



Penfield & Smith

111 East Victoria Street
Santa Barbara, CA 93101

tel 805-963-9532
fax 805-966-9801

www.penfieldsmith.com

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Water Resources
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GIS

W.O. 20214.03

December 23, 2011

Ms. Cara Meyer
Chief of Special Projects/Contracts Officer
Mountains Recreation and Conservation Authority
570 West Avenue Twenty-Six, Suite 100
Los Angeles, CA 90065

Subject: **Malibu Road Public Access Project – 24056 Malibu Road
Proposal for Supplemental Professional Services**

Dear Ms. Meyer,

Thank you for requesting this revised proposal for design services in relation to the subject project. It is our understanding that Penfield & Smith will become the Engineer of Record for this project, and that all previously prepared documents will be used for informational purposes only due to various technical questions that have been raised, and the fact that many are now outdated with expired approvals.

The proposed location for the beach access stairway is adjacent to 24056 Malibu Road in, Malibu, California. The proposed stairway is anticipated to be mostly timber, with the lower portion supported by concrete on the beach.

UNDERSTANDING OF PROJECT REQUIREMENTS

In preparation for this work, we have reviewed the following documents:

- Plan sheets 1-9 prepared by Vallier Design Associates and AN West Inc. in 2003-2004.
- Wave Hazard Study by Skelly Engineering dated September 3, 2002.
- Wave Runup & Coastal Hazard Update by GeoSoils, Inc, dated September 8, 2008.
- Preliminary Geologic and Soils Engineering Investigation by GeoConcepts, Inc dated December 17, 2002, and their supplemental reports dated July 21, 2003 and May 14, 2008.
- City of Malibu Planning Commission Resolution No. 09-18.

In order to move the project forward for public bidding, we envision the following tasks:

I. Topographic Surveying and Mapping

We will perform a field survey for topographic mapping purposes, including existing structures, walls, fences, curb, sidewalk, and visible surface features related to utilities such as meters, valves, backflow preventers, poles, warning signs, paint marks, etc. from the north side of Malibu Road to Mean Lower Low Water (MLLW) on the beach, between the easterly and westerly project/parcel limits.

The field survey will be based on known horizontal datums (CCS83, Zone 5) and will be tied vertically to the LA County Benchmark system, allowing for conversions between NGVD29, NAVD88 and MLLW, as necessary. Field work will be performed during low tide events to allow for the greatest amount of data capture.

P&S will create an AutoCAD drawing for the project base map, including a title sheet with surveyor's notes, vicinity map, and legend. The scale of the base map is proposed to be 1" = 10' with a 1 foot contour interval and will depict the Ordinary High Water Mark (OHWM).

Penfield & Smith will also research pertinent recorded maps and documents and compute the site boundary based on the legal description contained in the latest available Assessor site information. If easements of record are required to be plotted, a current preliminary title report will need to be provided by client. *Resolving boundary problems, such as conflicting descriptions and misclosures, are beyond the scope of this proposal.*

P&S will perform field survey to search for and recover existing record monuments. The monuments will be tied to the project control survey, and will be used to orient the boundary to the project mapping datum. The computed boundary will be added to the AutoCAD drawing base map. A record of survey, if required, is not considered in this scope.

II. Oceanographic Engineering

Noble Consultants, Inc. will make a site investigation, gather and review pertinent data, formulate oceanographic design criteria, estimate scour impacts and prepare a report as detailed in their proposal dated December 1, 2011, as modified by their email dated December 9, 2011. The deliverable will be one hardcopy report and one Portable Document Format (PDF) file.

III. Geotechnical Engineering

Shannon & Wilson, Inc. will perform subsurface explorations, a geophysical study, laboratory testing, a corrosion study, a geologic-seismic hazards evaluation, and engineering analysis and report, and a review of the project plans and specifications, in accordance with their revised proposal dated December 18, 2011. The deliverable will be one hardcopy report and one Portable Document Format (PDF) file.



IV. Permit Processing Assistance

Background

In 2002, the California Coastal Conservancy proposed public beach access on APN 4458-009-006, Malibu Road. At the time, the California Coastal Commission (CCC) was the Lead Agency. In June 2002, Coastal Development Permit (CDP) No. 4-02-198 was approved and the Initial Study/Mitigated Negative Declaration prepared for the project was adopted. The California Coastal Conservancy did not build the project and the CDP expired.

On March 10, 2008 a new application for a Coastal Development Permit for beach access was submitted. On March 17, 2009, the City of Malibu approved Coastal Development Permit No. 08-019 and Variance No. 09-007 to construct beach access stairs, public parking, and a fence and gate along Malibu Road. Per condition of approval number 4, the permit was set to expire two years after issuance. Unfortunately, Coastal Development Permit No. 08-019 expired before an extension to the permit was requested.

Permit Process

If beach access stairs are to be constructed in this location, a new Coastal Development Permit application with a request for a variance to construct on slopes in excess of 2.5 to 1, will need to be submitted for review and approval.

