CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: **0507442**
Insp Area: 2
Thos Bros: 336G2

Site Address: **7434 SALTON SEA WY SAC**
Parcel No: 031-0920-053

Sub-Type: RES
Housing (Y/N): N

CONTRACTOR
ZIMMERMAN REROOFING CO.
3675 R ST
SACRAMENTO CA 95816

OWNER
CHAN SOI F
7434 SALTON SEA WY
SACRAMENTO, CA 95831

ARCHITECT

Nature of Work: TEAR OFF SHAKE, RESHEET, REROOF W/ 22 SQ LIGHTWEIGHT TILE - TWO STORIES

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 763169 Date 6-9-05 Contractor Signature Kat Cy

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 6-9-05 Applicant/Agent Signature Kat Cy

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.

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:

PAID
CITY OF SACRAMENTO
JUN 09 2005
NEIGHBORHOOD PLANNING
AND DEVELOPMENT SERVICES

Carrier STATE FUND Policy Number 1711-0002921-2005 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 I 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 6-9-05 Applicant Signature Kat Cy

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.

CITY OF SACRAMENTO
PLANNING & BUILDING DEPARTMENT
BUILDING DIVISION
www.cityofsacramento.org
Help Line: 1-916-264-5656 OR 1-866-EZ-PERMIT
Inspection: 1-916-808-4677

Downtown Permit Center 1-916-264-6807
1231 I Street, Suite 200, Sacramento, CA 95814

North Permit Center 1-916-808-2354
2101 Arena Blvd., Suite 200, Sacramento, CA 95834

PRELIMINARY RESIDENTIAL APPLICATION

1-916-264-5656 OR 1-866-EZ-PERMIT

BUILDING SITE ADDRESS	SUITE	INSP. AREA
7434 Salton Sea Way		
ASSESSOR'S PARCEL NO.	**COMMUNITY PLAN NO.**	**PLAN CHECK NO.**

NAME OF APPLICANT	ADDRESS	ZIP CODE	PHONE NO.
LICENSED CONTRACTOR			
Zimmerman Re-Roofing, Inc.	3675 R Street	95816	454-3667
CONTRACTOR'S LICENSE NO.: 763169			
PROPERTY OWNER			
Kitman Chan	7434 Salton Sea Way	95831	422-9753
ARCHITECT/ENGINEER			

No. of Stories	No. of Rooms	Roof Covering	Area 1st Floor	Total Area	Garage Area	Patio Area
1 & 2		22 A		22		

THIS PERMIT IS FOR:
☑ BUILDING ☐ MECHANICAL ☐ PLUMBING ☐ ELECTRICAL ☐ SITE ☐ FIRE

NATURE OF WORK IN DETAIL

Tear off Shakes Re-Roof w/ Eagle-lite tile
Roof pitch 4/12 Single Fam Res.

$ 11,250.00
VALUATION

PBF10008

Chan

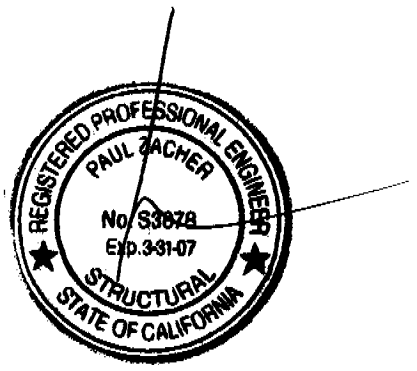
Paul Zacher – Structural Engineers, Inc
4701 Lakeside Way
Fair Oaks, CA 95628

TEL: 916.961.3960
FAX: 916.961.6552

Paul Zacher - Structural Engineer

May 14, 2005

Zimmerman Roofing
3675 R Street
Sacramento, CA 95816
TEL: (916) 454-3667
FAX: (916) 691-1943



Attn.: Mr. Jeff Shulman,

re: Job 2005185: CHAN

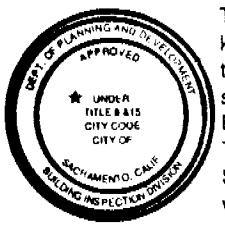
Subject: Structural Investigation Report of the Roof for the Residence located at 7434 Salton Sea, Sacramento, CA 95831.

