

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0111969

Insp Area: 2

Thos Bros: 336H3

Site Address: 669 CORIANDER WY SAC

Parcel No: 031-1040-054

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR

ZIMMERMAN ROOFING, INC
3675 R STREET
SACRAMENTO, CA 95816

OWNER

FELETTO LOUIE E/NADINE M
353 CEDAR RIVER WY
SACRAMENTO CA 95831

ARCHITECT

Nature of Work: TEAR OFF SHAKES & REROOF 24 SQ'S W/ PIONEER TILE

CONSTRUCTION LENDING AGENCY : I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name \_\_\_\_\_ Lender's Address \_\_\_\_\_

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class C39 License Number 557559 Date 9/19/01 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 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 9/19/01 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:

PAID CITY OF SACRAMENTO SEP 19 2001 Carrier: STATE FUND Exp Date: 10/01/2001 Policy Number: 713-00-2021

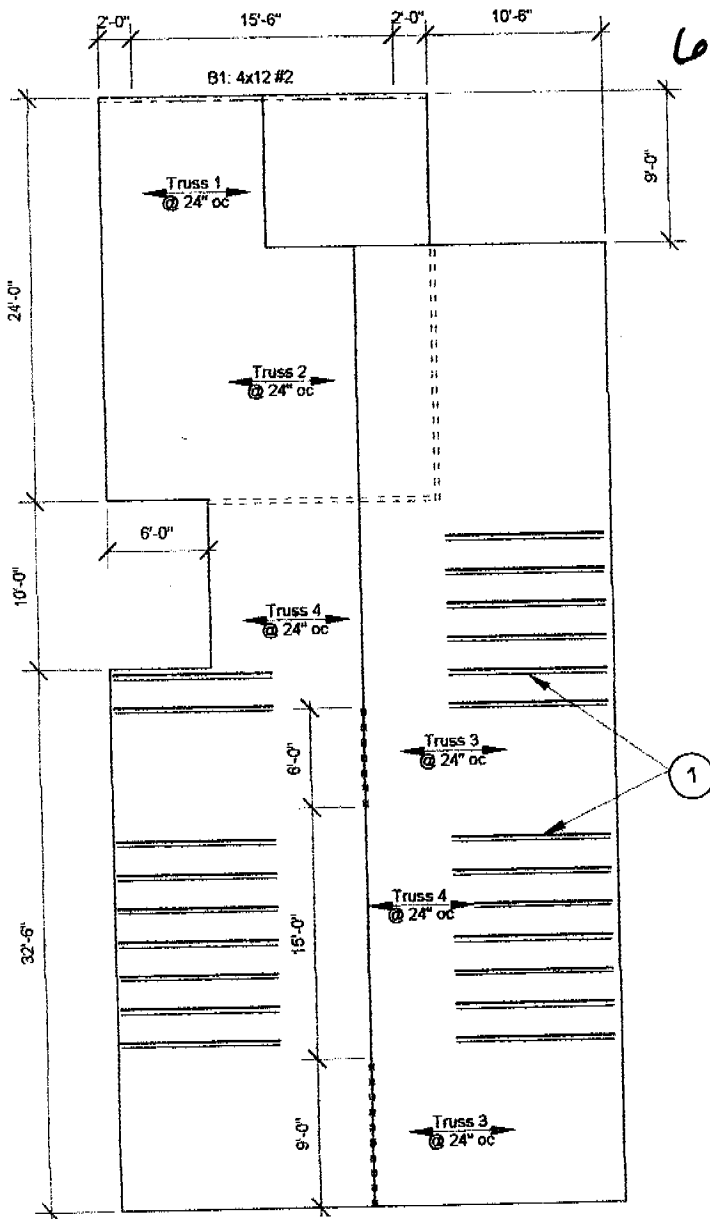
(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become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

Date 9/19/01 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.

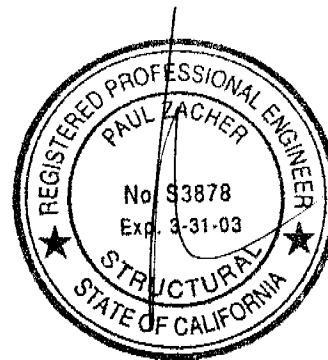
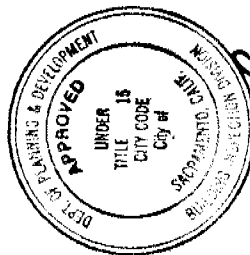
THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

669 CORIANDER WAY



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.

