CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0113651
Insp Area: 4
Thos Bros: 277 B5

Site Address: 2031 LAS COCHES WY SAC
Parcel No: 225-0621-006

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

CONTRACTOR

OWNER
FOLSOM CLYDE W/KAZUE H
2031 LAS COCHES WY
SACRAMENTO CA 95833

ARCHITECT

Nature of Work: TEAR OFF & REROOF 32 SQS WITH LIGHT WEIGHT 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'sAddress_____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class_____ License Number Date_____ Contractor 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.)

→ [signature] 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:_____

Y Date 10-22-01 Owner Signature [signature]

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

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

Y Date 10-22-01 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 Policy Number Exp Date

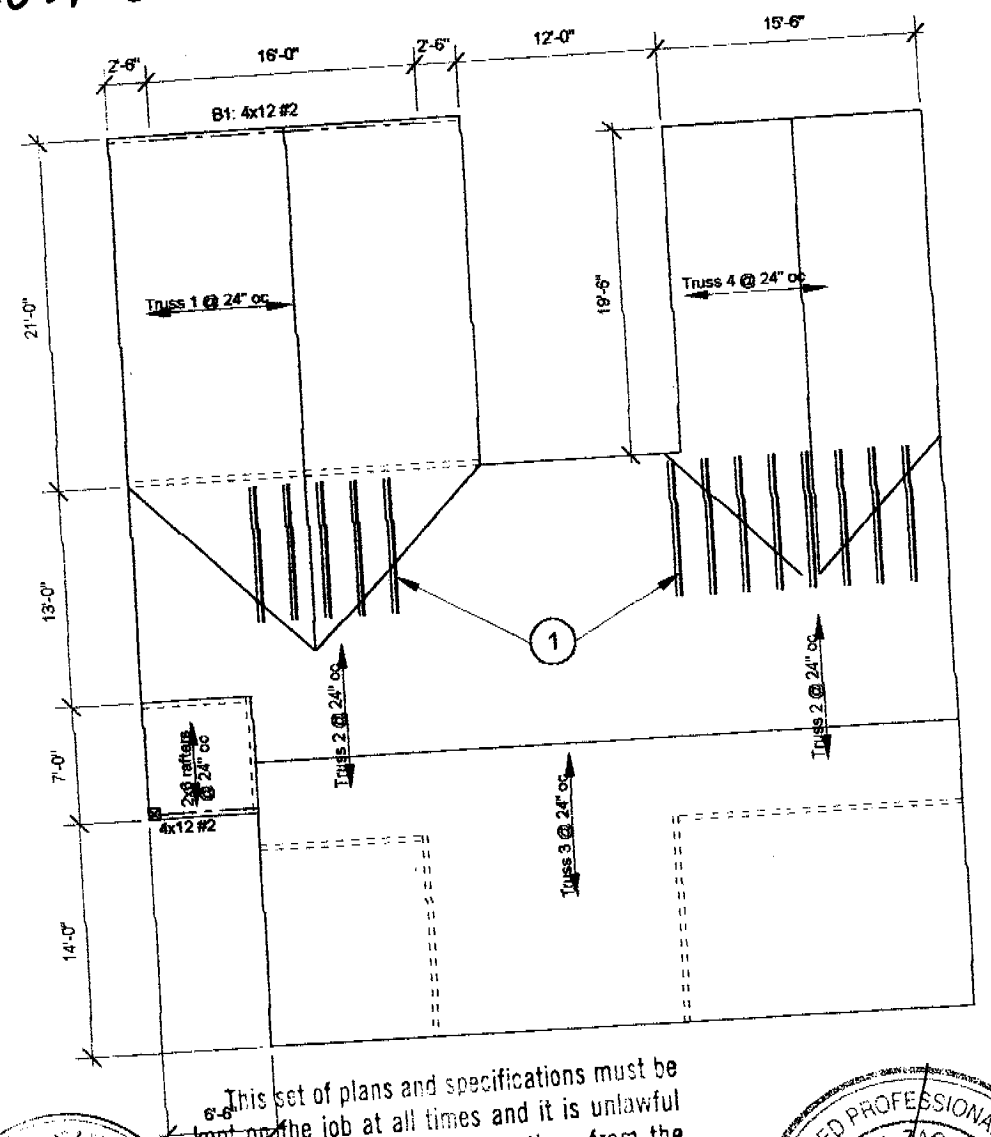
→ [signature] (This section need not be completed if the permit is for $100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Y Date 10-22-01 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.

