:** Tiles are attached in accordance with Table 15-D-1 of the UBC for roof slopes less than 4:12 and Table 15-D-2 of the UBC for roof slopes 4:12 and over. All tile nails are minimum No. 11 gage, corrosion-resistant steel having a minimum  $\frac{5}{16}$ -inch-diameter (7.9 mm) head and sufficient length to penetrate  $\frac{3}{4}$  inch (19 mm) into framing, battens or through the thickness of the sheathing, whichever is less.

When attaching tiles to overhang areas where the nail points may be visible from underneath the sheathing, nominal 1-by-2 wood batten strips are nailed through the sheathing into rafters with one 8d nail in each rafter. Tiles are nailed into batten strips with minimum No. 11 gage nails of sufficient length to penetrate through the full thickness of the batten strip.

**2.2.1.6 Trim Tile:** Each hip or ridge tile is secured to nailer boards with one nail at the head end and a dab of roofer's mastic or other permanent adhesive placed over the nailing area to secure succeeding tile. When installing Capistrano tiles, all hip, ridge and head wall intersections must be protected, to prevent moisture penetration, with mortar, metal, metal-backed tape, rubber or other ultraviolet-resistant materials. All rake tiles are attached with two nails into the barge board.

Nailer boards of sufficient height to adequately support hip or ridge tiles are nailed into framing every 24 inches (610 mm) with 10d steel nails or are secured using galvanized steel strapping or special galvanized steel attachment devices at 48 inches (1219 mm) on center.

**2.2.1.7 Flashings:** Valley flashing must be in accordance with Section 1508 of the UBC. All other flashing must comply with Section 1509 of the UBC. Openings through the tile for penetrations such as vents must be flashed and supported by additional blocking or roof framing as required. Flashing for profile tiles must be made of lead or other approved flexible materials, and must be formed to the contours of the tile.

**2.2.1.8 Broken Tile Replacement:** The broken tile is first removed. If battens were used originally, existing nails, if any, are cut and new tile inserted. If no battens were used, a 6-inch-by-6-inch-by- $\frac{1}{2}$ -inch (152 mm by 152 mm by 12.7 mm) plywood piece is nailed to the deck to act as a batten. The new tile is then inserted. As an alternate, new tiles may be inserted using roofer's mastic to form a bond at the head lap area.

**2.2.1.9 Severe Climate Considerations:** In areas designated by local building departments as subject to rooftop accumulations of sand, snow or rain driven by high winds, openings at hips, ridges and walls must be closed with metal or mortar, or approved sealant material. In areas subject to severe ice build-up at the eaves, tiles must not be installed on roof slopes below 4:12 (33% slope). Roof ventilation described in Section 1505.3 of the UBC must be provided.

Horizontal battens must be installed on top of nominal 1-by-4 vertical battens, to allow airflow between the roof deck and the installed tile. Vertical battens must be installed at 12 or 16 inches (305 or 406 mm) on center, or at up to 24 inches (610 mm) on center if fastened into rafters. Horizontal battens must be minimum 1-by-4, fastened through the vertical battens. All tiles are nailed through horizontal battens. In areas where basic wind speeds exceeding 80 mph (129 km/h) exist, directions in Table 15-D-1 or Table 15-D-2 of the UBC must be followed. Underlayment application must comply with Table 15-D-1 of the UBC for slopes less than 4:12 or Table 15-D-2 of the UBC for slopes 4:12 and greater.

**2.2.2 Reroofing:** Eagle tiles, as described in Section 2.1.1, provide a Class A roof when installed over existing asphalt shingle roofs. Care should be taken to ensure both horizontal and vertical alignment on the roof. Foreign matter must be cleaned from all interlocking areas. Cracked or broken tiles must be removed from the roof. Damaged or rusted flashing should be replaced. Existing framing must be adequate for the additional load. Structural data verifying adequacy should be submitted to the building official. The existing roof must be inspected in accordance with Appendix Chapter 15, Section 1515, of the UBC. When reroofing wood shake roofs, existing shakes must be removed and solid decking and tile must be installed, as with new construction. When installed over existing spaced sheathing boards, underlayment complying with the UBC or an underlayment recognized specifically for this type of use in an ICBO ES evaluation report, installed with or without battens, may be used. One layer of No. 30 felt or approved equal underlayment must be installed on the roof prior to application of tile. In lieu of this underlayment's being provided, the building official may determine that the existing roof covering provides the required underlayment protection.

Details not covered under this section are identical to those described in Section 2.2.1.