We understand the adjacent neighbors filed a lawsuit appealing the approval of the beach stairs noting a hazard to public safety. The project was ultimately approved with a requirement that an automatic be locked gate after people exit at dusk, fencing, and a refuse container with pick-up service be included.

According to City planning staff, resubmitting the same plan as was approved by Coastal Development Permit No. 08-019 (including the neighbor's design requests noted above) or one that is in substantial conformance with the previously approved plan, would expedite the City's review of the project.

Although the ultimate design may have a different appearance than the previously approved stairs, we believe the proposed design will meet the original intent and be a better project overall. We will work closely with MRCA and City staff to avoid any delay in the processing of a new Coastal Development Permit.

Proposed Permitting Assistance

Penfield & Smith will assist Mountains Recreation and Conservation Authority staff to organize and submit a City of Malibu Coastal Development Permit application. This includes completing the application forms and preparing a cover letter with a detailed project description. After the application is submitted, Penfield & Smith would assist you with the City's permit process and if necessary, coordinate with subconsultants to provide the required supplemental information/reports that may be requested after the County's 30-day application review period. Following are the specific tasks we envision:

1. Coastal Development Permit application
 - a. Complete application and project questionnaire forms.



- b. Coordinate with client to develop comprehensive project description.
- c. Coordinate with sub-consultants to prepare the necessary reports.
- d. Organize submittal for client review, signatures and fees.

2. Permit Processing

- a. After the formal application has been submitted to the City Planning Department, the project will be assigned to a case planner and the application reviewed for completeness. Penfield & Smith will assist in responding to any inquiries the case planner may have.
- b. Given that there is a previously adopted Mitigated Negative Declaration prepared for the previous project, an addendum could be prepared to clarify changes so that the environmental document accurately evaluates the modified project. Penfield & Smith would review the MND and addendum and comment as necessary. Once the environmental document and recommended mitigation measures/conditions of approval have been accepted by Mountains Recreation and Conservation Authority, the environmental document will be circulated by the City for a 30-day public comment period.
- c. After the 30-day public comment period, P&S will assist MRCA and City staff to address comments in the MND addendum, as appropriate, for Planning Commission for review and approval.
- d. Following approval by the Planning Commission, P&S will assist MRCA in obtaining City Building & Safety and Public Works departments' approvals in a timely manner.

V. Plans, Specifications and Estimates

- a. Perform field investigation of existing conditions and review basic geometric solutions to provide access from the roadway to the beach.
- b. Prepare a concept level (35%) design of a timber stairway to provide public access to the beach. The concept will be used for discussion purposes to obtain input from Noble Consultants and Shannon & Wilson, and for City of Malibu Coastal Development Permit application. P&S will prepare a section through the proposed stairs, showing the sand elevation at the time of our topographic survey, as well as Mean Sea Level, Mean Low Tide, Mean High Tide, and Design Wave Height.
- c. Incorporate comments and prepare 85% level design plans and construction cost estimate for the selected alternative. We will also prepare preliminary structural calculations and structural details. Plans will show general layout, proposed improvements, structural details and construction specifications in the form of notes on the plans. These plans can be used by MRCA for review and for use as final exhibits for Coastal Development permitting purposes with the City of Malibu.
- d. Incorporate comments received from the 85% level design and prepare final (100%) construction documents of the proposed improvements of the stairway. The construction documents will be stamped by a California registered Civil Engineer and will include bid set plans, technical specifications and a construction cost estimate. We will also coordinate MRCA General Provisions and "Front End" Specifications with the technical specifications



and assist with the preparation of a bid schedule. The deliverable will be one hardcopy reproducible set, AutoCAD files, and one Portable Document Format (PDF) version.

VI. Engineering Services During Construction

Attendance at one pre-bid meeting, response to no more than four bidders' inquiries, preparation of addenda to clarify bid documents, assistance in evaluating contractors' bids, attendance at one preconstruction meeting, technical responses to contractor Requests for Information (5 maximum), technical responses to contractor submittals (7 maximum), up to three site visits during construction, attendance at preliminary and final walk-throughs and punch list input.

VII. Project Management, Quality Control, Meetings & Correspondence

This task includes internal and external project coordination, project scheduling, budget preparation and monitoring, telephone conversations, meetings, emails, and hardcopy correspondence, quality control reviews, and project administration. Also included in this item are mileage, delivery costs, reproduction, and similar direct expenses.

Of course, we are available at your convenience to discuss these proposed tasks and would be pleased to make adjustments as mutually agreed upon. We also recognize that MRCA's budget for construction is approximately \$500,000 (excluding permits, inspection, construction management, and contingency), and will notify MRCA immediately if we have reason to believe that the construction cost for the design being developed will not fall within MRCA's budget.

CLIENT TO PROVIDE

Penfield & Smith will likely require a current preliminary title report. We request that MRCA arrange for such a document to be provided within two weeks of our authorization.

