

B

Type

X

Plans

BLD06-2773

Permit Number

22123

Street Number

Ruoff Dr

Street Name

TIM

Community Code

109-410-030

APN

# COUNTY OF SONOMA - PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403 (707) 565-1900 FAX (707) 565-1103

Please Print Your Name: <b>Michael Hallett</b>	Date Applied: <b>6-1-2006</b>
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INFORMATION WITHIN HEAVY LINE TO BE COMPLETED BY APPLICANT

Site Address: <b>22123 RUOFF DRIVE</b>	City: <b>TIMBER COVE</b>	ZIP: <b>95450</b>
Cross-Street: <b>UMLAND CIR</b>	APN: <b>109 40 030</b>	Project Phone #: <b>847-0088</b>
Directions: <b>TIMBER COVE ROAD - WEST ON RUOFF</b>	Subd Name: <b>TIMBER COVE UNIT 2</b>	Unit #: _____ Lot #: _____
Describe Project: <b>NEW HOUSE (4 <del>bedrooms</del>) Retaining walls</b>	Living Area: <b>1950</b>	Contract Price: <b>12,000</b>
	Garage: <b>(440)</b>	
Deck: <b>COVERED TERRACE 146</b>		

Name: <b>WERNER SCHMIDT</b>	Name: <b>MICHAEL HALLETT, ARCHITECT</b>
Mailing Address: <b>POB 165</b>	Mailing Address: <b>9425 BEN WAY</b>
City: <b>JENNER</b> State: <b>CA</b> ZIP: <b>95450</b>	City: <b>CAZADURO</b> State: <b>CA</b> ZIP: <b>95421</b>
Day Ph: ( ) <b>847-0088</b> Fax: ( ) _____	Day Ph: ( ) <b>847-3468</b> Fax: ( ) <b>847-3468</b>

Company Name: _____	Name: _____
Address: _____	Address: _____
City: _____ State: _____ ZIP: _____	City: _____ State: _____ ZIP: _____
Day Ph: ( ) _____ Fax: ( ) _____	Day Ph: ( ) _____ Fax: ( ) _____

### 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 worker's compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

I have and will maintain worker's compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My worker's compensation insurance carrier and policy number are:

Carrier: \_\_\_\_\_  
Policy No: \_\_\_\_\_

(This section need not be completed if the permit is for one hundred dollars (\$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 worker's compensation laws of California, and agree that if I should become subject to the worker's compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Exp. Date: \_\_\_\_\_ Applicant: \_\_\_\_\_

**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 3700 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.**

### OWNER-BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Contractor's 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 Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500).

I, as 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 Professions Code). The Contractor's 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 or 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 or 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 Contractor's 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 Contractor's License Law.

I am exempt under Sec. **7031.5** B & P.C. for this reason: \_\_\_\_\_

Date: **6-1-2006** Owner: **[Signature]**

### LICENSED CONTRACTOR'S 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.

Lic. Class: \_\_\_\_\_ Lic. No.: \_\_\_\_\_

Exp. Date: \_\_\_\_\_ Contractor: \_\_\_\_\_

### ASBESTOS DECLARATION

Written asbestos notification pursuant to Part 81 of Title 40 of the Code of Federal Regulations is required when asbestos exists in buildings, or portions thereof, undergoing demolition. I hereby declare that demolition authorized by this permit is from construction that  does  does not contain asbestos, or that  no demolition is authorized by this permit.

I certify that I have read this application and affirm under penalty of perjury that the above information is correct. I agree to comply with all local Ordinances and State laws relating to building construction. I hereby authorize representatives of the County of Sonoma to enter upon the above-mentioned property for inspection purposes. If, after making the Certificate of Exemption for the Worker's Compensation provision of the Labor Code I should become subject to such provisions, I will forthwith comply. In the event I do not comply with the Workman's Compensation law, this permit shall be deemed revoked.

PERMITTEE SIGNATURE: **[Signature]**

ADDRESS: **9425 BEN WAY, CAZADURO 95421**

Contractor  Owner  Other Licensed Professional

Final Date: \_\_\_\_\_ Inspector: \_\_\_\_\_

### CONSTRUCTION LENDING DECLARATION

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. (See: SO97, Civ. C.)

Lenders Name: \_\_\_\_\_  
Lenders Address: \_\_\_\_\_

### RRCCB FOR DEPARTMENT USE

Zoning: **RRCCB** Parcel No: \_\_\_\_\_ Acres: \_\_\_\_\_

Existing Use/Structures: **RESIDENTIAL**

Proposed Use/Structures: **NEW HOUSE WITH RETAINING WALLS**

Zoning Min. Yard Requirements: **FRONT 5 FT, SIDE 5 FT, REAR 5 FT**

NOTE: Fire Safe Standards require all parcels greater than 1 Acre to have a minimum 30' setback unless mitigated.  Mitigation Required  Address subject to change

Approved for Permit Issuance: \_\_\_\_\_ Approval: \_\_\_\_\_

By: **[Signature]** Date: **6/1/06**

Conditions: **CON 04-0010**

Sanitary Connection:  Available  Fees Paid

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Road Encroachment:  Fees Paid

Approved by: **PVT RD** Date: \_\_\_\_\_

Septic System Permit/Requirement: **SE004-0259**

Approved by: **[Signature]** Date: **6/1/06**

Flood Zone:  Yes  No 100 Year Flood Elevation: \_\_\_\_\_

Site Review: **SE005-1059**

Drainage Review: \_\_\_\_\_ Date: \_\_\_\_\_

Fires: **[Signature]** Date: **6/1/06**

Code Enforcement Violation:  Yes  No Violation # \_\_\_\_\_

This permit is limited to \_\_\_\_\_ days.

