

**CITY OF SACRAMENTO**

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

**Permit No: 0506339**

**Insp Area: 2**

**Thos Bros: 317A6**

**Site Address: 6400 LAKE PARK DR SAC**

**Parcel No: 029-0265-013**

**Sub-Type: REP**

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

**CONTRACTOR**

WEATHERTITE ROOFING  
4661 SUMMER CREEK CT  
SHINGLE SPRINGS, CA 95682

**OWNER**

IMAI TOSHIKO  
6400 LAKE PARK DR  
SACRAMENTO, CA 95831

**ARCHITECT**

**Nature of Work: REMOVE EXIST. COMP. ROOFING, INSTALL NEW LIGHT WIEGHT TILE ROOF, 33 SQ**

**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 C-37 License Number 420375 Date 7/5/05 Contractor Signature Carolyn Pei

**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 \_\_\_\_\_

CITY OF SACRAMENTO  
MAY 6 5 2005  
NEIGHBORHOODS PLANNING  
DAILY FIELD CLERK SERVICE

**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 3/5/05 Applicant/Agent Signature Carolyn Pei

**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 1271896-2004 Exp Date 10/01/2005

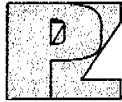
(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 5/5/05 Applicant Signature Carolyn Pei

**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.**

Imai



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

TEL: 916.961.3960  
FAX: 916.961.6552

April 26, 2005

ISSUED

MAY 05 2005

Weather-Tite Roofing Company

P.O. Box 6068

Folsom, CA 95673

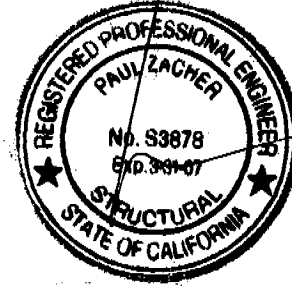
TEL: (916) 635-9810; M: (916) 849-1977

FAX: (916) 635-9810

Attn.: Mr. Larry Peer,

re: Job 2005161: IMAI

Sacramento Building Division



THO 5/5/05

Subject: Structural Investigation Report of the Roof for the Residence located at 400 Lake Park Drive, Sacramento, CA 95831.

As requested by Mr. Larry Peer, 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 26, 2005. 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 1960's vintage.
Occupancy:	Residential.
No. of Stories:	One.
Dimensions:	Approximately 2000 square feet.

**CONSTRUCTION:**

Roof:

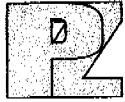
The roof covering will consist of a Light Weight Concrete Tile over 7/16" solid sheathing. The roof structure is conventionally framed with 2x4 rafters spaced at 24" on center with 2x4 purlins supported at no more than 4'-0" on center by 2x4 struts bearing on walls below. The garage area is framed with 2x4 rafters spaced at 24" on center and 2x6 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. There is an existing sag in the garage door header in the roof of approximately 2 inches. This is due to the original construction.

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#### 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.

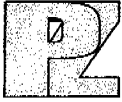
#### Roof Structure:

1. Scab a 1 3/4" x 11 1/4" LVL to the existing header. Jack up the existing beam as required where the existing sag occurs to provide an even contour at the roof level before installation of the LVL. See details 1 and 2.
2. Scab a 1 3/4" x 5-1/2" LVL to the existing header. See details 1 and 3.
3. Scab a 2x4 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 8'-0". 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.
4. Shim the areas as required where the existing sags occur to provide an even contour at the roof level. See detail 1.
5. Scab a 2x6 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 10'-0". Notch or remove the existing purlin as required. 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.
6. Add a 2x6 DF#2 x 25'-0" long purlin with 2x4 struts to the bearing walls below. See detail 1.
7. 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. 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 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.

