

**CITY OF SACRAMENTO**

**1231 I Street, Sacramento, CA 95814**

**Permit No: 9808428**

**Insp Area: 2**

**Site Address: 18 WINTERMIST CT SAC**

Parcel No: 0310630005

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR

ZIMMERMAN ROOFING  
3560 RAMONA AV  
SACRAMENTO, CA

95826

OWNER

YEE JOHN/ANGELA Y  
18 WINTERMIST CT  
SACRAMENTO CA

95831

ARCHITECT

**Nature of Work:** REMOVE OLD ROOF & REROOF W/PIONEER LIGHTWEIGHT TILE 4/12  
PITCH SFR 27SQS

**CONSTRUCTION LENDING AGENCY :** I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name \_\_\_\_\_ Lender's Address \_\_\_\_\_

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

License Class C-39 License Number 557539 Date 8-31-98 Contractor Signature Dilly 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 8-31-98 Applicant/Agent Signature Dilly 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 Fund Policy Number 713 97007071

\_\_\_\_ (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 8-31-98 Applicant Signature Dilly Coy

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

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



DEPARTMENT OF  
PLANNING AND DEVELOPMENT

CITY OF SACRAMENTO  
CALIFORNIA

1231 I STREET  
ROOM 200  
SACRAMENTO, CA  
95814-2998

Permit Service  
916-264-7619  
FAX 916-264-7046

*Yee at 18  
wintermist*

**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 Pioneer Shale
2. TILE WEIGHT PER SQUARE 730
3. WEIGHT OF ROOF SYSTEM PER SQUARE 180
4. TOTAL WEIGHT OF ROOF SYSTEM 910
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*

Yee

**Paul Zacher-Structural Engineers**

4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: 916.961.3960  
FAX: 916.961.3960  
e-mail: pzacher@softcom.net

August 25, 1998

Zimmerman Roofing  
3560 Ramona Avenue  
Sacramento, CA 95826  
TEL: 916.454.3667  
FAX: 916.455.3784  
TEL (Jeff): 916.392.1971  
FAX (Jeff): 916.392.6853  
FAX (Framer) : 916.383.5308

Attn.: Mr. Jeff Tucker,

re: Job 98198: YEE

Subject: Structural Investigation Report of the Roof for the Residence located at 18 Wintermist Court, 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 25, 1998. The investigation was made to determine the existing condition of the structure. All information, data and analysis contained within this report is based on the 1994 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 2500 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

Roof:  
The roof covering will consist of Pioneer Light Weight Concrete Shake Tile over 1/2" solid sheathing. The living and garage areas are framed with pre-engineered trusses spaced at 24" on center.

Yee

CONCLUSIONS:

Roof:

The living and garage areas have sufficient structural capacity for the applied live and dead loads.

RECOMMENDATIONS:

None.

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 which are not observable, or are hidden by architectural and structural materials.

If you have any questions on the above, do not hesitate to call.

Sincerely,



Paul Zacher, P.E., S.E.  
file



**DESIGN LOADING:**

Roof Pitch 4 in 12  
Pitch Adjustment Factor 1.05

**LOCATION: ROOF**

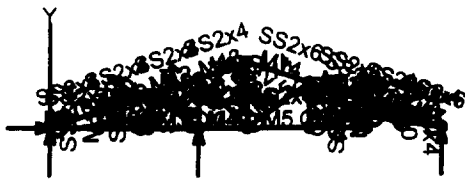
<u>MATERIAL</u>	<u>WEIGHT</u>	
Pioneer Everwest Light Wt	7.00	psf
Roofing felt	0.30	psf
1x4 skip sht'g	1.09	psf
1/2" OSB/ plywood	1.50	psf
2x6 rafters @ 24" oc	<u>1.00</u>	psf
Load	10.9	psf
Roof Pitch Adjustment	<u>0.59</u>	psf
Total Load	11.5	psf