Work Authorized: \_\_\_\_\_

<input type="checkbox"/> Plans Approved	<input type="checkbox"/> Post FIRM	<input type="checkbox"/> Quiet Prior Report Available
<input type="checkbox"/> No Plans Subject to Field Inspection	<input type="checkbox"/> Pre FIRM	<input type="checkbox"/> Geotechnical report Available
Plancheck Cleared By: _____ Date: _____	Type of Construction: _____	Occupancy: _____ No. of Stories: _____ No. of Bedrooms: _____
Permit Cleared for Issuance By: _____ Date: _____	Auto. Fire Sprinklers Rec'd: _____	No. of Units: _____ Certificate of Occupancy: _____
Machine Space for Permit Fee		

JOB ADDRESS: 22123 RUOFF DR, TIMBER COVE  
PERMIT NUMBER: BU006-2772  
INSPECTION AREA: 2

**THIS PERMIT SHALL EXPIRE IN THREE(3) YEARS FROM DATE FEES ARE PAID UNLESS OTHERWISE NOTED BY CODE ENFORCEMENT.**

**COUNTY OF SONOMA - PERMIT AND RESOURCE MANAGEMENT DEPARTMENT**  
 2550 Ventura Avenue, Santa Rosa, CA 95403 (707) 566-1900 FAX (707) 566-1103

Please Print Your Name: Michael Hallett Date Applied: 6-1-2006

INFORMATION WITHIN HEAVY LINE TO BE COMPLETED BY APPLICANT

Site Address: 22123 RUOFF DRIVE City: TIMBER COULE ZIP: 95450  
 Cross-Street: UMANO CIR ARN: 109 410 030 Project Phone #: (847) 0088 Project Fax #: ( )  
 Directions: TIMBER COULE ROAD, WEST ON RUOFF Subj. Name: TIMBER COULE Unit #: 2 Lot #: ( )  
 Describe Project: DETACHED GARAGE Living Area: 140 Garage: ( ) Deck: ( ) Contract Price: ( )

Name: WIENER SCHMIDT Name: MICHAEL HALLETT, ARCHITECT  
 Mailing Address: POB 168 Mailing Address: 9425 BEN WAY  
 City: JENNER State: CA ZIP: 95450 City: CAROLINO State: CA ZIP: 95421  
 Day Ph: (847) 0088 Fax: ( ) Day Ph: (847) 3468 Fax: (847) 3468

Company Name: \_\_\_\_\_ Name: \_\_\_\_\_  
 Address: \_\_\_\_\_ Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 Day Ph: \_\_\_\_\_ Fax: ( ) \_\_\_\_\_ Day Ph: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

**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 worker's compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.  
 I have and will maintain worker's compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My worker's compensation insurance carrier and policy number are:  
 Carrier: \_\_\_\_\_ Policy No.: \_\_\_\_\_  
 (This section need not be completed if the permit is for one hundred dollars (\$100) or less.)  
 I shall be liable in the performance of the work for which this permit is issued, I shall not employ any person who is not a citizen of the United States, and I shall be subject to the worker's compensation laws of California, and I shall be subject to the provisions of the Contractor's License Law (Chapter 9 commencing with Section 7000) of the Business and Professions Code, I shall forthwith comply with those provisions.  
 Date: 6-1-06 Applicant: [Signature]

**CONSTRUCTION LENDING DECLARATION**  
 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.)  
 Lenders Name: \_\_\_\_\_  
 Lenders Address: \_\_\_\_\_

**OWNER-BUILDER DECLARATION**  
 I hereby affirm under penalty of perjury that I am exempt from the Contractor's License Law for the following reasons (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 Contractor's License Law (Chapter 9 commencing with Section 7000) 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).  
 I, as 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 Professions Code). The Contractor's 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 or 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 or 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 Contractor's 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 Contractor's License Law.  
 I am exempt under Sec. 7001, B & P.C. for this reason:  
 Date: 6-1-06 At: [Signature]

**PRCC FOR DEPARTMENT USE**  
 Zoning: VAR Existing Use/Structures: VAR Acres: \_\_\_\_\_  
 Proposed Use/Structures: VAR  
 Zoning Min. Yard Requirements: 5' Front, 5' Side, 20' Back  
 NOTE: Fire Safe Standpipe requires all parcels greater than 1 Acre to have a min. 20' setback unless mitigated.  Mitigation Required  Address subject to change  
 Approval for Permit Issuance: \_\_\_\_\_ Approval for Occupancy: \_\_\_\_\_  
 By: [Signature] Date: 6/1/06

**LICENSED CONTRACTOR'S 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.  
 Lic. Class: \_\_\_\_\_ Lic. No.: \_\_\_\_\_  
 Exp. Date: \_\_\_\_\_ Contractor: \_\_\_\_\_

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Road Encroachment:  Fees Paid  
 Approved by: [Signature] Date: \_\_\_\_\_  
 Septic System Permit: SEP04-0259  
 Approved by: [Signature] Date: 6/1/06  
 Flood Zone: \_\_\_\_\_ 100 Year Flood Elevation: \_\_\_\_\_  
 Site Review: SE005-1059  
 Drainage Review: \_\_\_\_\_  
 Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Fire: \_\_\_\_\_  
 Approved by: [Signature] Date: 6/1/06  
 Code Enforcement Violation:  Yes  No Violation # \_\_\_\_\_  
 This permit is limited to \_\_\_\_\_ days.

