

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Site Address: 333 BAY RIVER WY SAC

Parcel No: 031-0380-058

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

Permit No: 0007225
Insp Area: 2

ARCHITECT

CONTRACTOR

ZIMMERMAN ROOFING, INC

OWNER

333 BAY RIVER WY
SACRAMENTO CA 95816

3675 R STREET

Nature of Work: BUSTER: REROOF W/O PERMIT; TEAR OFF AND REROOF W PIONEER

TITLE

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 (commencing with section 7000) of Division 3 of the Business and Professions Code.

License Class: E39
License Number: 31220

Date: 3/20/2001
Contractor Signature: [Signature]

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors license law for the following reason (Sec. 7031.5, Business and Professions Code): any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 3 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 & P 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: 3/20/2001
Applicant/Agent Signature: [Signature]

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:
I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.
I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are _____

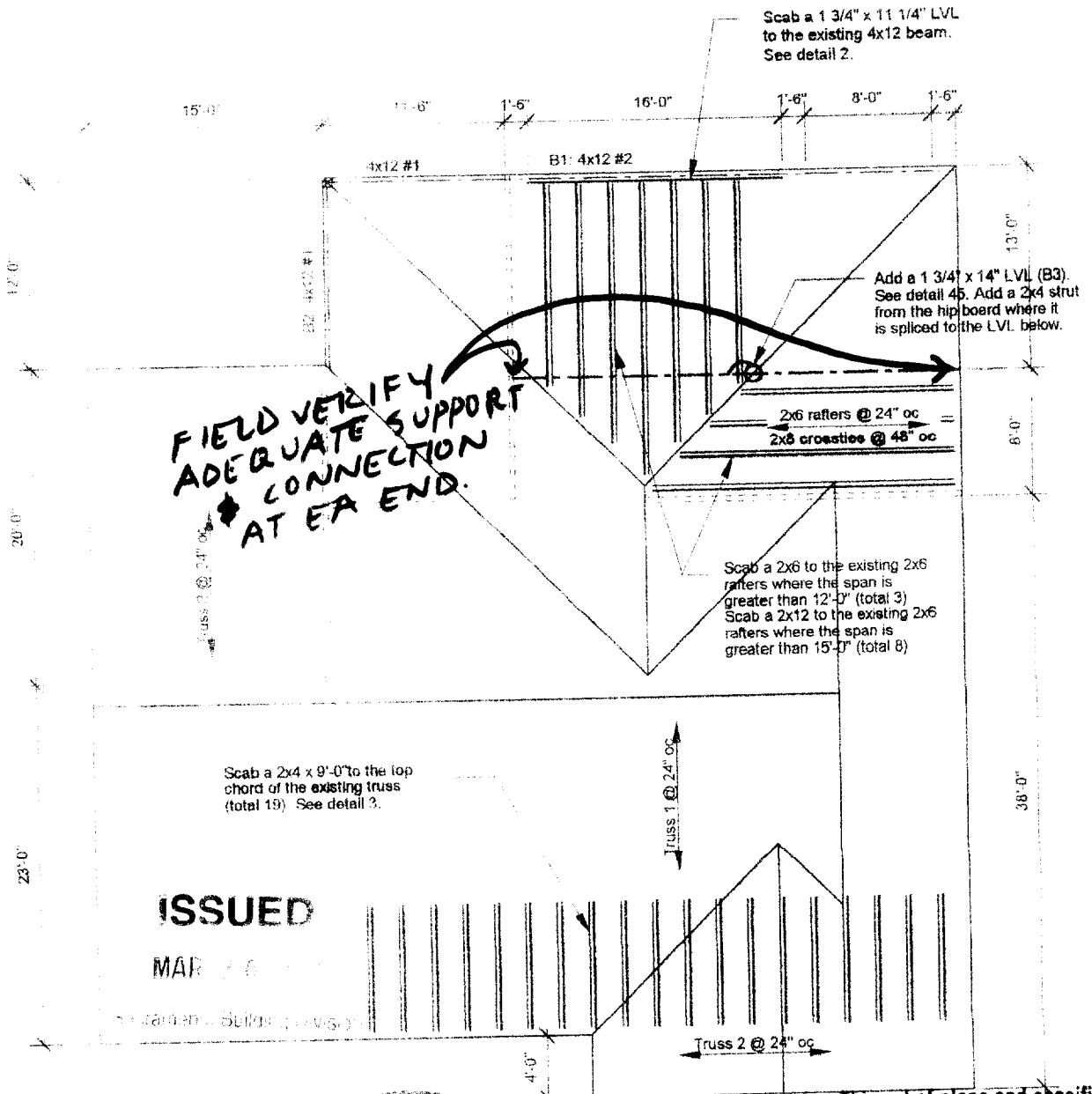
Carrier: PENNSYLVANIA GENERAL INSURANCE CO. Policy Number: 713-00-2021 Exp Date: 10/01/2011

(This section need not be completed if the permit is issued for the performance of the work for which this permit is issued and development services are not required.) I shall forthwith comply with those provisions subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions

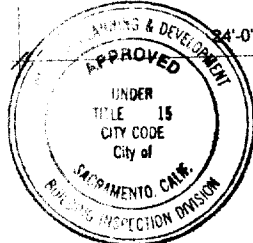
Date: 3/20/2001
Applicant Signature: [Signature]

WARNING: FAILURE TO SECURE WORKERS' 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.



