

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0109880

Insp Area: 2

Thos Bros:

Sub-Type: RES

Housing (Y/N): N

Site Address: 383 CAMELIA RIVER WY SAC

Parcel No: 031-0390-055

CONTRACTOR

ZIMMERMAN ROOFING, INC
3675 R STREET
SACRAMENTO, CA 95816

OWNER

BRIAN MASS
383 CAMELIA RIVER WY
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: TEAR OFF REROOF W PIONEER TILE 4:12 PITCH 34SQ

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. 3997, Civ. Code)

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 8-3-01 Contractor Signature Alma Gonzalez

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 & P. for this reason _____

Date _____ Owner Signature _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city, 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 improvement and that the 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 8-3-01 Applicant Agent Signature Alma Gonzalez

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

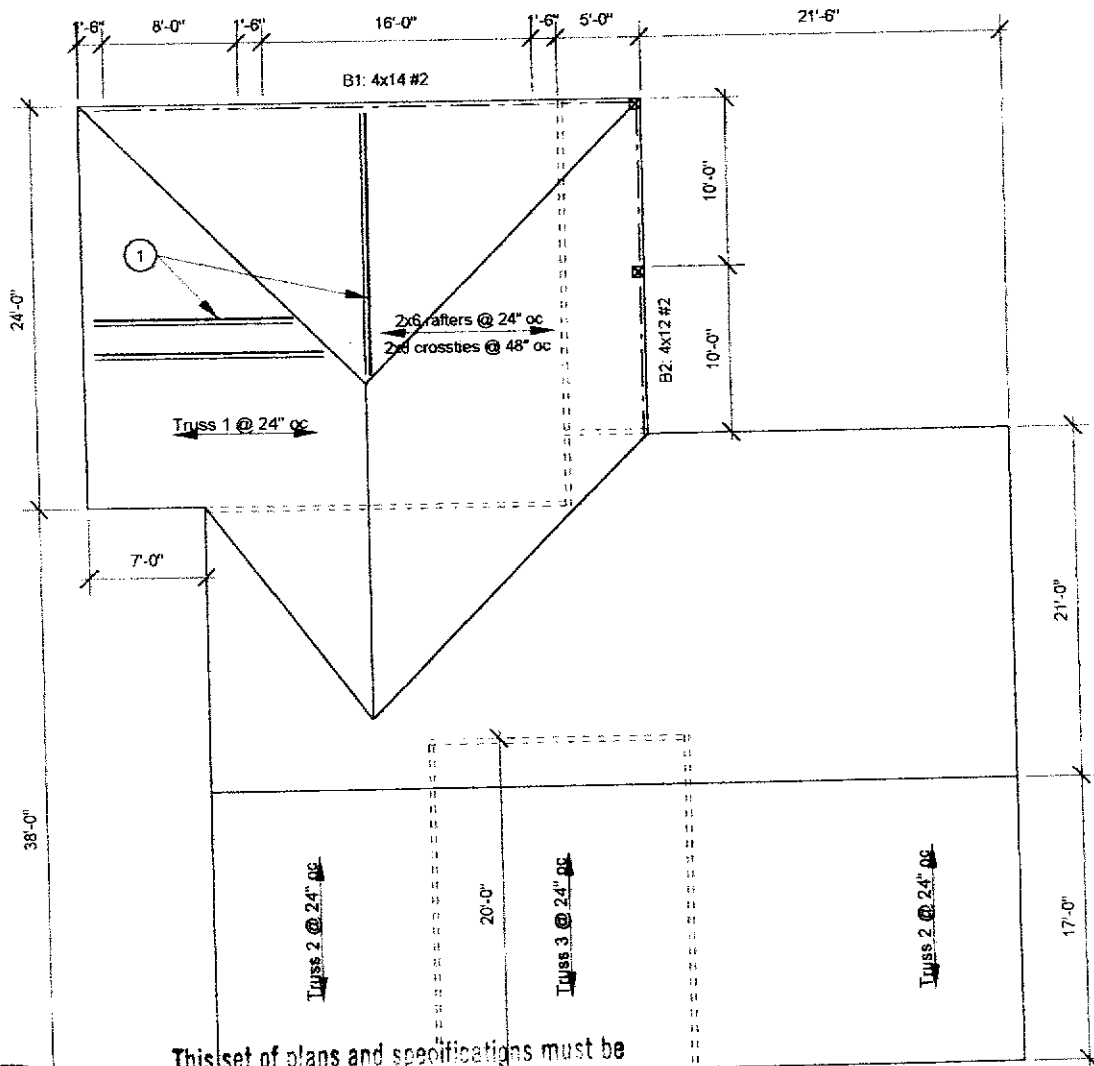
Carrier STATE FUND Policy Number 713-00-2021 Exp Date 10/01/2001

(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 forthwith comply with those provisions.

