

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0403774

Insp Area: 2

Thos Bros:

Sub-Type: RES

Housing (Y/N): N

Site Address: 407 CAMELIA RIVER WY SAC

Parcel No: 031-0390-050

CONTRACTOR

ZIMMERMAN REROOFING CO.
3675 R ST
SACRAMENTO CA 95816

OWNER

LAWRENCE DARNELL
407 CAMELIA RIVER WAY
SACRAMENTO, CA 95831

ARCHITECT

Nature of Work: TEAR OFF, RESHEET & REROOF 30 SQ CONC TILE FOR TOWNHOUSE

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-39 License Number 763169 Date 3/25/04 Contractor Signature Kat. O'p

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 above mentioned property for inspection purposes.

Date 3/25/04 Applicant/Agent Signature Kat. O'p

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.

KO 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 713-0002021 Exp Date 10/01/2004

(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 3/25/04 Applicant Signature Kat. O'p

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.

0403 77R

407 CAMELIA RIVER WY

Lawrence

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

TEL: 916.961.3960
FAX: 916.961.6552



March 2, 2004

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

Attn.: Mr. Jeff Tucker,

re: Job 2004085: LAWRENCE



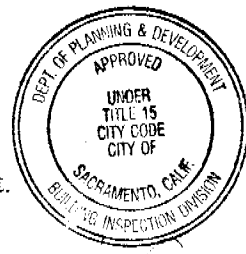
Subject: Structural Investigation Report of the Roof for the Residence located at 407 Camelia River Way,
Sacramento, CA 95831.

As requested by Mr. Jeff Tucker, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site March 2, 2004. 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.

3/15/04

CONSTRUCTION:

Roof:
The roof covering will consist of a Standard Weight Concrete Tile over 7/16" solid sheathing. The roof structure is framed with pre-engineered wood trusses spaced at 24" on center except for the vaulted ceiling areas. The vaulted ceiling is constructed of 2x6 rafters spaced at 16" on center supported mid-span by a 6x beam. The garage area is framed with 2x6 rafters spaced at 24" on center and 2x4 cross ties spaced at 48" on center.

CONCLUSIONS:

Roof:
The roof structure has sufficient structural capacity for the applied live and dead loads.

NO STRUCT. WORK NEEDED

1/15

0403 77R 407 CAMELIA RIVER WY

Lawrence



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

TEL: 916.961.3960
FAX: 916.961.6552

RECOMMENDATIONS:

None.

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

<u>MATERIAL</u>	<u>WEIGHT</u>	
Standard Weight Tile	10.30	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
7/16" OSB/ plywood	1.30	psf
2x6 rafters @ 24" oc	<u>1.00</u>	psf
Load	14.0	psf
Roof Pitch Adjustment	<u>1.65</u>	psf
Total Load	15.6	psf

LOCATION: VAULT

<u>MATERIAL</u>	<u>WEIGHT</u>	
Standard Weight Tile	10.30	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
7/16" OSB/ plywood	1.30	psf
2x6 rafters @ 16" oc	1.51	psf
Batt/blown insul	0.50	psf
1/2" Gypboard	<u>2.50</u>	psf
Load	17.5	psf
Roof Pitch Adjustment	<u>2.07</u>	psf
Total Load	19.6	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

<u>MATERIAL</u>	<u>WEIGHT</u>	
Standard Weight Tile	10.30	psf
Roofing felt	0.30	psf
7/16" OSB/ plywood	1.30	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	<u>0.64</u>	psf
Total Load	13.6	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	<u>2.50</u>	psf
Load	4.3	psf

Job #: 04_085
 Date: 03/02/2004

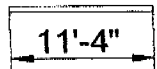
LOADING:

Rafter:

Dr = 15.6 psf x 2'-0" = 31.2 plf
 Lr = 16.0 psf x 2'-0" = 32.0 plf

2x6 #2

31.2 / 32.0

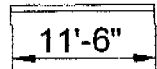


Vault:

Dr = 19.6 psf x 1'-4" = 26.1 plf
 Lr = 16.0 psf x 1'-4" = 21.3 plf

2x6 #2

26.1 / 21.3

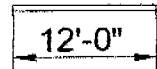


B1:

Dr = 15.6 psf x 11'-0" = 172 plf
 Lr = 16.0 psf x 11'-0" = 176 plf

4x12 #2

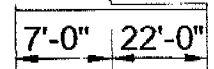
172 / 176



R2 = 1032 / 1056

1032 / 1056

140 / 144



B2:

Dr = 15.6 psf x 9'-0" = 140 plf
 Lr = 16.0 psf x 9'-0" = 144 plf

6 3/4" x 13 1/2" GLB

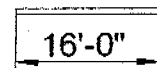
Pd/I = 1032 / 1056 - B1

B3:

Dr = 15.6 psf x 6'-0" = 94 plf
 Lr = 16.0 psf x 6'-0" = 96 plf

4x12 #2

94 / 96

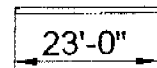


B4:

Dr = 19.6 psf x 10'-6" = 206 plf
 Lr = 16.0 psf x 10'-6" = 168 plf

6 x 16 #1

206 / 168



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: 4:09PM, 2 MAR 04

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

Timber Beam & Joist

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Description RAFTERS AND BEAMS

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

Timber Section	rafter		vault		B1	B2	B3	B4
	2x6	2x6	2x6	2x6	4x12	6.75x13.5	4x12	6x16
Beam Width	in	1.500	1.500	1.500	3.500	6.750	3.500	5.500
Beam Depth	in	5.500	5.500	5.500	11.250	13.500	11.250	15.500
Le: Unbraced Length	ft	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Timber Grade		Douglas Fir - Larch, Douglas Fir - Larch,			Douglas Fir - Larch, Douglas Fir, 24F - V Douglas Fir - Larch,		Douglas Fir - Larch,	
Fb - Basic Allow	psi	875.0	875.0	875.0	875.0	2,400.0	875.0	1,350.0
Fv - Basic Allow	psi	95.0	95.0	95.0	95.0	165.0	95.0	85.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0	1,600.0	1,800.0	1,600.0	1,600.0
Load Duration Factor		1.250	1.250	1.250	1.250	1.250	1.250	1.250
Member Type		Sawn	Sawn	Sawn	Sawn	GluLam	Sawn	Sawn
Repetitive Status		Repetitive	Repetitive	Repetitive	No	No	No	No

Center Span Data

Span	ft	11.33	11.50	12.00	27.00	16.00	23.00
Dead Load	#/ft	31.20	26.10	172.00		94.00	206.00
Live Load	#/ft	32.00	21.30	176.00		96.00	168.00
Dead Load	#/ft				140.00		
Live Load	#/ft				144.00		
Start	ft				7.000		
End	ft				27.000		
Point #1 DL	lbs				1,032.00		
LL	lbs				1,056.00		
@ X	ft				7.000		

Results

Ratio =	0.9841	0.7604	0.8463	0.6211	0.8214	0.8216	
Mmax @ Center	in-k	12.17	9.40	75.17	358.20	72.96	296.77
@ X =	ft	5.66	5.75	6.00	12.53	8.00	11.50
Fb: Actual	psi	1,609.2	1,243.4	1,018.1	1,747.0	988.2	1,347.5
Fb: Allowable	psi	1,635.2	1,635.2	1,203.1	2,812.7	1,203.1	1,640.2
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
Fv: Actual	psi	59.9	46.0	67.5	62.7	51.4	67.2
Fv: Allowable	psi	118.8	118.8	118.8	206.3	118.8	106.3
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