As requested by Mr. Jeff Shulman, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site May 13, 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 1980's vintage.
Occupancy:	Residential.
No. of Stories:	Two.
Dimensions:	Approximately 3000 square feet.



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.

5-25-05

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 2x8 rafters spaced at 24" on center and with pre-engineered wood trusses spaced at 24" on center except for the vaulted ceiling areas. The vaulted ceiling is constructed of 2x10 rafters spaced at 24" on center. One area had no access and was not inspected.

CONCLUSIONS:

Roof:

The roof structure has sufficient structural capacity for the applied live and dead loads. No conclusion is drawn for the area that is inaccessible and not inspected.

CITY COPY

1/15

Chan

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

TEL: 916.961.3960
FAX: 916.961.6552

RECOMMENDATIONS:

If any of the following recommendations do not correspond to actual field conditions, the engineer of record shall be notified for further investigation and evaluation before continuing work.

Roof Structure:

1. After the roofing material has been removed, the contractor shall shall supply the engineer with diagrams showing the member sizes and span lengths. The engineer shall then determine if the structure can adequately support the applied dead and live loads and a supplemental report shall be issued. 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.

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	

LOCATION: ROOF

MATERIAL	WEIGHT	
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
2x8 rafters @ 24" oc	1.32	psf
Load	11.3	psf
Roof Pitch Adjustment	1.34	psf
Total Load	12.7	psf

LOCATION: VAULT

MATERIAL	WEIGHT	
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
2x10 rafters @ 24" oc	1.69	psf
Batt/blown insul	0.50	psf
1/2" Gypboard	2.50	psf
Load	14.7	psf
Roof Pitch Adjustment	1.73	psf
Total Load	16.4	psf

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

MATERIAL	WEIGHT	
Light Weight Tile	7.30	psf
Roofing felt	0.30	psf
7/16" OSB/ plywood	1.30	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	0.64	psf
Total Load	10.6	psf

LOCATION: BOTTOM CHORD

MATERIAL	WEIGHT	
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.
Job #: 05_185
Date: 05/14/2005

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

LOADING:

Rafter:

Dr = 12.7 psf x 2'-0" = 25.4 plf
Lr = 16.0 psf x 2'-0" = 32.0 plf

2x8 #2

25.4 / 32.0
15'-0"

Vault:

Dr = 16.4 psf x 2'-0" = 32.8 plf
Lr = 16.0 psf x 2'-0" = 32.0 plf

2x10 #2

32.8 / 32.0
17'-4"

B1:

Dr = 12.7 psf x 7'-0" = 89 plf
Lr = 16.0 psf x 7'-0" = 112 plf

4x12 #2

89 / 112
16'-0"

Paul Zacher Structural Engr's, Inc.
4701 Lakeside Way
Fair Oaks, CA 95628

Title : **Job #**
Dsgnr: **Date:** 5:50PM, 14 MAY 05
Description :

Scope :

Rev: 580006
User: KW-0602844, Ver 5.8.0, 1-Dec-2003

Timber Beam & Joist

Description RAFTERS AND BEAMS

Timber Member Information

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

		rafter	vault	B1
Timber Section		2x8	2x10	4x12
Beam Width	in	1.500	1.500	3.500
Beam Depth	in	7.250	9.250	11.250
Le: Unbraced Length	ft	0.00	0.00	0.00
Timber Grade		Douglas Fir - Larch, No.2	Douglas Fir - Larch, No.2	Douglas Fir - Larch, No.2
Fb - Basic Allow	psi	875.0	875.0	875.0
Fv - Basic Allow	psi	95.0	95.0	95.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0
Load Duration Factor		1.250	1.250	1.250
Member Type		Sawn	Sawn	Sawn
Repetitive Status		Repetitive	Repetitive	No

Center Span Data

Span	ft	15.00	17.33	16.00
Dead Load	#/ft	25.40	32.80	89.00
Live Load	#/ft	32.00	32.00	112.00

