

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0009462
Insp Area: 2

Site Address: 356 BAY RIVER WY SAC
Parcel No: 031-0380-018

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

CONTRACTOR
ZIMMERMAN ROOFING
3675 RST
SACRAMENTO CA 95816

OWNER
TUBRE CAROL MERRILEE
356 BAY RIVER WY
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: 30 SQ T/O REROOF 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 C-391 License Number 557559 Date 8/16/00 Contractor Signature Silly 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 8/16/00 Applicant/Agent Signature Silly 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 71111111

Exp Date 10/1/2000

This section need not be completed if the permit is for a residential building. 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 8/16/00 Applicant Signature Silly 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

12311 STREET
ROOM 200
SACRAMENTO, CA
95814-2974

Phone Services
916-264-7819
FAX 916-264-7096

Carol Tubre
356 Bay River way
Sacto., CA 95831

TILE ROOF WORKSHEET

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

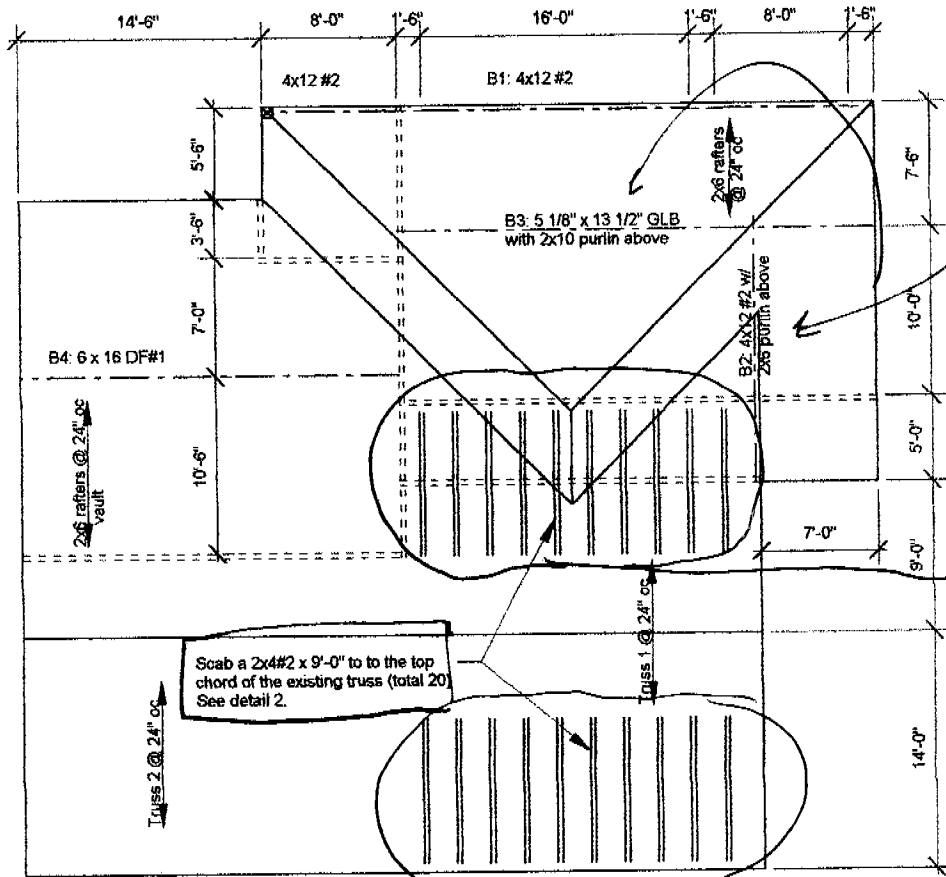
If the answer to question #5 is yes, a written engineering report from a registered engineer must be provided with each application.

