



Geotechnical Engineering
Coastal Engineering
Maritime Engineering

Proposal No. 10082
November 11, 2010

Mr. Bob Stark
ICF JONES & STOKES
9775 Businesspark Avenue, Suite 200
San Diego, California 92131

**ADDENDUM PROPOSAL FOR RESPONSE TO
CITY OF MALIBU REVIEW COMMENTS
CARBON LA COSTA PUBLIC BEACH ACCESS
MALIBU, CALIFORNIA**

Dear Mr. Stark:

Please consider this addendum proposal as an addition to our August 13, 2010, proposal (copy attached) to provide a limited geotechnical investigation specific to the currently proposed Bionic preferred alternative, along with the conceptual foundation/wall plans, including cross sections, to address viable foundation alternatives, including a drilled pier foundation system, a cantilevered spread footing wall system, and, if appropriate, a wall system utilizing deadman anchors for additional lateral restraint. In discussions with Mr. Chris Dean, the City's Third-Party Geotechnical Consultant, and due in part to the rather narrowly defined project scope of work (a seawall fronting Pacific Coast Highway with a street-level urban park with access to the beach), the City will provisionally accept a limited geologic/geotechnical study consisting of excavating three to four hand-dug test pits across the site to determine the elevation of the shore platform and general characteristics of the existing soils and beach deposits. A limited geotechnical investigation will also determine the general condition and potential origin of the existing riprap and will also specifically address the totally unsuitable site conditions for on-site waste disposal.

While it is noted that this study will not be completed in strict accordance with the City of Malibu's Guidelines for the Preparation of Engineering Geologic and Geotechnical Engineering Reports, based on preliminary discussions with Mr. Dean, as long as we adequately address the site-specific geologic and geotechnical conditions and their affect on the proposed improvements, and provide specific foundation design criteria for

ensuring a stable foundation for these proposed improvements, City Staff should in fact accept a limited focused geotechnical study report.

As indicated in the attached Fee Estimate and in previous discussions with both you and City Staff, the use of mechanized equipment for the excavation of test pits would be more economical. However, the permit requirements for any mechanized equipment on the beach requires, among other things, a full Coastal Development Permit application, the processing of which would greatly exceed the additional cost for hand-excavated test pits and thus the reason for the almost \$7,000 cost for the field investigative work.

The total fee estimate for the limited geotechnical investigation, including preparation of conceptual foundation/wall plans and sections, along with a discussion on the unsuitable site conditions for wastewater discharge at the site, is \$15,120. If, for some reason, the City requires expanding the scope of work to address all of the requirements contained in the City's February 2002 Guidelines for the Preparation of Engineering Geologic and Geotechnical Engineering Reports and Procedures for Report Submittal, we would estimate the fees for this additional work to be an additional \$5,000.

POORLY DEFINED ADDITIONAL SCOPE ELEMENTS

From discussions with you, Kelly Schoonmaker, and Mr. Dean, we understand that there are possibly seven additional poorly defined scope items that the City may either request information on or, worst case, require a formal submittal as part of the City's review process. In our discussions with Mr. Dean, he indicated that while he did not believe these additional scope items would be necessary, he could not speak for other City Staff and suggested that we at least be prepared to respond superficially to all of the issues, recognizing that the limited nature of the project, with some supporting clarification of the various scope items, may negate the City's requirement for more formal submittals.

Hydrology Report - We reviewed the City of Malibu's Hydrology/Hydraulic Report Requirements and discussed the report requirements with Mr. Dean. While Mr. Dean is not the City's reviewer for hydrology studies, he did agree that a project limited to the construction of a street-level urban park seaward of Pacific Coast Highway should not merit the need for a full hydrology/hydraulic report.



The entire southerly edge of the Pacific Coast Highway roadway has a concrete curb, with the exception of a narrow stretch approximately 50 feet from the eastern property line, with site drainage on Pacific Coast Highway draining to the east. This said, it does appear that roadway drainage does discharge onto the beach through this breach in the curb, visible in Photo 4 of Bionic's February 9, 2010, submittal, and also visible in Bionic's October 23, 2004, Historical Aerial Photo. While Bionic must resolve how to accommodate this drainage, including the possibility of accommodating this drainage through the project, once resolved and demonstrably illustrated how storm waters will be conveyed either off site or through the site, one would not anticipate the need for a formal hydrology/hydraulic report. Depending upon the scope of our involvement and assuming that the project might accommodate a limited amount of storm runoff through the site approximately 50 feet from the eastern property line (we would envision the construction of a catch basin and possibly an 18-inch reinforced concrete pipe discharging through the face of the wall near its base), we would estimate possibly \$3,000 in consulting fees. If a formal hydrology/hydraulic report is required in conformance with the City's guidelines, and of course assuming that adequate site topography covering the entire watershed exists, total fees could be approximately \$8,000 to \$10,000.

