CITY OF SACRAMENTO

Permit No: 9810988

1231 I Street, Sacramento, CA 95814

Insp Area: 2

Site Address: 875 SHORESIDE DR SAC

Sub-Type: RES

Parcel No: 0300650006

Housing (Y/N): N

CONTRACTOR		***OWNER***		***ARCHITECT***
KNUTSON ROOFING		BAVA HENRY J & LAVENA E		
1520 MAIN AV		875 SHORESIDE DR		
SACRAMENTO CA	95838	SACRAMENTO CA	95831	

Nature of Work: REROOF

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'sAddress_____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class C-39 License Number 664205 Date 11/3/98 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:_____

Date_____ Owner Signature_____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and herby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 11/3/98 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.

PAID CITY OF SACRAMENTO NOV 04 1998

X 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 285-98 UNIT 0001513 Exp Date 01/01/1999

_____ (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 11/3/98 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.

Anderson Engineering Consultants

Knutson Roofing
1520 Main Avenue
Sacramento, CA. 95838

October 8, 1998

Subject: Structural Roof Inspection
875 Shoreside Drive
Sacramento, CA. 95831

Dear David,

Pursuant to your request, Anderson Engineering Consultants performed a visual structural inspection at the subject site on September 25, 1998. The roof structure is comprised mostly of 2x6 rafters at 24" o.c. at a 5:12 pitch. The maximum span is 9'- 0" which is less than the manufacturer's span table length of 12'-1" for this condition. One portion of the house has 2x8 rafters at 24" o.c. and a maximum span of 14'-0" which is less than the span table length of 14'-7" for this condition. The final portion of the house consists of 4x6 exposed rafters with 2x6 T&G decking and a span of 13'-6". Calculations show the 4x6's to adequate for the new load. 2x6 purlins support the 2x6 rafters at approximately mid-span and are braced adequately to bearing members. The roof is in sound condition.

It is our opinion, based on the site inspection, that the structural integrity of the roof system will not be compromised by using your proposed reroof system of 7/8"- 22 gage hat channel fastened to the rafters with 16d galvanized nails (or equal) at 24" o.c., "Thermo-ply" underlayment fastened to the hat channel with #8 self tapping screws (or equal), 7/8" - 22 gage steel hat channel battens over the "Thermo-ply" underlayment fastened with #8 self tapping screws (or equal) at every rafter, and lightweight Eaglelite tile weighing 7.0 psf. The total dead load is 10 psf on the 2x6's and 2x8's and 12 psf on the 4x6's.

Should you have any questions, please do not hesitate to contact us.

REGISTERED PROFESSIONAL ENGINEER
CARL C. ANDERSON
No. C45457
EXP. 12-31-98
CIVIL
STATE OF CALIFORNIA

Sincerely,

Carl Anderson, P.E.

knubava.wri

57 Plumwood Court Chico, CA 95928 Bus / FAX (530) 343-0500

WHARTON AND ASSOCIATES
STRUCTURAL ENGINEERS
601 S. MILLIKEN AVE., SUITE H
ONTARIO, CA 91761

Date: _____

RE-ROOF PERMIT INFORMATION -

CONTRACTOR: _____ 5-STAR SERVICE NO.: _____

CONTACT: _____ CUSTOMER: _____

ADDRESS: _____ ADDRESS: _____

CITY, STATE, ZIP: _____ CITY, STATE, ZIP: _____

PHONE: _____ PHONE: _____

DESIGN CRITERIA: (1994 U.B.C.)

LIVE LOAD: 20 psf Pitch less than 4:12
16 psf Pitch 4:12 and greater

DEAD LOAD:	7.0 psf	New EAGLELITE Tile
	1.5 psf	New 1/2" CDX Plywood
	1.4 psf	Miscellaneous & Felt
	9.9 psf	Total Dead Load w/o Clg.
	2.5 psf	1/2" Gyp. Brd.
	12.4 psf	Total Dead Load w/ Clg.
Existing DL:	1.6 to 4.3 psf	Framing and Sheathing*

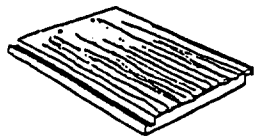
*Depending on Rafter Size

LUMBER PROPERTIES:

F_b = Allowable Bending Stress =

Includes 25% increase for Roof Loading	= 1885 psi	2x4
	1635 psi	2x6
	1510 psi	2x8
	1385 psi	2x10

E = Modulus of Elastitcity = 1.6×10^6 psi



CALCULATIONS:

The maximum allowable span of a member shall be determined by the lowest value of two methods of calculation: Maximum allowable bending stress and maximum allowable deflection (L/180 w/out clg.; L/240 w/ clg.).

$$L_{bending} := \sqrt{\frac{8 \cdot S \cdot F_b}{(DL + LL) \cdot SP \cdot 12}}$$

$$L_{\Delta} := \left[\frac{384 \cdot E \cdot I}{(180) \cdot 5 \cdot (0.5 \cdot DL + LL) \cdot SP \cdot 144}\right]^{\frac{1}{3}}$$ *(No Ceiling)*

$$L_{\Delta} := \left[\frac{384 \cdot E \cdot I}{5 \cdot (240) \cdot (0.5 \cdot DL + LL) \cdot SP \cdot 144}\right]^{\frac{1}{3}}$$ *(With Ceiling)*

Rafter overhangs at eves shall be determined by the lowest value based on member stress or deflection:

$$L_{b.o} := \sqrt{\frac{2 \cdot F_b \cdot S}{(DL + LL) \cdot SP \cdot 12}}$$

$$L_{\Delta .o} := \left[\frac{8 \cdot E \cdot I}{180 \cdot (0.5 \cdot DL + LL) \cdot SP \cdot 144}\right]^{\frac{1}{3}}$$

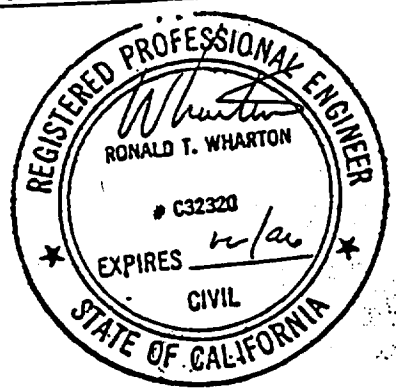
WHERE:
- F_b is Maximum Allowable Bending Stress (psi)
- S is Section Modulus of Lumber (in^3)
- LL is Live Load (psf)
- DL is Dead Load (psf)
- E is Modulus of Elasticity (psi)
- I is Moment of Inertia (in^4)
- SP is Rafter Spacing (ft)
- L is Span (ft)

TABULATED VALUES, MAXIMUM ALLOWABLE RAFTER SPANS:

Rafter Size	Rafter Spacing	Pitch < 4:12 (No Clg.) Single	Pitch < 4:12 (No Clg.) Double	Pitch > 4:12 (No Clg.) Single	Pitch > 4:12 (No Clg.) Double	Pitch > 4:12 (w/ Clg.) Single	Pitch > 4:12 (w/ Clg.) Double	Over Hangs at Eves
2x4	12"	9'-10"	12'-4"	10'-5"	13'-0"	9'-4"	11'-7"	4'-7"
$I = 5.36\ in^4$	16"	9'-0"	11'-3"	9'-6"	11'-11"	8'-6"	10'-7"	4'-2"
$S = 3.06\ in^3$	24"	7'-9"	9'-10"	8'-4"	10'-5"	7'-5"	9'-4"	3'-8"
2x6	12"	15'-5"	19'-3"	16'-4"	20'-2"	14'-7"	18'-1"	7'-3"
$I = 20.8\ in^4$	16"	13'-9"	17'-7"	14'-8"	18'-6"	13'-2"	16'-7"	6'-7"
$S = 7.56\ in^3$	24"	11'-4"	15'-5"	12'-1"	16'-4"	11'-7"	14'-7"	5'-8"
2x8	12"	19'-10"	25'-2"	21'-1"	26'-6"	19'-1"	23'-8"	9'-6"
$I = 47.6\ in^4$	16"	17'-4"	23'-1"	18'-6"	24'-4"	17'-5"	21'-8"	8'-8"
$S = 13.14\ in^3$	24"	14'-3"	19'-10"	15'-3"	21'-1"	14'-7"	19'-1"	7'-1"
2x10	12"	23'-11"	31'-11"	25'-6"	33'-6"	24'-3"	29'-11"	11'-11"
$I = 98.9\ in^4$	16"	21'-0"	28'-8"	22'-8"	30'-4"	21'-6"	27'-6"	10'-6"
$S = 21.4\ in^3$	24"	17'-4"	23'-11"	18'-6"	25'-6"	17'-9"	24'-3"	8'-8"

ENGINEER'S COMMENTS:

Existing roofing material must be removed. The maximum span values are for vertical gravity loading only. All framing shall comply with the Uniform Building Code. Cosmetic cracking of walls and ceiling can occur during and after re-roofing. Furthermore, visible deflection of the roof can occur, especially for rafters approaching maximum allowable spans. Cracking and deflections do not affect the structural integrity of the roof framing. This form is provided as a convenience to homeowners and contractors. Eagle Roofing Products Company and the Architect or Engineer assume no responsibility for the accuracy of the information supplied by others.



