June 16, 2021
Z6051

TO: Ashley James
Associate Planner
CITY OF BERKELEY
1947 Center Street, 2nd floor
Berkeley, California 94704

SUBJECT: **Geotechnical Peer Review – Liquefaction Zone**
RE: Steel Wave; New Three-Story Structure "theLAB"
ZP2021-0096
787 Bancroft Way

At your request, we have completed a geotechnical peer review of the proposed use permit application at the subject property using:

- Final Report (report) prepared by Rockridge Geotechnical, Inc., dated April 13, 2021; and

- California Geologic Survey, Guidelines for Evaluating and Mitigating Seismic Hazards in California – Special Publication 117A re-adopted September 11, 2008.

In addition, we have reviewed pertinent technical maps and reports from our office files.

DISCUSSION

Based on the materials provided for our peer review, we understand the applicant proposes to demolish the existing site structures to construct a three-story, at-grade L-shaped life science building. The proposed project is located within a liquefaction hazard zone as mapped by the California Geological Survey. According to the State's Seismic Hazards Mapping Act, a qualifying project in this zone must be supported by a site-specific geotechnical investigation (report) addressing the mapped hazard.

The purpose of this geotechnical peer review is to determine whether the referenced 2021 report is consistent with State criteria for project approval with respect to seismic hazards. When site seismic hazards are confirmed to exist, the State requires that a minimum level of mitigation for a project be performed to reduce the risk of ground

failure during an earthquake to a level that does not cause the collapse of buildings for human occupancy. Our geotechnical peer review does not include evaluation of detailed construction plans and is not intended to address all geotechnical aspects of proposed project design.

SITE CONDITIONS AND GEOTECHNICAL EVALUATIONS

The Project Geotechnical Consultant (Rockridge Geotechnical) has advanced a subsurface exploration program at the site which included two Cone Penetration Tests (CPT) to a depth of approximately 51 feet below the ground surface. Two test borings were also advanced to depths of 46 and 46.5 feet below the ground surface. The shallowest groundwater encountered by the applicant's Consultant, based on pore pressure dissipation tests, is reported at a depth of approximately 10 feet below the ground surface. The applicant's Consultant anticipates the historic high groundwater at the site is 7 feet below the ground surface.

The Geotechnical Consultant has also completed laboratory testing including Atterberg limits testing of surficial soils resulting in high plasticity clays with plasticity indices of 34 and 43 percent. Based on a document review completed by the applicant's Consultant, they understand that portions of the site have been excavated as part of remedial grading for removal of soils containing pesticides. The Consultant found that the surficial soils and undocumented fill are underlain by native alluvium to the depth explored.

The California Geological Survey (CGS) has mapped the historic high groundwater at depths less than 5 feet below the ground surface at the subject site. As previously mentioned, the site is located within a liquefaction hazard zone of required investigation delineated by the CGS. Based on the provided subsurface data and analysis, the Project Geotechnical Consultant calculates that the site has a potential for cyclic softening induced total settlement on the order of 0.5 inch, and differential settlement of about 0.25 inch over a distance of 30 feet. The Consultant finds that site soils are not subject to liquefaction and cyclic densification due to their cohesion.

CONCLUSIONS AND RECOMMENDATIONS

Based on our review of the referenced report dated April 13, 2021, it appears that the potential for seismic hazards has been satisfactorily evaluated by the Project Geotechnical Consultant in general conformance with State requirements. We conclude that the subsurface investigation has satisfactorily fulfilled State investigation requirements in the mapped potential liquefaction hazard zone. Consequently, we recommend geotechnical approval of the subject land use permit application with the following conditions attached:

1. **Geotechnical Plan Review** - The applicant's geotechnical consultant should review and approve all geotechnical aspects of the final project building and grading plans (i.e., site preparation and grading including, site surface and subsurface drainage improvements, and design parameters for foundations and associated improvements) to ensure that their recommendations have been properly incorporated.

   The results of the plan review should be summarized by the geotechnical consultant in a letter and submitted to the City Engineer for review and approval prior to issuance of building permits.

2. **Geotechnical Construction Inspections** - The geotechnical consultant 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, site surface and subsurface drainage improvements, and excavations for foundations and slabs-on-grade prior to the placement of steel and concrete.

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

Craig Stewart
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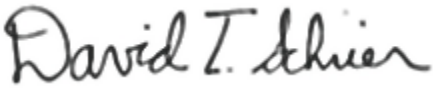

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