



May 2, 2013

Pars Global, LLC

Mr. Reza Kassraian
 4921 Birch Street, Suite 125
 Newport Beach, California 92660
 (949) 250-250-9863 • fax: (949) 250-9867

Subject: **Updated Geotechnical Report – Clinton Keith Village, LLC**
Geotechnical/Geological Engineering Study – APN: 326-250 & 004
 Project Number: 3351-GS

- References:
- 1) **EnGEN Corporation – Geotechnical Engineering Study** Zolfaghari Commercial - Assessor's Parcel Number: 326-250-003, Clinton Keith Road and George Avenue, City of Wildomar, County of Riverside, California; Project Number: M3551-GS
 - 2) **Leighton Consulting, Inc. – Fault Study Update** – Proposed Clinton Keith Development, APN 362-250-003 & 004, Clinton Keith Road and George Avenue, Wildomar, California, dated: April 16, 2013.
 - 3) **Leighton Consulting, Inc. - Geological Fault Hazards Investigation**, Proposed ±5-Acre Parcel, APN 362-250-003, Wildomar, Riverside County, California, dated: September 19, 2005
 - 4) **Pfeiler and Associates Engineers, Inc., Off-Site Grading Plan – Clinton Keith Village, LLC.**, dated December 29, 2008.

Dear Mr. Kassraian,

In accordance with your request and signed work order, we are updating the Referenced No. 1 report for the proposed development at the subject property located west northeast of the intersection of George Avenue and Clinton Keith Road, in the city of Wildomar, Riverside County, California. Submitted herewith the report of our findings.

1.0 EXECUTIVE SUMMARY

- 1.1 **General:** The Reference No. 1 report was completed by **EnGEN Corporation (EnGEN)** in April of 2006 and all relevant subsurface exploration and laboratory testing was conducted at that time in order to provide recommendations for site grading and minimum foundation design. The intent of this report is to update relevant elements of the Reference No. 1 report in order to meet the current CBC building codes after assessing the existing site condition from a reconnaissance that was conducted on May 5, 2013 and a review of the Reference No. 1 report.
- 1.2 **Findings & Recommendations:** Based on the site reconnaissance conducted by this firm on May 3, 2015 we have found that the study property remains substantially unchanged

from the condition represented in the referenced No. 1 report (see Photographic Survey, Appendix A). Therefore, we find that the recommendations provided in the Reference No. 1 Report may be relied upon for the development of the subject property from a geotechnical standpoint provided the updates presented in this report have been incorporated into the final design.

2.0 BACKGROUND:

2.1 A Geotechnical and geologic engineering study was conducted on the subject site, the findings and recommendations of which were provided in the Reference No. 1 report dated April 6, 2007. **EnGEN** was engaged to update the Referenced No. 1 report. In order to accomplish this task, we have conducted a site reconnaissance and review of the Referenced No. 1 report. Submitted herewith are our findings and recommendations.

2.2 **SITE RECONNAISSANCE:** A site reconnaissance was conducted by a qualified representative of this firm on May 3, 2013. The reconnaissance was limited to a surface site walk and photo survey of the property (see Appendix A). At the time of the site reconnaissance the property was completely enclosed by an approximate 6-foot high chain link fence and the ground surface was covered with a light to dense growth of native grasses and weeds. There were no man-made structures present. However open trenches were observed in the southwesterly area of the study site and are likely those excavated for the Reference No. 2 Report. Based on the site reconnaissance conducted, the subject property remains substantially unchanged from that represented in the Reference No. 1 Report.

2.3 **Report Review:** A review of the Referenced No. 1 Report has been completed and found that it provides the necessary information for development of the subject property from a geotechnical and geologic standpoint that is in keeping with the current standard of professional care normally exercised in southern California, Riverside County and the city of Wildomar. The findings and recommendations of the Reference No. 1 report can be relied upon with the exception that § 8.3.8 "Seismic Design Perimeters" should be updated to conform with the 2010 California Building Code and is provided under § 4.0 of this update report.