Date 8-3-01 Applicant Signature Alma Gonzalez

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.

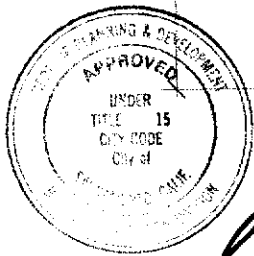
THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.



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.

Paul Zacher 06/3/01



FRAMING NOTES:

1. Scab a 2x8 to existing 2x6 rafters where the span is greater than 12'-0" (total 2). Scab a 2x6 to existing 2x8 rafter where the span is greater than 15'-0" (total 1).

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 - MAAS

Not to Scale

Maas

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

TEL: 916.961.3960
FAX: 916.961.6552



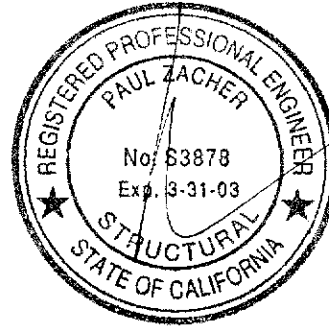
July 24, 2001

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

Attn.: Mr. Jeff Tucker,

re: Job 2001_179: MAAS

Subject: Structural Investigation Report of the Roof for the Residence located at 383 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 July 24, 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 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 area is conventionally framed with pre-engineered wood trusses spaced at 24" on center. The garage area is framed with 2x6 and 2x8 rafters spaced at 24" on center and with pre-engineered wood trusses spaced at 24" on center.

CONCLUSIONS:

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

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1/22

Maas



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 2x6 rafter to the existing 2x8 rafters with 16d's @ 12" on center where the span is greater than 15'-0". See detail 1. Scab a 2x8 rafter to the existing 2x6 rafters with 16d's @ 12" on center where the span is greater than 12'-0". See detail 1.

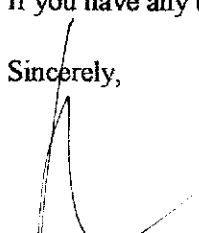
It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and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

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

Title :
 Dsgnr:
 Description :

Job #
 Date: 3:40PM, 24 JUL 01

Scope :

Rev. 510304
 User: KW-0602844, Ver 5.1.3, 22-Jun-1999, Win32
 (c) 1993-99 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

Timber Section		rafter 2x6	rafter 2-2x6	rafter 2x6 +2x8	B1 4x14	B2 4x12
Beam Width	in	1.500	3.000	3.000	3.500	3.500
Beam Depth	in	5.500	5.500	6.500	13.250	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	875.0	875.0	875.0
Fv - Basic Allow	psi	95.0	95.0	95.0	95.0	95.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0	1,600.0	1,600.0
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

	ft	12.00	15.00	17.75	16.00	10.00
Span	ft					
Dead Load	#/ft	24.40	24.40	24.40	110.00	37.00
Live Load	#/ft	32.00	32.00	32.00	144.00	48.00

Results

Ratio = 0.9852 0.7697 0.7716 0.8708 0.1435

Mmax @ Center	in-k	12.18	19.03	26.65	97.54	12.75
@ X =	ft	6.00	7.50	8.87	8.00	5.00
f _b : Actual	psi	1,610.9	1,258.5	1,261.7	952.4	172.7
F _b : Allowable	psi	1,635.2	1,635.2	1,635.2	1,093.8	1,203.1
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
f _v : Actual	psi	57.1	36.3	36.3	56.8	13.2
F _v : Allowable	psi	118.8	118.8	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