1. BRAND AND MODEL OF TILE Lite weight
2. TILE WEIGHT PER SQUARE 730 lbs
3. WEIGHT OF ROOF SYSTEM PER SQUARE 180 lbs
4. TOTAL WEIGHT OF ROOF SYSTEM 910 lbs
5. DOES TOTAL WEIGHT OF ROOF SYSTEM EXCEED 750# PER SQUARE? YES NO
6. ROOF SLOPE 4/12

PLEASE PROVIDE A SEPARATE WORKSHEET FOR EACH APPLICATION INVOLVING A TILE ROOF

See attached engin. report

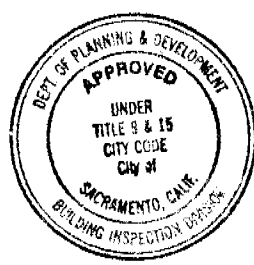
Richard 600-5539
 Fan 396-3288



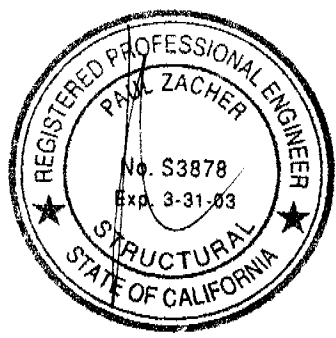
Verify in field
 OK CM
 8-22-00

OK CM
 8-22-00 CM

To provide engineering that omits these.



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.



Truss roof system. see work on this plan, & detail next sheet.

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 rafters are 2x6 DF#2 and hips and valleys are 2x8 DF#2 unless otherwise noted.
3. All existing rafter, hips, valleys, rafter ties, and purlins are braced per UBC Section 2320.12 "Roof and Ceiling Framing" unless otherwise shown.
4. All structural wood members that were observed appear to be in sound condition and without structural defect.