3.0 EARTHWORK RECOMMENDATIONS

3.1 **GENERAL:** There are no changes to the site's physical condition that would affect the site earthwork recommendations provided in the Reference No. 1 Report.

4.0 SEISMIC DESIGN CRITERIAL

4.1 **SEISMIC DESIGN CRITERIA:** The Project Structural Engineer should determine the actual footing widths and depths necessary to resist design vertical, horizontal and uplift forces using the following seismic criteria:

DESCRIPTION	DESIGN PARAMETERS
SITE LATITUDE:	33.5991° North
SITE LONGITUDE:	-117.2395° West
SITE CLASS:	D
SPECTRAL RESPONSE (SHORT):	(0.2 sec) – S _s : 2.8
SPECTRAL RESPONSE (ONE SECOND):	(1.0 sec) – S ₁ : 0.9
SHORT PERIOD SITE COEFFICIENT:	F _a : 1.0
1-SECOND PERIOD SITE COEFFICIENT:	F _v = 1.5
ADJUSTED SPECTRAL RESPONSE:	(Short Period) - 0.2 sec – S _{ms} : 2.3
ADJUSTED SPECTRAL RESPONSE:	(One Sec) – S _{m1} : 1.4
DESIGN SPECTRAL RESPONSE:	(Short Period) 0.2 sec – S _{ds} : 1.5
DESIGN SPECTRAL RESPONSE:	(One Sec) 1.0 sec – S _{d1} : 0.9

A review of the tentative grading plan should be made by this office when one becomes available.

Thank you for the opportunity to provide our services. Often, because of design and construction details which occur on a project, questions arise concerning the geotechnical conditions on the site. If we can be of further service or you should have questions regarding this report, please do not hesitate to contact this office at your convenience. Because of our involvement in the project to date, we would be pleased to discuss engineering testing and observation services that may be applicable on the project.

Respectfully submitted,
EnGEN Corporation



H. Wayne Baimbridge, Principal
 Operations Manager



Osbjorn Bratene, Principal
 GE 162

HWB:OB:al

Distribution: (1) Portable Digital Document (pdf) Addressee
 File: engen/projects/3500 series/3551GS/3551-gfs update_letter.doc



ADDITIONAL TECHNICAL REFERENCES REVIEWED FOR THIS UPDATE

1. **California Building Code (CBC)**, 2010
2. **Riverside County Land Information System (RCLIS)**, 2013, Website reviewed at <http://www3.tlma.co.riverside.ca.us/pa/rclis> , May of 2013.
3. **Southern California Earthquake Data Center (SCEDC)**, 2013, Southern California Earthquake Data Center Website, <http://www.scecdc.scec.org>.
4. **US Geological Survey (USGS)**, 2008, Update of the United States National Seismic Hazard Maps, Open File Report OF 2008-1128.
5. **US Geological Survey (USGS)**, 2000, Geologic Map of the Pechanga 7.5' Quadrangle, San Diego and Riverside County, California, scale 1'=2000'
6. **U.S. Seismic Design Maps Web Application, United States Geologic Survey**, Website (<http://geohazards.usgs.gov/designmaps/us/application.php>), Earthquake Hazards Program, Seismic Design Maps for Engineers, 2013.

EXHIBIT A

Photographic Survey
(May 2013)



Panoramic photo of subject site taken from the approximate southeast property corner, looking in a general northerly direction across site with George Avenue in the approximately center left of frame.



