

CITY OF SACRAMENTOPermit No: **0301325**

1231 I Street, Sacramento, CA 95814

Insp Area: 2

Thos Bros: 297 C7

Site Address: **1125 VALLEJO WY SAC**

Sub-Type: REP

Parcel No: 012-0062-012

Housing (Y/N): N

CONTRACTORACE HOME IMPROVEMENT
6729 WALNUT AV
ORANGEVALE ,CA 95662**OWNER**WHISENHUNT JOHN F JR/BOBBIL
1125 VALLEJO WY
SACRAMENTO CA 95818**ARCHITECT****Nature of Work:** T/O & RROOF 1 STORY HOUSE /GARAGE W/30SQS 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 B License Number 0602864 Date 1/30/03 Contractor Signature Gay Ferguson**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**

JAN 30 2003

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 a 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 1/30/03 Applicant/Agent Signature Gay Ferguson**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 1497387

Exp Date 07/30/2003

(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 1/30/03 Applicant Signature Gay Ferguson**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.

.....
Bartile

May 12, 2003

Sacramento County Building Department

RE: Bartile draped counter batten recommendations:

Steps:

1. Existing roof is removed exposing existing skip sheathing.
 2. All nails or staples are hammered down flush or removed.
 3. All sheathing with dry rot shall be removed and replaced.
 4. A starter membrane, 9" wide (ASTM 30 lb. felt or equivalent) shall be installed at the eave edge.
 5. A 7/8" 22 gauge galvanized hat channel furring batten shall be installed, vertically, directly over existing skip sheathing and roof rafter starting at eave up to ridge. (see photo #cb-1)
 - a. Nailed at 24" on center or less using a #16 d nail through the top of the hat channel through the existing skip sheathing and into the rafter below.
 - b. The vertical batten spacing is usually 16" or 24" on center depending on rafter layout. Maximum spacing is 24" on center.
 - c. Note: The vertical hat channel is installed below the underlayment, and not subject to moisture.
 6. Thermo-ply or Thermosheathing ICBO approved concrete and clay tile underlayment over ship sheathing. (see photo #cb-2)
 - a. Underlayment shall be draped between the vertical battens.
 - b. Minimum head lap of 3" and side lap of 2". Center of side lap must be at vertical batten. Vertical side lap cannot be in trough.
 7. The Horizontal battens hold the thermo-sheating in place when installed in next step. Draping of the thermo-sheet creates a significant water and airway channel, thus eliminating the possibility of water being trapped behind the horizontal battens. (see photo #cb-3)
-

Whisenhunt

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

TEL: (916) 961-3960
FAX: (916) 961-6552

March 25, 2003

Ventilated Roofing Systems
6729 Walnut Avenue
Orangevale, CA 95662

TEL: (916) 988-4139; M: (916) 628-5530
FAX: (916) 987-1078

Attn.: Gary Ferguson

re: Job 2002515: Whisenhunt residence located at 1125 Vallejo Drive, Sacramento, CA

subject: Contract Change Order Number 1

Per Mr. Gary Ferguson's request, the following is addressed:

Item 1: The beam to be scabbed to beam 1 next to garage has been revised per the attached details 1 and 2.



If you have any questions on the above, do not hesitate to call.

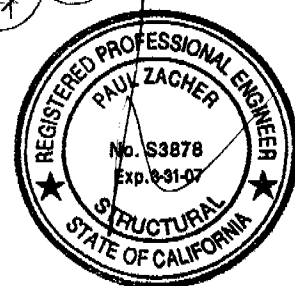
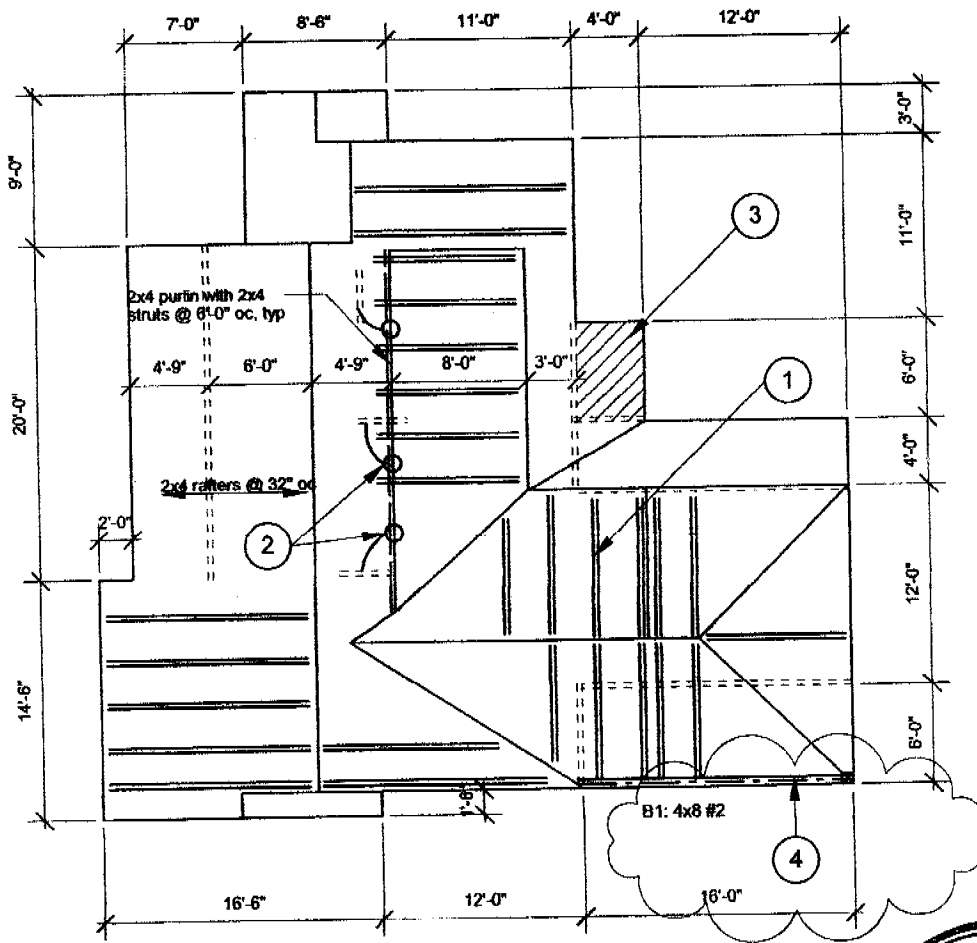
Sincerely,

Paul Zacher, P.E., S.E.

See Revision

1/3

REAR VIEW



FRAMING NOTES:

1. Scab a 2x4 to existing 2x4 rafters where the span is greater than 7'-4" (total 18). Scab a 2x6 to existing 2x4 rafters where the span is greater than 9'-4" (total 2). Scab a 2x10 to existing 2x4 rafters where the span is greater than 12'-4" (total 7).
2. Add 2x4 struts to bearing below (total 3).
3. Remove the existing porch overhang.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing 4x8 beam. See detail 2.

Notes:

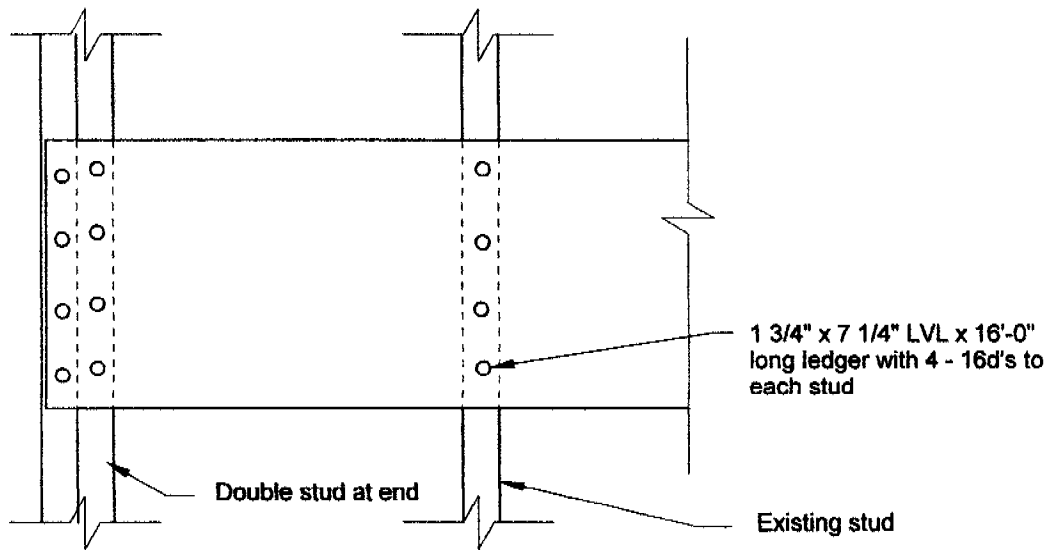
- A. This is a reroof project. The new roofing material shall be a Light Weight Concrete Tile. The tile shall weigh less than or equal to 8.2 psf.
- B. All rafters are 2x4 DF#2 and hips and valleys are 2x6 DF#2 unless otherwise noted.
- C. All existing rafter, hips, valleys, rafter ties, and purlins 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 - WHISENHUNT

