

**CITY OF SACRAMENTO**

1231 I Street, Sacramento, CA 95814

Permit No: 0111968

Insp Area: 2

Thos Bros: 336J2

Site Address: 22 RAMBLEOAK CR SAC

Parcel No: 031-0520-016

Sub-Type: RES

Housing (Y/N):

CONTRACTOR

ZIMMERMAN ROOFING, INC  
3675 R STREET  
SACRAMENTO, CA 95816

OWNER

TSUI LAM F/KA MAN LEUNG  
39 SAGERIVER CR  
SACRAMENTO C A. 95831

ARCHITECT

Nature of Work: TEAR OFF SHAKE & REROOF 28 SQ W/ PIONEER 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 C39 License Number 557559 Date 9/19/01 Contractor Signature [Signature]

**OWNER-BUILDER DECLARATION**: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_

Date \_\_\_\_\_ Owner Signature \_\_\_\_\_

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

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

Date 9/19/01 Applicant/Agent Signature [Signature]

**WORKER'S COMPENSATION DECLARATION**: I hereby affirm under penalty of perjury one of the following declarations:  
I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

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:

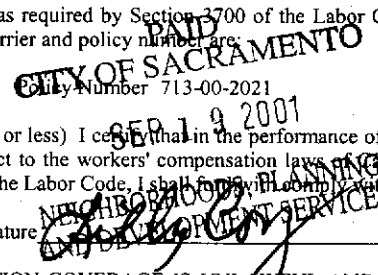
Carrier STATE FUND City Number 713-00-2021 Exp Date 10/01/2001

(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 comply with those provisions.

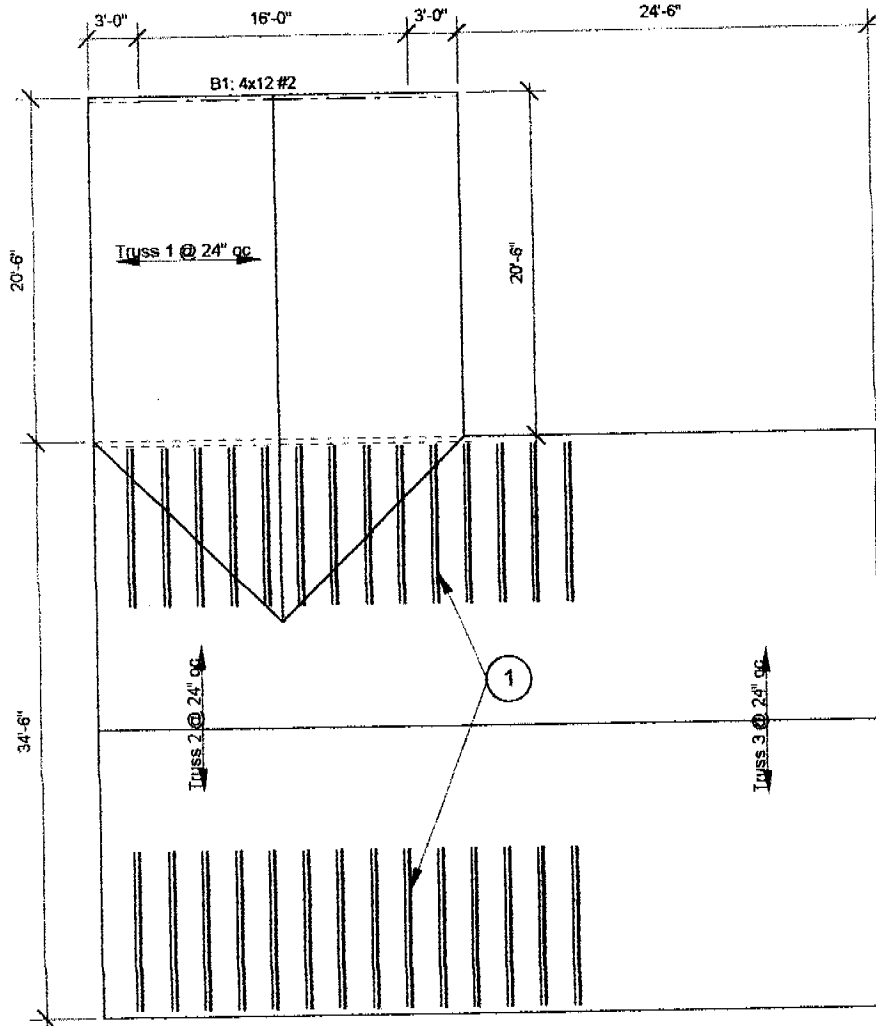
Date 9/19/01 Applicant Signature [Signature]

**WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.**

**THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.**

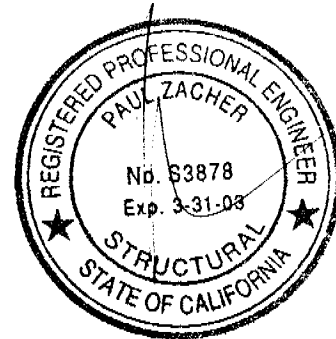


# 22 RAMBLE OAK CIRCLE



This set of plans and specifications must be kept in accordance with the provisions of the Building Code of the City of Sacramento, California, and it is unlawful to make any alterations or modifications to the same without the express written permission from the Building Inspector. The contractor shall be responsible for obtaining and specification sheets for all materials used and for obtaining and specification sheets for all materials used and for obtaining and specification sheets for all materials used.

*Julal* 9/16/01



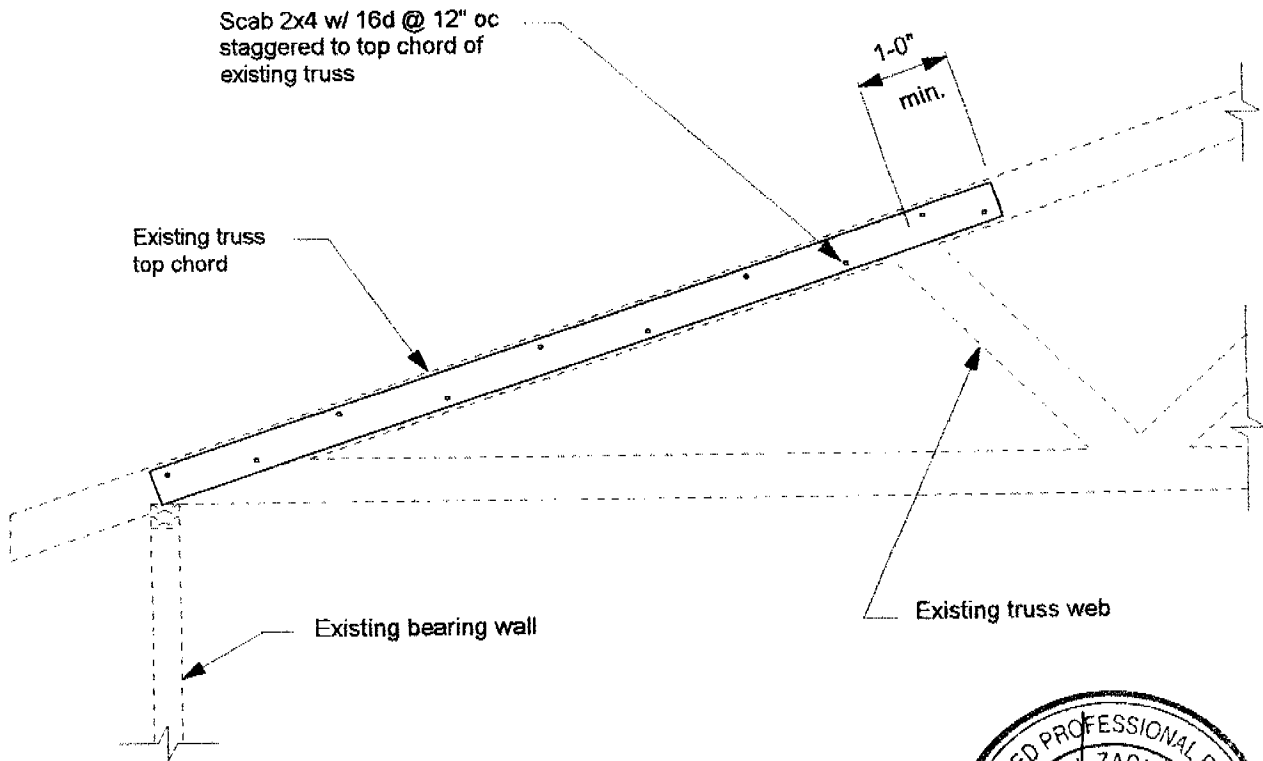
**FRAMING NOTES:**

1. Scab a 2x4 DF#2 x 11'-0" long rafter to the top chord of the existing truss #2 (total 28). See detail 2.

**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 7.0 psf.
- B. All structural wood members that were observed appear to be in sound condition and without structural defect.