Imai



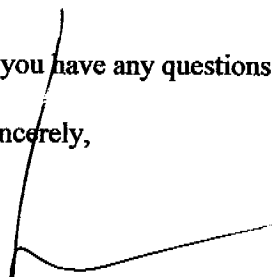
Paul Zacher - Structural Engineers, Inc  
4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: 916.961.3960  
FAX: 916.961.6552

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 4 in 12  
Pitch Adjustment Factor 1.05

LOCATION: ROOF

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	7.30	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
7/16" OSB/ plywood	1.30	psf
2x4 rafters @ 24" oc	<u>0.64</u>	psf
Load	10.6	psf
Roof Pitch Adjustment	<u>0.58</u>	psf
Total Load	11.2	psf

Job #: 05\_161

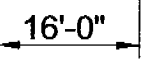
Date: 04/26/2005

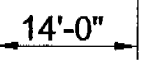
LOADING:

Rafter: 22.4 / 32.0  
 Dr = 11.2 psf x 2'-0" = 22.4 plf 2x4 #2   
 Lr = 16.0 psf x 2'-0" = 32.0 plf

Rafter: 22.4 / 32.0  
 Dr = 11.2 psf x 2'-0" = 22.4 plf 2-2x4 #2   
 Lr = 16.0 psf x 2'-0" = 32.0 plf

Rafter: 22.4 / 32.0  
 Dr = 11.2 psf x 2'-0" = 22.4 plf 2x6 #2   
 Lr = 16.0 psf x 2'-0" = 32.0 plf

B2: 89 / 128  
 Dr = 11.2 psf x 8'-0" = 89 plf 4x12 #2 + 1-3/4"x11-1/4" LVL   
 Lr = 16.0 psf x 8'-0" = 128 plf

B2: 49 / 64  
 Dr = 12.3 psf x 4'-0" = 49 plf 4x6 #2 + 1-3/4"x 5-1/2" LVL   
 Lr = 16.0 psf x 4'-0" = 64 plf

B3: 45 / 64  
 Dr = 11.2 psf x 4'-0" = 45 plf 4x6 #2   
 Lr = 16.0 psf x 4'-0" = 64 plf

Rev: 590006  
User: KW-0602844, Ver 5.8.0, 1-Dec-2003  
(c)1983-2003 ENERCALC Engineering Software

**Timber Beam & Joist**

Imai.ecw:Calculations

**Description RAFTERS AND BEAMS**

**Timber Member Information** Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

	rafter	rafter	rafter	B1	B2	B3
<b>Timber Section</b>	2x4	2-2x4	2x6x12#2+1.75x11.875x6#1+1.75x5.5 LVL			4x6
Beam Width	in 1.500	3.000	1.500	6.186	5.578	3.500
Beam Depth	in 3.500	3.500	5.500	11.250	5.500	5.500
Le: Unbraced Length	ft 0.00	0.00	0.00	0.00	0.00	0.00
Timber Grade	Douglas Fir - Larch, No.2	Douglas Fir - Larch, No.2	Douglas Fir - Larch, No.2	Custom, DF#2 + LVL	Custom, DF#2 + LVL	Douglas Fir - Larch, No.2
Fb - Basic Allow	psi 875.0	875.0	875.0	1,450.0	1,450.0	875.0
Fv - Basic Allow	psi 95.0	95.0	95.0	1,670.0	1,670.0	95.0
Elastic Modulus	ksi 1,600.0	1,600.0	1,600.0	1,666.7	1,666.7	1,600.0
Load Duration Factor	1.250	1.250	1.250	1.250	1.250	1.250
Member Type	Sawn	Sawn	Sawn	Manuf/Pine	Manuf/Pine	Sawn
Repetitive Status	Repetitive	Repetitive	Repetitive	No	No	No

**Center Span Data**

		7.75	9.75	12.00	16.00	14.00	11.00
Span	ft						
Dead Load	#/ft	22.40	22.40	22.40	89.00	49.00	49.00
Live Load	#/ft	32.00	32.00	32.00	128.00	64.00	64.00