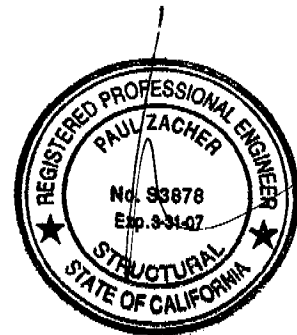
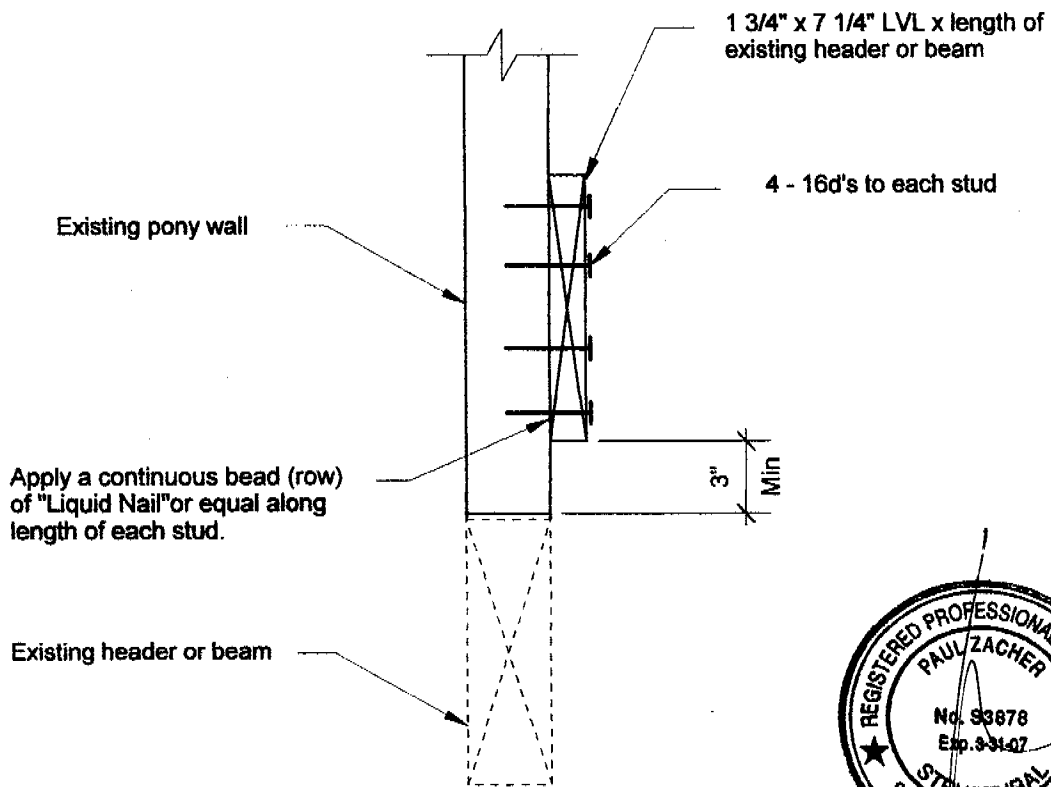
Not to Scale

2



ELEVATION

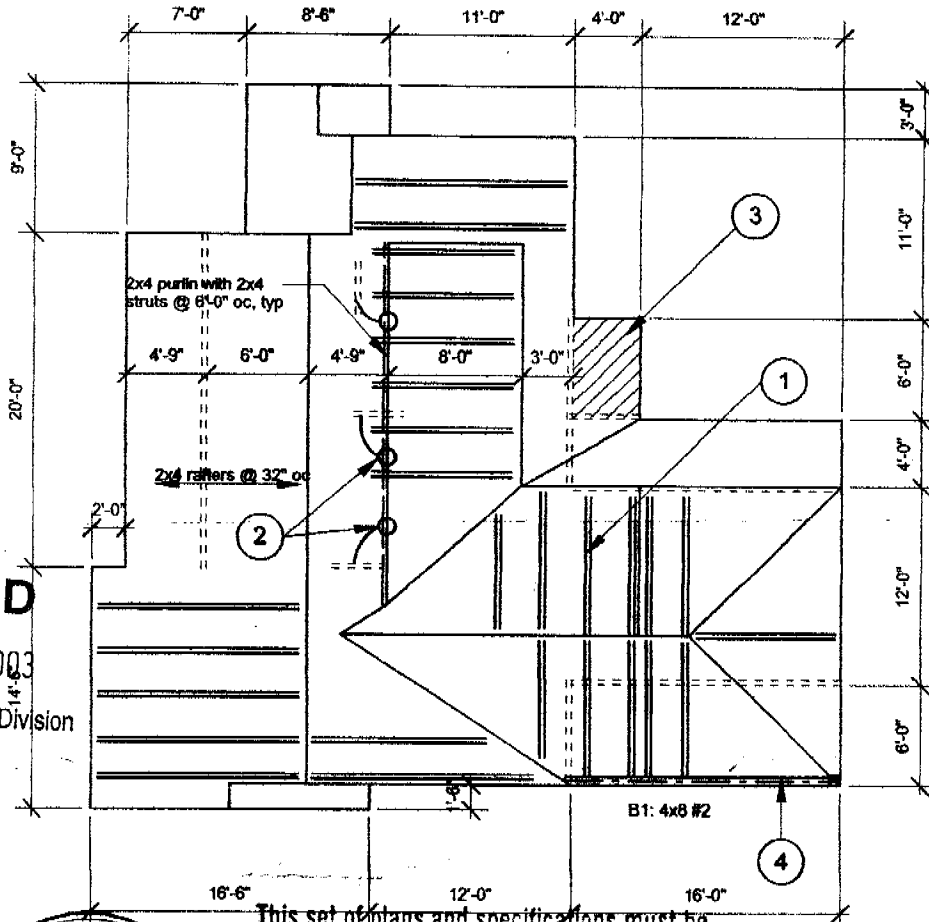
scale: 1-1/2" = 1'-0"



2

DETAIL

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

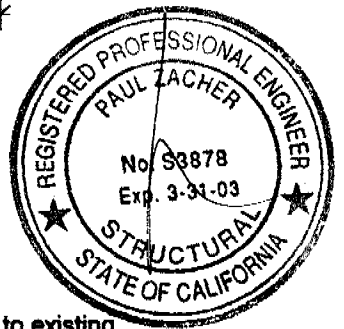


ISSUED
 JAN 30 2003
 Sacramento Building Division

Handwritten signature
 1/30/03



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.



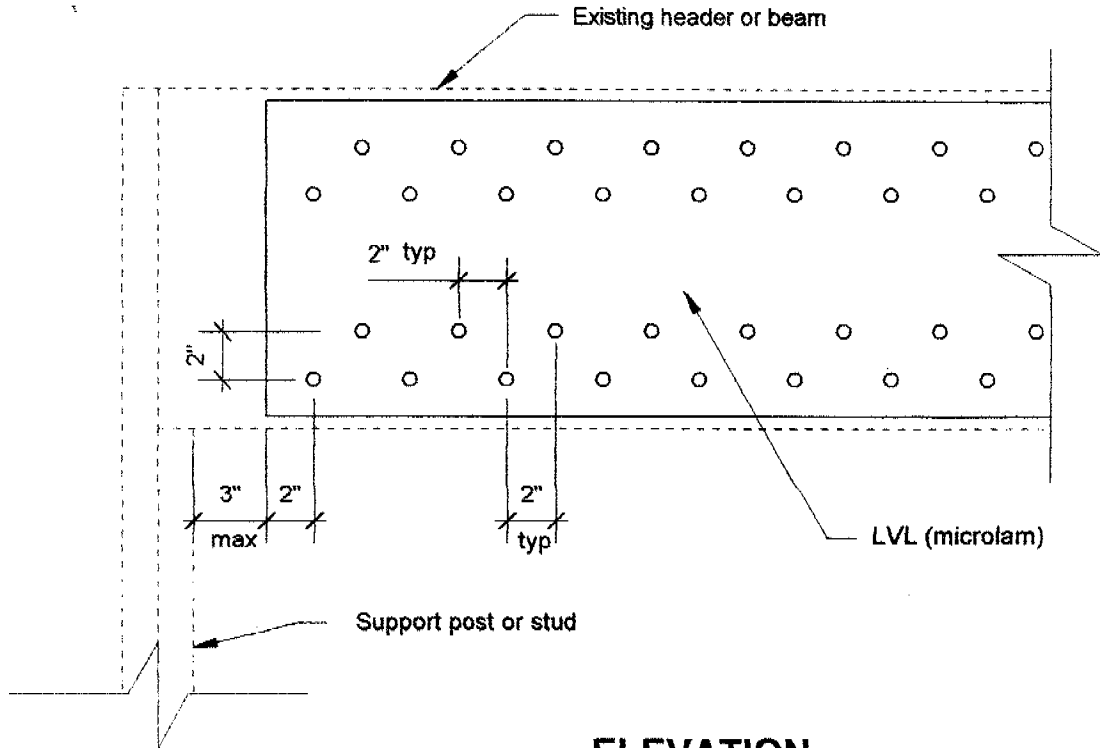
FRAMING NOTES:

1. Scab a 2x4 to existing 2x4 rafters where the span is greater than 7'-4" (total 18). Scab a 2x6 to existing 2x4 rafters where the span is greater than 9'-4" (total 2). Scab a 2x10 to existing 2x4 rafters where the span is greater than 12'-4" (total 7).
2. Add 2x4 struts to bearing below (total 3) *883*
3. Remove the existing porch overhang.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing 4x12 beam. See detail 2.