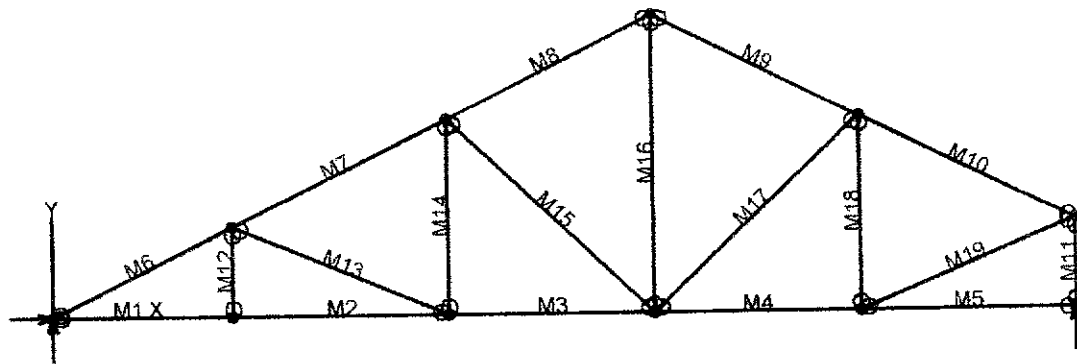
Reactions

@ Left End	DL	lbs	146.40	183.00	216.55	880.00	185.00
	LL	lbs	192.00	240.00	284.00	1,152.00	240.00
	Max. DL+LL	lbs	338.40	423.00	500.55	2,032.00	425.00
@ Right End	DL	lbs	146.40	183.00	216.55	880.00	185.00
	LL	lbs	192.00	240.00	284.00	1,152.00	240.00
	Max. DL+LL	lbs	338.40	423.00	500.55	2,032.00	425.00

Deflections

Ratio OK Deflection OK Deflection OK Deflection OK Deflection OK

Center DL Defl	in	-0.342	-0.418	-0.496	-0.149	-0.013
L/Defl Ratio		420.9	431.0	429.4	1,285.0	9,578.0
Center LL Defl	in	-0.449	-0.548	-0.651	-0.196	-0.016
L/Defl Ratio		320.9	328.7	327.4	981.6	7,383.0
Center Total Defl	in	-0.791	-0.965	-1.147	-0.345	-0.029
Location	ft	6.000	7.500	8.875	8.000	5.000
L/Defl Ratio		182.1	186.5	185.8	556.5	4,169.2



VisualAnalysis 3.50.c Report

07/24/01 15:47:12

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	5.00	0.00	No		No			
N3	11.00	0.00	"		"		"	
N4	16.75	0.00	"		"		"	
N5	22.50	0.00	"		"		"	
N6	28.50	0.00	"		Yes		"	
N7	5.00	2.50	"		No		"	
N8	28.50	2.50	"		"		"	
N9	11.00	5.50	"		"		"	
N10	22.50	5.50	"		"		"	
N11	16.75	8.38	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	5.00
M2	"	"	6.00
M3	"	"	5.75
M4	"	"	5.75
M5	"	"	6.00
M6	"	"	5.59
M7	"	"	6.71
M8	"	"	6.43
M9	"	"	6.43
M10	"	"	6.71
M11	"	"	2.50
M12	"	"	2.50
M13	"	"	6.50
M14	"	"	5.50
M15	"	"	7.96
M16	"	"	8.38
M17	"	"	7.96
M18	"	"	5.50
M19	"	"	6.50

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
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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	1008.37	-NA-
N6	"	-NA-	1008.37	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1725.66	-21.51	-0.0542	-0.1029
"	1725.66	-7.1775	23.7930	-0.0801
"	1725.66	7.1558	23.8111	-0.0458
"	1725.66	21.4892	0.0000	-0.0000
M2	1725.66	-29.85	-24.37	-0.1152
"	1725.66	-12.65	18.0480	-0.1247
"	1725.66	4.5471	26.1539	-0.1226
"	1725.66	21.7471	-0.0542	-0.1029
M3	1283.04	-24.09	-20.73	-0.0942
"	1283.04	-7.6089	9.5676	-0.1058
"	1283.04	8.8744	8.3549	-0.1125
"	1283.04	25.3577	-24.37	-0.1152
M4	920.46	-25.51	-25.22	-0.0630
"	920.46	-9.0226	7.7867	-0.0774
"	920.46	7.4607	9.2835	-0.0881
"	920.46	23.9441	-20.73	-0.0942
M5	0.0000	-21.60	0.0000	-0.0000
"	0.0000	-4.3960	25.9059	-0.0364
"	0.0000	12.8040	17.4979	-0.0553
"	0.0000	30.0040	-25.22	-0.0630
M6	-1984.82	110.95	0.0000	-0.0000
"	-1938.49	18.2857	119.98	-0.0940
"	-1892.16	-74.38	67.7152	-0.1186
"	-1845.82	-167.05	-156.79	-0.1076
M7	-1513.06	157.17	-156.79	-0.1076
"	-1457.46	45.9668	69.6979	-0.1496
"	-1401.86	-65.23	48.1575	-0.1447
"	-1346.26	-176.43	-221.41	-0.1132
M8	-1029.52	194.29	-221.41	-0.1132
"	-976.23	87.7245	80.1826	-0.1773
"	-922.95	-18.84	153.99	-0.1877
"	-869.67	-125.41	0.0000	-0.0805
M9	-1032.58	-200.42	-260.82	-0.0558
"	-979.30	-93.86	53.9075	-0.1188
"	-926.01	12.7114	140.85	-0.1508

