

**CITY OF SACRAMENTO**  
1231 I Street, Sacramento, CA 95814

**Permit No: 0106967**  
**Insp Area: 2**

**Site Address: 452 DEER RIVER WY SAC**  
Parcel No: 031-0320-011

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

CONTRACTOR  
ZIMMERMAN ROOFING, INC  
3675 R STREET  
SACRAMENTO, CA 95816

OWNER  
NISHIZAKI TERRY T/CATHLEEN J  
452 DEER RIVER WY  
SACRAMENTO CA 95831

ARCHITECT

**Nature of Work:** TPO REROOF WITH 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. Code).

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 C-39 License Number 597559 Date 4/4/01 Contractor Signature [Signature]

**OWNER-BUILDER DECLARATION:** I hereby affirm under penalty of perjury that I am exempt from the contractor 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 & 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 4/4/01 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 STANBURY BROTHERS PLANNING AND DEVELOPMENT SERVICES Policy Number 713-00-2021 Exp Date 10/01/2001

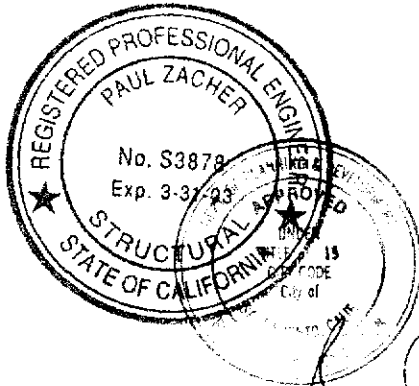
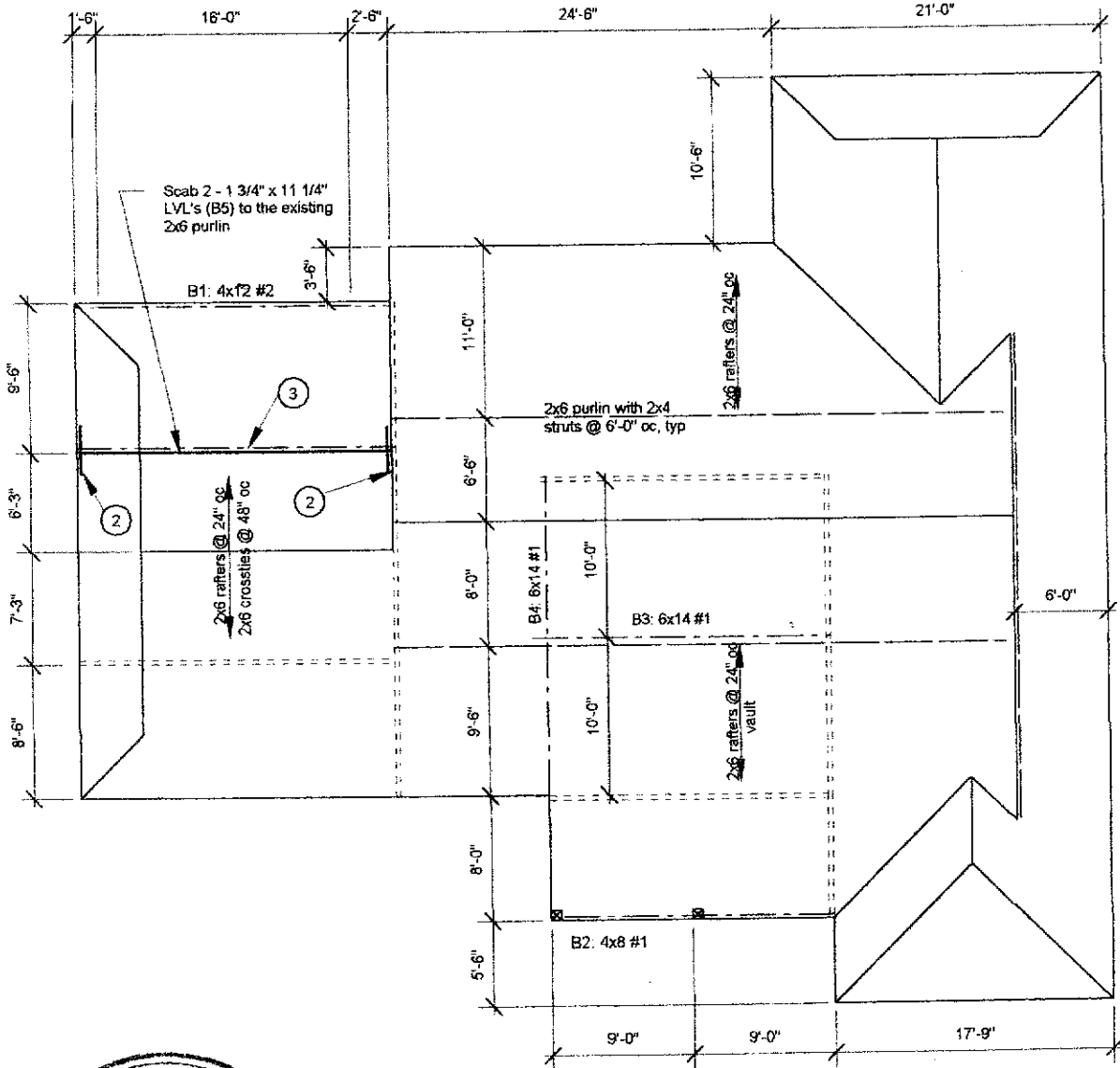
\_\_\_\_\_, (This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should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