**LOCATION: TOP CHORD**

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

**LOCATION: BOTTOM CHORD**

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



# VisualAnalysis 3.12.c Report

August 25, 1998 2:17 PM

## Project:

File: D:\Paul\d\_and\_d\untitled folder\truss1.VAP

Engineer: Paul Zacher

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

## Nodes

Node	X ft	Y ft	Fix	DX Fix	DY Fix	RZ Fix
N1	0.00	0.00	Yes	Yes	No	
N2	7.00	0.00	No	No	"	
N3	14.00	0.00	"	"	"	
N4	21.00	0.00	"	Yes	"	
N5	27.75	0.00	"	No	"	
N6	36.50	0.00	"	"	"	
N7	44.75	0.00	"	"	"	
N8	44.75	1.58	"	"	"	
N9	49.75	0.83	"	"	"	
N10	55.50	0.00	"	Yes	"	
N11	7.00	2.33	"	No	"	
N12	14.00	4.67	"	"	"	
N13	21.00	7.00	"	"	"	
N14	27.75	9.25	"	"	"	
N15	36.50	6.33	"	"	"	
N16	44.75	3.58	"	"	"	
N17	49.75	1.92	"	"	"	

## Spring Elements

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

## Member Elements

Member	Section	Material	Length ft	Weight lbs	Theta deg
M1	SS2x4	Wood	7.00	10.33	0.00
M2	"	"	7.00	10.33	0.00
M3	"	"	7.00	10.33	0.00
M4	"	"	6.75	9.96	0.00
M5	"	"	8.75	12.91	0.00
M6	"	"	8.25	12.17	0.00
M7	"	"	1.58	2.33	0.00
M8	"	"	5.06	7.46	0.00
M9	"	"	5.81	8.57	0.00
M10	"	"	7.38	10.88	0.00
M11	"	"	7.38	10.89	0.00
M12	"	"	7.38	10.88	0.00
M13	"	"	7.12	10.50	0.00
M14	SS2x6	"	9.22	21.39	0.00
M15	"	"	8.70	20.16	0.00
M16	"	"	5.27	12.21	0.00
M17	"	"	6.06	14.05	0.00
M18	SS2x4	"	2.33	3.44	0.00
M19	"	"	7.38	10.88	0.00
M20	"	"	4.67	6.89	0.00
M21	"	"	8.41	12.41	0.00
M22	"	"	7.00	10.33	0.00
M23	"	"	9.72	14.35	0.00
M24	"	"	9.25	13.65	0.00
M25	"	"	10.80	15.93	0.00
M26	"	"	6.33	9.34	0.00
M27	"	"	9.52	14.04	0.00
M28	"	"	8.40	12.39	0.00

p1

M29	"	"	5.01	7.39	0.00
M30	"	"	1.09	1.61	0.00
M31	"	"	2.00	2.95	0.00

## 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
"	SS2x6	8.25	20.80	7.56	7.56

## Material Properties

Material	Strength ksi	Elasticity ksi	Poisson	Density lb/ft <sup>3</sup>	Therm. /F
Wood	-NA-	1700.00	0.36	40.47	0.00

## Plate Elements

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



# VisualAnalysis 3.12.c Report

August 25, 1998 2:17 PM

**Project:**

File: D:\Paul\d\_and\_d\untitled folder\truss1.VAP  
 Engineer: Paul Zacher  
 Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

## Load Cases

Load Case	Strength	Service	Results
1) Service Case 1	Yes	Yes	1st Ord
2) Service Case 2	"	"	"
3) Equation Case 1	"	"	"

## Service Load Cases

Load Case	Load Source	Self Weight	Loads
Service Case 1	Dead loads	None	
Service Case 2	Roof Live 1	"	

## Load Combination Summary

Equation Case: Equation Case 1  
 Combination: +1D+1L+1Lr+1R+1W+1S+1E+1H+1F+1TS+1T+1TC+1I+1U+1LE  
**Contributing Cases & Source**  
 Service Case 1 (Dead loads)  
 Service Case 2 (Roof Live loads)