Results

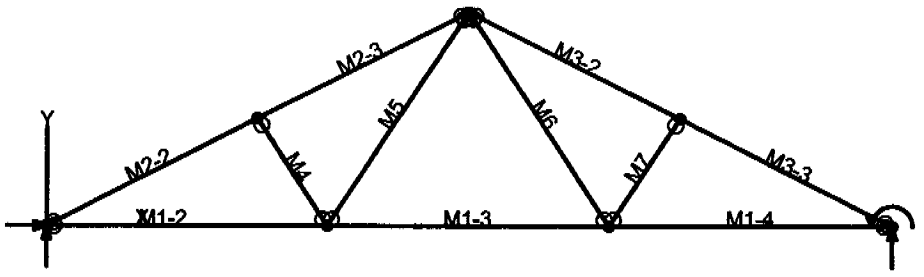
Ratio =		0.9767	0.9864	0.8689
Mmax @ Center	in-k	19.37	29.19	77.18
@ X =	ft	7.50	8.66	8.00
fb : Actual	psi	1,474.2	1,364.7	1,045.5
Fb : Allowable	psi	1,509.4	1,383.6	1,203.1
		Bending OK	Bending OK	Bending OK
fv : Actual	psi	54.6	55.4	54.4
Fv : Allowable	psi	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK

Reactions

@ Left End DL	lbs	190.50	284.21	712.00
LL	lbs	240.00	277.28	896.00
Max. DL+LL	lbs	430.50	561.49	1,608.00
@ Right End DL	lbs	190.50	284.21	712.00
LL	lbs	240.00	277.28	896.00
Max. DL+LL	lbs	430.50	561.49	1,608.00

Deflections

		Ratio OK	Deflection OK	Deflection OK
Center DL Defl	in	-0.380	-0.421	-0.198
L/Defl Ratio		474.2	494.5	972.1
Center LL Defl	in	-0.478	-0.410	-0.249
L/Defl Ratio		376.4	506.9	772.5
Center Total Defl	in	-0.858	-0.831	-0.446
Location	ft	7.500	8.665	8.000
L/Defl Ratio		209.8	250.3	430.4


Y
M2-2
M2-3
M3-2
M3-3
M4
M5
M6
M7
M1-2
M1-3
M1-4

Truss 1

VisualAnalysis 4.00 Report
Company: Paul Zacher - Structural - Engineers Engineer: Paul Zacher
File: C:\Documents and Settings\Owner\Desktop\Chan05_185\Truss 1.vap

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	21.50	0.00	No	"	Yes
N3	10.75	5.38	"	No	No
N4	7.17	0.00	"	"	"
N5	14.33	0.00	"	"	"
N6	5.38	2.69	"	"	"
N7	16.13	2.69	"	"	"

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	7.17
M1-3	"	"	7.17
M1-4	"	"	7.17
M2-2	"	"	6.01
M2-3	"	"	6.01
M3-2	"	"	6.01
M3-3	"	"	6.01
M4	"	"	3.23
M5	"	"	6.46
M6	"	"	6.46
M7	"	"	3.23

Section Properties

Category	Section	Ax in^2	Iz in^4	Sy+ in^3	Sy- in^3
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft^3
Wood	-NA-	1800000.00	0.36	40.47

Load Combination Summary

Equation Case: UBC97 12.8a
Combination: 1D+1Lr
Contributing Cases & Source
Dead Load (Dead loads)
Roof Live Load (Roof Live loads)