ISSUED
MAR 20 2001



REVIEWED BY:
J. Paul 3/20/01

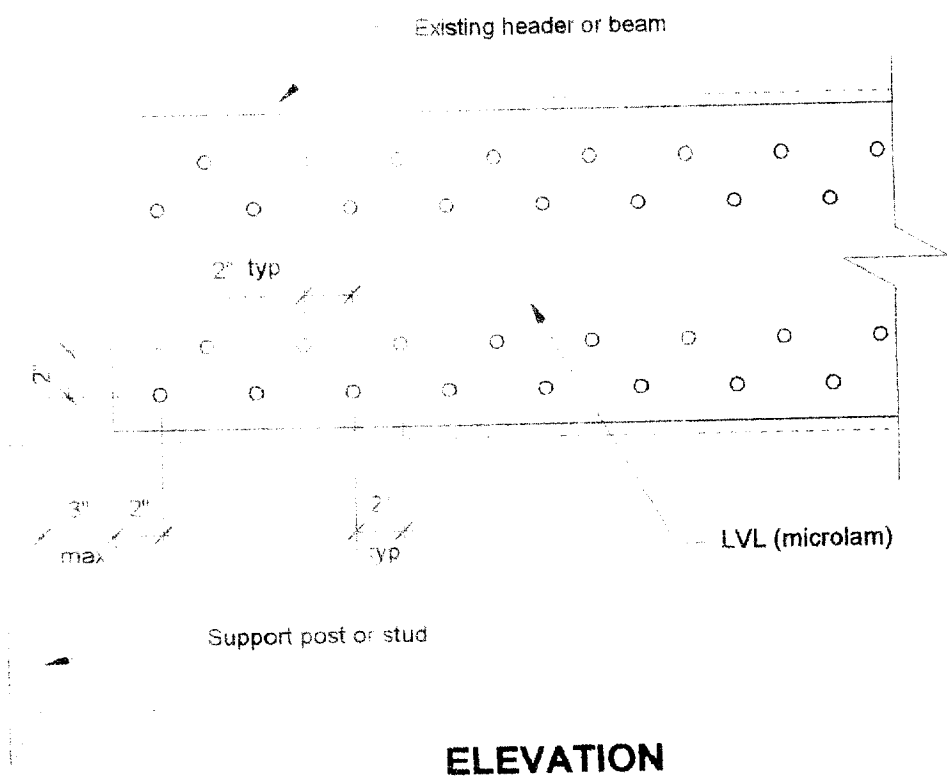
This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division. The approval of this plan and specification SHALL NOT be held to permit or approve the violation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

- Notes:
- 1 This is a reroof project. The new roofing material shall be a light weight concrete tile. The tile shall weigh less than or equal to 7.0 psf
 - 2 All rafters are 2x6 DF#2 and hips and valleys are 2x8 DF#2 unless otherwise noted.
 - 3 All existing rafter, hips, valleys, rafter ties, and purlins are braced per UBC Section 2320.12 "Roof and Ceiling Framing" unless otherwise shown.
 - 4 All structural wood members that were observed appear to be in sound condition and without structural defect.