2031 LAS COCHES WAY



ISSUED
OCT 2 8 2001
Sacramento Building Division

Kathy z

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.

APPROVED
UNDER TITLE 15 CITY CODE
City of SACRAMENTO, CALIF.
BUILDING INSPECTION DIVISION

REGISTERED PROFESSIONAL ENGINEER
PAUL ZACHER
No. S3878
Exp. 3-31-03
STRUCTURAL
STATE OF CALIFORNIA

10/22/01

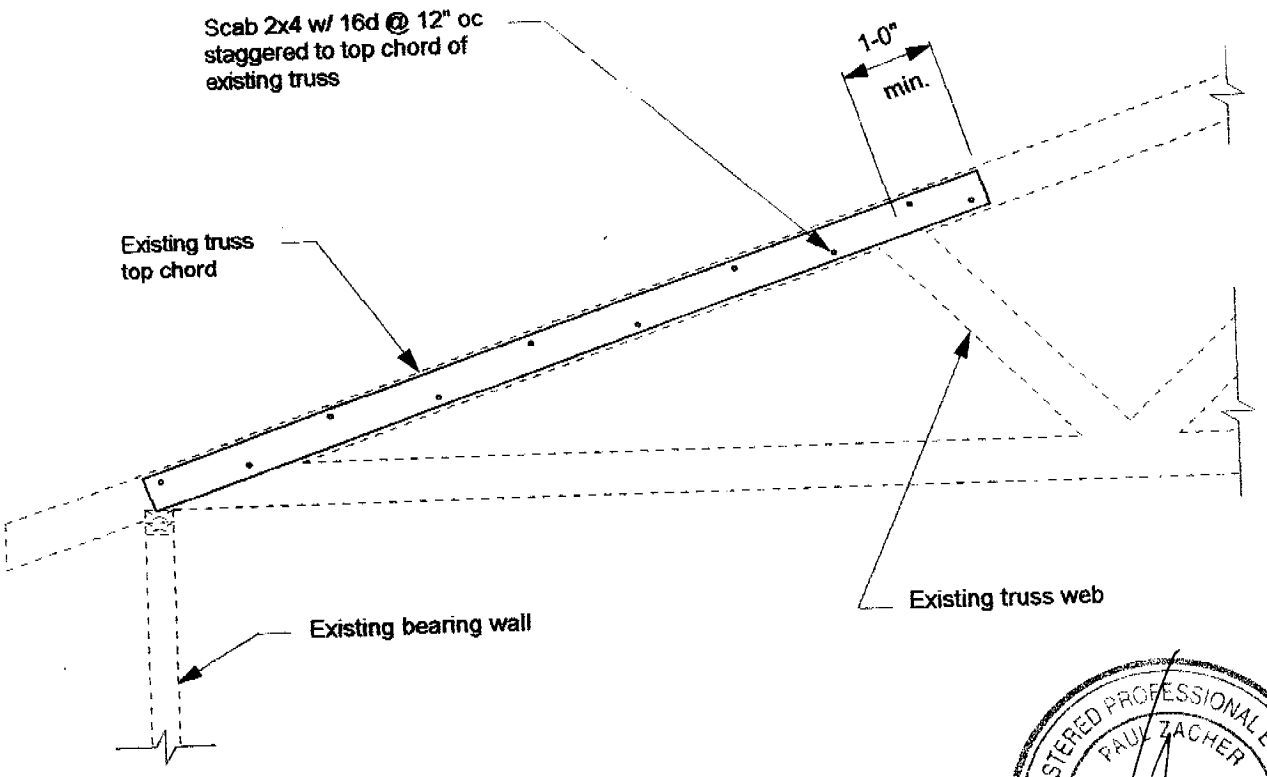
FRAMING NOTES:
1. Scab a 2x4 DF#2 x 12'-0" long rafter to the top chord of the existing truss #2 (total 13). See detail 2.

