

May 24, 2017



RSCCD Facility Planning, District
Construction and Support Services
2323 N. Broadway, Suite 112
Santa Ana, CA 92706

Attn: Ms. Allison Coburn
Facilities Project Manager
P: (714) 480-7530
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**Re: Addendum to Geotechnical Engineering Report
Proposed Science Center - Santa Ana College
1530 West 17th Street
Santa Ana, California
Terracon Project No. 60145101**

Dear Ms. Coburn,

We are providing our letter to supplement our geotechnical engineering report dated June 27, 2016 for the proposed science center building. This letter documents our recommendations for the following:

- n Seismic site class.
- n Lateral capacity for group piles.
- n Pile capacity increase for seismic and wind loads.

In our referenced report, it was our assumption that the fundamental period of vibration for the proposed buildings is less than 0.5 of a second. However, based on our communications with the structural engineer, the fundamental period for the proposed structures is anticipated to exceed such limit.

As discussed in the above referenced report, there are a discontinuity and thin lenses of liquefiable layers in the upper 20 feet of the site and an anticipated amount of settlement on the order of ½ of an inch. Additionally, the proposed building is to be supported on a deep foundation system which will bypass the liquefiable layers encountered onsite. Based on these facts, it is our opinion that the project site is still considered to have a site classification "D".

As for lateral capacity of group piles, group efficiency factor for lateral loading may be determined using the following chart included in the published study "Response, Analysis, and Design of Pile Groups Subjected to Static & Dynamic lateral Load", June 2003, Report No. UT03.03.



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Geotechnical



Environmental



Construction Materials



Facilities

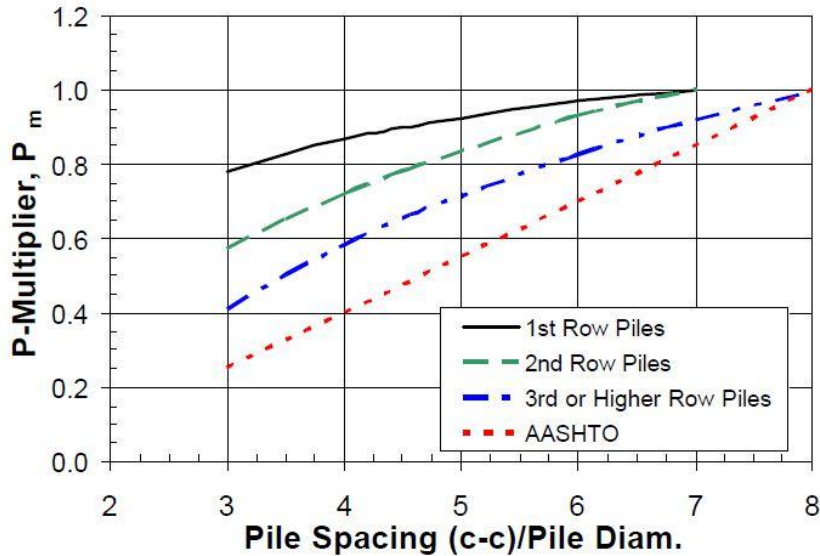


Figure IS-2 Recommended design curves for selecting p-multipliers (P_m) as a function of normalized pile spacing for 1st row piles, 2nd row piles and 3rd row or higher row piles.

The axial capacity of the piles may be increased by one-third when considering total loads that include wind or seismic conditions.

If you have any inquiries or comments on this report, please do not hesitate to contact the undersigned at (949) 261-0051.

Sincerely,
 Terracon Consultants, Inc.

F. Fred Buhamdan, P.E.
 Principal

Stephen Jacobs, C.E.G.
 Sr. Geologist



Michael W. Laney, P.E., G.E.
 Sr. Geotechnical Engineer