Date 4/4/01 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.

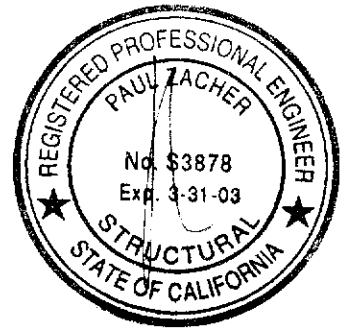
**THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.**

# 452 DEAR RIVER 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.



**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 - NISHIZAKI

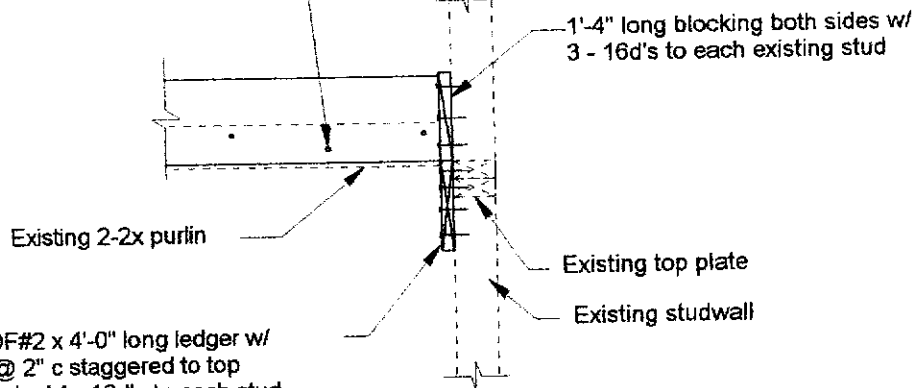
Not to Scale

7



2 - LVL's w/ 16d @ 6" oc to purlin (1 each side). Face nail LVL to blocking with 4 - 16d's.

2x10 DF#2 x 4'-0" long ledger w/ 16d's @ 2" c staggered to top plate and w/ 4 - 16d's to each stud