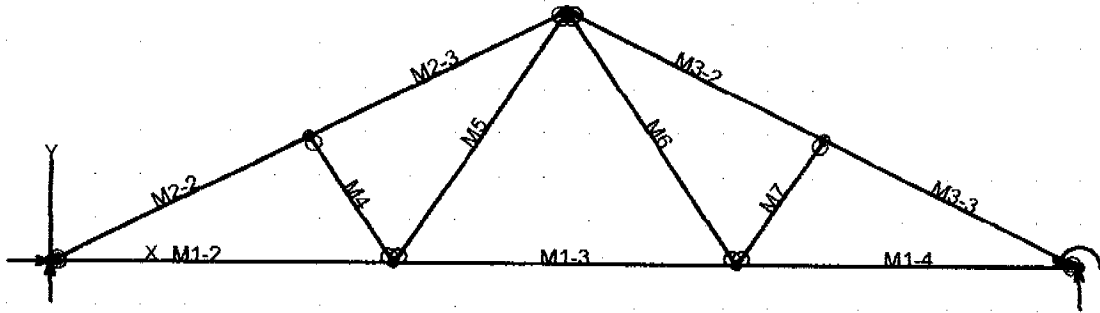
Reactions

@ Left End DL	lbs	176.75	150.07	1,032.00	1,801.48	752.00	2,369.00
LL	lbs	181.28	122.47	1,056.00	1,848.89	768.00	1,932.00
Max. DL+LL	lbs	358.03	272.55	2,088.00	3,650.37	1,520.00	4,301.00
@ Right End DL	lbs	176.75	150.07	1,032.00	2,030.52	752.00	2,369.00
LL	lbs	181.28	122.47	1,056.00	2,087.11	768.00	1,932.00
Max. DL+LL	lbs	358.03	272.55	2,088.00	4,117.63	1,520.00	4,301.00

Deflections

	Ratio OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK	
Center DL Defl	in	-0.348	-0.309	-0.121	-0.776	-0.209	-0.475
L/Defl Ratio		391.1	447.1	1,192.3	417.3	920.4	581.1
Center LL Defl	in	-0.357	-0.252	-0.124	-0.798	-0.213	-0.387
L/Defl Ratio		381.3	547.8	1,165.2	406.3	901.2	712.5
Center Total Defl	in	-0.704	-0.561	-0.244	-1.574	-0.422	-0.862
Location	ft	5.665	5.750	6.000	13.284	8.000	11.500
L/Defl Ratio		193.1	246.2	589.3	205.9	455.4	320.1

5



Truss 1

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Paul Zacher\Desktop\Lawrence04_085\Truss 1.vap

Nodes

Node	X ft	Y ft	Fix	DX Fix	DY Fix	RZ Fix
N1	0.00	0.00	Yes	Yes	No	No
N2	23.00	0.00	No	"	Yes	Yes
N3	11.50	5.75	"	No	No	No
N4	7.67	0.00	"	"	"	"
N5	15.33	0.00	"	"	"	"
N6	5.75	2.88	"	"	"	"
N7	17.25	2.88	"	"	"	"

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	7.67
M1-3	"	"	7.67
M1-4	"	"	7.67
M2-2	"	"	6.43
M2-3	"	"	6.43
M3-2	"	"	6.43
M3-3	"	"	6.43
M4	"	"	3.46
M5	"	"	6.91
M6	"	"	6.91
M7	"	"	3.46

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sz (+y) in ³	Sz (-y) 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-	1700000.00	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)

7

Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	740.60	-NA-
N2	"	-NA-	740.60	0.00

Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	1180.33	-38.42	-41.82	0.01	-0.08
"	1180.33	-16.44	28.26	0.01	-0.09
"	1180.33	5.53	42.20	0.00	-0.07
"	1180.33	27.51	0.00	0.00	0.00
M1-3	736.88	-32.97	-41.82	0.02	-0.08
"	736.88	-10.99	14.32	0.02	-0.09
"	736.88	10.99	14.32	0.01	-0.09
"	736.88	32.97	-41.82	0.01	-0.08
M1-4	1180.33	-27.51	0.00	0.03	0.00
"	1180.33	-5.53	42.20	0.03	-0.07
"	1180.33	16.44	28.26	0.02	-0.09
"	1180.33	38.42	-41.82	0.02	-0.08
M2-2	-1374.6	109.94	0.00	0.00	0.00
"	-1326.7	14.29	133.02	-0.00	-0.11
"	-1278.9	-81.37	61.14	-0.01	-0.11
"	-1231.1	-177.03	-215.64	-0.01	-0.08
M2-3	-1186.8	177.03	-215.64	-0.01	-0.08
"	-1139.0	81.37	61.14	-0.01	-0.14
"	-1091.2	-14.29	133.02	-0.02	-0.16
"	-1043.3	-109.94	0.00	-0.02	-0.08
M3-2	-1186.8	-177.03	-215.64	0.04	-0.06
"	-1139.0	-81.37	61.14	0.04	-0.12
"	-1091.2	14.29	133.02	0.05	-0.14
"	-1043.3	109.94	0.00	0.05	-0.06
M3-3	-1374.6	-109.94	0.00	0.03	0.01
"	-1326.7	-14.29	133.02	0.03	-0.09
"	-1278.9	81.37	61.14	0.04	-0.10
"	-1231.1	177.03	-215.64	0.04	-0.06
M4	-356.82	0.00	0.00	0.07	-0.03
"	-356.82	0.00	0.00	0.07	-0.03
"	-356.82	0.00	0.00	0.08	-0.03
"	-356.82	0.00	0.00	0.08	-0.02
M5	442.62	0.00	0.00	-0.06	-0.06
"	442.62	0.00	0.00	-0.06	-0.06
"	442.62	0.00	0.00	-0.06	-0.06
"	442.62	0.00	0.00	-0.06	-0.06
M6	442.62	0.00	0.00	0.07	-0.03
"	442.62	0.00	0.00	0.08	-0.03
"	442.62	0.00	0.00	0.08	-0.03
"	442.62	0.00	0.00	0.08	-0.03
M7	-356.82	0.00	0.00	-0.06	-0.06
"	-356.82	0.00	0.00	-0.06	-0.06
"	-356.82	0.00	0.00	-0.06	-0.05
"	-356.82	0.00	0.00	-0.06	-0.05