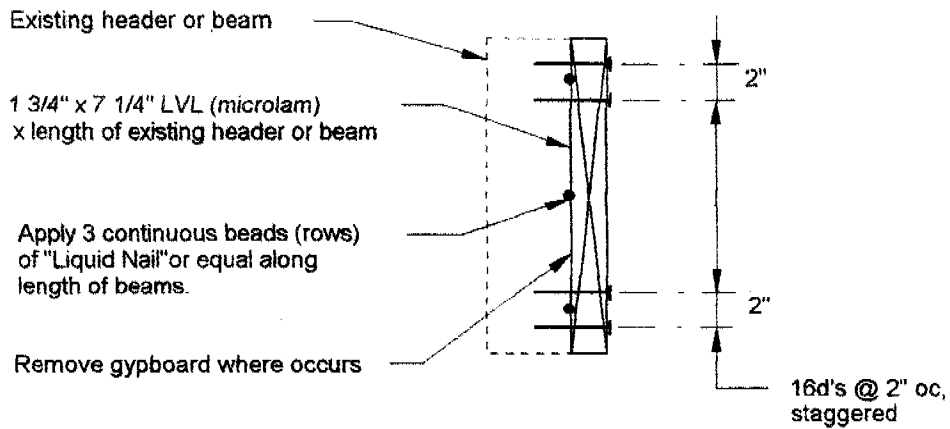
Notes:

- 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 8.2 psf.
- B. All rafters are 2x4 DF#2 and hips and valleys are 2x6 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 - WHISENHUNT**
 Not to Scale



ELEVATION



SECTION

2

HEADER DETAIL

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



Whisenhunt



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

TEL: 916.961.3960
FAX: 916.961.3960

November 15, 2002

Ventilated Roofing Systems
6729 Walnut Avenue
Orangevale, CA 95662
TEL: (916) 988-4139; M: (916) 628-5530
FAX: (916) 987-1078



Attn.: Mr. Gary Ferguson,

re: Job 2002515: WHISENHUNT

Subject: Structural Investigation Report of the Roof for the Residence located at 1125 Vallejo Drive, Sacramento, CA.

As requested by Mr. Gary Ferguson, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site November 14, 2002. 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 1930's vintage.
Occupancy:	Residential.
No. of Stories:	Two.
Dimensions:	Approximately 2500 square feet.

CONSTRUCTION:

Roof:
The roof covering will consist of a Light Weight Concrete Tile over a batten system. The roof structure is conventionally framed with 2x4 rafters spaced at 32" on center with 2x4 purlins supported at no more than 8'-0" on center by 2x4 struts bearing on walls below.

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.

P
R
E
P
A
R
E
D
B
Y
P
A
U
L
Z
A
C
H
E
R
E
N
G
I
N
E
E
R
S
A
S
C
I
A
T
E
S

Whisenhunt



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.

Roof Structure:

1. Scab a 2x4 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 7'-4". Scab a 2x6 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 9'-4". Scab a 2x10 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 12'-4". The rafter to be scabbed to the existing rafter may be held short of the intersecting bearing wall, hip, valley, ridge or purlin by no more than 4". See detail 1.
2. 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 4'-0" on center and the minimum slope of the struts shall not be less than 45 degrees from the horizontal. See detail 1.
3. Remove the existing porch overhang.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing header. 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

Whisenhunt



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.

Roof Structure:

1. Scab a 2x4 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 7'-4". Scab a 2x6 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 9'-4". Scab a 2x10 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 12'-4". The rafter to be scabbed to the existing rafter may be held short of the intersecting bearing wall, hip, valley, ridge or purlin by no more than 4". See detail 1.
2. 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 4'-0" on center and the minimum slope of the struts shall not be less than 45 degrees from the horizontal. See detail 1.
3. Remove the existing porch overhang.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing header. 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	12	in 12
Pitch Adjustment Factor	1.41	

LOCATION: ROOF BATTEN SYTEM

<u>MATERIAL</u>		<u>WEIGHT</u>	
Light Weight Tile	8.20	psf	
Roofing felt	0.30	psf	
1x4 skip sht'g	1.09	psf	
Batten system	0.50	psf	
2x4 rafters @ 32" oc	<u>0.75</u>	psf	
	Load	10.8	psf
	Roof Pitch Adjustment	<u>4.49</u>	psf
	Total Load	15.3	psf

Job #: 02-515

Date: 11/15/02

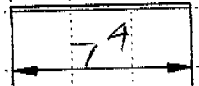
LOADING:

RAFTER

$Dr = 15.3 \text{ pcf} \times 28 = 40.9 \text{ plf} \quad 2 \times 4 \text{ } ^2$

$Lr = 12.0 \times \dots = 32.0$

40.9/32

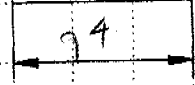


BOARDS

$Dr = 15.3 \text{ pcf} \times 28 = 40.9 \text{ plf} \quad 2 \times 2 \times 4 \text{ } ^2$

$Lr = 12.0 \times \dots = 32$

40.9/32

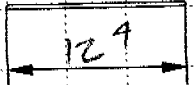


RAFTER

$Dr = 15.3 \text{ pcf} \times 28 = 40.9 \text{ plf} \quad 2 \times 4 \text{ } ^2 +$

$Lr = 12.0 \times \dots = 32.0 \quad 2 \times 6 \text{ } ^2$

40.9/32

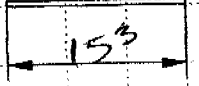


BOARDS

$Dr = 15.3 \text{ pcf} \times 28 = 40.9 \text{ plf} \quad 2 \times 10 \text{ } ^2$

$Lr = 12.0 \times \dots = 32$

40.9/32



B1

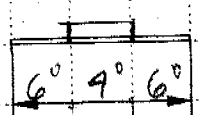
$Dr = 15.3 \text{ pcf} \times 30 = 46 \text{ plf} \quad 4 \times 8 \text{ } ^2 + 1 \frac{3}{4} \times 7 \frac{1}{4} \text{ LVL}$

$Lr = 12.0 \times \dots = 36$

$D_f = 10. \times 30 = 30 \text{ plf}, Lr = 40 \text{ plf} \times 30 = 120 \text{ plf}$

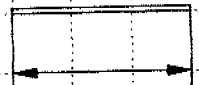
40/36

70/156



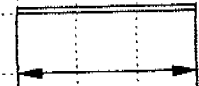
Dr =

Lr =



Dr =

Lr =



Paul Zacher - Structural Engineers
 4701 Lakeside Way
 Fair Oaks, CA 95628
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :

Job #
 Date: 6:39AM, 15 NOV 02

Scope :

Timber Beam & Joist

c:\paul\pk and assoc\test.ecw:Calculations

Rev: 510304
 User: KVV-0602844, Ver 5.1.3, 22-Jun-1999, Win32
 (c) 1993-99 ENERCALC

Description RAFTERS AND BEAMS

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Member Information

Timber Section		rafter 2" x 3-3/4	rafter 2 - 2" x 3	rafter 2x4 + 2x6	rafter 2x10	B1 4x8 + 1.75
Beam Width	in	2.000	3.500	2.120	1.500	5.250
Beam Depth	in	3.750	3.625	5.500	9.250	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			Custom, DF#2 + LVL	
Fb - Basic Allow	psi	875.0	875.0	875.0	875.0	1,450.0
Fv - Basic Allow	psi	95.0	95.0	95.0	95.0	158.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0	1,600.0	1,666.7
Load Duration Factor		1.250	1.250	1.250	1.250	1.000
Member Type		Manuf/Pine	Manuf/Pine	Sawn	Sawn	Manuf/Pine
Repetitive Status		Repetitive	Repetitive	Repetitive	No	No

Center Span Data

	ft	7.33	9.33	12.33	15.25	16.00
Span	ft					
Dead Load	#/ft	40.90	40.90	40.90	40.90	46.00
Live Load	#/ft	32.00	32.00	32.00	32.00	36.00
Dead Load	#/ft					120.00
Live Load	#/ft					6.000
Start	ft					10.000
End	ft					