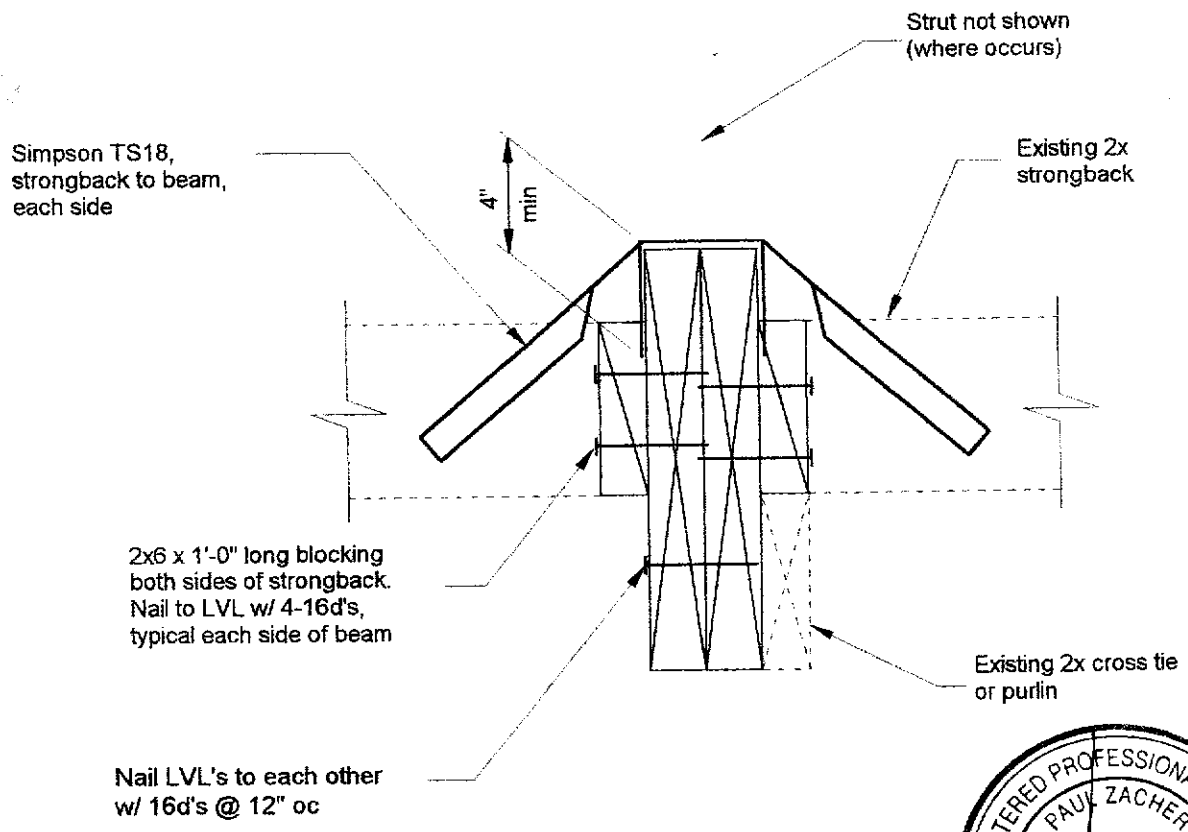


2

**LEDGER CONNECTION**

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





3

**STRONGBACK DETAIL**

No scale



Nishizaki 452 DEAR RIVER WAY

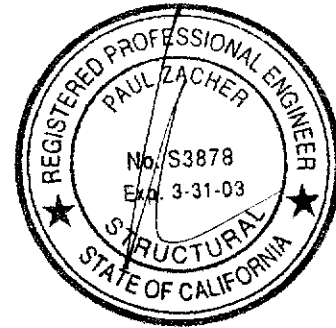


Paul Zacher - Structural Engineers  
4701 Lakeside Way  
Fair Oaks, CA 95628

TEL: 916.961.3960  
FAX: 916.961.6552

May 25, 2001

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



Attn.: Mr. Jeff Tucker,

re: Job 2001\_125: NISHIZAKI

Subject: Structural Investigation Report of the Roof for the Residence located at 452 Deer 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 May 25, 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 1970's vintage.  
Occupancy: Residential.  
No. of Stories: One.  
Dimensions: Approximately 2500 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 with 2x6 purlins supported at no more than 6'-0" on center by 2x4 struts bearing on walls below except for the vaulted ceiling areas. The vaulted ceiling is constructed of 2x6 rafters spaced at 24" on center supported at the ridge by a 6x beam. The garage area is framed with 2x6 rafters spaced at 24" on center and 2x6 cross ties spaced at 4'-0" on center.

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Nishizaki



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4701 Lakeside Way  
Fair Oaks, CA 95628

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### CONCLUSIONS:

#### Roof:

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

### 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 2 - 1 3/4" x 11 1/4" LVL's to the existing 2x6 purlin and nail together with 16d's @ 12" oc. The ends of the LVL may be clipped as required to meet the slope of the rafters. The support at the interior wall shall be a 2x10 x 4'-0" long ledger attached to the double top plate with 16d's @ 2" oc staggered. See details 1, 2 and 3.

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 |
| 1x4 skip sht'g        | 1.09          | psf |
| 1/2" OSB/ plywood     | 1.50          | psf |
| 2x6 rafters @ 24" oc  | <u>1.00</u>   | psf |
| Load                  | 10.9          | psf |
| Roof Pitch Adjustment | <u>1.29</u>   | psf |
| Total Load            | 12.2          | psf |

**LOCATION: VAULT**

| <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 |
| Batt/blown insul      | 0.50          | psf |
| 1/2" Gypboard         | <u>2.50</u>   | psf |
| Load                  | 13.9          | psf |
| Roof Pitch Adjustment | <u>1.64</u>   | psf |
| Total Load            | 15.5          | psf |