SERVICES NOT INCLUDED

The following services and all other services not specifically listed herein are excluded:

1. Governmental agency fees, bonds and taxes.
2. Title Company reports, services and fees.
3. Services by consultants other than Penfield & Smith. For example, architectural and landscape architectural design, and electrical engineering are not included in this proposal. Should such services be desired, we would be pleased to bring them on as subconsultants or to coordinate with firms working directly for MRCA, as desired.
4. Utility research, investigation, layout and design.
5. Destructive investigation and testing.
6. Design of temporary or interim structures including temporary walls or piles.
7. Structural observation and inspection.
8. Construction contract management, construction inspection and materials testing. We would be pleased to provide a proposal for these services when the bid date nears and the time and duration of construction has been established.



PROPOSED FEE AND METHOD OF PAYMENT

Our proposed services will be performed on a time-and-materials basis, not to exceed the total amount below, and will be billed monthly at the rates then in effect. Charges for "time" include professional, technical and clerical support services provided by Penfield & Smith. "Materials" include all reimbursable expenses, such as photocopies, postage, shipping/delivery, mileage, plots, prints, maps/documents and outside consultant fees.

Payment is due on receipt of statements (net 30 days). If an account is unpaid we may consider this as constructive notice to suspend work. Based on our understanding of your request at this time, we suggest an authorization as follows:

Topographic Surveying & Mapping	\$ 7,500
Oceanographic Engineering (incl. markup)	\$ 28,750
Geotechnical Engineering (incl. markup)	\$ 22,597
Permit Processing Assistance	\$ 7,250
Plans, Specifications and Estimates	\$ 44,540
Engineering Services During Construction	\$ 17,280
Project Management, Quality Control, Meetings & Correspondence	\$ 13,600
TOTAL	\$ 141,517

ADDITIONAL SERVICES

Services performed outside the scope of this agreement will require written approval prior to performance of the work. Compensation for additional services shall be in accordance with Exhibit "A", Penfield & Smith's Billing Rate Schedule currently in effect.

TIME OF PERFORMANCE

We assume that our work on this project will commence within ninety days and be completed no later than December 31, 2012. If the schedule changes appreciably, we reserve the right to modify this proposal.



Ms. Cara Meyer
Mountains Recreation and Conservation Authority
December 23, 2011
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AUTHORIZATION

Please do not hesitate to contact me (cpg@penfieldsmith.com or 805-963-9538 ext. 112) if you have any questions. If the proposal is satisfactory, please issue the appropriate purchase order or agreement.

Thank you for considering Penfield & Smith for this project.

Very truly yours,

PENFIELD & SMITH



Christopher P. Gabriel, P.E.
RCE 42125
Principal Engineer/Construction Manager

Enclosures

W:\work\20000-20999\20214\02 - Malibu Rd Beach Stair\Proposal\PS - MRCA Proposal 2011-12-02.docx



December 1, 2011

CI/CD

Mr. Bret Foster, P.E.
Principal Engineer
Penfield & Smith
111 East Victoria Street
Santa Barbara, CA 93101

RE: PROPOSAL
Oceanographic Design Criteria
For Seawall Design at Amarillo Beach
Malibu, California

Dear Mr. Foster:

Pursuant to your telephone request on November 28, 2011, we are pleased to submit this proposal to provide the necessary engineering services in formulating oceanographic design criteria and related project assessment for your proposed coastal access stairway located at 24038 Malibu Road, Malibu, as shown in Figure 1. The purpose of this planned access stairway is to enhance beach recreational activity within Amarillo Beach. Based on our brief telephone conversation, a conceptual design consisting of a zigzag stairway with seawall enforcement on the beach front has been drafted as graphically illustrated in Figure 2. A timber-pile supported stairway to reduce the project cost and minimize structure's encroachment on the beach is also being considered. For both alternatives, it is necessary to formulate oceanographic design criteria so that the detailed structure design can be proceeded.



Figure1. Project Site Map

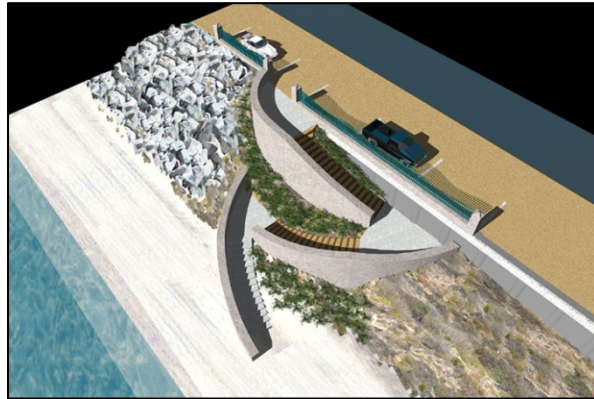


Figure 2. Conceptual Sketch of Coastal Access Stairway

In addition, the trend of warmer global temperature due to greenhouse gas emission will likely accelerate melting of glaciers, which will consequently release more water into the oceans. Warmer ocean temperature that results in the expansion of ocean water can also raise the sea level. Therefore, formulation of oceanographic design criteria should also consider the impact due to future sea level rise.