Results	Ratio =	0.9965	0.9873	0.9512	0.9682	0.8500
Mmax @ Center	in-k	5.88	9.52	16.62	25.43	56.69
@ X =	ft	3.66	4.66	6.16	7.62	8.00
fb : Actual	psi	1,253.4	1,241.8	1,555.4	1,188.9	1,232.5
Fb : Allowable	psi	1,257.8	1,257.8	1,635.2	1,203.1	1,450.0
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
fv : Actual	psi	49.2	37.6	53.7	54.3	35.8
Fv : Allowable	psi	118.8	118.8	118.8	118.8	158.0
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	149.90	190.80	252.15	311.86	428.00
	LL	lbs	117.28	149.28	197.28	244.00	528.00
	Max. DL+LL	lbs	267.18	340.08	449.43	555.86	956.00
@ Right End	DL	lbs	149.90	190.80	252.15	311.86	428.00
	LL	lbs	117.28	149.28	197.28	244.00	528.00
	Max. DL+LL	lbs	267.18	340.08	449.43	555.86	956.00

Deflections

		Ratio OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK
Center DL Defl	in	-0.189	-0.314	-0.452	-0.314	-0.306
L/Defl Ratio		465.6	356.9	327.2	582.0	627.6
Center LL Defl	in	-0.148	-0.245	-0.354	-0.246	-0.438
L/Defl Ratio		595.1	456.2	418.2	743.9	438.1
Center Total Defl	in	-0.337	-0.559	-0.806	-0.560	-0.744
Location	ft	3.665	4.665	6.165	7.625	8.000
L/Defl Ratio		261.2	200.2	183.6	326.5	258.0

5

May 22, 2003

Page 2

8. Valleys

- a. Begin with a thermo-sheet panel centered in the valley from eave to ridge with minimum 6" head lap.
- b. Horizontal thermo-sheeting panels are woven through and past the valleys

9. Horizontal battens are installed starting at the eave (called the kicker) and continuing to the ridge* at maximum 12" O.C. and yielding a minimum 3" head lap.

- a. Battens are attached with a #10 x 5/16" hex head with a 3/4" shank self-tapping corrosion resistant screw at vertical battens.
- b. Fastening of horizontal battens alternate at top flange of horizontal batten to bottom flange of horizontal batten, alternating at each vertical batten.

*The second horizontal batten is a 1/2" cold roll galvanized channel attached thru the top of the channel with a #10 x 5/16" hex head with a 3/4" minimum shank, self-tapping corrosion resistant screw at every vertical hat channel. Only the second course horizontal batten is installed with a cold rolled channel. This is to allow the first and second course of tile to lie on approximately the same plane.

10. The tile is to be installed using a 1 5/8" minimum** self-tapping corrosion resistant screw.

- a. Lightweight tiles are installed in the same manner as standard-weight tiles with the exception that each tile is attached as specified in Table 15-D-2 Chapter 15 of the code with a minimum **1.5/8" corrosion resistant screw. **European 2 1/2" and Sierra Mission 3 1/2" Fasteners required.
- b. Field tile shall have a minimum of a 3" head lap.

11. Hip and Ridge Trim shall be fastened with **1 5/8" minimum self-taping corrosion resistant screw fastened to high profile metal hat channel. Hip and ridge to be fastened with 2 fasteners penetrating 3/4" or one fastener and mastic at leading edge with surface compatible mastic meeting or exceeding the holding strength of a fastener.

- a. Rake Tiles shall be fastened to the fascia with minimum 2 3/8" corrosion resistant nail.

12. Ridge vent to be a minimum of 26 gauge galvanized or greater louvered vent fastened at a maximum of 32" OC with a 5/16" self tapping corrosion resistant screw.

13. Roof jacks to be double flashed and a diverter installed under the Thermoply channeling water away from the penetration/ jack.

Please contact Rob George at 916-761-0356 if you have any questions, or I can be reached at 800-933-5038 ext # 104

Lewis Evans, President

LME/jd

CC Rob George
Gary Ferguson
File



ICBO Evaluation Service, Inc.

5360 WORKMAN MILL ROAD • WHITTIER, CALIFORNIA 90601-2299

A subsidiary corporation of the International Conference of Building Officials

EVALUATION REPORT

Copyright © 1998 ICBO Evaluation Service, Inc.

ER-3909

Reissued May 1, 1998

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

BARTILE EXTRUDED CONCRETE ROOF TILES

BARTILE ROOFS, INC.
725 NORTH 1000 WEST
CENTERVILLE, UTAH 84014

1.0 SUBJECT

Bartile Extruded Concrete Roof Tiles

2.0 DESCRIPTION

2.1 General:

Bartile Extruded Concrete Roof Tiles are available in European, Mission "S" and Flat styles. Flat tiles are available in snake and slate designs. The tiles are 15 1/2 inches long by 10 1/2 inches wide and have 1 1/4 inch to 1 3/4 inch interlocking double tongue-and-groove side laps. The tiles also have anchor lugs at the bottom intended for installation over wood furring strips. The lugs are typically 1/2 inch deep, 1 1/2 inches wide and 5/8 inch thick. The tile thickness varies from 1/2 inch to 1 inch at the ribs. Accessory tiles in each style are available for rakes, edges and hips.

The tiles are available in both standard weight and lightweight varieties for each style. They vary only in weight due to the lightweight tiles using crushed lightweight shale in place of sand.

The basic concrete mix for the tiles is three parts of white sand (crushed lightweight shale for lightweight tiles) to one part of portland cement with appropriate amounts of water, air-entraining agents and accelerators. Mineral oxide coloring is added to the mix design as desired. When installed with a standard 3-inch head lap, the following are the approximate installed weights:

DESCRIPTION	INSTALLED WEIGHT (pounds per square foot)	
	Standard-weight Tiles	Lightweight tiles
European	9.0	7.0
Mission "S"	9.0	7.0
Flat (Snake & Slate)	9.5	7.25

*Includes underlayment and battens.

See Figure 1 for details.

2.2 Installation:

On roof slopes less than 3:12, tiles are only considered as decorative and must be applied over an approved roof covering, subject to the local building official's approval.

2.2.1 Standard-weight Tiles: On roof slopes 3:12 to 24:12, the tiles are installed over a minimum 1/2-inch thick solid sheathing with one layer of Type 30 asphalt-saturated organic roofing felt placed with a minimum 3-inch head lap and 6-inch end lap. 1-inch by 2-inch nominal cedar or fir wood strips perpendicular to the eaves may be optionally used between 4:12 and 6:12 slope. 1-inch by 2-inch nominal wood battens are

laid parallel to the eaves and spaced maximum 12 1/2-inches on center. Battens are attached with 8 penny common corrosion-resistant nails spaced 24 inches on center. Nails must be of sufficient length to penetrate 1 inch into or through the sheathing thickness, whichever is less. A minimum 1/2-inch space is provided between the ends of battens every 4 feet to allow for water drainage. Tiles are nailed to battens with No. 11 gage corrosion-resistant roofing nails in accordance with Tables 15-D-1 and 15-D-2 of the code. Nails must be of sufficient length to penetrate 3/4 inch into or through the thickness of the supporting member, whichever is less.

Edge, hip and rake tiles are attached with 8 penny common corrosion-resistant nails. All tiles must have a minimum 3-inch head lap, and vertical edges must be interlocked and staggered from adjacent courses.

On slopes 3:12 to 24:12, 1-inch by 6-inch spaced sheathing, grade marked in accordance with Chapter 23 of the code and installed at a maximum 12 inches on center, may be used.

When installed on spaced sheathing, an underlayment recognized specifically for this type of use in an ICBO ES evaluation report must be installed with 5-inch side and head laps. Rake and coping tiles are fastened with two nails. See Tables 15-D-1 and 15-D-2 of the code for field and perimeter tile nailing schedule. Valley flashing consists of minimum No. 28 gauge corrosion-resistant metal extending at least 12 inches from the centerline each way. See Figure 2 for installation details.

2.2.2 Lightweight Tiles: Lightweight tiles are installed in the same manner as standard-weight tiles except that each tile is attached with roofing nails as specified in Table 15-D-2 of Chapter 15 of the code.

2.3 Identification:

The shipping pallets have labels bearing the name "Bartile," the style, color of the tile, date of manufacture, installed weight and the evaluation report number (ICBO ES ER-3909). The lightweight tile labels bear the words LT, WT, Bartile.

3.0 EVIDENCE SUBMITTED

Test in accordance with the Acceptance Criteria for Special Roofing Systems (AC07), dated July 1997.

4.0 FINDINGS

That the Bartile Extruded Concrete Roof Tiles described in this report and applied over new construction are non-combustible roof coverings complying with the 1997 Uniform Building Code™, subject to the following conditions:

Evaluation reports of ICBO Evaluation Service, Inc., are issued solely to provide information to Class A members of ICBO, utilizing the code upon which the report is based. Evaluation reports are not to be construed as representing aesthetics or any other attributes not specifically addressed nor as an endorsement or recommendation for use of the subject report.

