



December 12, 2016
C5056A

TO : Catarina Kidd
 Planning Department
 CITY OF CUPERTINO
 10300 Torre Avenue
 Cupertino, California 95014

SUBJECT : **Supplemental Geotechnical Peer Review**
RE : Hirano, New Second Dwelling Unit & Swimming Pool
 11406 Lindy Place

At your request, we have completed a supplemental geotechnical peer review of the building permit application for the proposed residential and swimming pool construction using the following documents:

- Geotechnical Investigation (report), prepared by Murray Engineers, Inc., dated April 11, 2014;
- Geotechnical Report Update and Supplemental Recommendations, Guest House and Swimming Pool (Letter-report), prepared by Murray Engineers, Inc., dated October 27, 2016; and
- Revised Civil Engineering Plans (5 sheets, 8- and 10-scale), prepared by Lea & Braze Engineering, Inc., dated October 28, 2016.

In addition to evaluation of the above referenced documents, we reviewed pertinent technical documents from our office files and performed a recent site inspection.

DISCUSSION

The applicant proposes to construct a new 768 square-foot single-story addition east of the existing residence. The existing swimming pool is proposed to be backfilled and decommissioned and a new infinity-edge pool is proposed northeast of the existing residence. Other site improvements include a new wood deck at the northeast corner of the existing residence, new patios and walkways, and new stairs to access the back yard. A new energy dissipater is proposed on the slope northeast of the new swimming pool. The referenced plans indicate that grading quantities will include approximately 290 cubic yards of cut and approximately 10 cubic yards of fill.

In our previous review report, dated July 11, 2016, we recommended that a Geotechnical Report Update be performed since approximately 2 years had elapsed since the Geotechnical Investigation Report was performed, and since changes had been made to the project layout after the report was completed.

CONCLUSIONS AND RECOMMENDED ACTION

The proposed residential construction is constrained by potentially expansive surficial soil materials, existing undocumented artificial fill materials with the potential for settlement and surficial creep, and anticipated very strong seismic ground shaking. The Project Geotechnical Consultant performed an investigation of the site and provided geotechnical design recommendations in their report dated April 11, 2014. These recommendations included supporting the proposed guesthouse, swimming pool and retaining walls on deep reinforced concrete piers. In their Geotechnical Report Update, they indicate that the recommendations provided in the original geotechnical investigation report remain valid for the proposed improvements. We do not have objections to the geotechnical design recommendations, and recommend approval of the permit application from a geotechnical standpoint. However, prior to issuance of building permits, a geotechnical plan review should be performed, and a shoring plan should be submitted to the City, as described below:

1. **Shoring Plan** – A shoring plan should be submitted by a civil/structural engineer due to the close proximity of the proposed addition to the neighboring property and structures. The shoring plan should include profiles that depict the existing site topography, proposed cuts, and existing neighboring structures and property line. It should be noted that an approximate 17-foot high vertical cut is proposed within 10 feet of the property line, and neighboring structures appear to be very close to this property line.
2. **Geotechnical Plan Review** - The applicant's geotechnical consultant should review and approve all geotechnical aspects of the development plans (i.e., site preparation and grading, site drainage improvements and design parameters for foundations, drainage, pavement and retaining walls) to ensure that their recommendations have been properly incorporated. We specifically recommend that the geotechnical consultant perform the following:
 - Review the location of the proposed storm water energy dissipater.
 - Review and approve the shoring plans.

The Shoring Plans and Geotechnical Plan Review should be submitted to the City for review and approval by City Staff and the City Geotechnical Consultant prior to approval of building permits.

3. **Geotechnical Field Inspection** - The geotechnical consultant/engineering geologist should inspect, test (as needed), and approve all geotechnical aspects of the project construction. The inspections should include, but not necessarily be limited to: site preparation and grading, swimming pool excavation, site surface and subsurface drainage improvements and excavations for foundations and retaining walls prior to the placement of steel and concrete. The following should be specifically performed:

- The guesthouse and swimming pool excavations should be closely inspected to assure that the geologic materials are as anticipated.

The results of these inspections and the as-built conditions of the project should be described by the consultant in a letter and submitted to the City Engineer for review prior to final project (as-built) approval.

LIMITATIONS

This geotechnical peer review has been performed to provide technical advice to assist the City with its discretionary permit decisions. Our services have been limited to review of the documents previously identified, and a visual review of the property. Our opinions and conclusions are made in accordance with generally accepted principles and practices of the geotechnical profession. This warranty is in lieu of all other warranties, either expressed or implied.

Respectfully submitted,

COTTON, SHIRES AND ASSOCIATES, INC.
CITY GEOTECHNICAL CONSULTANT



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CEG 1923



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JMW:POS:mp

COTTON, SHIRES AND ASSOCIATES, INC.



July 25, 2016
C5056

TO : Sarah Filipe
Planning Department
CITY OF CUPERTINO
10300 Torre Avenue
Cupertino, California 95014

SUBJECT : **Geotechnical Peer Review**

RE : New Second Dwelling Unit & Swimming Pool
11406 Lindy Place

At your request, we have completed a geotechnical peer review of the building permit application for the proposed residential and swimming pool construction using the following documents:

- Geotechnical Investigation (report), prepared by Murray Engineers, Inc., dated April 11, 2014;
- Civil Engineering Plans (5 sheets, various scales), prepared by Lea & Braze Engineering, Inc., dated June 14, 2016;
- Architectural Plans, including: Site, Floor, Roof, and Elevations (10 sheets, various scales), prepared by Charles Holman Design, dated April 28, 2016; and
- Topographic Survey (2 sheets, 10-scale), prepared by Lea & Braze Engineering, Inc., dated February 25, 2014.

In addition to evaluation of the above referenced documents, we reviewed pertinent technical documents from our office files and performed a recent site inspection.

DISCUSSION

The applicant proposes to construct a new 768 square-foot single-story addition east of the existing residence. The existing swimming pool is proposed to be backfilled

and decommissioned and a new infinity-edge pool is proposed northeast of the existing residence. Other site improvements include a new wood deck at the northeast corner of the existing residence, new patios and walkways, and new stairs to access the back yard. A new energy dissipater is proposed on the slope northeast of the new swimming pool. The referenced plans indicate that grading quantities will include approximately 290 cubic yards of cut and approximately 10 cubic yards of fill.

SITE CONDITIONS

The project site is characterized by steep to very steep, northeast-facing hillside topography. Previous site grading has resulted in a relatively level cut/fill building pad with a steep to precipitous 12-foot-high cut in the southeast corner of the property, and an approximately 11-foot-thick fill prism with a steep slope northeast of the existing residence. A one-centimeter wide crack was observed traversing the swimming pool and adjacent hardscape in an approximate East-West trend. Existing site drainage is generally characterized by sheetflow directed to the northeast.

The subject property is primarily underlain, at depth, by bedrock materials of Matadero Sandstone, ancient landslide debris, old colluvium, and artificial fill, or a combination of these units. Subsurface exploration has determined that bedrock, old colluvium, or ancient landslide deposit materials are locally overlain by 10 to 14 feet of fill and colluvium. The property is located within Zone S on the City Geologic and Seismic Hazards Map indicating the potential for slope instability.

CONCLUSIONS AND RECOMMENDED ACTION

The proposed residential construction is constrained by potentially expansive surficial soil materials, existing undocumented artificial fill materials with the potential for settlement and surficial creep, and anticipated very strong seismic ground shaking. The Project Geotechnical Consultant has performed an investigation of the site and provided geotechnical design recommendations in a report dated April 11, 2014. These recommendations include supporting the proposed guesthouse and swimming pool on deep reinforced concrete piers. We note that proposed locations for the swimming pool and guesthouse have changed slightly since the report was completed. Specifically, the guest house will now be located directly east of the existing residence and the new pool will be located northeast of the existing pool. The new pool will be an infinity-edge design with very low tolerance for differential settlement. We recommend that The Consultant review the latest plans (dated June 14, 2016) and update or confirm foundation recommendations for each proposed structure. Additionally, the consultant should review the proposed location of the new storm water energy dissipater. According to the Engineering Geologic Map prepared by The Consultant (Figure A-2), the new energy dissipater may discharge directly above an area mapped as DIs