

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0009274

Insp Area: 2

Site Address: 301 BAY RIVER WY SAC

Parcel No: 031-0380-003

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR

GED COUNTRY ROOFING
8296 ALPINE AVE
SACRAMENTO CA 95826

OWNER

KIMURA TOKUJI & JUDY
301 BAY RIVER WY
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: 27 SQ T/O RESHEET REROOF W PIONEER LT WT 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.

X License Class C-31 License Number 622731 Date 8-14 Contractor Signature TM

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.

X Date 8-14-00 Applicant/Agent Signature TM

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.

X 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:

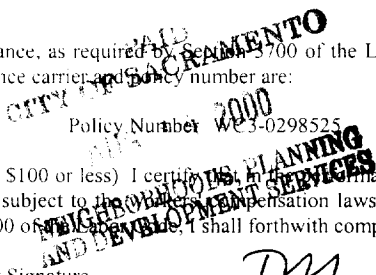
Carrier LEGION INSURANCE Policy Number WE 3-0298525 Exp Date 7/1/2000 **2601**

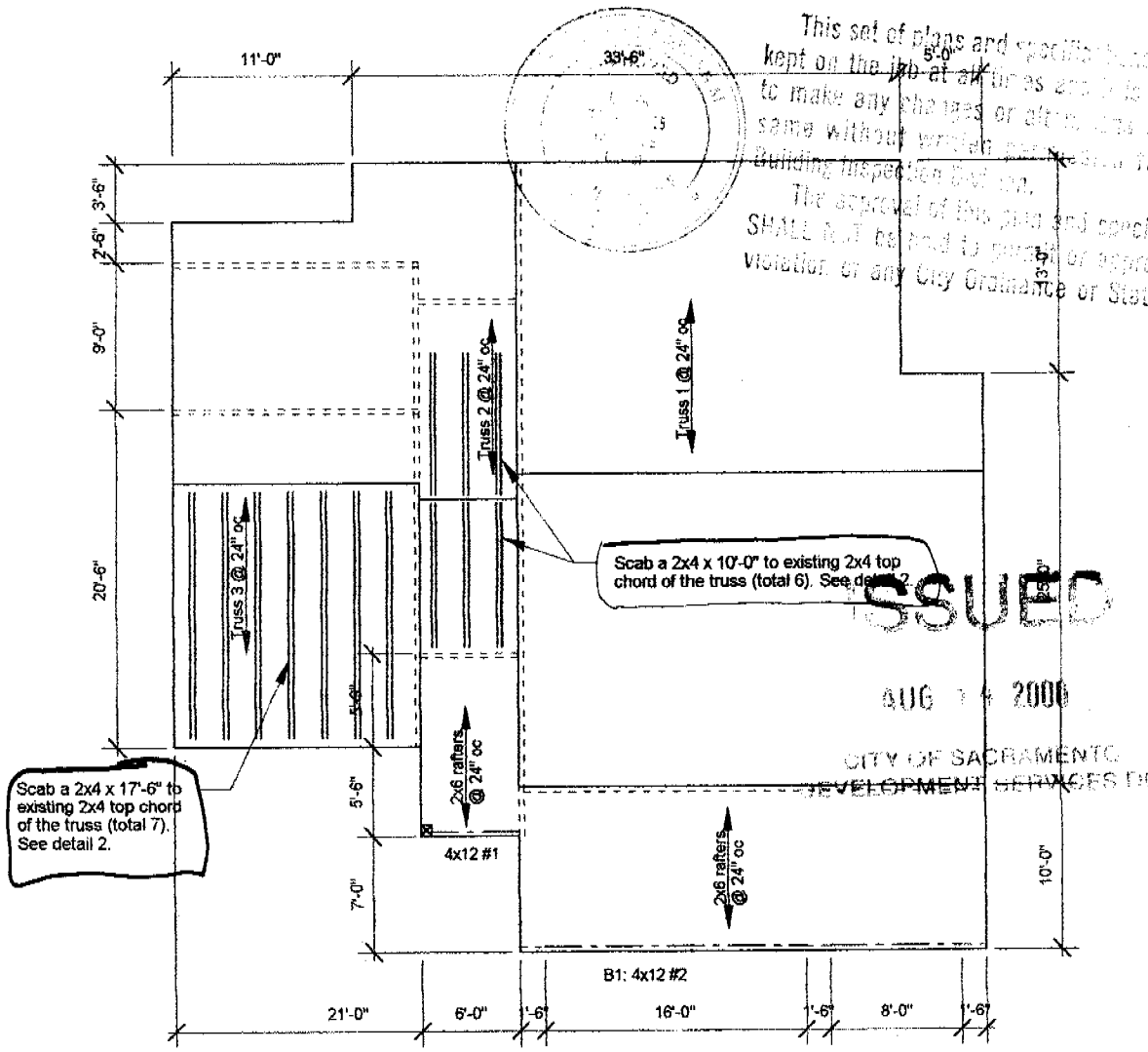
(This section need not be completed if the permit is for \$100 or less) I certify, on behalf of the applicant, that I have provided for the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of 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.