This report is based upon independent tests or other technical data submitted by the applicant. The ICBO Evaluation Service, Inc., technical staff has reviewed the test results and/or other data, but does not possess the facilities to make an independent verification. There is no warranty by ICBO Evaluation Service, Inc., express or implied, as to any "finding" or other matter in the report or as to any products covered by the report. This disclaimer includes, but is not limited to, merchantability.

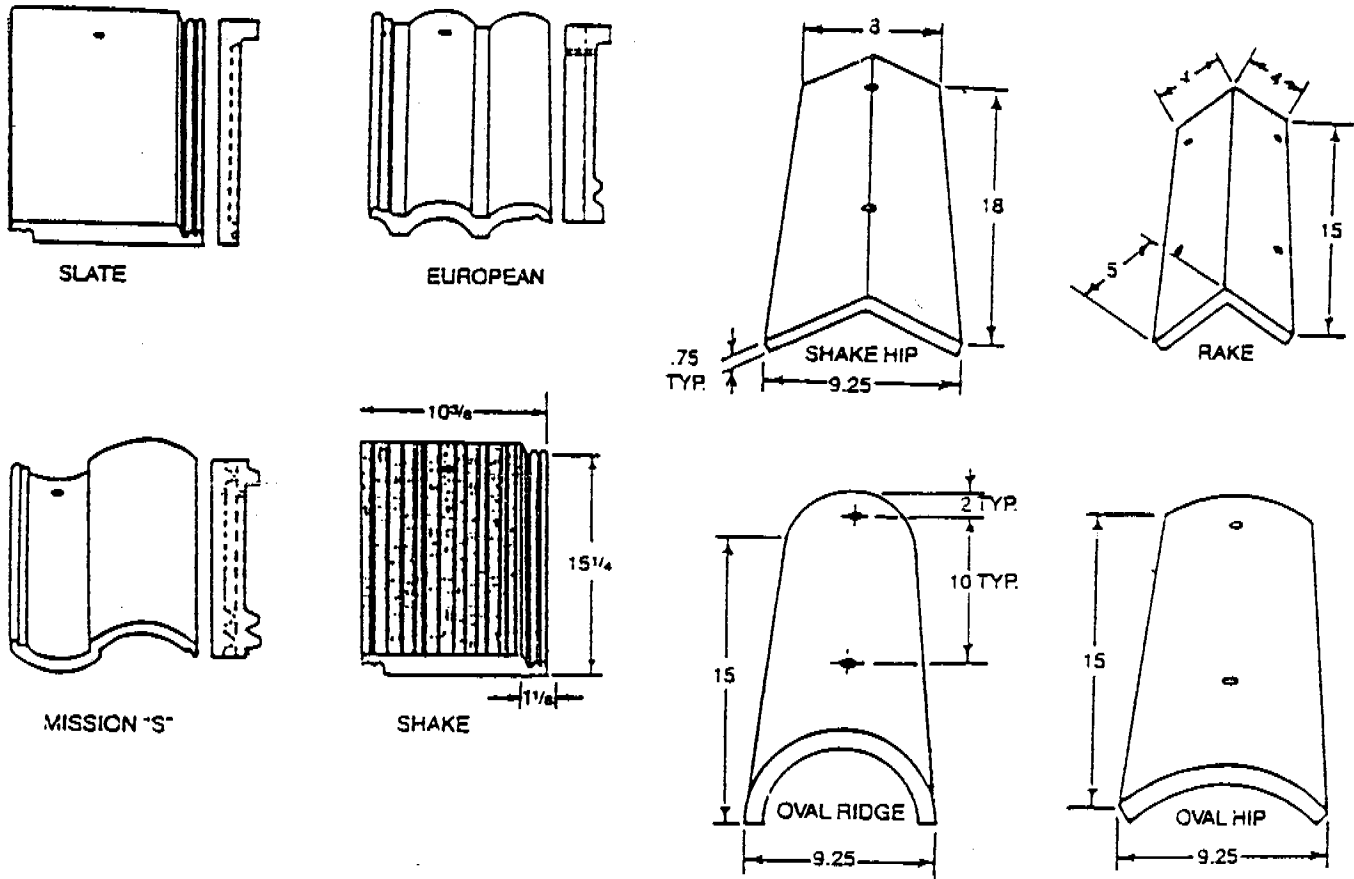


FIGURE 1

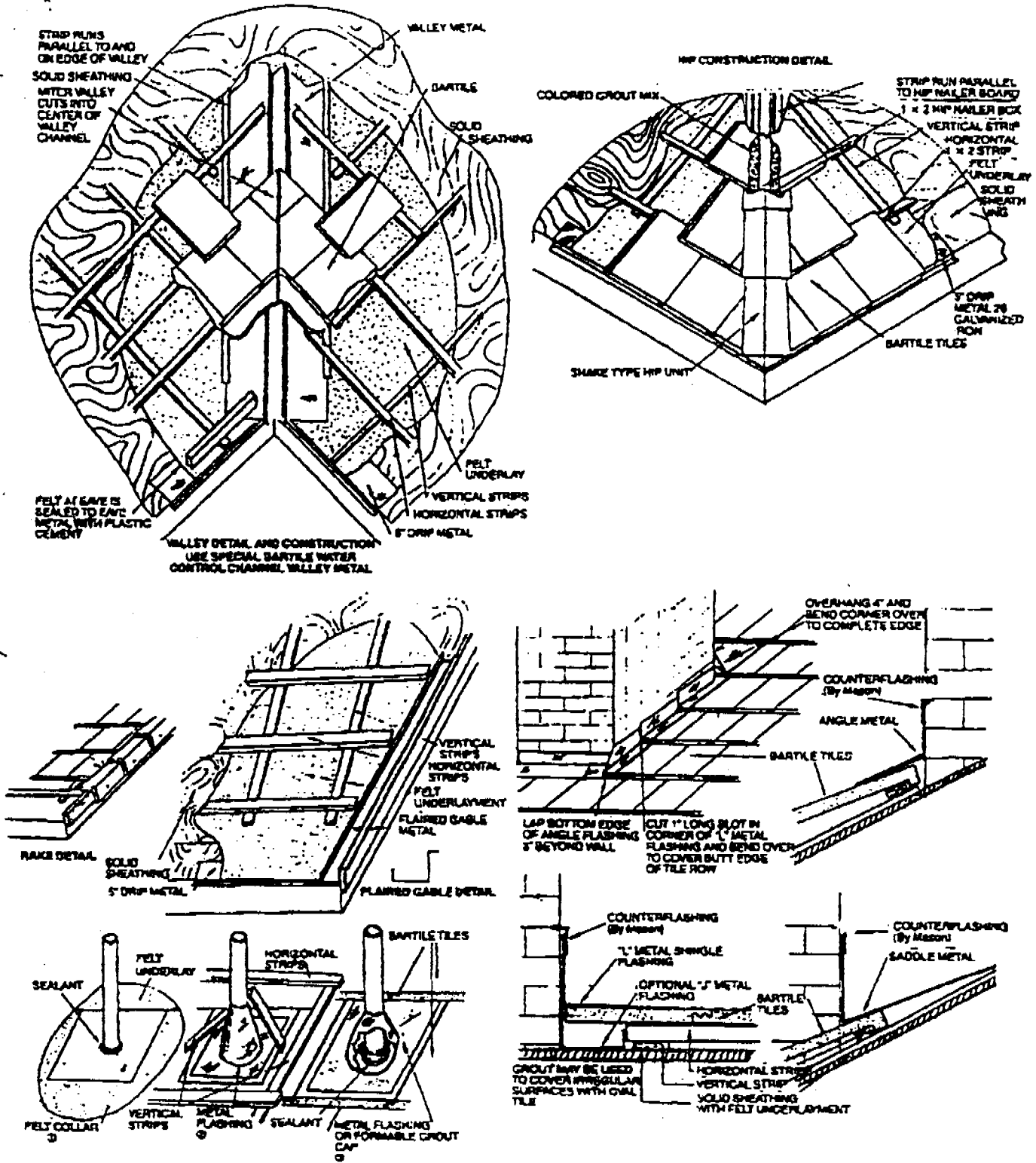


FIGURE 2

Whisenhunt

0301325

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

TEL: (916) 961-3960
FAX: (916) 961-6552

R

0301325

May 23, 2003

Ventilated Roofing Systems
6729 Walnut Avenue
Orangevale, CA 95662

TEL: (916) 988-4139; M: (916) 628-5530
FAX: (916) 987-1078

Attn.: Gary Ferguson

re: Job 2003515: Whisenhunt residence located at 1125 Vallejo Drive, Sacramento, CA

subject: Contract Change Order Number 3

Per Mr. Gary Ferguson's request, the following is addressed:

Item 1: The 1-3/4" x 14" LVL purlin is placed 4'-0" off the ridge rather than the 7'-0" as shown on CCO 02. Therefore, the 2x4 rafters spanning from the LVL to the exterior bearing wall are approximately 9'-6" in length. ~~Therefore, scab a 2x4 to the existing 2x4 rafters in this area. See the attached detail T.~~

REVISION

ISSUED

City of Sacramento

JUN 23 2003

NORTH PERMIT
CENTER



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.