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 - FOLSOM

Not to Scale 24

Rick



REGISTERED PROFESSIONAL ENGINEER
PAUL ZACHER
No. S3878
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STRUCTURAL
STATE OF CALIFORNIA

2 TRUSS REINFORCEMENT DETAIL

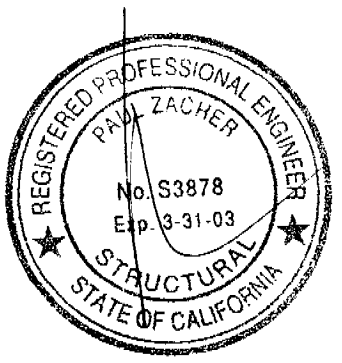
scale: 1/2" = 1'-0"

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

TEL: 916.961.3960
FAX: 916.961.6552

Paul Zacher Structural Engineers

October 18, 2001



Rojelio Roofing
8263 Bedford Cove Way
Sacramento, CA 95828
TEL: (916) 508-2171
FAX: (916) 668-8219

Attn.: Mr. Rogelio Vazquez,

re: Job 2001_346: **FOLSOM**

Subject: Structural Investigation Report of the Roof for the Residence located at 2031 Las Coches Way, Sacramento, CA 95833.

As requested by Mr. Rogelio Vazquez, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site October 18, 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 roof structure is framed with pre-engineered wood spaced at 24" on center.

CONCLUSIONS:

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

1/25

Folsom
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.
Roof Structure:

1. Scab a 2x4 DF#2 x 12'-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	6	in 12
Pitch Adjustment Factor	1.12	

LOCATION: ROOF		WEIGHT	
MATERIAL		7.00	psf
Light Weight Tile		0.30	psf
Roofing felt		1.09	psf
1x4 skip sht'g		1.50	psf
1/2" OSB/ plywood		1.00	psf
2x6 rafters @ 24" oc	Load	10.9	psf
	Roof Pitch Adjustment	1.29	psf
	Total Load	12.2	psf

LOCATION: TOP CHORD		WEIGHT	
MATERIAL		7.00	psf
Light Weight Tile		0.30	psf
Roofing felt		1.50	psf
1/2" OSB/ plywood		1.09	psf
1x4 skip sht'g		0.64	psf
2x4 truss @ 24" oc	Load	10.5	psf
	Roof Pitch Adjustment	1.24	psf
	Total Load	11.8	psf

LOCATION: BOTTOM CHORD		WEIGHT	
MATERIAL		0.50	psf
Batt/blown insul		1.28	psf
2x4 truss @ 24" oc		2.50	psf
1/2" Gypboard	Load	4.3	psf

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

Title :
Dsgnr:
Description :
Scope :

Job #
Date: 12:32PM, 18 OCT 01

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

Timber Beam & Joist

c:\enercalc\test.ecw:Calculations

Description RAFTERS AND BEAMS

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Member Information

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

Center Span Data

Span	ft	12.00	16.00
Dead Load	#/ft	24.40	64.00
Live Load	#/ft	32.00	64.00

Results

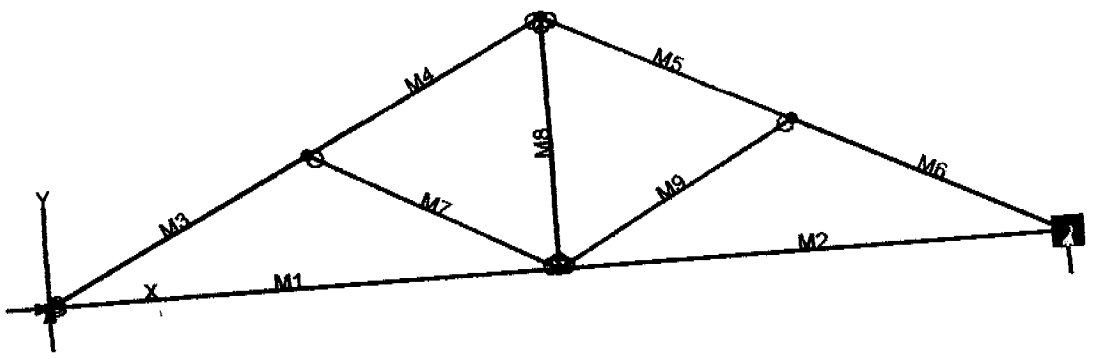
		Ratio =	0.9852	0.5534
Mmax @ Center		in-k	12.18	49.15
@ X =		ft	6.00	8.00
fb : Actual		psi	1,610.9	665.8
Fb : Allowable		psi	1,635.2	1,203.1
			Bending OK	**Bending OK**
fv : Actual		psi	57.1	34.6
Fv : Allowable		psi	118.8	118.8
			Shear OK	**Shear OK**

Reactions

@ Left End	DL	lbs	146.40	512.00
	LL	lbs	192.00	512.00
	Max. DL+LL	lbs	338.40	1,024.00
@ Right End	DL	lbs	146.40	512.00
	LL	lbs	192.00	512.00
	Max. DL+LL	lbs	338.40	1,024.00

Deflections

		Ratio OK	Deflection OK
Center DL Defl	in	-0.342	-0.142
L/Defl Ratio		420.9	1,351.9
Center LL Defl	in	-0.449	-0.142
L/Defl Ratio		320.9	1,351.9
Center Total Defl	in	-0.791	-0.284
Location	ft	6.000	8.000
L/Defl Ratio		182.1	675.9


M4
M5
M8
M6
Y
M3
M7
M9
M2
X
M1

VisualAnalysis 3.50.c Report

10/18/01 12:01:09
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	10.50	0.00	No	No	"
N3	21.00	0.00	"	Yes	"
N4	5.50	2.75	"	No	"
N5	15.50	2.75	"	"	"
N6	10.50	5.25	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.50
M2	"	"	10.50
M3	"	"	6.15
M4	"	"	5.59
M5	"	"	5.59
M6	"	"	6.15
M7	"	"	5.71
M8	"	"	5.25
M9	"	"	5.71

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

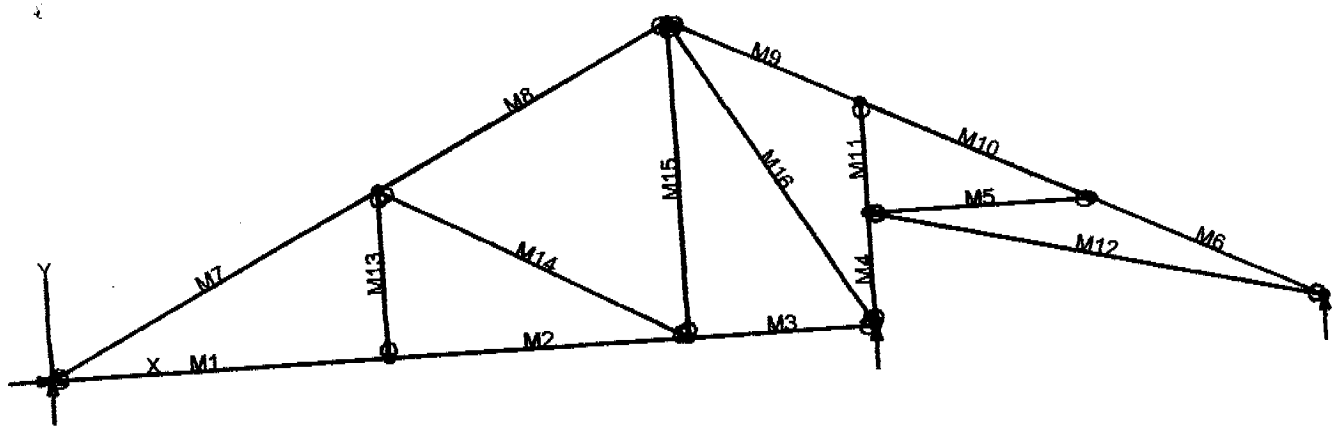
This item is empty. Check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N1	Equation Case 1	**0.00**	**743.01**	-NA-
N3	"	-NA-	743.01	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1146.89	-55.42	-107.87	-0.0742
"	1146.89	-25.32	33.1701	-0.1344
"	1146.89	4.7762	69.1284	-0.1373
"	**1146.89**	34.8762	0.0000	-0.0000
M2	1146.89	-34.88	-0.0000	-0.0000
"	1146.89	-4.7762	69.1284	**-0.1374**
"	1146.89	25.3238	33.1701	-0.1344
"	1146.89	55.4238	-107.87	-0.0742
M3	**-1342.49**	120.47	0.0000	-0.0000
"	-1291.53	18.5350	**141.94**	-0.1057
"	-1240.56	-83.40	75.4612	-0.1122
"	-1189.59	**-185.33**	**-199.43**	-0.0720
M4	-941.02	174.67	-199.43	-0.0720
"	-894.69	82.0081	39.2903	-0.1026
"	-848.35	-10.66	105.77	-0.1165
"	-802.02	-103.33	-0.0000	-0.0702
M5	-941.02	-174.67	-199.43	-0.0575
"	-894.69	-82.01	39.2903	-0.0882
"	-848.35	10.6585	105.77	-0.1020
"	-802.02	103.33	0.0000	-0.0558
M6	-1342.49	-120.47	0.0000	**0.0145**
"	-1291.53	-18.54	141.94	-0.0913
"	-1240.56	83.3983	75.4612	-0.0977
"	-1189.59	**185.33**	-199.43	-0.0575
M7	-437.49	0.0000	0.0000	-0.0572
"	-437.49	0.0000	0.0000	-0.0546
"	-437.49	0.0000	0.0000	-0.0521
"	-437.49	0.0000	0.0000	-0.0495
M8	532.51	-0.0000	-0.0000	-0.0162
"	532.51	-0.0000	0.0000	-0.0162
"	532.51	-0.0000	-0.0000	-0.0162
"	532.51	-0.0000	-0.0000	-0.0728
M9	-437.49	-0.0000	0.0000	-0.0703
"	-437.49	-0.0000	-0.0000	-0.0677
"	-437.49	-0.0000	-0.0000	-0.0651


Y
X
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
M13
M14
M15
M16

VisualAnalysis 3.50.c Report

10/18/01 12:07:18
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	17.00	0.00	"	"	"
N4	22.00	0.00	"	Yes	"
N5	22.00	3.00	"	No	"
N6	34.00	0.00	"	Yes	"
N7	9.00	4.50	"	No	"
N8	17.00	8.50	"	"	"
N9	22.00	6.00	"	"	"
N10	28.00	3.00	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.00
M2	"	"	8.00
M3	"	"	5.00
M4	"	"	3.00
M5	"	"	6.00
M6	"	"	6.71
M7	"	"	10.06
M8	"	"	8.94
M9	"	"	5.59
M10	"	"	6.71
M11	"	"	3.00
M12	"	"	12.37
M13	"	"	4.50
M14	"	"	9.18
M15	"	"	8.50
M16	"	"	9.86

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**	764.27	-NA-
N4	"	-NA-	**1244.56**	-NA-
N6	"	-NA-	**400.28**	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1029.00	-45.42	-60.46	-0.0679
"	1029.00	-19.62	36.8982	-0.1089
"	1029.00	6.1820	57.0524	-0.0977
"	**1029.00**	31.9820	0.0000	-0.0000
M2	1029.00	-30.65	-30.50	-0.0352
"	1029.00	-7.7215	20.5143	-0.0625
"	1029.00	15.2118	10.5273	-0.0690
"	1029.00	38.1451	-60.46	-0.0679
M3	329.16	-15.40	0.0000	-0.0000
"	329.16	-1.0664	13.6620	-0.0161
"	329.16	13.2669	3.4949	-0.0260
"	329.16	27.6003	-30.50	-0.0352
M4	-639.03	-17.97	-53.91	0.0150
"	-639.03	-17.97	-35.94	0.0070
"	-639.03	-17.97	-17.97	-0.0076
"	-639.03	-17.97	0.0000	-0.0257
M5	-816.51	-0.0000	-0.0000	-0.0593
"	-816.51	-0.0000	-0.0000	-0.0404
"	-816.51	-0.0000	-0.0000	-0.0215
"	-816.51	-0.0000	0.0000	-0.0026
M6	-940.66	-135.91	0.0000	-0.0003
"	-885.06	-24.71	178.95	-0.1495
"	-829.46	86.4936	109.87	-0.1486
"	-773.86	197.69	-207.24	-0.0627
M7	**-1247.86**	194.79	0.0000	-0.0000
"	-1164.46	27.9943	**372.23**	**-0.5863**
"	-1081.06	-138.81	186.39	-0.4778
"	-997.66	**-305.61**	**-557.51**	-0.0678
M8	-510.38	**284.73**	-557.51	-0.0678
"	-436.25	136.46	69.2676	-0.2138
"	-362.11	-11.80	255.10	-0.3028
"	-287.98	-160.07	0.0000	-0.0235
M9	-67.55	-175.28	-202.80	-0.0012
"	-21.21	-82.61	37.0408	-0.0409
"	25.1196	10.0549	104.64	-0.0652
"	71.4530	102.72	0.0000	-0.0301
M10	-43.55	-167.46	-207.24	-0.0627

