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August 6, 2019

File No.: 303333-001

Mr. Steve McGrath
Cambria Community Healthcare District
2535 Main Street
Cambria, CA 93428

PROJECT: CAMBRIA COMMUNITY HEALTHCARE DISTRICT
2535 Main Street
Cambria, CALIFORNIA

SUBJECT: Summary of File Review – Recommendations for Slope Assessment

Dear Mr. McGrath:

In accordance with your authorization, we have prepared this letter summarizing our findings and recommendations to address the reported slope distress at the health care facility at 2535 Main Street in Cambria, California (site). The site is an approximately 0.9-acre property located at the toe of a south facing slope that ranges in elevation from about 70 feet at the toe to about 366 feet at the crest (USGS 2019). Our recommendations outline information needed to characterize the slope and compile the geotechnical parameters that will be necessary to design mitigation measures so that the facility can resume unrestricted use as an ambulance staff building. Our recommendations are based on a site visit performed on July 24, 2019 by the undersigned and a review of historical documents listed below:

- Preliminary Geologic Slope Stability Assessment, Cut Slope/Hillside behind Cambria Health Facility, 2535 Main Street, Cambria, CA 93428, by Earth Systems Pacific, dated March 22, 2000, File No.: SL-12200-GA;
- Response to Request for Proposal (RFP) by Cambria Community Healthcare District, Evaluation of Slope Behind Professional Building, 2515 Main Street, Cambria California, by Earth Systems Pacific, dated September 17, 2012;
- Numerical Slope Stability Evaluation, 2535 Main Street, Cambria, California, by GeoSolutions, Inc. dated February 7, 2017, project No. 10078-2;
- Retaining Wall Recommendations, 2535 Main Street, Cambria, CA, by Coast Engineering and Survey Inc., dated July 2017
- 2535 Main Street, Cambria, CA Final Recommendations by Coast Engineering and Survey Inc., dated August 17, 2017

In addition to the documents listed above, we performed a preliminary review of County policies that will need to be considered during the planning and design process (San Luis Obispo County, 2019).

FINDINGS

- The site consists of a relatively flat developed area at the toe of an approximately 300 foot high slope;
- The bottom 15 feet or so, the toe of the slope, was cut to an inclination of approximately 0.5:1 (horizontal to vertical), probably to increase the buildable area;
- The process of making the cut portion of the slope removed surficial soil and some sandstone bedrock, exposing a soil/bedrock transition;
- Development at the site includes an ambulance staff building that is constructed less than 15 feet from the toe of the slope (non-conforming construction per 2016 CBC 1808.7.1);
- The site has experienced several episodes of soil slips that have been documented in the reviewed historical documents. These failures appear to be where soil above the bedrock moved down slope, and they do not appear to include substantial bedrock material;
- Screening level numerical slope stability analyses were performed for limited portions of the slope, and static and pseudo-static factors of safety are below the required values of 1.5 and 1.1, respectively. The analyses do not extend the full height of the slope, are missing strength data for one layer, and use a screening value for the seismic coefficient. Slope stability analyses will need to be performed to assess the entire slope and a site specific seismic coefficient will need to be calculated to meet County criteria;
- A wooden catchment fence was constructed to constrain debris that ravels from the slope face. Part of the fence was damaged as a result of the slope failure reported in 2017 and concrete barrier beams (k-rail) have been placed adjacent to the damaged section of fence;
- The wooden catchment fence is not sufficient to withstand slope failures, nor does it increase the factor of safety against sliding of the slope; and
- Recommendations to restrict the use of the ambulance staff building were made by GeoSolutions after a soil slip reported in 2017. Their recommendations are stated in their February 7, 2017 report.

RECOMMENDATIONS

To assess the slope and potentially remove the restrictions on the ambulance staff building County approved mitigation measures will need to be put in place, or the building will need to be moved so that it complies with the California Building Code (CBC), which states that buildings must be a minimum of 15 feet from ascending slopes. To address the non-conforming condition and design mitigation measures that permit an alternative setback or increase the factor of safety against sliding to acceptable values, we suggest the following steps be implemented:

- Perform a land survey to establish accurate topography of the property and slope behind the property all the way up to any hilltop or ridgeline that may serve as a high point for

slope stability analyses. The land survey should also delineate property boundaries. It should be considered that mitigation measures may include some form of tieback anchors into the hillside, and the extent of the anchors may be limited by property lines unless agreements can be reached with adjacent property owners;

- Perform geotechnical and geologic explorations to compile data to be used to complete the following sub-tasks:
    - Fulfill the County's geotechnical and geologic report requirements;
    - Perform slope stability analyses that will satisfy County review criteria;
    - Calculate the volume/mass of material that may be mobilized during a slope failure; and
    - Design a mitigation system that will satisfy the County's requirements for alternate setbacks and remedial slope protection devices.
- The geotechnical and geologic exploration will need to include soil and/or rock sampling and laboratory testing of soil and/or rock samples.

The site is within a County designated geologic study area (GSA) and will therefore require an engineering geology report to summarize the geologic hazards, in addition to a geotechnical engineering/soils report (San Luis Obispo County 2019).

CLOSURE

This letter is valid for the conditions, as they exist at this time for the type of project described herein. Our intent was to prepare this letter in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the locality of this project under similar conditions at this time. No representation, warranty, or guarantee is either expressed or implied. This letter is intended for the exclusive use by the client. Application beyond the stated intent is strictly at the user's risk.

The recommendations presented in this letter are intended to serve as a guide for the collection of data that can be used to assess the slope so that mitigation measures can be evaluated. The appropriate mitigation measures cannot be selected until the slope is characterized and the hazard is quantified. Potential mitigation measures may include slope reinforcement that brings the calculated factor of safety against sliding up to acceptable values, construction of a barrier that protects the building and occupants from debris in the event of a slope failure, or relocation or decommissioning of the building.

If changes with respect to the intent of the project become necessary, if items not addressed in this report are incorporated into plans, or if any of the assumptions used in the preparation of this letter are not correct, the engineering geologist shall be notified for modifications to this letter.

We appreciate the opportunity to be of service on this project and look forward to assisting in the design and construction of the mitigation measures. If there are any questions concerning this letter, please do not hesitate to contact the undersigned.

Sincerely,

Earth Systems Pacific

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Attachments: Technical References

Doc. No.: 1908-013.LTR/cr

TECHNICAL REFERENCES

California Building Code (CBC), 2016, Title 24, Part 2, Chapter 16

San Luis Obispo County, 2019, Land Use View, Interactive mapping application, accessed at https://gis.slocounty.ca.gov/Html5Viewer/

United States Geological Survey (USGS), 2019, The National Map, a web based portal to access public domain mapping and GIS data, accessed at https://viewer.nationalmap.gov/advanced-viewer/