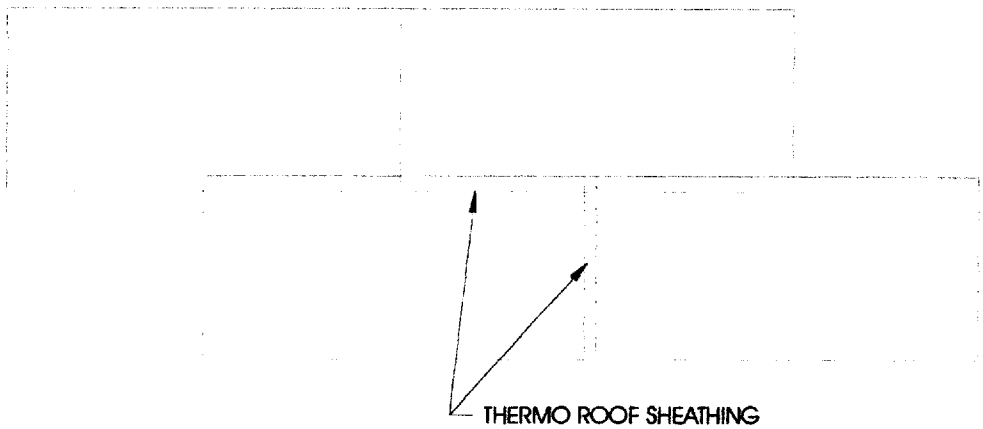
Roof Rafter[94 UBC (91 NDS)] Ver. V4051796
By: CCA , Anderson Engineering Consultants on: 10-08-1998

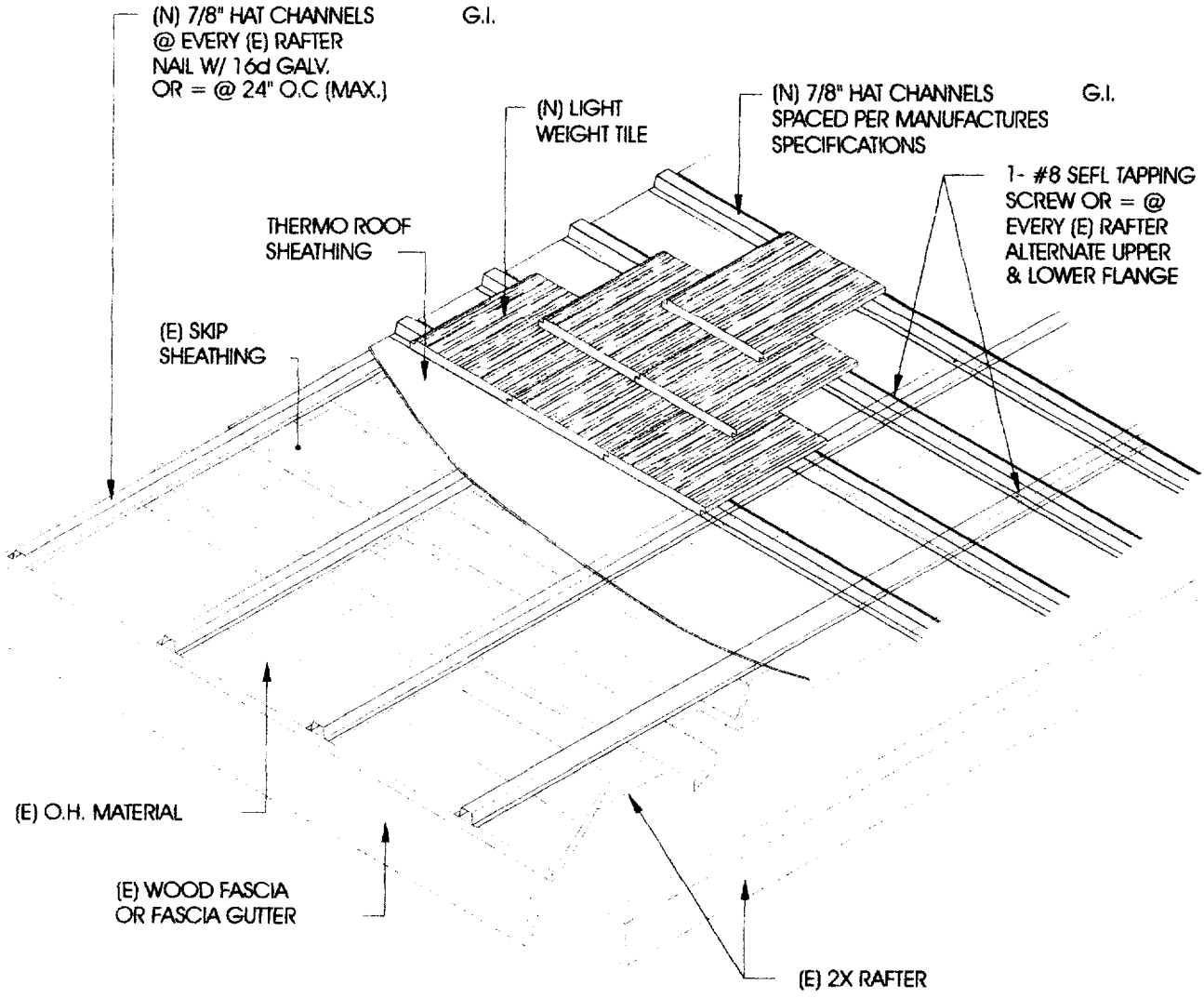
Project: BAVA - Location: 4X6 MAXIMUM SPAN