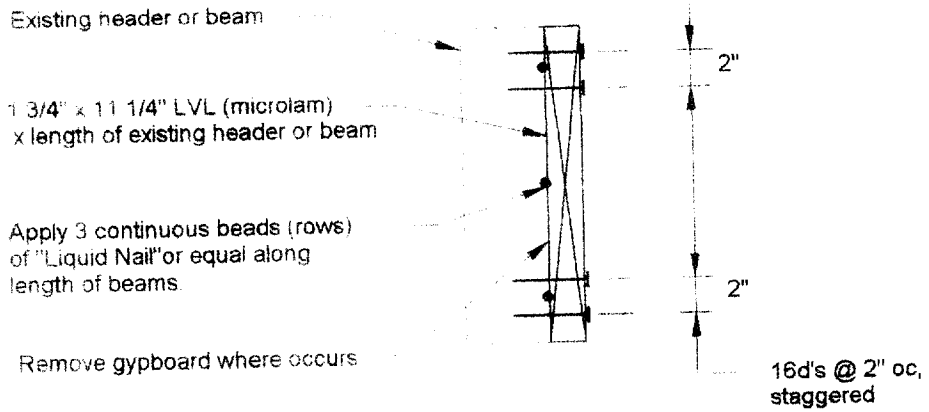
1

ROOF PLAN - KELLOGG

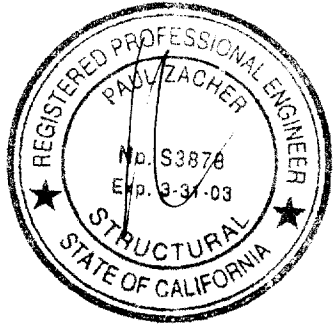
Not to Scale



ELEVATION



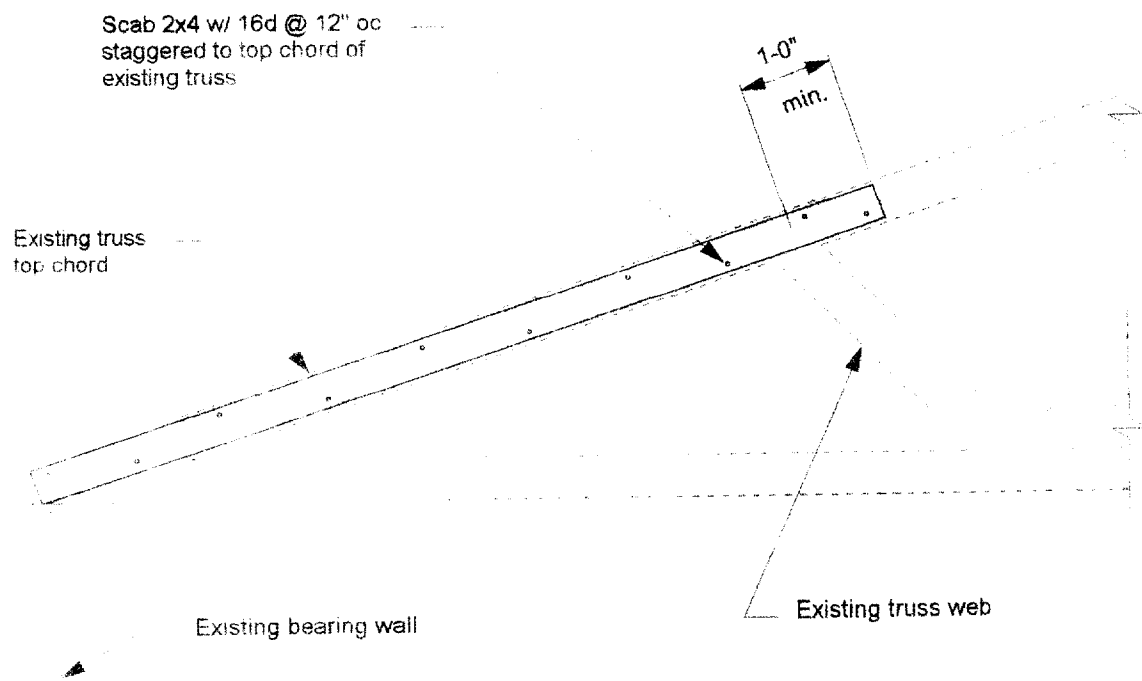
SECTION



2

HEADER DETAIL

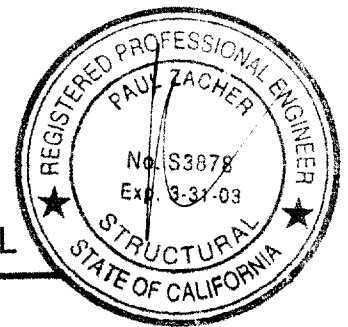
scale: 1 1/2" = 1'-0"

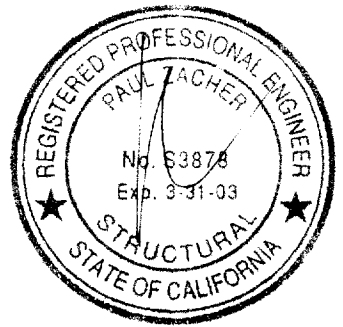
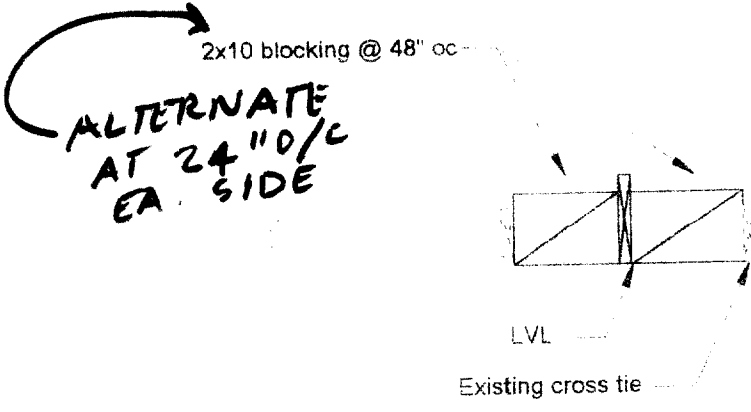


3

TRUSS REINFORCEMENT DETAIL

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





45

LATERAL RESTRAINT AT BEAM

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

Bay River Way 0007428

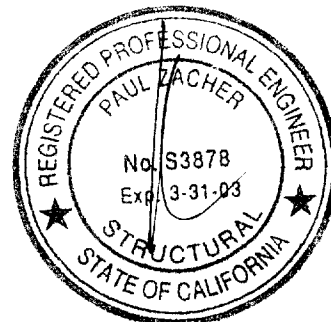
Kellog

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

TEL: 916.961.3960
FAX: 916.961.6552

February 12, 2001

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



Attn: Mr. Jeff Tucker,

re. Job 2000_402 KELLOG

Subject: Structural Investigation Report of the Roof for the Residence located at 333 Bay River Way,
Sacramento, CA 95831

As requested by Mr. Jeff Tucker, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site December 6, 2000. The investigation was made to determine the existing condition of the structure. All information, data and analysis contained within this report are based on the 1997 Uniform Building Code

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

DESCRIPTION

Type of Facility: Residence
Year Built: Estimated 1980's vintage.
Occupancy: Residential
No. of Stories: One.
Dimensions: Approximately 3000 square feet with a first story plate height of 8 feet.

CONSTRUCTION:

Roof:
The roof covering will consist of a Light Weight Concrete Tile over 1/2" solid sheathing. The living area is framed with pre-engineered wood trusses spaced at 24" on center. The garage area is framed with 2x6 rafters spaced at 24" on center and 2x8 cross ties spaced at 4'-0" on center.

CITY OF SACRAMENTO
PERMIT ASSISTANT

CONCLUSIONS:

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

MAR 06 2001

RECEIVED

1/10

Kellog

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

TEL: 916.961.3960
FAX: 916.961.6552

RECOMMENDATIONS:

If any of the following recommendations do not correspond to actual field conditions, the engineer of record shall be notified for further investigation and evaluation before continuing work.