*Paul Zacher* 9/16/01



**FRAMING NOTES:**

1. Scab a 2x6 DF#2 x 10'-6" long rafter to the top chord of the existing truss #4 (total 22). See detail 2.

**Notes:**

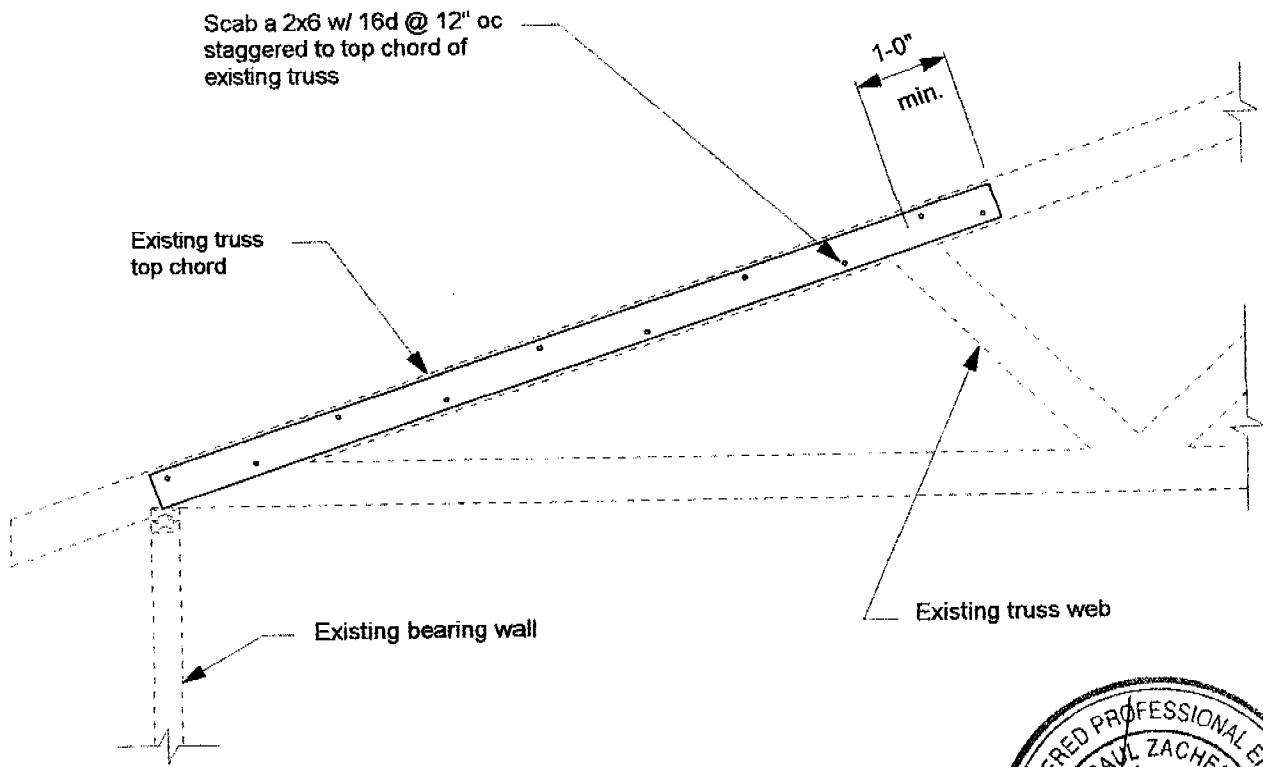
- A. This is a reroof project. The new roofing material shall be a Light Weight Concrete Tile. The tile shall weigh less than or equal to 7.0 psf.
- B. All structural wood members that were observed appear to be in sound condition and without structural defect.

1

**ROOF PLAN - MONTO**

Not to Scale

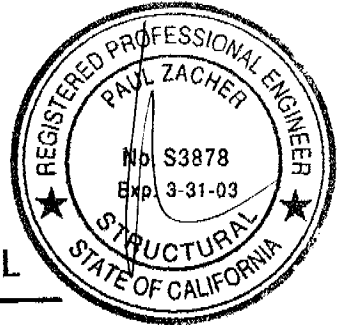
24



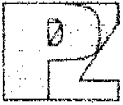
2

**TRUSS REINFORCEMENT DETAIL**

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



Monto

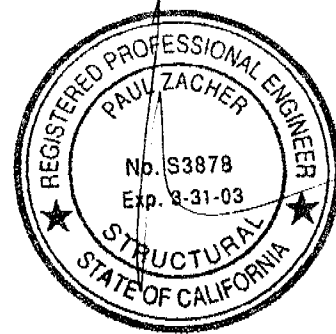


Paul Zacher - Structural Engineers  
4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: 916.961.3960  
FAX: 916.961.6552

August 13, 2001

Feletto  
353 Cedar River Way  
Sacramento, CA 95831  
TEL: (916) 422-5233  
FAX: (916) 445-6385



Attn.: Mr. Lou Feletto,

re: Job 2001\_233: MONTO

Subject: Structural Investigation Report of the Roof for the Residence located at 669 Coriander Way, Sacramento, CA 95831.