**ASBESTOS DECLARATION**  
 Written asbestos notification pursuant to Part 81 of Title 40 of the Code of Federal Regulations is required when asbestos exists in buildings, or portions thereof, undergoing demolition. I hereby declare that demolition authorized by this permit is from construction that  does  does not contain asbestos, or that  no demolition is authorized by this permit.  
 I certify that I have read this application and affirm under penalty of perjury that the above information is correct. I agree to comply with all local Ordinances and State laws relating to building construction. I hereby authorize representatives of the County of Sonoma to enter upon the above-mentioned property for inspection purposes. If, after making the Certificate of Exemption for the Worker's Compensation provision of the Labor Code I should become subject to such provisions, I will forthwith comply. In the event I do not comply with the Workman's Compensation law, this permit shall be deemed revoked.  
 Signature: [Signature]  
 ADDRESS: 9425 BEN WAY CAROLINO 95421  
 CITY: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 Contractor  Owner  Other Licensed Professional

Work Authorized: \_\_\_\_\_  
 Plans Approved  Post FIRM  Airtight Prio Report Available  
 No Plans Subject to Field Inspection  Pre FIRM  Geotechnical report Available  
 Plancheck Cleared By: \_\_\_\_\_ Date: \_\_\_\_\_ Type of Construction: \_\_\_\_\_ Occupancy: \_\_\_\_\_ No. of Stories: \_\_\_\_\_ No. of Bedrooms: \_\_\_\_\_  
 Permit Cleared for Issuance By: \_\_\_\_\_ Date: \_\_\_\_\_ Auto. Fire Sprinklers Req'd: \_\_\_\_\_ No. of Units: \_\_\_\_\_ Certificate of Occupancy: \_\_\_\_\_  
 Machine Space for Permit Fee

Final Date: \_\_\_\_\_ Inspector: \_\_\_\_\_

JOB ADDRESS: 22123 RUOFF DR, JENNER, CA 95450  
 PERMIT NUMBER: 02006-2713  
 INSPECTION AREA: 2



**COUNTY OF SONOMA**  
**PERMIT AND RESOURCE MANAGEMENT DEPARTMENT**

2550 Ventura Avenue, Santa Rosa, CA 95403  
(707) 565-1900 FAX (707) 565-1103

August 5, 2005

Michael Hallett, Architect  
9425 Ben Way  
Cazadero, CA 95421

Re: Site Evaluation at: 22123 Ruoff Drive  
A.P.N.: 109-410-030  
File Number: SEV05-1059

Dear Michael Hallett, Architect:

A site evaluation has been completed as the first step in processing your proposal for construction at the above address. This evaluation indicates the need for a geotechnical investigation to properly evaluate the site and to make recommendations for foundation design. This geotechnical investigation must address the following:

1. Site stability in an area of suspected past agricultural deep ripping, plowing, or agricultural grading that may reduce foundation support.
2. Area of suspected soft, compressible, or organic soil with low bearing capacity.

This report must be prepared by a firm experienced and licensed in the field of geotechnical engineering. Section 1804 of the Uniform Building Code sets the requirements and the information to be included in this report.

The results of this site review are valid for one year and apply only to the exact location shown on the plot plan that was submitted. If the proposed construction location is moved, a new site review will be required.

If you have any questions, please feel free to contact me between 7:30 a.m. and 9:00 a.m. at (707) 565-3719.

Sincerely,

Kevin Ruybal  
Building Inspector III

KR:jm

c: SEV05-1059  
Werner Schmidt

**DRAINAGE REVIEW**

SEV05-1059

FOR INTERNAL USE ONLY

Address: 22123 RUOFF DR

P.C.# EV 05-1059

Inspector: KR

Date: 8/4/05

The proposed construction appears to be located in:

Flood Hazard:	<input type="checkbox"/> FIRM Flood Zone (ASFH) BFE = _____ ft. NGVD.	<input type="checkbox"/> Portions of property in flood zone but project site not in flood zone.
	Lowest finish floor at 12 above BFE = _____ ft. NGVD.	
Geo-technical:	<input type="checkbox"/> Design for moving water is recommended	<input type="checkbox"/> Building is in FIRM Floodway
	Section _____ is _____ Ft/sec	<input type="checkbox"/> Main building on site is Post-FIRM
	Section _____ is _____ Ft/sec	<input type="checkbox"/> Sensitive drainage area, review by drainage section recommended.
	<input type="checkbox"/> Area subject to flooding (not on adopted FIRM).	<input type="checkbox"/> Appears to be a "substantial improvement" (40%), therefore flood regulations apply.
	<input type="checkbox"/> Project is on flood zone major damage list.	<input type="checkbox"/> Located inside the <i>Laguna de Santa Rosa</i> below elevation of 75 ft (Ord.#4906).
	<input type="checkbox"/> Flood Prone Urban Area defined by Ordinance #4906.	
	<input type="checkbox"/> Area of suspected slides, slumps, earth flow, or soil creep. (a.)	<input type="checkbox"/> Area without recommended setback from stream (Drainage Division recommendations).
	<input type="checkbox"/> Area of previous fill placement. (g.)	<input type="checkbox"/> Area of high moisture content in soil. (f.)
	<input type="checkbox"/> Area of suspected expansive soil. (c.)	<input type="checkbox"/> Area subject to high erosion (water or wind).
	<input type="checkbox"/> Area without sufficient slope setback as set forth in UBC Section 1806. (b.)	<input checked="" type="checkbox"/> Area of soft soil due to past deep ripping or cultivation below minimum foundation depth. (h.)
<input type="checkbox"/> Area subject to possible liquefaction. (e.)	<input type="checkbox"/> Area within 1000 feet of a solid waste disposal site.	
<input checked="" type="checkbox"/> Area of suspected soft, compressible, or organic soil with low bearing capacity.		
Soils Investigation:		Required <input checked="" type="checkbox"/> Included <input type="checkbox"/> Available <input type="checkbox"/>
Geologic:	<input type="checkbox"/> Located in the Alquist-Priolo Special Studies Zone.	<input type="checkbox"/> Geologic report required (see CGS Publication 42).
General:	<input type="checkbox"/> Building addition will affect the required light and ventilation in an existing room.	<input type="checkbox"/> Indications of existing substandard conditions that are not addressed by the proposed construction.
	<input type="checkbox"/> Existing electric meter must be replaced.	<input type="checkbox"/> Indications of past work done without a permit.
	<input type="checkbox"/> Existing gas meter must be replaced.	<input type="checkbox"/> Grading permit required for road, driveway, or site preparation.
Slope is <u>8 1/2 to 12 1/2</u>		<input checked="" type="checkbox"/> Site is likely to be acceptable for conventional construction methods.
Wind:	Exposure "B" <input checked="" type="checkbox"/> Exposure "C" Exposure "D"	N.S.C. Air Pollution Control District . . . . [ ] Yes [.] No