Nodal Reactions

Node	Load Case	FX	FY	MZ

		lb	lb	lb-ft
N1	UBC97 12.8a	**0.00**	**627.80**	-NA-
N2	"	-NA-	627.80	**0.00**

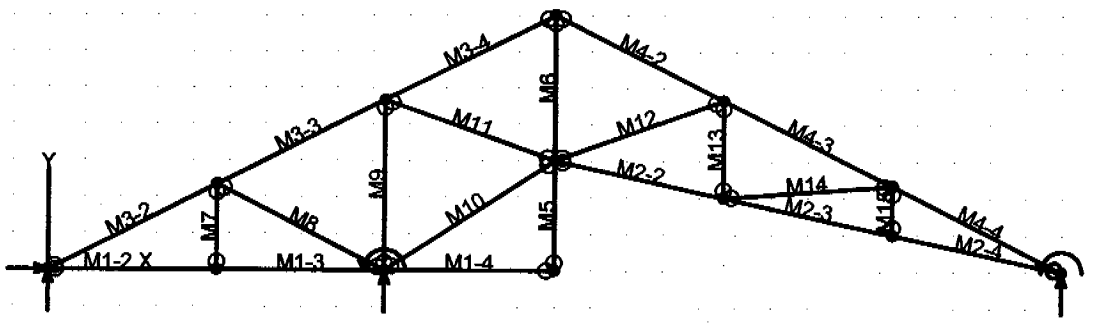
Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	998.29	-35.88	-36.26	0.01	-0.06
"	998.29	-15.33	24.88	0.01	-0.07
"	998.29	5.21	36.97	0.00	-0.05
"	**998.29**	25.76	0.00	0.00	0.00
M1-3	624.27	-30.82	-36.26	0.01	-0.06
"	624.27	-10.27	12.79	0.01	-0.07
"	624.27	10.27	12.79	0.01	-0.07
"	624.27	30.82	-36.26	0.01	-0.06
M1-4	998.29	-25.76	0.00	0.02	0.00
"	998.29	-5.21	36.97	0.02	-0.05
"	998.29	15.33	24.88	0.02	-0.07
"	998.29	35.88	-36.26	0.01	-0.06
M2-2	**-1162.1**	92.04	0.00	0.00	0.00
"	-1122.2	12.23	**104.37**	-0.00	-0.07
"	-1082.3	-67.57	48.94	-0.01	-0.08
"	-1042.4	**-147.38**	**-166.29**	-0.01	-0.06
M2-3	-1005.5	**147.38**	-166.29	-0.01	-0.06
"	-965.68	67.57	48.94	-0.01	-0.10
"	-925.78	-12.23	104.37	-0.01	**-0.11**
"	-885.88	-92.04	0.00	-0.02	-0.06
M3-2	-1005.5	-147.38	-166.29	0.03	-0.05
"	-965.68	-67.57	48.94	0.03	-0.09
"	-925.78	12.23	104.37	0.03	-0.10
"	-885.88	92.04	0.00	0.04	-0.05
M3-3	-1162.1	-92.04	0.00	0.02	**0.01**
"	-1122.2	-12.23	104.37	0.02	-0.06
"	-1082.3	67.57	48.94	0.03	-0.07
"	-1042.4	147.38	-166.29	0.03	-0.05
M4	-297.05	0.00	0.00	0.06	-0.03
"	-297.05	0.00	0.00	0.06	-0.02
"	-297.05	0.00	0.00	0.06	-0.02
"	-297.05	0.00	0.00	**0.06**	-0.02
M5	377.21	0.00	0.00	**-0.05**	-0.04
"	377.21	0.00	0.00	-0.04	-0.04
"	377.21	0.00	0.00	-0.04	-0.04
"	377.21	0.00	0.00	-0.04	-0.04
M6	377.21	0.00	0.00	0.06	-0.02
"	377.21	0.00	0.00	0.06	-0.02
"	377.21	0.00	0.00	0.06	-0.02
"	377.21	0.00	0.00	0.06	-0.02
M7	-297.05	0.00	0.00	-0.04	-0.05
"	-297.05	0.00	0.00	-0.04	-0.04
"	-297.05	0.00	0.00	-0.04	-0.04
"	-297.05	0.00	0.00	-0.04	-0.04

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	6.01	feet
Max Axial Comp, C	1042	lbs
Max Reaction, R	147	lbs
Max Moment, M	166	ft-lbs
Max LL Deflection	0.03	inches
Max TL Deflection	0.06	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 =	1.17	
fc =	198	psi
Fce=	1400	psi
Fc*=	2084	psi
F'c=	1131	psi
fb=	650	psi
F'b=Fb*=	2156	psi
Shear D/C ratio	0.35 < 1.0, Member OK	
Interaction equation:		
(fc/F'c)^2 +		
fb/ (F'b(1-fc/Fce)) =	0.38 < 1.0, Member OK	
Live Load defl ratio	0.10 < 1.0, Member OK	
Total Load defl ratio	0.15 < 1.0, Member OK	