As requested by Mr. Lou Feletto, 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 13, 2001. 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 1500 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 and garage areas are framed with pre-engineered wood trusses spaced at 24" on center.

**CONCLUSIONS:**

Roof:  
The garage has sufficient structural capacity for the applied live and dead loads. The living area currently lacks sufficient structural capacity for the applied live and dead loads. See "Recommendations" for location and repair to bring the living area up to the required capacity.

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

TEL: 916.961.3960  
FAX: 916.961.6552

RECOMMENDATIONS:

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

Living Area:

1. Scab a 2x6 DF#2 x 10'-6" long rafter to the top chord of the existing truss #4. See details 1 and 2.

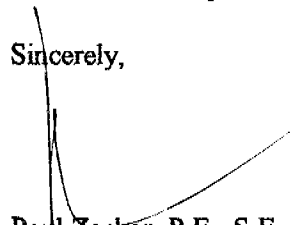
It shall be noted that small hairline cracking may occur at exterior stucco and interior gypboard finished walls that are load bearing or distributing roof strut loads. These cracks are a natural occurrence as the existing structure re-distributes the new roof weight. They are cosmetic in nature and 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	4	in 12
Pitch Adjustment Factor	1.05	

**LOCATION: TOP CHORD**

<u>MATERIAL</u>	<u>WEIGHT</u>	
Light Weight Tile	7.00	psf
Roofing felt	0.30	psf
1/2" OSB/ plywood	1.50	psf
1x4 skip sht'g	1.09	psf
2x4 truss @ 24" oc	<u>0.64</u>	psf
	Load	10.5 psf
Roof Pitch Adjustment	<u>0.57</u>	psf
Total Load	11.1	psf

**LOCATION: BOTTOM CHORD**

<u>MATERIAL</u>	<u>WEIGHT</u>	
Batt/blown insul	0.50	psf
2x4 truss @ 24" oc	1.28	psf
1/2" Gypboard	<u>2.50</u>	psf
	Load	4.3 psf

P.K. Zacher, S.E.

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

Job #: 01. 2000

Date: 8/10/01

LOADING

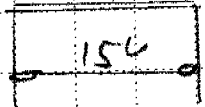
#1

D<sub>p</sub> = 15.4 p.s.f. = 4' : 02 p.u.

4 x 12" 2

L<sub>p</sub> = 16.0 . . . . . 04 .

02/04



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

Title :  
 Dsgnr:  
 Description :

Job #  
 Date: 12:36PM, 13 AUG 01

Scope :

Rev. 510304  
 User: KW-0602844, Ver 5.1.1.3, 22 Jun 1999, Win32  
 (c) 1983-99 ENERCALC

### Timber Beam & Joist

c:\enercalc\test.ecw\Calculations

Description      BEAMS

#### Timber Member Information

Calculations are designed to 1997 NDS and 1997 UBC Requirements

Timber Section		B1
Beam Width	in	4x12 3.500
Beam Depth	in	11.250
Le: Unbraced Length	ft	2.00
Timber Grade		Douglas Fir - Larch,
Fb - Basic Allow	psi	875.0
Fv - Basic Allow	psi	95.0
Elastic Modulus	ksi	1,600.0
Load Duration Factor		1.250
Member Type		Sawn
Repetitive Status		No

#### Center Span Data

Span	ft	15.50
Dead Load	#/ft	62.00
Live Load	#/ft	64.00

#### Results

Ratio = 0.5134

Mmax @ Center	in-k	45.41
@ X =	ft	7.75
fb : Actual	psi	615.0
Fb : Allowable	psi	1,196.1
		Bending OK
fv : Actual	psi	32.7
Fv : Allowable	psi	118.8
		Shear OK

