

**CITY OF SACRAMENTO**  
1231 I Street, Sacramento, CA 95814

**Permit No: 0415362**

**Insp Area: 4**

**Thos Bros: 277E5**

**Site Address: 23 DAKOTA CT SAC**

**Parcel No: 262-0300-036**

**Sub-Type: RES**

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

**CONTRACTOR**

BRIGGS ROOFING AND REPAIR  
STEVE BRIGGS  
3451 I ST STE 8 95660

**OWNER**

BOONE GEORGE/LOUISE MARIE  
23 DAKOTA CT  
SACRAMENTO, CA 95833

**ARCHITECT**

**Nature of Work: T/O & RROOF W/ DURALITE 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 642413 Date 9/20 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 projects with a contractor(s) licensed pursuant to the Contractors License Law).

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

Date \_\_\_\_\_ Owner Signature CITY OF SACRAMENTO

**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 9/20/04 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.

B 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 285-0002373 Exp Date 03/01/2005

(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 9/20 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.**

SEP-17-2004 14:06

P B CITY OF SACRAMENTO

916 808 8370

P.01/01

ATTN: Dan

# ROOFING QUESTIONNAIRE

Applicant's name: Tim Briggs Phone: ~~916 808 8370~~  
 Project Address: 23 Dakota Court 339-0615

Please check the appropriate boxes. Only check a box if it accurately and completely describes your proposed work, otherwise leave boxes blank.

1. **ROOFING TYPE**
- a.  The existing roofing material is composition shingle, wood shake or shingle, tile or metal. The new roofing material shall be:
- |                                     |                                     |   |
|-------------------------------------|-------------------------------------|---|
| <u>Existing</u>                     | <u>Proposed</u>                     |   |
| <input type="checkbox"/>            | <input type="checkbox"/>            | 25 year laminated dimensional composition wood shake or shingle |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | tile  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | metal that simulates one of the above listed materials          |
- b.  The existing roofing material is built up, foam or membrane with a roof pitch of 2:12 or less. The new roofing material shall be:
- |                          |                          |          |
|--------------------------|--------------------------|----------|
| <u>Existing</u>          | <u>Proposed</u>          |          |
| <input type="checkbox"/> | <input type="checkbox"/> | Built up |
| <input type="checkbox"/> | <input type="checkbox"/> | Foam     |
| <input type="checkbox"/> | <input type="checkbox"/> | Membrane |

2. **GUTTERS**
- a.  The existing gutters are fascia gutters.
- There is no change proposed to existing gutters.
  - New fascia gutters shall be provided.
  - Gutters shall be repaired and/or replaced to match existing.
- b.  The existing gutters are Ogee gutters.
- There is no change proposed to existing gutters.
  - New Ogee gutters shall be provided.
  - Gutters shall be repaired and/or replaced to match existing.
- c.  There are no existing gutters.
- No new gutters are proposed.
  - New Ogee gutters shall be provided.

3. **RAFTER TAILS**
- a.  There are no exposed rafter tails.
- b.  There are exposed rafter tails.
- There is no change or cutting proposed to existing rafter tails.
  - Rafter tails shall be repaired and replaced to match existing.

By signing below, the applicant certifies that this form accurately describes the proposed work.

Applicant's signature: Tim Briggs Date: 9/20/04

For City Staff use only

Counter Staff [Signature]

- In a DR District Meets DR criteria?  Yes  No (route to DR staff)
- In a P area or listed (route to P staff)
- Not in DR/P area

exp north



Boone



Paul Zacher - Structural Engineers, Inc.  
4701 Lakeside Way  
Fair Oaks, CA 95828

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. Scab a 2x4 DF#2 x 12'-0" long rafter to the top chord of the existing truss. 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	6	in 12
Pitch Adjustment Factor	1.12	

The dead and live load on truss top chord is placed along the length of the top chord. Therefore, the live load is as follows:

Live Load on top chord	14.3
------------------------	------

**LOCATION: TOP CHORD**

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	7.30	psf
Roofing felt	0.30	psf
7/16" OSB/ plywood	1.30	psf
1x4 skip sh't'g	1.09	psf
2x4 truss @ 24" oc	0.64	psf
Total Load	10.6	psf

**LOCATION: BOTTOM CHORD**

<u>MATERIAL</u>	<u>WEIGHT</u>	
Batt/blown insul	0.50	psf
2x4 truss @ 24" oc	1.28	psf
1/2" Gypboard	2.50	psf
Load	4.3	psf

PAUL ZACHER- STRUCTURAL ENGINEERS, INC.

4701 Lakeside Way

Fair Oaks, Ca 95628

Job #: 04 492

TEL: (916) 961-3960

Date: 08/25/2004

FAX: (916) 961-6552

LOADING:

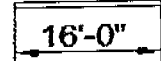
104 / 112

B1:

Dr = 14.9 psf x 7'-0" = 104 plf

4x12 #2

Lr = 16.0 psf x 7'-0" = 112 plf



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

Title :  
 Dsgnr:  
 Description :  
 Scope :

Job #  
 Date: 2:13PM, 28 AUG 04

Rev: 560100  
 User: KW-08/28/44 Ver 5.6.1, 25-Oct-2002  
 (c)1993-2002 ENPCALC Engineering Software

**Timber Beam & Joist**

c:\documents and settings\paul zacher\desktop

Description **RAFTERS AND BEAMS**

**Timber Member Information** Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Section		B1
Beam Width	in	4x12
Beam Depth	in	3.500
Le: Unbraced Length	ft	11.250
Timber Grade		0.00
Fb - Basic Allow	psi	Douglas Fir - Larch,
Fv - Basic Allow	psi	875.0
Elastic Modulus	ksi	95.0
Load Duration Factor		1,600.0
Member Type		1.250
Repetitive Status		Sawn
		No

**Center Span Data**

Span	ft	16.00
Dead Load	#/ft	104.00
Live Load	#/ft	112.00

**Results** Ratio = 0.9338

Mmax @ Center	in-k	82.94
@ X =	ft	8.00
Fb : Actual	psi	1,123.5
Fb : Allowable	psi	1,203.1
		Bending OK
Fv : Actual	psi	58.5
Fv : Allowable	psi	118.8
		Shear OK

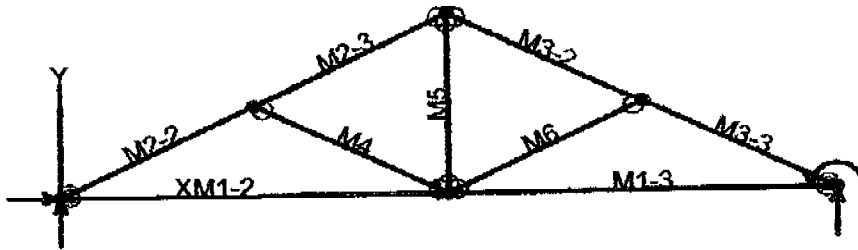
**Reactions**

@ Left End	DL	lbs	832.00
	LL	lbs	896.00
	Max. DL+LL	lbs	1,728.00
@ Right End	DL	lbs	832.00
	LL	lbs	896.00
	Max. DL+LL	lbs	1,728.00

**Deflections**

Deflection OK

Center DL Defl	in	-0.231
L/Defl Ratio		831.9
Center LL Defl	in	-0.249
L/Defl Ratio		772.6
Center Total Defl	in	-0.479
Location	ft	8.000
L/Defl Ratio		400.6



6



Paul Zacher - Structural Engineers

**Truss 1**

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Paul Zacher\Desktop\Boone04\_492\Truss 1.vap