SCOPE OF SERVICES

To assist your firm in the structural design of the proposed coastal access stairway and to provide qualitative assessment of potential coastal processes impact resulting from the access stairway, the professional engineering services that we propose to provide shall consist of the following tasks:

Task 1. Site Investigation

NCI shall conduct a visual site inspection to observe the existing fronting-beach conditions and to identify the location of the existing shore protective device in relation to other adjacent structures, if any, and to acquire a general overview of the coastal environment.

Task 2. Pertinent Data Collection and Review

We shall gather and review historical aerial and oblique photographs, oceanographic data, and beach profiles, if available, as well as pertinent studies that were prepared by the Corps of Engineers under the Coast of California Storm Tidal Waves Study (CCSTWS).

We shall also require additional data from your firm as follows:

- *Recent topography within the project site*
The topographic drawing should include the site topography extending from the roadway of Malibu Road to the Mean Lower Low Water (MLLW) Line or at a lower elevation.

We also need the date of the survey marked on the drawing sheet and would like it to be an AutoCAD file so that we can manipulate the scale at will.

- *A geotechnical analysis report*
A geotechnical report indicating the bedrock elevation within the footprint of the proposed access stairway as well as the sand grain size distribution of beach sand is necessary for our engineering evaluation.

Task 3. Formulation of Oceanographic Design Criteria

This analysis includes formulation of oceanographic conditions within the subject shoreline area, assessment of long-term shoreline processes within the subject beach, and estimates of short-term beach erosion as well as wave uprush during severe storm events. Specifically, the subtasks include:

- Perform a shoreline assessment to establish a design water level, including future sea level rise, for wave characterization.
- Estimate the likely storm-eroded beach conditions at the beach location of the proposed coastal access stairway.
- Perform a wave uprush analysis to estimate the vertical wave excursion under storm conditions.
- Formulate the oceanographic design criteria including impinging storm wave forces, water levels and eroded beach conditions.

Task 4. Project Impact Assessment

We shall perform a qualitative assessment of potential coastal processes impact, including the localized scouring effect, as a result of stairway construction.

Task 5. Report Preparation

A brief assessment letter report will be prepared to summarize our engineering analyses of the oceanographic conditions such as design water level due to future sea level rise, storm-induced eroded beach conditions, wave uprush calculations, and wave force on the proposed coastal structure. The qualitative coastal processes impact will also be addressed, if potentially possible.

ENGINEERING SERVICE FEE

We propose to perform the above-described scope of services on a time-and-expense basis in accordance with our hourly rates of the attached Standard Schedule of Charges. We estimate that our fee to perform this engineering analysis and to prepare the study report will be approximately \$30,000. This fee includes some time for coordination with Penfield & Smith.

Mr. Bret Foster
Oceanographic Design Criteria
December 1, 2011
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Table 1. Estimated Engineering Service Fee

Service Item	Estimated fee
Task 1: Site Investigation	\$1,500
Task 2: Pertinent Data Collection & Review	\$2,000
Task 3: Formulation of Oceanographic Design Criteria	\$16,000
Task 4: Project Impact Assessment	\$4,500
Task 5: Report Preparation	\$6,000
<i>Total for Task Items</i>	<i>\$30,000</i>

It should be noted that the formulation of the oceanographic conditions and storm damage scenarios as well as the dynamics of shoreline changes resulting from the interaction of coastal processes and coastal structures is an inexact science, which has various degrees of uncertainty and unpredictability. Therefore, the findings and conclusions derived from this engineering analysis will primarily be based in large measure on a high degree of professional judgment and opinion, which may be subject to different interpretation depending upon the reviewer and the degree of controversy that may surround the project.

Yours very truly,

NOBLE CONSULTANTS, INC.



Chia-Chi Lu, Ph.D., P.E., D.CE
Manger, Coastal Engineering

Attachment: NCI Standard Schedule of Charges



SCHEDULE OF CHARGES

Labor* (per hour)

Senior Principal Engineer	\$280	Senior Survey Engineer	\$135
Principal Engineer	234	Staff Engineer III	132
Associate Engineer II	206	Staff Engineer II	128
Associate Engineer I	192	Staff Engineer I	115
Senior Structural Engineer II	178	Surveyor II	110
Senior Structural Engineer I	166	Surveyor I	98
Senior Engineer II	178	Senior Construction Inspector	106
Senior Engineer I	166	CADD Designer/Operator	106
Structural Engineer	156	Assistant Engineer	102
Project Engineer II	146	Construction Inspector	98
Project Engineer I	136	Technician	84
Construction Manager	142	Word Processing / Clerical	76
Construction Cost Estimator	135		

* Depositions, mediations, arbitrations, and court appearance labor is two times the rate shown and billed in 1/2-day increments.