Job #: 01-125

Date: 5/25/01

LOADING

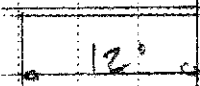
ROOF

DP = 12.2 p/f = 2' = 24.4 p/f

2x6 #2

LP = 16.0 . . . = 32

24.4/32



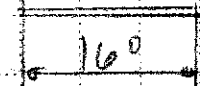
B1

DP = 12.2 p/f = 5' = 61 p/f

4x12 #2

LP = 16.0 . . . = 80

61/80



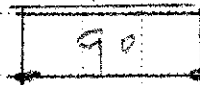
B2

DP = 12.2 p/f = 4' = 49 p/f

4x8 #1

LP = 16.0 . . . = 64

49/64



B3

DP = 15.5 p/f = 10' = 155 p/f

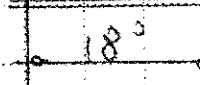
6x14 #1

LP = 16.0 . . . = 160

R<sub>2</sub> = 1395/1440

1395/1440

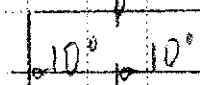
155/160



B4

Po/L = 1395/1440 = B2

6x14 #1



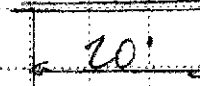
B5

DP = 12.2 p/f = 8' = 98 p/f

2-1 3/4 x 11 1/4 LVL

LP = 16.0 . . . = 128

98/128



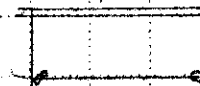
VAULT

DP = 15.5 p/f = 2' = 31 p/f

2x6 #2

LP = 16.0 . . . = 32

31/32





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

Title :  
 Dsgnr:  
 Description :  
 Scope :

Job #  
 Date: 2:14PM, 25 MAY 01

Rev. 510304  
 User: RW-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                  | B2                  | B3                  | B4                  | B5                  | vault               |
|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Timber Section       | 2x6                 | 4x12                | 4x8                 | 6x14                | 6x14                | LVL:3.500x          | 2x6                 |
| Beam Width           | in 1.500            | 3.500               | 3.500               | 5.500               | 5.500               | 3.500               | 1.500               |
| Beam Depth           | in 5.500            | 11.250              | 7.250               | 13.500              | 13.500              | 11.250              | 5.500               |
| Le: Unbraced Length  | ft 0.00             | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                |
| Timber Grade         | Douglas Fir - Larch | Douglas Fir - Larch | Douglas Fir - Larch | Douglas Fir - Larch | Douglas Fir - Larch | Russ Joist - MacMil | Douglas Fir - Larch |
| Fb - Basic Allow     | psi 875.0           | 875.0               | 1,000.0             | 1,350.0             | 1,350.0             | 2,600.0             | 875.0               |
| Fv - Basic Allow     | psi 95.0            | 95.0                | 95.0                | 85.0                | 85.0                | 285.0               | 95.0                |
| Elastic Modulus      | ksi 1,600.0         | 1,600.0             | 1,700.0             | 1,600.0             | 1,600.0             | 1,900.0             | 1,600.0             |
| Load Duration Factor | 1.250               | 1.250               | 1.250               | 1.250               | 1.250               | 1.250               | 1.250               |
| Member Type          | Sawn                | Sawn                | Sawn                | Sawn                | Sawn                | Manuf/Pine          | Sawn                |
| Repetitive Status    | Repetitive          | No                  | No                  | No                  | No                  | No                  | Repetitive          |

**Center Span Data**

|             |      |       |       |       |        |          |        |       |
|-------------|------|-------|-------|-------|--------|----------|--------|-------|
| Span        | ft   | 12.00 | 16.00 | 9.00  | 18.00  | 20.00    | 20.00  | 10.50 |
| Dead Load   | #/ft | 24.40 | 61.00 | 49.00 | 155.00 |          | 98.00  | 31.00 |
| Live Load   | #/ft | 32.00 | 80.00 | 64.00 | 160.00 |          | 128.00 | 32.00 |
| Point #1 DL | lbs  |       |       |       |        | 1,395.00 |        |       |
| LL          | lbs  |       |       |       |        | 1,440.00 |        |       |
| @ X         | ft   |       |       |       |        | 10.000   |        |       |

