

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0014133
Insp Area: 2

Site Address: 955 PARK RANCH WY SAC
Parcel No: 031-0250-032

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

CONTRACTOR
OMNI ROOFING
P.O. BOX 235
FAIR OAKS, CA. 95628

OWNER
GARCIA RINTY VIGIL/MARGARIT
955 PARK RANCH WY
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: T/O SHEET REROOF WITH LITE 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 39 License Number 64515 Date 11-28-00 Contractor Signature Norman A. Jelle

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 11-28-00 Applicant/Agent Signature Norman A. Jelle

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 1461308 Exp Date 06/01/2001

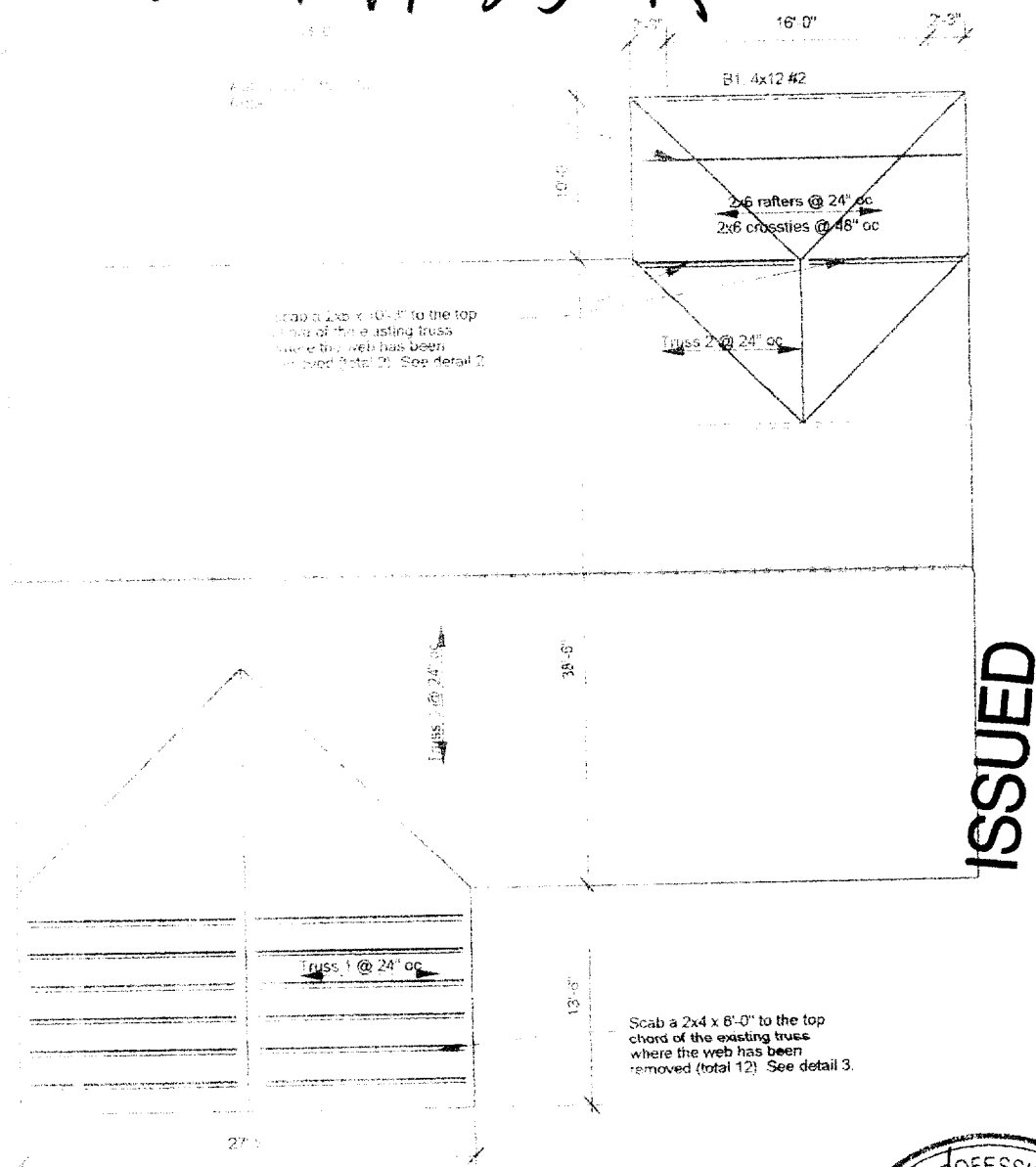
_____, (This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and agree that if I should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

Date 11-28-00 Applicant Signature Norman A. Jelle

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.

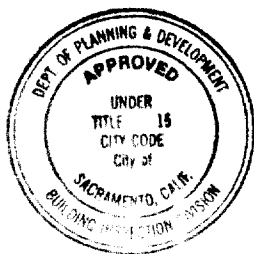
0014133 R



ISSUED

1.0V 2 6 2000

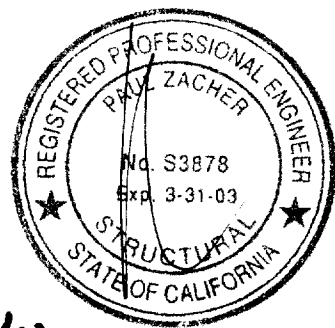
Sacramento Building Division



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.

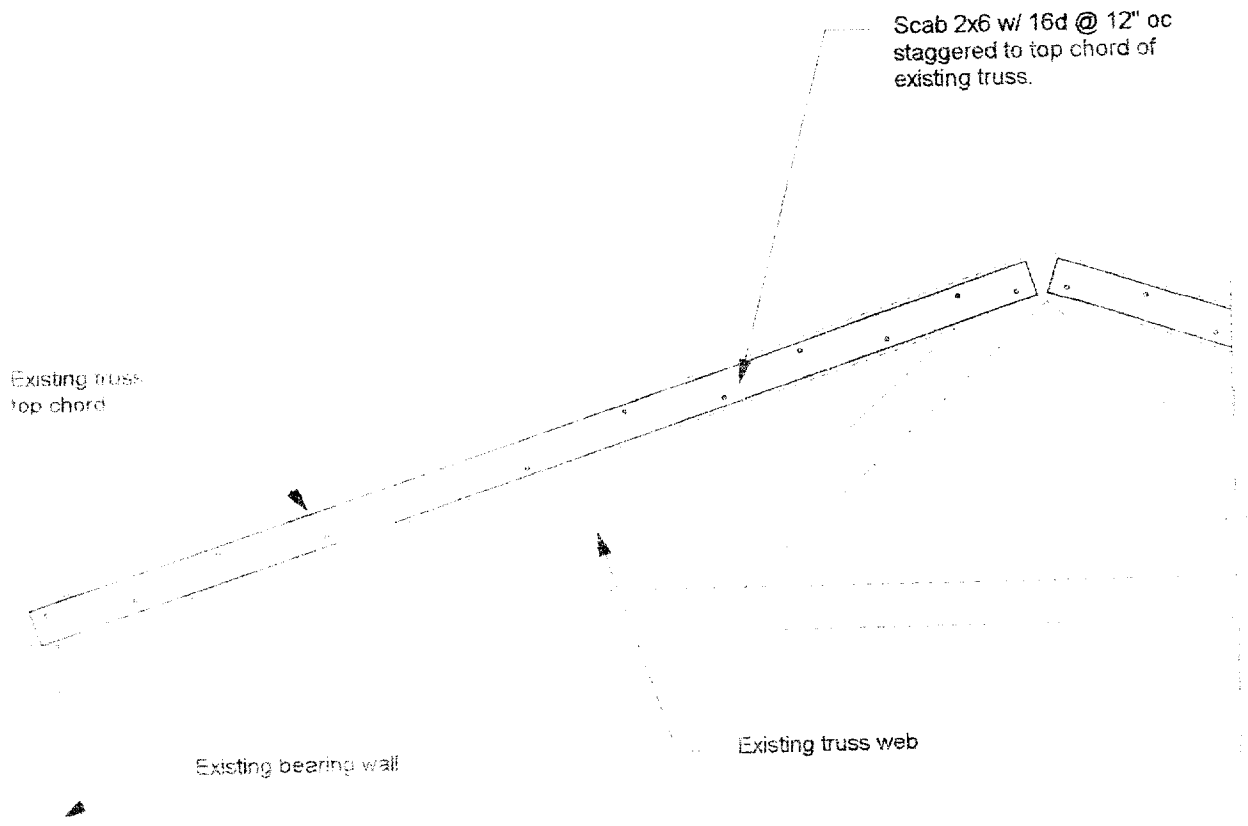
REVIEWED BY: *Paul Zacher* 11/20/00



- Notes:
- 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.
 - All structural wood members that were observed appear to be in sound condition and without structural defect.



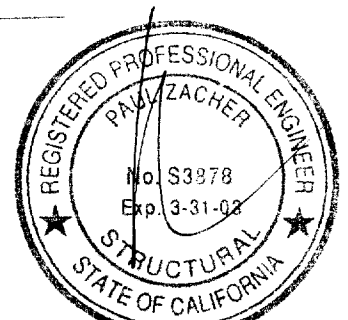
1 ROOF PLAN - GARCIA
Not to Scale



TRUSS REINFORCEMENT DETAIL

2

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



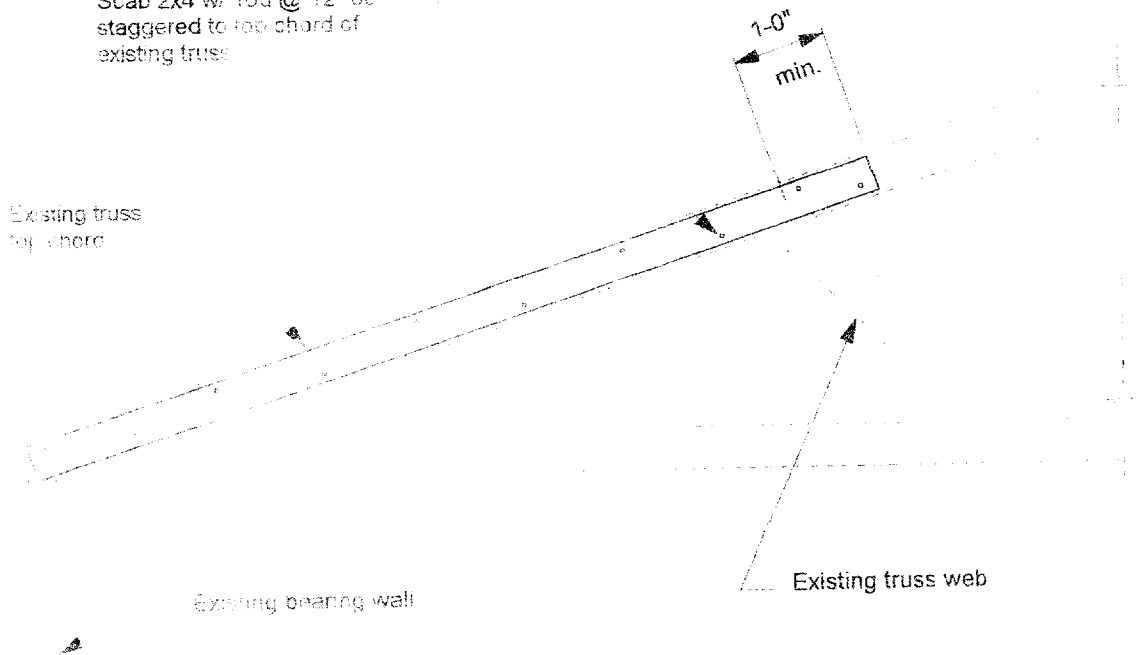
Scab 2x4 w/ 16d @ 12" oc
staggered to top chord of
existing truss

Existing truss
top chord

1'-0"
min.

Existing bearing wall

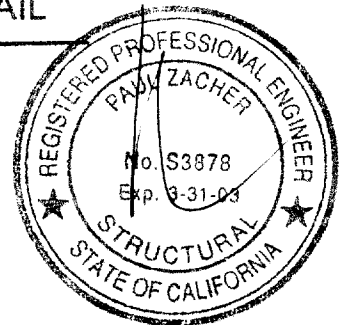
Existing truss web



TRUSS REINFORCEMENT DETAIL

3

scale 1/2" = 1'-0"



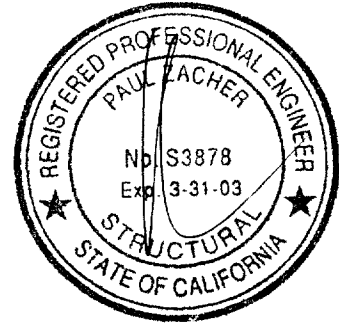
Garcia

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

TEL: 916.961.3960
FAX: 916.961.6552

October 11, 2000

Omni Roofing
P.O. Box 235
Fair Oaks, CA 95628
TEL: (916) 965-8237
FAX: (916) 965-9059



Attn: Mr. Norm Sells.

re: Job 2000-336: GARCIA

Subject: Structural Investigation Report of the Roof for the Residence located at 955 Park Ranch Way, Sacramento, CA 95831.

As requested by Mr. Norm Sells, 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 10, 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 1970'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 framed with pre-engineered wood trusses spaced at 24" on center. The garage area is framed with 2x6 rafters spaced at 24" on center and with pre-engineered wood trusses spaced at 24" on center.

CONCLUSIONS:

Roof:
The living and garage areas lack sufficient structural capacity for the applied live and dead loads.

Garcia

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 2x6 DF#2 x 10'-3" long rafter to the top chord of the existing truss. See details 1 and 2.

Garage:

2. Scab a 2x4 DF#2 x 8'-0" long rafter to the top chord of the existing truss. See details 1 and 3.
3. Add a 1x8 cross tie as required so that the maximum spacing does not exceed 4'-0" on center. Nail the cross ties to the existing rafters with 4 -16d's at each connection. 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

DESIGN LOADING:

Roof Pitch	4	in 12
Pitch Adjustment Factor	1.05	

LOCATION: ROOF

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	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	1.00	psf
	Load	10.9 psf
	Roof Pitch Adjustment	0.59 psf
	Total Load	11.5 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	0.64	psf
	Load	10.5 psf
	Roof Pitch Adjustment	0.57 psf
	Total Load	11.1 psf

LOCATION: BOTTOM CHORD

<u>MATERIAL</u>	<u>WEIGHT</u>	
Batt/blown insul	0.50	psf
2x4 truss @ 24" oc	1.28	psf
1/2" Gypboard	2.50	psf
	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: 11.18AM, 11 OCT 00

REV: 10/30/04
 DRAW: AW 0602/BA4 Ver: 1
 10/19/93 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

	rafter	B1
Timber Section	2x6	4x12
Beam Width	in: 14.00	15.00
Beam Depth	in: 5.500	11.250
L _e - Unbraced Length	ft: 5.00	0.00
Timber Grade	Douglas Fir - Arch	Douglas Fir - Arch
F _b - Basic Allow	psi: 875.0	875.0
F _v - 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

	ft	12.00	16.00
Span			
Dead Load	#/ft:	29.00	31.00
Live Load	#/ft:	32.00	112.00

Results

Ratio = 0.9607 0.8344

M _{max} @ Center	in-k:	11.88	74.11
@ X =	ft:	6.00	8.00
f _b Actual	psi:	1,570.9	1,003.8
F _b Allowable	psi:	1,635.2	1,203.1
		Bending OK	Bending OK
F _v Actual	psi:	65.7	52.2
F _v Allowable	psi:	116.8	116.8
		Shear OK	Shear OK

Reactions

@ Left End	DL	lbs:	198.00	648.00
	LL	lbs:	192.00	896.00
	Max. DL+LL	lbs:	330.00	1,544.00
@ Right End	DL	lbs:	198.00	648.00
	LL	lbs:	192.00	896.00
	Max. DL+LL	lbs:	330.00	1,544.00

Deflections

Ratio = Deflection OK

Center DL Defl	in:	0.322	0.180
L/Defl Ratio		446.5	1,068.1
Center LL Defl	in:	0.449	0.249
L/Defl Ratio		320.9	772.5
Center Total Defl	in:	0.771	0.428
Location	ft:	6.000	8.000
L/Defl Ratio		156.7	448.3

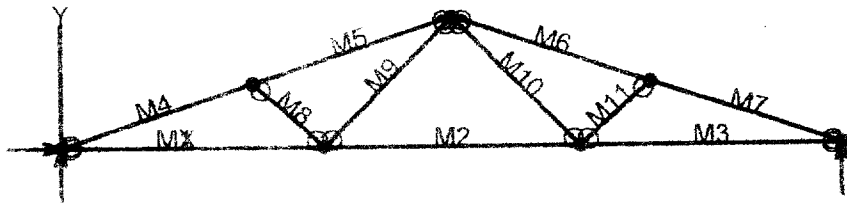
P K Zacher SF

Job #:

Date:

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

10/1/02	12°
2/1/02	16°



VisualAnalysis 3.50.c Report

10/1/80 11:12:00

Project: Truss 1

File: C:\Program Files\IES\VA35\truss 1.vap

Company: PE Associates Engineers

Engineer: Paul Zecher

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	9.25	0.00	No	No				
N3	18.50	0.00						
N4	27.75	0.00		Yes				
N5	6.00	2.25		No				
N6	10.75	2.25						
N7	15.50	4.50						

Member Elements

Member	Section	Material	Length ft
M1	S52x4	Wood	9.25
M2	"	"	9.25
M3	"	"	9.25
M4	"	"	7.13
M5	"	"	7.13
M6	"	"	7.13
M7	"	"	7.13
M8	"	"	3.38
M9	"	"	6.41
M10	"	"	6.42
M11	"	"	3.38

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
Wood	Sha S52x4	5.25	5.34	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	NA-	1700000.00	0.35	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combinations: +1D+1L+1LR
 Contributing Cases & Source
 Service Case 1 (Dead loads)
 Service Case 2 (Roof Live loads)

Member Uniform Loads

Temp. table is empty. Check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
M1	Equation Case 1	0.00	903.76	-NA-
M4		-NA	903.76	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	2167.49	-45.65	-54.36	-0.2326
"	2167.49	-19.14	45.3145	-0.2356
"	2167.49	7.3814	43.4349	-0.1688
"	2167.49	33.8981	0.0000	-0.0000
M2	1349.43	-38.70	-54.36	-0.2326
"	1349.43	-12.90	22.8452	-0.2609
"	1349.43	12.9000	22.8452	-0.2609
"	1349.43	28.7000	-54.36	-0.2326
M3	2167.49	-33.90	-0.0000	-0.0000
"	2167.49	-7.3814	43.4349	-0.1689
"	2167.49	19.1352	45.3145	-0.2356
"	2167.49	45.6519	54.36	-0.2326
M4	-2331.33	139.80	0.0000	-0.0000
"	-2290.68	17.8501	186.23	-0.2092
"	-2250.03	-104.10	83.9471	-0.2233
"	-2209.38	-226.05	-306.84	-0.2170
M5	-1950.18	231.29	-306.84	-0.2170
"	-1908.09	104.82	105.67	-0.3534
"	-1865.99	-21.64	207.95	-0.3973
"	-1823.90	-148.11	0.0000	-0.2324
M6	-1950.18	-231.29	-306.84	-0.1949
"	-1908.09	-104.82	105.67	-0.3312
"	-1865.99	21.6426	207.95	-0.3751
"	-1823.90	148.11	0.0000	-0.2102
M7	-2331.33	-139.80	0.0000	0.0222
"	-2290.68	-17.85	186.23	-0.1871
"	-2250.03	104.10	83.9471	-0.2233
"	-2209.38	226.05	-306.84	-0.1948
M8	-524.91	0.0000	-0.0000	-0.1549
"	-524.91	-0.0000	-0.0000	-0.1453
"	-524.91	-0.0000	-0.0000	-0.1356
"	-524.91	-0.0000	0.0000	-0.1260
M9	-610.53	0.0000	0.0000	-0.1885
"	-610.53	0.0000	0.0000	-0.1864
"	-610.53	0.0000	0.0000	-0.1844
"	-610.53	0.0000	0.0000	-0.1823
M10	-610.53	0.0000	0.0000	-0.1384
"	-610.53	0.0000	0.0000	-0.1343
"	-610.53	0.0000	0.0000	-0.1343
"	-610.53	0.0000	0.0000	-0.1322
M11	-524.91	0.0000	0.0000	-0.2019
"	-524.91	0.0000	0.0000	-0.1922
"	-524.91	0.0000	0.0000	-0.1824
"	-524.91	0.0000	0.0000	-0.1730

BENDING & COMP: TRUSS 1 - MEMBER 4

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

Grading

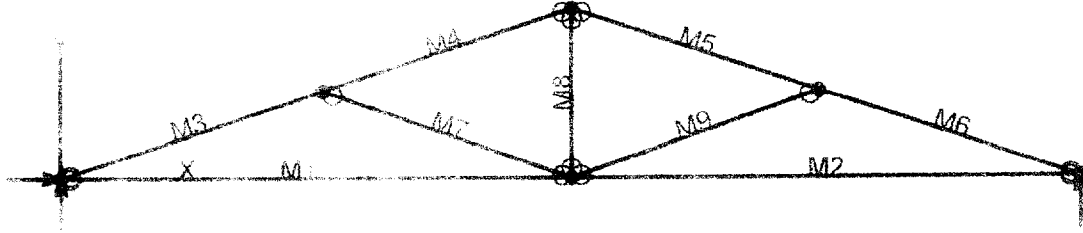
2x or 4x

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	3 inches
Depth, c	7.5 inches
Length	7.12 feet
Max Axial Comp. C	2209 lbs
Max Reaction, R	226 lbs
Max Moment, M	306 ft-lbs
Max LL Deflection	0.09 inches
Max TL Deflection	0.21 inches
LL Defl Criteria = L/240	240
TL Defl Criteria = L/180	180
Duration factor, Cd	1.25
Repetitive Factor, Cr	1.15
Size Factor, Cf bending	1.15 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 ²	1.20
F _c	210 psi
F _{c_e}	1023 psi
F _b	2084 psi
F _{b_e}	891 psi
F _v	600 psi
F _{v_e} = F _{b_e}	2156 psi
Shear D/C ratio	0.27 < 1.0, Member OK
Interaction equation (F _c /F _{c_e}) ² +	
F _b / (F _b (1 - F _c /F _{c_e})) =	0.41 < 1.0, Member OK
Live Load defl ratio	0.25 < 1.0, Member OK
Total Load defl ratio	0.44 < 1.0, Member OK



VisualAnalysis 3.50.c Report

Job: VA35\Truss 1
 Project: Truss 1
 File: C:\Program Files\IES\VA35\Truss 1.vap
 Company: PE Associates Engineers
 Engineer: Paul Zsche
 Defaults: 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	10.25	0.00	No		No			
N3	20.50	0.00			Yes			
N4	5.25	1.75			No			
N5	15.25	1.75						
N6	10.25	3.42						

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.25
M2	"	"	10.25
M3	"	"	5.03
M4	"	"	5.03
M5	"	"	5.03
M6	"	"	5.03
M7	"	"	5.03
M8	"	"	5.03
M9	"	"	3.42
M10	"	"	5.03

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
Wood Sha	SS2x4	5.25	5.38	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
WOOD	NA	1700000.00	0.38	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combination: +D+L+L1
 Contributing Cases & Source
 Service Case 1 (Dead Loads)
 Service Case 2 (Roof Live Loads)

Member Uniform Loads

Printed on 08/21/2017. Check the calculation state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
1	Equation Case 1	-0.00	673.81	-NA-
2		-NA-	673.81	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
11	1555.52	-53.19	-93.44	-0.1296
12	1555.52	-23.81	37.8495	-0.1750
13	1555.52	5.5757	68.9958	-0.1546
14	1555.52	34.9590	0.0000	-0.0000
15	1555.52	-34.96	0.0000	-0.0000
16	1555.52	-5.5757	68.9958	-0.1547
17	1555.52	23.8076	37.8495	-0.1750
18	1555.52	53.1910	-93.44	-0.1296
19	-1677.72	114.17	0.0000	-0.0000
20	1646.10	19.3175	122.68	-0.1004
21	-1614.48	75.53	70.8311	-0.1310
22	-1582.87	-170.38	-155.55	-0.1251
23	-1148.62	165.01	-155.55	-0.1251
24	-1118.65	19.6736	54.6367	-0.1605
25	-1088.18	-15.66	106.49	-0.1714
26	-1058.01	-105.99	0.0000	-0.1276
27	-1148.62	-165.01	-155.55	-0.1115
28	-1118.65	-74.67	54.6367	-0.1469
29	-1088.18	15.6597	106.49	-0.1578
30	-1058.01	105.99	0.0000	-0.1140
31	-1477.72	-114.17	0.0000	0.0136
32	-1646.10	-19.32	122.68	-0.0869
33	-1614.48	75.5325	70.8311	-0.1175
34	-1582.87	170.38	-155.55	-0.1115
35	-549.26	0.0000	0.0000	-0.1152
36	-549.26	0.0000	0.0000	-0.1123
37	-549.26	0.0000	0.0000	-0.1093
38	-549.26	0.0000	0.0000	-0.1064
39	-549.26	0.0000	0.0000	-0.0214
40	-549.26	0.0000	0.0000	-0.0214
41	-549.26	0.0000	0.0000	-0.0214
42	-549.26	0.0000	0.0000	-0.0214
43	-549.26	0.0000	0.0000	-0.1294
44	-549.26	0.0000	0.0000	-0.1264
45	-549.26	0.0000	0.0000	-0.1235
46	-549.26	0.0000	0.0000	-0.1205

BENDING & COMP: TRUSS 2 - MEMBER 3

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

Grading:

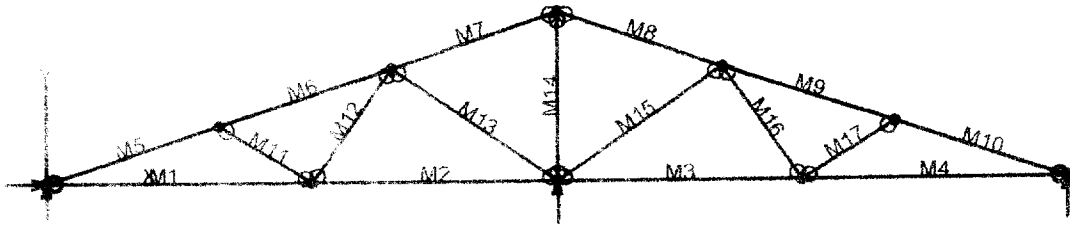
1x or 4x

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	5.53 feet
Max Axial Comp. C	1582 lbs
Max Reaction, R	170 lbs
Max Moment, M	155 ft-lbs
Max LL Deflection	0.05 inches
Max TL Deflection	0.12 inches
LL Defl Criteria = $L/240$	240
TL Defl Criteria = $L/180$	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	1.15
f_c	301 psi
f_{cc}	1635 psi
F_b^*	2084 psi
F_c	1255 psi
f_b	607 psi
$F^*b = F_b^*$	2156 psi
Shear D/C ratio	0.41 < 1.0, Member OK
Interaction equation: $(f_c/F_c)^2 +$	
$f_b/(F^*b(1-f_c/F_{cc})) =$	0.40 < 1.0, Member OK
Live Load defl ratio	0.18 < 1.0, Member OK
Total Load defl ratio	0.33 < 1.0, Member OK



VisualAnalysis 3.50.c Report

Project: Truss 3
 File: C:\Program Files\IBS\VA35\Truss 3.rap
 Company: PK Associates Engineers
 Engineer: Paul Zacher
 Units: 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	10.00	0.00	No	No	"
N3	9.35	0.00	"	Yes	"
N4	28.50	0.00	"	No	"
N5	28.50	0.00	"	Yes	"
N6	6.50	2.17	"	No	"
N7	12.00	2.17	"	"	"
N8	13.00	4.33	"	"	"
N9	15.50	4.33	"	"	"
N10	19.25	6.42	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.00
M2	"	"	9.35
M3	"	"	9.35
M4	"	"	10.00
M5	"	"	6.85
M6	"	"	6.85
M7	"	"	6.85
M8	"	"	6.85
M9	"	"	6.85
M10	"	"	6.85
M11	"	"	4.17
M12	"	"	5.27
M13	"	"	7.60
M14	"	"	6.85
M15	"	"	7.60
M16	"	"	5.27
M17	"	"	4.17

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
Wood Sha	SS2x4	5.25	5.35	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
WOOD	NA	1700000.00	0.34	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combination: SLD+LL+ILF
 Contributing Cases & Source
 Equation Case 1 (Dead Loads)
 Equation Case 2 (Roof Live Loads)

Member Uniform Loads

If member is empty, check the selection state, or report properties.

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
1	Equation Case 1	0.00	352.84	-NA-
2		-NA-	1825.11	-NA-
3		-NA-	352.84	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	504.91	-51.18	-81.78	-0.0278
M2	504.91	-22.51	40.7999	-0.1072
M3	504.91	41.1557	68.0579	-0.1169
M4	504.91	14.9224	0.0000	-0.0000
M5	171.73	-37.01	-56.23	-0.0000
M6	171.73	-10.50	16.8080	-0.0225
M7	171.73	16.0198	8.2938	-0.0267
M8	171.73	42.5365	-81.78	-0.0278
M9	171.73	-42.54	-81.78	-0.0278
M10	171.73	-16.02	8.2938	-0.0267
M11	171.73	10.4969	16.8080	-0.0225
M12	171.73	27.0135	-56.23	-0.0000
M13	504.91	-34.82	0.0000	-0.0000
M14	504.91	41.1557	68.0579	-0.1169
M15	504.91	22.5110	40.7999	-0.1072
M16	504.91	11.1776	-81.78	-0.0278
M17	-579.63	141.76	0.0000	-0.0000
M18	-40.12	24.3305	189.03	-0.1506
M19	-501.00	-93.10	110.38	-0.1360
M20	-462.01	-210.54	-235.84	-0.0342
M21	-139.90	176.80	-235.64	-0.0342
M22	100.88	59.3690	33.3029	-0.0411
M23	81.88	-58.06	14.7918	-0.0366
M24	-32.80	-175.50	-231.17	-0.0192
M25	807.15	204.45	-231.17	-0.0192
M26	844.91	91.5360	93.3151	-0.1059
M27	982.41	21.38	170.17	-0.1257
M28	920.43	-134.30	0.0000	-0.0083
M29	807.15	-204.45	-231.17	-0.0162
M30	844.91	-91.54	93.3151	-0.1030
M31	982.41	21.2807	170.17	-0.1227
M32	920.43	134.30	0.0000	-0.0054
M33	139.90	-176.80	-235.64	-0.0312
M34	100.88	-59.37	33.3029	-0.0382
M35	81.88	58.0644	14.7918	-0.0336
M36	-32.80	-175.50	-231.17	-0.0182
M37	-579.63	-141.76	0.0000	0.0029

	189.05	0.0000	0.0000	0.0000	0.0000
	189.05	0.0000	0.0000	0.0000	0.0000
	210.54	-0.0000	-0.0000	-0.0000	-0.0000
M 1	503.47	0.0000	0.0000	0.0000	0.0058
	-503.47	0.0000	0.0000	0.0000	-0.0237
	103.47	0.0000	0.0000	0.0000	-0.0033
	103.47	0.0000	0.0000	0.0000	-0.0001
M 2	436.74	0.0000	0.0000	0.0000	-0.0014
	436.74	0.0000	0.0000	0.0000	-0.0183
	436.74	0.0000	0.0000	0.0000	-0.0051
	436.74	0.0000	0.0000	0.0000	-0.0120
M 3	501.21	0.0000	0.0000	0.0000	-0.0059
	501.21	0.0000	-0.0000	-0.0000	-0.0097
	501.21	0.0000	-0.0000	-0.0000	-0.0035
	501.21	0.0000	-0.0000	-0.0000	0.0008
M 4	838.54	0.0000	-0.0000	-0.0000	-0.0047
	838.54	0.0000	-0.0000	-0.0000	-0.0047
	838.54	0.0000	-0.0000	-0.0000	0.0047
	838.54	0.0000	0.0000	0.0000	0.0047
M 5	801.21	0.0000	0.0000	0.0000	0.0012
	801.21	0.0000	0.0000	0.0000	0.0150
	801.21	0.0000	0.0000	0.0000	0.0088
	801.21	0.0000	0.0000	0.0000	-0.0028
M 6	436.74	0.0000	0.0000	0.0000	0.0138
	436.74	0.0000	0.0000	0.0000	0.0106
	436.74	0.0000	0.0000	0.0000	0.0075
	436.74	0.0000	0.0000	0.0000	-0.0044
M 7	503.47	0.0000	0.0000	0.0000	-0.0304
	-503.47	0.0000	-0.0000	-0.0000	0.0286
	503.47	0.0000	-0.0000	-0.0000	0.0168
	503.47	0.0000	0.0000	0.0000	0.0253

BENDING & COMP. TRUSS 3 - MEMBERS

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	Depth, d	Length	Max Axial Comp, C	Max Reaction, R	Max Moment, M	Max LL Deflection	Max TL Deflection	LL Defl Criteria = L/240	TL Defl Criteria = L/180	Duration factor, Cd	Repetitive Factor, Cr	Size Factor, Cf bending	Size Factor, Cf comp	Buckling Factor, CT =	fc =	Fcc =	Fc* =	F'c =	Fb =	F'b=F'b* =	Shear D/C ratio	Interaction equation:	(fc/F'c)^2 +	Ib/ (F'b(1-fc/F'ce)) =	Live Load defl ratio	Total Load defl ratio
1.5 inches	3.5 inches	6.85 feet	462 lbs	210 lbs	235 ft-lbs	0.02 inches	0.03 inches	240	180	1.25	1.15	1.5 for 2x4, 1.3 for 2x6	1.15 1.15 for 2x4, 1.1 for 2x6	1.19	88 psi	1099 psi	2084 psi	943 psi	921 psi	2156 psi	0.51 < 1.0, Member OK			0.47 < 1.0, Member OK	0.06 < 1.0, Member OK	0.07 < 1.0, Member OK