X Date 8-14-00 Applicant Signature TM

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.

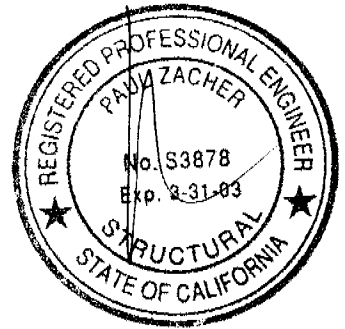




This set of plans and specifications must be kept on the job at all times and no one is authorized to make any changes or alterations to the same without written permission from the Building Inspection Division. The approval of this plan and certification SHALL NOT be held to punish or approve the violation of any City Ordinance or State Law.

See work req'd, circled.

Matt P. 8/10/00



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 7.3 psf.
2. All structural wood members that were observed appear to be in sound condition and without structural defect.

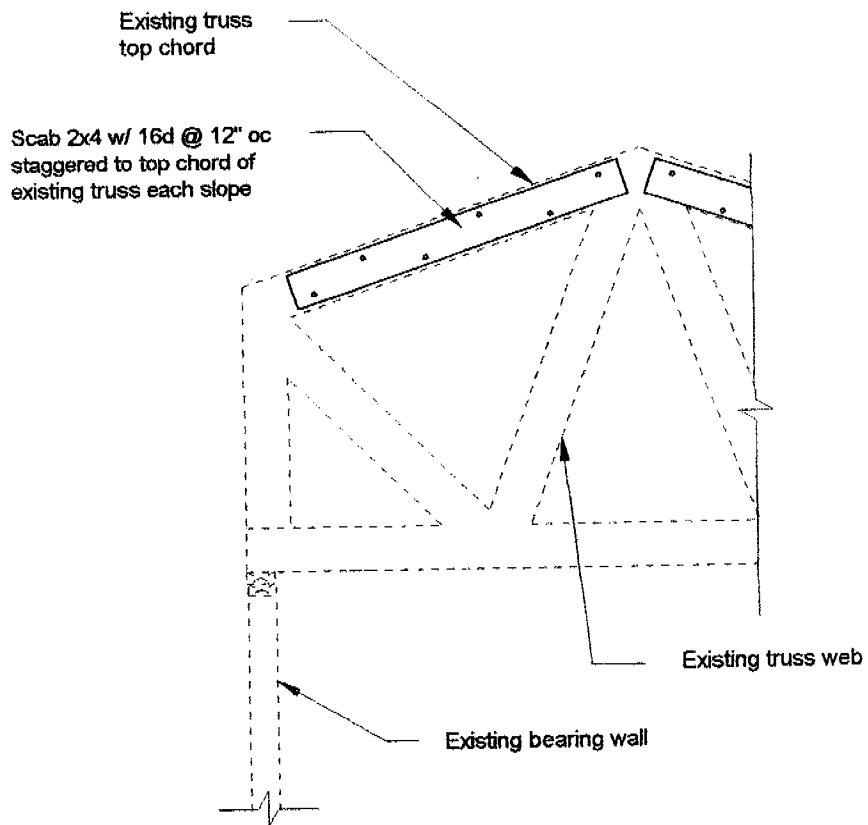


1

ROOF PLAN - KIMURA

Not to Scale

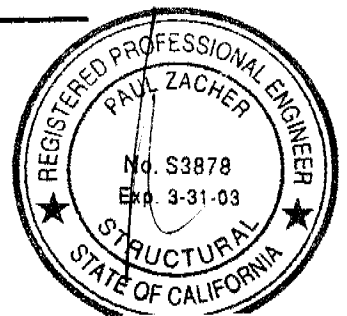
21



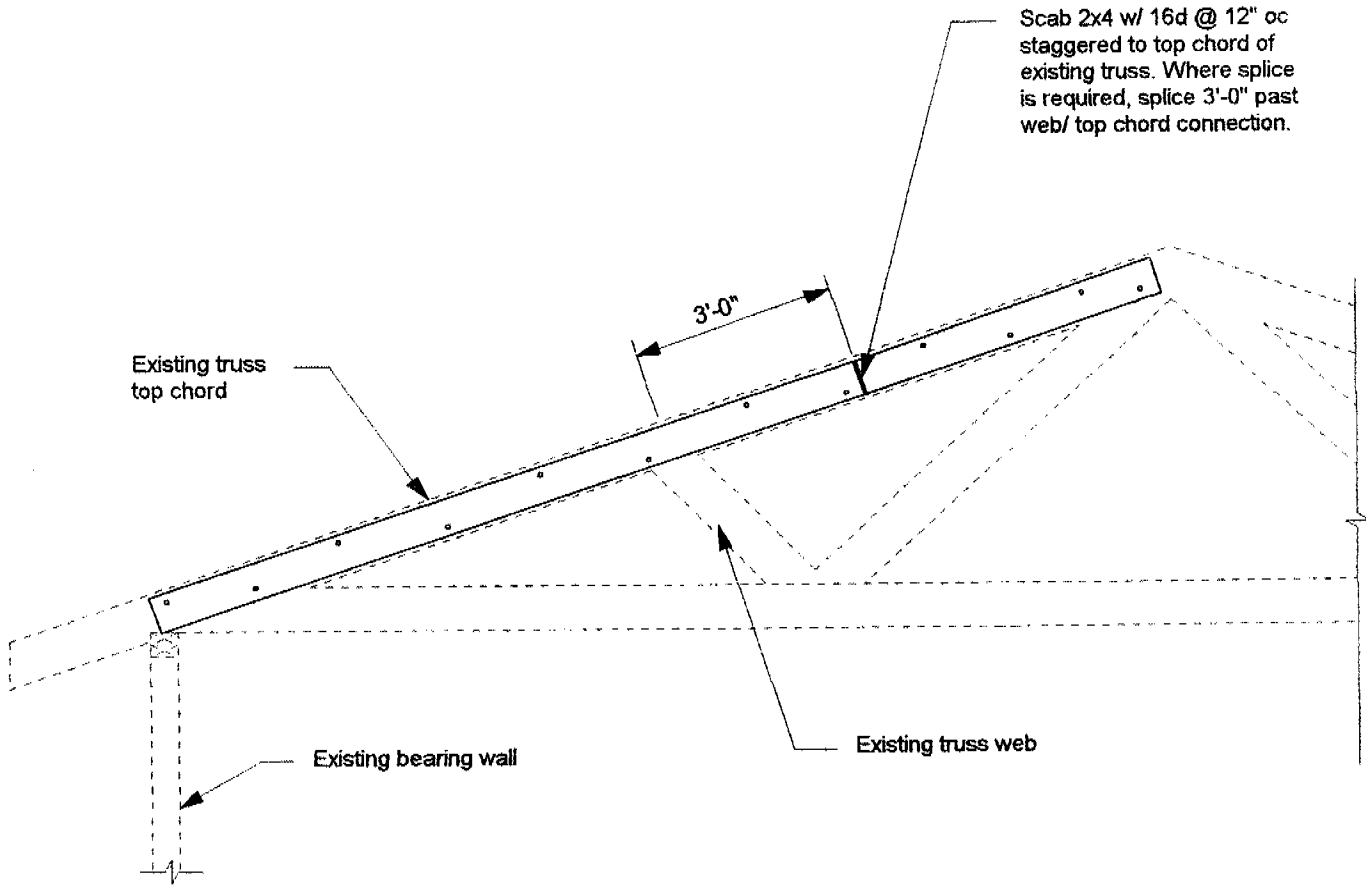
2

TRUSS REINFORCEMENT DETAIL

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



Scab 2x4 w/ 16d @ 12" oc staggered to top chord of existing truss. Where splice is required, splice 3'-0" past web/ top chord connection.