- ① Dirt. loads disturbed. Large Redwoods cut 1/2 . . . staked on-site.
- ② Garage located @ natural area: 1/2 gravel driveway area. (E)
- ③ Nice site, if Applicant able to get soils eng. to witness excavations only, that would be ok.
- ④ Minimum foundation depth @ least 18" below grade

# Jim Glomb

*Geotechnical and Environmental Consulting, Inc*

152 Weeks Way, Sebastopol, CA 95472 • Phone 707/237-2703, Fax 707/237-2659  
email jim@jimglomb.com

May 18, 2006  
Project 1001

Mr. Werner Schmidt  
PO Box 165  
Jenner, CA 95450

**RE: Geotechnical Conformance Review**  
Architectural Plans  
Proposed Residence and Garage  
22123 Ruoff Drive  
Timber Cove, California

Dear Mr. Schmidt:

At your request, we have reviewed geotechnical aspects of the architectural plans by Gauthier & Hallet, dated May 12, 2006, for the proposed residence at the subject property. Based on our review and consultation we find the geotechnically related notes and details in general conformance with the recommendations of our geotechnical report dated February 13, 2006.

We should perform site observations during construction to verify proper foundation embedment, as specified in our geotechnical report.

We trust this provides the geotechnical information requested. If you have questions or wish to discuss this further, please call.

Yours very truly,  
Jim Glomb Consulting



Jim Glomb  
Engineering Geologist, C.E.G. 1154



## **Jim Glomb**

*Geotechnical and Environmental Consulting, Inc.*

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152 Weeks Way, Sebastopol, CA 95472 • Phone 707/237-2703, Fax 707/237-2659

[jim@jimglomb.com](mailto:jim@jimglomb.com)

February 7, 2006

Project 1001

Mr. Werner Schmidt

PO Box 165

Jenner, CA 95450

**Re: Geotechnical Investigation Report**

Proposed Residence and Garage

22123 Ruoff Drive

Timber Cove, California

Dear Mr. Schmidt:

We are pleased to submit our geotechnical investigation report for the subject property at 22123 Ruoff Drive in Timber Cove, California. The proposed project consists of design and construction of a single-family residence and detached garage. The proposed development is shown on the Site Plan, Plate 1.

The purposes of our work have been to investigate the soil and geologic conditions of the property and to provide geotechnical recommendations and design criteria for the proposed residential construction.

### **Scope**

The scope of our work consisted of:

1. Review of soil and geologic data pertaining to the site and vicinity;
2. Geologic field reconnaissance of the site and vicinity;
3. Exploration of subsurface conditions by excavation of 3 backhoe test pits;
4. Logging and sampling of 3 backhoe test pits;
5. Field testing of representative samples obtained from the test pits;
6. Geotechnical analysis of field data; and
7. Preparation of this report with our findings, conclusions and recommendations.

### **Development Plan**

The development plan is depicted on the Site Plan, Plate 1. The proposed residence, garage, parking deck and driveway will be situated in the middle and lower portions of the property. We understand that the proposed residence will be constructed near existing grade and that minimal

grading is planned. The garage will be cut into a gentle slope, requiring retaining walls estimated to be a maximum of 4 feet high. The buildings will consist of one wood-frame structures with light loading. The primary residence will have raised wood floors and the garage will have a slab on grade floor. Site access will be from a driveway leading from Ruoff Drive in the southeast corner of the site.

## Site Conditions

The trapezoidal-shaped ±1-acre subject parcel consists of a gentle west-descending slope. The site is bounded on the east by Ruoff Drive and on the west, north and south by residential estate properties. The site drains to the west. The site supports the growth of native brush, grasses and fir trees.

## Soil and Geologic Conditions

Test pits excavated at the site expose colluvial soil underlain by weathered bedrock. The 1.5 to 2.5-foot thick colluvial soil cover encountered in the test pits consists of moist to wet, loose to medium dense fine sand and silty sand with tree roots. Soils are classified in accordance with the Unified Soil Classification System, presented on Figure 1. The surface soil is underlain by moist to very moist, weathered, friable, fine sandy claystone bedrock. The bedrock had no discernible bedding and closed fracturing. Laboratory tests indicate that the bedrock is highly expansive. Subsurface conditions are depicted on the Logs of Test Pits, Plates 2.1 and 2.2.

No evidence of active landsliding or active faulting was observed on the site

## Faulting and Seismicity

The project site is not within a current Earthquake Fault Zone as designated by the State of California. The closest active fault is the San Andreas, located about 1 kilometer east of the site. Like most of California, the site will be subject to future strong ground shaking from an earthquake. The intensity of future earthquake shaking will depend on the distance from the site to the earthquake focus, magnitude, and the response of the structures to the underlying soil and/or rock. Earthquake-related liquefaction is not anticipated at the site in the future due to density of the underlying sandstone bedrock.

## Conclusions

Based on our fieldwork, laboratory testing, literature review and analysis, we conclude that the subject site is suitable for support of the proposed residential construction. The primary geotechnical concerns are the loose colluvial soil, the highly expansive bedrock and the potential for earthquake ground shaking. Weathered bedrock at or below a depth of 3 feet is considered adequate for structural support.