**Nodes**

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	20.00	0.00	No	"	Yes
N3	10.00	5.00	"	No	No
N4	10.00	0.00	"	"	"
N5	5.00	2.50	"	"	"
N6	15.00	2.50	"	"	"

**Member Elements**

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	10.00
M1-3	"	"	10.00
M2-2	"	"	5.59
M2-3	"	"	5.59
M3-2	"	"	5.59
M3-3	"	"	5.59
M4	"	"	5.59
M5	"	"	5.00
M6	"	"	5.59

**Section Properties**

Category	Section	Ax in <sup>2</sup>	Ix in <sup>4</sup>	Sz(+y) in <sup>3</sup>	Sz(-y) in <sup>3</sup>
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

**Material Properties**

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1700000.00	0.36	40.47

**Load Combination Summary**

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases &amp; Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

**Nodal Reactions**

Node	Load Case	FX lb	FY lb	MZ lb-ft

Paul Zacher - Structural Engineers

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	584.00	-NA-
N2	"	-NA-	584.00	0.00

## Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	909.47	-52.87	-98.70	0.01	-0.06
"	909.47	-24.20	29.72	0.01	-0.11
"	909.47	4.46	62.62	0.00	-0.11
"	909.47	33.13	0.00	0.00	0.00
M1-3	909.47	-33.13	0.00	0.02	0.00
"	909.47	-4.46	62.62	0.02	-0.11
"	909.47	24.20	29.72	0.02	-0.11
"	909.47	52.87	-98.70	0.01	-0.06
M2-2	-1059.8	85.99	0.00	0.00	0.00
"	-1022.6	11.75	91.00	-0.00	-0.06
"	-985.57	-62.49	43.73	-0.01	-0.07
"	-948.45	-136.73	-141.82	-0.01	-0.05
M2-3	-743.36	136.73	-141.82	-0.01	-0.05
"	-706.25	62.49	43.73	-0.01	-0.08
"	-669.13	-11.75	91.00	-0.01	-0.10
"	-632.01	-85.99	0.00	-0.01	-0.05
M3-2	-743.36	-136.73	-141.82	0.03	-0.04
"	-706.25	-62.49	43.73	0.03	-0.07
"	-669.13	11.75	91.00	0.03	-0.08
"	-632.01	85.99	0.00	0.03	-0.04
M3-3	-1059.8	-85.99	0.00	0.02	0.01
"	-1022.6	-11.75	91.00	0.02	-0.05
"	-985.57	62.49	43.73	0.03	-0.06
"	-948.45	136.73	-141.82	0.03	-0.04
M4	-341.82	0.00	0.00	0.04	-0.04
"	-341.82	0.00	0.00	0.04	-0.04
"	-341.82	0.00	0.00	0.04	-0.04
"	-341.82	0.00	0.00	0.04	-0.04
M5	411.47	0.00	0.00	-0.06	-0.01
"	411.47	0.00	0.00	-0.05	-0.01
"	411.47	0.00	0.00	-0.05	-0.01
"	411.47	0.00	0.00	-0.05	-0.01
M6	-341.82	0.00	0.00	-0.02	-0.05
"	-341.82	0.00	0.00	-0.02	-0.05
"	-341.82	0.00	0.00	-0.01	-0.06
"	-341.82	0.00	0.00	-0.01	-0.05

**BENDING & COMP: TRUSS 1 - MEMBER 2-2**

Design based on 1997 UBC 2321 Division V and ANSI/TPI 1-1995

Grading:

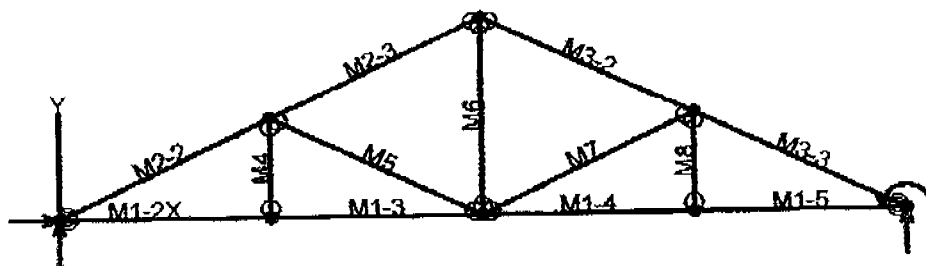
2x or 4x

Doug-fir larch: No. 2

Assumptions:

Solid sheathing on top chord of truss. Therefore,  
 continuous lateral support is provided along compression face  
 Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	3.5 inches
Length	5.59 feet
Max Axial Comp, C	948 lbs
Max Reaction, R	136 lbs
Max Moment, M	141 ft-lbs
Max LL Deflection	0.03 inches
Max TL Deflection	0.05 inches
LL Defl Criteria = L/	240
TL Defl Criteria = L/	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
Size Factor, Cf bending	1.5 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.15 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.15
fc =	181 psi
Fce =	1602 psi
Fc* =	2084 psi
F'c =	1239 psi
fb =	552 psi
F'b = F'b* =	2156 psi
Shear D/C ratio	0.33 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/(F'b(1-fc/Fce)) =	0.31 < 1.0, Member OK
Live Load defl ratio	0.11 < 1.0, Member OK
Total Load defl ratio	0.13 < 1.0, Member OK



Paul Zacher - Structural Engineers

**Truss 2**

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Paul Zacher\Desktop\Boone04\_492\Truss 2.vap

**Nodes**

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	32.00	0.00	No		Yes			Yes
N2	0.00	0.00	Yes		"			No
N3	16.00	8.00	No		No			"
N4	8.00	0.00	"		"			"
N5	16.00	0.00	"		"			"
N6	24.00	0.00	"		"			"
N7	8.00	4.00	"		"			"
N8	24.00	4.00	"		"			"

**Member Elements**

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	8.00
M1-3	"	"	8.00
M1-4	"	"	8.00
M1-5	"	"	8.00
M2-2	"	"	8.94
M2-3	"	"	8.94
M3-2	"	"	8.94
M3-3	"	"	8.94
M4	"	"	4.00
M5	"	"	8.94
M6	"	"	8.00
M7	"	"	8.94
M8	"	"	4.00

**Section Properties**

Category	Section	Ax in <sup>2</sup>	Ix in <sup>4</sup>	Sx(+y) in <sup>3</sup>	Sx(-y) in <sup>3</sup>
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

**Material Properties**

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1700000.00	0.36	40.47

**Load Combination Summary**

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases &amp; Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

11

Paul Zacher - Structural Engineers

## Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	-NA-	934.40	0.00
N2	"	0.00	934.40	-NA-

## Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	1508.00	-39.60	-41.60	0.02	-0.14
"	1508.00	-16.67	33.40	0.01	-0.14
"	1508.00	6.27	47.27	0.01	-0.10
"	1508.00	29.20	0.00	0.00	0.00
M1-3	1508.00	-34.93	-45.80	0.03	-0.15
"	1508.00	-11.99	16.73	0.03	-0.16
"	1508.00	10.94	18.13	0.02	-0.16
"	1508.00	33.87	-41.60	0.02	-0.14
M1-4	1508.00	-33.87	-41.60	0.05	-0.14
"	1508.00	-10.94	18.13	0.04	-0.16
"	1508.00	11.99	16.73	0.04	-0.16
"	1508.00	34.93	-45.80	0.03	-0.15
M1-5	1508.00	-29.20	0.00	0.06	0.00
"	1508.00	-6.27	47.27	0.06	-0.10
"	1508.00	16.67	33.40	0.05	-0.14
"	1508.00	39.60	-41.60	0.05	-0.14
M2-2	-1753.6	135.24	0.00	0.00	0.00
"	-1694.2	16.46	226.00	-0.01	-0.31
"	-1634.8	-102.32	98.00	-0.01	-0.28
"	-1575.4	-221.10	-383.99	-0.02	-0.14
M2-3	-1161.6	221.10	-383.99	-0.02	-0.14
"	-1102.2	102.32	98.00	-0.02	-0.33
"	-1042.8	-16.46	226.00	-0.03	-0.40
"	-983.47	-135.24	0.00	-0.03	-0.14
M3-2	-1161.6	-221.10	-383.99	0.08	-0.11
"	-1102.2	-102.32	98.00	0.08	-0.30
"	-1042.8	16.46	226.00	0.09	-0.37
"	-983.47	135.24	0.00	0.09	-0.11
M3-3	-1753.6	-135.24	0.00	0.06	0.03
"	-1694.2	-16.46	226.00	0.06	-0.28
"	-1634.8	102.32	98.00	0.07	-0.25
"	-1575.4	221.10	-383.99	0.08	-0.11
M4	73.47	0.00	0.00	0.14	0.02
"	73.47	0.00	0.00	0.14	0.03
"	73.47	0.00	0.00	0.14	0.04
"	73.47	0.00	0.00	0.14	0.05
M5	-634.90	0.00	0.00	0.09	-0.12
"	-634.90	0.00	0.00	0.10	-0.11
"	-634.90	0.00	0.00	0.10	-0.11
"	-634.90	0.00	0.00	0.10	-0.10
M6	637.72	0.00	0.00	-0.15	-0.03
"	637.72	0.00	0.00	-0.14	-0.03
"	637.72	0.00	0.00	-0.14	-0.03
"	637.72	0.00	0.00	-0.14	-0.03
M7	-634.90	0.00	0.00	-0.04	-0.14
"	-634.90	0.00	0.00	-0.04	-0.14
"	-634.90	0.00	0.00	-0.04	-0.14
"	-634.90	0.00	0.00	-0.04	-0.13
M8	73.47	0.00	0.00	0.14	0.02

12

Paul Zacher - Structural Engineers

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
"	73.47	0.00	0.00	0.14	0.03
"	73.47	0.00	0.00	0.14	0.04
"	73.47	0.00	0.00	0.14	0.05

**BENDING & COMP: TRUSS 2 - MEMBER 2-2**

Design based on 1997 UBC 2321 Division V and ANSI/TPI 1-1995

Grading:

2x or 4x

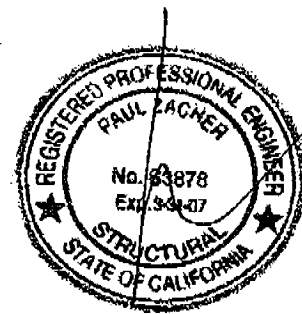
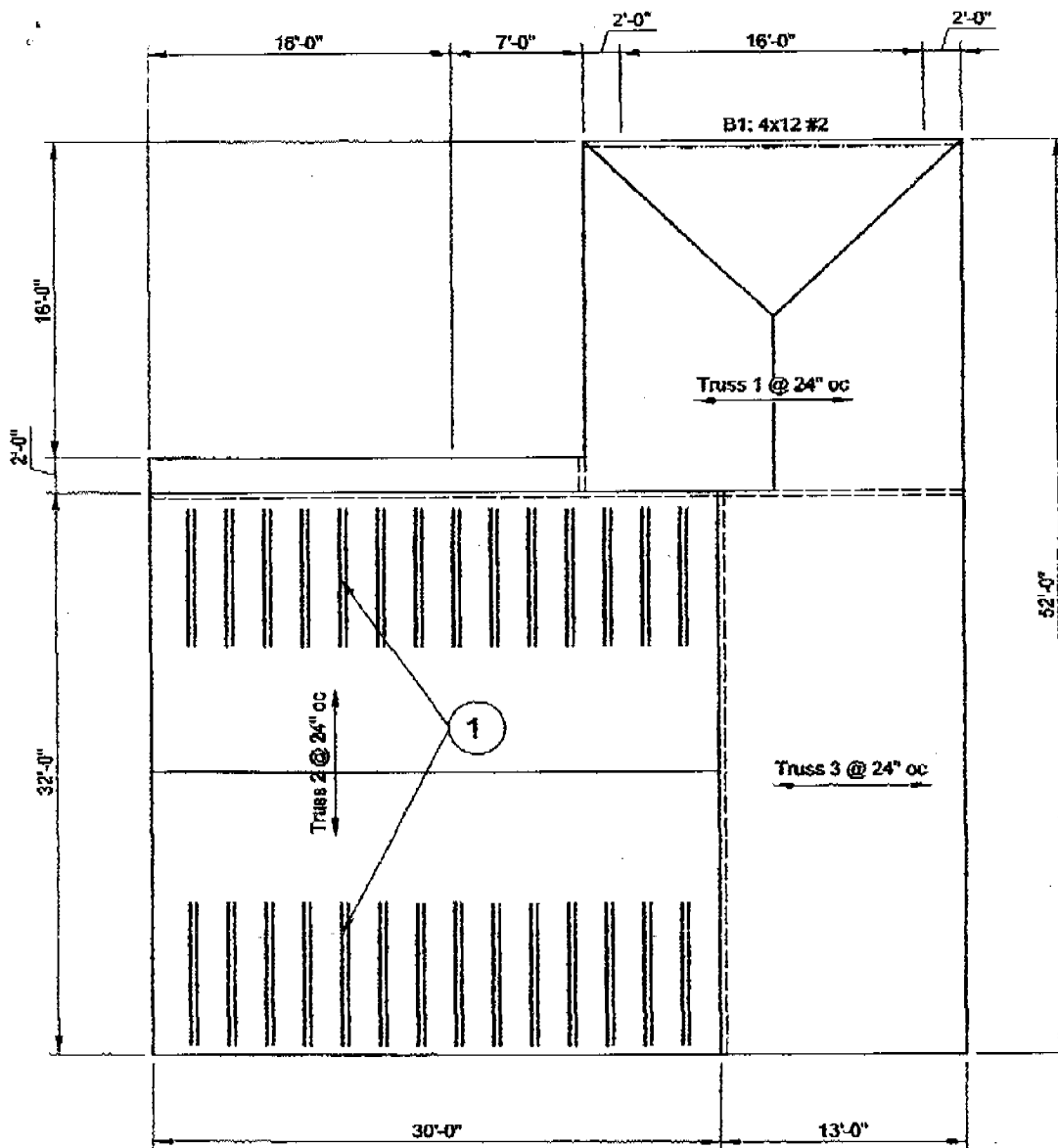
Doug-fir larch: No. 2

Assumptions:

Solid sheathing on top chord of truss. Therefore,  
 continuous lateral support is provided along compression face  
 Maximum center-center spacing = 24"

Width, b	3 inches
Depth, d	3.5 inches
Length	8.94 feet
Max Axial Comp, C	1575 lbs
Max Reaction, R	221 lbs
Max Moment, M	383 ft-lbs
Max LL Deflection	0.07 inches
Max TL Deflection	0.14 inches
LL Defl Criteria = L/	240
TL Defl Criteria = L/	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
Size Factor, Cf bending	1.5 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.15 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.25
fc =	150 psi
Fce =	676 psi
Fc* =	2084 psi
F'c =	623 psi
fb =	750 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.27 < 1.0, Member OK
Interaction equation:	
(fc/F'c) <sup>2</sup> +	
fb / (F'b(1-fc/Fce)) =	0.51 < 1.0, Member OK
Live Load defl ratio	0.16 < 1.0, Member OK
Total Load defl ratio	0.23 < 1.0, Member OK





**FRAMING NOTES:**

- 1. Scab a 2x4 DF#2 x 12'-0" long rafter to the top chord of the existing truss #1 (total 6). 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 7.3 psf.
- B. All structural wood members that were observed appear to be in sound condition and without structural defect.