Reimbursable Expenses**

In-house

Survey Vessel	\$300 per day	CADD Plots	\$2.00 per page
RTK-DGPS Surveying	375 per day	Imagenex Profiling Sonar	375 per day
Locus DGPS Surveying	275 per day	Imagenex Side Scan Sonar	375 per day
DGPS Navigation System	375 per day	Sparker Sub-bottom Profiler	400 per day
Gyro	25 per day	Uniboom Sub-bottom Profiler	350 per day
Motion Compensator	200 per day	3.5 Tuned Transducer System	250 per day
Precision Depth Sounder	75 per day	Marine Magnetometer	200 per day
Tide Gage	75 per day	Underwater Video System	125 per day
Theodolite/Total Station	150 per day	Truck	100 per day
Radios	15 per day	Generator	50 per day
Photocopying	0.30 per page	Inspector Boat	100 per day
Color Photocopy (8-1/2x11)	1.00 per page	Automobile	1.00 per mile
Color Photocopy (11x17)	1.25 per page		

Out-of-Pocket

Travel, Subconsultants, Printing, Communication, etc.

** In-house at scheduled rate plus 15%. Out-of-pocket at cost plus 15%.

Invoices

Bills are due and payable on presentation. Interest at 1.5% per month (but not exceeding the maximum rate allowable by law) is payable on any amounts not paid within 30 days.

Cara Meyer

From: Chris Gabriel [cpg@penfieldsmith.com]
Sent: Friday, December 23, 2011 9:39 AM
To: Chris Gabriel
Subject: FW: Coastal access stairway proposal - Noble

For File

Bret:

Thanks for your open discussion regarding this design work.

I went back to revisit the fee proposal.

My suggestion would be to reduce the effort on the impact assessment.

I also tighten the fees for the engineering analysis and report preparation.

As a result, we can reduce the total fee from \$30,000 to \$25,000.

However, it is important to have the information of a recent topo and the precise depth of the bedrock layer.

Task 1: Site Investigation \$1,500

Task 2: Pertinent Data Collection & Review \$2,000

Task 3: Formulation of Oceanographic Design Criteria \$14,500

Task 4: Project Impact Assessment \$3,000

Task 5: Report Preparation \$4,000

Total for Task Items \$25,000

Thanks and have a good weekend!

Chia-Chi

Chia-Chi Lu, Ph.D., P.E., D.CE

Noble Consultants Inc.

2201 Dupont Drive, Suite 620

Irvine, CA 92612

Phone: (949) 752-1530 x104

Fax: (949) 752-8381

E-mail: cclu@nobleconsultants.com

Web: www.nobleconsultants.com

December 18, 2011

Mr. Bret Foster
Penfield & Smith
111 East Victoria Street
Santa Barbara, CA 93101

Attn: Mr. Bret Foster

RE: GEOTECHNICAL ENGINEERING PROPOSAL, REVISION NO. 1, PROPOSED IMPROVEMENTS, MALIBU STAIRS, MALIBU, CALIFORNIA

We are pleased to submit this revised proposal to perform a geotechnical investigation of the site of the proposed Malibu stairs. You have furnished us with a prior report, photos, and architectural drawings for the project, and we have visited the site and observed the existing conditions.

This proposal includes a description of the proposed project, our scope of services, a schedule, and a revised fee estimate based, and has been tailored to meet the needs of the project and fulfill your requirements. Per your request, we are approaching the investigation with the assumption that this will be a stand-alone report and previous reports completed by other consultants will not be used in the submittal. We will however reference that data in our report. Should the outlined services not meet your expectations of the assignment, we would appreciate the opportunity to discuss your concerns and make adjustments as necessary.

PROJECT INFORMATION

The project is located at 24038 Malibu Road, Malibu, California. The site is situated between two residential properties and is partially developed. There is a soldier pile and lagging wall that is installed in the eastern half of the site. The western half of the site has large diameter riprap (up to 6 feet in diameter) along the slope. The entire length of the site is bordered by a steel road-edge barrier, with one break in the center of the barrier for public access to the beach.

Access to the beach is difficult. There is a downward slope from the elevation of the road down about 15 feet. From this elevation there is a steep drop off of about 10 feet to the elevation of the beach.

Based on the supplied drawings, the proposed improvements include a large public-access staircase, with concrete stairs that lead from Malibu Road to the beach. It is our understanding that alternate designs for the stairway are being considered. However, based on conversations with Penfield & Smith, all designs will incorporate pile foundations.

PROPOSED SERVICES

The purpose of this investigation is to determine the geotechnical conditions beneath the site and to provide data for design of foundations and for grading. Our services will consist of the following main tasks:

- Desk study including review of prior local projects and public geotechnical reports from the City of Malibu;
- Subsurface exploration to determine the nature and stratigraphy of the subsurface soils, and to obtain undisturbed and bulk samples for laboratory observation and testing;
- A geophysical survey to supplement our subsurface investigation. The survey will consist of combined P-wave seismic refraction and multi-channel analysis of surface waves (MASW) techniques to map the bedrock surface along two profiles that approximate the oceanward limit of the staircase.
- Geologic-seismic hazards study;
- Laboratory testing of soil samples to determine the static physical soil properties;
- Engineering evaluation of the geotechnical data to develop recommendations for design of foundations and walls below grade and for earthwork for the proposed Malibu stairway.