## Recommendations

We recommend that the following measures be implemented:

## Site Preparation and Grading

### *General*

Grading is most economically performed during the summer months when the on-site soils are driest. Delays should be anticipated in site grading performed during the rainy season due to excessive soil moisture. Special and comparatively expensive construction procedures should be anticipated if grading must be completed during the winter.

### *Clearing*

Areas to be graded or receive improvements should be cleared of unwanted tree stumps, debris, or other deleterious material, and then stripped of the upper soils containing root growth and organic matter. We anticipate that the required depth of stripping will be about 2 inches. Deeper stripping, up to about 4 feet may be required to remove localized concentrations of organic matter, such as tree roots. The cleared materials should be removed from the site; strippings may be stockpiled for reuse as topsoil in landscaping areas.

### *Overexcavation*

Surface soil should be overexcavated in areas designated for placement of fill or support of improvements. Difficulty in achieving the recommended minimum degree of compaction described below should be used as a field criterion by the engineering geologist to identify areas of unstable soils that should be removed and replaced as properly moisture conditioned and compacted fill. The depth and extent of overexcavation should be approved in the field by the engineering geologist. It should be noted that test pit excavations were loosely backfilled. In the event that foundations or slabs are placed within 5 feet of test pits, the loose backfill should be removed and recompacted as engineered fill.

### *Subgrade Preparation*

Exposed soils designated to support improvements or receive engineered fill should be scarified to a minimum depth of 8 inches, brought to at least optimum moisture content, and compacted to at least 90 percent relative compaction in accordance with ASTM test designation D 1557. Improvements and fill may be placed directly on exposed competent bedrock.

### *Fill Placement on Slopes*

All fill placed on slopes steeper than 5:1 should be placed on level benches cut into the hillside. The benches should be excavated into competent bedrock a minimum depth of 2 feet. Internal subdrainage may be required to reduce the buildup of hydrostatic pressure behind the fill. The engineering geologist will provide recommendations in the field during grading if drainage is required behind fills.

### *General Engineered Fill*

General engineered fill should not have rocks or lumps greater than 6 inches in largest dimension and perishable materials should be removed. In their present conditions, some of the surface soils and bedrock may be too wet or may require mixing with drier soils to be suitable as compacted fill. On site bedrock is highly expansive and unsuitable as engineered fill. Fill material should be approved by the engineering geologist prior to use.

General engineered fill should be placed in level lifts not exceeding 8 inches in loose thickness. Each lift should be brought to at least optimum moisture content and compacted to at least 90 percent relative compaction in accordance with ASTM test designation D 1557.

#### *Temporary Slopes*

Temporary slopes higher than 4 feet should be laid back or shored in conformance with OSHA standards. All temporary slopes and shoring design are the responsibility of the contractor.

#### *Finished Slopes*

In general, cut and fill slopes in soil should be constructed at an inclination not exceeding 2:1. Cut slopes in competent bedrock with maximum heights of 10 to 12 feet should not exceed an inclination of 1.5:1. Routine maintenance of slopes should be anticipated. The tops of cut slopes should be rounded and compacted to reduce the risk of erosion. Fill and cut slopes should be planted with vegetation to resist erosion, or protected from erosion by other measures, upon completion of grading. Surface water runoff should be intercepted and diverted away from the tops and toes of cut and fill slopes by using berms or ditches.

#### **Seismic Design**

Based on the location of the San Andreas fault (Type A) at 1 kilometer from the site, we recommend that the following seismic design criteria be used in accordance with the 1997 Uniform Building Code:

<i>Seismic Zone Factor ("Z")</i>	0.40
<i>Seismic Source Type</i>	"A"
<i>Soil Profile Type</i>	Sc
<i>Near Source Factor (N<sub>a</sub>)</i>	1.5
<i>Near Source Factor (N<sub>v</sub>)</i>	2.0
<i>Seismic Coefficient (C<sub>a</sub>)</i>	0.60
<i>Seismic Coefficient (C<sub>v</sub>)</i>	1.12

#### **Foundations**

Bearing in competent bedrock may be achieved by spread footings. Detailed geotechnical design criteria are presented below.

#### *Spread Footings*

Spread footings should be bottomed only in competent bedrock and be at least 12 inches wide and extend at least 36 inches below lowest adjacent grade. The engineering geologist should observe footing excavations to verify proper embedment. Localized deepening of excavations may be required if tree roots or localized wet or highly weathered conditions are encountered. Foundations so established may be designed for maximum allowable soil contact pressure of 2,000 pounds per square foot for dead load plus sustained live loads. An increase of 1/3 may be applied for total loads, including wind or seismic forces.

Footings should be stepped as necessary to produce level tops and bottoms and should be deepened as necessary to provide at least 5 feet of horizontal clearance between the bottom edge of footing and the face of the nearest slope. A passive equivalent fluid pressure of 350 pounds per cubic foot and a friction factor of 0.35 may be used to resist lateral forces and sliding. Passive pressure should be disregarded for the uppermost 1 foot of foundation depth unless confined by slabs or pavements.

#### **Slabs on Grade**

Slabs may be supported on at least 12 inches of non-expansive engineered fill. The subgrade should be maintained at wet of optimum moisture condition and be proof-rolled to provide a firm, unyielding surface for slab support. If moisture penetration would be objectionable, slabs could be underlain by a capillary moisture break consisting of at least 4 inches of clean, free-draining crushed rock or gravel graded such that 100 percent will pass the 1-inch sieve and none will pass the No. 4 sieve. Further protection against slab moisture penetration can be provided by means of a moisture vapor membrane, placed between the drain rock and slab. The membrane should be covered with 2 inches of damp, clean sand to protect it during construction.