**Results**

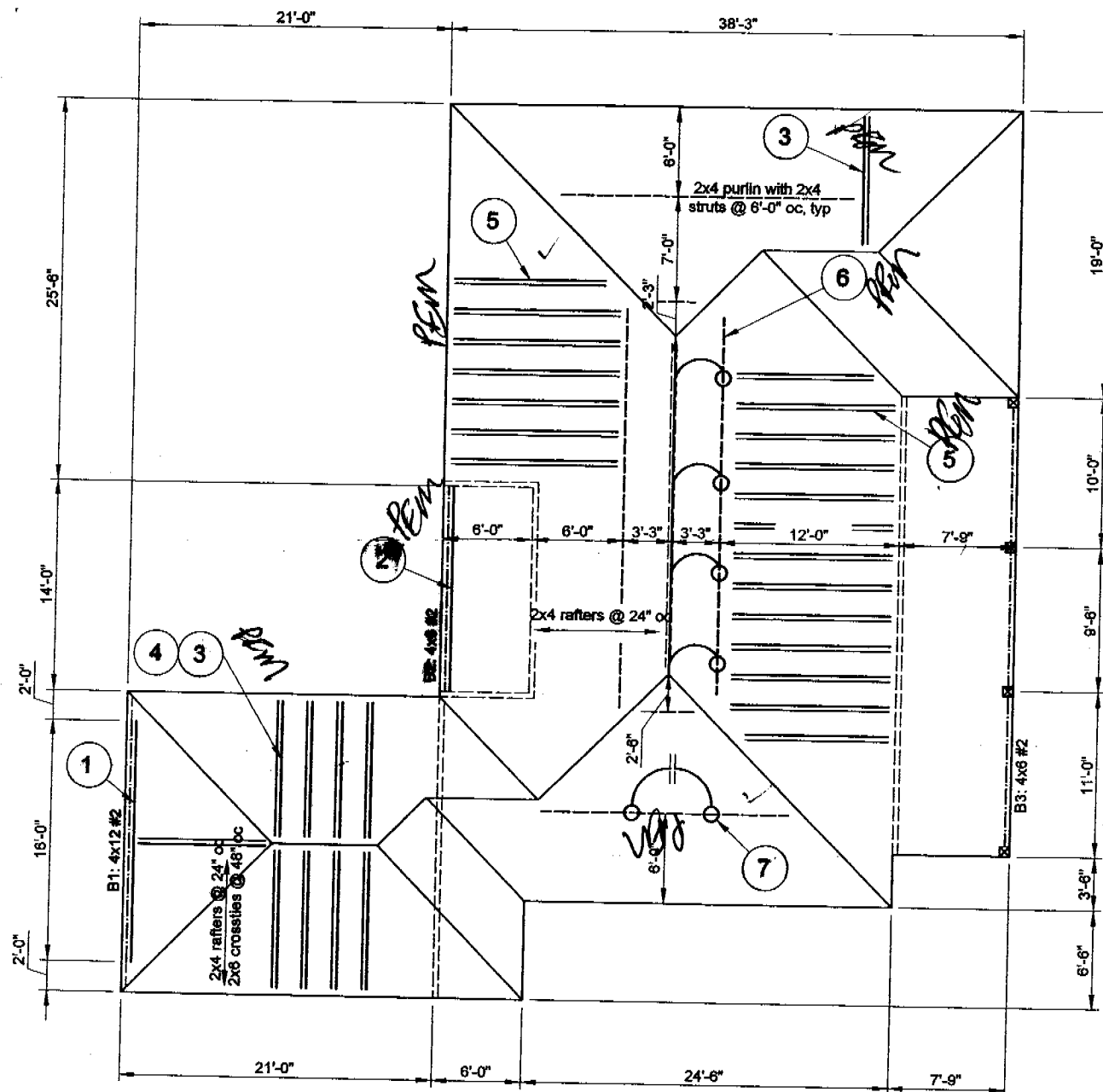
	Ratio =	0.8482	0.6713	0.9502	0.3523	0.6518	0.8174
Mmax @ Center @ X =	in-k ft	4.90	7.76	11.75	83.33	33.22	20.51
fb : Actual	psi	1,600.4	1,266.5	1,553.8	638.6	1,181.3	1,162.3
Fb : Allowable	psi	1,886.7	1,886.7	1,635.2	1,812.5	1,812.5	1,421.9
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
fv : Actual	psi	55.9	35.8	55.1	33.2	36.2	44.6
Fv : Allowable	psi	118.8	118.8	118.8	2,087.5	2,087.5	118.8
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