A more complete description of the methodology to perform the required tasks is presented in the following sections.

Subsurface Explorations

We propose to explore the site by drilling one large-diameter bucket auger boring to a depth of about 35 feet below the existing grade of Malibu Road using truck- or track-mounted drilling equipment. The boring will be drilled under the observation of our engineering geologist, who will down-hole log the subsurface conditions encountered and obtain relatively undisturbed and bulk samples for laboratory inspection and testing.

We will conduct all drilling and sampling in general accordance with the applicable ASTM International (ASTM) standards. At the completion of the drilling, we will backfill the borings with the cuttings and transport all samples to our laboratory where they will be examined by our project engineer and visually classified according to the Unified Soil Classification System.

We will not be sampling any of the soils or any of the water that may be encountered during the explorations for environmental testing. If the soil samples obtained indicate that environmental sampling and testing of the soils and/or groundwater is warranted, we will immediately notify you of our findings and will develop recommendations for a sampling and testing program.

The health and safety of our personnel require that we be aware of any environmental contamination present on the property. Accordingly, we need to be provided with any reports on the presence of such contaminants. If evidence of such materials is encountered during the course of our investigation, we must stop our investigation and contact you to determine the appropriate course of action. Delays and increased costs caused by such actions are not within the scope of our investigation.

Geophysical Study

Because the difficult beach access will prohibit the use of a drill rig along the beach, we will conduct a geophysical survey. The survey will be completed in order to map the bedrock surface under the beach sand deposits. Combined P-wave seismic refraction and MASW techniques will be used, which are noninvasive. These techniques utilize a generated dynamic source, such as a truck-mounted accelerated weight or hand-held sledgehammer.

We anticipate that the seismic survey will require approximately one day to complete. Because the surveys are in a location with limited access and within the tidal zone, additional methods may be necessary, which may require a longer than expected study period. The survey will be completed during low tide.

Laboratory Testing

Our project engineer will select samples for laboratory testing to determine the pertinent static physical characteristics of the soils. The data obtained will be used in the necessary engineering analyses. The laboratory tests may include:

- Moisture content and dry density determinations for each undisturbed sample;
- Direct shear tests to determine the shear strength of the materials;
- Compaction tests for use in preparing earthwork recommendations;
- Soil corrosivity tests to determine the corrosion potential of the on-site soils and the effect of the soils on underground metal piping and portland cement concrete.

The estimated number of each type of test is listed below.

SUMMARY OF TESTS

Test Type	Number of Tests (estimated)
Moisture and Dry Density	6
Direct Shear	3
Compaction	1
Soil Corrosivity	1

Corrosion Study

If corrosion studies are desired, we will retain Atlantic Consultants to perform a soil corrosivity study. That study will determine the corrosion potential of the on-site soils and the effect of the soils on underground metal piping and Portland cement concrete. This study will include sulfate tests, pH determination, laboratory resistivity tests, and corrosion design recommendations. This service will not include corrosion protection consultation during design; if needed, we can provide such design consultation.

Geologic-Seismic Hazards Evaluation

We will perform a geologic-seismic hazards evaluation to define the geologic environment and evaluate geologic-seismic hazards that may affect the site. Using available data, we will develop information on the general geologic and groundwater conditions beneath the site and the locations of nearby active and potentially active faults. The study will address the potential for primary earthquake hazards (ground shaking and surface rupture) and secondary earthquake hazards (liquefaction, seismic settlement, tsunami, earthquake-induced landsliding, and lurching)

impacting the site. We will also discuss the impact of the hazards of landsliding, flooding, and subsidence to meet the requirements of the County of Los Angeles, Department of Building and Safety and City of Malibu code.

Engineering Analyses and Report

The results of our subsurface explorations, geophysical study, and laboratory tests will be evaluated and engineering analyses will be performed. We will prepare a geotechnical report summarizing the data collected and presenting our design recommendations. The report will include:

- Results of the subsurface exploration and laboratory tests, with a description of the soil and groundwater conditions encountered;
- Recommendations for design of foundations to be used for support of the proposed Malibu stairway, including criteria for resisting lateral loads and estimated settlements for the anticipated loadings;
- We will provide the Site Coefficient and Seismic Zonation as defined in the 2010 California Building Code (CBC);
- Recommendations for design of walls below grade and retaining walls;
- Recommendations for design of shoring and pile foundations;
- Recommendations for earthwork, including site preparation, excavation, and the placing of any required compacted fill;
- Recommendations for floor slab support;
- Results of the corrosion study.