### 2.3 Roof Classification:

When installed over solid sheathing in accordance with this report, Eagle and Eaglelite roofing tiles are Class A roof coverings in accordance with Section 1504.1 of the UBC. When installed over spaced or solid sheathing in accordance with this report, the tiles are noncombustible roof coverings in accordance with Section 1504.2 of the UBC. The tiles are Class A roof coverings when installed over existing asphalt shingles in accordance with Section 2.2.2 of this report.

### 2.4 Identification:

The name EAGLE and the evaluation report number (ER-4660) are imprinted on each tile. A tag on each shipping pallet indicates the producing plant location, product identification and the installed weight. Each Eaglelite tile is identified by the product name "Eaglelite" on a tag and a light-colored strip across the headlap area.

## 3.0 EVIDENCE SUBMITTED

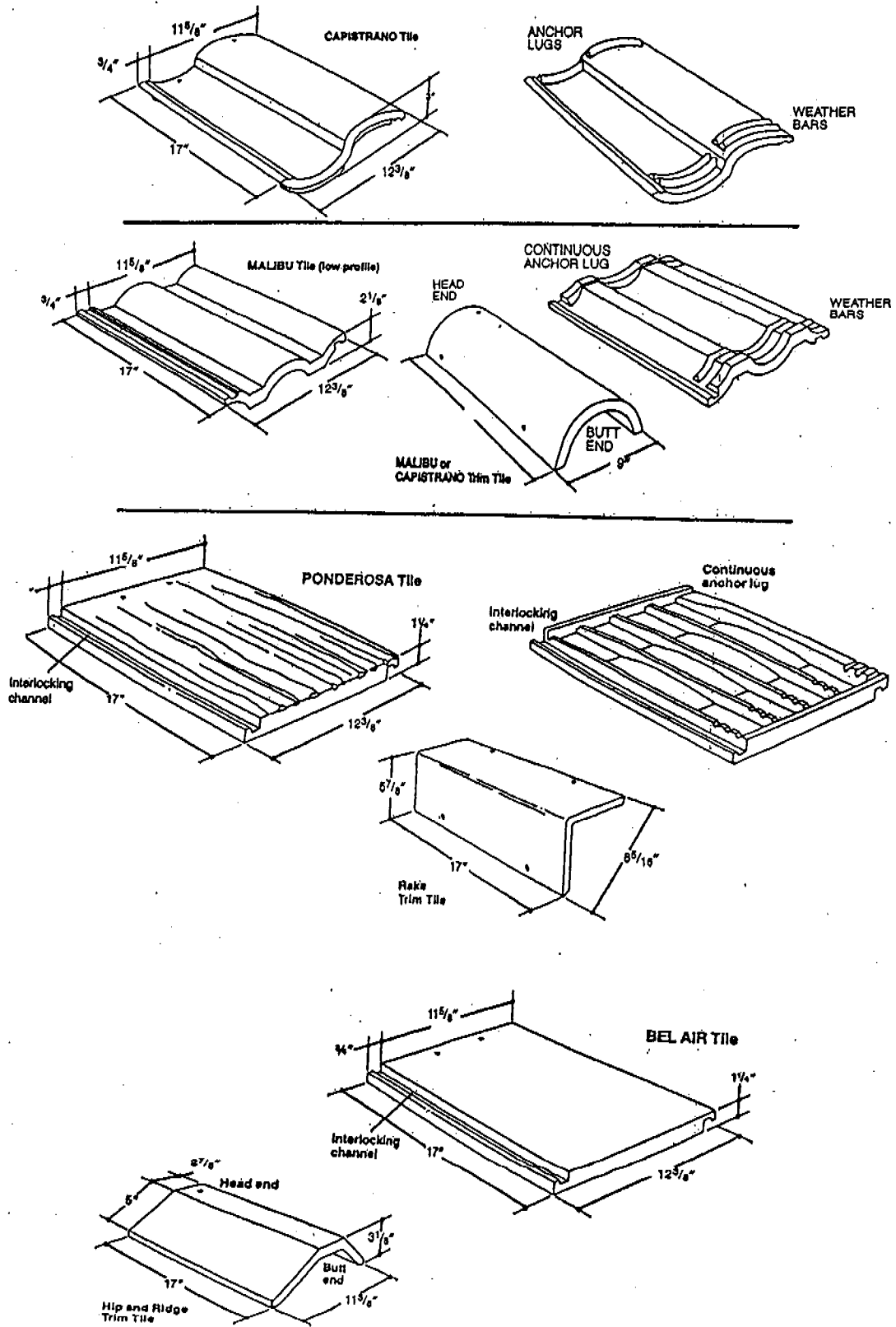
Results of tests in accordance with the ICBO ES Acceptance Criteria for Special Roofing Systems (AC07), dated April 1999; installation instructions; and quality control manual.