APPROVED BY BRYON NAKASHIMA

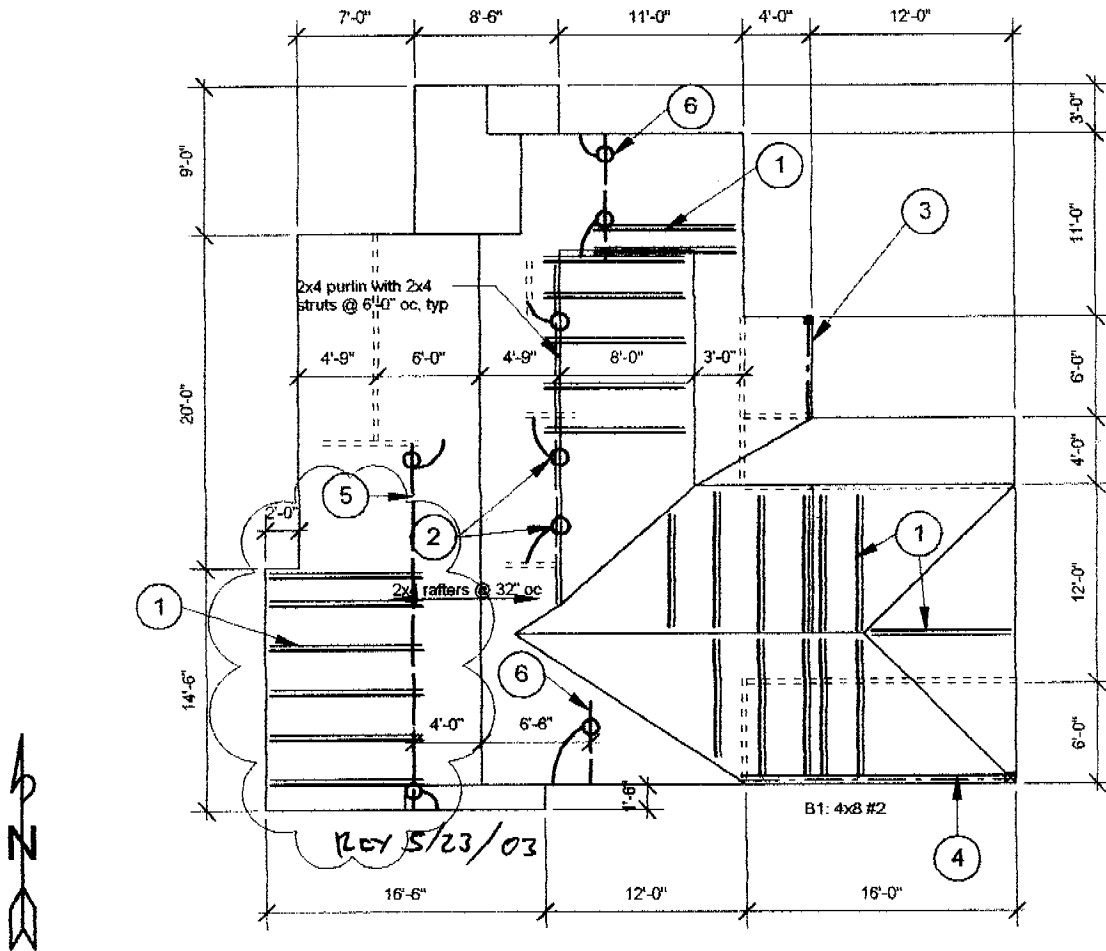
If you have any questions on the above, do not hesitate to call.

Sincerely,

Paul Zacher, P.E., S.E.



1/2



FRAMING NOTES:

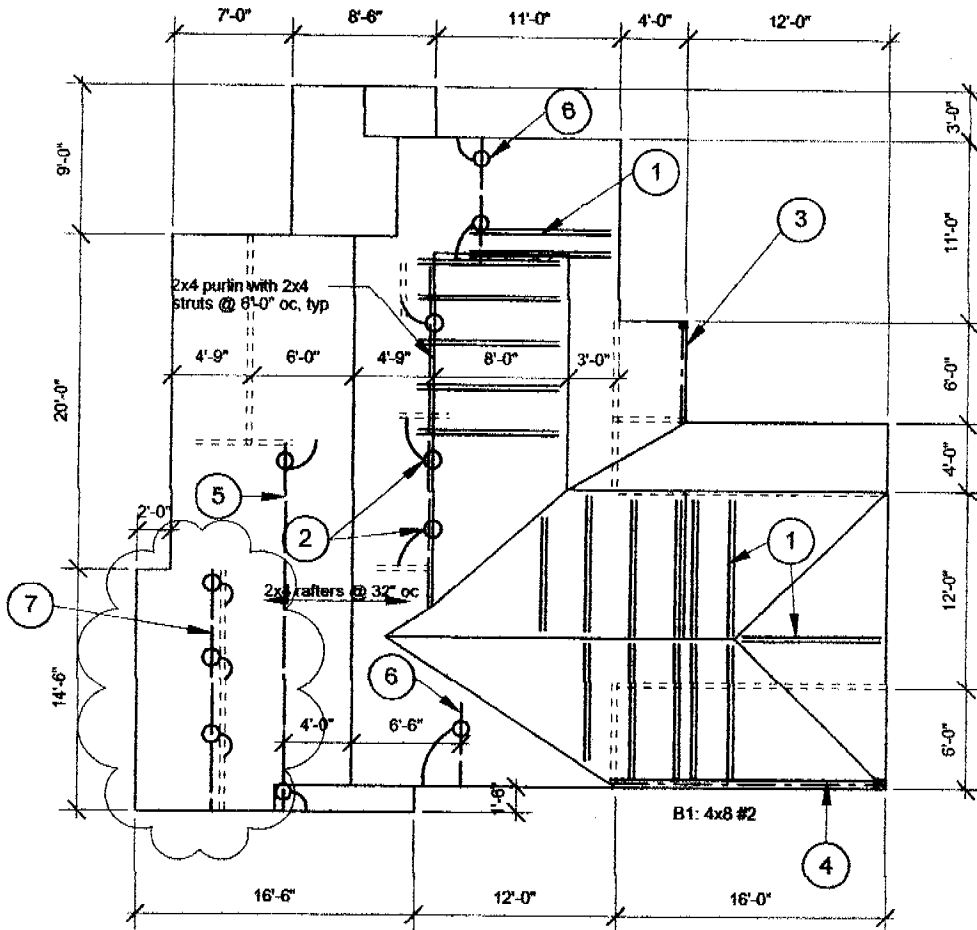
1. Scab a 2x4 to existing 2x4 rafters where the span is greater than 7'-4" (total 24). Scab a 2x6 to existing 2x4 rafters where the span is greater than 9'-4" (total 2).
2. Add 2x4 struts to bearing below (total 3).
3. Install a 4x6 DF#2 beam placed flat. Support the 4x6 by the top plate at one end and a 4x4 post at the other. Install a Simpson AC44 post cap and AB44 post base at the top and bottom of the 4x4 post. Where the existing 2x4 rafters are required to be cut, hang the rafters off the 4x6 beam with Simpson LU24 hangers.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing 4x8 beam. See detail 2.
5. Add a 1 3/4" x 14" x 22'-0" long LVL purlin with 2x4 struts to bearing below.
6. Add a 2x10 DF#2 x 6'-0" long purlin with 2x4 struts to bearing below.

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 8.2 psf.
- B. All rafters are 2x4 DF#2 and hips and valleys are 2x6 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 - WHISENHUNT
Not to Scale
2



FRAMING NOTES:

1. Scab a 2x4 to existing 2x4 rafters where the span is greater than 7'-4" (total 19). Scab a 2x6 to existing 2x4 rafters where the span is greater than 9'-4" (total 2).
2. Add 2x4 struts to bearing below (total 3).
3. Install a 4x6 DF#2 beam placed flat. Support the 4x6 by the top plate at one end and a 4x4 post at the other. Install a Simpson AC44 post cap and AB44 post base at the top and bottom of the 4x4 post. Where the existing 2x4 rafters are required to be cut, hang the rafters off the 4x6 beam with Simpson LU24 hangers.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing 4x8 beam. See detail 2.
5. Add a 1 3/4" x 14" x 22'-0" long LVL purlin with 2x4 struts to bearing below.
6. Add a 2x10 DF#2 x 6'-0" long purlin with 2x4 struts to bearing below.
7. Add a 2x6 DF#2 x 15'-0" long purlin with 2x4 struts to bearing below.