#### Reactions

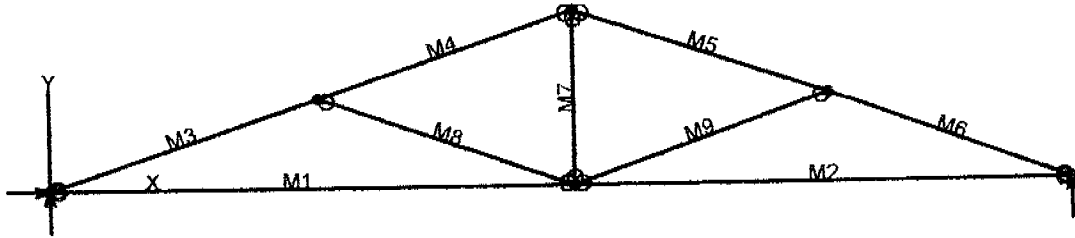
@ Left End	DL	lbs	480.50
	LL	lbs	496.00
	Max. DL+LL	lbs	976.50
@ Right End	DL	lbs	480.50
	LL	lbs	496.00
	Max. DL+LL	lbs	976.50

#### Deflections

Ratio OK

Center DL Defl	in	-0.121
L/Defl Ratio		1,534.9
Center LL Defl	in	-0.125
L/Defl Ratio		1,487.0
Center Total Defl	in	-0.246
Location	ft	7.750
L/Defl Ratio		755.3





# VisualAnalysis 3.50.c Report

08/13/01 12:14:01

Project: Truss 1

File: Untitled.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	9.75	0.00	No	No	"
N3	19.00	0.00	"	Yes	"
N4	5.00	1.67	"	No	"
N5	14.50	1.67	"	"	"
N6	9.75	3.25	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	9.75
M2	"	"	9.25
M3	"	"	5.27
M4	"	"	5.01
M5	"	"	5.01
M6	"	"	4.80
M7	"	"	3.25
M8	"	"	5.04
M9	"	"	5.04

## 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-	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	624.81	-NA-
N3	"	-NA-	627.10	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	1424.99	-50.06	-79.34	-0.1019
"	1424.99	-22.11	37.7141	-0.1463
"	1424.99	5.8371	64.1622	-0.1298
"	1424.99	33.7871	0.0000	-0.0000
M2	1330.33	-31.20	-0.0000	-0.0000
"	1330.33	-4.6806	55.1072	-0.1053
"	1330.33	21.8361	28.6590	-0.1235
"	1330.33	48.3528	-79.34	-0.1019
M3	-1538.82	109.15	0.0000	-0.0000
"	-1508.65	18.8155	112.03	-0.0833
"	-1478.48	-71.52	65.7272	-0.1087
"	-1448.31	-161.85	-138.91	-0.1032
M4	-1039.97	156.47	-138.91	-0.1032
"	-1011.43	70.6578	50.2309	-0.1306
"	-982.88	-15.16	96.5345	-0.1375
"	-954.34	-100.98	0.0000	-0.0998
M5	-1039.08	-153.78	-125.44	-0.0818
"	-1010.53	-67.97	59.2086	-0.1171
"	-981.99	17.8490	101.02	-0.1272
"	-953.44	103.67	0.0000	-0.0902
M6	-1454.55	-95.82	0.0000	0.0123
"	-1424.38	-14.52	87.9369	-0.0494
"	-1394.20	66.7849	46.1221	-0.0735
"	-1364.03	148.08	-125.44	-0.0804
M7	407.97	-0.0000	0.0000	0.0152
"	407.97	-0.0000	-0.0000	0.0164
"	407.97	-0.0000	-0.0000	0.0175
"	407.97	-0.0000	-0.0000	0.0187
M8	-516.82	-0.0000	-0.0000	-0.0900
"	-516.82	-0.0000	-0.0000	-0.0893
"	-516.82	-0.0000	-0.0000	-0.0886
"	-516.82	-0.0000	0.0000	-0.0880
M9	-416.48	0.0000	0.0000	-0.1024
"	-416.48	0.0000	0.0000	-0.0978
"	-416.48	0.0000	0.0000	-0.0933
"	-416.48	0.0000	0.0000	-0.0888

**BENDING & COMP: TRUSS 1 - MEMBER 3**

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

Grading:

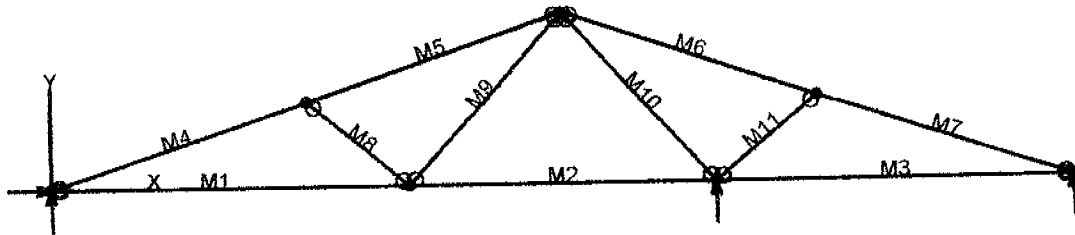
2x or 4x

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	5.27 feet
Max Axial Comp, C	1448 feet
Max Reaction, R	161 feet
Max Moment, M	138 feet
Max LL Deflection	0.05 feet
Max TL Deflection	0.10 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 =	1.15
fc =	276 psi
Fce=	1789 psi
Fc*=	2084 psi
F'c=	1326 psi
fb=	541 psi
F'b=Fb*=	2156 psi
Shear D/C ratio	0.39 < 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	0.19 < 1.0, Member OK
Total Load defl ratio	0.28 < 1.0, Member OK



# VisualAnalysis 3.50.c Report

08/13/01 12:16:31

Project: Truss 2

File: Untitled.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	10.50	0.00	No	No	"
N3	19.50	0.00	"	Yes	"
N4	30.00	0.00	"	"	"
N5	7.50	2.50	"	No	"
N6	22.50	2.50	"	"	"
N7	15.00	5.00	"	"	"

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	10.50
M2	"	"	9.00
M3	"	"	10.50
M4	"	"	7.91
M5	"	"	7.91
M6	"	"	7.91
M7	"	"	7.91
M8	"	"	3.91
M9	"	"	6.73
M10	"	"	6.73
M11	"	"	3.91

## 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-	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	533.00	-NA-
N3	"	-NA-	1294.23	-NA-
N4	"	-NA-	144.73	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	996.78	-52.06	-72.54	-0.0602
"	996.78	-21.96	56.7250	-0.1706
"	996.78	8.1412	80.9058	-0.1691
"	<b>996.78</b>	38.2412	0.0000	-0.0000
M2	119.13	-40.94	-92.69	-0.0000
"	119.13	-15.14	-8.7677	0.0017
"	119.13	10.6614	-2.0518	-0.0221
"	119.13	36.4614	-72.54	-0.0602
M3	-154.96	-36.32	0.0000	-0.0000
"	-154.96	-6.2224	74.1900	-0.1283
"	-154.96	23.8776	43.2933	-0.1045
"	-154.96	53.9776	-92.69	-0.0000
M4	<b>-1102.08</b>	154.16	0.0000	-0.0000
"	-1056.92	18.6556	<b>226.81</b>	-0.2260
"	-1011.75	-116.84	97.4309	-0.1926
"	-966.58	-252.34	-388.13	-0.0685
M5	-654.16	252.34	-388.13	-0.0685
"	-608.99	116.84	97.4309	-0.2024
"	-563.82	-18.66	226.81	<b>-0.2459</b>
"	-518.66	-154.16	-0.0000	-0.0297
M6	563.51	<b>-254.66</b>	<b>-406.42</b>	0.0037
"	608.68	-119.16	85.2370	-0.1424
"	653.85	16.3420	220.71	-0.2140
"	699.01	151.84	0.0000	-0.0341
M7	112.72	-151.84	-0.0000	0.0042
"	157.89	-16.34	220.71	-0.1885
"	203.06	119.16	85.2370	-0.1296
"	248.22	<b>254.66</b>	<b>-406.42</b>	0.0037
M8	-593.57	-0.0000	0.0000	-0.0454
"	-593.57	-0.0000	-0.0000	-0.0427
"	-593.57	-0.0000	-0.0000	-0.0400
"	-593.57	-0.0000	-0.0000	-0.0372
M9	630.32	0.0000	0.0000	-0.0507
"	630.32	0.0000	0.0000	-0.0396
"	630.32	0.0000	0.0000	-0.0284
"	630.32	0.0000	0.0000	-0.0173
M10	-1097.60	0.0000	0.0000	-0.0276
"	-1097.60	0.0000	0.0000	-0.0146
"	-1097.60	0.0000	0.0000	-0.0015
"	-1097.60	0.0000	0.0000	<b>0.0115</b>
M11	-599.01	-0.0000	0.0000	-0.0099
"	-599.01	-0.0000	-0.0000	-0.0090
"	-599.01	-0.0000	-0.0000	-0.0081
"	-599.01	-0.0000	-0.0000	-0.0072

**BENDING & COMP: TRUSS 2 - MEMBER 4**

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

Grading:

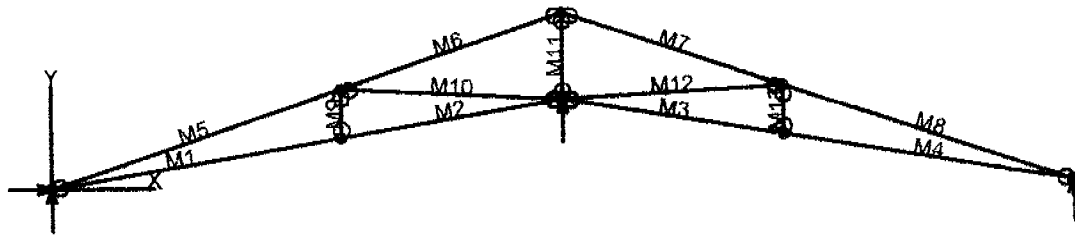
2x or 4x    Doug-fir larch: No. 2

Assumptions:

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

Width, b	1.5 inches
Depth, d	3.5 inches
Length	7.91 feet
Max Axial Comp, C	966 feet
Max Reaction, R	252 feet
Max Moment, M	388 feet
Max LL Deflection	0.03 feet
Max TL Deflection	0.06 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 =	1.22
fc =	184 psi
Fce=	844 psi
Fc*=	2084 psi
F'c=	758 psi
fb=	1520 psi
F'b=Fb*=	2156 psi
Shear D/C ratio	0.61 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.96 < 1.0, Member OK
Live Load defl ratio	0.08 < 1.0, Member OK
Total Load defl ratio	0.11 < 1.0, Member OK





# VisualAnalysis 3.50.c Report

08/13/01 12:20:12

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	8.50	1.42	No		No		"	
N3	15.00	2.50	"		Yes		"	
N4	21.50	1.42	"		No		"	
N5	30.00	0.00	"		Yes		"	
N6	8.50	2.83	"		No		"	
N7	21.50	2.83	"		"		"	
N8	15.00	5.00	"		"		"	

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	8.62
M2	"	"	6.59
M3	"	"	6.59
M4	"	"	8.62
M5	"	"	8.96
M6	"	"	6.85
M7	"	"	6.85
M8	"	"	8.96
M9	"	"	1.41
M10	"	"	6.51
M11	"	"	2.50
M12	"	"	6.51
M13	"	"	1.41

## 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-	1700000.00	0.36	40.47

## Load Combination Summary

Equation Case: Equation Case 1  
Combination: +1D+1L+1Lr  
Contributing Cases & Source

15

- 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	291.90	-NA-
N3	"	-NA-	1391.71	-NA-
N5	"	-NA-	291.90	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	391.61	31.4017	0.0000	-0.0000
"	395.68	7.0350	55.0317	-0.0938
"	399.75	-17.33	40.2427	-0.1106
"	403.82	-41.70	-44.37	-0.0733
M2	391.04	34.6834	-44.37	-0.0733
"	394.13	16.0500	11.2455	-0.0611
"	397.23	-2.5833	26.0344	-0.0416
"	400.32	-21.22	-0.0000	-0.0014
M3	391.04	-34.68	-44.37	-0.0706
"	394.13	-16.05	11.2455	-0.0584
"	397.23	2.5833	26.0344	-0.0389
"	400.32	21.2166	0.0000	0.0014
M4	391.61	-31.40	0.0000	0.0027
"	395.68	-7.0350	55.0317	-0.0911
"	399.75	17.3316	40.2427	-0.1078
"	403.82	41.6983	-44.37	-0.0706
M5	-474.20	185.14	0.0000	-0.0000
"	-423.07	31.5762	<b>322.44</b>	<b>-0.4298</b>
"	-371.94	-121.99	187.44	-0.3789
"	-320.81	<b>-275.56</b>	<b>-405.00</b>	-0.0737
M6	1198.90	235.25	-405.00	-0.0737
"	1238.10	117.82	-2.4263	-0.0718
"	1277.31	0.3843	132.57	-0.0935
"	<b>1316.51</b>	-117.05	0.0000	-0.0060
M7	1198.90	-235.25	-405.00	-0.0684
"	1238.10	-117.82	-2.4263	-0.0666
"	1277.31	-0.3843	132.57	-0.0882
"	1316.51	117.05	0.0000	-0.0007
M8	-474.20	-185.14	-0.0000	0.0052
"	-423.07	-31.58	322.44	-0.4247
"	-371.94	121.99	187.44	-0.3736
"	-320.81	<b>275.56</b>	-405.00	-0.0684
M9	77.7893	0.0000	0.0000	0.0166
"	77.7893	0.0000	0.0000	0.0173
"	77.7893	0.0000	0.0000	0.0180
"	77.7893	0.0000	0.0000	<b>0.0187</b>
M10	<b>-1605.19</b>	-0.0000	0.0000	-0.0704
"	-1605.19	-0.0000	-0.0000	-0.0468
"	-1605.19	-0.0000	-0.0000	-0.0232
"	-1605.19	-0.0000	-0.0000	0.0004
M11	-1055.84	0.0000	0.0000	-0.0083
"	-1055.84	0.0000	0.0000	-0.0083
"	-1055.84	0.0000	0.0000	-0.0083