## 4.0 FINDINGS

That the Eagle Concrete Roofing Tiles described in this report comply with the 1997 *Uniform Building Code*<sup>™</sup>, subject to the following conditions:

- 4.1 Tiles are manufactured, identified and installed in accordance with this report and the manufacturer's instructions.
- 4.2 Tiles are manufactured at Eagle Roofing Products facilities located in Rialto, California, and Phoenix, Arizona.

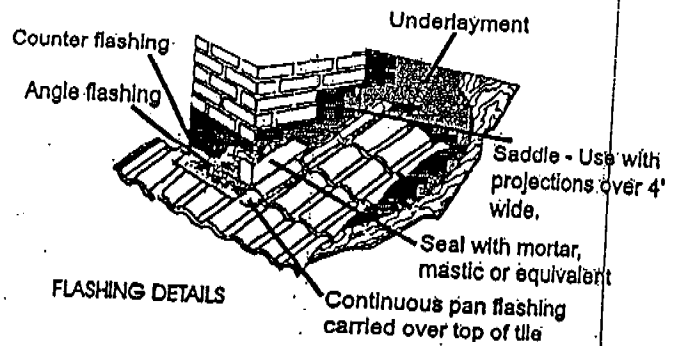
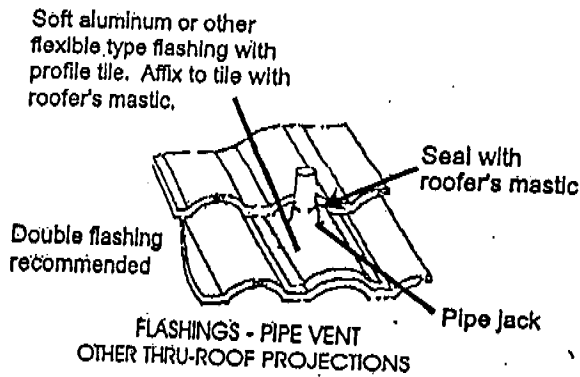
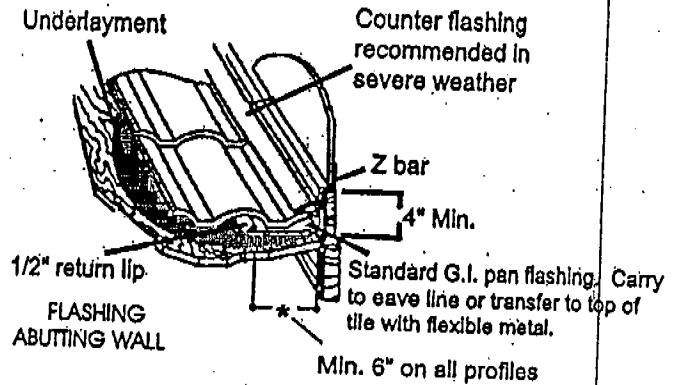
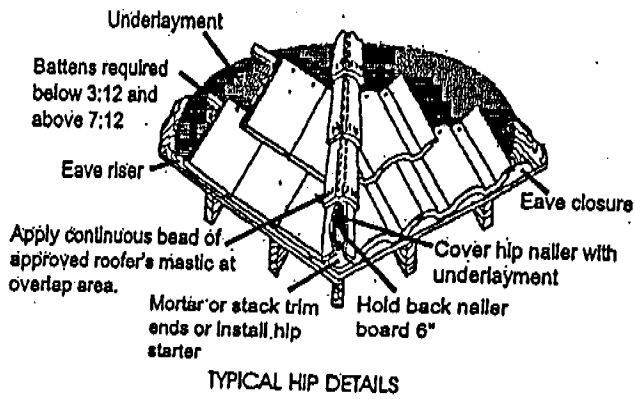
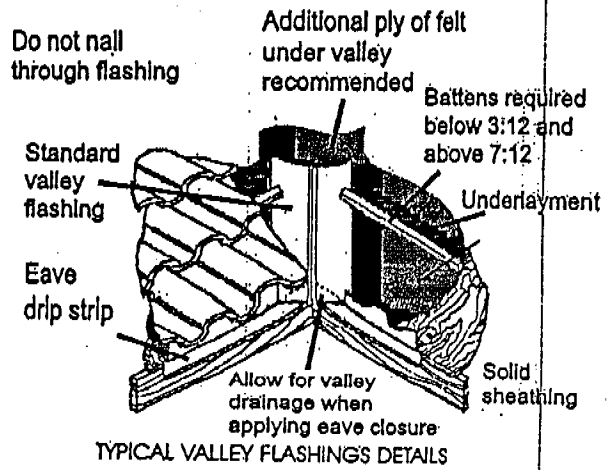
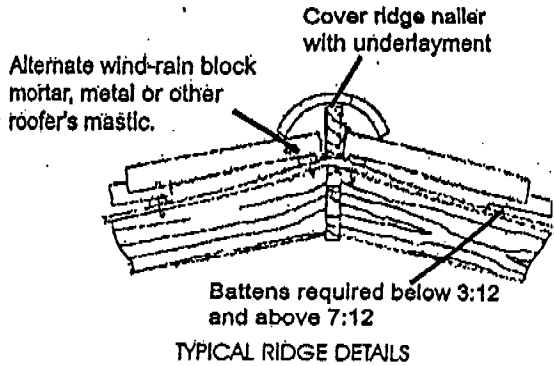
This report is subject to re-examination in two years.



