

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0009855
Insp Area: 2

Site Address: 10 RAMBLEOAK CR SAC
Parcel No: 031-0520-014

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

CONTRACTOR
ZIMMERMAN ROOFING
3675 R ST
SACRAMENTO CA 95816

OWNER
WONG RICHARD/SUSAN CHIN
10 RAMBLEOAK CR
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: REROOF T/O 29SQ MONIER 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 C-39 License Number 557559 Date 8/23/00 Contractor Signature Billy Coy

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 hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 8/23/00 Applicant/Agent Signature Billy Coy

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:

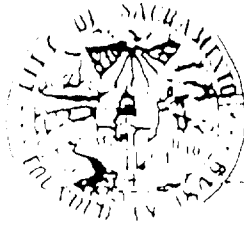
Carrier STATE COMP INS FUND Policy Number 713-99-2021 Exp Date 10/01/2000

(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 8/23/00 Applicant Signature Billy Coy

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.



DEPARTMENT OF
PLANNING AND DEVELOPMENT

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
ROOM 200
SACRAMENTO, CA
95814-1991

Phone Services
TEL: 916-704-7011
FAX: 916-244-7046

Richard Wong
10 Rumble Oak Cir
Sacramento, CA 95831

TILE ROOF WORKSHEET

This worksheet must be filled out whenever any type of tile roof is applied for.

If the answer to question #5 is yes, a written engineering report from a registered engineer must be provided with each application.