Living Area

1. Scab a 2x4 DF#2 x 9'-0" long rafter to the top chord of the existing truss. See details 1 and 3.

Garage:

2. Add a 1 3/4" x 14" LVL beam. Support the existing hip board to the LVL beam with a 2x4 strut. The minimum slope of the strut shall not be less than 45 degrees from the horizontal. See details 1 and 45
3. Scab a 1 3/4" x 11 1/4" LVL to the existing header. See details 1 and 2.
4. Scab a 2x6 rafter to the existing 2x6 rafters with 16d's @ 12" on center where the span is greater than 12'-0". Scab a 2x12 rafter to the existing 2x6 rafters with 16d's @ 12" on center where the span is greater than 15'-0". 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	6	in 12
Pitch Adjustment Factor	1.12	

LOCATION: ROOF

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

LOCATION: 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
2x4 truss @ 24" oc	0.64	psf
	Load	9.4 psf
Roof Pitch Adjustment	1.11	psf
Total Load	10.6	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

PK Zacher SE

Job # 00 4 2

Date: 1/24/93

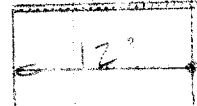
002

RAFTER

2x12 @ 16" OC - 27' 0" LF
 2x10 @ 16" OC - 12'

2x6^{#2}

23/32

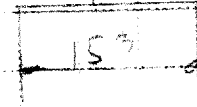


003

2x11 @ 16" OC - 27' 0" LF
 2x10 @ 16" OC - 12'

2-2x6^{#2}

23/32

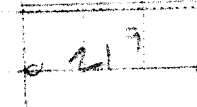


004

2x12 @ 16" OC - 27' 0" LF
 2x10 @ 16" OC - 12'

2x12^{#2}

23/32



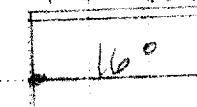
005

4x12 @ 16" OC - 27' 0" LF
 1 3/4" x 11 1/4" LVL

4x12^{#2} +

1 3/4" x 11 1/4" LVL

115/100

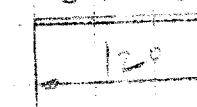


006

4x12 @ 16" OC - 27' 0" LF
 2x10 @ 16" OC - 12'

4x12^{#1}

69/90



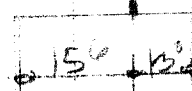
007

4x12 @ 16" OC - 27' 0" LF
 2x10 @ 16" OC - 12'

4x12[#]

670[#]

1 3/4" x 14" LVL



486/676

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

Title :
 Dsgnr:
 Description :
 Scope :

Job #
 Date: 6:27PM, 22 JAN 01

Rev: 310304
 User: J.W.0602844, Ver: 9.1.0, 11/19/99, Win/22
 (C) 1983-99 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	rafter	rafter	B1	B2	B3
Timber Section	2x6	2-2x6	2x12	4x12 + 1.7	4x12	LVL:1.750x
Beam Width	in: 1.500	3.000	1.500	5.250	3.500	1.750
Beam Depth	in: 5.500	5.500	11.250	11.250	11.250	14.000
Le. Unbraced Length	ft: 0.00	0.00	0.00	0.00	0.00	4.00
Timber Grade	Douglas Fir - Larch	Douglas Fir - Larch	Douglas Fir - Larch	Custom DF#2 + LVL	Douglas Fir - Larch	Truss Joist - MacMil
Fb - Basic Allow	psi: 875.0	875.0	875.0	1,450.0	1,000.0	2,600.0
Fv - Basic Allow	psi: 95.0	95.0	95.0	158.0	95.0	285.0
Elastic Modulus	ksi: 1,600.0	1,600.0	1,600.0	1,666.7	1,700.0	1,900.0
Load Duration Factor	1.250	1.250	1.250	1.250	1.250	1.250
Member Type	Sawn	Sawn	Sawn	Manuf/Pine	Sawn	Manuf/Pine
Repetitive Status	Repetitive	Repetitive	Repetitive	No	No	No

Center Span Data

Span	ft	12.00	15.25	21.75	16.00	12.00	28.50
Dead Load	#/ft	23.00	23.00	23.00	115.00	69.00	
Live Load	#/ft	32.00	32.00	32.00	160.00	96.00	
Point #1 DL	lbs						486.00
LL	lbs						676.00
@ X	ft						15.500