"	-872.73	119.28	0.0000	-0.0767
M10	-1093.06	-127.92	0.0000	0.0092
"	-1037.46	-16.72	161.09	-0.1184
"	-981.86	94.4814	74.1460	-0.1127
"	-926.26	205.68	-260.82	-0.0558
M11	-986.77	0.0000	0.0000	0.0271
"	-986.77	0.0000	0.0000	0.0323
"	-986.77	0.0000	0.0000	0.0374
"	-986.77	0.0000	0.0000	0.0426
M12	43.2579	0.0000	0.0000	0.0116
"	43.2579	0.0000	0.0000	0.0195
"	43.2579	0.0000	0.0000	0.0274
"	43.2579	0.0000	0.0000	0.0353
M13	-479.51	0.0000	0.0000	-0.0965
"	-479.51	0.0000	0.0000	-0.0914
"	-479.51	0.0000	0.0000	-0.0863
"	-479.51	0.0000	0.0000	-0.0813
M14	239.64	0.0000	0.0000	-0.0262
"	239.64	0.0000	0.0000	-0.0260
"	239.64	0.0000	0.0000	-0.0258
"	239.64	0.0000	0.0000	-0.0255
M15	-621.47	-0.0000	0.0000	-0.0639
"	-621.47	-0.0000	-0.0000	-0.0571
"	-621.47	-0.0000	-0.0000	-0.0503
"	-621.47	-0.0000	-0.0000	-0.0435
M16	560.37	-0.0000	0.0000	-0.0354
"	560.37	-0.0000	-0.0000	-0.0250
"	560.37	-0.0000	-0.0000	-0.0146
"	560.37	-0.0000	-0.0000	-0.0042
M17	-119.73	-0.0000	0.0000	-0.0925
"	-119.73	-0.0000	-0.0000	-0.0789
"	-119.73	-0.0000	-0.0000	-0.0653
"	-119.73	-0.0000	-0.0000	-0.0516
M18	-328.02	0.0000	0.0000	0.0062
"	-328.02	0.0000	0.0000	0.0183
"	-328.02	0.0000	0.0000	0.0304
"	-328.02	0.0000	0.0000	0.0426
M19	997.17	-0.0000	0.0000	-0.0746
"	997.17	-0.0000	-0.0000	-0.0542
"	997.17	-0.0000	-0.0000	-0.0338
"	997.17	-0.0000	-0.0000	-0.0135

BENDING & COMP: TRUSS 1 - MEMBER 10

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

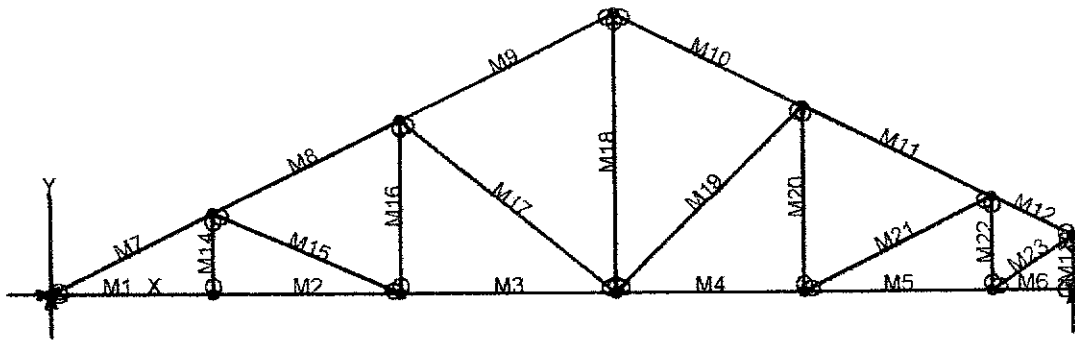
Grading:

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	6.71 feet
Max Axial Comp, C	926 feet
Max Reaction, R	205 feet
Max Moment, M	260 feet
Max LL Deflection	0.02 feet
Max TL Deflection	0.05 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 =	1.18
fc =	176 psi
Fce=	1142 psi
Fc*=	2084 psi
F'c=	972 psi
fb=	1019 psi
F*b=Fb*=	2156 psi
Shear D/C ratio	0.49 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F*b(1-fc/Fce)) =	0.59 < 1.0, Member OK
Live Load defl ratio	0.06 < 1.0, Member OK
Total Load defl ratio	0.11 < 1.0, Member OK



VisualAnalysis 3.50.c Report

07/24/01 15:52:32

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	6.00	0.00	No	No	"
N3	13.00	0.00	"	"	"
N4	21.00	0.00	"	"	"
N5	28.00	0.00	"	"	"
N6	35.00	0.00	"	"	"
N7	38.00	0.00	"	Yes	"
N8	6.00	3.00	"	No	"
N9	13.00	6.50	"	"	"
N10	21.00	10.50	"	"	"
N11	28.00	7.00	"	"	"
N12	35.00	3.50	"	"	"
N13	38.00	2.00	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	6.00
M2	"	"	7.00
M3	"	"	8.00
M4	"	"	7.00
M5	"	"	7.00
M6	"	"	3.00
M7	"	"	6.71
M8	"	"	7.83
M9	"	"	8.94
M10	"	"	7.83
M11	"	"	7.83
M12	"	"	3.35
M13	"	"	2.00
M14	"	"	3.00
M15	"	"	7.62
M16	"	"	6.50
M17	"	"	10.31
M18	"	"	10.50
M19	"	"	9.90
M20	"	"	7.00
M21	"	"	7.83
M22	"	"	3.50
M23	"	"	3.61

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
N1	Equation Case 1	-0.00	1344.49	-NA-
N7	"	-NA-	1344.49	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	2334.15	-26.76	-5.7748	-0.1760
"	2334.15	-9.5625	30.4641	-0.1388
"	2334.15	7.6375	32.3891	-0.0806
"	2334.15	24.8375	0.0000	-0.0000
M2	2334.15	-34.98	-39.97	-0.2105
"	2334.15	-14.92	18.1358	-0.2177
"	2334.15	5.1488	29.5331	-0.2101
"	2334.15	25.2155	-5.7748	-0.1760
M3	1834.76	-34.57	-41.29	-0.1821
"	1834.76	-11.63	20.1557	-0.2122
"	1834.76	11.3016	20.5959	-0.2219
"	1834.76	34.2349	-39.97	-0.2105
M4	1466.98	-28.48	-29.92	-0.1416
"	1466.98	-8.4090	12.9985	-0.1632
"	1466.98	11.6577	9.2082	-0.1754
"	1466.98	31.7244	-41.29	-0.1821
M5	1113.48	-28.68	-19.94	-0.0549
"	1113.48	-8.6086	23.4374	-0.1029
"	1113.48	11.4580	20.1130	-0.1306
"	1113.48	31.5247	-29.92	-0.1416
M6	0.0000	-6.2522	0.0000	-0.0000
"	0.0000	2.3478	1.9307	-0.0181
"	0.0000	10.9478	-4.7172	-0.0360
"	0.0000	19.5478	-19.94	-0.0549
M7	-2677.89	136.47	0.0000	-0.0000
"	-2622.29	25.2711	180.21	-0.1916
"	-2566.69	-85.93	112.39	-0.2320
"	-2511.09	-197.13	-203.45	-0.1848
M8	-2136.90	171.14	-203.45	-0.1848