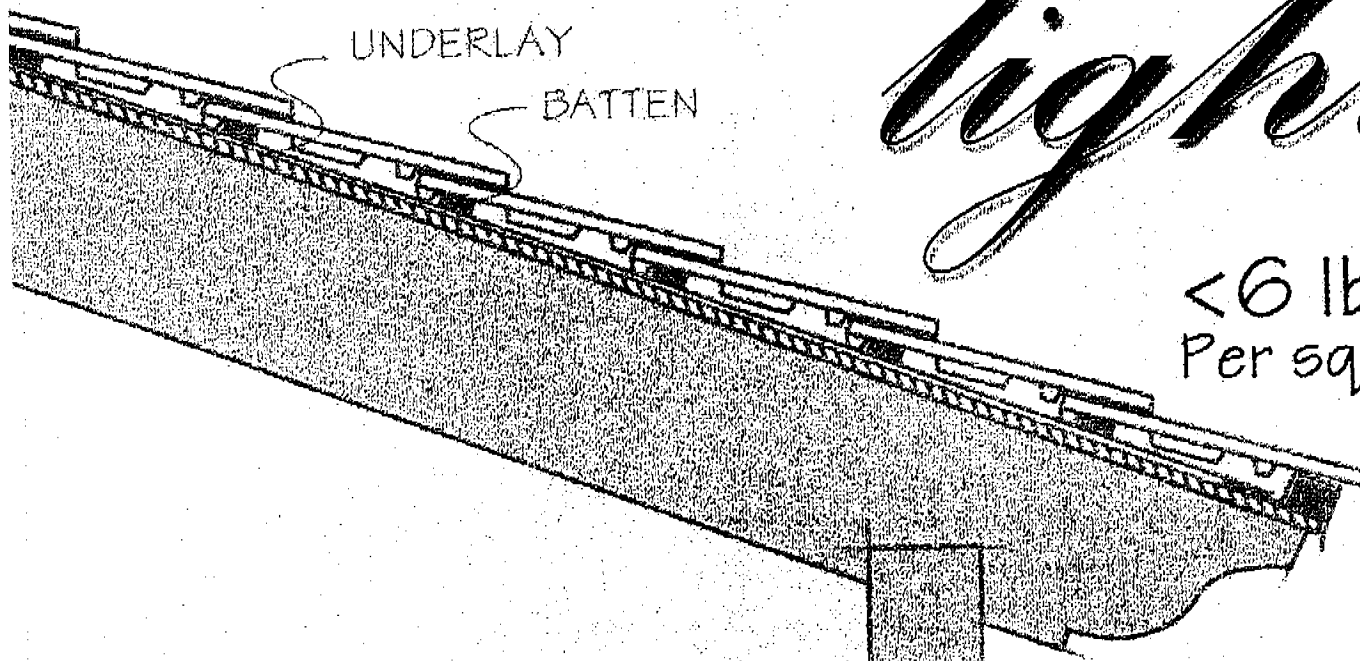


**ROOF PLAN - BOONE**

Not to Scale

15

# Why choose to go with MonierLifetile



- All lightweight tiles are less than 600 lbs. per square
- Structural enhancements rarely needed
- 4,500 lbs. less than average 30 sq. mid-weight roof

