

CITY OF SACRAMENTO  
1231 I Street, Sacramento, CA 95814

Permit No: 0605475  
Insp Area: 2  
Thos Bros: 336G2

Site Address: 435 PIMENTEL WY SAC  
Parcel No: 031-1120-081

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

CONTRACTOR  
WEATHERTITE ROOFING  
4661 SUMMER CREEK CT  
SHINGLE SPRINGS, CA 95682

OWNER  
MADRUGA JASON M/KATHRYN K  
435 PIMENTEL WY  
SACRAMENTO, CA 95831

ARCHITECT

Nature of Work: PAPERLESS, TEAR OFF SHAKES, RESHEET, AND INSTALL 38 SQ'S OF LIGHTWEIGHT TILE-IN  
PROGRESS INSPECTION REQUIRED

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 420375 Date 4/24/06 Contractor Signature Carolyn Pees

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 with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_

Date \_\_\_\_\_ Owner Signature NEW CITY HALL

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 4/24/06 Applicant/Agent Signature Carolyn Pees

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.

CP 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:

A Carrier STATE FUND Policy Number 1271896-2004 Exp Date 10/01/2006

(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 4/24/06 Applicant Signature Carolyn Pees

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.

0605475

Madruga

PZSE, Inc. - Structural Engineers  
4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: (916) 961-3960  
FAX: (916) 961-6552  
e-mail: paul@pzse.com

March 15, 2006

Madruga  
435 Pimental Way  
Sacramento, CA 95831  
TEL: (916) 392-8433  
FAX:



Attn.: Ms. Madruga,

re: Job 2006048: MADRUGA

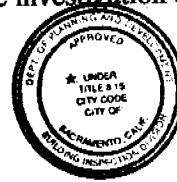
Subject: Structural Investigation Report of the Roof for the Residence located at 435 Pimental Way, Sacramento, CA 95831.

As requested by Ms. Madruga, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site February 28, 2006. 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 with 2001 CBC Title 24 Amendments.

The following is based on visual observations with no subsurface investigation being made. This report 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.

DESCRIPTION:

Type of Facility: Residence.  
Year Built: Estimated 1980's vintage.  
Occupancy: Residential.  
No. of Stories: One.  
Dimensions: Approximately 2000 square feet.



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 By: MAB  
04-21-06

CONSTRUCTION:

Roof:  
The roof covering will consist of a Light Weight Concrete Tile over 7/16" solid sheathing. The roof structure is framed with pre-engineered wood trusses 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.

*Field Verify* - tile weight 7.3 PSF may  
- Requirements of sheet 2 (of 3)  
are met

CITY COPY

1/31

0605475  
PZSE, INC. - STRUCTURAL ENGINEERS  
4701 LAKESIDE WAY  
FAIR OAKS, CA 95628  
TEL: (916) 961-3960  
FAX: (916) 961-6552  
E-MAIL: PAUL@PZSE.COM

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Madruga

PZSE, Inc. - Structural Engineers  
4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: (916) 961-3960  
FAX: (916) 961-6552  
e-mail: paul@pzse.com

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 rafter to the existing 2x4 rafters with 16d's @ 12" on center where the span is greater than 8'-0". The rafter to be scabbed to the existing rafter may be held short of the intersecting bearing wall, hip, valley, ridge or purlin by no more than 4". See detail 1.
2. Scab a 2x4 DF#2 x 10'-6" 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, S.E.



Job #: 06\_048

Date: 03/15/2006

LOADING:

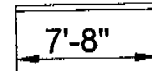
Rafter:

$Dr = 11.9 \text{ psf} \times 2'-0" = 23.8 \text{ plf}$

2x4 #2

23.8 / 32.0

$Lr = 16.0 \text{ psf} \times 2'-0" = 32.0 \text{ plf}$



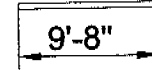
Rafter:

$Dr = 11.9 \text{ psf} \times 2'-0" = 23.8 \text{ plf}$

2-2x4 #2

23.8 / 32.0

$Lr = 16.0 \text{ psf} \times 2'-0" = 32.0 \text{ plf}$



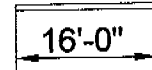
B1:

$Dr = 14.9 \text{ psf} \times 6'-0" = 89 \text{ plf}$

4x12 #2

89 / 96

$Lr = 16.0 \text{ psf} \times 6'-0" = 96 \text{ plf}$



#### Description RAFTERS AND BEAMS

#### Timber Member Information Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

		rafter	rafter	B1
Timber Section		2x4	2-2x4	4x12
Beam Width	in	1.500	3.000	3.500
Beam Depth	in	3.500	3.500	11.250
Le: Unbraced Length	ft	0.00	0.00	0.00
Timber Grade		Douglas Fir - Larch, No.2	Douglas Fir - Larch, No.2	Douglas Fir - Larch, No.2
Fb - Basic Allow	psi	875.0	875.0	875.0
Fv - Basic Allow	psi	95.0	95.0	95.0
Elastic Modulus	ksi	1,600.0	1,600.0	1,600.0
Load Duration Factor		1.250	1.250	1.250
Member Type		Sawn	Sawn	Sawn
Repetitive Status		Repetitive	Repetitive	No

#### Center Span Data

Span	ft	7.67	9.67	16.00
Dead Load	#/ft	23.80	23.80	89.00
Live Load	#/ft	32.00	32.00	96.00

#### Results Ratio = 0.8522 0.6773 0.7998

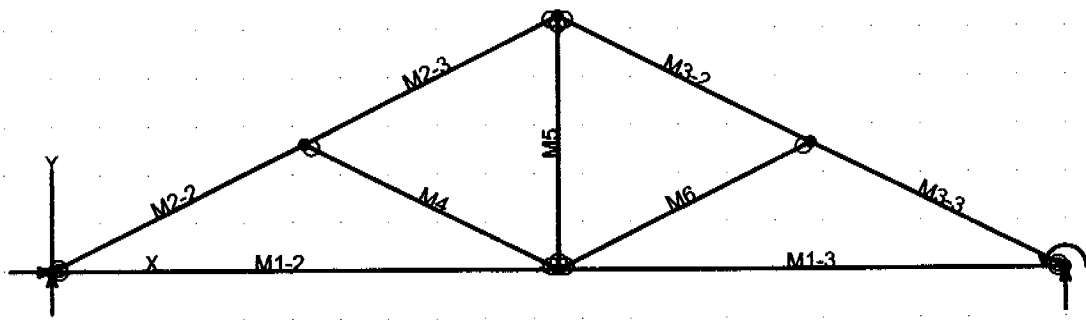
Mmax @ Center	in-k	4.92	7.83	71.04
@ X =	ft	3.83	4.83	8.00
fb : Actual	psi	1,607.8	1,277.8	962.2
Fb : Allowable	psi	1,886.7	1,886.7	1,203.1
		Bending OK	Bending OK	Bending OK
fv : Actual	psi	56.7	36.4	50.1
Fv : Allowable	psi	118.8	118.8	118.8
		Shear OK	Shear OK	Shear OK

#### Reactions

@ Left End DL	lbs	91.27	115.07	712.00
LL	lbs	122.72	154.72	768.00
Max. DL+LL	lbs	213.99	269.79	1,480.00
@ Right End DL	lbs	91.27	115.07	712.00
LL	lbs	122.72	154.72	768.00
Max. DL+LL	lbs	213.99	269.79	1,480.00

#### Deflections Ratio OK Deflection OK Deflection OK

Center DL Defl	in	-0.216	-0.273	-0.198
L/Defl Ratio		425.9	425.0	972.1
Center LL Defl	in	-0.291	-0.367	-0.213
L/Defl Ratio		316.7	316.1	901.2
Center Total Defl	in	-0.507	-0.640	-0.411
Location	ft	3.835	4.835	8.000
L/Defl Ratio		181.6	181.3	467.7



# Truss 1

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher  
File: C:\Documents and Settings\Paul\Desktop\Madruga06\_048\Truss 1.vap

## Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	21.00	0.00	No	"	Yes
N3	10.50	5.25	"	No	No
N4	10.50	0.00	"	"	"
N5	5.25	2.63	"	"	"
N6	15.75	2.63	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	10.50
M1-3	"	"	10.50
M2-2	"	"	5.87
M2-3	"	"	5.87
M3-2	"	"	5.87
M3-3	"	"	5.87
M4	"	"	5.87
M5	"	"	5.25
M6	"	"	5.87

## 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

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1600000.00	0.36	40.47

## Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

## Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	596.40	-NA-



Node	Load Case	FX lb	FY lb	MZ lb-ft
N2	"	-NA-	596.40	0.00

## Member Results

Member	Fx lb	Vy lb	Mx lb-ft	Dx in	Dy in
M1-2	928.54	-55.62	-109.95	0.01	-0.06
"	928.54	-25.52	32.01	0.01	-0.13
"	928.54	4.58	68.66	0.00	<b>-0.14</b>
"	<b>928.54</b>	34.68	0.00	0.00	0.00
M1-3	928.54	-34.68	0.00	0.03	0.00
"	928.54	-4.58	68.66	0.02	-0.14
"	928.54	25.52	32.01	0.02	-0.13
"	928.54	55.62	-109.95	0.01	-0.06
M2-2	<b>-1081.7</b>	87.16	0.00	0.00	0.00
"	-1044.0	11.72	<b>96.67</b>	-0.00	-0.07
"	-1006.2	-63.73	45.79	-0.01	-0.08
"	-968.56	<b>-139.17</b>	<b>-152.64</b>	-0.01	-0.06
M2-3	-759.80	<b>139.17</b>	-152.64	-0.01	-0.06
"	-722.08	63.73	45.79	-0.01	-0.10
"	-684.35	-11.72	<b>96.67</b>	-0.01	-0.11
"	-646.63	-87.16	0.00	-0.01	-0.06
M3-2	-759.80	-139.17	-152.64	0.03	-0.05
"	-722.08	-63.73	45.79	0.04	-0.09
"	-684.35	11.72	<b>96.67</b>	0.04	-0.10
"	-646.63	87.16	0.00	<b>0.04</b>	-0.05
M3-3	-1081.7	-87.16	0.00	0.02	<b>0.01</b>
"	-1044.0	-11.72	<b>96.67</b>	0.03	-0.06
"	-1006.2	63.73	45.79	0.03	-0.07
"	-968.56	<b>139.17</b>	<b>-152.64</b>	0.03	-0.05
M4	-347.93	0.00	0.00	0.04	-0.05
"	-347.93	0.00	0.00	0.04	-0.05
"	-347.93	0.00	0.00	0.04	-0.05
"	-347.93	0.00	0.00	0.04	-0.04
M5	422.44	0.00	0.00	<b>-0.06</b>	-0.01
"	422.44	0.00	0.00	-0.06	-0.01
"	422.44	0.00	0.00	-0.06	-0.01
"	422.44	0.00	0.00	-0.06	-0.01
M6	-347.93	0.00	0.00	-0.02	-0.06
"	-347.93	0.00	0.00	-0.02	-0.06
"	-347.93	0.00	0.00	-0.02	-0.06
"	-347.93	0.00	0.00	-0.02	-0.06

**BENDING & COMP: TRUSS 1 - MEMBER 2-2**

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

Grading:

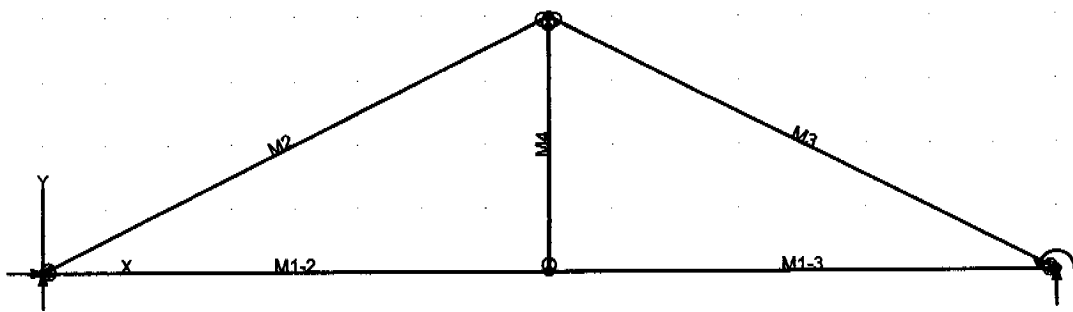
2x or 4x

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	5.87 feet
Max Axial Comp, C	968 lbs
Max Reaction, R	139 lbs
Max Moment, M	152 ft-lbs
Max LL Deflection	0.03 inches
Max TL Deflection	0.06 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 =	1.16
fc =	184 psi
Fce=	1463 psi
Fc*=	2084 psi
F'c=	1166 psi
fb=	596 psi
F'b=Fb*=	2156 psi
Shear D/C ratio	0.33 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.34 < 1.0, Member OK
Live Load defl ratio	0.10 < 1.0, Member OK
Total Load defl ratio	0.15 < 1.0, Member OK



## Truss 2

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Paul\Desktop\Madruga06\_048\Truss 2.vap

### Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes	Yes	No			
N2	16.00	0.00	No	"	Yes			
N3	8.00	4.00	"	No	No			
N4	8.00	0.00	"	"	"			

### Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	8.00
M1-3	"	"	8.00
M2	"	"	8.94
M3	"	"	8.94
M4	"	"	4.00

### 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

### Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1600000.00	0.36	40.47

### Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

### Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	454.40	-NA-
N2	"	-NA-	454.40	0.00

### Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	470.07	-42.24	-62.70	0.01	-0.03
"	470.07	-19.30	19.33	0.00	-0.05
"	470.07	3.63	40.23	0.00	-0.05
"	<b>470.07</b>	26.56	0.00	0.00	0.00
M1-3	470.07	-26.56	0.00	0.01	0.00
"	470.07	-3.63	40.23	0.01	-0.05
"	470.07	19.30	19.33	0.01	-0.05
"	470.07	42.24	-62.70	0.01	-0.03
M2	<b>-611.78</b>	<b>172.45</b>	0.00	0.00	0.00
"	-554.30	57.48	<b>342.62</b>	-0.00	-0.57
"	-496.82	-57.48	342.62	-0.00	<b>-0.58</b>
"	-439.34	<b>-172.45</b>	0.00	<b>-0.01</b>	-0.03
M3	-611.78	-172.45	0.00	0.01	0.00
"	-554.30	-57.48	342.62	0.01	-0.57
"	-496.82	57.48	342.62	0.01	-0.57
"	-439.34	172.45	0.00	0.02	-0.02
M4	84.47	0.00	0.00	0.03	0.01
"	84.47	0.00	0.00	0.03	0.01
"	84.47	0.00	0.00	0.03	0.01
"	84.47	0.00	0.00	<b>0.03</b>	<b>0.01</b>

**BENDING & COMP: TRUSS 2 - MEMBER 2-2**

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

Grading:

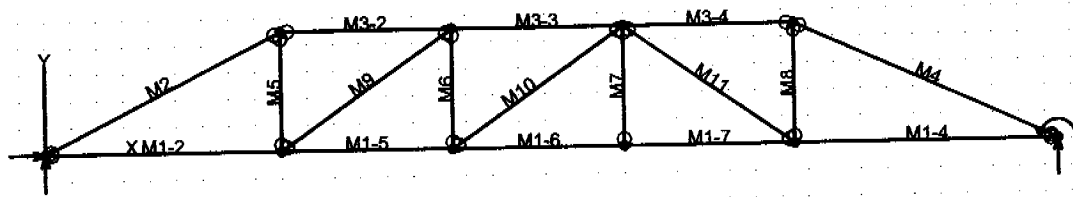
2x or 4x

Doug-fir larch: No. 2

Assumptions:Solid sheathing on top chord of truss. Therefore,  
continuous lateral support is provided along compression face

Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	3.5 inches
Length	8.94 feet
Max Axial Comp, C	554 lbs
Max Reaction, R	57 lbs
Max Moment, M	342 ft-lbs
Max LL Deflection	0.29 inches
Max TL Deflection	0.58 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 =	1.25
fc =	106 psi
Fce =	676 psi
Fc* =	2084 psi
F'c =	623 psi
fb =	1340 psi
F*b = Fb* =	2156 psi
Shear D/C ratio	0.14 < 1.0, Member OK
Interaction equation:	
(fc/F'c) <sup>2</sup> +	
fb / (F*b(1-fc/Fce)) =	0.77 < 1.0, Member OK
Live Load defl ratio	0.65 < 1.0, Member OK
Total Load defl ratio	0.97 < 1.0, Member OK



# Truss 3

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher  
 File: C:\Documents and Settings\Paul\Desktop\Madruga06\_048\Truss 3.vap

## Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes			No
N2	38.50	0.00	No		"			Yes
N3	28.50	4.50	"		No			No
N4	9.00	4.50	"		"			"
N5	9.00	0.00	"		"			"
N6	28.50	0.00	"		"			"
N7	15.50	4.50	"		"			"
N8	22.00	4.50	"		"			"
N9	15.50	0.00	"		"			"
N10	22.00	0.00	"		"			"

## Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	9.00
M1-4	"	"	10.00
M1-5	"	"	6.50
M1-6	"	"	6.50
M1-7	"	"	6.50
M2	"	"	10.06
M3-2	"	"	6.50
M3-3	"	"	6.50
M3-4	"	"	6.50
M4	"	"	10.97
M5	"	"	4.50
M6	"	"	4.50
M7	"	"	4.50
M8	"	"	4.50
M9	"	"	7.91
M10	"	"	7.91
M11	"	"	7.91

## 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

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1600000.00	0.36	40.47

## Load Combination Summary

Equation Case: UBC97 12.8a



Combination: 1D+1Lr  
 Contributing Cases & Source  
 Dead Load (Dead loads)  
 Roof Live Load (Roof Live loads)

## Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	0.00	1093.40	-NA-
N2	"	-NA-	1093.40	0.00

## Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	1687.54	-44.67	-53.73	0.02	-0.23
"	1687.54	-18.87	41.55	0.01	-0.23
"	1687.54	6.93	59.46	0.01	-0.16
"	1687.54	32.73	0.00	0.00	0.00
M1-4	1813.55	-36.30	0.00	0.11	0.00
"	1813.55	-7.64	73.20	0.10	-0.22
"	1813.55	21.03	50.88	0.10	-0.29
"	1813.55	49.70	-66.96	0.09	-0.26
M1-5	2296.27	-22.13	-15.89	0.04	-0.32
"	2296.27	-3.49	11.85	0.04	-0.29
"	2296.27	15.14	-0.76	0.03	-0.26
"	2296.27	33.77	-53.73	0.02	-0.23
M1-6	2336.16	-27.22	-11.17	0.06	-0.33
"	2336.16	-8.59	27.61	0.06	-0.35
"	2336.16	10.04	26.04	0.05	-0.34
"	<b>2336.16</b>	28.68	-15.89	0.04	-0.32
M1-7	2336.16	-36.53	-66.96	0.09	-0.26
"	2336.16	-17.90	-8.00	0.08	-0.28
"	2336.16	0.73	10.59	0.07	-0.31
"	2336.16	19.37	-11.17	0.06	-0.33
M2	-1983.7	194.00	0.00	0.00	0.00
"	-1919.0	64.67	433.63	-0.01	-0.98
"	-1854.3	-64.67	433.63	-0.02	-1.06
"	-1789.7	-194.00	0.00	-0.03	-0.24
M3-2	-1687.5	-186.30	<b>-192.72</b>	0.07	-0.32
"	-1687.5	-81.87	97.70	0.07	-0.38
"	-1687.5	22.57	161.94	0.08	-0.38
"	-1687.5	127.00	0.00	0.09	-0.23
M3-3	-2296.2	-156.59	-192.35	0.05	-0.33
"	-2296.2	-52.16	33.71	0.06	-0.34
"	-2296.2	52.27	33.58	0.06	-0.33
"	<b>-2296.2</b>	156.71	-192.72	0.07	-0.32
M3-4	-1813.5	-127.06	0.00	0.03	-0.26
"	-1813.5	-22.62	162.07	0.04	-0.39
"	-1813.5	81.81	97.95	0.04	-0.40
"	-1813.5	186.24	-192.35	0.05	-0.33
M4	-2087.6	<b>-219.77</b>	0.00	0.10	0.05
"	-2021.6	-73.26	535.34	0.11	-1.36
"	-1955.7	73.26	<b>535.34</b>	0.12	<b>-1.45</b>
"	-1889.8	<b>219.77</b>	0.00	0.13	-0.22
M5	499.87	0.00	0.00	0.23	0.02
"	499.87	0.00	0.00	0.23	0.04
"	499.87	0.00	0.00	0.23	0.06
"	499.87	0.00	0.00	0.23	<b>0.09</b>
M6	78.42	0.00	0.00	0.32	0.04
"	78.42	0.00	0.00	0.32	0.05
"	78.42	0.00	0.00	0.32	0.06
"	78.42	0.00	0.00	0.32	0.07

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M7	46.59	0.00	0.00	0.33	0.05
"	46.59	0.00	0.00	0.33	0.05
"	46.59	0.00	0.00	0.33	0.06
"	46.59	0.00	0.00	0.33	0.06
M8	448.04	0.00	0.00	0.26	0.03
"	448.04	0.00	0.00	0.26	0.05
"	448.04	0.00	0.00	0.26	0.07
"	448.04	0.00	0.00	0.26	0.09
M9	-740.37	0.00	0.00	-0.12	-0.30
"	-740.37	0.00	0.00	-0.12	-0.27
"	-740.37	0.00	0.00	-0.12	-0.24
"	-740.37	0.00	0.00	-0.12	-0.20
M10	-48.52	0.00	0.00	-0.15	-0.30
"	-48.52	0.00	0.00	-0.15	-0.29
"	-48.52	0.00	0.00	-0.15	-0.29
"	-48.52	0.00	0.00	-0.15	-0.29
M11	-635.63	0.00	0.00	0.22	-0.22
"	-635.63	0.00	0.00	0.22	-0.19
"	-635.63	0.00	0.00	0.22	-0.16
"	-635.63	0.00	0.00	0.23	-0.24

**BENDING & COMP: TRUSS 3 - MEMBER 2**

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

Grading:

2x or 4x

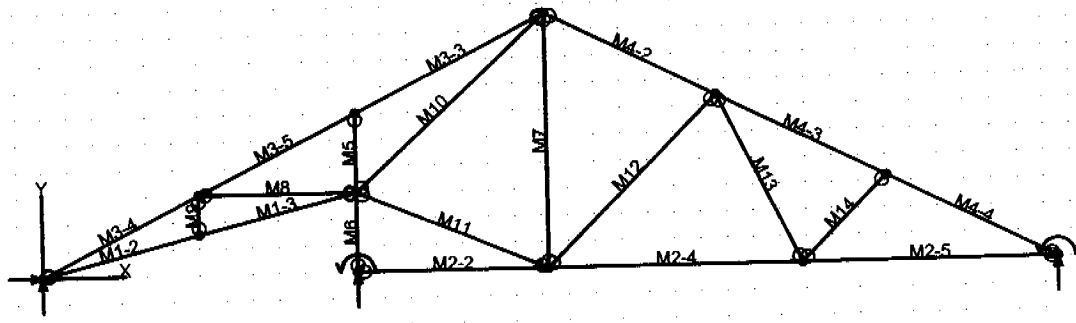
Doug-fir larch: No. 2

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	1919 lbs
Max Reaction, R	64 lbs
Max Moment, M	433 ft-lbs
Max LL Deflection	0.25 inches
Max TL Deflection	0.49 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 =	1.28
fc =	183 psi
Fce =	547 psi
Fc* =	2084 psi
F'c =	514 psi
fb =	848 psi
F*b = Fb* =	2156 psi
Shear D/C ratio	0.08 < 1.0, Member OK
Interaction equation:	
(fc/F'c) <sup>2</sup> +	
fb / (F*b(1-fc/Fce)) =	0.72 < 1.0, Member OK
Live Load defl ratio	0.50 < 1.0, Member OK
Total Load defl ratio	0.73 < 1.0, Member OK



# Truss 4

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher

File: C:\Documents and Settings\Paul\Desktop\Madruga06\_048\Truss 4.vap

## Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	38.50	0.00	No		Yes		Yes	
N2	0.00	0.00	Yes		"		No	
N3	19.25	9.63	No		No		"	
N4	12.00	0.00	"		Yes		Yes	
N5	12.00	3.00	"		No		No	
N6	19.25	0.00	"		"		"	
N7	12.00	6.00	"		"		"	
N8	28.88	0.00	"		"		"	
N9	6.00	3.00	"		"		"	
N10	25.67	6.42	"		"		"	
N11	32.08	3.21	"		"		"	
N12	6.00	1.50	"		"		"	

## Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	6.18
M1-3	"	"	6.18
M2-2	"	"	7.25
M2-4	"	"	9.63
M2-5	"	"	9.63
M3-3	"	"	8.11
M3-4	"	"	6.71
M3-5	"	"	6.71
M4-2	"	"	7.17
M4-3	"	"	7.17
M4-4	"	"	7.17
M5	"	"	3.00
M6	"	"	3.00
M7	"	"	9.63
M8	"	"	6.00
M9	"	"	1.50
M10	"	"	9.82
M11	"	"	7.85
M12	"	"	9.07
M13	"	"	7.17
M14	"	"	4.54

## 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

## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
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Wood -NA- 1600000.00 0.36 40.47

## Load Combination Summary

Equation Case: UBC97 12.8a

Combination: 1D+1Lr

Contributing Cases & Source

Dead Load (Dead loads)

Roof Live Load (Roof Live loads)

## Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	-NA-	704.34	0.00
N2	"	0.00	234.23	-NA-
N4	"	-NA-	1248.23	0.00

## Member Results

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M1-2	373.04	21.02	0.00	0.00	0.00
"	377.21	4.33	26.12	0.00	-0.03
"	381.38	-12.35	17.85	0.00	-0.04
"	385.55	-29.04	-24.80	0.00	-0.04
M1-3	371.03	29.04	-24.80	0.00	-0.04
"	375.20	12.35	17.85	0.00	-0.04
"	379.38	-4.33	26.12	0.01	-0.04
"	383.55	-21.02	0.00	0.01	-0.01
M2-2	-5.07	-38.89	-55.96	-0.01	-0.05
"	-5.07	-18.11	12.90	-0.01	-0.05
"	-5.07	2.67	31.55	-0.01	-0.04
"	-5.07	23.46	0.00	-0.01	0.00
M2-4	707.62	-43.57	-76.95	0.00	-0.08
"	707.62	-15.98	18.54	0.00	-0.10
"	707.62	11.62	25.54	-0.00	-0.09
"	707.62	39.21	-55.96	-0.01	-0.05
M2-5	1090.86	-33.39	0.00	0.02	0.00
"	1090.86	-5.80	62.84	0.01	-0.12
"	1090.86	21.79	37.19	0.01	-0.13
"	<b>1090.86</b>	49.38	-76.95	0.00	-0.08
M3-3	284.46	<b>187.04</b>	-249.38	-0.00	-0.01
"	336.55	82.86	115.14	0.00	-0.20
"	388.64	-21.33	<b>198.26</b>	0.00	<b>-0.25</b>
"	440.74	-125.51	0.00	0.00	-0.05
M3-4	-464.35	108.06	0.00	0.00	0.00
"	-421.24	21.84	145.15	-0.00	-0.13
"	-378.12	-64.39	97.58	-0.00	-0.12
"	-335.01	-150.61	-142.71	-0.00	-0.04
M3-5	326.94	113.43	-142.71	-0.00	-0.04
"	370.05	27.21	14.46	-0.00	-0.02
"	413.16	-59.01	-21.10	-0.00	0.01
"	456.27	-145.24	<b>-249.38</b>	-0.00	-0.01
M4-2	-441.92	<b>-165.83</b>	-197.42	0.04	-0.06
"	-395.81	-73.62	88.80	0.04	-0.16
"	-349.71	18.59	154.61	0.04	-0.17
"	-303.60	110.80	0.00	0.04	-0.03
M4-3	-1037.0	-136.84	-186.87	0.03	-0.07
"	-990.93	-44.63	30.03	0.03	-0.08
"	-944.82	47.58	26.51	0.04	-0.07
"	-898.72	139.79	-197.42	0.04	-0.06

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
M4-4	-1275.7	-112.27	0.00	0.02	0.01
"	-1229.6	-20.06	158.13	0.02	-0.15
"	-1183.5	72.15	95.84	0.03	-0.16
"	-1137.4	164.36	-186.87	0.03	-0.07
M5	-374.04	-5.07	0.00	-0.01	-0.00
"	-374.04	-5.07	5.07	-0.01	-0.01
"	-374.04	-5.07	10.15	-0.01	-0.01
"	-374.04	-5.07	15.22	-0.01	-0.01
M6	-1224.7	5.07	-15.22	0.01	0.01
"	-1224.7	5.07	-10.15	0.00	0.01
"	-1224.7	5.07	-5.07	0.00	0.00
"	-1224.7	5.07	0.00	0.00	-0.01
M7	329.66	0.00	0.00	0.04	0.03
"	329.66	0.00	0.00	0.05	-0.01
"	329.66	0.00	0.00	0.05	0.01
"	329.66	0.00	0.00	0.05	0.02
M8	-710.15	0.00	0.00	-0.01	0.01
"	-710.15	0.00	0.00	-0.01	0.02
"	-710.15	0.00	0.00	-0.01	0.03
"	-710.15	0.00	0.00	-0.01	<b>0.04</b>
M9	59.87	0.00	0.00	0.04	0.01
"	59.87	0.00	0.00	0.04	0.01
"	59.87	0.00	0.00	0.04	0.01
"	59.87	0.00	0.00	0.04	0.01
M10	-892.94	0.00	0.00	-0.01	-0.05
"	-892.94	0.00	0.00	-0.01	-0.04
"	-892.94	0.00	0.00	-0.00	-0.02
"	-892.94	0.00	0.00	0.00	-0.01
M11	352.99	0.00	0.00	0.01	-0.05
"	352.99	0.00	0.00	0.01	-0.03
"	352.99	0.00	0.00	0.01	-0.02
"	352.99	0.00	0.00	0.01	-0.00
M12	-546.63	0.00	0.00	<b>-0.05</b>	-0.06
"	-546.63	0.00	0.00	-0.04	-0.05
"	-546.63	0.00	0.00	-0.04	-0.04
"	-546.63	0.00	0.00	-0.04	-0.03
M13	354.93	0.00	0.00	0.07	-0.03
"	354.93	0.00	0.00	0.07	-0.03
"	354.93	0.00	0.00	0.07	-0.03
"	354.93	0.00	0.00	<b>0.07</b>	-0.02
M14	-317.50	0.00	0.00	-0.05	-0.06
"	-317.50	0.00	0.00	-0.05	-0.06
"	-317.50	0.00	0.00	-0.05	-0.05
"	-317.50	0.00	0.00	-0.05	-0.05

**BENDING & COMP: TRUSS 4 - MEMBER 4-4**

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

Grading:

2x or 4x

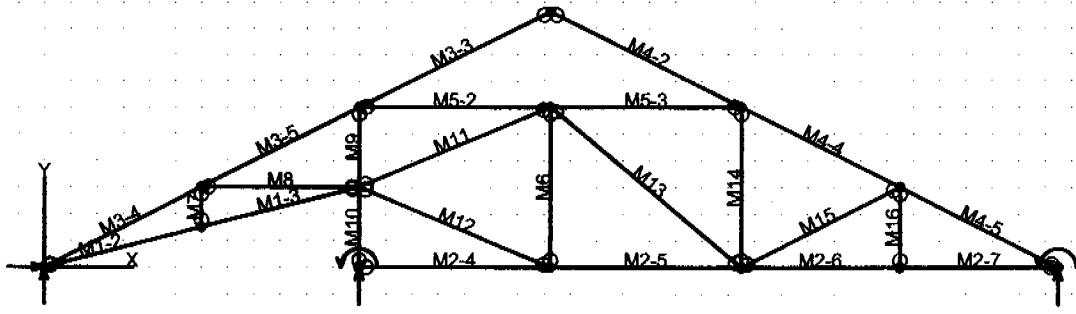
Doug-fir larch: No. 2

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	7.17 feet
Max Axial Comp, C	1137 lbs
Max Reaction, R	164 lbs
Max Moment, M	186 ft-lbs
Max LL Deflection	0.04 inches
Max TL Deflection	0.07 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 =	1.20
fc =	217 psi
Fce =	1010 psi
Fc* =	2084 psi
F'c =	881 psi
fb =	729 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.39 < 1.0, Member OK
Interaction equation:	
(fc/F'c) <sup>2</sup> +	
fb / (F'b(1-fc/Fce)) =	0.49 < 1.0, Member OK
Live Load defl ratio	0.11 < 1.0, Member OK
Total Load defl ratio	0.15 < 1.0, Member OK





# Truss 5

VisualAnalysis 4.00 Report

Company: Paul Zacher - Structural Engineers Engineer: Paul Zacher  
 File: C:\Documents and Settings\Paul\Desktop\Madruga06\_048\Truss 5.vap

## Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	38.50	0.00	No	Yes	Yes
N2	0.00	0.00	Yes	"	No
N3	12.00	3.00	No	No	"
N4	12.00	0.00	"	Yes	Yes
N5	19.25	9.63	"	No	No
N6	6.00	1.50	"	"	"
N7	26.50	0.00	"	"	"
N8	12.00	6.00	"	"	"
N9	26.50	6.00	"	"	"
N10	19.25	0.00	"	"	"
N11	32.50	0.00	"	"	"
N12	6.00	3.00	"	"	"
N13	32.50	3.00	"	"	"
N14	19.25	6.00	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1-2	SS2x4	Wood	6.18
M1-3	"	"	6.18
M2-4	"	"	7.25
M2-5	"	"	7.25
M2-6	"	"	6.00
M2-7	"	"	6.00
M3-3	"	"	8.11
M3-4	"	"	6.71
M3-5	"	"	6.71
M4-2	"	"	8.11
M4-4	"	"	6.71
M4-5	"	"	6.71
M5-2	"	"	7.25
M5-3	"	"	7.25
M6	"	"	6.00
M7	"	"	1.50
M8	"	"	6.00
M9	"	"	3.00
M10	"	"	3.00
M11	"	"	7.85
M12	"	"	7.85
M13	"	"	9.41
M14	"	"	6.00
M15	"	"	6.71
M16	"	"	3.00

## 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

25

Category	Section	Ax in <sup>2</sup>	Iz in <sup>4</sup>	Sy+ in <sup>3</sup>	Sy- in <sup>3</sup>
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## Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft <sup>3</sup>
Wood	-NA-	1600000.00	0.36	40.47

## Load Combination Summary

Equation Case: UBC97 12.8a  
 Combination: 1D+1Lr  
 Contributing Cases & Source  
 Dead Load (Dead loads)  
 Roof Live Load (Roof Live loads)

## Nodal Reactions

Node	Load Case	FX lb	FY lb	MZ lb-ft
N1	UBC97 12.8a	-NA-	698.08	0.00
N2	"	0.00	220.40	-NA-
N4	"	-NA-	1268.32	0.00

## Member Results

Member	Fx lb	Fy lb	Mz lb-ft	Dx in	Dy in
M1-2	318.18	20.81	0.00	0.00	0.00
"	322.35	4.12	25.69	0.00	-0.03
"	326.52	-12.56	16.99	0.00	-0.04
"	330.69	-29.25	-26.10	0.00	-0.04
M1-3	316.07	29.25	-26.10	0.00	-0.04
"	320.24	12.56	16.99	0.00	-0.04
"	324.41	-4.12	25.69	0.00	-0.03
"	328.58	-20.81	0.00	0.01	-0.01
M2-4	-3.28	-37.74	-47.62	-0.00	-0.04
"	-3.28	-16.96	18.46	-0.00	-0.05
"	-3.28	3.82	34.33	-0.00	-0.04
"	-3.28	24.61	0.00	-0.00	0.00
M2-5	322.77	-28.48	-28.05	0.00	-0.07
"	322.77	-7.69	15.63	-0.00	-0.07
"	322.77	13.09	9.11	-0.00	-0.06
"	322.77	33.87	-47.62	-0.00	-0.04
M2-6	1109.13	-23.88	-16.55	0.01	-0.07
"	1109.13	-6.68	14.00	0.01	-0.08
"	1109.13	10.52	10.17	0.00	-0.08
"	1109.13	27.72	-28.05	0.00	-0.07
M2-7	1109.13	-23.04	0.00	0.02	0.00
"	1109.13	-5.84	28.87	0.02	-0.04
"	1109.13	11.36	23.35	0.01	-0.06
"	1109.13	28.56	-16.55	0.01	-0.07
M3-3	-409.38	186.89	-248.13	0.00	-0.01
"	-357.28	82.70	115.97	-0.00	-0.20
"	-305.19	-21.48	198.68	-0.00	-0.26
"	-253.10	-125.67	0.00	-0.00	-0.05
M3-4	-404.65	107.79	0.00	0.00	0.00
"	-361.54	21.57	144.56	-0.00	-0.13

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
"	-318.43	-64.65	96.40	-0.00	-0.12
"	-275.32	-150.87	-144.49	-0.00	-0.04
M3-5	389.03	113.88	-144.49	-0.00	-0.04
"	432.14	27.66	13.69	-0.00	-0.01
"	475.26	-58.56	-20.86	-0.00	0.01
"	518.37	-144.78	<b>-248.13</b>	0.00	-0.01
M4-2	-408.67	<b>-185.48</b>	-236.70	0.04	-0.06
"	-356.58	-81.29	123.59	0.04	-0.24
"	-304.48	22.89	<b>202.49</b>	0.04	<b>-0.27</b>
"	-252.39	127.08	0.00	0.04	-0.03
M4-4	-906.05	-115.63	-144.78	0.03	-0.06
"	-862.94	-29.41	17.30	0.03	-0.05
"	-819.83	56.81	-13.34	0.03	-0.04
"	-776.72	143.04	-236.70	0.04	-0.06
M4-5	<b>-1293.9</b>	-107.75	0.00	0.02	0.01
"	-1250.8	-21.53	144.46	0.02	-0.13
"	-1207.7	64.69	96.20	0.03	-0.14
"	-1164.5	150.92	-144.78	0.03	-0.06
M5-2	678.18	0.09	0.00	0.01	-0.01
"	678.18	0.09	0.23	0.01	-0.02
"	678.18	0.09	0.45	0.01	-0.03
"	678.18	0.09	0.68	0.01	-0.04
M5-3	-476.11	-0.09	0.00	0.01	-0.07
"	-476.11	-0.09	0.23	0.01	-0.06
"	-476.11	-0.09	0.45	0.01	-0.05
"	-476.11	-0.09	0.68	0.01	-0.04
M6	-63.30	0.00	0.00	0.04	-0.00
"	-63.30	0.00	0.00	0.04	0.00
"	-63.30	0.00	0.00	0.04	0.01
"	-63.30	0.00	0.00	0.04	0.01
M7	60.30	0.00	0.00	0.03	0.01
"	60.30	0.00	0.00	0.03	0.01
"	60.30	0.00	0.00	0.03	0.01
"	60.30	0.00	0.00	0.03	0.01
M8	-712.62	0.00	0.00	0.01	-0.03
"	-712.62	0.00	0.00	0.01	-0.02
"	-712.62	0.00	0.00	0.01	-0.01
"	-712.62	0.00	0.00	0.01	-0.01
M9	-711.65	-3.28	0.00	-0.01	-0.01
"	-711.65	-3.28	3.28	-0.01	-0.01
"	-711.65	-3.28	6.57	-0.01	-0.01
"	-711.65	-3.28	9.85	-0.01	-0.01
M10	-1243.7	3.28	-9.85	0.01	<b>0.01</b>
"	-1243.7	3.28	-6.57	0.00	0.00
"	-1243.7	3.28	-3.28	0.00	0.00
"	-1243.7	3.28	0.00	0.00	-0.00
M11	-777.46	0.00	0.00	-0.00	-0.04
"	-777.46	0.00	0.00	-0.00	-0.03
"	-777.46	0.00	0.00	0.00	-0.02
"	-777.46	0.00	0.00	0.00	-0.01
M12	352.87	0.00	0.00	0.01	-0.04
"	352.87	0.00	0.00	0.01	-0.03
"	352.87	0.00	0.00	0.01	-0.01
"	352.87	0.00	0.00	0.01	-0.00
M13	565.83	0.00	0.00	0.04	-0.05
"	565.83	0.00	0.00	0.04	-0.04
"	565.83	0.00	0.00	0.04	-0.03
"	565.83	0.00	0.00	0.04	-0.02
M14	-129.33	0.00	0.00	-0.07	-0.01
"	-129.33	0.00	0.00	-0.07	-0.01
"	-129.33	0.00	0.00	-0.07	-0.00
"	-129.33	0.00	0.00	<b>-0.07</b>	-0.00
M15	-391.82	0.00	0.00	-0.03	-0.06
"	-391.82	0.00	0.00	-0.03	-0.06

Member	Fx lb	Vy lb	Mz lb-ft	Dx in	Dy in
"	-391.82	0.00	0.00	-0.03	-0.06
"	-391.82	0.00	0.00	-0.03	-0.06
M16	52.44	0.00	0.00	0.07	0.00
"	52.44	0.00	0.00	<b>0.07</b>	-0.00
"	52.44	0.00	0.00	0.07	0.01
"	52.44	0.00	0.00	0.07	0.01

**BENDING & COMP: TRUSS 5 - MEMBER 4-5**

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

Grading:

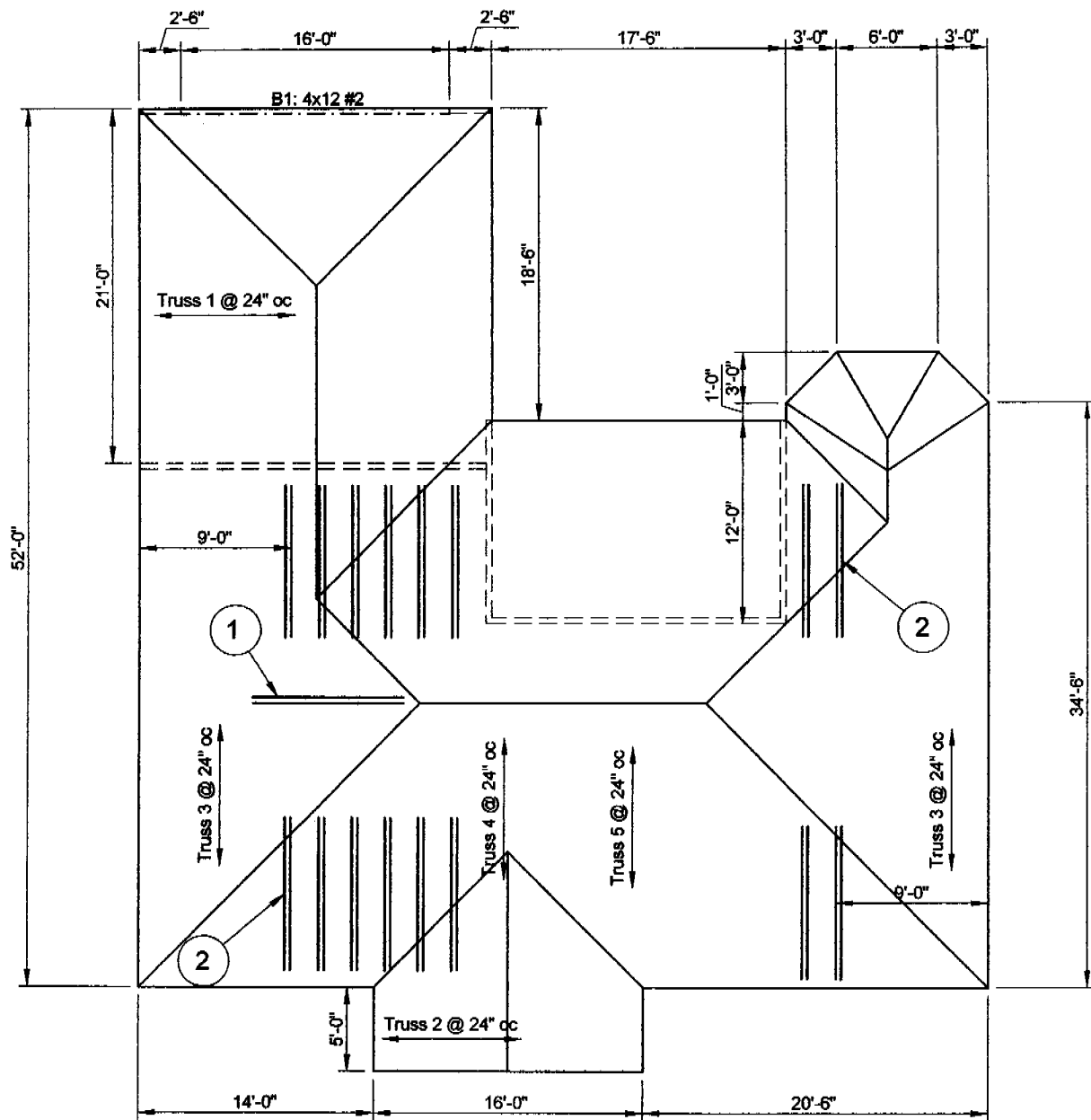
2x or 4x

Doug-fir larch: No. 2

Assumptions:

Solid sheathing on top chord of truss. Therefore,  
continuous lateral support is provided along compression face  
Maximum center-center spacing = 24"

Width, b	1.5 inches
Depth, d	3.5 inches
Length	6.71 feet
Max Axial Comp, C	1164 lbs
Max Reaction, R	150 lbs
Max Moment, M	144 ft-lbs
Max LL Deflection	0.03 inches
Max TL Deflection	0.06 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 =	1.18
fc =	222 psi
Fce =	1142 psi
Fc* =	2084 psi
F'c =	972 psi
fb =	564 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.36 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.38 < 1.0, Member OK
Live Load defl ratio	0.09 < 1.0, Member OK
Total Load defl ratio	0.13 < 1.0, Member OK



**FRAMING NOTES:**

1. Scab a 2x6 to existing 2x6 rafters where the span is greater than 8'-0" (total 1).
2. Scab a 2x4 DF#2 x 10'-6" long rafter to the top chord of the existing truss (total 16). 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 7.3 psf.
- B. All framing members including rafters, purlins, joists and beams are existing unless otherwise noted in the framing notes above.
- C. All structural wood members that were observed appear to be in sound condition and without structural defect.

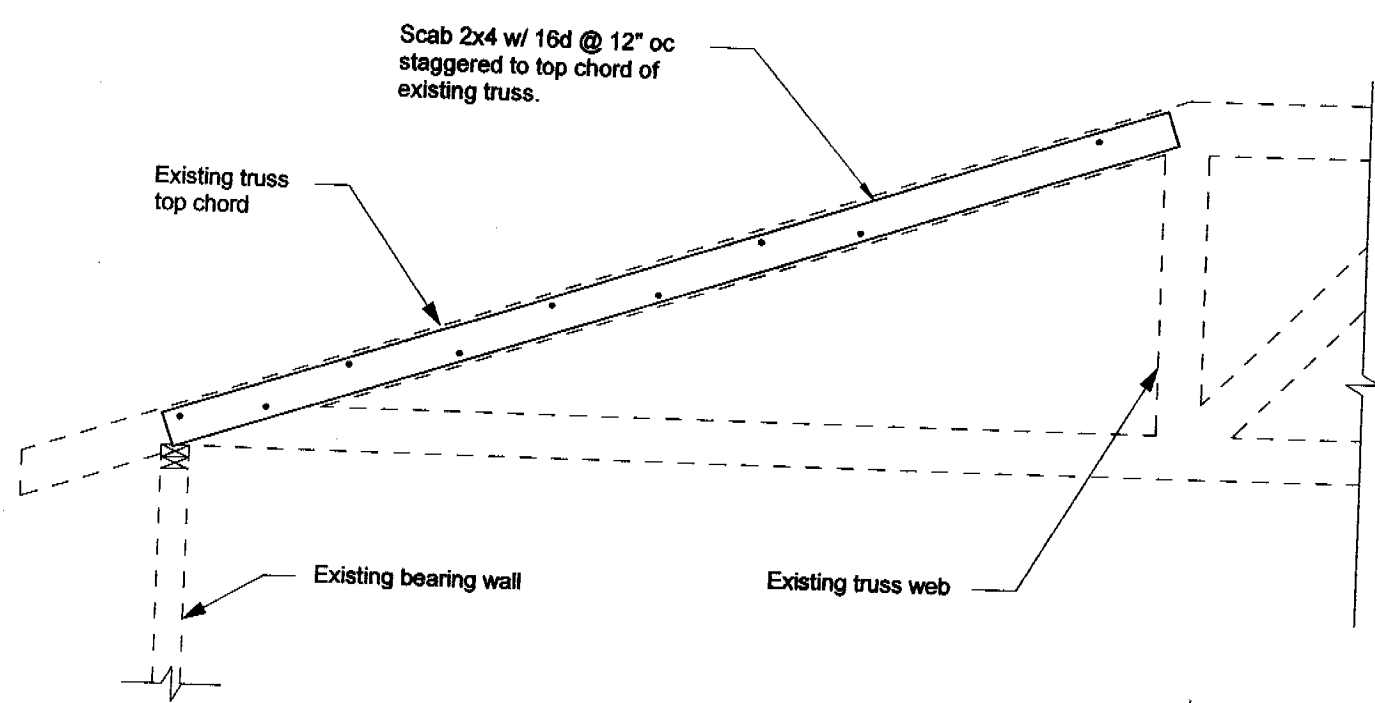


**1 ROOF PLAN - MADRUGA**

Not to Scale

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2 TRUSS REINFORCEMENT DETAIL  
scale: 1/2" = 1'-0"





CITY OF SACRAMENTO

**PAID**

Downtown Permit Center  
1231 I Street, Suite 200  
Sacramento, CA 95814

www.cityofsacramento.org  
Help Line: 1-916-808-5656 OR 1-866-EZ-PERMIT  
Inspection Request: 1-916-808-7622

CITY OF SACRAMENTO  
APR 24 2006

North Permit Center  
2101 Arena Blvd., Suite 200  
Sacramento, CA 95834

NEW CITY HALL

Fax # 916-264-1901

MINOR PERMIT APPLICATION

Date: 4-21-2006

Permit received in this office by 3:00 P.M. to be processed the following workday. Contractors must have a current Compensation Insurance. Note: Work started before a Building Permit is issued will be subject to quad fee.

Permits requiring Plan Review are not eligible for the MINOR PERMIT PROGRAM

Reservation approval may be required if job address is located in those areas (additional forms may be required)

FOR TO PROCESS THIS REQUEST, ALL THE FOLLOWING INFORMATION MUST BE PROVIDED:

RESIDENTIAL  APARTMENTS (4+ units per building)  COMMERCIAL (limited)  
Unit # \_\_\_\_\_ Contract Price \$17,000  
Phone # 889-1977 Email: \_\_\_\_\_

Contractor: 1230 The Rocking Horse License #: 420375  
Address: 4661 Summer Street  
City/State/Zip: 58100 Sacramento CA 95822  
Phone: 530 672 9113 Fax: SAME  
Pre-Registered? YES NO Registration # \_\_\_\_\_

Nature of Work: Provide description of work & indicate type of work in selections below.  
Description of Work: Tear off Shakes, Roofing, Replace with light weight tile

<input checked="" type="checkbox"/> Reroof (excluding tile) <input type="checkbox"/> Tear-Off <input checked="" type="checkbox"/> Resheet <input type="checkbox"/> House <input checked="" type="checkbox"/> Garage # Stories: 1 # Squares: 38 Material: Light weight <input type="checkbox"/> Siding <input type="checkbox"/> Wood <input type="checkbox"/> T-111 <input type="checkbox"/> Horiz <input type="checkbox"/> Vinyl <input type="checkbox"/> Stucco	<input type="checkbox"/> HVAC Installations (Residential Only) <input type="checkbox"/> Change-out <input type="checkbox"/> New <input type="checkbox"/> Heat Pump <input type="checkbox"/> Package <input type="checkbox"/> Split system <input type="checkbox"/> Roof mount <input type="checkbox"/> Cut-in <input type="checkbox"/> Heat pump or elect. unit to gas. <input type="checkbox"/> Wall furnace <input type="checkbox"/> Other (describe below) Value of duct work: \$ _____ Equipment: \$ _____ Cut-in: \$ _____	<input type="checkbox"/> Water Heater (Residential Only) <input type="checkbox"/> Electric <input type="checkbox"/> Gas <input type="checkbox"/> Change-out <input type="checkbox"/> Electric to Gas <input type="checkbox"/> Relocate <input type="checkbox"/> New <input type="checkbox"/> Dry Rot or Termitte <input type="checkbox"/> Damage Repair <input type="checkbox"/> Flooring/Joists <input type="checkbox"/> Mudsill/Studs <input type="checkbox"/> Roof Structure <input type="checkbox"/> Exterior	<input type="checkbox"/> Minor Electric and/or Minor Plumbing (Residential Only) <input type="checkbox"/> Electric Service Change # amps _____ <input type="checkbox"/> New electric circuits <input type="checkbox"/> Re-wire <input type="checkbox"/> Water Service Replacement <input type="checkbox"/> Sewer Service Replacement <input type="checkbox"/> Gas Line Replacement <input type="checkbox"/> Re-plumb <input type="checkbox"/> Water <input type="checkbox"/> Waste	<input type="checkbox"/> Public Utilities Safety Inspection (Residential and single apartment units Only) <input type="checkbox"/> SMUD <input type="checkbox"/> PG&E * NOTE * Correction Notice items will require an additional building permit.	Office Use Only: Parcel #: 031-1120-081 Date Received: 4-21-2006 Date Issued: Processor's Initials: Permit #:

\*\*\*DUPLICATE\*\*\*  
 PD: 04/21/2006 040 GBP 00134866  
 DATE: 04/21/2006 10:28AM SHT RES BLD PT  
 PNT #: 0605475R  
 0200BLDG PMT-RESID \$217.50  
 0200BLDG PMT TAX \$217.50  
 0200BUSINESS TAX \$6.80  
 02075.M.I. \$1.70  
 0213GENERAL PLAN FEE \$10.03  
 0259TECH SURCHARGE \$8.70  
 PG CHANGE \$244.73 \$0.00