〃	12.0535	-56.26	42.2677	-0.0637
〃	67.6535	54.9384	43.7472	-0.0436
〃	123.25	166.14	-202.80	-0.0012
M11	-390.70	17.9710	-53.91	0.0150
〃	-390.70	17.9710	-35.94	0.0138
〃	-390.70	17.9710	-17.97	0.0058
〃	-390.70	17.9710	-0.0000	-0.0056
M12	791.69	-51.60	0.0000	-0.0001
〃	800.29	-17.20	141.48	-0.4203
〃	808.89	17.2000	141.48	-0.4223
〃	817.49	51.6000	0.0000	-0.0061
M13	83.5632	0.0000	0.0000	0.0125
〃	83.5632	0.0000	0.0000	0.0139
〃	83.5632	0.0000	0.0000	0.0153
〃	83.5632	0.0000	0.0000	0.0167
M14	-802.96	0.0000	0.0000	-0.0506
〃	-802.96	0.0000	0.0000	-0.0401
〃	-802.96	0.0000	0.0000	-0.0296
〃	-802.96	0.0000	0.0000	-0.0191
M15	451.92	0.0000	0.0000	-0.0235
〃	451.92	0.0000	0.0000	-0.0132
〃	451.92	0.0000	0.0000	-0.0029
〃	451.92	0.0000	0.0000	0.0074
M16	-684.66	-0.0000	0.0000	-0.0215
〃	-684.66	-0.0000	-0.0000	-0.0070
〃	-684.66	-0.0000	-0.0000	0.0076
〃	-684.66	-0.0000	-0.0000	**0.0222**

BENDING & COMP: TRUSS 2 - MEMBER 7

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

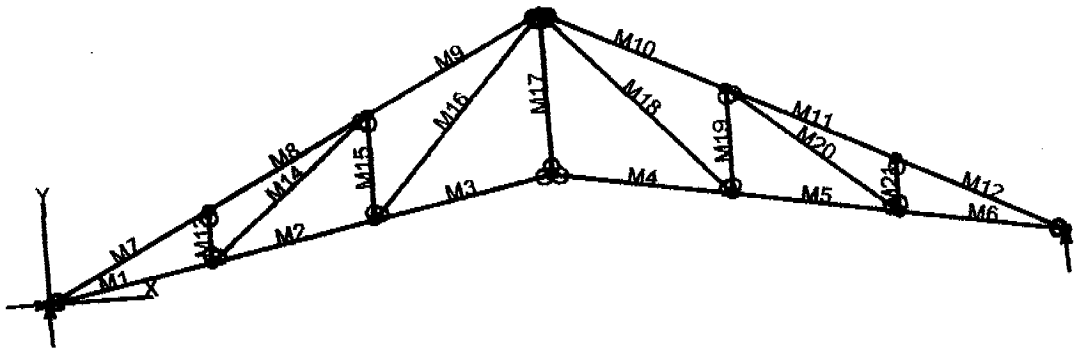
Grading:

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	3	inches
Depth, d	3.5	inches
Length	10.06	feet
Max Axial Comp, C	997	feet
Max Reaction, R	305	feet
Max Moment, M	557	feet
Max LL Deflection	0.03	feet
Max TL Deflection	0.06	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 =	1.28	
fc =	95	psi
Fce=	547	psi
Fc*=	2084	psi
F'c=	514	psi
fb=	1091	psi
F'b=Fb*=	2156	psi
Shear D/C ratio	0.37 < 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	0.06 < 1.0, Member OK	
Total Load defl ratio	0.09 < 1.0, Member OK	


Y
X
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
M13
M14
M15
M16
M17
M18
M19
M20
M21

VisualAnalysis 3.50.c Report

10/18/01 12:11:42
Project: Truss 3
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	5.50	1.00	No	No	"
N3	11.00	2.00	"	"	"
N4	17.00	3.09	"	"	"
N5	23.00	2.00	"	"	"
N6	28.50	1.00	"	"	"
N7	34.00	0.00	"	Yes	"
N8	5.50	2.75	"	No	"
N9	28.50	2.75	"	"	"
N10	11.00	5.50	"	"	"
N11	23.00	5.50	"	"	"
N12	17.00	8.50	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	5.59
M2	"	"	5.59
M3	"	"	6.10
M4	"	"	6.10
M5	"	"	5.59
M6	"	"	5.59
M7	"	"	6.15
M8	"	"	6.15
M9	"	"	6.71
M10	"	"	6.71
M11	"	"	6.15
M12	"	"	6.15
M13	"	"	1.75
M14	"	"	7.11
M15	"	"	3.50
M16	"	"	8.85
M17	"	"	5.41
M18	"	"	8.85
M19	"	"	3.50
M20	"	"	7.11
M21	"	"	1.75

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**	**1205.36**	-NA-
N7	"	-NA-	1205.36	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	3251.94	33.6214	0.0000	-0.0000
"	3254.81	17.8547	47.8866	-0.1739
"	3257.67	2.0881	66.4672	-0.3178
"	**3260.54**	-13.68	55.7419	-0.4197
M2	2672.44	8.7245	55.7419	-0.4197
"	2675.30	-7.0422	57.2358	-0.4817
"	2678.17	-22.81	29.4237	-0.5077
"	2681.04	-38.58	-27.69	-0.5159
M3	1919.30	30.3414	-27.69	-0.5159
"	1922.43	13.1414	16.4127	-0.5309
"	1925.55	-4.0586	25.6441	-0.5353
"	1928.68	-21.26	-0.0000	-0.5219
M4	1919.30	-30.34	-27.69	-0.4613
"	1922.43	-13.14	16.4127	-0.4763
"	1925.55	4.0586	25.6441	-0.4807
"	1928.68	21.2586	0.0000	-0.4673
M5	2672.44	-8.7245	55.7419	-0.3651
"	2675.30	7.0422	57.2358	-0.4271
"	2678.17	22.8089	29.4237	-0.4531
"	2681.04	38.5755	-27.69	-0.4613
M6	3251.94	-33.62	0.0000	0.0546
"	3254.81	-17.85	47.8866	-0.1192
"	3257.67	-2.0881	66.4672	-0.2632
"	3260.54	13.6786	55.7419	-0.3651
M7	-3651.50	135.29	0.0000	-0.0000
"	-3600.54	33.3543	172.31	-0.2616
"	-3549.57	-68.58	136.21	-0.3997
"	-3498.60	-170.51	-108.30	-0.4429
M8	-3651.95	136.18	-108.30	-0.4429
"	-3600.98	34.2448	65.8364	-0.5024
"	-3550.02	-67.69	31.5612	-0.5232
"	-3499.05	-169.62	-211.13	-0.5322

M9	-3040.56	**198.27**	-211.13	-0.5322
"	-2984.96	87.0730	107.28	-0.6305
"	-2929.36	-24.13	177.65	**-0.6463**
"	-2873.76	-135.33	0.0000	-0.5131
M10	-3040.56	**-198.27**	**-211.13**	-0.3955
"	-2984.96	-87.07	107.28	-0.4939
"	-2929.36	24.1270	**177.65**	-0.5096
"	-2873.76	135.33	0.0000	-0.3765
M11	**-3651.95**	-136.18	-108.30	-0.3063
"	-3600.98	-34.24	65.8364	-0.3658
"	-3550.02	67.6885	31.5612	-0.3865
"	-3499.05	169.62	-211.13	-0.3955
M12	-3651.50	-135.29	0.0000	0.1366
"	-3600.54	-33.35	172.31	-0.1250
"	-3549.57	68.5790	136.21	-0.2631
"	-3498.60	170.51	-108.30	-0.3063
M13	-342.89	-0.0000	-0.0000	0.0992
"	-342.89	-0.0000	-0.0000	0.1233
"	-342.89	-0.0000	-0.0000	0.1475
"	-342.89	-0.0000	0.0000	0.1716
M14	742.43	-0.0000	-0.0000	-0.5061
"	742.43	-0.0000	-0.0000	-0.4637
"	742.43	-0.0000	-0.0000	-0.4214
"	742.43	-0.0000	0.0000	-0.3790
M15	-594.15	-0.0000	-0.0000	0.1362
"	-594.15	-0.0000	-0.0000	0.1525
"	-594.15	-0.0000	-0.0000	0.1688
"	-594.15	-0.0000	0.0000	**0.1851**
M16	1086.68	0.0000	0.0000	-0.4496
"	1086.68	0.0000	0.0000	-0.4460
"	1086.68	0.0000	0.0000	-0.4425
"	1086.68	0.0000	0.0000	-0.4389
M17	731.30	0.0000	0.0000	0.1527
"	731.30	0.0000	0.0000	0.1527
"	731.30	0.0000	0.0000	0.1527
"	731.30	0.0000	0.0000	0.1527
M18	1086.68	0.0000	0.0000	-0.2251
"	1086.68	0.0000	0.0000	-0.2215
"	1086.68	0.0000	0.0000	-0.2180
"	1086.68	0.0000	0.0000	-0.2144
M19	-594.15	0.0000	0.0000	-0.1693
"	-594.15	0.0000	0.0000	-0.1530
"	-594.15	0.0000	0.0000	-0.1367
"	-594.15	0.0000	0.0000	-0.1204
M20	742.43	0.0000	0.0000	-0.3126
"	742.43	0.0000	0.0000	-0.2703
"	742.43	0.0000	0.0000	-0.2279
"	742.43	0.0000	0.0000	-0.1856
M21	-342.89	0.0000	0.0000	-0.2063
"	-342.89	0.0000	0.0000	-0.1822
"	-342.89	0.0000	0.0000	-0.1580
"	-342.89	0.0000	0.0000	-0.1339