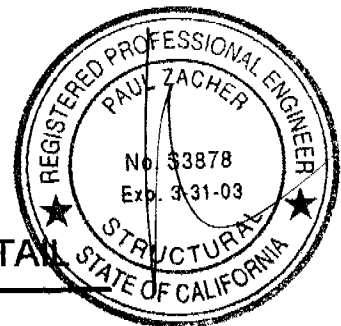
1 ROOF PLAN - HUANG - MEI  
Not to Scale 21



2

TRUSS REINFORCEMENT DETAIL

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



20

Huang-Mei



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

TEL: 916.961.3960  
FAX: 916.961.6552

September 1, 2001

Zimmerman Roofing  
3675 R Street  
Sacramento, CA 95816  
TEL: (916) 454-3667  
FAX: (916) 392-6853

Attn.: Mr. Jeff Tucker,

re: Job 2001\_244: HUANG / MEI

Subject: Structural Investigation Report of the Roof for the Residence located at 22 Rambleoak Circle, 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 31, 2001. 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 1500 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.

**CONCLUSIONS:**

Roof:  
The garage has sufficient structural capacity for the applied live and dead loads. The living area currently lacks sufficient structural capacity for the applied live and dead loads. See "Recommendations" for location and repair to bring the living area up to the required capacity.

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1/21

Huang-Mei



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.

Garage:

1. Scab a 2x4 DF#2 x 11'-0" long rafter to the top chord of the existing truss. See details 1 and 2.

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: TOP CHORD**

**MATERIAL**

**WEIGHT**

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>0.64</u>	psf
	Load	10.5 psf
Roof Pitch Adjustment	<u>0.57</u>	psf
Total Load	11.1	psf

**LOCATION: BOTTOM CHORD**

**MATERIAL**

**WEIGHT**

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

P.K. Zacher, S.E.

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

Job #: 01-244

Date: 8/31/01

LOADING

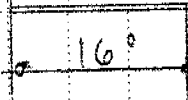
B1

$Q_p = 15.4 \text{ pcf} \cdot 4' = 62 \text{ pcf}$

$L_p = 14.0 \quad - \quad = 64'$

$4 \cdot 12 \cdot 2$

62/64



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

Job #  
 Date: 3:53PM, 31 AUG 01

Title :  
 Dsgnr:  
 Description :

Scope :

**Timber Beam & Joist**

c:\enercalc\test.ecw\Calculations

Rev: 510304  
 User: RW-0602844, Ver: 5.1.3, 22-Jun-1999, Win32  
 (c) 1983-99 ENERCALC

Description **BEAMS**

Calculations are designed to 1997 NDS and 1997 UBC Requirements

**Timber Member Information**

Timber Section		B1
Beam Width	in	4x12 3.500
Beam Depth	in	11.250
Le: Unbraced Length	ft	2.00
Timber Grade		Douglas Fir - Larch,
Fb - Basic Allow	psi	875.0
Fv - Basic Allow	psi	95.0
Elastic Modulus	ksi	1,600.0
Load Duration Factor		1.250
Member Type		Sawn
Repetitive Status		No

**Center Span Data**

Span	ft	16.00
Dead Load	#/ft	62.00
Live Load	#/ft	64.00

**Results**

Ratio = 0.5470

Mmax @ Center	in-k	48.38
@ X =	ft	8.00
f <sub>b</sub> : Actual	psi	655.4
F <sub>b</sub> : Allowable	psi	1,198.1
		Bending OK
f <sub>v</sub> : Actual	psi	34.1
F <sub>v</sub> : Allowable	psi	118.8
		Shear OK