1

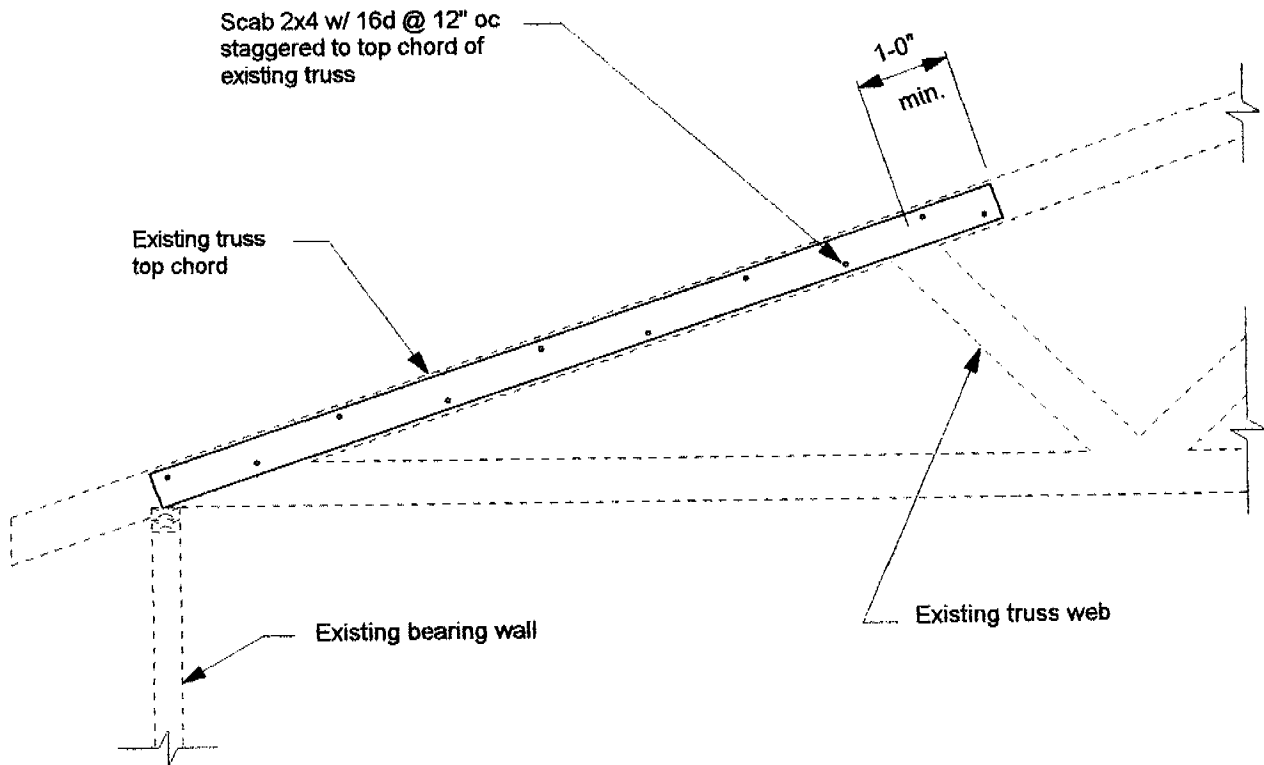
ROOF PLAN - TUBRE

Not to Scale

15 Reviewed by Matt P. 8/14/00



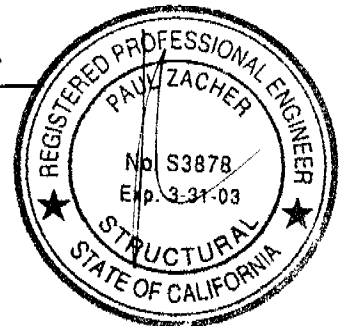
This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division.
The approval of this plan and specification SHALL NOT be held to warrant or approve the violation of any City Ordinance or State Law.



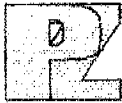
2

TRUSS REINFORCEMENT DETAIL

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



Tubre



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

TEL: 916.961.3960
FAX: 916.961.6552

August 3, 2000

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

Attn.: Mr. Jeff Tucker,

re: Job 2000_217: TUBRE



Subject: Structural Investigation Report of the Roof for the Residence located at 356 Bay 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 August 2, 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 3000 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

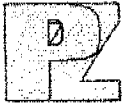
Roof:
The roof covering will consist of a Light Weight Concrete Tile over 1/2" solid sheathing. The living area is framed with pre-engineered trusses spaced at 24" on center except for the vaulted ceiling area. The vaulted ceiling is constructed of 2x6 rafters spaced at 24" on center supported mid-span by a 6x beam. The garage area 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.

RECEIVED
AUG 10 2000
STRUCTURAL ENGINEER
PAUL ZACHER

Tubre



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 2x4 DF#2 x 9'-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

<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	1.00	psf
	Load	10.9 psf
Roof Pitch Adjustment	1.29	psf
Total Load	12.2	psf

LOCATION: VAULT

<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	1.00	psf
Batt/blown insul	0.50	psf
1/2" Gypboard	2.50	psf
	Load	13.9 psf
Roof Pitch Adjustment	1.64	psf
Total Load	15.5	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	1.28	psf
	Load	11.2 psf
Roof Pitch Adjustment	1.32	psf
Total Load	12.5	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	2.50	psf
	Load	3.6 psf

3

Job #: 00-217

Date: 8/3/00

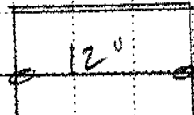
LOADING

RATER

OR = 12.2 p.f. x 20 = 24.4 p.f. 2x12^{#2}

LR = 16.0 = 32 .

24.4/32

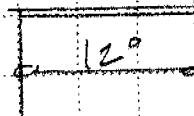


VAULT

OR = 15.5 p.f. x 4/3 = 20.6 p.f. 2x12^{#2}

LR = 16.0 = 21.3 .

20.6/21.3

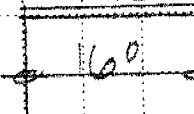


#1

OR = 12.2 p.f. x 4 = 49 p.f. 4x12^{#2}

LR = 16.0 = 64 .

49/64



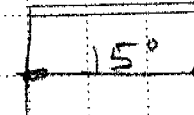
#2

OR = 12.2 p.f. x 7 = 85 p.f. 4x12^{#2}

LR = 16.0 = 112 .

638/840

85/112



658/840

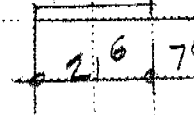
#3

OR = 12.2 p.f. x 6 = 73 p.f.