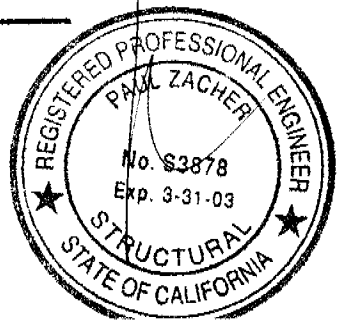


3

TRUSS REINFORCEMENT DETAIL

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

ZM



Kimura

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

TEL: 916.961.3960
FAX: 916.961.6552

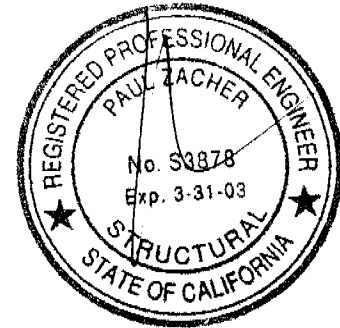
August 3, 2000

Old Country Roofing
8296 Alpine Avenue
Sacramento, CA 95826
TEL: (916) 453-8484
FAX: (916) 453-8487

Attn.: Mr. George Frank,

re: Job 2000_194: KIMURA

Subject: Structural Investigation Report of the Roof for the Residence located at 301 Bay River Way,
Sacramento, CA 95831.



As requested by Mr. George Frank, this is a report to determine what needs should be addressed to correct any structural deficiencies of the roof. Paul Zacher visited the site August 2, 2000. The investigation was made to determine the existing condition of the structure. All information, data and analysis contained within this report are based on the 1997 Uniform Building Code.

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

DESCRIPTION:

Type of Facility: Residence.
Year Built: Estimated 1980's vintage.
Occupancy: Residential.
No. of Stories: Two.
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 conventionally framed with 2x6 rafters spaced at 24" on center and with pre-engineered wood trusses spaced at 24" on center.

CONCLUSIONS:

Roof:
The living area has sufficient structural capacity for the applied live and dead loads. The garage lacks sufficient structural capacity for the applied live and dead loads.

1/27



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 rafter to the existing pre-engineered truss top chord with 16d's @ 12" on center. See details 1 and 2.

It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and are not an indication of a structural hazard or failure.

It shall be noted that some deflection of the rafters may be evident after installation of the tile. The existing roof framing has deflected but this may not be readily evident due to the uneven nature of the existing roofing material. Concrete tile is a very consistent and uniform product and when installed in an even plane, even small deflections can become apparent. This is only a cosmetic issue and not a structural concern.

The inspection consisted of visual observation only, made solely to determine the structural capacity of the existing roof. Analysis does not determine any effects on the overall structure under lateral forces or effects on the foundation unless specifically noted in the calculations and in this document. No warranties, expressed or implied, are made or intended in conjunction with this report. The inspection was made only to the portions that were accessible. The specific items noted were those that were observable and there may be defects that are not observable, or are hidden by architectural and structural materials.

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

Sincerely,

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

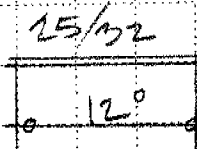
00-194

Date: 8/13/00

LOADING

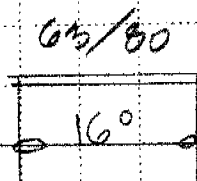
KAFIR

OP 12 S.P.F. = 2° = 25 p.f. 2x16"2
LP 16.0. " " 32.



B1

OP 12 S.P.F. = 5° = 63 p.f. 4x12"2
LP 16.0. " " 80.



Teacher - Structural Engineers
 701 Lakeside Way
 Fair Oaks
 TEL: (916) 961-3960
 FAX: (916) 961-6552

Title :
 Dsgnr:
 Description :

Job #
 Date: 1:39PM, 3 AUG 00

Scope :

Rev: 510304
 User: KW 0602844, Ver 5.1.3, 22-Jun-1999, Win32
 (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	B1
Timber Section		2x6	4x12
Beam Width	in	1.500	3.500
Beam Depth	in	5.500	11.250
Le: Unbraced Length	ft	0.00	0.00
Timber Grade		Douglas Fir - Larch, Douglas Fir - Larch,	
Fb - Basic Allow	psi	875.0	875.0
Fv - 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

Span	ft	12.00	16.00
Dead Load	#/ft	25.00	63.00
Live Load	#/ft	32.00	80.00

Results

Ratio = 0.9956 0.6182

Mmax @ Center	in-k	12.31	54.91
@ X =	ft	6.00	8.00
Fb : Actual	psi	1,628.0	743.8
Fb : Allowable	psi	1,635.2	1,203.1
		Bending OK	Bending OK
Fv : Actual	psi	57.7	38.7
Fv : Allowable	psi	118.8	118.8
		Shear OK	Shear OK