FIELD AND TRIM TILE SPECIFICATIONS

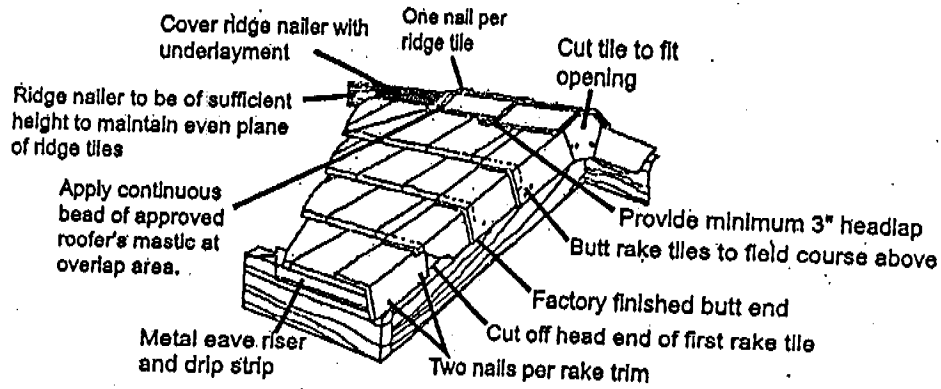
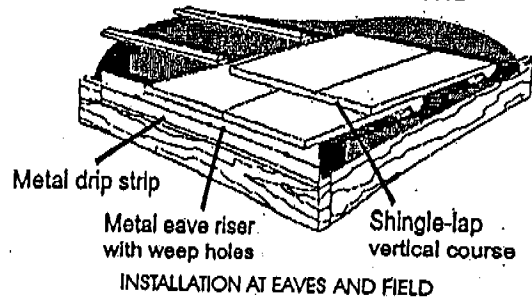


Note: Hip nailer boards are to be of sufficient height to maintain even plane of trim tiles. Height of nailer boards will vary due to roof pitch and type of tile.

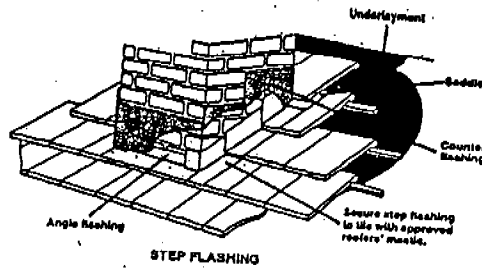
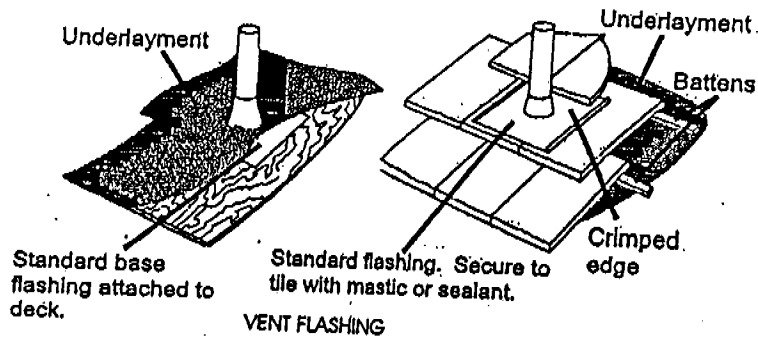


APPLICATION DETAILS

Battens required on roof pitches below 3:12 and above 7:12



TYPICAL RIDGE AND GABLE



APPLICATION DETAILS