LR = 16.0 = 104 .

5/8 x 13 1/2 GLB

79/104



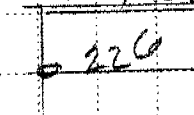
Po/L = 638/840 - #2

#4

OR = 15.5 p.f. x 10 = 155 p.f. 6x12^{#2}

LR = 16.0 = 160 .

155/160



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

Title :
 Dsgnr:
 Description :

Job #
 Date: 3:35PM, 3 AUG 00

Scope :

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

Timber Beam & Joist

c:\enercalc\fast.ecw\Calculations

Description RAFTERS AND BEAMS

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

	rafter	vault	B1	B2	B3	B4
Timber Section	2x6	2x6	4x12	4x12	5.125x13.5	6x16
Beam Width	1.500	1.500	3.500	3.500	5.125	5.500
Beam Depth	5.500	5.500	11.250	11.250	13.500	15.500
Le: Unbraced Length	0.00	0.00	0.00	0.00	0.00	0.00
Timber Grade	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir, 24F	Douglas Fir - Larch
Fb - Basic Allow	875.0	875.0	875.0	875.0	2,400.0	1,350.0
Fv - Basic Allow	95.0	95.0	95.0	95.0	165.0	85.0
Elastic Modulus	1,600.0	1,600.0	1,600.0	1,600.0	1,800.0	1,600.0
Load Duration Factor	1.250	1.250	1.250	1.250	1.250	1.250
Member Type	Sawn	Sawn	Sawn	Sawn	GluLam	Sawn
Repetitive Status	Repetitive	No	No	No	No	No

Center Span Data

		rafter	vault	B1	B2	B3	B4
Span	ft	12.00	12.00	16.00	15.00	28.50	22.50
Dead Load	#/ft	24.40	20.60	49.00	85.00		163.00
Live Load	#/ft	32.00	21.30	64.00	112.00		168.00
Dead Load	#/ft					79.00	
Live Load	#/ft					104.00	
Start	ft					21.500	15.000
End	ft						
Point #1 DL	lbs					638.00	
LL	lbs					840.00	
@ X	ft					21.500	

Results

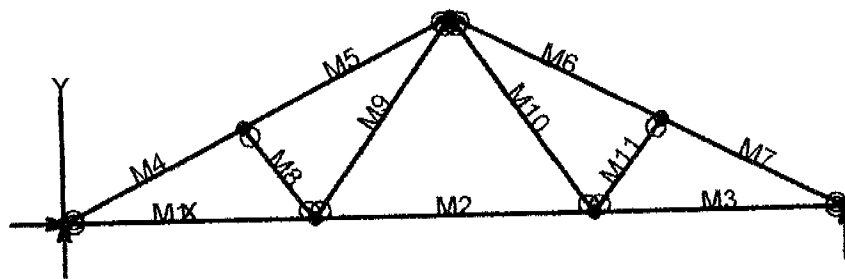
	Ratio =	0.9852	0.8417	0.4885	0.7485	0.5797	0.6958
Mmax @ Center	in-k	12.18	9.05	43.39	66.49	259.52	251.35
@ X =	ft	6.00	6.00	8.00	7.50	15.39	11.25
fb : Actual	psi	1,610.9	1,196.7	587.7	900.6	1,667.1	1,141.3
Fb : Allowable	psi	1,635.2	1,421.9	1,203.1	1,203.1	2,875.7	1,640.2
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
fv : Actual	psi	57.1	42.4	30.6	49.5	56.9	58.2
Fv : Allowable	psi	118.8	118.8	118.8	118.8	206.3	106.3
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

Reactions

			rafter	vault	B1	B2	B3	B4
@ Left End	DL	lbs	146.40	123.60	392.00	637.50	1,214.54	1,833.75
	LL	lbs	192.00	127.80	512.00	840.00	1,598.91	1,890.00
	Max. DL+LL	lbs	338.40	251.40	904.00	1,477.50	2,813.45	3,723.75
@ Right End	DL	lbs	146.40	123.60	392.00	637.50	1,121.96	1,833.75
	LL	lbs	192.00	127.80	512.00	840.00	1,477.09	1,890.00
	Max. DL+LL	lbs	338.40	251.40	904.00	1,477.50	2,599.05	3,723.75

Deflections

		Ratio OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK
Center DL Defl	in	-0.342	-0.289	-0.109	-0.146	-0.725	-0.344
L/Defl Ratio		420.9	498.6	1,765.7	1,235.3	472.0	784.5
Center LL Defl	in	-0.449	-0.299	-0.142	-0.192	-0.954	-0.355
L/Defl Ratio		320.9	482.2	1,351.9	937.5	358.6	761.1
Center Total Defl	in	-0.791	-0.587	-0.251	-0.338	-1.678	-0.699
Location	ft	6.000	6.000	8.000	7.500	14.478	11.250
L/Defl Ratio		182.1	245.1	765.7	533.0	203.8	386.3



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	904.40	-NA-
N4	"	-NA-	904.40	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1487.32	-40.81	-59.51	-0.1219
"	1487.32	-18.01	28.5527	-0.1317
"	1487.32	4.7873	48.3909	-0.1023
"	1487.32	27.5873	0.0000	-0.0000
M2	899.33	-38.00	-59.51	-0.1219
"	899.33	-12.67	24.7189	-0.1595
"	899.33	12.6667	24.7189	-0.1595
"	899.33	38.0000	-59.51	-0.1219
M3	1487.32	-27.59	0.0000	-0.0000
"	1487.32	-4.7873	48.3909	-0.1023
"	1487.32	18.0127	28.5527	-0.1317
"	1487.32	40.8127	-59.51	-0.1219
M4	-1722.42	119.10	0.0000	-0.0000
"	-1667.19	8.6340	154.04	-0.1435
"	-1611.96	-101.83	41.1611	-0.1404
"	-1556.73	-212.29	-338.63	-0.1153
M5	-1470.42	231.57	-338.63	-0.1153
"	-1406.70	104.11	129.61	-0.3205
"	-1342.97	-23.34	242.48	-0.3764
"	-1279.24	-150.80	0.0000	-0.1168
M6	-1470.42	-231.57	-338.63	-0.0937
"	-1406.70	-104.11	129.61	-0.2990
"	-1342.97	23.3440	242.48	-0.3548
"	-1279.24	150.80	0.0000	-0.0953
M7	-1722.42	-119.10	-0.0000	0.0215
"	-1667.19	-8.6340	154.04	-0.1220
"	-1611.96	101.83	41.1611	-0.1189
"	-1556.73	212.29	-338.63	-0.0937
M8	-452.17	-0.0000	-0.0000	-0.0601
"	-452.17	-0.0000	-0.0000	-0.0526
"	-452.17	-0.0000	-0.0000	-0.0452
"	-452.17	-0.0000	0.0000	-0.0377
M9	537.29	0.0000	0.0000	-0.0885
"	537.29	0.0000	0.0000	-0.0875
"	537.29	0.0000	0.0000	-0.0865
"	537.29	0.0000	0.0000	-0.0855
M10	537.29	-0.0000	0.0000	-0.0494
"	537.29	-0.0000	-0.0000	-0.0484
"	537.29	-0.0000	-0.0000	-0.0474
"	537.29	-0.0000	-0.0000	-0.0464
M11	-452.17	0.0000	0.0000	-0.0982
"	-452.17	0.0000	0.0000	-0.0907
"	-452.17	0.0000	0.0000	-0.0833
"	-452.17	0.0000	0.0000	-0.0758

VisualAnalysis 3.50.c Report

08/03/00 15:54:49

Project: Truss 1

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	9.00	0.00	No	No	"
N3	19.00	0.00	"	"	"
N4	23.00	0.00	"	Yes	"
N5	6.50	3.25	"	No	"
N6	21.50	3.25	"	"	"
N7	14.00	7.00	"	"	"
N8	23.00	2.50	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.00
M2	"	"	10.00
M3	"	"	4.00
M4	"	"	7.27
M5	"	"	8.39
M6	"	"	8.39
M7	"	"	1.68
M8	"	"	4.10
M9	"	"	8.60
M10	"	"	8.60
M11	"	"	4.10
M12	"	"	2.50
M13	"	"	3.58