## Equation Case Combinations

Load Case	Cases	Equation
Equation Case 1	0.00	0.00

## Factored Case Combinations

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

## Nodal Loads

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

## Member Point Loads

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

## Member Uniform Loads

Load Case	Member	Direction	Offset ft	End Off ft	Magnitude
Service Case 1	M1	DY proj.	0.00	7.00	-0.01 K/ft
"	M2	"	0.00	7.00	-0.01 K/ft
"	M3	"	0.00	7.00	-0.01 K/ft
"	M4	"	0.00	6.75	-0.01 K/ft
"	M5	"	0.00	8.75	-0.01 K/ft
"	M6	"	0.00	8.25	-0.01 K/ft
"	M8	"	0.00	5.06	-0.01 K/ft
"	M9	"	0.00	5.81	-0.01 K/ft
"	M10	"	0.00	7.38	-0.02 K/ft
"	M11	"	0.00	7.38	-0.02 K/ft
"	M12	"	0.00	7.38	-0.02 K/ft

"	M13	"	0.00	7.12	-0.02 K/ft
"	M14	"	0.00	9.22	-0.02 K/ft
"	M15	"	0.00	8.70	-0.02 K/ft
"	M16	"	0.00	5.27	-0.02 K/ft
"	M17	"	0.00	6.06	-0.02 K/ft
Service Case 2	M10	"	0.00	7.38	-0.03 K/ft
"	M11	"	0.00	7.38	-0.03 K/ft
"	M12	"	0.00	7.38	-0.03 K/ft
"	M13	"	0.00	7.12	-0.03 K/ft
"	M14	"	0.00	9.22	-0.03 K/ft
"	M15	"	0.00	8.70	-0.03 K/ft
"	M16	"	0.00	5.27	-0.03 K/ft
"	M17	"	0.00	6.06	-0.03 K/ft

## Member Linear Loads

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

## Member Temperature Changes

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

## Member Gradient Temperatures

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

# VisualAnalysis 3.12.c Report

August 25, 1998 2:16 PM

## Project:

File: D:\Paul\d\_and\_d\untitled folder\truss1.VAP

Engineer: Paul Zacher

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

## Load Cases

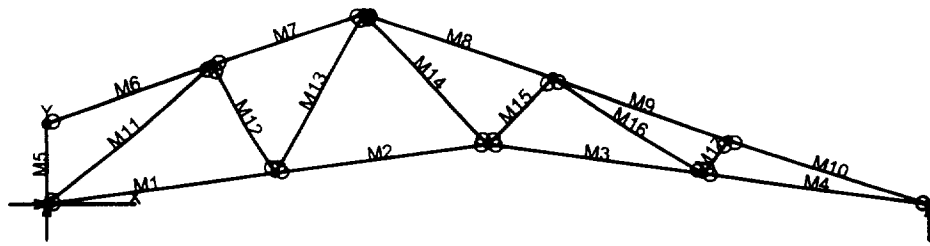
Load Case	Strength Service Results		
1) Service Case 1	Yes	Yes	1st Ord
2) Service Case 2	"	"	"
3) Equation Case 1	"	"	"

