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August 16, 2018
File: 20181569.002A

Mr. Ron Johnson
Contra Costa Community College District
2600 Mission Bell Drive
San Pablo, CA 94806
Email: ronj@cslpm.com

Subject: **Addendum #3 - Bearing Capacity Factor of Safety Clarification**
C-4016 New Allied Science Building
Contra Costa College
2600 Mission Bell Drive
San Pablo, California

Dear Mr. Johnson:

This letter provides clarification on the factor of safety used in our calculations to obtain the allowable bearing capacity for the subject project. This letter was prepared in response to our e-mail and phone communications with the Structural Engineer, Mr. Jeff Smith, of Rutherford + Chekene. Factors of safety for the allowable bearing capacity with respect to allowable stress design and overstrength factors outlined in the 2016 CBC Section 1605A.I.1 are provided below.

Bearing Capacity Recommendations (Spread Footings)

The geotechnical report, Geotechnical Engineering Investigation Report, C-4016 New Allied Science Building, Contra Costa College, 2600 Mission Bell Drive, San Pablo, California," dated October 17, 2017 (File No. 20181569.001A/PLE17R67485) recommended a net allowable bearing capacity of 3,000 psf for spread footings (dead + live loads); the allowable bearing capacity included a factor of safety of at least 3. This recommendation applied to footings with a minimum width of 18 inches, founded at least 30 inches below adjacent finished grade, and with the earthwork recommendations provided in the report.

A one-third increase in the net allowable bearing capacity was recommended to consider short-term loading due to wind or seismic forces. Per the Structural Engineer, a bearing capacity of 4,000 psf has been used for design of the building's spread footings for the seismic condition (dead + live + seismic loads) and minimum footing widths for the project are 3 feet and founded 30 inches below adjacent finished grade. Based upon the proposed footing sizes and depth for this project, an ultimate bearing capacity of 10,000 psf can be utilized for seismic design of footings. A factor of safety of 2.5 is recommended for the seismic condition; therefore the net allowable bearing capacity for the seismic condition is 4,000 psf.

We understand a factor of safety of 2.5 for the seismic allowable bearing capacity is equal to the factor of safety used for the overstrength factor in design of the seismic force-resisting system.

LIMITATIONS

This letter is subject to the recommendations and provisions and requirements outlined in the limitations section of the 2017 geotechnical investigation report. No warranty, express or implied, is made.

CLOSURE

Thank you for this opportunity to be of service. If you have any questions or if we can be of further assistance, please contact the undersigned at (916) 366-1701.

Sincerely,

KLEINFELDER, INC.

Rebecca L. Money, PE, GE
Principal Geotechnical Engineer

Kenneth G. Sorensen, PE, GE
Senior Principal Engineer

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