**Reactions**

		86.80	109.20	134.40	712.00	343.00	269.50
@ Left End	DL	lbs					
	LL	lbs	124.00	156.00	192.00	1,024.00	448.00
	Max. DL+LL	lbs	210.80	265.20	326.40	1,736.00	791.00
@ Right End	DL	lbs	86.80	109.20	134.40	712.00	343.00
	LL	lbs	124.00	156.00	192.00	1,024.00	448.00
	Max. DL+LL	lbs	210.80	265.20	326.40	1,736.00	791.00

**Deflections**

	Ratio OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK
Center DL Defl	in	-0.212	-0.266	-0.314	-0.107	-0.329
L/Defl Ratio		438.6	440.6	458.5	1,789.8	511.3
Center LL Defl	in	-0.303	-0.379	-0.449	-0.154	-0.429
L/Defl Ratio		307.0	308.4	320.9	1,244.4	391.5
Center Total Defl	in	-0.515	-0.645	-0.763	-0.262	-0.758
Location	ft	3.875	4.875	6.000	8.000	7.000
L/Defl Ratio		180.6	181.4	188.8	734.0	221.7



**FRAMING NOTES:**

1. Scab a 1 3/4" x 11 1/4" LVL to the existing header. See detail 2.
2. Scab a 1 3/4" x 5-1/2" LVL to the existing header. See detail 3.
3. Scab a 2x4 rafter to the existing 2x4 rafters where the span is greater than 8'-0" (total 9).
4. Shim the areas as required where the existing sags occur to provide an even contour at the roof level.
5. Scab a 2x6 rafter to the existing 2x4 rafters where the span is greater than 10'-0". Notch or remove the existing purlin as required (total 20). See detail 1.
6. Add a 2x6 DF#2 x 25'-0" long purlin with 2x4 struts to the bearing walls below.
7. Provide additional 2x4 struts from the existing purlins to the bearing walls below.

