

Michelucci & Associates, Inc.
Geotechnical Consultants

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August 29, 2017
Job No. 16-4572

Via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Geotechnical and Geologic Investigation Update
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

INTRODUCTION

As authorized, we have prepared an update of our geotechnical and geologic investigation report dated July 6, 2016 pertaining to the site of the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents.

The purpose of our 2016 study was to provide general geotechnical recommendations and design criteria related to the new residence that is planned at the property. We also evaluated the geologic setting, as the site is located within a complex geologic area where active ocean bluff retreat is occurring immediately west of the property and a strand of the Seal Cove (San Gregorio) Fault is located immediately offshore west of the site. As discussed in our 2016 study, the primary geologic hazard to the site is coastal bluff retreat. In our opinion, although retreat of the ocean bluff occurred during the 2016-2017 winter, the project continues to be feasible from a geologic and geotechnical viewpoint, provided that the recommendations contained in the report are incorporated into the final plans and followed during construction.

SCOPE OF SERVICES

Our current services included:

- * Site inspections by our geotechnical and geologic personnel, Project Geologist John Petroff and Certified Engineering Geologist David F. Hoexter, conducted site inspections on July 13 and August 21, 2017; on August 21, 2017 we measured distances from a fixed/surveyed location shown on the 2016 topographic survey to the current top of cliff (bluff), for comparison to the location of the 2016 surveyed top of cliff;
- * Review of our previous investigation report;
- * Discussions with the architect Carlos Zubieta; and,
- * The preparation of this report.

DISCUSSION

Retreat of the ocean bluff face has occurred since issuance of our July 6, 2016 report. Otherwise, the site remains unchanged from the time of our 2016 investigation and field observations. A fence is located along the bluff top. During our July 13, 2017 site visit, we met a nearby property owner, Gaylen Eslinger, who confirmed the previously noted bluff retreat and indicated that he relocated the fence landward following the bluff retreat occurrence.

The slope down from the site to the Dean Creek drainage along the south side of the site remains visually unchanged (i.e. there does not appear to have been further erosion or retreat of the Dean Creek drainage side walls during the winter of 2016-2017).

Landward retreat of the ocean bluff occurred during the winter of 2016-2017. We measured the approximate retreat distance of the top of the bluff (identified as "top of cliff" on the May 16, 2016 topographic survey by Lea & Braze Engineering, Inc.). Our measurements consisted of taping the distance from a fixed point on the survey, (the street light located adjacent to the Arbor Lane cul-de-sac immediately adjacent to the subject property) to the top of the bluff. Our measurements were accomplished at 20-foot intervals initiated at the intersection of the two fences bordering the property near the south slope along Dean Creek and parallel to the ocean bluff, with the measurements progressing in a northerly direction essentially parallel to the bluff fence.

Our measurements indicate that the bluff retreated approximately 6 feet near the current southwest fence corner post, with a maximum of 11 feet retreat further north approximately 60 feet from the corner post. Due to possible differences in interpretation of the top of bluff location, and to the measurement method (a 200 foot tape), we consider our measurements to be accurate to a distance on the order of 1 to 2 feet.

CONCLUSIONS

Our July 2016 report discusses our calculation of the average bluff retreat rate at the site since 1866. Bluff retreat occurs episodically, taking place and then commonly not occurring for years until a subsequent episode occurs. In our opinion, the 2016-2017 bluff retreat is representative of past episodic events (in occurrence, not necessarily in magnitude), and our previous estimates of average annual rates and anticipated time until retreat reaches the planned residence are unchanged.

Therefore, the recommendations contained in our July 2016 report remain applicable and could be utilized during the preparation of design plans for the project.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon our observations and measurements as described herein. While in our opinion these observations adequately disclose the conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this evaluation, could occur.

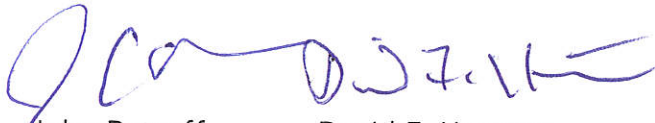
The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this letter inaccurate. Accordingly, neither Carlos Zubieta Architect nor any other party shall rely on the information or conclusions contained in this letter after 12 months from its date of issuance without the express written consent of Michelucci & Associates, Inc. Reliance on this letter after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the letter after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Carlos Zubieta Architect.

This letter was prepared to provide engineering and geologic opinions and recommendations only. It should not be construed to be any type of guarantee or insurance.

CLOSING

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



John Petroff
Project Geologist

David F. Hoexter
Certified Engineering Geologist #1158
(Expires 11/30/17)



Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/19)