Groundwater Hydrology Report - There is no groundwater to speak of in the site vicinity, and as indicated in our April 22, 2010, Geotechnical and Coastal Constraints Study, the Miocene-age Vaqueros Formation is exposed in the northerly road cut and underlies at least the more western portion of Pacific Coast Highway adjacent the site, essentially eliminating any possibility for a groundwater resource, recognizing that groundwater will exist at or slightly above mean sea level associated with the Pacific Ocean water body adjacent the site. Given the very limited project scope, we do not believe that the City would request a separate groundwater hydrology report and, given this concern, we would include a brief discussion reaffirming the lack of any potential groundwater resource in the site vicinity and, as importantly, foundation recommendations to accommodate the site water that does exist resulting from the presence of the Pacific Ocean bordering the site. Given the preceding, we assume that the City will not require a groundwater hydrology report and we will include some groundwater text and foundation recommendations accommodating same in our limited geotechnical report. If the City does require a standalone groundwater hydrology report, we estimate the cost to prepare the report will be about \$3,000.



Wave Uprush Study - As indicated in our August 13, 2010, proposal, the cost to prepare a site-specific wave uprush study in conformance with City of Malibu requirements will be approximately \$5,000. As we have previously indicated, the results of this study would be very similar to what we recently prepared for Broach Beach, a copy of which was previously provided to Coastal Conservancy Staff and which was approved by City Staff in 2009.

Water Quality Checklist - We have reviewed the City of Malibu's Department of Public Works' Water Quality Checklist and are comfortable answering "no" to all eleven questions. However, assuming that a small storm drain penetrates the wall about 50 feet from its eastern end, we will be required to demonstrate that this project does not in any way impair water quality.

Water Quality Mitigation Plans & Storm Water Management Plan – Water Quality Mitigation Plans and the Storm Water Management Plan, if required, essentially responds to the drainage issues discussed above under Hydrology Report and Water Quality Checklist. As with the Hydrology Report, these two elements are required to demonstrate that the project properly accommodates site drainage addressing conveyance, erosion, and of course water quality. Best Management Practices will be required to ensure both construction-period and post-construction water quality. As a practical matter, disposal of any storm water is already the responsibility of Caltrans and arguably the City of Malibu. It would seem that the City should work with the Conservancy in developing a mutually agreeable Storm Water Management and Water Quality Mitigation Plan for this project, assuming, as discussed above, that some water is to be conveyed via a storm drain through this project. Estimating the cost for these plans is extremely difficult, given the current lack of information. If more clarity regarding these two plans is necessary, we believe that a meeting with City Staff, and possibly Caltrans Staff, would be necessary in order to define a reasonable scope of work.

Beach Erosion Report – Our April 22, 2010, Geotechnical and Coastal Constraints Study addressed beach erosion. However, the City could possibly ask for more information than that already provided. In our discussions with Mr. Dean, he was most concerned with ensuring that the geotechnical report adequately addressed the necessary foundation design criteria to ensure the long-term integrity of this project. We believe that we will accomplish this with the currently proposed scope, and do not believe that a



more formal beach erosion report will be required. However, as with the hydrology report, an addendum beach erosion report, that should address any City concerns, could be prepared for a fee on the order of \$5,000.

As-Needed Consultation - Lastly, we understand that Coastal Conservancy Staff would like additional as-needed assistance to respond to questions, attend meetings, and otherwise assist the Conservancy and their consultants. At a minimum, this might include limited responses to outstanding questions on hydrology, groundwater, wave uprush, water quality, beach erosion, and storm water management. We still have about \$2,000 remaining in our previous contract and, given the preceding, we would suggest allocating an additional \$5,000 to \$10,000 for ongoing as-needed services. As indicated in our Fee Estimate, we have also summarized the additional poorly defined cost estimates associated with the other scope items listed above.

We appreciate the opportunity to work with ICF Jones & Stokes and the California State Conservancy on this interesting project. If you have any questions or require additional information, please give us a call.

Very truly yours,

TERRACOSTA CONSULTING GROUP, INC.



Walter F. Crampton, Principal Engineer
R.C.E. 23792, R.G.E. 245

WFC/jg



GEOTECHNICAL INVESTIGATION
CARBON LA COSTA BEACH ACCESS
 MALIBU, CALIFORNIA

TASKS	Prin Eng/Geo \$185/hr	Assoc. Eng/Geo \$170/hr	Sr. Eng/Geo \$160/hr	Proj. Eng/Geo \$155/hr	Senior Designer \$130/hr	Designer \$100/hr	Tech Support \$75/hr	TOTAL LABOR	Misc.	TOTAL
Mobilization and Permitting				8		4	2	\$1,790		\$1,790
Excavation, Sample and Log Four (4) Test Pits				22				\$3,410	\$3,500	\$6,910
Engineering Analysis	2			8				\$1,610		\$1,610
Report Preparation	6			8		4	2	\$2,900		\$2,900
Concept Plans	6					8		\$1,910		\$1,910
Subtotal - Geotechnical Investigation										\$15,120
As Needed Consultation (\$5,000 to \$10,000)										\$10,000
TOTAL HOURS	14			46		16	4			
TOTAL FEES	\$2,590			\$7,130		\$1,600	\$300	\$11,620	\$3,500	\$25,120

POORLY DEFINED ADDITIONAL SCOPE ELEMENTS

Limited Hydrology/Hydraulic Input	\$3,000
Formal Hydrology/Hydraulic Report (\$8,000 to \$10,000)	\$10,000
Groundwater Hydrology Report	\$3,000
Wave Uprush Study	\$5,000
Water Quality Mitigation Plans & Storm Water Management Plan	unknown
Beach Erosion Report	<u>\$5,000</u>
Total	\$26,000