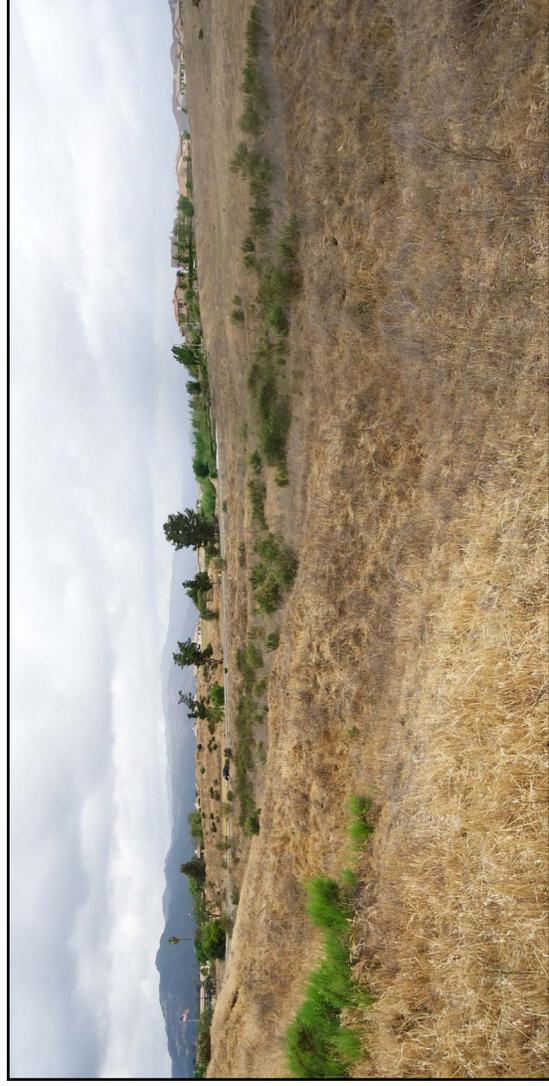
Panoramic photo of subject site taken from the approximate northeast property corner, looking south across site open trenches in the hillsides middle of frame.



Panoramic photo of subject site taken from the approximate northeast corner of the property, looking in a westerly direction with George Avenue in middle center of frame.



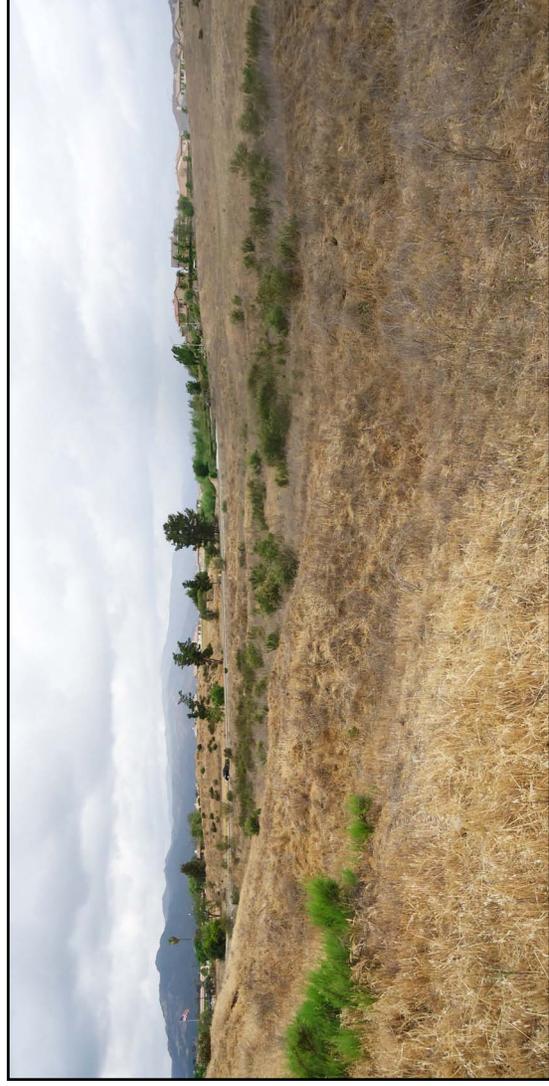
Panoramic photo of subject site taken from the approximate southeast property corner, looking in a northerly direction with George Avenue in upper left of frame.