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 8.2 psf.
- B. All rafters are 2x4 DF#2 and hips and valleys are 2x6 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.

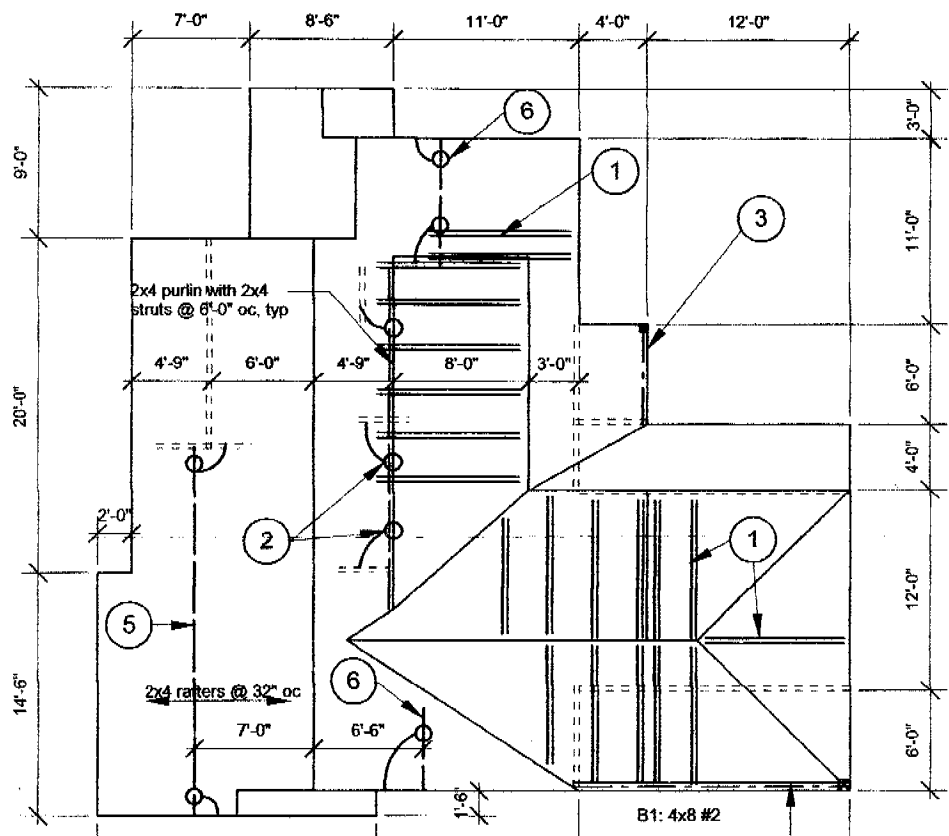
1 | **ROOF PLAN - WHISENHUNT**

Not to Scale

2

1125 VALLUJO DR.

0301325R
AREA ②



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.



FRAMING NOTES:

1. Scab a 2x4 to existing 2x4 rafters where the span is greater than 7'-4" (total 18). Scab a 2x6 to existing 2x4 rafters where the span is greater than 9'-4" (total 2).
2. Add 2x4 struts to bearing below (total 3).
3. Install a 4x6 DF#2 beam placed flat. Support the 4x6 by the top plate at one end and a 4x4 post at the other. Install a Simpson AC44 post cap and AB44 post base at the top and bottom of the 4x4 post. Where the existing 2x4 rafters are required to be cut, hang the rafters off the 4x6 beam with Simpson LU24 hangers.
4. Scab a 1 3/4" x 7 1/4" LVL to the existing 4x8 beam. See detail 2.
5. Add a 1 3/4" x 14" x 22'-0" long LVL purlin with 2x4 struts to bearing below.
6. Add a 2x10 DF#2 x 6'-0" long purlin with 2x4 struts to bearing below.

RE-ISSUED
MAY 21 2003
Sacramento Building Division

REVISION

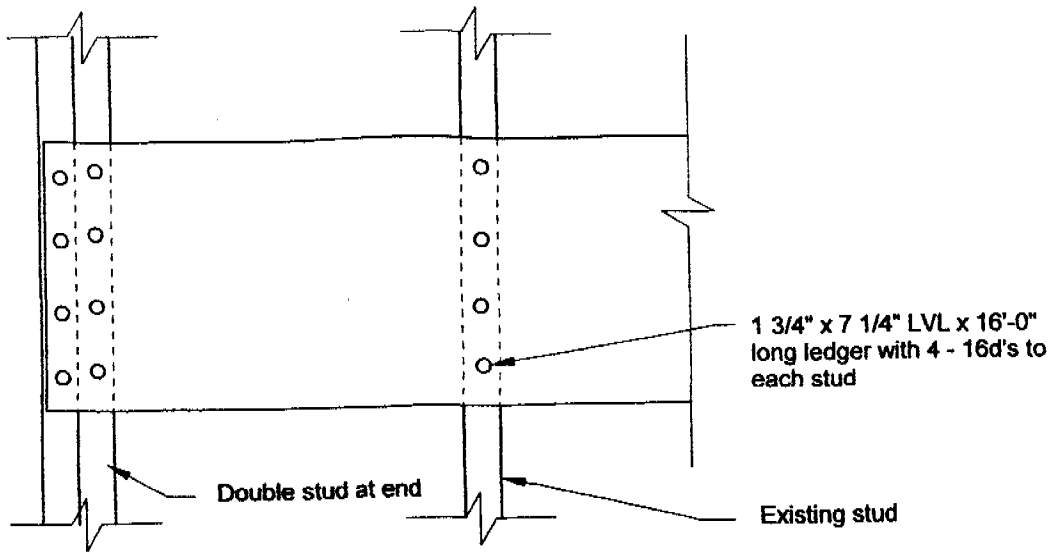
Notes:

- 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 8.2 psf.
- B. All rafters are 2x4 DF#2 and hips and valleys are 2x6 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.



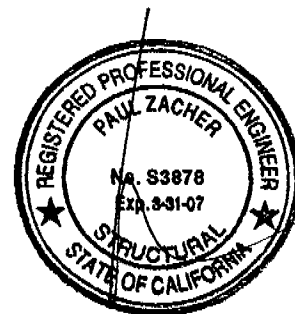
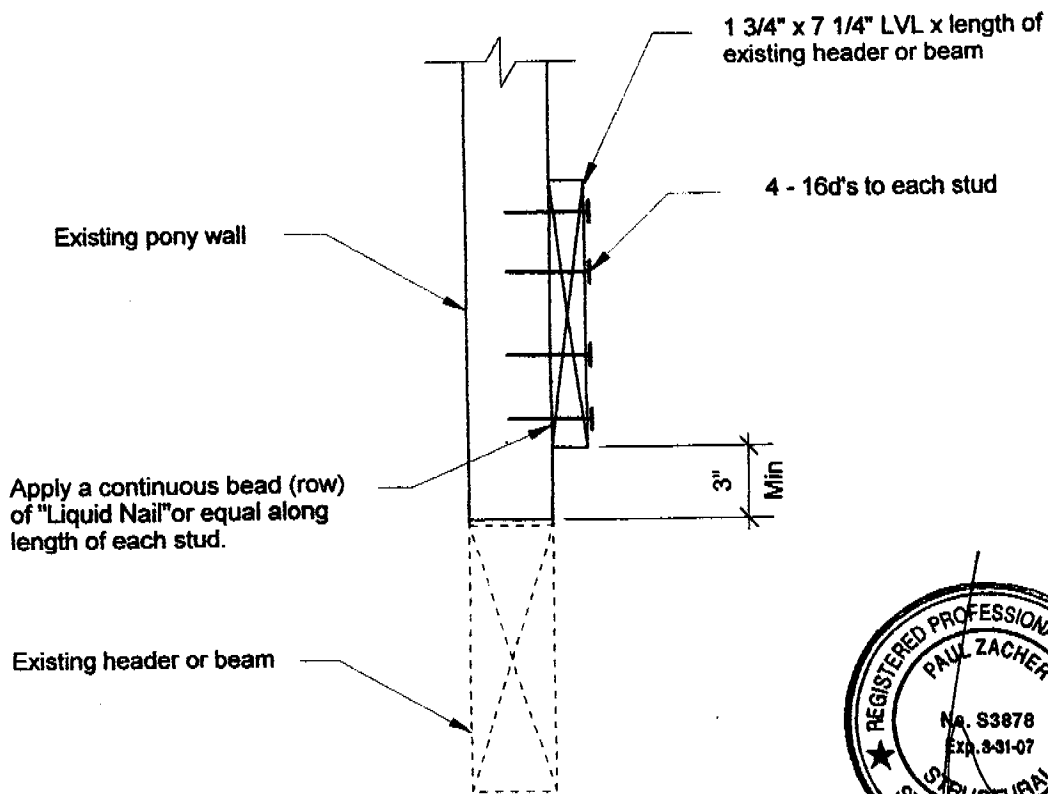
ROOF PLAN - WHISENHUNT

Not to Scale



ELEVATION

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



2

DETAIL

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

P.K. Zacher, S.E.