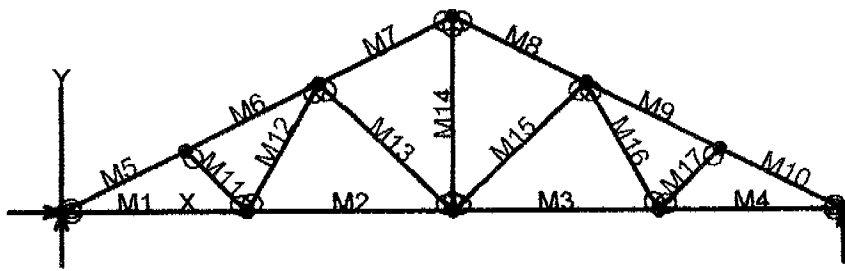
Reactions

@ Left End	DL	lbs	150.00	504.00
	LL	lbs	192.00	640.00
	Max. DL+LL	lbs	342.00	1,144.00
@ Right End	DL	lbs	150.00	504.00
	LL	lbs	192.00	640.00
	Max. DL+LL	lbs	342.00	1,144.00

Deflections

Ratio OK Deflection OK

Center DL Defl	in	-0.351	-0.140
L/Defl Ratio		410.8	1,373.3
Center LL Defl	in	-0.449	-0.178
L/Defl Ratio		320.9	1,081.5
Center Total Defl	in	-0.799	-0.317
Location	ft	6.000	8.000
L/Defl Ratio		180.2	605.0



VisualAnalysis 3.50.c Report

08/03/00 12:20:00

Project: Truss 1

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

Company: PK Associates Engineers

Engineer: Paul Zacher

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

Nodes

Node	X ft	Y ft	Fix DX	Fix DY	Fix RZ
N1	0.00	0.00	Yes	Yes	No
N2	9.00	0.00	No	No	"
N3	19.00	0.00	"	"	"
N4	29.00	0.00	"	"	"
N5	38.00	0.00	"	Yes	"
N6	6.00	3.00	"	No	"
N7	32.00	3.00	"	"	"
N8	12.50	6.25	"	"	"
N9	25.50	6.25	"	"	"
N10	19.00	9.50	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.00
M2	"	"	10.00
M3	"	"	10.00
M4	"	"	9.00
M5	"	"	6.71
M6	"	"	7.27
M7	"	"	7.27
M8	"	"	7.27
M9	"	"	7.27
M10	"	"	6.71
M11	"	"	4.24
M12	"	"	7.16
M13	"	"	9.02
M14	"	"	9.50
M15	"	"	9.02
M16	"	"	7.16
M17	"	"	4.24

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	1238.80	-NA-
N5	"	-NA-	1238.80	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	2140.26	-40.01	-52.31	-0.2083
"	2140.26	-17.21	33.3578	-0.1962
"	2140.26	5.5881	50.7934	-0.1366
"	2140.26	28.3881	0.0000	-0.0000
M2	1697.25	-39.24	-64.74	-0.2342
"	1697.25	-13.91	23.6361	-0.2638
"	1697.25	11.4231	27.7813	-0.2581
"	1697.25	36.7564	-52.31	-0.2083
M3	1697.25	-36.76	-52.31	-0.2083
"	1697.25	-11.42	27.7813	-0.2581
"	1697.25	13.9102	23.6361	-0.2638
"	1697.25	39.2436	-64.74	-0.2342
M4	2140.26	-28.39	0.0000	-0.0000
"	2140.26	-5.5881	50.7934	-0.1366
"	2140.26	17.2119	33.3578	-0.1962
"	2140.26	40.0119	-52.31	-0.2083
M5	-2455.62	125.47	0.0000	-0.0000
"	-2404.10	22.4339	164.79	-0.1790
"	-2352.58	-80.60	99.7516	-0.2199
"	-2301.06	-183.64	-195.11	-0.1839
M6	-2186.39	160.39	-195.11	-0.1839
"	-2130.57	48.7640	57.5416	-0.2333
"	-2074.76	-62.86	40.4679	-0.2433
"	-2018.95	-174.49	-246.33	-0.2325
M7	-1493.31	201.33	-246.33	-0.2325
"	-1437.49	89.7083	105.50	-0.3518
"	-1381.68	-21.92	187.61	-0.3781
"	-1325.87	-133.54	-0.0000	-0.2205
M8	-1493.31	-201.33	-246.33	-0.1890
"	-1437.49	-89.71	105.50	-0.3083
"	-1381.68	21.9162	187.61	-0.3344
"	-1325.87	133.54	0.0000	-0.1769
M9	-2186.39	-160.39	-195.11	-0.1403
"	-2130.57	-48.76	57.5416	-0.1898
"	-2074.76	62.8605	40.4679	-0.1997
"	-2018.95	174.49	-246.33	-0.1890
M10	-2455.62	-125.47	0.0000	0.0436
"	-2404.10	-22.43	164.79	-0.1354