## Member Extreme Results

Member	Fx(lc) K	Fy(lc) K	Mz(lc) K-ft	fc max(lc) ksi	fc min(lc) ksi	Dx(lc) in	Dy(lc) in
M1	-0.40( 3)	-0.03( 3)	-0.04( 3)	-0.08( 3)	-0.23( 3)	0.00( 3)	-0.02( 1)
"	-0.20( 1)	0.02( 1)	0.03( 1)	0.11( 1)	-0.04( 1)	0.00( 2)	0.02( 3)
M2	-0.40( 3)	-0.02( 1)	-0.04( 3)	-0.08( 3)	-0.23( 3)	-0.01( 3)	0.01( 1)
"	-0.20( 1)	0.03( 3)	0.01( 1)	0.11( 1)	-0.04( 1)	0.00( 1)	0.02( 3)
M3	-1.15( 3)	-0.03( 3)	-0.05( 3)	-0.22( 3)	-0.40( 3)	-0.02( 3)	0.00( 1)
"	-0.56( 1)	0.02( 1)	0.01( 1)	0.04( 1)	-0.11( 1)	0.00( 1)	0.02( 3)
M4	-1.81( 3)	-0.02( 1)	-0.05( 3)	-0.34( 3)	-0.53( 3)	-0.03( 3)	-0.13( 3)
"	-0.89( 1)	0.03( 3)	0.01( 1)	-0.03( 1)	-0.17( 1)	-0.01( 1)	0.00( 1)
M5	0.20( 1)	-0.03( 3)	-0.05( 3)	0.04( 2)	-0.15( 1)	-0.03( 3)	-0.27( 3)
"	0.41( 3)	0.03( 1)	0.03( 3)	0.27( 3)	0.07( 3)	-0.01( 1)	-0.06( 1)
M6	0.00( 2)	-0.03( 3)	-0.05( 3)	0.00( 2)	-0.19( 3)	-0.03( 3)	-0.41( 3)
"	0.02( 3)	0.03( 1)	0.02( 1)	0.20( 3)	0.00( 1)	-0.01( 1)	-0.13( 1)
M7	0.00( 2)	0.00( 2)	-0.04( 3)	0.00( 2)	-0.13( 3)	-0.41( 3)	0.00( 2)
"	0.03( 3)	0.02( 3)	0.00( 1)	0.14( 3)	0.01( 3)	-0.20( 1)	0.03( 3)
M8	1.30( 1)	-0.02( 1)	0.00( 1)	0.25( 1)	0.10( 2)	0.03( 1)	-0.41( 3)
"	<b>2.65( 3)</b>	0.03( 3)	0.06( 3)	0.72( 3)	<b>0.51( 3)</b>	0.08( 3)	-0.17( 1)
M9	1.30( 1)	-0.03( 3)	0.00( 2)	0.25( 1)	0.10( 2)	0.04( 1)	-0.35( 3)
"	2.65( 3)	0.02( 1)	0.06( 3)	0.74( 3)	0.50( 3)	0.10( 3)	0.01( 3)
M10	0.19( 2)	-0.22( 3)	-0.29( 3)	0.04( 2)	<b>-1.05( 3)</b>	0.00( 3)	-0.17( 3)
"	0.50( 3)	0.15( 3)	0.21( 3)	1.24( 3)	0.07( 3)	0.00( 3)	0.02( 3)
M11	0.57( 1)	-0.17( 3)	-0.29( 3)	0.12( 1)	-0.92( 3)	0.00( 1)	-0.03( 3)
"	1.27( 3)	0.20( 3)	0.09( 3)	1.36( 3)	0.22( 3)	0.02( 3)	0.02( 3)
M12	0.91( 1)	-0.20( 3)	-0.29( 3)	0.18( 1)	-0.75( 3)	0.01( 1)	-0.06( 3)
"	1.98( 3)	0.17( 3)	0.10( 3)	<b>1.51( 3)</b>	0.35( 3)	0.04( 3)	0.02( 3)
M13	0.22( 1)	-0.14( 3)	-0.29( 3)	0.05( 1)	-1.04( 3)	0.02( 1)	-0.26( 3)
"	0.57( 3)	0.22( 3)	0.19( 3)	1.21( 3)	0.11( 3)	0.04( 3)	-0.02( 1)
M14	0.21( 2)	<b>-0.28( 3)</b>	<b>-0.48( 3)</b>	0.03( 1)	-0.71( 3)	0.06( 1)	-0.28( 3)
"	0.58( 3)	0.18( 3)	<b>0.32( 3)</b>	0.81( 3)	0.07( 3)	0.13( 3)	-0.05( 1)
M15	-2.21( 3)	-0.18( 3)	-0.48( 3)	-0.25( 3)	-1.01( 3)	0.06( 1)	-0.39( 3)
"	-1.01( 1)	<b>0.26( 3)</b>	0.19( 3)	0.51( 3)	-0.13( 1)	0.13( 3)	-0.12( 1)
M16	-2.18( 3)	-0.09( 3)	-0.12( 3)	-0.25( 3)	-0.56( 3)	0.05( 1)	-0.39( 3)
"	-1.02( 1)	0.18( 3)	0.19( 3)	0.04( 3)	-0.13( 1)	0.12( 3)	-0.17( 1)
M17	<b>-2.82( 3)</b>	-0.17( 3)	0.00( 1)	-0.34( 3)	-0.79( 3)	0.05( 1)	-0.34( 3)
"	-1.34( 1)	0.13( 3)	0.29( 3)	0.12( 3)	-0.17( 1)	0.11( 3)	0.03( 3)
M18	0.00( 2)	0.00( 1)	0.00( 1)	0.00( 2)	0.00( 2)	0.01( 1)	0.00( 1)
"	0.06( 3)	0.00( 2)	0.00( 2)	0.01( 3)	0.01( 3)	0.02( 3)	0.00( 3)
M19	-0.79( 3)	0.00( 3)	0.00( 3)	-0.15( 3)	-0.15( 3)	-0.01( 3)	0.01( 1)
"	-0.39( 1)	0.00( 1)	0.00( 1)	-0.07( 1)	-0.07( 1)	0.00( 1)	0.02( 3)
M20	0.13( 2)	0.00( 2)	0.00( 1)	0.02( 2)	0.02( 2)	0.01( 1)	-0.01( 3)
"	0.30( 3)	0.00( 3)	0.00( 3)	0.06( 3)	0.06( 3)	0.02( 3)	0.01( 3)
M21	-0.80( 3)	0.00( 1)	0.00( 1)	-0.15( 3)	-0.15( 3)	-0.02( 3)	-0.01( 3)
"	-0.39( 1)	0.00( 3)	0.00( 3)	-0.07( 1)	-0.07( 1)	0.00( 1)	0.03( 3)
M22	-2.24( 3)	0.00( 3)	0.00( 3)	<b>-0.43( 3)</b>	-0.43( 3)	-0.02( 3)	-0.04( 3)
"	-1.08( 1)	0.00( 1)	0.00( 1)	-0.20( 1)	-0.20( 1)	0.00( 1)	0.02( 3)
M23	0.94( 1)	0.00( 2)	0.00( 1)	0.18( 1)	0.18( 1)	0.02( 1)	-0.12( 3)
"	1.90( 3)	0.00( 3)	0.00( 3)	0.36( 3)	0.36( 3)	0.07( 3)	0.02( 3)
M24	-0.66( 3)	0.00( 3)	0.00( 3)	-0.13( 3)	-0.13( 3)	-0.14( 3)	-0.09( 3)
"	-0.30( 1)	0.00( 2)	0.00( 1)	-0.06( 1)	-0.06( 1)	-0.06( 1)	0.03( 3)

