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November 22, 2017
Job No. 16-4572

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

Carlos Zubieta Architect
Attn: Carlos Zubieta
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Venice, CA 90291

Re: Response to Steven R. King, Ph.D. October 22, 2017 Memo
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 a response to the October 22, 2017 memo prepared by Steven R. King, Ph.D. Dr. King's memo comments on various matters related to 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, and also as Lot 12. Specifically, Dr. King provides comments on our August 29, 2017 geotechnical and geologic investigation update letter.

Our initial, 2016, geotechnical and geologic investigation provided geotechnical recommendations and design criteria related to the new residence that is planned at the property, and also evaluated the geologic setting, including fault rupture potential and active ocean bluff retreat occurring immediately west of the property and (to a lesser extent), creek bluff erosion occurring immediately south of the property. Our August 29, 2017 update documented the 2016-2017 ocean bluff retreat and concluded that, although retreat of the ocean bluff occurred during the 2016-2107 winter, the project continues to be feasible from a geologic and geotechnical viewpoint.

DISCUSSION

This discussion follows the order of Dr. King's memo.

1a. Dr. King notes the occurrence of "errors". While Dr. King may disagree with our observations and conclusions, he does not substantiate any "errors". Dr. King initially refers to and takes out of context our use of the term "does not appear" in regards to our discussion of the slope down from the site into the Dean Creek drainage; however, he ignores the preceding phrase "the site remains visually unchanged", which is clear and without equivocation. The full sentence is:

> *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).*

Note, we have added the **bolding** (above) to our initial phrasing.

1b. Dr. King states that we are incorrect in our assessment of the site remaining visually unchanged, in that he observed that the slope is "more deeply concave ... due to undercutting" following the 2016/2017 winter. However, we noted no new undercutting at the toe of the slope, along the slope, or at the top of the slope (or "cliff face/bluff top" as termed by Dr. King). We descended the slope at one location from the adjacent flat property, and also observed the slope from The Strand on the opposite side of the drainage. There were no fresh indications of erosion or undercutting of the soil face, and vegetation was essentially as it had appeared prior to the 2016/2017-winter season. Further, Dr. King claims that the top of the slope is eroding due to its southern exposure with wind and rain causing erosion at the top of the "cliff". However, this location is protected by trees, and the ground surface is not or is only minimally exposed to either wind or direct rainfall. Further, there were no indications following the 2016/2017 winter of erosion along the toe of the slope within the Dean Creek drainage.

1c. The memo uses the terms "near vertical wall" and "cliff face" for the slope adjacent to Dean Creek. These terms are inflammatory and inaccurate. In fact, this is a slope of varying inclinations ranging from locally nearly vertical over short distances to accessible by foot, as is shown on our cross sections B-B' and C'C' in our July 6, 2016 report.

1d. Dr. King refers to fallen trees, erosion, and water flow in his photos #1A and 1B, with the implication that they depict recent storm events. These photos do indicate these occurrences; however, they appear to be a number of years old (apparently obtained at the same as other photos included in the memo, which appear to be from 1994 and 1998), and do not reflect recent (2016-2017) conditions. We have included with this letter photos we took from The Strand on April 12, 2016 and July 14, 2017 of what appears to us to be the same locations as Dr. King's photos. There are no indications or erosion or bluff retreat between the time of Dr. King's photos and our April 2016 photos (prior to the 2016/2017 winter), or between our April 2016 photos and our July 2017 photos (after the 2016/2017 winter).

2a. The King memo refers to some documents obtained from a California Coastal Commission file. Only excerpts are included in the memo, so we do now know what was excluded or taken out of context. Dr. King discusses the bluff erosion along Lot 10 (now protected by ocean front armoring), and seems to imply a similarity in conditions with the subject, Lot 12. However, Lot 10 is located along the ocean bluff where the retreat rate is more significant than along the creek bluff adjacent to Lot 12.

2b. The memo refers to the 1974 consultant author using the term "cliff top". The 1974 consultant's use of this term does not make it correct or appropriate.

2c. We note that the 1974 "projected top of cliff after 50 years" (Dr. King's photos 2D and 2E) proved to be overly conservative, particularly along the ocean bluff and to a lesser extend along the creek bluff. In reality, the 1974 report predicted almost no creek bluff recession and assuming the accuracy of the 1974 report, the Dean Creek slope base and top appear essentially unchanged in the intervening 43 years.

3. The King memo refers to various 1997 documents related to the then proposed and currently present well. The county at that time required a 50- foot setback from the "creek bluff top edge" (June 4, 1997 letter), in lieu of a geotechnical investigation being performed to rationalize a lesser setback. The owner chose to locate the well at the 50-foot setback as opposed to (presumably) the expense of an unnecessary geotechnical investigation required to reduce the setback. It is not clear, but the 50-foot distance appears to derive from a county regulation, which is generalized and in no way reflects site-specific calculations or conditions. What is clear is that this 50-foot distance in no way applies to the current site specific conditions.

CONCLUSIONS

In summary:

1. While the Dean Creek slope is relatively steep, objections to the proposed residence location based solely on steepness are inapplicable. Of importance is the rate of retreat, and there are no indications that the past or potential Dean Creek slope retreat rate will imperil the proposed residence.

2. Significant erosion along the Dean Creek slope during the winter of 2016-2017 does not appear to have occurred.

3. Comparison of the 1974 Lowney Kaldveer figure with the recent site topographic survey and with the site as recently viewed indicates that little to no recession of the creek bank top occurred during the intervening years along the Dean Creek bluff.

4. The 50-foot setback from Dean Creek for the well location has no bearing on any Dean Creek setback for the proposed residence.

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.

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Attached: Photographs 1 and 2.

Photo 1: View from The Strand, April 12, 2016

Photo 2: View from The Strand, same apparent location on July 13, 2017 as King January 1998 (?) Photos 1A and 1B.