**Results** Ratio =

|                            |         |            |            |            |            |            |            |            |
|----------------------------|---------|------------|------------|------------|------------|------------|------------|------------|
|                            | Ratio = | 0.9852     | 0.6096     | 0.2985     | 0.5502     | 0.6113     | 0.5651     | 0.8425     |
| Mmax @ Center              | in-k    | 12.18      | 54.14      | 13.73      | 153.09     | 170.10     | 135.60     | 10.42      |
| @ X =                      | ft      | 6.00       | 8.00       | 4.50       | 9.00       | 10.00      | 10.00      | 5.25       |
| f <sub>b</sub> : Actual    | psi     | 1,610.9    | 733.4      | 447.8      | 916.4      | 1,018.2    | 1,836.7    | 1,377.7    |
| F <sub>b</sub> : Allowable | psi     | 1,635.2    | 1,203.1    | 1,500.0    | 1,665.6    | 1,665.6    | 3,250.0    | 1,635.2    |
|                            |         | Bending OK | Bending OK | Bending OK | Bending OK | Bending OK | Bending OK | Bending OK |
| f <sub>v</sub> : Actual    | psi     | 57.1       | 38.2       | 26.2       | 50.4       | 28.6       | 78.5       | 55.3       |
| F <sub>v</sub> : Allowable | psi     | 118.8      | 118.8      | 118.8      | 106.3      | 106.3      | 356.3      | 118.8      |
|                            |         | Shear OK   | Shear OK   | Shear OK   | Shear OK   | Shear OK   | Shear OK   | Shear OK   |

**Reactions**

|                |     |        |          |        |          |          |          |        |
|----------------|-----|--------|----------|--------|----------|----------|----------|--------|
| @ Left End DL  | lbs | 146.40 | 488.00   | 220.50 | 1,395.00 | 697.50   | 980.00   | 162.75 |
| LL             | lbs | 192.00 | 640.00   | 288.00 | 1,440.00 | 720.00   | 1,280.00 | 168.00 |
| Max. DL+LL     | lbs | 338.40 | 1,128.00 | 508.50 | 2,835.00 | 1,417.50 | 2,260.00 | 330.75 |
| @ Right End DL | lbs | 146.40 | 488.00   | 220.50 | 1,395.00 | 697.50   | 980.00   | 162.75 |
| LL             | lbs | 192.00 | 640.00   | 288.00 | 1,440.00 | 720.00   | 1,280.00 | 168.00 |
| Max. DL+LL     | lbs | 338.40 | 1,128.00 | 508.50 | 2,835.00 | 1,417.50 | 2,260.00 | 330.75 |

**Deflections** Ratio OK Deflection OK Deflection OK Deflection OK Deflection OK Deflection OK Deflection OK

|                   |    |        |         |         |         |         |        |        |
|-------------------|----|--------|---------|---------|---------|---------|--------|--------|
| Center DL Defl    | in | -0.342 | -0.135  | -0.038  | -0.203  | -0.223  | -0.447 | -0.255 |
| L/Defl Ratio      |    | 420.9  | 1,418.4 | 2,821.2 | 1,064.5 | 1,077.8 | 536.8  | 494.5  |
| Center LL Defl    | in | -0.449 | -0.178  | -0.050  | -0.209  | -0.230  | -0.584 | -0.263 |
| L/Defl Ratio      |    | 320.9  | 1,081.5 | 2,160.0 | 1,031.3 | 1,044.2 | 411.0  | 479.1  |
| Center Total Defl | in | -0.791 | -0.313  | -0.088  | -0.412  | -0.453  | -1.031 | -0.518 |
| Location          | ft | 6.000  | 8.000   | 4.500   | 9.000   | 10.000  | 10.000 | 5.250  |
| L/Defl Ratio      |    | 182.1  | 613.6   | 1,223.4 | 523.8   | 530.4   | 232.8  | 243.3  |

5

## Ledger

### LEDGER DESIGN:

WOOD TO WOOD CONNECTION: Ledger to double top plate

Assumptions:

1. Point load from beam is equally distributed to each supporting stud.
2. Allowable foundation pressure is 1000 plf.

|                           |                              |                     |
|---------------------------|------------------------------|---------------------|
| Width, b                  | 1.5 inches                   |                     |
| Depth, d                  | 9.25 inches                  |                     |
| Maximum reaction          | 2260 lbs                     |                     |
| Base design values:       |                              |                     |
| Shear, Fv                 | 95 psi                       |                     |
| Bending, Fb               | 875 psi                      |                     |
| Comp. perp. to grain, Fc  | 625 psi                      |                     |
| Mod of elasticity, E      | 1600000 psi                  |                     |
| Load duration factor, Cd  | 1.25                         |                     |
| Size factor, Cf           | 1.10                         |                     |
| Allowable shear, Fv'      | 119 psi                      | Horizontal Shear OK |
| Actual shear, fv          | 65 psi                       |                     |
| Allowable bending, Fb'    | 1203 psi                     | Bending OK          |
| Actual bending, fb        | 105 psi                      |                     |
| Length of ledger required | 2.26 feet                    |                     |
| Length of ledger used     | 2.67 feet                    |                     |
| Number of nails required  | 18 16d's ledger to top plate |                     |