p1

M25	-1.12( 3)	0.00( 2)	0.00( 1)	-0.21( 3)	-0.21( 3)	-0.12( 3)	-0.25( 3)
"	-0.54( 1)	0.00( 3)	0.00( 3)	-0.10( 1)	-0.10( 1)	-0.05( 1)	-0.04( 1)
M26	-0.04( 2)	0.00( 3)	0.00( 3)	-0.01( 2)	-0.01( 2)	0.13( 1)	-0.03( 3)
"	0.03( 1)	0.00( 1)	0.00( 1)	0.01( 1)	0.01( 1)	0.27( 3)	0.05( 3)
M27	0.92( 1)	0.00( 3)	0.00( 3)	0.17( 1)	0.17( 1)	0.09( 1)	-0.35( 3)
"	1.88( 3)	0.00( 1)	0.00( 1)	0.36( 3)	0.36( 3)	0.20( 3)	-0.10( 1)
M28	0.18( 1)	0.00( 3)	0.00( 3)	0.03( 1)	0.03( 1)	0.04( 1)	0.13( 1)
"	0.40( 3)	0.00( 1)	0.00( 1)	0.08( 3)	0.08( 3)	0.08( 3)	<b>0.40( 3)</b>
M29	-0.58( 3)	0.00( 1)	0.00( 1)	-0.11( 3)	-0.11( 3)	-0.03( 3)	<b>-0.41( 3)</b>
"	-0.29( 2)	0.00( 3)	0.00( 3)	-0.06( 2)	-0.06( 2)	-0.01( 1)	-0.18( 1)
M30	-0.02( 2)	0.00( 1)	0.00( 1)	0.00( 2)	0.00( 2)	0.18( 1)	-0.01( 3)
"	0.03( 1)	0.00( 3)	0.00( 3)	0.01( 1)	0.01( 1)	<b>0.36( 3)</b>	0.03( 3)
M31	-0.37( 3)	0.00( 1)	0.00( 1)	-0.07( 3)	-0.07( 3)	<b>-0.41( 3)</b>	0.00( 2)
"	-0.16( 1)	0.00( 3)	0.00( 3)	-0.03( 1)	-0.03( 1)	-0.20( 1)	0.01( 3)