#### **Retaining Walls**

Retaining walls should be fully backdrained. The backdrains should consist of 4-inch diameter, rigid perforated pipe surrounded by a drainage blanket. The pipe should slope to drain by gravity to appropriate outlets. Accessible subdrain cleanouts should be provided and maintained on a routine basis. The drainage blanket should consist of clean, free-draining crushed rock or gravel, wrapped in a filter fabric such as Mirafi 140N. Alternatively, the drainage blanket could consist of Caltrans Class 2 "Permeable Material" or a prefabricated drainage structure such as Mirafi Miradrain. The top of the drainpipe should be at least 8 inches below lowest adjacent grade. The drainage blanket should be at least 1 foot in width and extend to within 1 foot of the surface. The uppermost 1-foot should be backfilled with compacted native soil to exclude surface water.

Yielding retaining walls free to rotate at least 0.1 percent of the wall height at the top of the backfill could be subjected to active lateral earth pressure equivalent to those exerted by a fluid weighing 45 pounds per cubic foot where the backslope is level; or 55 pounds per cubic foot, where the backslope is inclined at 3:1. In addition to lateral earth pressures, retaining walls must be designed to resist horizontal pressures that may be generated by surcharge loads applied at the ground surface, or from uphill foundation systems behind the walls. Where an imaginary 1:1 (H:V) plane projected downward from the outermost edge of a surcharge load or foundation intersects a retaining wall, that portion of the wall below the intersection should be designed for an additional horizontal thrust from a uniform pressure equivalent to one-third the maximum anticipated surcharge load.

Wall backfill should consist of soil which is spread in level lifts not exceeding 8 inches in thickness. Each lift should be brought to at least the optimum moisture content and compacted to not less than 90 percent relative compaction, per ASTM test designation D-1557. Retaining walls will yield slightly during backfilling. Therefore, walls should be properly braced during the backfilling operations.

Where migration of moisture through retaining walls would be detrimental or undesirable, retaining walls should be waterproofed as specified by the project architect or structural engineer.

Retaining walls should be supported on footings designed in accordance with the recommendations presented above. A minimum factor of safety of 1.5 against overturning and sliding should be used in the design of retaining walls.

#### **Foundation Drains**

Foundation drains should be installed around the perimeter of the house and garage except the downslope side. The drains should consist of a minimum 12-inch wide trench, at least 30 inches deep. A 4-inch diameter rigid perforated pipe, consisting of PVC Schedule 40, ABS SDR-35 or better, and sloped to drain to outlets, should be placed at the bottom of the trench. The top of the pipe should be at least 8-inches below the level of the lowest adjacent interior grade. The trench should be backfilled with clean free-drained crushed rock, wrapped in a filter fabric such as Mirafi 140N. The top 6 inches should consist of compacted on-site soil.

Drains should outlet well away from foundations and should not be allowed to cause ground soaking or ponding.

#### **Surface Drainage**

The site should be graded to provide positive drainage away from building areas as well as driveways. Roofs should be provided with gutters and downspouts that discharge into closed conduits, or onto concrete slabs or asphalt pavements that drain away from the foundations to appropriate discharge points. Energy dissipators, such as riprapped stilling basins, may be required to reduce erosion where subdrains or culverts discharge into natural, unlined drainage ways. Toes of cut slopes and the inboard side of driveways, should be equipped with compacted soil or paved V-ditches.

The potential for erosion, future landslides or slope instability can be significantly reduced by proper collection and disposal of surface water runoff. Surface drainage systems should not be connected to subsurface drainage systems.

Yard areas should be monitored for the presence of rodent burrowing activity. Before burrows develop into piped underground cavities, rodents should be exterminated. Alternatively, underground cutoff walls can be constructed to reduce subsurface erosion from piping of rodent burrows.

#### **Maintenance**

Periodic land maintenance will be required. Drains should be checked frequently, and cleaned and maintained as necessary.

#### **Supplemental Services**

Jim Glomb Consulting recommends that we be retained to review the project plans and specifications to determine if they are consistent with our recommendations. In addition, we should be retained to observe geotechnical construction, particularly site preparation and

excavation of foundations, as well as to perform appropriate field observations, fill compaction testing and laboratory tests, if required.

If, during construction, subsurface conditions different from those described in this report are observed, or appear to be present beneath excavations, we should be advised at once so that these conditions may be reviewed and our recommendations reconsidered. The recommendations made in this report are contingent upon our notification and review of the changed conditions. If more than 18 months have elapsed between the submission of this report and the start of work at the site, or if conditions have changed because of natural causes or construction operations at or adjacent to the site, the recommendations of this report may no longer be valid or appropriate.

In such case, we recommend that we review this report to determine the applicability of the conclusions and recommendations considering the time elapsed or changed conditions. The recommendations made in this report are contingent upon such a review. These services are performed on an as-requested basis and are in addition to this geotechnical investigation. We cannot accept responsibility for conditions, situations or stages of construction that we are not notified to observe.

## Limitations

This report has been prepared for the exclusive use of Mr. Werner Schmidt and his consultants for the proposed project described in this report. Our services consist of professional opinions and conclusions developed by a certified engineering geologist in accordance with generally accepted engineering geologic and geotechnical engineering principles and practices. We provide no other warranty, either expressed or implied. Our conclusions and recommendations are based upon the information provided us regarding the proposed construction and professional judgment. Verification of our conclusions and recommendations is subject to our review of the project plans and specifications, and our observation of construction.

Site conditions and cultural features described in the text of this report are those existing at the time of our fieldwork and may not necessarily be the same or comparable at other times.

The scope of our services did not include an environmental assessment or an investigation of the presence or absence of hazardous, toxic or corrosive materials in the soil, surface water, groundwater or air, on or below, or around the site, nor did it include an evaluation or investigation of the presence or absence of wetlands.

We trust this provides the information you require at this time. If you have questions or wish to discuss this further, please call.