BRAND AND MODEL OF TILE Monier Lite weight

TILE WEIGHT PER SQUARE 730 lbs

HEIGHT OF ROOF SYSTEM PER SQUARE 180 lbs

TOTAL WEIGHT OF ROOF SYSTEM 910 lbs

DOES TOTAL WEIGHT OF ROOF SYSTEM EXCEED 750# PER SQUARE? YES NO

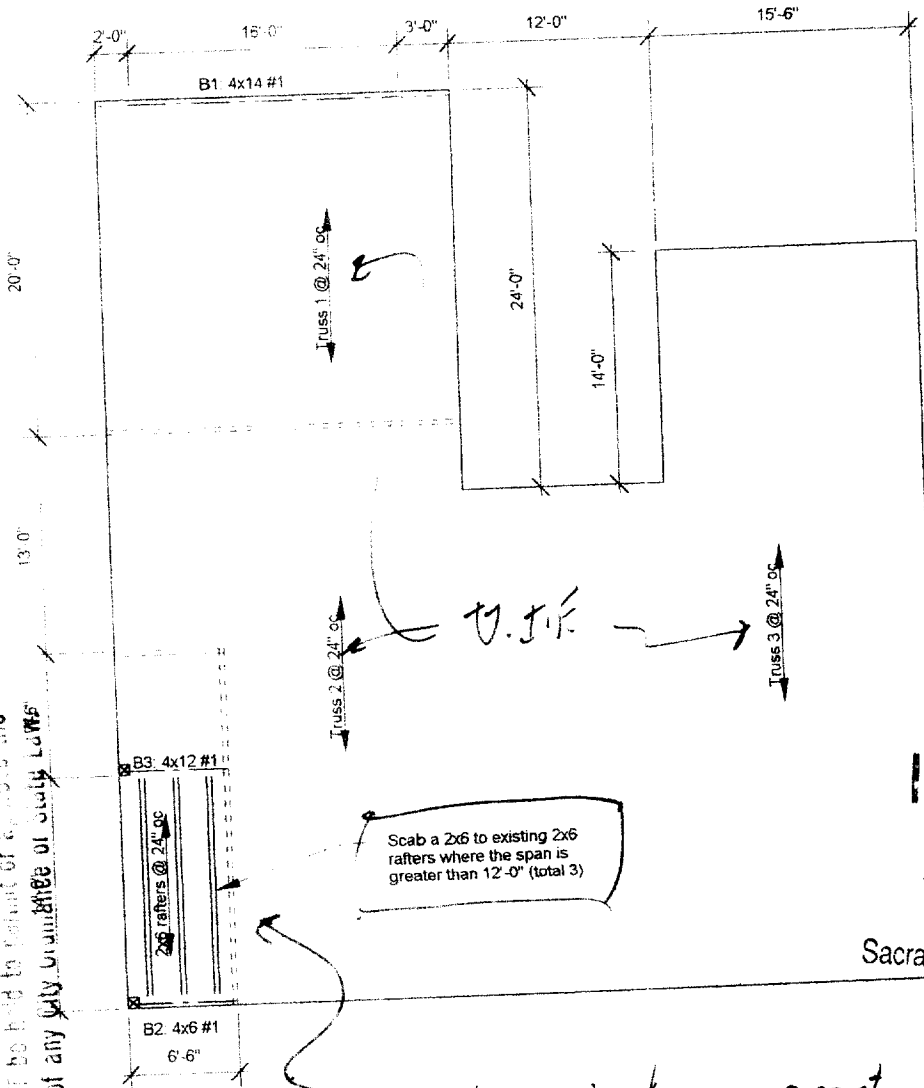
ROOF SLOPE 4/12

PLEASE PROVIDE A SEPARATE WORKSHEET FOR EACH APPLICATION INVOLVING A TILE

See attached engin. report

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 to the same without written permission from the Building Inspection Division.

The approval of this plan and specification shall NOT be held to account or excuse the violation of any City Ordinance or State Laws.



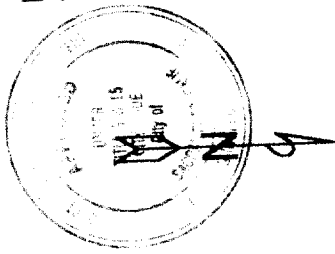
ISSUED

AUG 23 2000

Sacramento Building Division

work required, per report

Reviewed by Matt P. 8/23/00



Notes

1. 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 7.0 psf.
2. All structural wood members that were observed appear to be in sound condition and without structural defect.

20

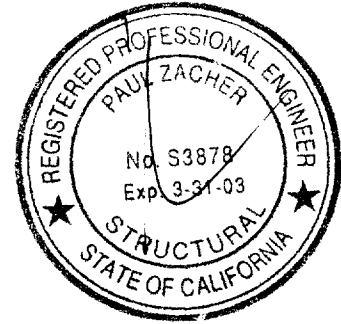
Roof-Zimmerman

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

TEL: 916.961.3960
FAX: 916.961.6552

August 17, 2000

Zimmerman Roofing
3675 R Street
Sacramento, CA 95816
TEL: 916.454.3667
FAX: 916.455.3784



Attn: Mr. Jeff Tucker,

re Job 2000_246: WONG

Subject: Structural Investigation Report of the Roof for the Residence located at 10 Ramble Oak,
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 August 17, 2000. 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.

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: One.
Dimensions: Approximately 2000 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

Roof:
The roof covering will consist of a Light Weight Concrete Tile over 1/2" solid sheathing. The living and garage areas are framed with pre-engineered wood trusses spaced at 24" on center except for the patio area which is framed with 2x6 rafters spaced at 24" on center.

CONCLUSIONS:

Roof:
The living area lacks sufficient structural capacity for the applied live and dead loads. The garage has sufficient structural capacity for the applied live and dead loads.

Roof-Zimmerman

Paul Zacher – Structural Engineers
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.

Living Area:

1. Scab a 2x6 rafter to the existing 2x6 rafters with 16d's @ 12" on center where the span is greater than 12'-0". See detail 1

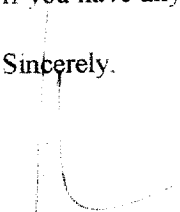
It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and 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	4	in 12
Pitch Adjustment Factor	1.05	

LOCATION: ROOF

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	7.00	psf
Roofing felt	0.30	psf
1/2" OSB/ plywood	1.50	psf
1x4 skip sht'g	1.09	psf
2x6 rafters @ 24" oc	<u>1.00</u>	psf
Load	10.9	psf
Roof Pitch Adjustment	<u>0.59</u>	psf
Total Load	11.5	psf

LOCATION: TOP CHORD

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	7.00	psf
Roofing felt	0.30	psf
1/2" OSB/ plywood	1.50	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	<u>1.28</u>	psf
Load	11.2	psf
Roof Pitch Adjustment	<u>0.60</u>	psf
Total Load	11.8	psf

LOCATION: BOTTOM CHORD

<u>MATERIAL</u>	<u>WEIGHT</u>	
Batt/blown insul	0.50	psf
2x4 truss @ 24" oc	0.64	psf
1/2" Gypboard	<u>2.50</u>	psf
Load	3.6	psf

P K Zacher, S.E.