4701 Lakeside Way
Fair Oaks, CA 95628
TEL: (916) 961-3960
FAX: (916) 961-6552

Job #: 02-515

Date: 5/17/03

LOADING:

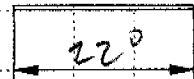
LVL

Dr = 15.3 pLF x 7' = 115 pLF

1 3/4" x 14 LVL

Lr = 12.0 " " = 90 "

115/90



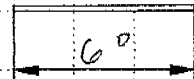
BEAM

Dr = 15.3 pLF x 12' = 31 pLF

4x6 #2 FLAT

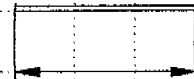
Lr = 12.0 " " = 24 "

31/24



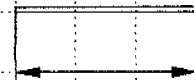
Dr =

Lr =



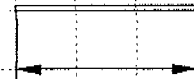
Dr =

Lr =



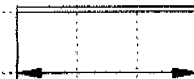
Dr =

Lr =



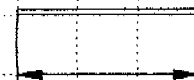
Dr =

Lr =



Dr =

Lr =



Paul Zacher - Structural Engr's
 4701 Lakeside Way
 Fair Oaks, CA 95628
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :

Job #
 Date: 1:29PM, 17 MAY 03

Scope :

Rev: 560100
 User: KW-0602844, Ver 5.6.1, 25-Oct-2002
 (c)1983-2002 ENERCALC Engineering Software

Timber Beam & Joist

c:\pau\pk and assoc\test.ecw:Calculations

Description BEAMS

Timber Member Information

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Section		LVL	Beam
		MicroLam:	4x6#2 flat
Beam Width	in	1.750	5.500
Beam Depth	in	14.000	3.500
Le: Unbraced Length	ft	0.00	0.00
Timber Grade		Tuss Joist - MacMil Douglas Fir - Larch,	
Fb - Basic Allow	psi	2,600.0	875.0
Fv - Basic Allow	psi	285.0	95.0
Elastic Modulus	ksi	1,900.0	1,600.0
Load Duration Factor		1.250	1.250
Member Type		Manuf/Pine	Manuf/Pine
Repetitive Status		No	No

Center Span Data

Span	ft	22.00	6.00
Dead Load	#/ft	115.00	31.00
Live Load	#/ft	90.00	24.00

Results

Ratio = 0.8011 0.2418

Mmax @ Center	in-k	148.83	2.97
@ X =	ft	11.00	3.00
fb : Actual	psi	2,603.4	264.5
Fb : Allowable	psi	3,250.0	1,093.8
		Bending OK	Bending OK
fv : Actual	psi	123.7	11.6
Fv : Allowable	psi	356.3	118.8
		Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	1,265.00	93.00
	LL	lbs	990.00	72.00
	Max. DL+LL	lbs	2,255.00	165.00
@ Right End	DL	lbs	1,265.00	93.00
	LL	lbs	990.00	72.00
	Max. DL+LL	lbs	2,255.00	165.00

Deflections

Ratio OK Deflection OK

Center DL Defl	in	-0.797	-0.029
L/Defl Ratio		331.2	2,504.4
Center LL Defl	in	-0.624	-0.022
L/Defl Ratio		423.1	3,234.8
Center Total Defl	in	-1.421	-0.051
Location	ft	11.000	3.000
L/Defl Ratio		185.8	1,411.6

DESIGN LOADING:

Roof Pitch	12	in 12
Pitch Adjustment Factor	1.41	

LOCATION: ROOF BATTEN SYTEM

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	8.20	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
Batten system	0.50	psf
2x4 rafters @ 32" oc	<u>0.75</u>	psf
	Load	10.8 psf
Roof Pitch Adjustment	<u>4.49</u>	psf
Total Load	15.3	psf

Job #: 02-515

Date: 11/15/02

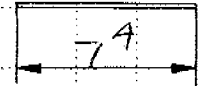
LOADING:

RAFTER

Dr = 15.42 p.f.f. x 2⁸ = 40.9 p.f.f. 2 x 4" x 2

Lr = 12.0 x 2 = 32.0

40.9 / 2 = 20.45

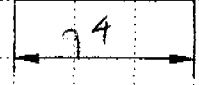


RAFTER

Dr = 15.42 p.f.f. x 2⁸ = 40.9 p.f.f. 2 x 4" x 2

Lr = 12.0 x 2 = 32.0

40.9 / 2 = 20.45

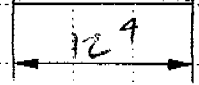


RAFTER

Dr = 15.42 p.f.f. x 2⁸ = 40.9 p.f.f. 2 x 4" x 2 +

Lr = 12.0 x 2 = 32.0 2 x 6" x 2

40.9 / 2 = 20.45

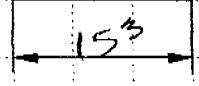


RAFTER

Dr = 15.42 p.f.f. x 2⁸ = 40.9 p.f.f. 2 x 10" x 2

Lr = 12.0 x 2 = 32.0

40.9 / 2 = 20.45



B1

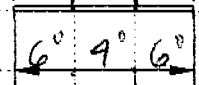
Dr = 15.42 p.f.f. x 3⁰ = 46 p.f.f. + 1 1/2" x 7 1/2" LVL

Lr = 12.0 x 3 = 36.0

4 x 8" x 2

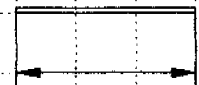
40/30

70/150



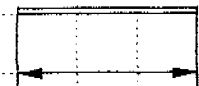
Dr =

Lr =



Dr =

Lr =



Paul Zacher - Structural Engineers
 4701 Lakeside Way
 Fair Oaks, CA 95628
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :

Job #
 Date: 6:39AM, 15 NOV 02

Scope :

Rev: 510304
 User: KW-0602844, Ver 5.1.3, 22-Jun-1999, Win32
 (c) 1993-99 ENERCALC

Timber Beam & Joist

c:\paul\pk and assoc\test.ecw:Calculations

Description RAFTERS AND BEAMS

Timber Member Information

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Section		rafter 2" x 3-3/4	rafter 2 - 2" x 3	rafter 2x4 + 2x6	rafter 2x10	B1 4x8 + 1.75
Beam Width	in	2.000	3.500	2.120	1.500	5.250
Beam Depth	in	3.750	3.625	5.500	9.250	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	Custom, DF#2 + LVL
Fb - Basic Allow	psi	875.0	875.0	875.0	875.0	1,450.0
Fv - Basic Allow	psi	95.0	95.0	95.0	95.0	158.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0	1,600.0	1,666.7
Load Duration Factor		1.250	1.250	1.250	1.250	1.000
Member Type		Manuf/Pine	Manuf/Pine	Sawn	Sawn	Manuf/Pine
Repetitive Status		Repetitive	Repetitive	Repetitive	No	No

Center Span Data

	ft	7.33	9.33	12.33	15.25	16.00
Span	ft					
Dead Load	#/ft	40.90	40.90	40.90	40.90	46.00
Live Load	#/ft	32.00	32.00	32.00	32.00	36.00
Dead Load	#/ft					30.00
Live Load	#/ft					120.00
Start	ft					6.000
End	ft					10.000

Results

Ratio = 0.9965 0.9873 0.9512 0.9882 0.8500

Mmax @ Center	in-k	5.88	9.52	16.62	25.43	56.69
@ X =	ft	3.66	4.66	6.16	7.62	8.00
fb: Actual	psi	1,253.4	1,241.8	1,555.4	1,188.9	1,232.5
Fb: Allowable	psi	1,257.8	1,257.8	1,635.2	1,203.1	1,450.0
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
fv: Actual	psi	49.2	37.6	53.7	54.3	35.8
Fv: Allowable	psi	118.8	118.8	118.8	118.8	158.0
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	149.90	190.80	252.15	311.86	428.00
	LL	lbs	117.28	149.28	197.28	244.00	528.00
	Max. DL+LL	lbs	267.18	340.08	449.43	555.86	956.00
@ Right End	DL	lbs	149.90	190.80	252.15	311.86	428.00
	LL	lbs	117.28	149.28	197.28	244.00	528.00
	Max. DL+LL	lbs	267.18	340.08	449.43	555.86	956.00

Deflections

Ratio OK Deflection OK Deflection OK Deflection OK Deflection OK

Center DL Defl	in	-0.189	-0.314	-0.452	-0.314	-0.306
L/Defl Ratio		465.6	356.9	327.2	582.0	627.6
Center LL Defl	in	-0.148	-0.245	-0.354	-0.246	-0.438
L/Defl Ratio		595.1	456.2	418.2	743.9	438.1
Center Total Defl	in	-0.337	-0.559	-0.806	-0.560	-0.744
Location	ft	3.665	4.665	6.165	7.625	8.000
L/Defl Ratio		261.2	200.2	183.6	326.5	258.0