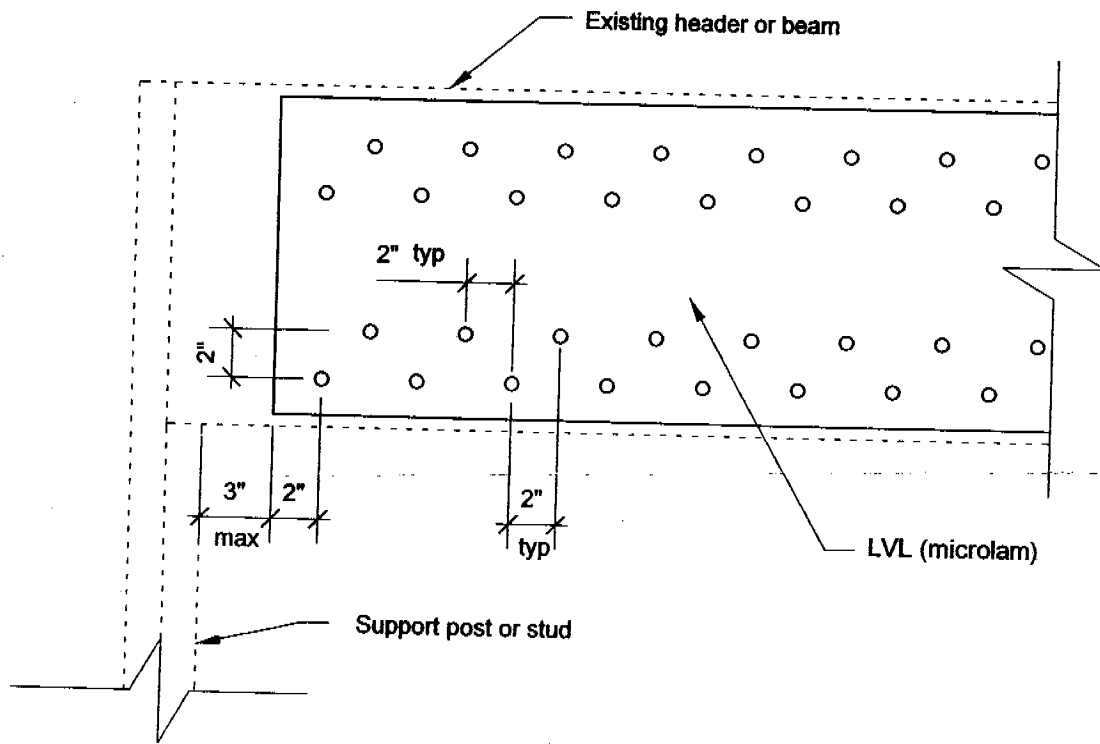
**NOTES:**

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

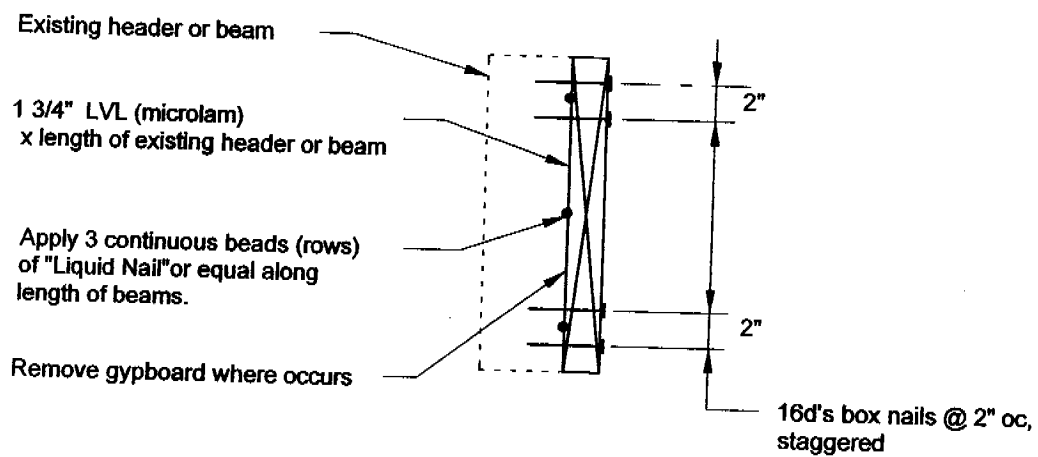
1 ROOF PLAN - IMAI  
Not to Scale







**ELEVATION**



**SECTION**

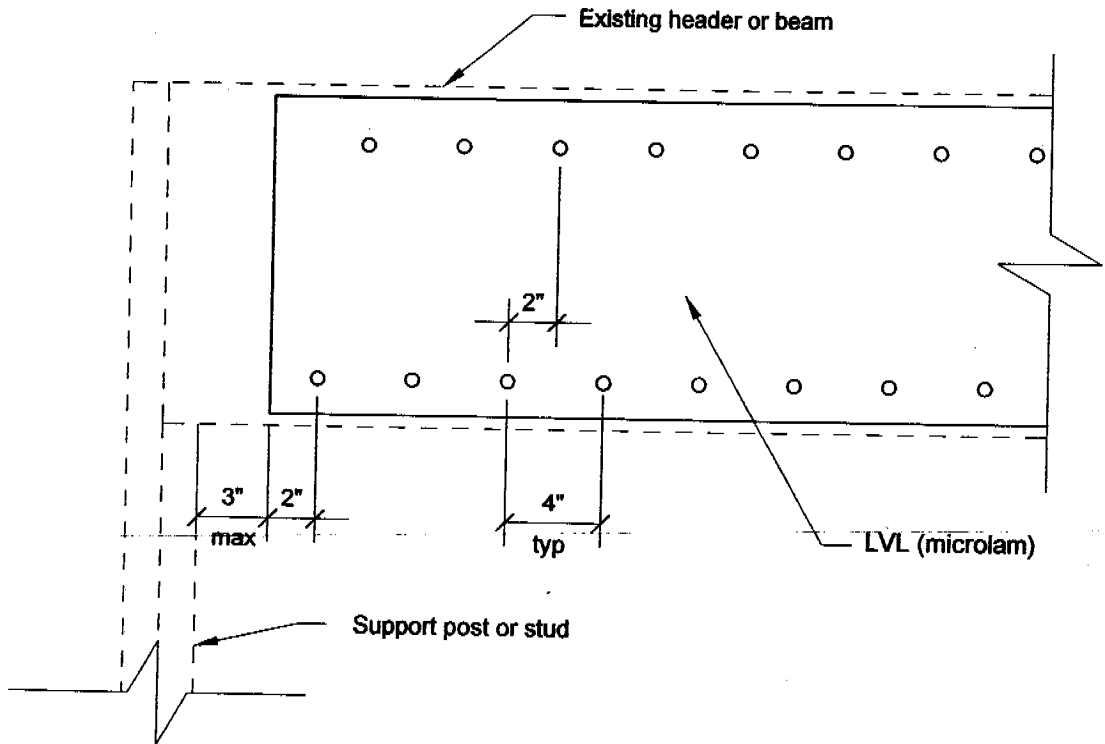
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**DETAIL**