**Reactions**

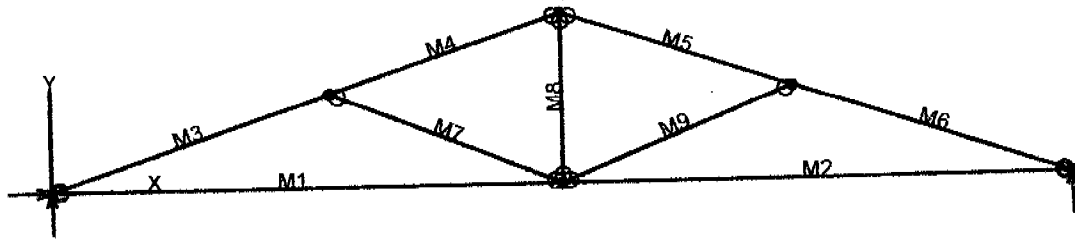
@ Left End	DL	lbs	496.00
	LL	lbs	512.00
	Max. DL+LL	lbs	1,008.00
@ Right End	DL	lbs	496.00
	LL	lbs	512.00
	Max. DL+LL	lbs	1,008.00

**Deflections**

Ratio OK

Center DL Defl	in	-0.138
L/Defl Ratio		1,395.5
Center LL Defl	in	-0.142
L/Defl Ratio		1,351.9
Center Total Defl	in	-0.280
Location	ft	8.000
L/Defl Ratio		686.7





# VisualAnalysis 3.50.c Report

08/31/01 15:41:51

Project: Truss 1

File: Untitled.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	"	Yes	"
N4	6.00	2.00	"	No	"
N5	16.00	2.00	"	"	"
N6	11.00	3.67	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	11.00
M2	"	"	11.00
M3	"	"	6.32
M4	"	"	5.27
M5	"	"	5.27
M6	"	"	6.32
M7	"	"	5.39
M8	"	"	3.67
M9	"	"	5.39

## Section Properties

Category	Section	Ax in <sup>2</sup>	Iz in <sup>4</sup>	Sy+ in <sup>3</sup>	Sy- in <sup>3</sup>
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
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	723.11	-NA-
N3	"	-NA-	723.11	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1638.91	-57.36	-110.71	-0.1481
"	1638.91	-25.83	41.5251	-0.2120
"	1638.91	5.7019	78.4291	-0.1937
"	<b>1638.91</b>	37.2353	0.0000	-0.0000
M2	1638.91	-37.24	-0.0000	-0.0000
"	1638.91	-5.7019	78.4291	-0.1937
"	1638.91	25.8314	41.5251	-0.2119
"	1638.91	57.3647	-110.71	-0.1481
M3	<b>-1771.70</b>	132.41	0.0000	-0.0000
"	-1735.57	24.0059	<b>164.30</b>	-0.1526
"	-1699.43	-84.39	100.65	-0.1827
"	-1663.30	<b>-192.79</b>	<b>-190.96</b>	-0.1436
M4	-1231.73	171.73	-190.96	-0.1436
"	-1201.56	81.3924	31.0247	-0.1673
"	-1171.39	-8.9409	94.6796	-0.1804
"	-1141.22	-99.27	-0.0000	-0.1457
M5	-1231.73	-171.73	-190.96	-0.1282
"	-1201.56	-81.39	31.0247	-0.1520
"	-1171.39	8.9409	94.6796	-0.1650
"	-1141.22	99.2743	0.0000	-0.1303
M6	-1771.70	-132.41	0.0000	<b>0.0153</b>
"	-1735.57	-24.01	164.30	-0.1373
"	-1699.43	84.3941	100.65	-0.1674
"	-1663.30	<b>192.79</b>	-190.96	-0.1283
M7	-565.47	-0.0000	-0.0000	-0.1285
"	-565.47	-0.0000	-0.0000	-0.1254
"	-565.47	-0.0000	-0.0000	-0.1222
"	-565.47	-0.0000	0.0000	-0.1191
M8	534.75	-0.0000	-0.0000	-0.0242
"	534.75	-0.0000	0.0000	-0.0242
"	534.75	-0.0000	-0.0000	-0.0242
"	534.75	-0.0000	-0.0000	-0.0242
M9	-565.47	0.0000	0.0000	-0.1465
"	-565.47	0.0000	0.0000	-0.1434
"	-565.47	0.0000	0.0000	-0.1402
"	-565.47	0.0000	0.0000	-0.1371