Yours very truly,

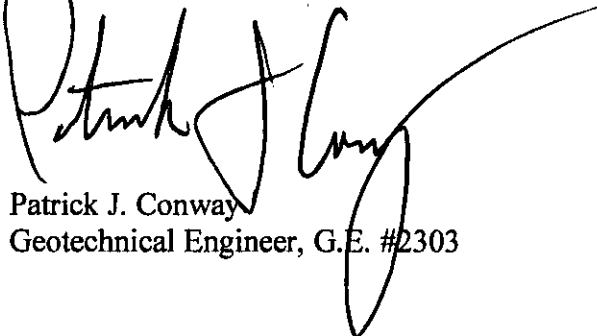
Jim Glomb Consulting, Inc.



Jim Glomb  
Engineering Geologist, C.E.G. 1154



PJC and Associates, Inc.



Patrick J. Conway  
Geotechnical Engineer, G.E. #2303



- Attachments:
- References
  - Plate 1 - Site Plan
  - Plates 2.1 and 2.2 - Logs of Test Pits
  - Figure 1 - USCS Soil Chart

## REFERENCES

1. California Division of Mines and Geology, 1986, *State of California Special Studies Zones Fault Maps, Scale 1:24,000.*
2. California Division of Mines and Geology, 1998, *Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada.*
3. Dwyer, Michael J., 1976, *Reconnaissance Photo-Interpretation Map of Landslides in 24 Selected 7.5' Quadrangles, OFM-76-74.*
4. Jennings, C.W., 1975, *Fault Map of California with Locations of Volcanoes, Thermal Springs and Thermal Wells: California Division of Mines and Geology, Geologic Data Map No. 1, Scale 1:750,000.*
5. Lawson, A.C., 1908, *The California Earthquake of April 18, 1906*, Report of the State Earthquake Investigation Commission: Carnegie Institution of Washington, D.C., 1969.
6. *1997 Uniform Building Code, ICBO.*

# LOGS OF TEST PITS

Surface gradient: 6:1		Pit dimensions: 2 x 10 x 5			Logged by: Jim Glomb Date: 1/13/06		Test Pit T-1		
Pit orientation: N61W		Groundwater depth: none encountered			Equipment: Backhoe				
Depth (ft.)	Samples		Pocket pen (tons/ft <sup>2</sup> )	Expansion Index	Dry density (PCF)	Field moisture (% dry wt)	Soil type USCS	Geologic/Engineering Description and Remarks	Geologic Attitudes
	Bulk	Tube							
1							SP	@0-1.5 Light brown fine sand: very moist - wet, medium dense. <div style="text-align: right;">COLLUVIUM</div> <hr/> @1.5-2.5 Orange brown clayey sand: wet, medium dense, with numerous roots. <div style="text-align: right;">VERY WEATHERED BEDROCK</div> <hr/> @2.5-5 Orange brown-grey mottled sandy claystone: stiff consistency, cracked, cracks closed, very moist, no discernible bedding, oxidized. <div style="text-align: right;">BEDROCK</div> <hr/> Bottom of test pit at 5 feet.	
2									
3				118	84	36			
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

Surface gradient: 5:1		Pit dimensions: 2 x 10 x 4			Logged by: Jim Glomb Date: 1/13/06		Test Pit T-2		
Pit orientation: N70W		Groundwater depth: spot seepages			Equipment: Backhoe				
Depth (ft.)	Samples		Pocket pen (tons/ft <sup>2</sup> )	Index	Dry density (PCF)	Field moisture (% dry wt)	Soil type USCS	Geologic/Engineering Description and Remarks	Geologic Attitudes
	Bulk	Tube							
1							SP	@0-2.5 Light brown fine sand: wet, medium dense, with roots with spot seepages at lower contact. <div style="text-align: right;">COLLUVIUM</div> <hr/> @2.5-4 Light gray-orange brown mottled sandy claystone, very stiff consistency, massive, fractured, fractures closed. <div style="text-align: right;">BEDROCK</div> <hr/> Bottom of test pit at 4 feet.	
2									
3									
4									
5									
6									
7									
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9									
10									
11									
12									
13									
14									
15									