BENDING & COMP: TRUSS 1 - MEMBER 2-2

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

Grading:

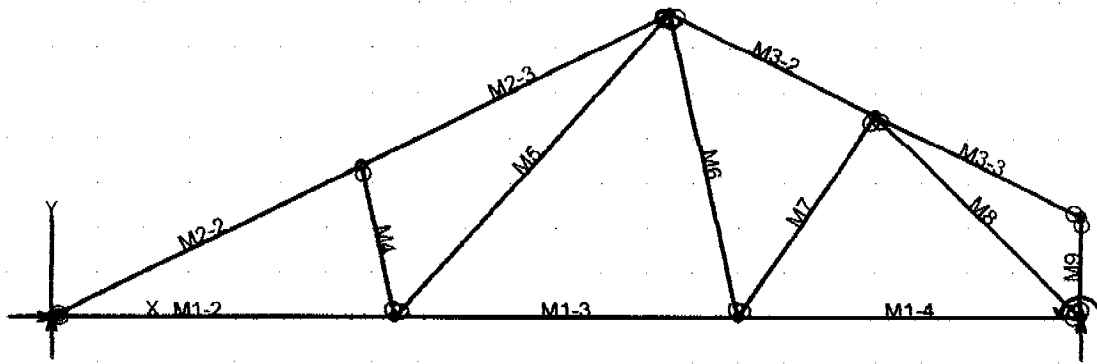
2x or 4x

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	6.43 feet
Max Axial Comp, C	1231 lbs
Max Reaction, R	177 lbs
Max Moment, M	215 ft-lbs
Max LL Deflection	0.04 inches
Max TL Deflection	0.08 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 =	1.18
fc =	234 psi
Fce=	1235 psi
Fc* =	2084 psi
F'c=	1032 psi
fb=	842 psi
F'b=Fb* =	2156 psi
Shear D/C ratio	0.43 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.53 < 1.0, Member OK
Live Load defl ratio	0.12 < 1.0, Member OK
Total Load defl ratio	0.19 < 1.0, Member OK



Truss 2

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Paul Zacher\Desktop\Lawrence04_085\Truss 3.vap

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes		No	
N2	13.50	6.75	No		No		"	
N3	22.50	2.25	"		"		"	
N4	22.50	0.00	"		Yes		Yes	
N5	7.50	0.00	"		No		No	
N6	15.00	0.00	"		"		"	
N7	6.75	3.38	"		"		"	
N8	18.00	4.50	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	7.50
M1-3	"	"	7.50
M1-4	"	"	7.50
M2-2	"	"	7.55
M2-3	"	"	7.55
M3-2	"	"	5.03
M3-3	"	"	5.03
M4	"	"	3.46
M5	"	"	9.03
M6	"	"	6.91
M7	"	"	5.41
M8	"	"	6.36
M9	"	"	2.25

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sz (+y) in ³	Sz (-y) 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-	1700000.00	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)

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Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	724.50	-NA-
N4	"	-NA-	724.50	0.00

Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	1106.90	-36.84	-34.41	0.01	-0.07
"	1106.90	-15.34	30.79	0.01	-0.08
"	1106.90	6.16	42.26	0.00	-0.06
"	1106.90	27.66	0.00	0.00	0.00
M1-3	580.72	-34.23	-49.24	0.02	-0.05
"	580.72	-12.73	9.44	0.02	-0.06
"	580.72	8.77	14.38	0.01	-0.07
"	580.72	30.27	-34.41	0.01	-0.07
M1-4	603.06	-25.69	0.00	0.02	0.00
"	603.06	-4.19	37.32	0.02	-0.05
"	603.06	17.31	20.90	0.02	-0.06
"	603.06	38.81	-49.24	0.02	-0.05
M2-2	-1301.6	128.25	0.00	0.00	0.00
"	-1245.5	15.96	181.27	-0.00	-0.17
"	-1189.3	-96.34	80.17	-0.01	-0.16
"	-1133.2	-208.63	-303.31	-0.01	-0.07
M2-3	-1237.5	208.63	-303.31	-0.01	-0.07
"	-1181.4	96.34	80.17	-0.02	-0.17
"	-1125.2	-15.96	181.27	-0.02	-0.20
"	-1069.1	-128.25	0.00	-0.02	-0.04
M3-2	-738.60	-138.95	-134.10	0.01	-0.03
"	-701.16	-64.08	36.10	0.02	-0.06
"	-663.73	10.78	80.80	0.02	-0.07
"	-626.30	85.64	0.00	0.02	-0.04
M3-3	-42.82	-85.64	0.00	0.01	0.01
"	-5.39	-10.78	80.80	0.01	-0.03
"	32.04	64.08	36.10	0.01	-0.04
"	69.47	138.95	-134.10	0.01	-0.03
M4	-430.11	0.00	0.00	0.07	0.00
"	-430.11	0.00	0.00	0.07	-0.00
"	-430.11	0.00	0.00	0.07	-0.00
"	-430.11	0.00	0.00	0.07	0.01
M5	651.56	0.00	0.00	-0.05	-0.06
"	651.56	0.00	0.00	-0.04	-0.05
"	651.56	0.00	0.00	-0.04	-0.04
"	651.56	0.00	0.00	-0.04	-0.03
M6	81.87	0.00	0.00	0.05	-0.01
"	81.87	0.00	0.00	0.05	-0.01
"	81.87	0.00	0.00	0.05	0.00
"	81.87	0.00	0.00	0.05	0.01
M7	-8.26	0.00	0.00	-0.03	-0.04
"	-8.26	0.00	0.00	-0.03	-0.03
"	-8.26	0.00	0.00	-0.03	-0.03
"	-8.26	0.00	0.00	-0.03	-0.02
M8	-852.86	0.00	0.00	0.02	-0.02
"	-852.86	0.00	0.00	0.02	-0.01
"	-852.86	0.00	0.00	0.02	0.00
"	-852.86	0.00	0.00	0.02	0.02

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M9	-95.75	0.00	0.00	-0.00	-0.02
"	-95.75	0.00	0.00	-0.00	-0.02
"	-95.75	0.00	0.00	-0.00	-0.02
"	-95.75	0.00	0.00	0.00	-0.02

BENDING & COMP: TRUSS 2 - MEMBER 2-2

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

Grading:

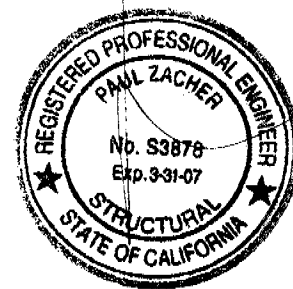
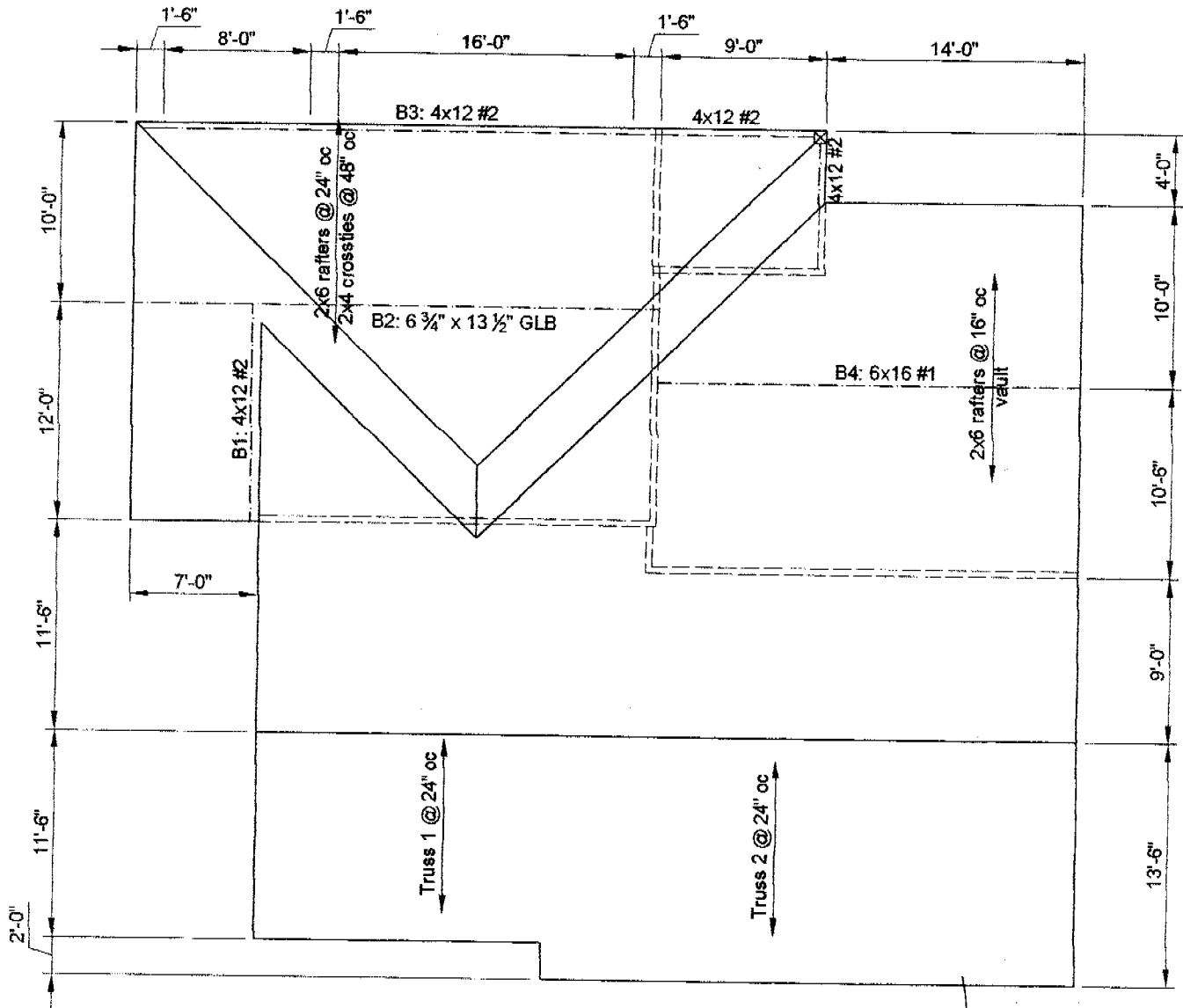
2x or 4x

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	1.5 inches
Depth, d	3.5 inches
Length	7.55 feet
Max Axial Comp, C	1133 lbs
Max Reaction, R	208 lbs
Max Moment, M	303 ft-lbs
Max LL Deflection	0.03 inches
Max TL Deflection	0.07 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 =	1.21
fc =	216 psi
Fce =	919 psi
Fc* =	2084 psi
F'c =	815 psi
fb =	1187 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.50 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.79 < 1.0, Member OK
Live Load defl ratio	0.08 < 1.0, Member OK
Total Load defl ratio	0.14 < 1.0, Member OK



NOTES:

- A. This is a reroof project. The new roofing material shall be a Standard Weight Concrete Tile. The tile shall weigh less than or equal to 10.3 psf.
- B. All rafters are 2x6 DF#2 and hips and valleys are 2x8 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.

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ROOF PLAN - LAWRENCE

Not to Scale