# VisualAnalysis 3.12.c Report

August 25, 1998 2:45 PM

**Project:**

File: D:\Paul\d\_and\_d\UNTITL~1\truss2.VAP

Engineer: Paul Zacher

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

## Load Cases

Load Case	Strength Service Results		
( 1)Service Case 1	Yes	Yes	1st Ord
( 2)Service Case 2	"	"	"
( 3)Equation Case 1	"	"	"

## Member Extreme Results

Member	Fx(lc) K	Fy(lc) K	Mz(lc) K-ft	fc max(lc) ksi	fc min(lc) ksi	Dx(lc) in	Dy(lc) in
M1	0.62( 1)	-0.03( 1)	0.00( 1)	0.12( 1)	-0.18( 1)	0.00( 3)	-0.31( 3)
"	1.29( 3)	0.03( 1)	0.08( 1)	0.55( 3)	0.24( 3)	0.02( 3)	0.00( 1)
M2	0.76( 1)	-0.03( 1)	0.00( 1)	0.14( 1)	-0.12( 1)	0.01( 1)	-0.51( 3)
"	1.56( 3)	0.03( 1)	0.07( 1)	0.57( 3)	0.30( 3)	0.03( 3)	-0.14( 1)
M3	1.67( 1)	-0.03( 3)	0.00( 3)	0.20( 1)	0.09( 1)	0.08( 1)	-0.52( 3)
"	3.44( 3)	0.03( 1)	0.07( 1)	0.53( 3)	0.42( 3)	0.19( 3)	-0.22( 1)
M4	2.21( 1)	-0.03( 1)	0.00( 2)	0.27( 1)	0.15( 1)	0.10( 1)	-0.52( 3)
"	<b>4.51( 3)</b>	0.03( 1)	0.08( 1)	0.67( 3)	<b>0.55( 3)</b>	0.23( 3)	0.03( 3)
M5	-0.18( 3)	0.00( 3)	0.00( 3)	-0.03( 3)	-0.03( 3)	0.00( 3)	-0.09( 3)
"	-0.08( 1)	0.00( 2)	0.00( 3)	-0.01( 1)	-0.01( 1)	0.00( 1)	0.00( 3)
M6	-0.06( 3)	-0.17( 3)	0.00( 3)	-0.01( 3)	-1.15( 3)	0.04( 1)	-0.43( 3)
"	0.06( 3)	0.17( 3)	0.29( 3)	<b>1.15( 3)</b>	0.01( 3)	0.08( 3)	-0.01( 1)
M7	-1.55( 3)	-0.16( 3)	0.00( 3)	-0.29( 3)	-1.26( 3)	0.03( 1)	<b>-0.54( 3)</b>
"	-0.72( 1)	0.16( 3)	0.25( 3)	0.70( 3)	-0.14( 1)	0.08( 3)	-0.13( 1)
M8	-3.09( 3)	<b>-0.24( 3)</b>	<b>-0.30( 3)</b>	-0.36( 3)	-0.85( 3)	0.14( 1)	-0.44( 3)
"	-1.47( 1)	0.16( 3)	0.25( 3)	0.10( 3)	-0.18( 1)	0.30( 3)	-0.14( 1)
M9	-4.52( 3)	-0.14( 3)	-0.30( 3)	-0.55( 3)	-1.01( 3)	0.12( 1)	-0.50( 3)
"	-2.18( 1)	<b>0.23( 3)</b>	0.21( 3)	0.01( 2)	-0.27( 1)	0.28( 3)	-0.22( 1)
M10	<b>-4.77( 3)</b>	-0.21( 3)	0.00( 3)	<b>-0.58( 3)</b>	<b>-1.28( 3)</b>	0.11( 1)	-0.47( 3)
"	-2.28( 1)	0.21( 3)	<b>0.44( 3)</b>	0.14( 3)	-0.28( 1)	0.25( 3)	<b>0.07( 3)</b>
M11	-1.66( 3)	0.00( 3)	0.00( 3)	-0.32( 3)	-0.32( 3)	-0.02( 3)	-0.27( 3)
"	-0.81( 1)	0.00( 1)	0.00( 1)	-0.15( 1)	-0.15( 1)	0.00( 1)	0.00( 1)
M12	0.13( 2)	0.00( 2)	0.00( 1)	0.02( 2)	0.02( 2)	0.13( 1)	-0.10( 3)
"	0.29( 3)	0.00( 3)	0.00( 3)	0.06( 3)	0.06( 3)	0.27( 3)	0.03( 3)
M13	-0.26( 3)	0.00( 3)	0.00( 3)	-0.05( 3)	-0.05( 3)	-0.22( 3)	-0.35( 3)
"	-0.11( 1)	0.00( 1)	0.00( 1)	-0.02( 1)	-0.02( 1)	-0.11( 1)	-0.09( 1)
M14	0.93( 1)	0.00( 1)	0.00( 1)	0.11( 1)	0.11( 1)	0.20( 1)	-0.26( 3)
"	1.86( 3)	0.00( 3)	0.00( 3)	0.23( 3)	0.23( 3)	<b>0.41( 3)</b>	-0.06( 1)
M15	-0.77( 3)	0.00( 1)	0.00( 1)	-0.15( 3)	-0.15( 3)	-0.27( 3)	-0.45( 3)
"	-0.35( 1)	0.00( 3)	0.00( 3)	-0.07( 1)	-0.07( 1)	-0.13( 1)	-0.20( 1)
M16	0.47( 2)	0.00( 2)	0.00( 1)	0.09( 2)	0.09( 2)	0.18( 1)	-0.40( 3)
"	0.99( 3)	0.00( 3)	0.00( 3)	0.19( 3)	0.19( 3)	0.38( 3)	-0.18( 1)
M17	-0.37( 3)	0.00( 1)	0.00( 1)	-0.07( 3)	-0.07( 3)	<b>-0.37( 3)</b>	-0.41( 3)
"	-0.16( 1)	0.00( 3)	0.00( 3)	-0.03( 1)	-0.03( 1)	-0.18( 1)	-0.19( 1)