Summary:
3.50 IN x 5.50 IN x 13.5 FT (Actual 14.625 FT) @ 24.00 O.C. / #2 - DOUGLAS FIR-LARCH - Dry Use
Section Adequate By: 48.8% Controlling Factor: Moment of Inertia / Depth Required 4.82 In

Deflections:			
Dead Load:	DLD=	0.29	IN
Live Load:	LLD=	0.36	IN = L/485
Total Load:	TLD=	0.66	IN = L/268
Rafter End Loads and Reactions:	LOADS:	RXNS:	
Upper Live Load:	108 PLF	216 LB	
Upper Dead Load:	88 PLF	176 LB	
Upper Total Load:	196 PLF	392 LB	
Lower Live Load:	108 PLF	216 LB	
Lower Dead Load:	88 PLF	176 LB	
Lower Total Load:	196 PLF	392 LB	
Upper Equiv. Tributary Width:	UTWeq=	7.313	FT
Lower Equiv. Tributary Width:	LTWeq=	7.313	FT
Rafter Data:			
Interior Span:	L=	13.5	FT
Cantilever Span:	CS1=	0.0	FT
Live Load Deflect. Criteria:	L/	240	
Total Load Deflect. Criteria:	L/	180	
Rafter Spacing:	SPC=	24.00	IN O.C.
Rafter Loads:			
Roof Live Load:	LL=	16	PSF
Roof Dead Load:	DL=	12	PSF
Rafter Pitch:	RP=	5.00	: 12
Rafter Unbraced Length:	Lu=	0.0	FT
Roof Duration Factor:	Cd=	1.25	
Slope Adjusted Spans And Loads:			
Interior Span:	Ladj=	14.6	FT
Cantilever Span:	CS1adj=	0.0	FT
Rafter Live Load:	wL=	27	PLF
Roof Loaded Area:	RLA=	29	SF
Roof Live Load Method: 1			
Rafter Dead Load:	wD=	22	PLF
Rafter Total Load:	wT=	49	PLF
Properties For: #2- DOUGLAS FIR-LARCH			
Bending Stress:	Fb=	875	PSI
Shear Stress:	Fv=	95	PSI
Modulus of Elasticity:	E=	1600000	PSI
Stress Perpendicular to Grain:	Fc_perp=	625	PSI
Adjusted Properties			
Fb' (Tension):	Fb'=	1635	PSI
Adjustment Factors: Cd=1.25 Cf=1.30 Cr=1.15			
Fv':	Fv'=	119	PSI
Adjustment Factors: Cd=1.25			
Design Requirements:			
Maximum Moment(Interior Span):	Mcent=	1321	FT-LB
At Location(From Upper Support):	X=	7.313	FT
Moment At Cantilever:	Mcant=	0	FT-LB
Maximum Shear:	Vmax=	361	LB
Shear At Peak:	Vpeak=	361	LB
Required Cantilever Depth:	D(cant)=	0.00	IN
Comparisons With Required Sections:			
Section Modulus:	Sreq=	9.7	IN3
	S=	17.6	IN3
Area:	Areq=	4.6	IN2
	A=	19.2	IN2
Moment of Inertia:	Ireq=	32.7	IN4
	I=	48.5	IN4

SCALE: N.T.S.





CERTIFIED INSTALLERS
KNUTSON ROOFING