Earth Systems
48511 Warm Springs Boulevard, Suite 210 | Fremont, CA 94539 | Ph: 510.353.3833 | www.earthsystems.com

August 14, 2020

File No.: 302712-001

Mr. Roy Patel
c/o Akshar Development, Inc.
2834 El Camino Real
Redwood City, CA 94061

PROJECT: ROY PATEL RESIDENCE
1989 TICINO COURT
PLEASANTON, CALIFORNIA

SUBJECT: 2019 California Building Code Seismic Parameters

REF.: Geotechnical Engineering Investigation, Roy Patel Residence, 1989 Ticino Court, Pleasanton, California by Earth Systems, dated December 27, 2018 (File No. 302712-001)

Dear Mr. Patel:

On your behalf, per the request of Ms. Pei-en Yang, with *Arris Studio Architects*, Earth Systems Pacific (Earth Systems) has reviewed the seismic design parameters presented in our above-referenced report and compared then to the seismic design parameters per the 2019 California Building Code (CBC). The 2016 CBC is based on the 2009 NEHRP Provisions and ASCE 7-10, while the 2019 CBC is based on the 2015 NEHRP Provisions and ASCE 7-16. Therefore, these parameters are no longer applicable and need to be updated per the 2019 edition of the California Building Code.

The site is in a region of generally high seismicity and has the potential to experience strong ground shaking from earthquakes on regional or local causative faults. The following seismic design parameters represent the general procedure as outlined in Section 1613 of the CBC 2019 edition and in ASCE 7-16. The values were obtained using the OSHPD Seismic Design Maps Web Application. The seismic factors S_1 is greater than 0.2g, and the Site Class is 'D'. As such, a site-specific ground motion hazard analysis will need to be performed if the structural engineer determines that ASCE 7-16, Section 11.4.8, Exception 2 does not apply. Earth Systems should be notified to provide a site-specific ground motion hazard evaluation if needed. If required, the seismic factors presented will not be applicable to the project.

Summary of Seismic Parameters - CBC 2019
(Site Coordinates 37.6324° N, 121.8117°W)

Parameter	Design Value
Site Class	D
Mapped Short Term Spectral Response Parameter, (S_s)	1.913g
Mapped 1-second Spectral Response Parameter, (S_1)	0.60g
Site Coefficient, (F_a)	1.0
Site Coefficient, (F_v)	1.7[1,2]
Site Modified Short Term Response Parameter, (S_{Ms})	1.913g
Site Modified 1-second Response Parameter, (S_{M1})	1.02g[1]
Design Short Term Response Parameter, (S_{Ds})	1.275g
Design 1-second Response Parameter, (S_{D1})	0.68g[1]

[1] The 2019 parameter is are based on the assumption that the buildings will conform to ASCE 7-16 11.4.8 - Exception No. 2.
[2] The 2019 CBC F_v parameter shall only be used for calculation of T_s. (ASCE Table 11.4-2, Supplement 1, Note a)

If you have any questions or need any additional information, please do not hesitate to contact our office.

Sincerely,

Earth Systems Pacific

Lauren Becker, EIT 170409
Staff Engineer

Ajay Singh, GE 3057
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
AJAY SINGH
GE 3057
GEOTECHNICAL
STATE OF CALIFORNIA

Doc. No.: 2008-038.LTR/kt