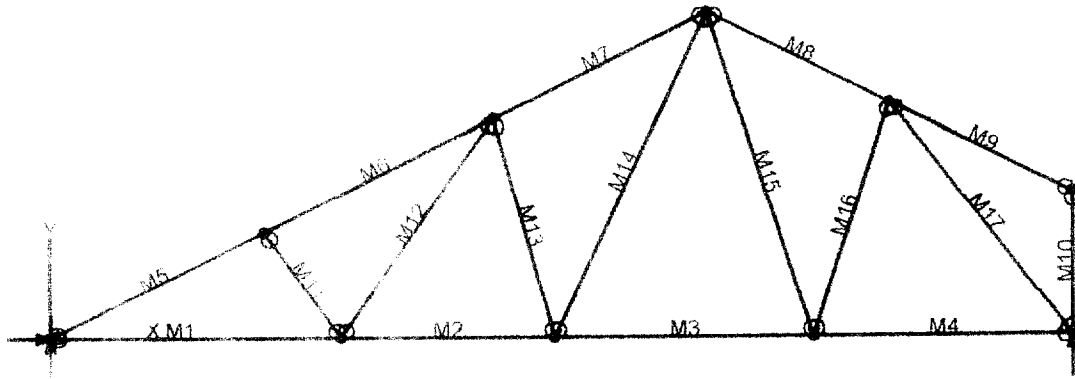
Results	Ratio =	0.9607	0.7758	0.9806	0.5261	0.3511	0.7536
Mmax @ Center	in-k	11.88	19.19	39.03	105.60	35.64	98.56
@ X =	ft	6.00	7.62	10.87	8.00	6.00	15.50
Fb Actual	psi	1,570.9	1,268.5	1,233.5	953.6	482.7	1,724.0
Fb Allowable	psi	1,635.2	1,635.2	1,257.8	1,812.5	1,375.0	2,287.8
		Bending OK	Bending OK	Bending OK	Bending OK	Bending OK	Bending OK
Fv Actual	psi	55.7	36.0	48.9	49.6	32.0	38.7
Fv Allowable	psi	118.8	118.8	118.8	197.5	118.8	356.3
		Shear OK	Shear OK	Shear OK	Shear OK	Shear OK	Shear OK

Reactions

@ Left End DL	lbs	138.00	175.37	250.12	920.00	414.00	221.68
LL	lbs	192.00	244.00	348.00	1,280.00	576.00	308.35
Max. DL+LL	lbs	330.00	419.37	598.12	2,200.00	990.00	530.04
@ Right End DL	lbs	138.00	175.37	250.12	920.00	414.00	264.32
LL	lbs	192.00	244.00	348.00	1,280.00	576.00	367.65
Max. DL+LL	lbs	330.00	419.37	598.12	2,200.00	990.00	631.96

Deflections

	Ratio OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK	Deflection OK	
Center DL Defl	in	-0.322	-0.421	-0.407	-0.163	-0.046	-0.527
L/Defl Ratio		446.5	435.1	641.8	1,175.5	3,158.0	648.6
Center LL Defl	in	-0.449	-0.585	-0.566	-0.227	-0.063	-0.733
L/Defl Ratio		320.9	312.8	461.3	844.9	2,269.8	466.3
Center Total Defl	in	-0.771	-1.006	-0.972	-0.391	-0.109	-1.261
Location	ft	6.000	7.625	10.875	8.000	6.000	14.592
L/Defl Ratio		186.7	182.0	268.4	491.6	1,320.6	271.3



VisualAnalysis 3.50 c Report

01/13/01 10:16:01

Project: Truss 1

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

Company: PK Associates Engineers

Engineer: Paul Zache

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	9.50	0.00	No		No			
N3	16.50	0.00						
N4	25.00	0.00						
N5	33.50	0.00			Yes			
N6	7.00	7.50			No			
N7	14.50	7.25						
N8	21.50	10.75						
N9	27.50	7.75						
N10	33.50	4.75						

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.50
M2	"	"	7.00
M3	"	"	9.50
M4	"	"	9.50
M5	"	"	7.83
M6	"	"	8.39
M7	"	"	7.83
M8	"	"	6.71
M9	"	"	6.71
M10	"	"	4.75
M11	"	"	4.75
M12	"	"	4.81
M13	"	"	4.81
M14	"	"	7.50
M15	"	"	11.50
M16	"	"	11.71
M17	"	"	8.14
M18	"	"	9.80

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
Wood	Sha SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	<NA>	700000.00	0.35	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combination: -1D+1L+1Lr
 Contributing Cases & Source
 Service Case 1: Dead loads
 Service Case 2: Roof Live loads

Member Uniform Loads

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

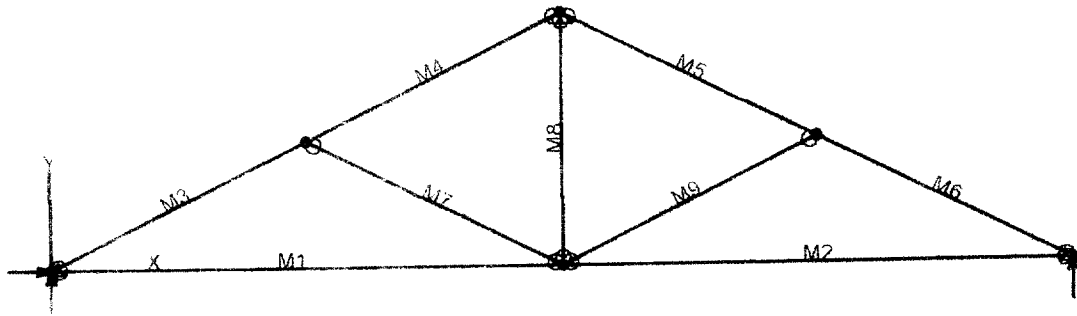
Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N	Equation Case 1	0.00	1140.33	-NA-
N-	"	-NA-	1140.33	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy ln
M	1877.86	-46.52	-53.90	+0.1539
	1877.86	-19.29	50.0892	+0.1958
	1877.86	-0.9429	88.0563	+0.1558
	1877.86	35.1762	0.0000	+0.0000
M-	1335.43	-26.88	-31.35	+0.1394
	1335.43	-6.8122	7.8359	+0.1451
	1335.43	13.2544	0.3200	+0.1477
	1335.43	33.3211	-53.90	+0.1539
M	814.82	-40.74	-66.99	+0.0821
	814.82	-16.38	13.7528	+0.1193
	814.82	1.9904	35.6328	+0.1440
	814.82	32.3570	-31.35	+0.1384
M-	756.25	-39.67	0.0000	+0.0000
	756.25	-4.3017	46.5351	+0.0782
	756.25	10.0649	24.2039	+0.0944
	756.25	44.4316	-66.99	+0.0821
M-	-2173.85	148.68	0.0000	+0.0000
	-2110.78	24.5427	225.13	+0.2629
	-2049.71	-99.59	127.14	+0.2701
	-1987.65	-223.72	-293.67	+0.1469
M-	-1921.71	197.65	-293.67	+0.1469
	-1854.61	64.6533	71.9840	+0.1205
	-1788.11	-68.35	66.8224	+0.2023
	-1721.61	-201.35	-309.16	+0.1446
M-	-1400.65	225.70	-309.16	+0.1446
	-1338.61	101.57	116.92	+0.2861
	-1276.55	-22.56	219.97	+0.3105
	-1214.48	-146.70	-0.0000	+0.0857
M-	-992.83	198.60	-261.59	+0.0592
	-939.63	-92.20	62.9288	+0.1405
	-886.43	4.2043	150.11	+0.1802
	-833.23	120.50	0.0000	+0.0964
M-	-60.30	120.50	0.0000	+0.0124
	-7.1022	-14.20	150.11	+0.1977
	46.0978	92.1957	62.9288	+0.1042
	99.2974	198.60	-261.59	+0.0592
M-	-134.84	0.0000	0.0000	+0.0295
	-134.84	0.0000	0.0000	+0.0378