Y
M3-4
M4-2
M6
M3-3
M11
M12
M4-3
M13
M9
M2-2
M14
M3-2
M7
M8
M10
M5
M2-3
M15
M4-1
M2-4
M1-2 X
M1-3
M1-4

Truss 2

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural - Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Owner\Desktop\Chan05_185\Truss 2.vap

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	28.00	0.00	No	"	Yes
N3	14.00	7.00	"	No	No
N4	14.00	3.00	"	"	"
N5	14.00	0.00	"	"	"
N6	4.67	0.00	"	"	"
N7	9.33	0.00	"	Yes	Yes
N8	18.67	2.00	"	No	No
N9	23.33	1.00	"	"	"
N10	4.67	2.33	"	"	"
N11	9.33	4.67	"	"	"
N12	18.67	4.67	"	"	"
N13	23.33	2.33	"	"	"

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	4.67
M1-3	"	"	4.67
M1-4	"	"	4.67
M2-2	"	"	4.77
M2-3	"	"	4.77
M2-4	"	"	4.77
M3-2	"	"	5.22
M3-3	"	"	5.22
M3-4	"	"	5.22
M4-2	"	"	5.22
M4-3	"	"	5.22
M4-4	"	"	5.22
M5	"	"	3.00
M6	"	"	4.00
M7	"	"	2.33
M8	"	"	5.22
M9	"	"	4.67
M10	"	"	5.55
M11	"	"	4.96
M12	"	"	4.96
M13	"	"	2.67
M14	"	"	4.68
M15	"	"	1.33

Section Properties

Category	Section	Ax in^2	Iz in^4	Sy+ in^3	Sy- in^3
Wood	Sha SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft^3
Wood	-NA-	1800000.00	0.36	40.47

Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	**0.00**	**-57.01**	-NA-
N2	"	-NA-	378.44	**0.00**
N7	"	-NA-	**1313.77**	**35.02**

Member Results

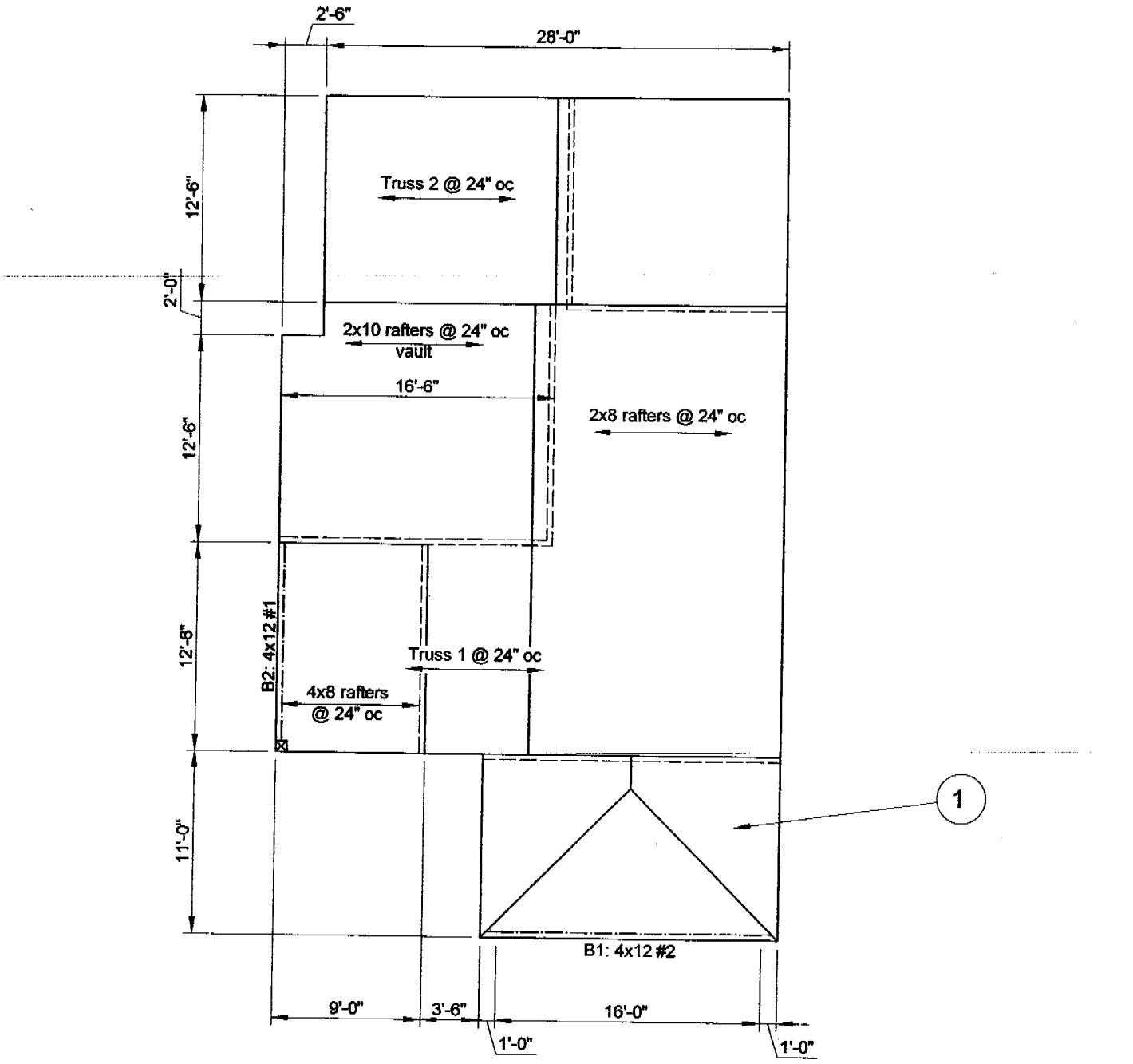
Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	-327.97	-25.31	-24.47	-0.00	0.00
"	-327.97	-11.93	4.49	-0.00	0.00
"	-327.97	1.45	12.64	-0.00	-0.00
"	-327.97	14.82	0.00	0.00	0.00
M1-3	-327.97	-16.55	-8.09	-0.00	0.00
"	-327.97	-3.18	7.25	-0.00	-0.00
"	-327.97	10.20	1.79	-0.00	0.00
"	-327.97	23.58	-24.47	-0.00	0.00
M1-4	-0.52	-10.83	0.00	-0.00	-0.03
"	-0.52	2.55	6.44	-0.00	-0.02
"	-0.52	15.93	-7.93	-0.00	-0.01
"	-0.52	29.30	-43.11	-0.00	0.00
M2-2	424.95	-23.99	-20.84	0.01	-0.05
"	427.75	-10.91	6.91	0.01	-0.04
"	430.55	2.17	13.86	0.01	-0.04
"	433.36	15.26	0.00	0.01	-0.02
M2-3	918.77	-13.08	10.40	0.02	-0.06
"	921.57	0.00	20.79	0.02	-0.06
"	924.37	13.08	10.38	0.02	-0.06
"	**927.18**	26.17	-20.84	0.01	-0.05
M2-4	916.90	-21.80	0.00	0.03	0.01
"	919.70	-8.72	24.27	0.02	-0.03
"	922.50	4.36	27.73	0.02	-0.05
"	925.31	17.44	10.40	0.02	-0.06
M3-2	325.47	82.42	0.00	0.00	0.00
"	360.12	13.13	83.04	0.00	-0.03
"	394.76	-56.16	45.63	0.00	-0.02
"	429.40	**-125.44**	**-112.23**	0.00	0.00
M3-3	656.13	104.00	-112.23	0.00	0.00
"	690.77	34.71	8.34	0.00	0.00
"	725.42	-34.58	8.46	0.01	-0.00
"	760.06	-103.86	-111.88	0.01	-0.01
M3-4	55.68	**125.38**	-111.88	0.01	-0.01
"	90.32	56.09	45.87	0.01	-0.04
"	124.96	-13.20	83.16	0.01	-0.06
"	159.61	-82.49	0.00	0.01	-0.03
M4-2	56.09	-125.42	-112.13	0.03	-0.04

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
"	90.73	-56.14	45.70	0.03	-0.06
"	125.37	13.15	83.08	0.03	-0.06
"	160.02	82.44	0.00	0.03	-0.01
M4-3	-519.23	-98.11	-81.73	0.03	-0.06
"	-484.59	-28.82	28.59	0.03	-0.06
"	-449.94	40.47	18.46	0.03	-0.05
"	-415.30	109.76	-112.13	0.03	-0.04
M4-4	**-1051.6**	-88.27	0.00	0.02	0.01
"	-1016.9	-18.98	**93.21**	0.03	-0.05
"	-982.32	50.31	65.97	0.03	**-0.07**
"	-947.68	119.60	-81.73	0.03	-0.06
M5	10.83	-0.52	0.00	0.03	-0.00
"	10.83	-0.52	0.52	0.03	-0.00
"	10.83	-0.52	1.03	0.03	0.00
"	10.83	-0.52	1.55	0.03	0.01
M6	-290.46	0.39	-1.55	**-0.03**	-0.01
"	-290.46	0.39	-1.03	-0.03	-0.01
"	-290.46	0.39	-0.52	-0.03	-0.02
"	-290.46	0.39	0.00	-0.03	-0.02
M7	48.89	0.00	0.00	-0.00	-0.00
"	48.89	0.00	0.00	-0.00	0.00
"	48.89	0.00	0.00	-0.00	-0.00
"	48.89	0.00	0.00	-0.00	-0.00
M8	-341.45	0.00	0.00	-0.00	0.00
"	-341.45	0.00	0.00	-0.00	0.00
"	-341.45	0.00	0.00	-0.00	-0.00
"	-341.45	0.00	0.00	-0.00	0.00
M9	-708.43	0.00	0.00	-0.00	-0.01
"	-708.43	0.00	0.00	-0.00	-0.01
"	-708.43	0.00	0.00	-0.00	-0.00
"	-708.43	0.00	0.00	-0.00	0.00
M10	-752.27	0.00	0.00	-0.01	-0.02
"	-752.27	0.00	0.00	-0.01	-0.02
"	-752.27	0.00	0.00	-0.01	-0.01
"	-752.27	0.00	0.00	-0.00	0.00
M11	560.08	0.00	0.00	-0.01	0.00
"	560.08	0.00	0.00	-0.01	0.01
"	560.08	0.00	0.00	-0.01	0.01
"	560.08	0.00	0.00	-0.01	**0.02**
M12	-559.38	0.00	0.00	-0.01	-0.05
"	-559.38	0.00	0.00	-0.01	-0.04
"	-559.38	0.00	0.00	-0.00	-0.03
"	-559.38	0.00	0.00	-0.00	-0.03
M13	188.60	0.00	0.00	0.05	0.00
"	188.60	0.00	0.00	0.05	0.01
"	188.60	0.00	0.00	0.05	0.01
"	188.60	0.00	0.00	0.05	0.01
M14	-481.80	0.00	0.00	-0.00	-0.06
"	-481.80	0.00	0.00	-0.00	-0.06
"	-481.80	0.00	0.00	-0.00	-0.06
"	-481.80	0.00	0.00	-0.00	-0.05
M15	31.21	0.00	0.00	0.06	0.00
"	31.21	0.00	0.00	0.06	0.00
"	31.21	0.00	0.00	**0.06**	0.00
"	31.21	0.00	0.00	0.06	0.01

BENDING & COMP: TRUSS 2 - MEMBER 4-4
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	5.22	feet
Max Axial Comp, C	947	lbs
Max Reaction, R	119	lbs
Max Moment, M	81	ft-lbs
Max LL Deflection	0.03	inches
Max TL Deflection	0.06	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 =	1.14	
fc =	180	psi
Fce=	1821	psi
Fc*=	2084	psi
F'c=	1339	psi
fb=	317	psi
F'b=Fb*=	2156	psi
Shear D/C ratio	0.29 < 1.0, Member OK	
Interaction equation: (fc/F'c)^2 + fb/ (F'b(1-fc/Fce)) =	0.18 < 1.0, Member OK	
Live Load defl ratio	0.11 < 1.0, Member OK	
Total Load defl ratio	0.17 < 1.0, Member OK	



FRAMING NOTES:

1. No Access. See "Recommendations" for allowable rafter spans.

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 2x8 DF#2 and hips and valleys are 2x10 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 - CHAN

Not to Scale

15