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

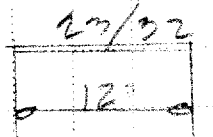
Job #

Date: 8/11/00

20/02

2x6" 2'-0" PVF
2x6" 2'-0" PVF

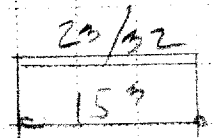
2x6" 2



22/02

2x6" 2'-0" PVF
2x6" 2'-0" PVF

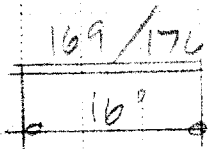
2x6" 2



169/176

4x4" 11'-0" PVF
4x4" 17'-0" PVF

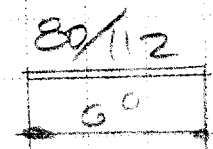
4x4" 1



80/112

4x6" 7'-0" PVF
4x6" 11'-0" PVF

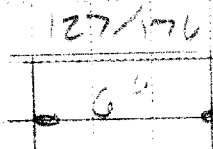
4x6" 1



127/176

4x12" 11'-0" PVF
4x12" 17'-0" PVF

4x12" 1



Paul Zacher - Structural Engineers
 4701 Lakeside Way
 Fair Oaks
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :
 Scope :

Job #
 Date: 2:02PM, 17 AUG 00

Rev: 310304
 User: RW-0602344 Ver: 1.3.02 Jun 1999, Win32
 (C) 1983-99 ENERCALC

Timber Beam & Joist

c:\enercalc\test.ecw.Calculations

Description RAFTERS AND BEAMS

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

	rafter	vault	B1	B2	B3
Timber Section	2x6	2-2x6	4x14	4x6	4x12
Beam Width	in 1.500	3.000	3.500	3.500	3.500
Beam Depth	in 5.500	5.500	13.250	5.500	11.250
Le: Unbraced Length	ft 0.00	0.00	0.00	0.00	0.00
Timber Grade	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir - Larch
Fb - Basic Allow	psi 875.0	875.0	1,000.0	1,000.0	1,000.0
Fv - Basic Allow	psi 95.0	95.0	95.0	95.0	95.0
Elastic Modulus	ksi 1,600.0	1,600.0	1,700.0	1,700.0	1,700.0
Load Duration Factor	1.250	1.250	1.250	1.250	1.250
Member Type	Sawn	Sawn	Sawn	Sawn	Sawn
Repetitive Status	Repetitive	Repetitive	Repetitive	No	No

Center Span Data

		rafter	vault	B1	B2	B3
Span	ft	12.00	15.25	16.00	6.50	6.50
Dead Load	#/ft	23.00	23.00	169.00	80.00	127.00
Live Load	#/ft	32.00	32.00	176.00	112.00	176.00

Results

Ratio = 0.9607 0.7758 0.8999 0.4243 0.2249

Mmax @ Center	in-k	11.88	19.19	132.48	12.17	19.20
@ X =	ft	6.00	7.62	8.00	3.25	3.25
Fb Actual	psi	1,570.9	1,268.5	1,293.6	689.6	260.1
Fb Allowable	psi	1,635.2	1,635.2	1,437.5	1,625.0	1,375.0
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
Fv Actual	psi	55.7	36.0	77.1	42.0	26.7
Fv Allowable	psi	118.8	118.8	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

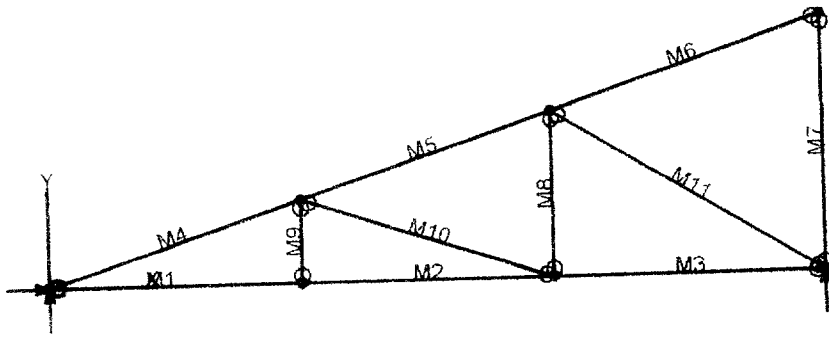
Reactions

@ Left End	DL	lbs	138.00	175.37	1,352.00	260.00	412.75
	LL	lbs	192.00	244.00	1,408.00	364.00	572.00
	Max. DL+LL	lbs	330.00	419.37	2,760.00	624.00	984.75
@ Right End	DL	lbs	138.00	175.37	1,352.00	260.00	412.75
	LL	lbs	192.00	244.00	1,408.00	364.00	572.00
	Max. DL+LL	lbs	330.00	419.37	2,760.00	624.00	984.75

Deflections

Ratio OK Deflection OK Deflection OK Deflection OK Deflection OK

Center DL Defl	in	-0.322	-0.421	-0.216	-0.039	-0.007
L/Defl Ratio		446.5	435.1	888.7	2,002.6	10,795.9
Center LL Defl	in	-0.449	-0.585	-0.225	-0.055	-0.010
L/Defl Ratio		320.9	312.8	853.3	1,430.5	7,790.2
Center Total Defl	in	-0.771	-1.006	-0.441	-0.093	-0.017
Location	ft	6.000	7.625	8.000	3.250	3.250
L/Defl Ratio		186.7	182.0	435.3	834.4	4,525.0



VisualAnalysis 3.50.c Report

08/17/00 13:32:15

Project: truss 1

File: C:\Program Files\IES\VA35\truss 1.vap

Company: PK Associates Engineers

Engineer: Paul Zacher

Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	6.50	0.00	No		No		No	
N2	13.00	0.00	"		"		"	
N3	20.00	0.00	"		Yes		"	
N4	6.50	2.17	"		No		"	
N5	13.00	4.33	"		"		"	
N6	20.00	6.67	"		"		"	
N7	0.00	0.00	Yes	Yes	Yes	Yes	"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	6.50
M2	"	"	6.50
M3	"	"	7.00
M4	"	"	6.85
M5	"	"	6.85
M6	"	"	7.38
M7	"	"	6.67
M8	"	"	4.33
M9	"	"	2.17
M10	"	"	6.85
M11	"	"	8.23

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-	1700000.00	0.36	40.47

Load Combination Summary

Equation Case: Equation Case 1

Combination: +1D+1L+1Lr

Contributing Cases & Source

Service Case 1 (Dead loads)

Service Case 2 (Roof Live loads)

Member Uniform Loads

This item is empty. Check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N3	Equation Case 1	-NA-	628.00	-NA-
N7	"	0.00	628.00	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1365.82	-24.09	-4.5023	-0.1004
"	1365.82	-8.4927	30.7140	-0.0922
"	1365.82	7.1073	32.2147	-0.0592
"	1365.82	22.7073	0.0000	-0.0000
M2	1365.82	-28.03	-34.59	-0.0679
"	1365.82	-12.43	9.1560	-0.0874
"	1365.82	3.1714	19.1846	-0.1012
"	1365.82	18.7714	-4.5023	-0.1004
M3	729.04	-20.26	0.0000	-0.0000
"	729.04	-3.4588	27.5726	-0.0438
"	729.04	13.3412	16.0433	-0.0625
"	729.04	30.1412	-34.59	-0.0679
M4	-1487.21	141.64	0.0000	-0.0000
"	-1449.06	27.3679	192.37	-0.1804
"	-1410.91	-86.90	124.38	-0.1919
"	-1372.76	-201.17	-203.97	-0.1013
M5	-822.27	162.61	-203.97	-0.1013
"	-784.29	48.2861	36.1244	-0.0967
"	-746.30	-66.03	15.8641	-0.0774
"	-708.31	-180.35	-264.75	-0.0632
M6	-73.69	220.43	-264.75	-0.0632
"	-32.56	97.3913	125.45	-0.1897
"	8.5742	-25.65	213.70	-0.2004
"	49.7049	-148.69	-0.0000	0.0053
M7	-156.78	0.0000	0.0000	-0.0209
"	-156.78	0.0000	0.0000	-0.0037
"	-156.78	0.0000	0.0000	0.0135
"	-156.78	0.0000	0.0000	0.0307
M8	270.76	-0.0000	0.0000	0.0009
"	270.76	-0.0000	-0.0000	0.0085
"	270.76	-0.0000	-0.0000	0.0162
"	270.76	-0.0000	-0.0000	0.0239
M9	42.8641	0.0000	0.0000	0.0119
"	42.8641	0.0000	0.0000	0.0145
"	42.8641	0.0000	0.0000	0.0170
"	42.8641	0.0000	0.0000	0.0196
M10	-671.33	0.0000	0.0000	-0.0889
"	-671.33	0.0000	0.0000	-0.0782
"	-671.33	0.0000	0.0000	-0.0675
"	-671.33	0.0000	0.0000	-0.0568
M11	-857.24	-0.0000	0.0000	-0.0559
"	-857.24	-0.0000	-0.0000	-0.0319
"	-857.24	-0.0000	-0.0000	-0.0079
"	-857.24	-0.0000	-0.0000	0.0162