The following graphics will be included in our report:

- A vicinity map showing the location of the site.
- A plot plan showing the location of the proposed Malibu stairway relative to adjacent streets and existing structures and the locations of our exploration boring and geophysical lines.
- A log of the exploration boring depicting the changes encountered in the soil strata by elevation and depth below ground surface together with a description and classification of each soil stratum. The depth to groundwater will also be indicated if encountered.

- Plots and tables presenting the results of the laboratory tests.

Review of Project Plans and Specifications

On receipt of two sets of relevant construction drawings and specifications, we will review the documents for conformance with the recommendations presented in our report. One set of documents will be returned to you with the corrections marked in red. On receipt of one corrected set of the documents, we will prepare a letter stating that the construction documents conform to the recommendations presented in our report.

RELEVANT EXPERIENCE

We are familiar with the geotechnical conditions near the site. We have experience with prior projects nearby to the site; including the Malibu Lumber Yard plaza area, and Pepperdine University. Our experience in the vicinity of the subject project site and with similar projects was used to the extent possible in developing the scope of our proposed investigation.

SCHEDULE

For your planning purposes, we anticipate that we can begin our subsurface explorations within 2 weeks of receiving written authorization to proceed. The drilling of the boring and geophysical investigation is expected to take 1 day each. We can provide preliminary information within 4 weeks of completion of the subsurface explorations and a written report 2 weeks later.

FEE

The fee for our services will be based on the rates given in the enclosed Standard Terms and Conditions. The fee for the outlined investigation, including the rental and operation of the drilling equipment and review of project plans and specifications, will not exceed \$19,650 without your approval. The fee may be broken down as follows:

Drilling Permits & Research	\$2,400
Subsurface Exploration	5,180
Laboratory Testing	1,420
Geophysical Study	4,400
Engineering Analyses and Report	6,250
TOTAL	\$ 19,650

The fee estimate will be valid for a period of 90 days from the date of this proposal. The fee estimate does not include additional services or work requested by you or your other consultants or by the controlling public agencies during the review process. Our fees for additional services will be based on the rates given in the enclosed Standard Terms and Conditions. Our fee also does not include disposal of contaminated soils or hazardous materials. We will invoice monthly for the portion of work completed.

AUTHORIZATION

If this proposal meets with your approval, please sign in the space provided and return one signed copy of this letter for authorization. As services are performed, invoices will be submitted to you periodically. Shannon & Wilson, Inc. has prepared the enclosed "Important Information About Your Geotechnical Proposal" to assist you and others in understanding the use and limitations of our proposals.

GEOTECHNICAL OBSERVATION AND TESTING

Geotechnical observation and testing services during construction are considered a continuation of the geotechnical investigation. We would be pleased to furnish you with a proposal to perform geotechnical inspection services during the construction phase of the project.

We appreciate the opportunity to submit this proposal and would be pleased to work with you and your design consultants on this project. Please call if there are any questions regarding the scope of the outlined investigation.

Penfield and Smith
Mr. Bret Foster
December 18, 2011
Page 8 of 8

Sincerely,

SHANNON & WILSON, INC.



Dean G. Francuch
Engineering Geologist CEG 1842
Associate

KMA:DGF/kma

c: Bret Foster, Penfield and Smith (via email)

Enc: Standard General Terms & Conditions, CA-GH-2011 (1/2011)
Important Information About Your Geotechnical Proposal

I accept the above conditions and authorize the above work to proceed.

By _____ Signature _____
(print)

_____ Date _____
Organization

SCHEDULE OF CHARGES

The rates listed below will be charged for time expended performing consultation, field investigations, inspections and instrumentation, analyses, attendance at project-related meetings, project management, report preparation and review.

PERSONNEL

Senior Vice President-----	\$240/hr
Vice President-----	\$212/hr
Senior Associate-----	\$185/hr
Associate-----	\$175/hr
Senior Principal Professional-----	\$162/hr
Principal Professional-----	\$145/hr
Senior Professional-----	\$132/hr
Professional IV-----	\$115/hr
Professional III-----	\$95/hr
Professional II-----	\$80/hr
Professional I-----	\$70/hr
Public Works Technician (Prevailing Wage)-----	\$165/hr
Deputy Grading Inspector-----	\$110/hr
Senior Technical Services-----	\$110/hr
Technical Services IV-----	\$80/hr
Technical Services III-----	\$70/hr
Technical Services II-----	\$60/hr
Technical Services I-----	\$55/hr
Senior Office Services/Contract Administrator/Accounting-----	\$110/hr
Office Services-----	\$65/hr

Overtime, if needed, will be charged at 1.5 times the above rates. A 4-hour daily minimum will be charged for field observation services.

EXPENSES

Vehicle:-----	\$0.70/mile (\$25/day min.)
Slope Inclinometer:-----	\$260/day
Manometer:-----	\$50/day
Organic Vapor Analyzer (OVA)-----	\$100/day

Subcontracted services and other outside costs will be charged at 1.15 times our cost.