	-2352.58	80.6041	99.7516	-0.1763
	-2301.06	183.64	-195.11	-0.1403
M11	-362.64	-0.0000	-0.0000	-0.1290
"	-362.64	-0.0000	-0.0000	-0.1121
"	-362.64	-0.0000	-0.0000	-0.0953
"	-362.64	-0.0000	0.0000	-0.0785
M12	381.88	-0.0000	-0.0000	-0.1688
"	381.88	-0.0000	-0.0000	-0.1540
"	381.88	-0.0000	-0.0000	-0.1392
"	381.88	-0.0000	0.0000	-0.1244
M13	-626.54	0.0000	0.0000	-0.1351
"	-626.54	0.0000	0.0000	-0.1292
"	-626.54	0.0000	0.0000	-0.1233
"	-626.54	0.0000	0.0000	-0.1174
M14	947.01	-0.0000	-0.0000	-0.0487
"	947.01	-0.0000	-0.0000	-0.0487
"	947.01	-0.0000	-0.0000	-0.0487
"	947.01	-0.0000	0.0000	-0.0487
M15	-626.54	-0.0000	0.0000	-0.2026
"	-626.54	-0.0000	-0.0000	-0.1967
"	-626.54	-0.0000	-0.0000	-0.1908
"	-626.54	-0.0000	-0.0000	-0.1850
M16	381.88	-0.0000	0.0000	-0.0838
"	381.88	-0.0000	-0.0000	-0.0690
"	381.88	-0.0000	-0.0000	-0.0542
"	381.88	-0.0000	-0.0000	-0.0394
M17	-362.64	0.0000	0.0000	-0.1979
"	-362.64	0.0000	0.0000	-0.1810
"	-362.64	0.0000	0.0000	-0.1642
"	-362.64	0.0000	0.0000	-0.1474

BENDING & COMP: TRUSS 1 - MEMBER 5

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

Grading:

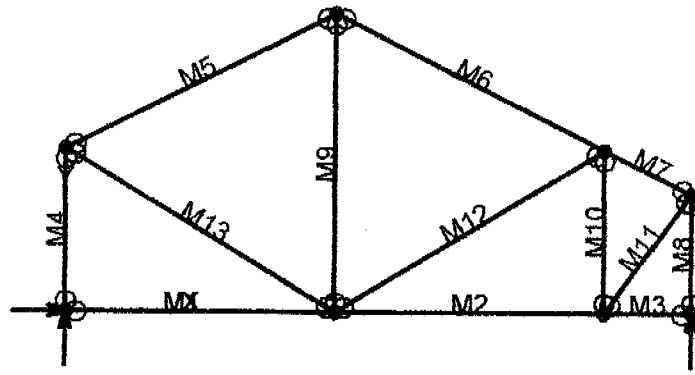
2x or 4x

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	2301 lbs
Max Reaction, R	183 lbs
Max Moment, M	195 ft-lbs
Max LL Deflection	0.08 inches
Max TL Deflection	0.18 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 =	438 psi
Fce =	1085 psi
Fc* =	1869 psi
F'c =	911 psi
fb =	764 psi
F'b = Fb* =	1887 psi
Shear D/C ratio	0.44 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.91 < 1.0, Member OK
Live Load defl ratio	0.24 < 1.0, Member OK
Total Load defl ratio	0.40 < 1.0, Member OK



Modal Analysis 3.50.c Report

03/03/00 12:51:49

Project: Truss 2
 File: C:\Program Files\IES\VA35\truss 2.vap
 Company: PK Associates Engineers
 Engineer: Paul Zacher
 Default Units: Feet, Pounds, Degrees, °Fahrenheit, Seconds.

Nodes

Node	X ft	Y ft	Y Fix	DX Fix	DY Fix	RZ Fix
N1	0.00	0.00	Yes	Yes	No	No
N2	9.25	0.00	No	No	"	"
N3	18.50	0.00	"	"	"	"
N4	21.50	0.00	"	Yes	"	"
N5	0.00	5.63	"	No	"	"
N6	9.25	10.25	"	"	"	"
N7	18.50	5.63	"	"	"	"
N8	21.50	4.13	"	"	"	"

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.25
M2	"	"	9.25
M3	"	"	3.00
M4	"	"	5.63
M5	"	"	10.34
M6	"	"	10.34
M7	"	"	3.35
M8	"	"	4.13
M9	"	"	10.25
M10	"	"	5.63
M11	"	"	5.10
M12	"	"	10.83
M13	"	"	10.83

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.