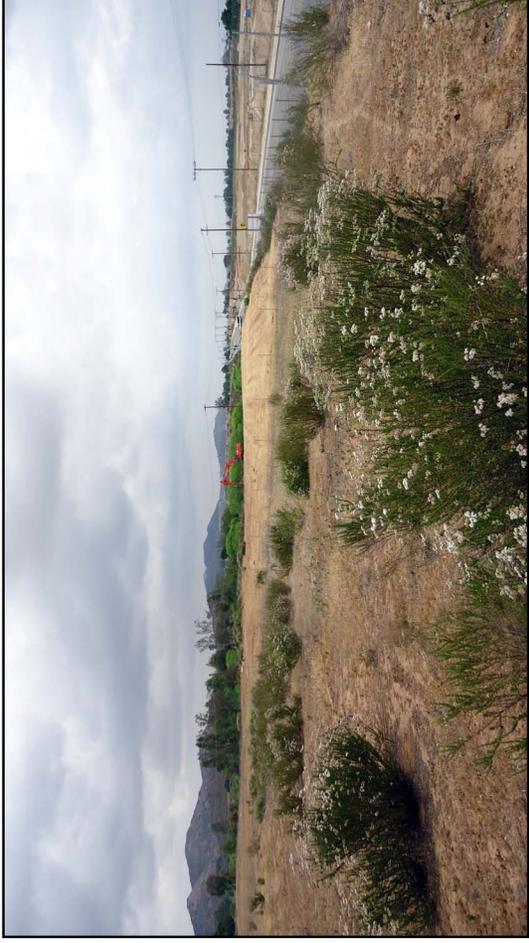
Panoramic photo of subject site taken from the approximate southeast area of the property, looking in an approximately westerly direction with George Avenue in upper middle frame.



Panoramic photo of subject site taken from the approximate southeast property corner, looking in a northerly direction with George Avenue in upper left of frame.



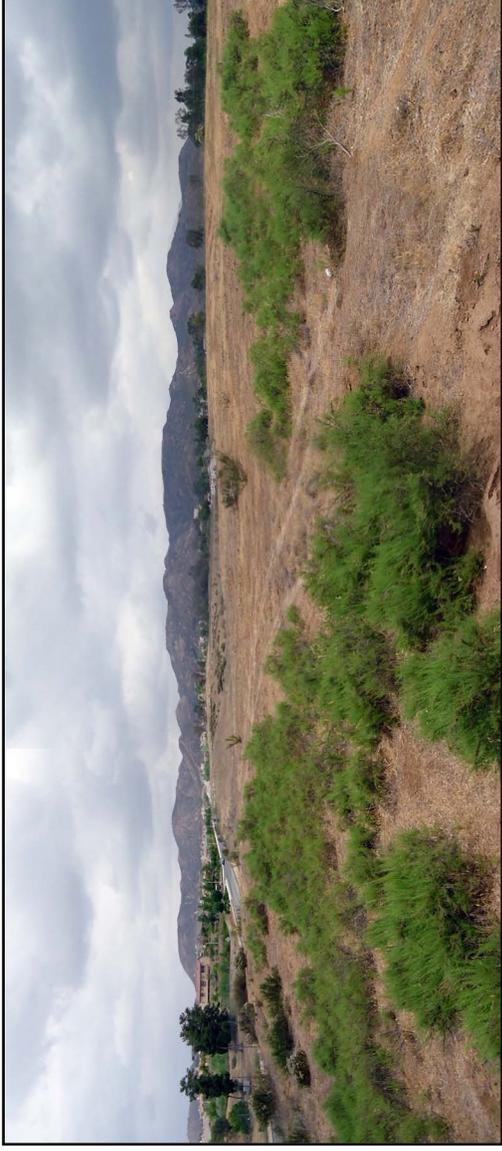
Panoramic photo of subject site taken from the approximate southeast area of the property, looking in an approximately northwesterly direction with George Avenue in upper middle frame.



Panoramic photo of subject site taken from the approximate southwest corner, looking in an easterly with Clinton Keith Road in right of frame.



Panoramic photo of subject site taken from the approximate southeast corner of the property, looking in an approximately northwesterly direction.



Panoramic photograph of subject site taken from the approximate southwest corner, looking in an approximately southwesterly direction.



Panoramic photograph of subject site taken from the approximate southwest center of the property line, looking in an approximately northerly direction.