"	-2072.03	41.4062	72.9404	-0.2256
"	-2007.16	-88.33	11.7380	-0.2079
"	-1942.30	-218.06	-387.06	-0.2102
M9	-1482.19	265.67	-387.06	-0.2102
"	-1408.06	117.41	182.90	-0.5133
"	-1333.92	-30.86	311.92	-0.5685
"	-1259.79	-179.13	0.0000	-0.1597
M10	-1467.87	-237.04	-332.16	-0.1212
"	-1403.01	-107.31	116.16	-0.2911
"	-1338.14	22.4253	226.88	-0.3462
"	-1273.27	152.16	0.0000	-0.1449
M11	-1726.57	-172.88	-162.21	-0.0353
"	-1661.71	-43.15	118.74	-0.1573
"	-1596.84	86.5822	62.0893	-0.1616
"	-1531.97	216.32	-332.16	-0.1212
M12	-1262.43	-35.04	0.0000	0.0229
"	-1234.63	20.5603	7.9388	0.0071
"	-1206.83	76.1603	-46.13	-0.0081
"	-1179.03	131.76	-162.21	-0.0353
M13	-1338.24	0.0000	0.0000	0.0584
"	-1338.24	0.0000	0.0000	0.0672
"	-1338.24	0.0000	0.0000	0.0760
"	-1338.24	0.0000	0.0000	0.0848
M14	51.9779	-0.0000	-0.0000	0.0188
"	51.9779	-0.0000	-0.0000	0.0331
"	51.9779	-0.0000	-0.0000	0.0474
"	51.9779	-0.0000	0.0000	0.0617
M15	-543.31	0.0000	0.0000	-0.1774
"	-543.31	0.0000	0.0000	-0.1640
"	-543.31	0.0000	0.0000	-0.1507
"	-543.31	0.0000	0.0000	-0.1373
M16	283.24	0.0000	0.0000	-0.0539
"	283.24	0.0000	0.0000	-0.0495
"	283.24	0.0000	0.0000	-0.0452
"	283.24	0.0000	0.0000	-0.0408
M17	-808.99	0.0000	0.0000	-0.1275
"	-808.99	0.0000	0.0000	-0.1194
"	-808.99	0.0000	0.0000	-0.1113
"	-808.99	0.0000	0.0000	-0.1031
M18	836.51	0.0000	0.0000	-0.0605
"	836.51	0.0000	0.0000	-0.0459
"	836.51	0.0000	0.0000	-0.0312
"	836.51	0.0000	0.0000	-0.0165
M19	-367.81	0.0000	0.0000	-0.1715
"	-367.81	0.0000	0.0000	-0.1513
"	-367.81	0.0000	0.0000	-0.1311
"	-367.81	0.0000	0.0000	-0.1109
M20	-116.75	0.0000	0.0000	0.0142
"	-116.75	0.0000	0.0000	0.0343
"	-116.75	0.0000	0.0000	0.0543
"	-116.75	0.0000	0.0000	0.0743
M21	395.22	0.0000	0.0000	-0.1599
"	395.22	0.0000	0.0000	-0.1295
"	395.22	0.0000	0.0000	-0.0991
"	395.22	0.0000	0.0000	-0.0687
M22	-694.10	0.0000	0.0000	0.0373
"	-694.10	0.0000	0.0000	0.0531
"	-694.10	0.0000	0.0000	0.0690
"	-694.10	0.0000	0.0000	0.0848
M23	1338.24	-0.0000	0.0000	-0.0927
"	1338.24	-0.0000	-0.0000	-0.0736
"	1338.24	-0.0000	-0.0000	-0.0545
"	1338.24	-0.0000	-0.0000	-0.0354

BENDING & COMP: TRUSS 2 - MEMBER 7

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

Grading:

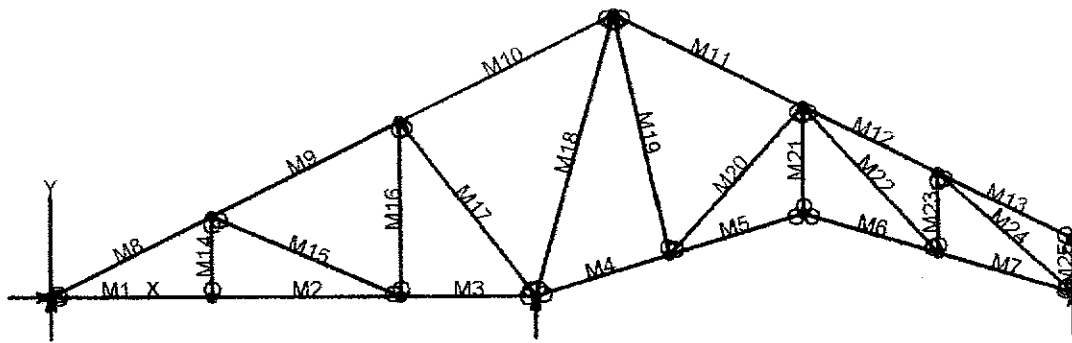
2x or 4x

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	3.5 inches
Length	6.71 feet
Max Axial Comp, C	2511 feet
Max Reaction, R	197 feet
Max Moment, M	203 feet
Max LL Deflection	0.09 feet
Max TL Deflection	0.18 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 =	1.18
fc =	478 psi
Fce=	1142 psi
Fc*=	2084 psi
F'c=	972 psi
fb=	795 psi
F'b=Fb*=	2156 psi
Shear D/C ratio	0.47 < 1.0, Member OK
Interaction equation: (fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.88 < 1.0, Member OK
Live Load defl ratio	0.27 < 1.0, Member OK
Total Load defl ratio	0.40 < 1.0, Member OK



VisualAnalysis 3.50.c Report

07/24/01 15:57:57

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	6.00	0.00	No		No		"	
N3	13.00	0.00	"		"		"	
N4	18.00	0.00	"		Yes		"	
N5	23.00	1.50	"		No		"	
N6	28.00	3.00	"		"		"	
N7	33.00	1.50	"		"		"	
N8	38.00	0.00	"		Yes		"	
N9	6.00	3.00	"		No		"	
N10	13.00	6.50	"		"		"	
N11	21.00	10.50	"		"		"	
N12	28.00	7.00	"		"		"	
N13	33.00	4.50	"		"		"	
N14	38.00	2.00	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	6.00
M2	"	"	7.00
M3	"	"	5.00
M4	"	"	5.22
M5	"	"	5.22
M6	"	"	5.22
M7	"	"	5.22
M8	"	"	6.71
M9	"	"	7.83
M10	"	"	8.94
M11	"	"	7.83
M12	"	"	5.59
M13	"	"	5.59
M14	"	"	3.00
M15	"	"	7.62
M16	"	"	6.50
M17	"	"	8.20
M18	"	"	10.92
M19	"	"	9.22
M20	"	"	7.43
M21	"	"	4.00
M22	"	"	7.43
M23	"	"	3.00
M24	"	"	6.73
M25	"	"	2.00

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
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Wood Sha SS2x4	5.25	5.36	3.06	3.06
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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	340.62	-NA-
N4	"	-NA-	1911.14	-NA-
N8	"	-NA-	444.80	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	341.16	-31.02	-31.29	-0.0235
"	341.16	-13.82	13.4538	-0.0264
"	341.16	3.3849	23.8839	-0.0212
"	341.16	20.5849	0.0000	-0.0000
M2	341.16	-30.09	-31.21	-0.0133
"	341.16	-10.02	15.4676	-0.0287
"	341.16	10.0446	15.4412	-0.0321
"	341.16	30.1113	-31.29	-0.0235
M3	-173.18	-15.26	-0.0000	-0.0000
"	-173.18	-0.9244	13.4254	-0.0086
"	-173.18	13.4089	3.0217	-0.0113
"	-173.18	27.7422	-31.21	-0.0133
M4	-302.21	17.1279	0.0000	-0.0014
"	-297.91	2.7946	17.2707	-0.0190
"	-293.61	-11.54	9.6630	-0.0280
"	-289.31	-25.87	-22.82	-0.0325
M5	296.78	25.8721	-22.82	-0.0325
"	301.08	11.5388	9.6630	-0.0427
"	305.38	-2.7946	17.2707	-0.0485
"	309.68	-17.13	0.0000	-0.0456
M6	297.06	-24.94	-17.96	-0.0299
"	301.36	-10.61	12.9042	-0.0392
"	305.66	3.7259	18.8913	-0.0421
"	309.96	18.0592	0.0000	-0.0355
M7	505.34	-18.06	0.0000	0.0104
"	509.64	-3.7259	18.8913	-0.0116

