

CITY OF SACRAMENTO
1231 I Street, Sacramento, CA 95814

Permit No: 0109524
Insp Area: 2

Site Address: 30 RAMBLEOAK CR SAC
Parcel No: 031-0520-017

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

CONTRACTOR
ZIMMERMAN ROOFING, INC
3075 R STREET
SACRAMENTO, CA 95831

OWNER
ZHOU SU ZHEN
30 RAMBLEOAK CR
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: 21 SQ T/O SHAKE REROOF W LTWT 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, C.C.P.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 8 of the Business and Professions Code and my license is in full force and effect.

License Class C21 License Number 557550 Date 1-27-01 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 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 an 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 1-27-01 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 STATE FUND Policy Number 713-00-2021 Exp Date 10/01/2001

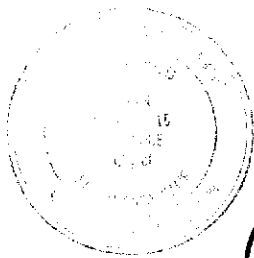
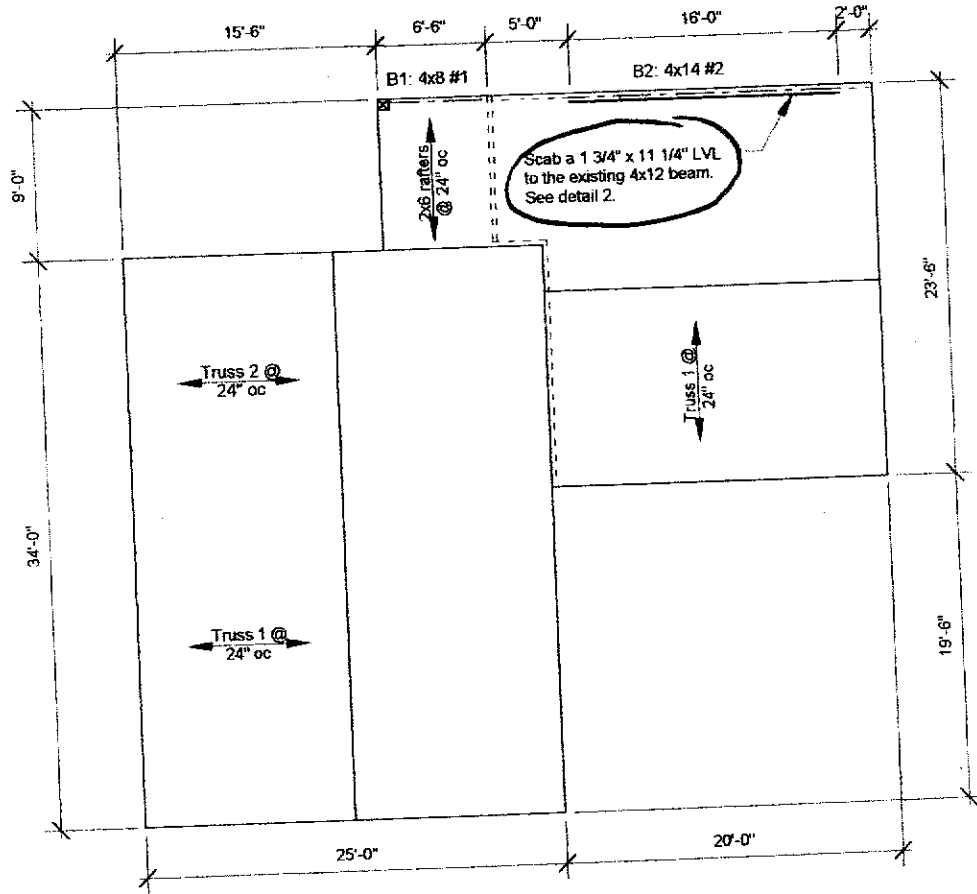
(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become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

Date 1-27-01 Applicant Signature [Signature]

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.

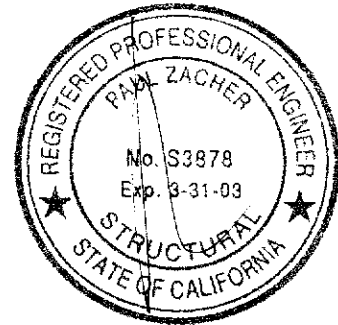
30 RAMBLE OAK CIR.



I, the undersigned, being a duly Licensed and Registered Professional Engineer, do hereby certify that the above is a true and correct copy of the original as shown to me by the contractor with that of the permission from the building department.

The approval of this plan and specifications SHALL NOT be held to prove the violation of any City Ordinance or State Law.

Paul Zacher
7/29/01



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

1

ROOF PLAN - ZHOU

Not to Scale

16

Zhou



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.

Garage:

1. Scab a 1 3/4" x 11 1/4" LVL to the existing header. See details 1 and 2.

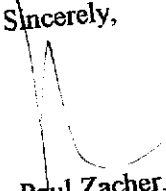
It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and 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

DESIGN LOADING:

Roof Pitch
Pitch Adjustment Factor

4 in 12
1.05

LOCATION: ROOF

MATERIAL

Light Weight Tile
Roofing felt
1x4 skip sht'g
1/2" OSB/ plywood
2x6 rafters @ 24" oc

WEIGHT

	7.00	psf
	0.30	psf
	1.09	psf
	1.50	psf
	1.00	psf
Roof Pitch Adjustment	10.9	psf
Total Load	<u>0.59</u>	psf
	11.5	psf

LOCATION: TOP CHORD

MATERIAL

Light Weight Tile
Roofing felt
1/2" OSB/ plywood
1x4 skip sht'g
2x4 truss @ 24" oc

WEIGHT

	7.00	psf
	0.30	psf
	1.50	psf
	1.09	psf
	0.64	psf
Roof Pitch Adjustment	10.5	psf
Total Load	<u>0.57</u>	psf
	11.1	psf

LOCATION: BOTTOM CHORD

MATERIAL

Batt/blown insul
2x4 truss @ 24" oc
1/2" Gypboard

WEIGHT

	0.50	psf
	1.28	psf
	2.50	psf
Load	4.3	psf

P.K. Zacher, S.E.

Job #: 01-1747

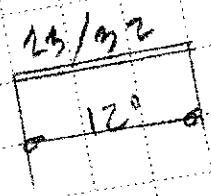
Date: 6/23/01

LOADING

RAFTER

OR = 11.5 p.f.f. @ 20° = 247 p.f.f.
LR = 16.0 " " " = 432 "

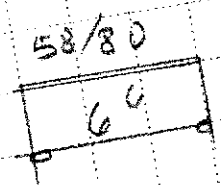
2x6 #2



B2

OR = 11.5 p.f.f. @ 5° = 58 p.f.f.
LR = 16.0 " " " = 80 "

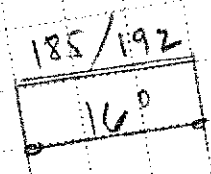
4x8 #1



B2

OR = 15.4 p.f.f. @ 12° = 185 p.f.f.
LR = 16.0 " " " = 192 "

4x14 #2
+ 1 3/4 x 11 1/4 LVL



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

Title :
 Dsgnr:
 Description :

Scope :

c:\enercalc\test\ecw\Calculations

Timber Beam & Joist

RAFTERS AND BEAMS

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Member Information

Timber Section		B1	B2
Beam Width	in	4x8	4x12 + 1.7
Beam Depth	in	2x6	5.250
Le: Unbraced Length	ft	1.500	3.500
Timber Grade		5.500	7.250
Fb - Basic Allow	psi	0.00	0.00
Fv - Basic Allow	psi	875.0	1,000.0
Elastic Modulus	ksi	95.0	1,700.0
Load Duration Factor		1.250	1.250
Member Type		Sawn	Manuf/Pine
Repetitive Status		Repetitive	No

Center Span Data

	ft	6.50	16.00
Span	#/ft	12.00	58.00
Dead Load	#/ft	23.00	80.00
Live Load	#/ft	32.00	192.00
Ratio =		0.9607	0.1902

Results

	in-k	8.75	144.77
Mmax @ Center	ft	6.00	3.25
@ X =	psi	1,570.9	285.2
fb : Actual	psi	1,635.2	1,500.0
Fb : Allowable	psi	Bending OK	Bending OK
fv : Actual	psi	55.7	21.6
Fv : Allowable	psi	118.8	118.8
		Shear OK	Shear OK

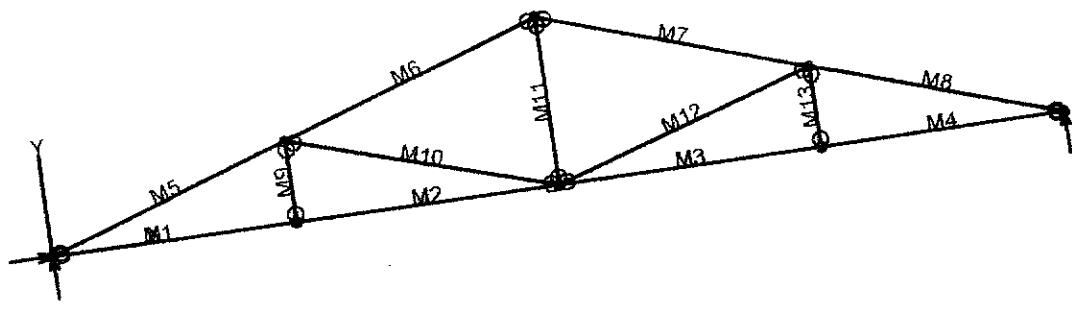
Reactions

	DL	LL	Max. DL+LL
@ Left End	lbs	138.00	330.00
	lbs	192.00	330.00
	lbs	138.00	192.00
@ Right End	lbs	188.50	448.50
	lbs	260.00	448.50
	lbs	188.50	260.00
Max. DL+LL	lbs	1,480.00	1,536.00
	lbs	1,536.00	3,016.00
	lbs	1,480.00	1,536.00
	lbs	1,536.00	3,016.00

Deflections

	in	Ratio OK	Deflection OK	Deflection OK
Center DL Defl		-0.322	-0.012	-0.263
L/Defl Ratio		446.5	6,326.9	730.7
Center LL Defl		-0.449	-0.017	-0.273
L/Defl Ratio		320.9	4,587.0	704.1
Center Total Defl		-0.771	-0.029	-0.535
Location	ft	6.000	3.250	8.000
L/Defl Ratio		186.7	2,659.1	358.6

4. 15. 78



6

VisualAnalysis 3.50.c Report

06/28/01 13:18:49

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	6.00	0.00	No		No		"	
N3	12.50	0.00	"		"		"	
N4	19.00	0.00	"		"		"	
N5	25.00	0.00	"		Yes		"	
N6	6.00	2.00	"		No		"	
N7	19.00	2.00	"		"		"	
N8	12.50	4.17	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	6.00
M2	"	"	6.50
M3	"	"	6.50
M4	"	"	6.00
M5	"	"	6.32
M6	"	"	6.85
M7	"	"	6.85
M8	"	"	6.32
M9	"	"	2.00
M10	"	"	6.80
M11	"	"	4.17
M12	"	"	6.80
M13	"	"	2.00

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	821.70	-NA-
N5	"	-NA-	821.70	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1991.99	-24.56	7.4425	-0.1883
"	1991.99	-7.3596	39.2757	-0.1525
"	1991.99	9.8404	36.7948	-0.0891
"	1991.99	27.0404	0.0000	-0.0000
M2	1991.99	-36.09	-45.49	-0.1981
"	1991.99	-17.46	12.4273	-0.2082
"	1991.99	1.1736	30.0706	-0.2101
"	1991.99	19.8070	7.4425	-0.1883
M3	1991.99	-19.81	7.4425	-0.1883
"	1991.99	-1.1736	30.0706	-0.2101
"	1991.99	17.4597	12.4273	-0.2082
"	1991.99	36.0930	-45.49	-0.1981
M4	1991.99	-27.04	0.0000	-0.0000
"	1991.99	-9.8404	36.7948	-0.0891
"	1991.99	7.3596	39.2757	-0.1525
"	1991.99	24.5596	7.4425	-0.1883
M5	-2141.06	123.96	0.0000	-0.0000
"	-2104.93	15.5623	146.50	-0.1489
"	-2068.80	-92.84	65.0450	-0.1903
"	-2032.66	-201.24	-244.37	-0.1924
M6	-1380.65	211.81	-244.37	-0.1924
"	-1341.44	94.3768	104.66	-0.3022
"	-1302.24	-23.06	186.12	-0.3300
"	-1263.03	-140.49	0.0000	-0.1956
M7	-1380.65	-211.81	-244.37	-0.1712
"	-1341.44	-94.38	104.66	-0.2811
"	-1302.24	23.0566	186.12	-0.3088
"	-1263.03	140.49	0.0000	-0.1744
M8	-2141.06	-123.96	0.0000	0.0212
"	-2104.93	-15.56	146.50	-0.1277
"	-2068.80	92.8377	65.0450	-0.1691
"	-2032.66	201.24	-244.37	-0.1713
M9	44.3665	-0.0000	-0.0000	0.0161
"	44.3665	-0.0000	-0.0000	0.0254
"	44.3665	-0.0000	-0.0000	0.0347
"	44.3665	-0.0000	0.0000	0.0440
M10	-784.14	-0.0000	-0.0000	-0.1794
"	-784.14	-0.0000	-0.0000	-0.1753
"	-784.14	-0.0000	-0.0000	-0.1711
"	-784.14	-0.0000	0.0000	-0.1669
M11	533.40	0.0000	0.0000	-0.0335
"	533.40	0.0000	0.0000	-0.0335
"	533.40	0.0000	0.0000	-0.0335
"	533.40	0.0000	0.0000	-0.0335

M12	-784.14	0.0000	0.0000	-0.1991
"	-784.14	0.0000	0.0000	-0.1950
"	-784.14	0.0000	0.0000	-0.1908
"	-784.14	0.0000	0.0000	-0.1866
M13	44.3665	0.0000	0.0000	0.0229
"	44.3665	0.0000	0.0000	0.0323
"	44.3665	0.0000	0.0000	0.0416
"	44.3665	0.0000	0.0000	0.0509

BENDING & COMP: TRUSS 1 - MEMBER 5

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

Grading:

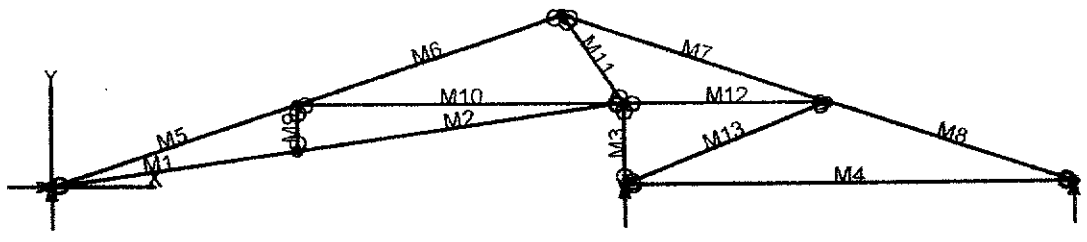
2x or 4x

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	6.32 feet
Max Axial Comp, C	2032 feet
Max Reaction, R	201 feet
Max Moment, M	244 feet
Max LL Deflection	0.09 feet
Max TL Deflection	0.19 feet
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 =	1.17
fc =	387 psi
Fce =	1275 psi
Fc* =	2084 psi
F'c =	1057 psi
fb =	956 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.48 < 1.0, Member OK
Interaction equation:	
(fc/F'c) ² +	
fb / (F'b(1-fc/Fce)) =	0.77 < 1.0, Member OK
Live Load defl ratio	0.28 < 1.0, Member OK
Total Load defl ratio	0.45 < 1.0, Member OK



VisualAnalysis 3.50.c Report

06/28/01 13:23:52

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	Fix	DX	Fix	DY	Fix	RZ
N1	0.00	0.00	Yes		Yes		No	
N2	6.00	0.86	No		No		"	
N3	14.00	2.00	"		"		"	
N4	14.00	0.00	"		Yes		"	
N5	25.00	0.00	"		"		"	
N6	6.00	2.00	"		No		"	
N7	12.50	4.17	"		"		"	
N8	19.00	2.00	"		"		"	

Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	6.06
M2	"	"	8.08
M3	"	"	2.00
M4	"	"	11.00
M5	"	"	6.32
M6	"	"	6.85
M7	"	"	6.85
M8	"	"	6.32
M9	"	"	1.14
M10	"	"	8.00
M11	"	"	2.64
M12	"	"	5.00
M13	"	"	5.39

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	358.87	-NA-
N4	"	-NA-	1053.91	-NA-
N5	"	-NA-	231.86	-NA-

Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1068.75	24.0171	0.0000	-0.0000
"	1071.22	6.8171	31.0625	-0.0688
"	1073.68	-10.38	27.4604	-0.1158
"	1076.15	-27.58	-10.81	-0.1437
M2	1066.98	35.7373	-10.81	-0.1437
"	1070.24	12.8040	54.4146	-0.1671
"	1073.51	-10.13	58.0168	-0.1227
"	1076.78	-33.06	-0.0000	-0.0055
M3	-934.48	-0.0000	-0.0000	0.0131
"	-934.48	-0.0000	-0.0000	0.0158
"	-934.48	-0.0000	-0.0000	0.0184
"	-934.48	-0.0000	0.0000	0.0211
M4	180.33	-47.30	0.0000	-0.0000
"	180.33	-15.77	115.33	-0.2696
"	180.33	15.7667	115.33	-0.2696
"	180.33	47.3000	0.0000	-0.0000
M5	-1160.80	126.13	0.0000	-0.0000
"	-1124.67	17.7257	151.06	-0.1383
"	-1088.53	-90.67	74.1670	-0.1654
"	-1052.40	-199.07	-230.68	-0.1454
M6	378.71	209.81	-230.68	-0.1454
"	417.91	92.3800	113.78	-0.2197
"	457.12	-25.05	190.68	-0.2030
"	496.32	-142.49	0.0000	-0.0196
M7	922.67	-217.26	-281.68	-0.0028
"	961.87	-99.82	79.7852	-0.0965
"	1001.07	17.6112	173.68	-0.1326
"	1040.28	135.04	0.0000	-0.0189
M8	-229.44	-118.06	-0.0000	0.0050
"	-193.30	-9.6623	134.06	-0.0684
"	-157.17	98.7377	40.1683	-0.0448
"	-121.04	207.14	-281.68	-0.0028
M9	64.8475	-0.0000	-0.0000	0.0290
"	64.8475	-0.0000	-0.0000	0.0317
"	64.8475	-0.0000	-0.0000	0.0344
"	64.8475	-0.0000	0.0000	0.0371
M10	-1487.01	0.0000	0.0000	-0.1409
"	-1487.01	0.0000	0.0000	-0.0948
"	-1487.01	0.0000	0.0000	-0.0487
"	-1487.01	0.0000	0.0000	-0.0025
M11	-911.54	0.0000	0.0000	-0.0159
"	-911.54	0.0000	0.0000	-0.0070
"	-911.54	0.0000	0.0000	0.0018

"	-911.54	0.0000	0.0000	0.0107
M12	-943.98	0.0000	0.0000	-0.0078
"	-943.98	0.0000	0.0000	-0.0061
"	-943.98	0.0000	0.0000	-0.0043
"	-943.98	0.0000	0.0000	-0.0025
M13	-194.22	-0.0000	-0.0000	0.0049
"	-194.22	-0.0000	-0.0000	0.0075
"	-194.22	-0.0000	-0.0000	0.0101
"	-194.22	-0.0000	0.0000	0.0128

BENDING & COMP: TRUSS 2 - 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	6.32 feet
Max Axial Comp. C	1052 feet
Max Reaction, R	199 feet
Max Moment, M	230 feet
Max LL Deflection	0.07 feet
Max TL Deflection	0.14 feet
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 =	1.17
fc =	200 psi
Fce=	1275 psi
Fc*=	2084 psi
F'c=	1057 psi
fb=	901 psi
F'b=Fb*=	2156 psi
Shear D/C ratio	0.48 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.53 < 1.0, Member OK
Live Load defl ratio	0.22 < 1.0, Member OK
Total Load defl ratio	0.33 < 1.0, Member OK