# VisualAnalysis 3.12.c Report

August 25, 1998 2:45 PM

**Project:**

File: D:\Paul\d\_and\_d\UNTITL~1\truss2.VAP

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	1.29	No	No	"
N3	17.50	2.50	"	"	"
N4	26.00	1.29	"	"	"
N5	35.00	0.00	"	Yes	"
N6	0.00	3.33	"	No	"
N7	6.50	5.50	"	"	"
N8	12.50	7.50	"	"	"
N9	20.00	5.00	"	"	"
N10	27.00	2.67	"	"	"

## Spring Elements

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

## Member Elements

Member	Section	Material	Length ft	Weight lbs	Theta deg
M1	SS2x4	Wood	9.09	13.41	0.00
M2	"	"	8.59	12.67	0.00
M3	SS2x6	"	8.59	19.90	0.00
M4	"	"	9.09	21.08	0.00
M5	SS2x4	"	3.33	4.91	0.00
M6	"	"	6.85	10.11	0.00
M7	"	"	6.32	9.33	0.00
M8	SS2x6	"	7.91	18.33	0.00
M9	"	"	7.38	17.10	0.00
M10	"	"	8.43	19.55	0.00
M11	SS2x4	"	8.51	12.56	0.00
M12	"	"	4.90	7.22	0.00
M13	"	"	7.13	10.52	0.00
M14	SS2x6	"	7.07	16.39	0.00
M15	SS2x4	"	3.54	5.22	0.00
M16	"	"	7.05	10.41	0.00
M17	"	"	1.70	2.51	0.00

## 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
"	SS2x6	8.25	20.80	7.56	7.56

## Material Properties

Material	Strength ksi	Elasticity ksi	Poisson	Density lb/ft <sup>3</sup>	Therm. /F
Wood	-NA-	1700.00	0.36	40.47	0.00