"	-1055.84	0.0000	0.0000	-0.0083
M12	-1605.19	0.0000	0.0000	-0.0712
"	-1605.19	0.0000	0.0000	-0.0476
"	-1605.19	0.0000	0.0000	-0.0240
"	-1605.19	0.0000	0.0000	-0.0004
M13	77.7893	-0.0000	0.0000	-0.0021
"	77.7893	-0.0000	-0.0000	-0.0014
"	77.7893	-0.0000	-0.0000	-0.0007
"	77.7893	-0.0000	-0.0000	-0.0000

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### **BENDING & COMP: TRUSS 3 - MEMBER 5**

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

#### Grading:

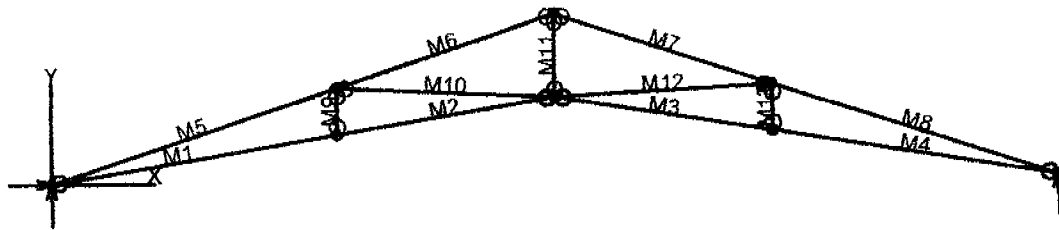
2x or 4x

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	8.96 feet
Max Axial Comp, C	320 feet
Max Reaction, R	275 feet
Max Moment, M	405 feet
Max LL Deflection	0.03 feet
Max TL Deflection	0.07 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 =	1.25
fc =	61 psi
Fce =	674 psi
Fc* =	2084 psi
F'c =	621 psi
fb =	1587 psi
F'b = Fb* =	2156 psi
Shear D/C ratio	0.66 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb / (F'b(1-fc/Fce)) =	0.82 < 1.0, Member OK
Live Load defl ratio	0.07 < 1.0, Member OK
Total Load defl ratio	0.12 < 1.0, Member OK



# VisualAnalysis 3.50.c Report

08/13/01 12:21:10

Project: Truss 3

File: C:\Program Files\IES\VA35\truss 4.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 Fix
N1	0.00	0.00	Yes	Yes	No	
N2	8.50	1.42	No	No	"	
N3	15.00	2.50	"	"	"	
N4	21.50	1.42	"	"	"	
N5	30.00	0.00	"	Yes	"	
N6	8.50	2.83	"	No	"	
N7	21.50	2.83	"	"	"	
N8	15.00	5.00	"	"	"	

## Member Elements

Member	Section	Material	Length ft
M1	SS2x4	Wood	8.62
M2	"	"	6.59
M3	"	"	6.59
M4	"	"	8.62
M5	"	"	8.96
M6	"	"	6.85
M7	"	"	6.85
M8	"	"	8.96
M9	"	"	1.41
M10	"	"	6.51
M11	"	"	2.50
M12	"	"	6.51
M13	"	"	1.41

## 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-	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	987.76	-NA-
N5	"	-NA-	987.76	-NA-

## Member Results

Member	Axial lbs	Vy lbs	Mz lb-ft	Dy in
M1	4497.63	43.2410	0.0000	-0.0000
"	4501.70	18.8744	89.0413	-0.5030
"	4505.77	-5.4923	108.26	-0.8757
"	4509.84	-29.86	57.6619	-1.0883
M2	4501.00	19.1989	57.6619	-1.0882
"	4504.10	0.5656	79.2647	-1.1709
"	4507.20	-18.07	60.0440	-1.1844
"	<b>4510.29</b>	-36.70	0.0000	-1.1459
M3	4501.00	-19.20	57.6619	-0.9966
"	4504.10	-0.5656	79.2647	-1.0793
"	4507.20	18.0678	60.0440	-1.0927
"	4510.29	36.7011	0.0000	-1.0543
M4	4497.63	-43.24	0.0000	0.0922
"	4501.70	-18.87	89.0413	-0.4108
"	4505.77	5.4923	108.26	-0.7835
"	4509.84	29.8590	57.6619	-0.9961
M5	<b>-4748.42</b>	196.26	0.0000	-0.0000
"	-4697.29	42.6964	<b>355.65</b>	-0.8478
"	-4646.16	-110.87	253.86	-1.1588
"	-4595.03	<b>-264.44</b>	<b>-305.38</b>	-1.1034
M6	-3197.89	220.71	-305.38	-1.1034
"	-3158.69	103.28	63.9890	-1.1912
"	-3119.48	-14.15	165.78	<b>-1.2371</b>
"	-3080.28	-131.59	0.0000	-1.1409
M7	-3197.89	-220.71	-305.38	-0.9263
"	-3158.69	-103.28	63.9890	-1.0141
"	-3119.48	14.1535	165.78	-1.0599
"	-3080.28	131.59	0.0000	-0.9638
M8	<b>-4748.42</b>	-196.26	-0.0000	0.1767
"	-4697.29	-42.70	355.65	-0.6712
"	-4646.16	110.87	253.86	-0.9820
"	-4595.03	<b>264.44</b>	<b>-305.38</b>	-0.9268
M9	53.7560	0.0000	0.0000	0.2308
"	53.7560	0.0000	0.0000	0.2523
"	53.7560	0.0000	0.0000	0.2737
"	53.7560	0.0000	0.0000	0.2952
M10	-1481.76	0.0000	0.0000	-1.0996
"	-1481.76	0.0000	0.0000	-1.0825
"	-1481.76	0.0000	0.0000	-1.0654
"	-1481.76	0.0000	0.0000	-1.0484
M11	1701.21	0.0000	0.0000	-0.2796
"	1701.21	0.0000	0.0000	-0.2796
"	1701.21	0.0000	0.0000	-0.2796
"	1701.21	0.0000	0.0000	-0.2796



M12	-1481.76	-0.0000	0.0000	-1.1279
"	-1481.76	-0.0000	-0.0000	-1.1109
"	-1481.76	-0.0000	-0.0000	-1.0938
"	-1481.76	-0.0000	-0.0000	-1.0767
M13	53.7560	-0.0000	0.0000	0.2641
"	53.7560	-0.0000	-0.0000	0.2855
"	53.7560	-0.0000	-0.0000	0.3070
"	53.7560	-0.0000	-0.0000	<b>0.3285</b>

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**BENDING & COMP: TRUSS 4 - 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	5.5 inches
Length	8.96 feet
Max Axial Comp, C	4595 feet
Max Reaction, R	264 feet
Max Moment, M	305 feet
Max LL Deflection	0.03 feet
Max TL Deflection	0.07 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	1.3 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.1 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.25
fc =	557 psi
Fce=	1664 psi
Fc*=	1994 psi
F'c=	1247 psi
fb=	484 psi
F'b=Fb*=	1869 psi
Shear D/C ratio	0.40 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	0.59 < 1.0, Member OK
fb/(F'b(1-fc/Fce)) =	0.07 < 1.0, Member OK
Live Load defl ratio	0.12 < 1.0, Member OK
Total Load defl ratio	

## BENDING & COMP: TRUSS 4 - 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	5.5 inches
Length	8.96 feet
Max Axial Comp, C	4595 feet
Max Reaction, R	264 feet
Max Moment, M	305 feet
Max LL Deflection	0.03 feet
Max TL Deflection	0.07 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	1.3 1.5 for 2x4, 1.3 for 2x6
Size Factor, Cf comp	1.1 1.15 for 2x4, 1.1 for 2x6
Buckling Factor, CT =	1.25
fc =	557 psi
Fce=	1664 psi
Fc*=	1994 psi
F'c=	1247 psi
fb=	484 psi
F'b=Fb*=	1869 psi
Shear D/C ratio	0.40 < 1.0, Member OK
Interaction equation:	
(fc/F'c)^2 +	
fb/ (F'b(1-fc/Fce)) =	0.59 < 1.0, Member OK
Live Load defl ratio	0.07 < 1.0, Member OK
Total Load defl ratio	0.12 < 1.0, Member OK