BENDING & COMP: TRUSS 1 - MEMBER 4

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

Grading:

2x or 4x

Doug-fir larch: No. 2

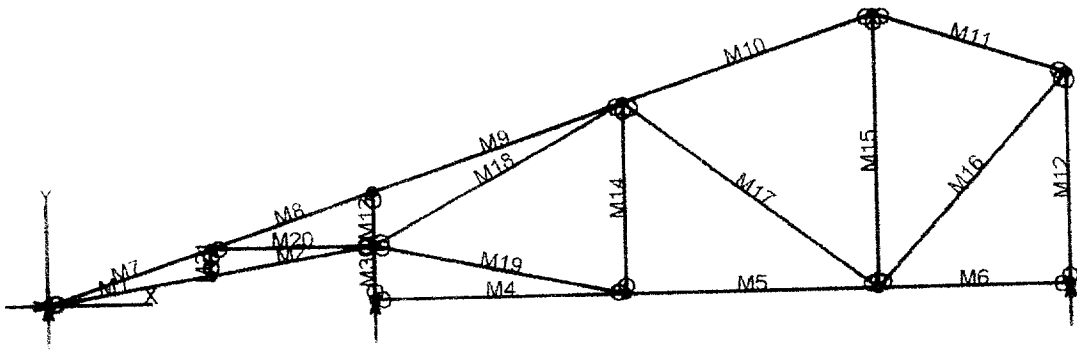
Assumptions:

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	6.85 feet
Max Axial Comp. C	1372 lbs
Max Reaction, R	201 lbs
Max Moment, M	203 ft-lbs
Max LL Deflection	0.04 inches
Max TL Deflection	0.10 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 =	1.20
fc =	261 psi
Fce =	1045 psi
Fc* =	1869 psi
F'c =	885 psi
fb =	795 psi
F'b = Fb* =	1887 psi
Shear D/C ratio	0.48 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.65 < 1.0, Member OK
Live Load defl ratio	0.12 < 1.0, Member OK
Total Load defl ratio	0.22 < 1.0, Member OK



VisualAnalysis 3.50.c Report

08/11/00 13:41:23

Project: truss 2

File: C:\Program Files\IES\VA35\truss 2.vap

Company: PK Associates Engineers

Engineer: Paul Zacher

Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	5.50	0.92	No	No	"
N3	11.00	1.83	"	"	"
N4	11.00	0.00	"	Yes	"
N5	19.50	0.00	"	No	"
N6	28.00	0.00	"	"	"
N7	34.50	0.00	"	Yes	"
N8	5.50	1.83	"	No	"
N9	11.00	3.67	"	"	"
N10	19.50	6.50	"	"	"
N11	28.00	9.33	"	"	"
N12	34.50	7.17	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	5.58
M2	"	"	5.57
M3	"	"	1.83
M4	"	"	8.50
M5	"	"	8.50
M6	"	"	6.50
M7	SS2x6	"	5.80
M8	"	"	5.80
M9	"	"	8.96
M10	"	"	8.96
M11	"	"	6.85
M12	SS2x4	"	7.17
M13	"	"	1.84
M14	"	"	6.50
M15	"	"	9.33
M16	"	"	9.68
M17	"	"	10.70
M18	"	"	9.70
M19	"	"	8.69
M20	"	"	5.50
M21	"	"	0.91

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
"	SS2x6	8.25	20.80	7.56	7.56

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: Equation Case 1
 Combination: +1D+1L+1Lr
 Contributing Cases & Source
 Service Case 1 (Dead loads)
 Service Case 2 (Roof Live loads)

Member Uniform Loads

This item is empty. Check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N1	Equation Case 1	-0.00	266.87	-NA-
N4	"	-NA-	1198.58	-NA-
N7	"	-NA-	701.14	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	596.98	19.9492	0.0000	-0.0000
"	599.16	6.9300	24.9211	-0.0353
"	601.34	-6.0891	25.7027	-0.0556
"	603.52	-19.11	2.3448	-0.0603
M2	596.98	19.1138	2.3448	-0.0603
"	599.14	6.0909	25.7027	-0.0570
"	601.29	-6.9321	24.9211	-0.0382
"	603.44	-19.96	0.0000	-0.0044
M3	-1173.93	11.9621	-21.89	0.0097
"	-1173.93	11.9621	-14.59	0.0108
"	-1173.93	11.9621	-7.2969	0.0108
"	-1173.93	11.9621	-0.0000	0.0104
M4	-11.96	-36.55	-50.56	-0.0353
"	-11.96	-16.15	23.9479	-0.0613
"	-11.96	4.2516	40.8017	-0.0581
"	-11.96	24.6516	0.0000	-0.0000
M5	601.15	-28.99	-36.89	-0.0227
"	601.15	-8.5913	16.2103	-0.0421
"	601.15	11.8087	11.6522	-0.0440
"	601.15	32.2087	-50.56	-0.0353
M6	0.0000	-17.73	-0.0000	-0.0000
"	0.0000	-2.1251	21.4198	-0.0205
"	0.0000	13.4749	9.1241	-0.0244
"	0.0000	29.0749	-36.89	-0.0227
M7	-670.95	141.08	0.0000	-0.0000
"	-638.77	44.3575	178.68	-0.0496
"	-606.59	-52.36	170.94	-0.0694
"	-574.40	-149.08	-23.20	-0.0609
M8	281.81	94.3460	-23.20	-0.0609

	314.15	-71.3212	65.2838	-0.0450
	346.49	-98.99	-32.64	-0.0200
	378.83	-195.66	-316.98	-0.0037
M9	339.30	214.40	-316.98	-0.0037
	379.07	64.9346	98.9878	-0.0382
	328.83	-84.53	69.7261	-0.0454
	378.59	-234.00	-404.71	-0.0380
M10	-458.82	269.38	-404.76	-0.0380
	-409.06	119.91	175.39	-0.1138
	-359.29	-29.55	310.31	-0.1289
	-309.53	-179.02	-0.0000	-0.0250
M11	-426.05	-171.48	-0.0000	-0.0033
	-388.06	-57.16	260.36	-0.0701
	-350.07	57.1599	260.36	-0.0761
	-312.08	171.48	0.0000	-0.0213
M12	-683.42	-0.0000	0.0000	0.0095
	-683.42	-0.0000	-0.0000	0.0120
	-683.42	-0.0000	-0.0000	0.0146
	-683.42	-0.0000	-0.0000	0.0171
M13	-436.72	-11.90	-21.89	0.0097
	-436.72	-11.90	-14.59	0.0072
	-436.72	-11.90	-7.2969	0.0037
	-436.72	-11.90	0.0000	-0.0003
M14	-63.24	0.0000	0.0000	0.0102
	-63.24	0.0000	0.0000	0.0111
	-63.24	0.0000	0.0000	0.0119
	-63.24	0.0000	0.0000	0.0128
M15	-136.39	0.0000	0.0000	0.0058
	-136.39	0.0000	0.0000	0.0096
	-136.39	0.0000	0.0000	0.0134
	-136.39	0.0000	0.0000	0.0171
M16	521.46	-0.0000	0.0000	0.0114
	521.46	-0.0000	-0.0000	0.0169
	521.46	-0.0000	-0.0000	0.0224
	521.46	-0.0000	-0.0000	0.0279
M17	-315.87	-0.0000	0.0000	0.0076
	-315.87	-0.0000	-0.0000	0.0120
	-315.87	-0.0000	-0.0000	0.0163
	-315.87	-0.0000	-0.0000	0.0207
M18	-1011.41	-0.0000	-0.0000	0.0072
	-1011.41	-0.0000	-0.0000	0.0173
	-1011.41	-0.0000	-0.0000	0.0274
	-1011.41	-0.0000	0.0000	0.0375
M19	627.16	0.0000	0.0000	-0.0323
	627.16	0.0000	0.0000	-0.0218
	627.16	0.0000	0.0000	-0.0113
	627.16	0.0000	0.0000	-0.0008
M20	-889.28	0.0000	0.0000	0.0029
	-889.28	0.0000	0.0000	0.0215
	-889.28	0.0000	0.0000	0.0401
	-889.28	0.0000	0.0000	0.0587
M21	39.8239	-0.0000	-0.0000	0.0144
	39.8239	-0.0000	-0.0000	0.0150
	39.8239	-0.0000	-0.0000	0.0157
	39.8239	-0.0000	0.0000	0.0163