EXPERT WITNESS/TESTIMONY

The hourly rates for the services of our staff will be doubled for time expended for expert witness services including trial preparation, depositions and court appearances with a minimum of four hours for depositions and court appearances per day.



SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Attachment to and part of Proposal
51-2-10166-001

Date: December 18, 2011

To: Attn: Mr. Bret Foster
Penfield & Smith

Important Information About Your Geotechnical/Environmental Proposal

More construction problems are caused by site subsurface conditions than any other factor. The following suggestions and observations are offered to help you manage your risks.

HAVE REALISTIC EXPECTATIONS.

If you have never before dealt with geotechnical or environmental issues, you should recognize that site exploration identifies actual subsurface conditions at those points where samples are taken, at the time they are taken. The data derived are extrapolated by the consultant, who then applies judgment to render an opinion about overall subsurface conditions; their reaction to construction activity; appropriate design of foundations, slopes, impoundments, and recovery wells; and other construction and/or remediation elements. Even under optimal circumstances, actual conditions may differ from those inferred to exist, because no consultant, no matter how qualified, and no subsurface program, no matter how comprehensive, can reveal what is hidden by earth, rock, and time.

DEVELOP THE SUBSURFACE EXPLORATION PLAN WITH CARE.

The nature of subsurface explorations—the types, quantities, and locations of procedures used—in large measure determines the effectiveness of the geotechnical/environmental report and the design based upon it. The more comprehensive a subsurface exploration and testing program, the more information it provides to the consultant, helping reduce the risk of unanticipated conditions and the attendant risk of costly delays and disputes. Even the cost of subsurface construction may be lowered.

Developing a proper subsurface exploration plan is a basic element of geotechnical/environmental design, which should be accomplished jointly by the consultant and the client (or designated professional representatives). This helps the parties involved recognize mutual concerns and makes the client aware of the technical options available. Clients who develop a subsurface exploration plan without the involvement and concurrence of a consultant may be required to assume responsibility and liability for the plan's adequacy.

READ GENERAL CONDITIONS CAREFULLY.

Most consultants include standard general contract conditions in their proposals. One of the general conditions most commonly employed is to limit the consulting firm's liability. Known as a "risk allocation" or "limitation of liability," this approach helps prevent problems at the beginning and establishes a fair and reasonable framework for handling them, should they arise.

Various other elements of general conditions delineate your consultant's responsibilities. These are used to help eliminate confusion and misunderstandings, thereby helping all parties recognize who is responsible for different tasks. In all cases, read your consultant's general conditions carefully, and ask any questions you may have.

HAVE YOUR CONSULTANT WORK WITH OTHER DESIGN PROFESSIONALS.

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a consultant's report. To help avoid misinterpretations, retain your consultant to work with other project design professionals who are affected by the geotechnical/environmental report. This allows a consultant to explain report implications to design professionals affected by them, and to review their plans and specifications so that issues can be dealt with adequately. Although some other design professionals may be familiar with geotechnical/environmental concerns, none knows as much about them as a competent consultant.

OBTAIN CONSTRUCTION MONITORING SERVICES.

Most experienced clients also retain their consultant to serve during the construction phase of their projects. Involvement during the construction phase is particularly important because this permits the consultant to be on hand quickly to evaluate unanticipated conditions, to conduct additional tests if required, and when necessary, to recommend alternative solutions to problems. The consultant can also monitor the geotechnical/environmental work performed by contractors. It is essential to recognize that the construction recommendations included in a report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site.

Because actual subsurface conditions can be discerned only during earthwork and/or drilling, design consultants need to observe those conditions in order to provide their recommendations. Only the consultant who prepares the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid. The consultant submitting the report cannot assume responsibility or liability for the adequacy of preliminary recommendations if another party is retained to observe construction.

REALIZE THAT ENVIRONMENTAL ISSUES MAY NOT HAVE BEEN ADDRESSED.

If you have requested only a geotechnical engineering proposal, it will not include services needed to evaluate the likelihood of contamination by hazardous materials or other pollutants. Given the liabilities involved, it is prudent practice to always have a site reviewed from an environmental viewpoint. A consultant cannot be responsible for failing to detect contaminants when the services needed to perform that function are not being provided.

ONE OF THE OBLIGATIONS OF YOUR CONSULTANT IS TO PROTECT THE SAFETY, PROPERTY, AND WELFARE OF THE PUBLIC.

A geotechnical/environmental investigation will sometimes disclose the existence of conditions that may endanger the safety, health, property, or welfare of the public. Your consultant may be obligated under rules of professional conduct, or statutory or common law, to notify you and others of these conditions.

RELY ON YOUR CONSULTANT FOR ADDITIONAL ASSISTANCE.

Your consulting firm is familiar with several techniques and approaches that can be used to help reduce risk exposure for all parties to a construction project, from design through construction. Ask your consultant not only about geotechnical and environmental issues, but others as well, to learn about approaches that may be of genuine benefit.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland