

RALPH STONE AND COMPANY, INC.

Geotechnical, Environmental & Civil Engineers

April 18, 2013

File: 7062

Malibu Village HOA
17015 Pacific Coast Highway
Pacific Palisades, Ca 90272
Attn: Herb Englehardt, President

SUBJECT: Project Document Review for Multi-Level Structure at 16990-17000
Sunset Boulevard, Pacific Palisades, California

REFERENCES: See Appendix A

Dear Mr. Englehardt:

In accordance with your authorization, we have completed this review of project documents by Sassan Geosciences, Inc. (consultant) pertaining to the development of a proposed multi-level structure at 16990-17000 Sunset Boulevard. We have reviewed past documents prepared circa 1989 for a similar project at the subject site and documents provided to us regarding the current project, as listed in Appendix A.

The site consists of a vacant pad located at the top of a descending slope comprised of canyon fill and bedrock. It is our understanding, from the documents provided, that it is proposed to construct a multi-level structure with two-levels of subterranean parking on the pad. It is intended to support the structure on piles founded in competent bedrock and additional soldier piles are proposed at/near the property line to provide an appropriate factor of safety. Specific drainage recommendations were provided to address the relatively shallow groundwater table.

The site is located immediately upslope and north of the Malibu Village mobile home park which is located at 17015 Pacific Coast Highway. The properties share a common property boundary and the slope between the two properties is owned in part by both parties, though most of the slope is located within the Malibu Village property.

Based on our review of the Reference documents cited herein, we provide the following comments regarding the proposed project:

1. The consultant's recent geologic map for the current project, and topographic map upon which it was based, do not include the easternmost corner of the property. Improvements may or may not be planned for this area, but it appears that storm drain connections may extend easterly beyond the area shown and additional slope stabilization may be required. The project maps should extend east to include the entire property. The consultant should consider providing additional cross-sections and slope stability analyses of the very steep slopes located near the easternmost property corner.

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2. Significant exploration was performed at the subject site and on the subjacent descending slope by Converse Consultants Pasadena (CCP) for their Reference 1 report for a similar multi-level project. The consultants should review and incorporate CCP exploration and earth material/groundwater data on the maps/sections for the current project.
3. Based on the Reference 1 boring logs by CCP, a hydrogen sulfide odor was observed in Borings B-2 and B-7 near the top of slope and a chemical odor was observed in Boring B-6 on the pad. The consultant should provide recommendations for mitigation of the odors, as necessary, and discuss the impact of odor-producing materials at depth on the proposed project.
4. The consultant should test the existing earth materials and groundwater for corrosivity against proposed buried metal/concrete structures. Depending upon results, concrete/foundation/utility specifications may need to be revised.
5. The Reference 7 report by the consultant states:

"Although landslides have occurred on the coastal bluff to the east and west of the subject property, only surficial landslides have been mapped on the slope area below the site."

This statement is misleading considering the slope below the site is the head escarpment of a very large bedrock landslide. Subsequent to sliding, the escarpment was breached by a canyon which is currently filled and the landslide debris was modified by grading/fill. The landslide debris and slip surface were never removed, nor was the slide mass stabilized. The slide mass is currently occupied by the Malibu Village mobile home park. The consultant should comment on the implications of past significant earth movement with respect to earth material strengths, slope stability analyses, and foundation/wall design.

6. CCP encountered a clay seam/gouge at depths of 15 to 20 feet in Boring B-11 near the toe of slope and Evans, Colbaugh & Assoc., Inc., (ECA) encountered clay seams at depths of 46 to 52 feet in Boring B-1 near Pacific Coast Highway which may indicate the existence of a landslide plane or other adversely-oriented planar geologic feature. The consultant should comment on the implications of the clay seams/clay gouge and provide revised analyses and/or recommendations as applicable.
7. Based on the Reference 5 City Review Letter, it is recommended that the consultant utilize minimum allowable strengths for earth materials or back-calculated values in their analyses due to the highly distorted nature of the underlying earth materials.
8. The strengths used by CCP in their analyses are lower than the strengths used for analyses/design of the current project. It should be noted that neither the City nor E.D. Michael in an independent review (Ref. 2) approved of strengths used by CCP in their report. The consultant should provide justification for use of higher shear strengths considering the CCP data and subsequent City/independent review.

9. The consultant applied fill/colluvium strengths obtained from top-of-slope pad to off-site landslide debris at the toe of slope. The consultant also states in their Reference 8 report:

"... this slide would not affect the stability of the slopes below the subject property."

This statement may imply that the existing off-site landslide debris acts as a buttress against potential deep-seated slope failures. The strengths used by the consultant are significantly higher than strengths presented by ECA in their Reference 6 report for the mobile home park at the toe of slope. The consultant should, as a minimum, review the ECA data and incorporate ECA exploration depths/data on the maps/sections for the current project and provide quantitative justification for the Reference 8 statement quoted above.

9. Fill/colluvium strengths used by the consultant are higher than CCP fill strengths and higher than expected for a lower density soil described as "loose" and "caving" in the consultant's boring logs. The consultant should provide justification for use of higher shear strengths considering the qualitative descriptions in their logs and City-reviewed CCP strengths.
10. The slope stability analyses and design calculations for wall/piles are based on earth material strengths in question. The analyses and design may need to be modified/revised, as necessary.
11. Seismic slope stability analyses by the consultant use a horizontal seismic coefficient of 0.15 which is not in accordance with LADBS guidelines.
12. Considering the existing landslide debris and clay seams/gouge at/near the toe of slope, the consultant should extend slope stability search limits to PCH to rule out potential failures through landslide debris.
13. ECA provided a section through the thalweg of the pre-existing canyon whereas the consultant's cross section E-E' is drawn perpendicular to slope contours and may not be an accurate representation of the depth of the canyon fill. The consultant should review the ECA data and accurately depict the depth of the canyon as relates to proposed foundation piles and proposed removal/recompaction of the canyon fill.
14. The consultant's borings B-8 east of the filled canyon and B-2 west of the filled canyon encountered the basal contact between the terrace deposits and bedrock at approximately 8 and 22 feet below grade, respectively. The consultant should discuss the significance of the 14-foot contact offset.

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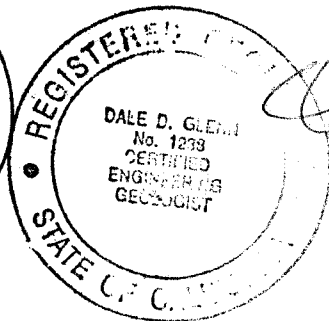
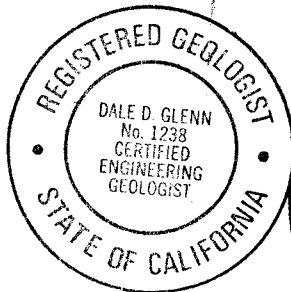
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15. Considering the configuration of the canyon as shown on the regional geologic map by McGill, the clay seam/gouge found in borings by CCP, and shear zones found in a trench by CCP, could the filled canyon be masking a graben or head scarp of a large south- or southwest-directed landslide? Might a fault be present at the subject site as described by E.D. Michaels (Ref. 2) and shown on the McGill map? The consultant should discuss the impact of these geologic features, if present, on the proposed project.
16. Proposed perimeter subdrain trenches will provide a conduit by which water can infiltrate into the existing fill and down gradient into the off-site slope, and may artificially raise the groundwater level near the top of slope. The consultant should address the infiltration issue and/or revise analyses and recommendations considering the worst-case groundwater condition at the level of the proposed subdrain trenches.
17. To intercept subsurface water in the canyon fill, a proposed three-tiered retaining wall subdrain system is recommended to be connected serially to the lowest tier. In the event of blockage of the lowest tier subdrain pipes or outlets, subsurface water levels may rise to the upper tiers. The consultant should consider independent/parallel installation of each tier of subdrains/outlets.

Thank you for this opportunity to be of service. If you have any questions, please contact the undersigned at the letterhead location.

Very truly yours,

RALPH STONE AND COMPANY, INC.



Dale D. Glenn
Dale Glenn, P.G., C.E.G.
Engineering Geologist

James Rowlands
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JR:DG::an

Enclosures: Appendix A - References
Distribution: Client (4, CD, PDF)
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APPENDIX A REFERENCES

1. Geotechnical and Geological Investigation (and Supplemental Slope Stability and Foundation Design Data), Proposed Apartment Building, 16990 Sunset Boulevard, Los Angeles, California; by Converse Consultants Pasadena, CCP Project No. 86-31-238-01, August 1, 1986 (November 26, 1986)
2. Review of Geotechnical and Geological Investigation, Proposed Apartment Building, 16990 Sunset Boulevard, Los Angeles, California by Converse Consultants, Aug. 1, 1986 (CCP Project No. 86-31-238-01); City of Los Angeles Office of Zoning Administration, Coastal Development Permit Case No. CDP86-020; by E.D. Michael, September 29, 1986
3. Geologic Investigation for Proposed 3- to 4- Story Apartment Complex with 2- to 3-Story Subterranean Parking Levels, Portions of Lots 2 and 3, Tract 10238, 16990 Sunset Boulevard, City of Los Angeles, California; by Dale Glenn & Associates, work Order #8507-142, October 9, 1989
4. Update Geotechnical and Geologic Engineering Report for Proposed Multi-Unit Building at 16990 Sunset Boulevard, Pacific Palisades, California; by Ralph Stone and Company, Inc., File 2605, October 9, 1989
5. City Review Letter (of Ref. 3,4 above), Log # 14215; by LADBS, January 4, 1990
6. Report of Geotechnical Evaluation - Repair of Ground Distress, Malibu Village; by Evans, Colbaugh & Assoc., Inc., ECA 94-21-02, November 12, 1997
7. Preliminary Geotechnical Engineering and Engineering Geology Investigation for 17000-17020 Sunset Boulevard, Pacific Palisades; by Sassan Geosciences, Inc., SAS File # 8JSM122, November 16, 2009
8. Addendum No. 1 to Preliminary Geotechnical Engineering and Engineering Geology Investigation, 16990-17020 Sunset Boulevard, Pacific Palisades; by Sassan Geosciences, Inc., SAS File # 8JSM122, April 16, 2010
9. Addendum No. 2 to Preliminary Geotechnical Engineering and Engineering Geology Investigation, 16990-17000 Sunset Boulevard, Pacific Palisades; by Sassan Geosciences, Inc., SAS File # 1GAB052, July 15, 2011
10. Geology and Soils Report Approval Letter; by LADBS, Log # 69754-02, October 25, 2011
11. Ground-Water Flow Rate, Sunset Palisades Development 16990 Sunset Boulevard, Pacific Palisades Area, City of Los Angeles, California; by E.D. Michael, January 2, 2013