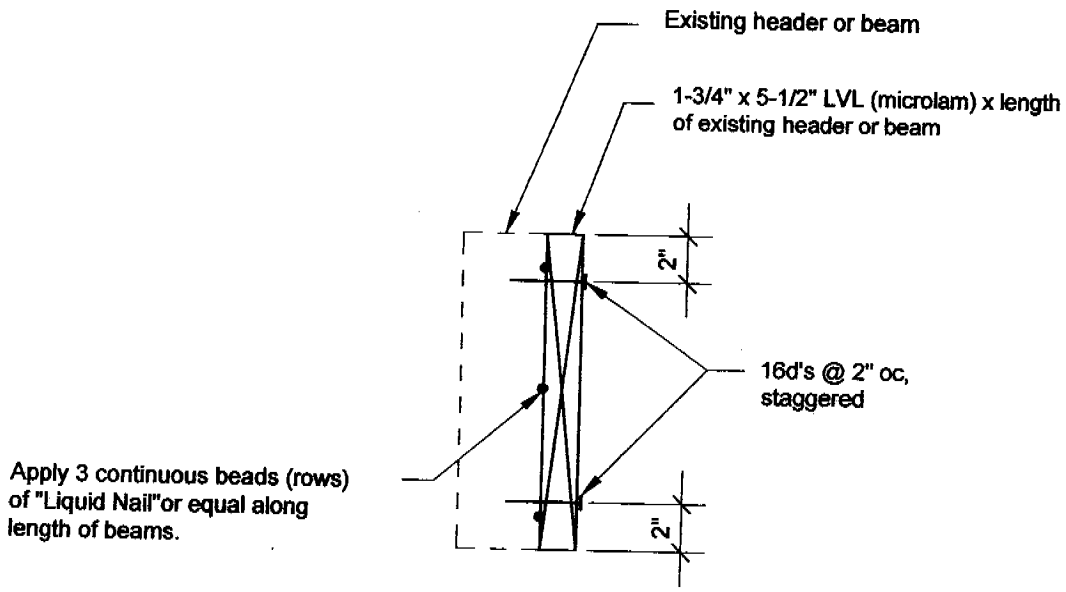
scale: 1 1/2" = 1'-0"

8





**ELEVATION**



Apply 3 continuous beads (rows) of "Liquid Nail" or equal along length of beams.

**SECTION**

3

**HEADER DETAIL**

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

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