# VisualAnalysis 3.12.c Report

August 25, 1998 2:35 PM

## Project:

File: D:\Paul\d\_and\_d\untitled folder\truss2.VAP

Engineer: Paul Zacher

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

## Load Cases

Load Case	Strength Service Results		
( 1)Service Case 1	Yes	Yes	1st Ord
( 2)Service Case 2	"	"	"
( 3)Equation Case 1	"	"	"

## Service Load Cases

Load Case	Load Source	Self Weight	Loads
Service Case 1	Dead loads	None	
Service Case 2	Roof Live 1	"	

## Load Combination Summary

Equation Case: Equation Case 1

Combination: +1D+1L+1Lr+1R+1W+1S+1E+1H+1F+1TS+1T+1TC+1I+1U+1LE

### Contributing Cases & Source

Service Case 1 (Dead loads)

Service Case 2 (Roof Live loads)

## Equation Case Combinations

Load Case	Cases Equation	
Equation Case 1	0.00	0.00

## Factored Case Combinations

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

## Nodal Loads

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

## Member Point Loads

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

## Member Uniform Loads

Load Case	Member	Direction	Offset ft	End Off ft	Magnitude
Service Case 1	M1	DY proj.	0.00	9.09	-0.01 K/ft
"	M2	"	0.00	8.59	-0.01 K/ft
"	M3	"	0.00	8.59	-0.01 K/ft
"	M4	"	0.00	9.09	-0.01 K/ft
"	M6	"	0.00	6.85	-0.02 K/ft
"	M7	"	0.00	6.32	-0.02 K/ft
"	M8	"	0.00	7.91	-0.02 K/ft
"	M9	"	0.00	7.38	-0.02 K/ft
"	M10	"	0.00	8.43	-0.02 K/ft
Service Case 2	M6	"	0.00	6.85	-0.03 K/ft
"	M7	"	0.00	6.32	-0.03 K/ft



"	M8	"	0.00	7.91	-0.03 K/ft
"	M9	"	0.00	7.38	-0.03 K/ft
"	M10	"	0.00	8.43	-0.03 K/ft

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## Member Linear Loads

---

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

## Member Temperature Changes

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

## Member Gradient Temperatures

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

Buckling Factor, CT is  
 negelected due to small contribution

**BENDING & COMP: TRUSS 1; MEMBER 17**

Grading:

2x or 4x                      Doug-fir larch: No. 2

Assumptions:

Lateral support at points of bearing  
 SPS or gypboard attached to compression face  
 Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	5.5 inches
Length	6.06 feet
Max Axial Comp, C	2820 lbs
Max Reaction, R	170 lbs
Max Moment, M	1 ft-lbs
Max LL Deflection	0.17 inches
Max TL Deflection	0.34 inches
LL Defl Criteria = L/	240
TL Defl Criteria = L/	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
fc =	342 psi
Fce=	4290 psi
Fc*=	1094 psi
F'c=	1029 psi
fb=	0 psi
F'b=	1258 psi
Shear D/C ratio	0.26 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.11 < 1.0, Member OK
Live Load defl ratio	0.56 < 1.0, Member OK
Total Load defl ratio	0.84 < 1.0, Member OK

Buckling Factor, CT is  
 negelected due to small contribution

**BENDING & COMP: TRUSS 2; MEMBER 10**

Grading:

2x or 4x                      Doug-fir larch: No. 2

Assumptions:

Lateral support at points of bearing  
 SPS or gypboard attached to compression face  
 Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	5.5 inches
Length	8.43 feet
Max Axial Comp, C	4770 lbs
Max Reaction, R	210 lbs
Max Moment, M	0 ft-lbs
Max LL Deflection	0.25 inches
Max TL Deflection	0.47 inches
LL Defl Criteria = L/	240
TL Defl Criteria = L/	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
fc =	578 psi
Fce=	2217 psi
Fc*=	1094 psi
F'c=	951 psi
fb=	0 psi
F'b=	1258 psi
Shear D/C ratio	0.32 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.37 < 1.0, Member OK
Live Load defl ratio	0.59 < 1.0, Member OK
Total Load defl ratio	0.84 < 1.0, Member OK