<b>Jim Glomb</b> <i>Geotechnical and Environmental Consulting, Inc.</i> 152 Weeks Way, Sebastopol, CA 95472 • 707/237-2703	Client: Schmidt Date: 1/13/06 Project: 1001	Plate 2.1
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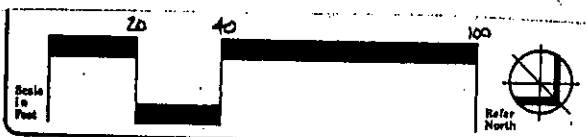
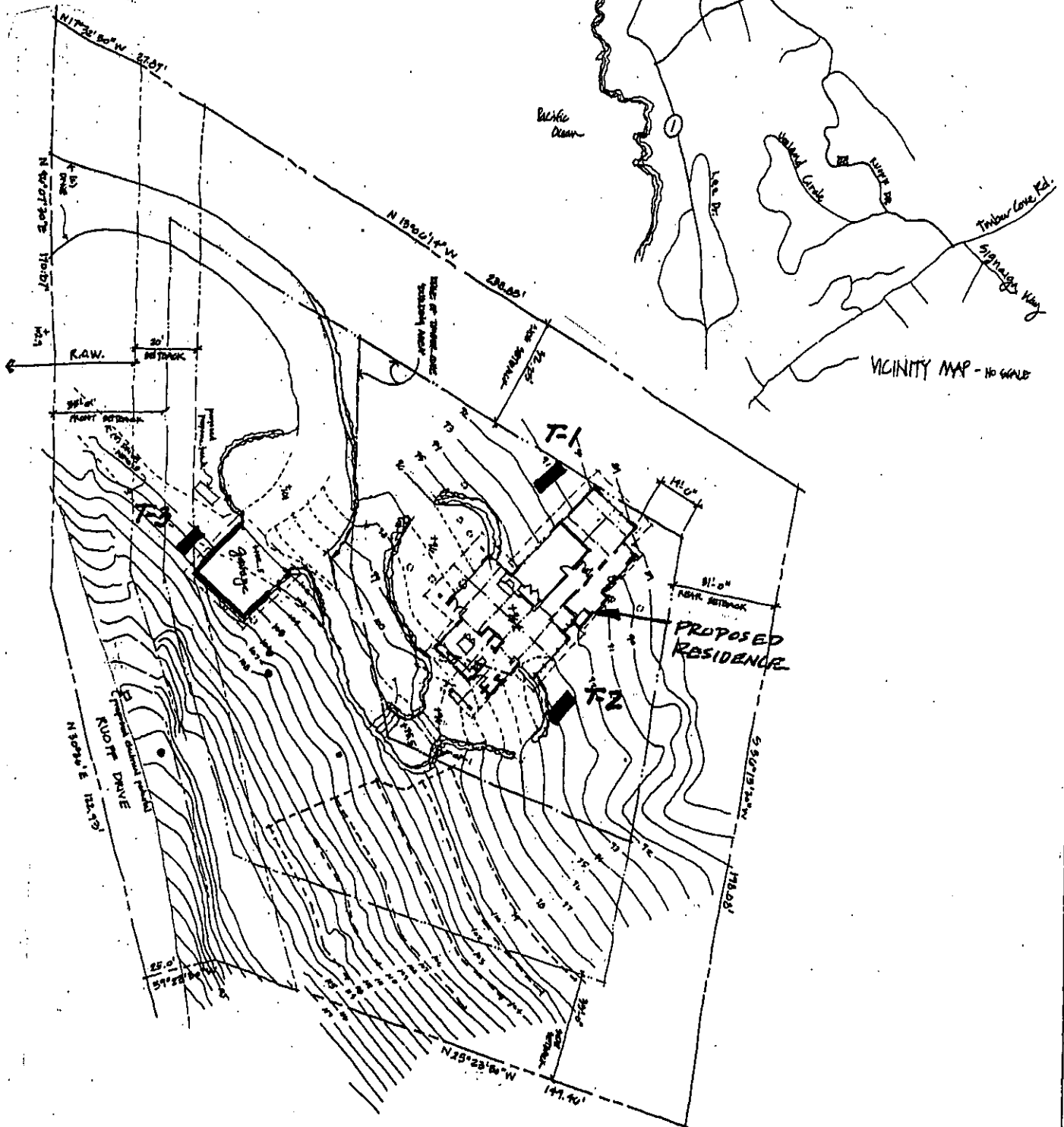
# LOGS OF TEST PITS

Surface gradient: 4:1	Pit dimensions: 2 x 8 x 4	Logged by: Jim Glomb Date: 1/13/06	Test Pit T-3
Pit orientation: N67E	Groundwater depth: none encountered	Equipment: Backhoe	

Depth (ft.)	Samples		Pocket pen (tons/ft <sup>2</sup> )	Index	Dry density (PCF)	Field moisture (% dry wt)	Soil type USCS	Geologic/Engineering Description and Remarks	Geologic Attitudes
	Bulk	Tube							
1							SM	@0-1.5 Light gray-brown slightly silty fine sand; wet, loose, with roots. <hr/> COLLUVIUM @1.5 - 4 Light orange brown-gray sandy claystone: very moist, stiff consistency. <hr/> BEDROCK Bottom of test pit at 4 feet.	
2									
3									
4									
5									
6									
7									
8									
9									

<b>Jim Glomb</b> <i>Geotechnical and Environmental Consulting, Inc.</i> 152 Weeks Way, Sebastopol, CA 95472 • 707/237-2703	Client: Schmidt Date: 1/13/06 Project: 1001	Plate 2.2
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# Site Plan



- TEST PIT LOCATION
- EXISTING CONTOUR
- - - EXISTING CONTOUR - TO BE REMOVED
- - - NEW CONTOUR
- EXISTING TREE - TO BE REMOVED

**Jim Glomb**  
 Geotechnical and Environmental Consulting  
 152 Weeks Way, Sebastopol CA 95472

Schmidt  
 Project 1001

February 2006

Plate  
 1

# UNIFIED SOIL CLASSIFICATION CHART

<i>MAJOR DIVISIONS</i>			<i>TYPICAL NAMES</i>	
<b>COARSE GRAINED SOILS</b> More than Half > #200 sieve	<b>GRAVELS</b>  More than half coarse fraction is larger than No. 4 sieve	Clean gravels with little or no fines	GW	Well graded gravels, gravel-sand mixtures
		Gravels with over 12% fines	GP	Poorly graded gravels, gravel-sand mixtures
		Gravels with over 12% fines	GM	Silty gravels, poorly graded gravel-sand silt mixtures
		Gravels with over 12% fines	GC	Clayey gravels, poorly graded gravel-sand-clay mixtures
	<b>SANDS</b>  More than half coarse fraction is smaller than No. 4 sieve	Clean sands with little or no fines	SW	Well graded sands, gravelly sands
		Sands with over 12% fines	SP	Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM	Silty sands, poorly graded sand-silt mixtures
		Sands with over 12% fines	SC	Clayey sands, poorly graded sand-clay mixtures
<b>FINE GRAINED SOILS</b> More than Half < #200 sieve	<b>SILTS AND CLAYS</b>  Liquid limit less than 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic clays and organic silty clays of low plasticity
	<b>SILTS AND CLAYS</b>  Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
<b>HIGHLY ORGANIC SOILS</b>			PT	Peat and other highly organic soils

<p><b>Jim Glomb</b>  <i>Geotechnical and Environmental Consulting, Inc.</i>                  152 Weeks Way, Sebastopol, CA 95472 • 707/237-2703, Fax 707/237-2659</p>	<p><b>Figure</b> 1</p>
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