	134.84	0.0000	0.0000	-0.0462
	134.84	0.0000	0.0000	0.0545
M	-426.60	0.0000	0.0000	-0.0899
	-426.60	0.0000	0.0000	-0.0515
	-426.60	0.0000	0.0000	-0.0530
	-426.60	0.0000	0.0000	-0.0445
M	518.68	0.0000	0.0000	0.1071
	518.68	0.0000	0.0000	0.1068
	518.68	0.0000	0.0000	-0.1065
	518.68	0.0000	0.0000	0.1062
M	-690.27	-0.0000	0.0000	-0.0037
	-690.27	-0.0000	-0.0000	0.0096
	-690.27	-0.0000	-0.0000	-0.0056
	-690.27	-0.0000	-0.0000	0.0016
M	799.20	0.0000	0.0000	0.0915
	799.20	0.0000	0.0000	0.0717
	799.20	0.0000	0.0000	-0.0519
	799.20	0.0000	0.0000	-0.0021
M	-50.45	0.0000	0.0000	0.0429
	-50.45	0.0000	0.0000	-0.0025
	-50.45	0.0000	0.0000	-0.0022
	-50.45	0.0000	0.0000	0.0082
M	139.90	0.0000	0.0000	0.0089
	139.90	0.0000	0.0000	-0.0037
	139.90	0.0000	0.0000	-0.0345
	139.90	0.0000	0.0000	-0.0174
M	-1235.35	0.0000	0.0000	-0.0418
	-1235.35	0.0000	0.0000	-0.0135
	-1235.35	0.0000	0.0000	0.0148
	-1235.35	0.0000	0.0000	0.0431



VisualAnalysis 3.50.c Report

01-12-01 13:46:05

Project: Truss 2

File: C:\Program Files\IES VA35\truss 2.rap

Company: PK Associates Engineers

Engineer: Paul Zacher

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

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	12.00	0.00	No	No	"
N3	24.00	0.00	"	Yes	"
N4	6.00	3.00	"	No	"
N5	18.00	3.00	"	"	"
N6	12.00	6.00	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	12.00
M2	"	"	12.00
M3	"	"	6.71
M4	"	"	6.71
M5	"	"	6.71
M6	"	"	6.71
M7	"	"	6.71
M8	"	"	6.00
M9	"	"	6.71

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
Wood Sha	SS2x4	5.25	9.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	NA	1700000.00	0.36	40.47

Load Combination Summary

Equation Case: Equation Case 1
 Combination: -1D+1L+1Lr
 Contributing Cases & Source
 Service Case 1 (Dead loads)
 Service Case 1 (Roof Live loads)

Member Uniform Loads

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

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N1	Equation Case 1	-0.00	816.95	-NA-
N2	"	-NA-	816.95	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M	1281.72	63.64	-144.50	-0.0938
	1281.72	29.24	40.9250	0.2015
	1281.72	5.1586	89.0905	-0.2185
	1281.72	29.5586	0.0000	-0.0000
M	1281.72	39.56	0.0000	-0.0000
	1281.72	-5.1586	89.0905	-0.2185
	1281.72	29.2414	40.9250	-0.2014
	1281.72	63.6414	-144.50	-0.0938
M	-1494.07	122.12	0.0000	-0.0000
	-1440.87	15.7183	153.51	-0.1307
	-1387.67	-90.68	69.6997	-0.1347
	-1334.47	-197.08	-251.43	-0.0907
M	-1038.85	197.08	-251.43	-0.0907
	-985.65	90.6817	69.6997	-0.1643
	-932.45	-15.72	153.51	-0.1901
	-879.25	-122.12	0.0000	-0.0891
M	-1038.85	-197.08	-251.43	-0.0722
	-985.65	-90.68	69.6997	-0.1459
	-932.45	15.7183	153.51	-0.1716
	-879.25	122.12	0.0000	-0.0706
M	-1494.07	-122.12	0.0000	0.0185
	-1440.87	-15.72	153.51	-0.1123
	-1387.67	90.6817	69.6997	-0.1162
	-1334.47	197.08	-251.43	-0.0722
M	-492.70	0.0000	0.0000	-0.0747
	-492.70	0.0000	0.0000	-0.0713
	-492.70	0.0000	0.0000	-0.0680
	-492.70	0.0000	0.0000	-0.0646
M	567.97	0.0000	-0.0000	-0.0207
	567.97	-0.0000	0.0000	-0.0207
	567.97	-0.0000	-0.0000	-0.0207
	567.97	-0.0000	-0.0000	-0.0207
M	-492.70	-0.0000	0.0000	-0.0932
	-492.70	-0.0000	-0.0000	-0.0898
	-492.70	-0.0000	-0.0000	-0.0865
	-492.70	-0.0000	-0.0000	-0.0831