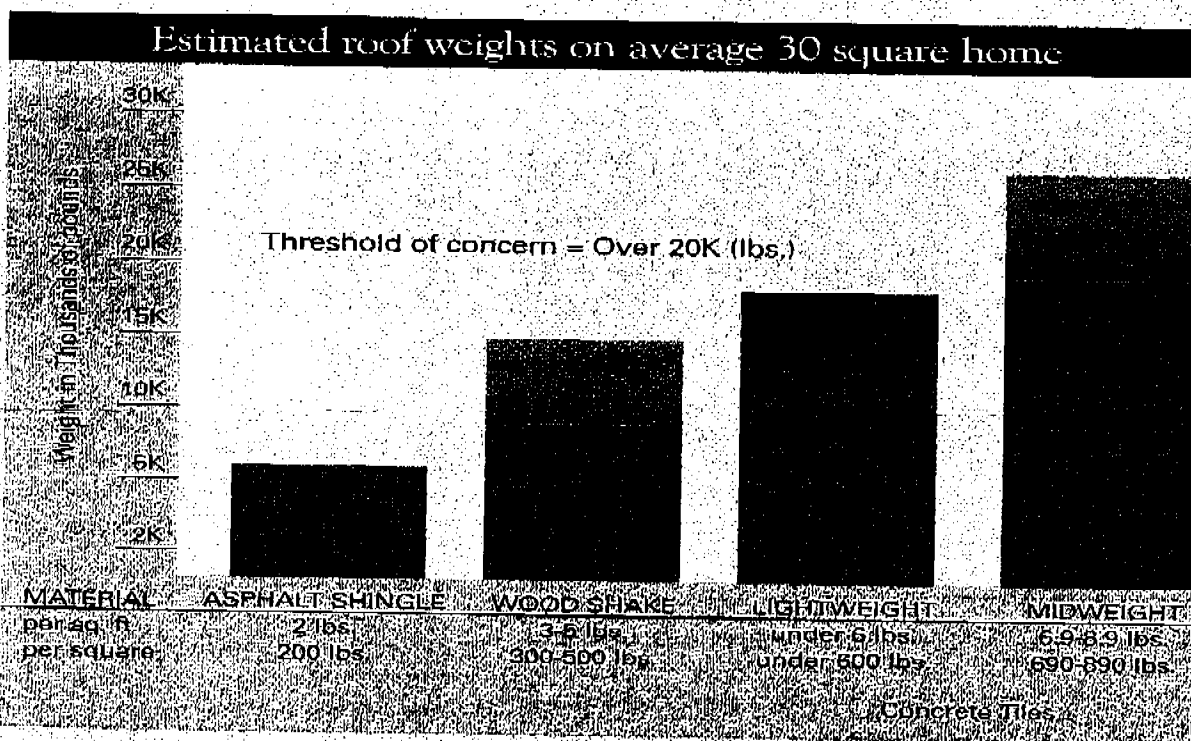
*Our "true" lightweight flat tiles are 125 lbs. lighter per square than our nearest competitor. Apart from sheeting, reroofing with Cedarlite and Duralite rarely requires structural reinforcement and, in most municipalities, no engineering report is required to obtain a permit.*

## Reroof Redefined.

MonierLifetile is the first and only manufacturer to create a sub-600 flat tile. Other manufacturers claim to make "lightweight" tiles, but they've usually modified a standard weight tile, with the actual weight varying from 6.9-8.9 pounds per square foot. We call them "mid-weight" tiles. Only MonierLifetile flat tiles are truly lightweight, designed from the outset to be sub 600 while still passing our stringent requirements for strength and weather resistance. To ensure you're getting the benefits of lightweight tile, MonierLifetile is the only choice for your project.

Lightweight tiles are tiles that weigh less than six pounds per square foot. Why does the weight of a roof tile matter so much? For a typical 30-square reroofing job, a mid-weight roof tile, at over seven pounds per square foot, can add up to 4,500 pounds to the weight of a roof.

*right?*



When that much weight is added to your home, its structural integrity should be reviewed. This means your roof may require an engineering report and, depending on the results, you may need to have your home structurally enhanced. All of this adds extra cost and time to the job.

This is especially important in areas with steeply pitched roofs, since they put more weight on the walls of the home. Because all of our lightweight tiles fall below the 600 pound threshold, municipalities may not require engineering reports or structural enhancements, which could potentially save you thousands of dollars.