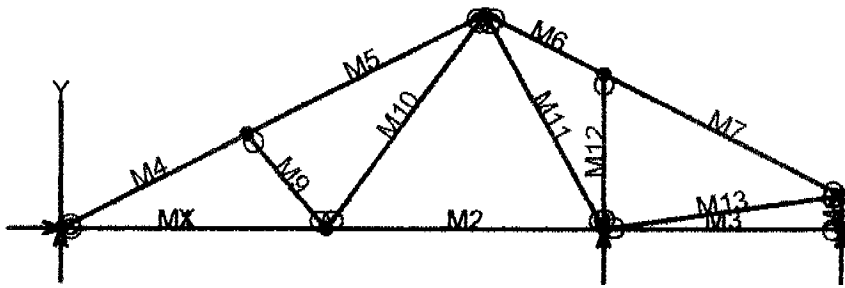
Nodal Reactions

Node	Load Case	FX lbs	FY lbs	MZ lb-ft
N1	Equation Case 1	-0.00	700.90	-NA-
N4	"	-NA-	700.90	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	0.0000	-42.81	-70.87	-0.0188
"	0.0000	-19.38	24.8227	-0.0608
"	0.0000	4.0546	48.4474	-0.0687
"	0.0000	27.4879	0.0000	-0.0000
M2	412.16	-30.98	-32.32	-0.0123
"	412.16	-7.5488	26.8999	-0.0446
"	412.16	15.8846	14.0489	-0.0391
"	412.16	39.3179	-70.87	-0.0188
M3	0.0000	-0.6263	0.0000	-0.0000
"	0.0000	6.9737	-3.1927	-0.0027
"	0.0000	14.5737	-13.97	-0.0061
"	0.0000	22.1737	-32.32	-0.0123
M4	-673.41	0.0000	0.0000	-0.0010
"	-673.41	0.0000	0.0000	-0.0007
"	-673.41	0.0000	0.0000	-0.0003
"	-673.41	0.0000	0.0000	-0.0000
M5	-529.80	238.28	0.0000	-0.0050
"	-450.37	79.4251	546.23	-1.1382
"	-370.95	-79.43	546.23	-1.1430
"	-291.52	-238.28	0.0000	-0.0192
M6	-552.85	-284.38	-476.80	-0.0156
"	-473.42	-125.53	228.37	-0.5494
"	-394.00	33.3212	387.30	-0.6683
"	-314.57	192.17	0.0000	-0.0172
M7	-428.38	64.8754	0.0000	-0.0027
"	-402.62	116.39	-101.48	0.0307
"	-376.86	167.91	-260.41	0.0388
"	-351.10	219.43	-476.80	-0.0156
M8	-700.27	0.0000	0.0000	0.0017
"	-700.27	0.0000	0.0000	0.0029
"	-700.27	0.0000	0.0000	0.0040
"	-700.27	0.0000	0.0000	0.0051
M9	-113.95	-0.0000	-0.0000	0.0000
"	-113.95	-0.0000	-0.0000	0.0007
"	-113.95	-0.0000	-0.0000	0.0015
"	-113.95	-0.0000	0.0000	0.0022
M10	-513.57	-0.0000	0.0000	-0.0025
"	-513.57	-0.0000	-0.0000	0.0001
"	-513.57	-0.0000	-0.0000	0.0026
"	-513.57	-0.0000	-0.0000	0.0051
M11	700.75	0.0000	0.0000	0.0037
"	700.75	0.0000	0.0000	0.0062
"	700.75	0.0000	0.0000	0.0088
"	700.75	0.0000	0.0000	0.0114

	-52.50	0.0000	0.0000	0.0125
	-52.50	0.0000	0.0000	0.0137
	-52.50	0.0000	0.0000	0.0149
"	-52.50	0.0000	0.0000	0.0160
M13	429.89	-0.0000	-0.0000	0.0038
"	429.89	-0.0000	-0.0000	0.0079
"	429.89	-0.0000	-0.0000	0.0120
"	429.89	-0.0000	0.0000	0.0160