BENDING & COMP: TRUSS 2 - MEMBER 3

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

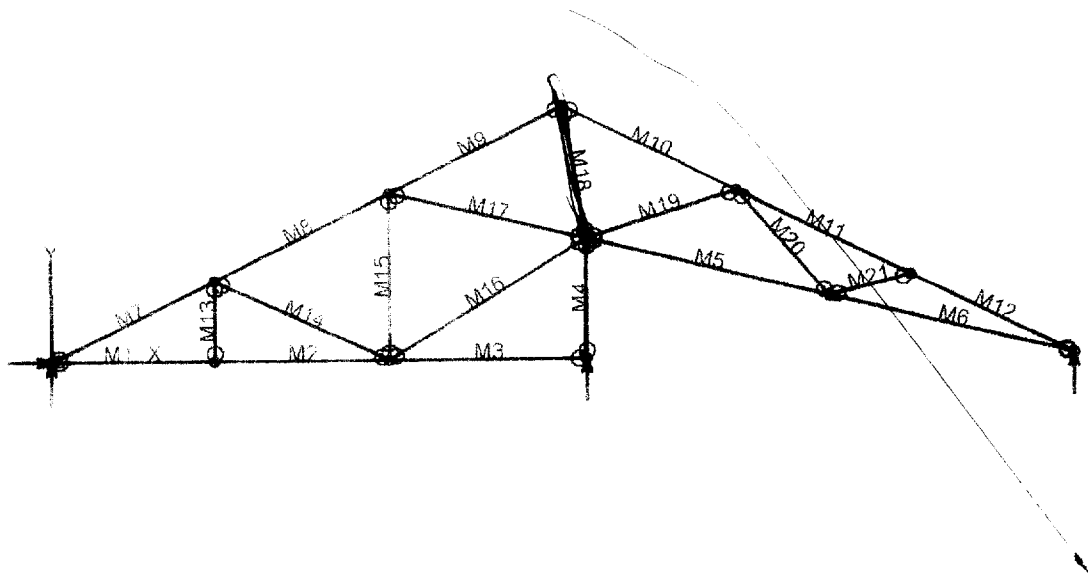
Grading:

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	1334 lbs
Max Reaction, R	197 lbs
Max Moment, M	251 ft-lbs
Max LL Deflection	0.04 inches
Max TL Deflection	0.09 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, CF =	1.18
$f_c =$	254 psi
$F_{ce} =$	1142 psi
$F_c^* =$	2084 psi
$F'_c =$	972 psi
$f_b =$	984 psi
$F'_b = F_b^* =$	2156 psi
Shear D/C ratio	0.47 < 1.0, Member OK
Interaction equation:	
$(f_c/F'_c)^2 +$	
$f_b/(F'_b(1-f_c/F_{ce})) =$	0.66 < 1.0, Member OK
Live Load defl ratio	0.12 < 1.0, Member OK
Total Load defl ratio	0.20 < 1.0, Member OK



VisualAnalysis 3.50.c Report

01/11/01 13:57:07

Project: Truss 3

File: C:\Program Files\IES\VA35\truss 3.rvp

Company: PK Associates Engineers

Engineer: Paul Zacher

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

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes		No	
N2	7.00	0.00	No		No		"	
N3	14.50	0.00	"		"		"	
N4	23.00	0.00	"		Yes		"	
N5	23.00	5.25	"		No		"	
N6	33.50	2.63	"		"		"	
N7	44.00	0.00	"		Yes		"	
N8	7.00	3.50	"		No		"	
N9	37.00	3.50	"		"		"	
N10	14.50	7.25	"		"		"	
N11	29.50	7.25	"		"		"	
N12	22.00	11.00	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	7.00
M2	"	"	7.50
M3	"	"	8.50
M4	"	"	5.25
M5	"	"	10.80
M6	"	"	10.80
M7	"	"	7.83
M8	"	"	8.39
M9	"	"	8.39
M10	"	"	8.39
M11	"	"	8.39
M12	"	"	7.83
M13	"	"	3.50
M14	"	"	8.28
M15	"	"	7.25
M16	"	"	9.99
M17	"	"	8.73
M18	"	"	5.84
M19	"	"	6.80
M20	"	"	6.11
M21	"	"	3.41

Section Properties

Category	Section	Ax in ²	Iz in ⁴	Sy+ in ³	Sy- in ³
Wood	Sha SS2x4	5.25	5.36	3.06	3.06

Material Properties

Material	Strength psi	Elasticity psi	Poisson	Density lb/ft ³
Wood	-NA-	1700000.00	0.36	40.47