### BENDING & COMP: TRUSS 1 - MEMBER 3

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

#### Grading:

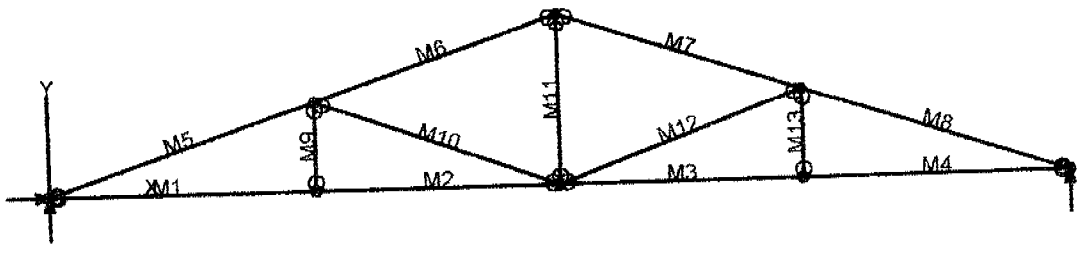
2x or 4x

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	6.32 feet
Max Axial Comp, C	1663 feet
Max Reaction, R	192 feet
Max Moment, M	190 feet
Max LL Deflection	0.07 feet
Max TL Deflection	0.14 feet
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 =	317 psi
Fce=	1275 psi
Fc*=	2084 psi
F'c=	1057 psi
fb=	744 psi
F'b=Fb*=	2156 psi
Shear D/C ratio	0.46 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.55 < 1.0, Member OK
Live Load defl ratio	0.22 < 1.0, Member OK
Total Load defl ratio	0.33 < 1.0, Member OK



# VisualAnalysis 3.50.c Report

08/31/01 15:45:50

Project: Truss 2

File: Untitled.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	9.00	0.00	No		No		"	
N3	25.50	0.00	"		"		"	
N4	17.25	0.00	"		"		"	
N5	34.50	0.00	"		Yes		"	
N6	9.00	3.00	"		No		"	
N7	25.50	3.00	"		"		"	
N8	17.25	5.75	"		"		"	

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.00
M2	"	"	8.25
M3	"	"	8.25
M4	"	"	9.00
M5	"	"	9.49
M6	"	"	8.70
M7	"	"	8.70
M8	"	"	9.49
M9	"	"	3.00
M10	"	"	8.78
M11	"	"	5.75
M12	"	"	8.78
M13	"	"	3.00

## Section Properties

Category	Section	Ax in <sup>2</sup>	Iz in <sup>4</sup>	Sy+ in <sup>3</sup>	Sy- in <sup>3</sup>
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
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	1133.87	-NA-
N5	"	-NA-	1133.87	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	2692.28	-42.37	-33.01	-0.3586
"	2692.28	-16.57	55.1985	-0.3286
"	2692.28	9.2320	66.2025	-0.2153
"	<b>2692.28</b>	35.0320	0.0000	-0.0000
M2	2692.28	-37.89	-52.94	-0.3746
"	2692.28	-14.24	18.5752	-0.3915
"	2692.28	9.4091	25.2190	-0.3893
"	2692.28	33.0591	-33.01	-0.3586
M3	2692.28	-33.06	-33.01	-0.3586
"	2692.28	-9.4091	25.2190	-0.3893
"	2692.28	14.2409	18.5752	-0.3914
"	2692.28	37.8909	-52.94	-0.3746
M4	2692.28	-35.03	0.0000	-0.0000
"	2692.28	-9.2320	66.2025	-0.2153
"	2692.28	16.5680	55.1985	-0.3286
"	2692.28	42.3680	-33.01	-0.3586
M5	<b>-2901.61</b>	191.08	0.0000	-0.0000
"	-2847.41	28.4783	<b>345.86</b>	-0.5919
"	-2793.21	-134.12	178.83	-0.6091
"	-2739.01	<b>-296.72</b>	<b>-501.11</b>	-0.3656
M6	-1896.25	281.20	-501.11	-0.3656
"	-1846.57	132.15	96.9054	-0.5540
"	-1796.88	-16.90	263.94	<b>-0.6434</b>
"	-1747.20	-165.95	0.0000	-0.3693
M7	-1896.25	-281.20	-501.11	-0.3261
"	-1846.57	-132.15	96.9054	-0.5146
"	-1796.88	16.9013	263.94	-0.6038
"	-1747.20	165.95	0.0000	-0.3298
M8	-2901.61	-191.08	0.0000	0.0395
"	-2847.41	-28.48	345.86	-0.5525
"	-2793.21	134.12	178.83	-0.5695
"	-2739.01	<b>296.72</b>	-501.11	-0.3261
M9	75.4271	-0.0000	-0.0000	0.0326
"	75.4271	-0.0000	-0.0000	0.0489
"	75.4271	-0.0000	-0.0000	0.0652
"	75.4271	-0.0000	0.0000	0.0815
M10	-1045.19	0.0000	0.0000	-0.3307
"	-1045.19	0.0000	0.0000	-0.3234
"	-1045.19	0.0000	0.0000	-0.3161
"	-1045.19	0.0000	0.0000	-0.3088
M11	790.16	0.0000	0.0000	-0.0624
"	790.16	0.0000	0.0000	-0.0624
"	790.16	0.0000	0.0000	-0.0624
"	790.16	0.0000	0.0000	-0.0624