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	742.90	-NA-
N4	"	-NA-	742.90	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1166.48	-41.42	-64.95	-0.0670
"	1166.48	-18.62	24.9268	-0.0900
"	1166.48	4.1830	46.5779	-0.0799
"	1166.48	26.9830	0.0000	-0.0000
M2	575.73	-36.07	-45.68	-0.0275
"	575.73	-10.74	32.1314	-0.0894
"	575.73	14.5944	25.7057	-0.0980
"	575.73	39.9277	-64.95	-0.0670
M3	428.84	-3.7809	-0.0000	-0.0000
"	428.84	6.3524	-1.7481	-0.0065
"	428.84	16.4857	-16.97	-0.0140
"	428.84	26.6191	-45.68	-0.0275
M4	-1363.50	118.67	0.0000	-0.0000
"	-1308.27	8.2086	153.01	-0.1262
"	-1253.04	-102.25	39.1004	-0.1069
"	-1197.81	-212.71	-341.72	-0.0678
M5	-1111.35	231.94	-341.72	-0.0678
"	-1047.62	104.48	127.55	-0.2608
"	-983.89	-22.98	241.45	-0.3075
"	-920.16	-150.43	0.0000	-0.0403
M6	-706.98	-232.82	-349.17	-0.0099
"	-643.26	-105.37	122.58	-0.2171
"	-579.53	22.0870	238.97	-0.2853
"	-515.80	149.54	0.0000	-0.0433
M7	61.8272	94.3943	-0.0000	0.0060
"	74.5728	119.89	-59.93	0.0058
"	87.3184	145.38	-134.07	0.0019
"	100.06	170.87	-222.43	-0.0099
M8	-452.98	-0.0000	-0.0000	-0.0296
"	-452.98	-0.0000	-0.0000	-0.0282
"	-452.98	-0.0000	-0.0000	-0.0267
"	-452.98	-0.0000	0.0000	-0.0252
M9	541.19	-0.0000	0.0000	-0.0504
"	541.19	-0.0000	-0.0000	-0.0417
"	541.19	-0.0000	-0.0000	-0.0331
"	541.19	-0.0000	-0.0000	-0.0244
M10	-81.73	-0.0000	0.0000	-0.0300
"	-81.73	-0.0000	-0.0000	-0.0194
"	-81.73	-0.0000	-0.0000	-0.0088
"	-81.73	-0.0000	-0.0000	0.0018
M11	163.00	0.0000	0.0000	-0.0341
"	163.00	0.0000	0.0000	-0.0270
"	163.00	0.0000	0.0000	-0.0198
"	163.00	0.0000	0.0000	-0.0126

M12	112.08	-13.09	0.0000	-0.0127
"	112.08	-13.09	10.9046	-0.0184
"	112.08	-13.09	21.8092	-0.0227
"	112.08	-13.09	32.7139	-0.0242
M13	-958.04	44.5473	-126.74	-0.0009
"	-958.04	44.5473	-73.59	0.0216
"	-958.04	44.5473	-20.44	0.0246
"	-958.04	44.5473	32.7139	0.0219

BENDING & COMP: TRUSS 2 - 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	7.27 feet
Max Axial Comp, C	1197 lbs
Max Reaction, R	212 lbs
Max Moment, M	0.03 ft-lbs
Max LL Deflection	0.07 inches
Max TL Deflection	0.11 inches
LL Defl Criteria = L/	240
TL Defl Criteria = L/	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
Size Factor, Cf bending	1.5 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.15 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.21
fc =	228 psi
Fce =	937 psi
Fc* =	1869 psi
F'c =	812 psi
fb =	0 psi
F'b = Fb* =	1887 psi
Shear D/C ratio	0.51 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.08 < 1.0, Member OK
Live Load defl ratio	0.19 < 1.0, Member OK
Total Load defl ratio	0.23 < 1.0, Member OK