Load Combination Summary

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

Member Uniform Loads

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

Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N1	Equation Case 1	0.00	545.87	-NA-
N2	"	-NA-	1997.19	-NA-
N3	"	-NA-	457.99	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	708.47	34.66	-31.92	-0.0510
"	708.47	14.59	25.4252	-0.0599
"	708.47	5.4733	36.0652	-0.0466
"	708.47	25.5400	0.0000	-0.0000
M2	708.47	35.85	-58.93	-0.0399
"	708.47	-14.35	3.6863	-0.0464
"	708.47	7.1481	12.6910	-0.0536
"	708.47	28.6481	-31.92	-0.0510
M3	0.0000	29.62	-0.0000	-0.0000
"	0.0000	-5.2499	49.2216	-0.0696
"	0.0000	19.1167	29.5770	-0.0730
"	0.0000	43.4834	-58.93	-0.0399
M4	-1967.58	0.0000	0.0000	-0.0138
"	-1967.58	0.0000	0.0000	-0.0094
"	-1967.58	0.0000	0.0000	-0.0051
"	-1967.58	0.0000	0.0000	-0.0007
M5	-82.71	-55.30	-109.80	-0.0959
"	-75.19	-25.20	35.1193	-0.1634
"	-67.66	4.9049	71.7201	-0.1657
"	-60.14	35.0049	0.0000	-0.0133
M6	1038.75	-35.00	0.0000	0.0046
"	1046.28	-4.9049	71.7201	-0.1538
"	1053.80	25.1951	35.1193	-0.1574
"	1061.33	55.2951	109.80	-0.0959
M7	-866.37	148.56	0.0000	-0.0000
"	-804.31	24.4236	224.82	-0.2310
"	-742.24	-99.71	126.62	-0.2066
"	-680.17	-223.84	-294.60	-0.0526
M8	-275.96	193.49	-294.60	-0.0526
"	-209.46	60.4897	59.4143	-0.0824
"	-142.96	-72.51	42.6150	-0.0691

	-76.48	198.51	-345.00	0.0370
M1	817.98	240.64	-345.00	-0.0370
	884.48	101.64	140.82	0.2836
	950.98	-158.36	255.82	-0.3061
	1017.48	-158.36	0.0000	-0.0253
M2	1071.78	-241.10	-348.82	-0.0540
	1138.28	-198.10	138.27	0.2584
	1204.78	241.9012	254.54	-0.3023
	1271.28	157.90	0.0000	-0.0150
M3	-542.24	-197.57	-282.29	0.1034
	-475.74	58.57	66.3540	0.1296
	-409.24	241.4342	44.1774	-0.1002
	-342.74	107.43	-348.82	-0.0540
M4	-1211.24	-150.13	-0.0000	0.0084
	-1149.18	-26.00	228.93	-0.2494
	-1087.11	98.1359	134.83	-0.2465
	-1025.04	222.27	-282.29	-0.1034
M5	63.3081	0.0000	0.0000	0.0067
	63.3081	0.0000	0.0000	0.0099
	63.3081	0.0000	0.0000	0.0130
	63.3081	0.0000	0.0000	0.0162
M6	-604.92	0.0000	0.0000	-0.0390
	-604.92	0.0000	0.0000	-0.0361
	-604.92	0.0000	0.0000	-0.0332
	-604.92	0.0000	0.0000	-0.0303
M7	236.14	0.0000	0.0000	0.0138
	236.14	0.0000	0.0000	-0.0117
	236.14	0.0000	0.0000	0.0096
	236.14	0.0000	0.0000	-0.0075
M8	188.41	-0.0000	0.0000	-0.0412
	188.41	-0.0000	-0.0000	-0.0316
	188.41	0.0000	-0.0000	-0.0219
	188.41	-0.0000	-0.0000	-0.0122
M9	-1026.84	-0.0000	0.0000	0.0134
	-1026.84	-0.0000	-0.0000	0.0205
	-1026.84	-0.0000	-0.0000	0.0277
	-1026.84	-0.0000	-0.0000	0.0349
M10	-1326.04	0.0000	0.0000	-0.0075
	-1326.04	0.0000	0.0000	-0.0044
	-1326.04	0.0000	0.0000	-0.0014
	-1326.04	0.0000	0.0000	0.0017
M11	-1045.87	-0.0000	-0.0000	-0.0623
	-1045.87	-0.0000	-0.0000	-0.0460
	-1045.87	-0.0000	-0.0000	-0.0297
	-1045.87	-0.0000	0.0000	-0.0135
M12	712.60	-0.0000	-0.0000	-0.0768
	712.60	-0.0000	-0.0000	-0.0635
	712.60	-0.0000	-0.0000	-0.0502
	712.60	-0.0000	0.0000	-0.0370
M13	-635.90	-0.0000	-0.0000	-0.0972
	-635.90	-0.0000	-0.0000	-0.0935
	-635.90	-0.0000	-0.0000	-0.0898
	-635.90	-0.0000	0.0000	-0.0861

BENDING & COMP: TRUSS 3 - MEMBER 10

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	8.39 feet
Max Axial Comp. C	1071 lbs
Max Reaction, R	241 lbs
Max Moment, M	348 ft-lbs
Max LL Deflection	0.02 inches
Max TL Deflection	0.05 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 =	1.23
fc =	204 psi
Fce =	759 psi
Fc* =	2084 psi
F'c =	690 psi
fb =	1364 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.58 < 1.0, Member OK
Interaction equation	
(fc/F'c)^2 +	
fb/(F'b(1-fc/Fce)) =	0.95 < 1.0, Member OK
Live Load defl ratio	0.05 < 1.0, Member OK
Total Load defl ratio	0.09 < 1.0, Member OK