"	513.94	10.6074	12.9042	-0.0239
"	518.24	24.9408	-17.96	-0.0299
M8	-448.27	133.68	0.0000	-0.0000
"	-392.67	22.4774	173.96	-0.1302
"	-337.07	-88.72	99.9001	-0.1151
"	-281.47	-199.92	-222.19	-0.0243
M9	107.33	172.58	-222.19	-0.0243
"	172.19	42.8506	57.9675	-0.0347
"	237.06	-86.88	0.5332	-0.0060
"	301.93	-216.62	-394.50	-0.0116
M10	568.70	266.51	-394.50	-0.0116
"	642.84	118.24	177.94	-0.3305
"	716.97	-30.03	309.44	-0.4099
"	791.10	-178.29	-0.0000	-0.0296
M11	100.38	-229.86	-275.92	-0.0310
"	165.25	-100.12	153.65	-0.2269
"	230.11	29.6114	245.62	-0.2598
"	294.98	159.34	0.0000	-0.0121
M12	-602.07	-110.21	-114.99	-0.0295
"	-555.74	-17.55	3.6104	-0.0115
"	-509.41	75.1207	-50.03	-0.0003
"	-463.07	167.79	-275.92	-0.0310
M13	-59.21	-118.43	-0.0000	0.0126
"	-12.88	-25.76	133.91	-0.0718
"	33.4517	66.9034	95.5825	-0.0775
"	79.7850	159.57	-114.99	-0.0295
M14	61.1264	-0.0000	-0.0000	0.0028
"	61.1264	-0.0000	-0.0000	0.0045
"	61.1264	-0.0000	-0.0000	0.0062
"	61.1264	-0.0000	0.0000	0.0079
M15	-559.59	0.0000	0.0000	-0.0182
"	-559.59	0.0000	0.0000	-0.0154
"	-559.59	0.0000	0.0000	-0.0127
"	-559.59	0.0000	0.0000	-0.0099
M16	278.26	-0.0000	0.0000	-0.0060
"	278.26	-0.0000	-0.0000	-0.0054
"	278.26	-0.0000	-0.0000	-0.0048
"	278.26	-0.0000	-0.0000	-0.0042
M17	-745.72	0.0000	0.0000	-0.0033
"	-745.72	0.0000	0.0000	-0.0009
"	-745.72	0.0000	0.0000	0.0014
"	-745.72	0.0000	0.0000	0.0038
M18	-1249.64	-0.0000	-0.0000	-0.0252
"	-1249.64	-0.0000	-0.0000	-0.0183
"	-1249.64	-0.0000	-0.0000	-0.0115
"	-1249.64	-0.0000	0.0000	-0.0046
M19	423.95	0.0000	0.0000	0.0049
"	423.95	0.0000	0.0000	0.0079
"	423.95	0.0000	0.0000	0.0110
"	423.95	0.0000	0.0000	0.0140
M20	-719.93	-0.0000	-0.0000	-0.0372
"	-719.93	-0.0000	-0.0000	-0.0345
"	-719.93	-0.0000	-0.0000	-0.0318
"	-719.93	-0.0000	0.0000	-0.0291
M21	211.76	0.0000	0.0000	0.0129
"	211.76	0.0000	0.0000	0.0144
"	211.76	0.0000	0.0000	0.0160
"	211.76	0.0000	0.0000	0.0175
M22	293.63	0.0000	0.0000	-0.0181
"	293.63	0.0000	0.0000	-0.0153
"	293.63	0.0000	0.0000	-0.0125
"	293.63	0.0000	0.0000	-0.0096
M23	-105.94	0.0000	0.0000	-0.0212
"	-105.94	0.0000	0.0000	-0.0174
"	-105.94	0.0000	0.0000	-0.0137
"	-105.94	0.0000	0.0000	-0.0100
M24	-658.18	0.0000	0.0000	-0.0216
"	-658.18	0.0000	0.0000	-0.0063
"	-658.18	0.0000	0.0000	0.0090

"	-658.18	0.0000	0.0000	0.0242
M25	-132.41	0.0000	0.0000	-0.0362
"	-132.41	0.0000	0.0000	-0.0338
"	-132.41	0.0000	0.0000	-0.0313
"	-132.41	0.0000	0.0000	-0.0289

BENDING & COMP: TRUSS 3 - MEMBER 10

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	8.94 feet
Max Axial Comp, C	568 feet
Max Reaction, R	266 feet
Max Moment, M	394 feet
Max LL Deflection	0.01 feet
Max TL Deflection	0.01 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 =	1.25
fc =	108 psi
Fce =	676 psi
Fc* =	2084 psi
F'c =	623 psi
fb =	1544 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.64 < 1.0, Member OK
Interaction equation: (fc/F'c)^2 +	
fb/(F'b(1-fc/Fce)) =	0.88 < 1.0, Member OK
Live Load defl ratio	0.02 < 1.0, Member OK
Total Load defl ratio	0.02 < 1.0, Member OK