BENDING & COMP: TRUSS 2 - MEMBER 7

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

Grading:

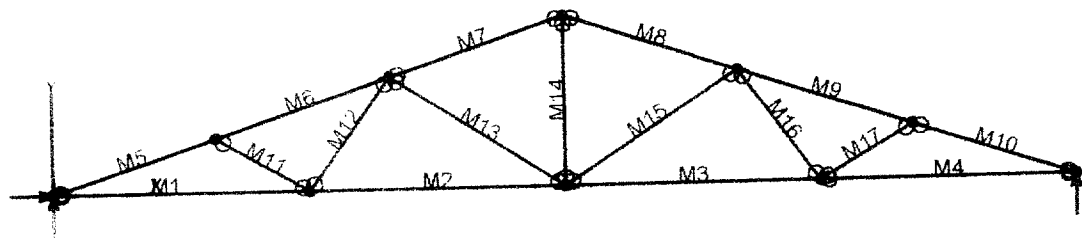
2x or 4x

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	5.5 inches
Length	5.8 feet
Max Axial Comp, C	606 lbs
Max Reaction, R	52 lbs
Max Moment, M	178 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	1.3 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.1 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.17
fc =	73 psi
Fce =	3506 psi
Fc* =	1788 psi
F'c =	1544 psi
fb =	282 psi
F'b = Fb* =	1635 psi
Shear D/C ratio	0.08 < 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	0.10 < 1.0, Member OK
Total Load defl ratio	0.16 < 1.0, Member OK



VisualAnalysis 3.50.c Report

08/17/00 13:47:46

Project: truss 3

File: C:\Program Files\IES\VA35\truss 3.vap

Company: PK Associates Engineers

Engineer: Paul Zacher

Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	11.00	0.00	No	No	"
N3	22.00	0.00	"	"	"
N4	33.00	0.00	"	"	"
N5	44.00	0.00	"	Yes	"
N6	7.00	2.33	"	No	"
N7	37.00	2.33	"	"	"
N8	14.50	4.83	"	"	"
N9	29.50	4.83	"	"	"
N10	22.00	7.33	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	11.00
M2	"	"	11.00
M3	"	"	11.00
M4	"	"	11.00
M5	SS2x6	"	7.38
M6	"	"	7.91
M7	"	"	7.91
M8	"	"	7.91
M9	"	"	7.91
M10	"	"	7.38
M11	SS2x4	"	4.63
M12	"	"	5.96
M13	"	"	8.92
M14	"	"	7.33
M15	"	"	8.92
M16	"	"	5.96
M17	"	"	4.63

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
"	SS2x6	8.25	20.80	7.56	7.56

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: Equation Case 1

Combination: +1D+1L+1Lr

Contributing Cases & Source

Service Case 1 (Dead loads)

Service Case 2 (Roof Live loads)