* M12	-1045.19	-0.0000	0.0000	-0.3733
"	-1045.19	-0.0000	-0.0000	-0.3661
"	-1045.19	-0.0000	-0.0000	-0.3588
"	-1045.19	-0.0000	-0.0000	-0.3515
M13	75.4271	0.0000	0.0000	0.0434
"	75.4271	0.0000	0.0000	0.0597
"	75.4271	0.0000	0.0000	0.0760
"	75.4271	0.0000	0.0000	0.0923

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### BENDING & COMP: TRUSS 2 - MEMBER 5

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

#### Grading:

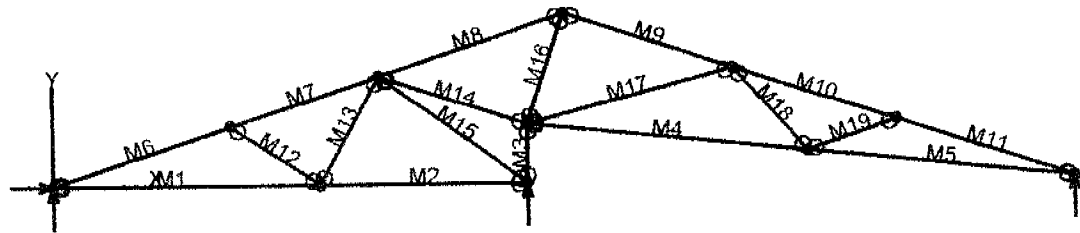
2x or 4x

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	3 inches	
Depth, d	3.5 inches	
Length	9.49 feet	
Max Axial Comp, C	2739 feet	
Max Reaction, R	296 feet	
Max Moment, M	501 feet	
Max LL Deflection	0.18 feet	
Max TL Deflection	0.36 feet	
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 =	1.26	
fc =	261 psi	
Fce=	608 psi	
Fc*=	2084 psi	
F'c=	565 psi	
fb=	982 psi	
F'b=Fb*=	2156 psi	
Shear D/C ratio	0.36 < 1.0, Member OK	
Interaction equation:		
(fc/F'c)^2 +		
fb/ (F'b(1-fc/Fce)) =	1.01 > 1.0, Member No Good.	OK, Only 1% over
Live Load defl ratio	0.38 < 1.0, Member OK	
Total Load defl ratio	0.57 < 1.0, Member OK	



# VisualAnalysis 3.50.c Report

08/31/01 15:51:46

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	9.00	0.00	No		No		"	
N3	16.00	0.00	"		Yes		"	
N4	16.00	2.00	"		No		"	
N5	25.50	0.97	"		"		"	
N6	34.50	0.00	"		Yes		"	
N7	6.00	2.00	"		No		"	
N8	28.50	2.00	"		"		"	
N9	11.00	3.67	"		"		"	
N10	17.25	5.75	"		"		"	
N11	23.00	3.83	"		"		"	

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.00
M2	"	"	7.00
M3	"	"	2.00
M4	"	"	9.56
M5	"	"	9.05
M6	"	"	6.32
M7	"	"	5.27
M8	"	"	6.59
M9	"	"	6.06
M10	"	"	5.80
M11	"	"	6.32
M12	"	"	3.61
M13	"	"	4.18
M14	"	"	5.27
M15	"	"	6.20
M16	"	"	3.95
M17	"	"	7.24
M18	"	"	3.80
M19	"	"	3.17

## Section Properties

Category	Section	Ax in <sup>2</sup>	Iz in <sup>4</sup>	Sy+ in <sup>3</sup>	Sy- in <sup>3</sup>
Wood Sha	SS2x4	5.25	5.36	3.06	3.06