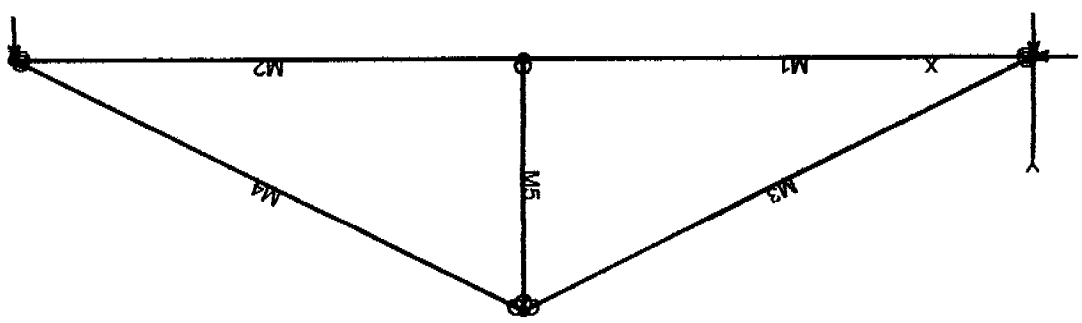
BENDING & COMP: TRUSS 3 - MEMBER 7

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	6.15	feet
Max Axial Comp, C	3549	feet
Max Reaction, R	68	feet
Max Moment, M	136	feet
Max LL Deflection	0.20	feet
Max TL Deflection	0.39	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 =	676	psi
Fce=	1341	psi
Fc*=	2084	psi
F'c=	1097	psi
fb=	533	psi
F'b=Fb*=	2156	psi
Shear D/C ratio	0.16 < 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	0.65 < 1.0, Member OK	
Total Load defl ratio	0.95 < 1.0, Member OK	


M2
M1
X
M4
M5
M3
Y

VisualAnalysis 3.50.c Report

10/18/01 12:15:23
Project: Truss 4
File: C:\Program Files\IES\VA35\truss 4.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	7.50	0.00	No	No	"
N3	15.00	0.00	"	Yes	"
N4	7.50	3.75	"	No	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	7.50
M2	"	"	7.50
M3	"	"	8.39
M4	"	"	8.39
M5	"	"	3.75

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**	**530.72**	-NA-
N3	"	-NA-	530.72	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	544.84	-39.31	**-52.95**	-0.0267
"	544.84	-17.81	18.3159	-0.0413
"	544.84	3.6901	35.9658	-0.0393
"	**544.84**	25.1901	0.0000	-0.0000
M2	544.84	-25.19	0.0000	-0.0000
"	544.84	-3.6901	35.9658	-0.0393
"	544.84	17.8099	18.3159	-0.0413
"	544.84	39.3099	-52.95	-0.0267
M3	**-713.40**	**208.50**	0.0000	-0.0000
"	-643.90	69.5000	**387.55**	-0.5350
"	-574.40	-69.50	387.55	**-0.5438**
"	-504.90	**-208.50**	0.0000	-0.0260
M4	-713.40	-208.50	0.0000	0.0049
"	-643.90	-69.50	387.55	-0.5302
"	-574.40	69.5000	387.55	-0.5388
"	-504.90	208.50	0.0000	-0.0211
M5	78.6199	-0.0000	-0.0000	0.0055
"	78.6199	-0.0000	-0.0000	0.0055
"	78.6199	-0.0000	-0.0000	0.0055
"	78.6199	-0.0000	0.0000	**0.0055**

BENDING & COMP: TRUSS 4 - MEMBER 3
Design based on 1997 UBC 2321 Division V and ANSI/TPI 1-1995

Grading:
2x or 4x
Assumptions:

Doug-fir larch: No. 2

DEPARTMENT OF
NEIGHBORHOODS, PLANNING
AND DEVELOPMENT SERVICES

DEVELOPMENT SERVICES
DIVISION

CITY OF SACRAMENTO
CALIFORNIA

1231 I STREET
ROOM 200
SACRAMENTO, CA
95814-2904

916-264-7619
FAX 916-264-7046

EXHIBIT 1

I have read and am familiar with the contents of the City's Standard Owner-Builder Notification and Owner-Builder Verification, as required by California Health and Safety Code Section 19830 and 19831. I authorize my