Member Uniform Loads

This item is empty. Check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N1	Equation Case 1	-0.00	1381.60	-NA-
N5	"	-NA-	1381.60	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	3555.52	-45.17	-61.30	-0.4364
"	3555.52	-18.77	55.6904	-0.4300
"	3555.52	7.6271	76.1242	-0.3018
"	3555.52	34.0271	0.0000	-0.0000
M2	2775.68	-42.00	-87.69	-0.4799
"	2775.68	-15.60	17.6669	-0.4979
"	2775.68	10.8014	26.4617	-0.4908
"	2775.68	37.2014	-61.30	-0.4364
M3	2835.98	-31.63	0.0000	-0.4333
"	2835.98	-5.2285	67.3293	-0.5753
"	2835.98	21.1715	38.1007	-0.5662
"	2835.98	47.5715	-87.69	-0.4799
M4	3447.12	-39.60	0.0000	-0.0000
"	3447.12	-13.20	96.5580	-0.3701
"	3447.12	13.2000	96.5580	-0.5145
"	3447.12	39.6000	0.0000	-0.4333
M5	-3799.14	155.69	0.0000	-0.0000
"	-3758.17	32.5992	230.77	-0.1801
"	-3717.20	-90.49	159.58	-0.2994
"	-3676.22	-213.59	-213.56	-0.3789
M6	-3289.00	224.81	-213.56	-0.3788
"	-3245.04	92.9473	204.26	-0.4814
"	-3201.09	-38.92	275.44	-0.5243
"	-3157.13	-170.79	-0.0000	-0.4835
M7	-2264.04	197.80	0.0000	-0.4835
"	-2220.08	65.9335	346.63	-0.5886
"	-2176.13	-65.93	346.63	-0.5858
"	-2132.17	-197.80	-0.0000	-0.4751
M8	-2278.08	-239.93	-333.04	-0.4242
"	-2234.12	-108.06	124.60	-0.4668
"	-2190.17	23.8063	235.62	-0.4767
"	-2146.21	155.67	0.0000	-0.4163
M9	-3270.75	-155.67	-0.0000	-0.3143
"	-3226.79	-23.81	235.62	-0.4086
"	-3182.83	108.06	124.60	-0.4328
"	-3138.88	239.93	-333.04	-0.4242
M10	-2694.53	-184.64	0.0000	0.0589

"	-3653.58	61.55	301.95	-0.1473
"	-3612.59	41.5467	301.95	-0.2717
"	-3571.61	184.64	0.0000	-0.3143
M11	-586.05	0.0000	0.0000	-0.2506
"	-586.05	0.0000	0.0000	-0.3231
"	-586.05	0.0000	0.0000	-0.2956
"	-586.05	0.0000	0.0000	-0.2681
M12	466.01	-0.0000	-0.0000	-0.3664
"	466.01	-0.0000	-0.0000	-0.3438
"	466.01	-0.0000	-0.0000	-0.3212
"	466.01	-0.0000	0.0000	-0.2986
M13	-821.15	0.0000	0.0000	-0.3527
"	-821.15	0.0000	0.0000	-0.3480
"	-821.15	0.0000	0.0000	-0.3432
"	-821.15	0.0000	0.0000	-0.3384
M14	1017.61	-0.0000	0.0000	-0.0936
"	1017.61	-0.0000	-0.0000	-0.0934
"	1017.61	-0.0000	-0.0000	-0.0932
"	1017.61	-0.0000	-0.0000	-0.0929
M15	-892.88	0.0000	0.0000	-0.4541
"	-892.88	0.0000	0.0000	-0.4490
"	-892.88	0.0000	0.0000	-0.4438
"	-892.88	0.0000	0.0000	-0.4386
M16	371.00	0.0000	0.0000	-0.2156
"	371.00	0.0000	0.0000	-0.1919
"	371.00	0.0000	0.0000	-0.1682
"	371.00	0.0000	0.0000	-0.1444
M17	-455.33	-0.0000	0.0000	-0.4426
"	-455.33	-0.0000	-0.0000	-0.4144
"	-455.33	-0.0000	-0.0000	-0.3861
"	-455.33	-0.0000	-0.0000	-0.3578

BENDING & COMP: TRUSS 2 - MEMBER 7

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	5.5 inches
Length	7.38 feet
Max Axial Comp. C	3676 lbs
Max Reaction, R	213 lbs
Max Moment, M	213 ft-lbs
Max LL Deflection	0.16 inches
Max TL Deflection	0.37 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	1.3 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.1 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.22
fc =	446 psi
Fce=	2251 psi
Fc*=	1788 psi
F'c=	1366 psi
fb=	338 psi
F*b=Fb*=	1635 psi
Shear D/C ratio	0.33 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F*b(1-fc/Fce)) =	0.36 < 1.0, Member OK
Live Load defl ratio	0.43 < 1.0, Member OK
Total Load defl ratio	0.75 < 1.0, Member OK