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>

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	313.29	-NA-
N3	"	-NA-	1530.77	-NA-
N6	"	-NA-	424.61	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	416.14	-46.33	-68.70	-0.0132
"	416.14	-20.53	31.4074	-0.0647
"	416.14	5.2668	54.3069	-0.0732
"	416.14	31.0668	0.0000	-0.0000
M2	-87.56	-20.29	-0.0000	-0.0000
"	-87.56	-0.2192	23.8056	-0.0172
"	-87.56	19.8474	0.9060	-0.0137
"	-87.56	39.9141	-68.70	-0.0132
M3	-1574.76	0.0000	0.0000	-0.0042
"	-1574.76	0.0000	0.0000	0.0004
"	-1574.76	0.0000	0.0000	0.0049
"	-1574.76	0.0000	0.0000	0.0095
M4	263.89	-48.83	-76.24	-0.0922
"	266.84	-21.60	35.7000	-0.1346
"	269.78	5.6382	61.1122	-0.1218
"	272.72	32.8716	0.0000	-0.0052
M5	1116.22	-30.28	0.0000	0.0009
"	1119.01	-4.4783	52.2441	-0.0947
"	1121.80	21.3217	26.8319	-0.1112
"	1124.59	47.1217	-76.24	-0.0922
M6	-484.03	136.15	0.0000	-0.0000
"	-447.90	27.7473	172.19	-0.1202
"	-411.76	-80.65	116.42	-0.1113
"	-375.63	-189.05	-167.30	-0.0199
M7	-128.53	128.67	-167.30	-0.0199
"	-98.36	38.3394	-20.96	0.0068
"	-68.19	-51.99	-32.96	0.0137
"	-38.01	-142.33	-203.29	-0.0061
M8	1052.14	200.24	-203.29	-0.0061
"	1089.72	87.3208	111.78	-0.1147
"	1127.30	-25.60	179.54	-0.1396
"	1164.88	-138.51	-0.0000	-0.0192
M9	745.19	-185.26	-178.42	-0.0723
"	779.87	-81.37	90.4473	-0.1243

"	814.56	22.5101	149.92	-0.1194
"	849.25	126.39	0.0000	-0.0120
M10	-669.72	-147.17	-167.49	-0.0997
"	-636.66	-47.80	20.3771	-0.0932
"	-603.60	51.5678	16.7359	-0.0831
"	-570.54	150.93	-178.42	-0.0723
M11	-1218.59	-136.12	0.0000	0.0026
"	-1182.46	-27.72	172.12	-0.1450
"	-1146.32	80.6830	116.29	-0.1635
"	-1110.19	189.08	-167.49	-0.0997
M12	-402.61	-0.0000	0.0000	-0.0151
"	-402.61	-0.0000	-0.0000	-0.0128
"	-402.61	-0.0000	-0.0000	-0.0105
"	-402.61	-0.0000	-0.0000	-0.0082
M13	352.56	-0.0000	0.0000	-0.0108
"	352.56	-0.0000	-0.0000	-0.0077
"	352.56	-0.0000	-0.0000	-0.0046
"	352.56	-0.0000	-0.0000	-0.0015
M14	-1119.19	0.0000	0.0000	-0.0074
"	-1119.19	0.0000	0.0000	-0.0073
"	-1119.19	0.0000	0.0000	-0.0072
"	-1119.19	0.0000	0.0000	-0.0070
M15	108.62	0.0000	0.0000	-0.0070
"	108.62	0.0000	0.0000	-0.0038
"	108.62	0.0000	0.0000	-0.0007
"	108.62	0.0000	0.0000	0.0025
M16	-936.17	-0.0000	-0.0000	-0.0077
"	-936.17	-0.0000	-0.0000	0.0002
"	-936.17	-0.0000	-0.0000	0.0081
"	-936.17	-0.0000	0.0000	0.0160
M17	-1067.83	-0.0000	-0.0000	-0.0728
"	-1067.83	-0.0000	-0.0000	-0.0491
"	-1067.83	-0.0000	-0.0000	-0.0254
"	-1067.83	-0.0000	0.0000	-0.0017
M18	488.06	0.0000	0.0000	-0.0716
"	488.06	0.0000	0.0000	-0.0648
"	488.06	0.0000	0.0000	-0.0579
"	488.06	0.0000	0.0000	-0.0510
M19	-553.86	-0.0000	-0.0000	-0.0900
"	-553.86	-0.0000	-0.0000	-0.0870
"	-553.86	-0.0000	-0.0000	-0.0841
"	-553.86	-0.0000	0.0000	-0.0812