VisualAnalysis 3.50.c Report

08/03/00 13:14:05

Project: Truss 3

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

Company: PK Associates Engineers

Engineer: Paul Zacher

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

Nodes

Node	X ft	Y ft	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes		No	
N2	10.00	0.00	No		No		"	
N3	20.50	0.00	"		Yes		"	
N4	29.50	0.00	"		"		"	
N5	7.00	3.50	"		No		"	
N6	29.50	1.25	"		"		"	
N7	16.00	8.00	"		"		"	
N8	20.50	5.75	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.00
M2	"	"	10.50
M3	"	"	9.00
M4	"	"	7.83
M5	"	"	10.06
M6	"	"	5.03
M7	"	"	10.06
M8	"	"	1.25
M9	"	"	4.61
M10	"	"	10.00
M11	"	"	9.18
M12	"	"	5.75
M13	"	"	9.09

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	F _X lbs	F _Y lbs	M _Z lb-ft
N1	Equation Case 1	0.00	572.38	-NA-
N3	"	-NA-	1276.11	-NA-
N4	"	-NA-	74.91	-NA-

Member Results

Member	Axial lbs	V _y lbs	M _z lb-ft	D _y in
M1	815.70	-45.37	-73.70	-0.0460
"	815.70	-20.04	35.1018	-0.1073
"	815.70	5.2969	59.6676	-0.1091
"	815.70	30.6303	0.0000	-0.0000
M2	98.0796	-40.08	-75.62	-0.0000
"	98.0796	-13.48	17.8871	-0.0398
"	98.0796	13.1167	18.5286	-0.0556
"	98.0796	39.7167	-73.70	-0.0460
M3	0.0000	-25.80	-0.0000	-0.0000
"	0.0000	-2.9976	43.0218	-0.0495
"	0.0000	19.8024	17.8146	-0.0352
"	0.0000	42.6024	-75.62	-0.0000
M4	-971.86	119.76	0.0000	-0.0000
"	-911.76	-0.4503	154.84	-0.1151
"	-851.65	-120.66	-3.1332	-0.0640
"	-791.55	-240.87	-473.92	-0.0491
M5	-661.59	278.93	-473.92	-0.0491
"	-584.32	124.38	201.15	-0.4891
"	-507.04	-30.18	359.13	-0.5896
"	-429.76	-184.74	0.0000	-0.0157
M6	180.14	-203.56	-440.92	-0.0025
"	218.77	-126.28	-164.67	0.0578
"	257.41	-49.00	-17.70	0.0251
"	296.05	28.2794	0.0000	-0.0227
M7	187.91	-188.02	0.0000	0.0041
"	265.18	-33.46	370.13	-0.5922
"	342.46	121.10	223.16	-0.4905
"	419.74	275.65	-440.92	-0.0025
M8	-49.11	0.0000	0.0000	0.0092
"	-49.11	0.0000	0.0000	0.0103
"	-49.11	0.0000	0.0000	0.0113
"	-49.11	0.0000	0.0000	0.0124
M9	-535.80	0.0000	0.0000	-0.0216
"	-535.80	0.0000	0.0000	-0.0214
"	-535.80	0.0000	0.0000	-0.0211
"	-535.80	0.0000	0.0000	-0.0209
M10	614.87	0.0000	0.0000	-0.0364
"	614.87	0.0000	0.0000	-0.0264
"	614.87	0.0000	0.0000	-0.0165
"	614.87	0.0000	0.0000	-0.0066
M11	-714.38	0.0000	0.0000	-0.0174
"	-714.38	0.0000	0.0000	-0.0080
"	-714.38	0.0000	0.0000	0.0014

	-714.38	0.0000	0.0000	0.0108
2	-535.77	0.0000	0.0000	-0.0124
"	-535.77	0.0000	0.0000	-0.0091
"	-535.77	0.0000	0.0000	-0.0058
"	-535.77	0.0000	0.0000	-0.0026
M13	-254.57	-0.0000	0.0000	-0.0017
"	-254.57	-0.0000	-0.0000	-0.0016
"	-254.57	-0.0000	-0.0000	-0.0015
"	-254.57	-0.0000	-0.0000	-0.0014

BENDING & COMP: TRUSS 3 - 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, d	3.5 inches
Length	7.83 feet
Max Axial Comp, C	791 lbs
Max Reaction, R	240 lbs
Max Moment, M	473 ft-lbs
Max LL Deflection	0.02 inches
Max TL Deflection	0.04 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 =	75 psi
Fce =	818 psi
Fc* =	1869 psi
F'c =	726 psi
fb =	927 psi
F'b = Fb* =	1887 psi
Shear D/C ratio	0.29 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.55 < 1.0, Member OK
Live Load defl ratio	0.05 < 1.0, Member OK
Total Load defl ratio	0.08 < 1.0, Member OK