



Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

April 3, 2020

Project No. 12735.001

MIG Inc.
1500 Iowa Avenue, Suite 110
Riverside, California 92507

Attention: Mr. Kent Norton

**Subject: Geologic Fault Hazard Peer Review
Proposed S2A Showroom and Factory
(APNs 439-030-009, 439-030-010 and 439-400-023)
City of Hemet, California**

References: Fault Rupture Hazard Investigation, Proposed S2A Showroom and Factory Compound, APNs 439-030-009, 439-030-010 and 439-400-023, West of State Street and Crow's Nest Place, City of Hemet, Riverside County, California, prepared by Fred Aflakian, PG, CEG, dated September 26, 2019, Project No. 19-805 Fault

In accordance with your authorization of Task Item 4 from our proposal dated November 8, 2019, Leighton Consulting, Inc. (Leighton) has prepared this third-party peer review of the above referenced Fault Rupture Hazard Investigation performed for the subject site. The above referenced report was received electronically on March 13, 2020.

Our review is based on the *Technical Guidelines for the Review of Geotechnical and Geologic Reports* (Riverside County, 2000) and *Special Publication 42, Earthquake Fault Zones A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards In California* (California Geological Survey, 2018), and Leighton's professional experience and knowledge of the geology in the general project area and region.

Leighton has performed the following tasks to evaluate this report:

- Review of pertinent and readily available published literature, web based resources and in-house documents in regards to fault hazards and geology of the subject area.
- Performed a brief site visit to view surface conditions, current land cover and any landforms or geologic features related to earthquake faulting.
- Reviewed the provided report documents including all attached plans, plates and figures.
- Preparation of this third-party review letter with our comments and recommendations.

INTRODUCTION

The project site occupies vacant land immediately west of the intersection of State Street and Crow's Nest Place in the City of Hemet, Riverside County California. Parcels comprising the property are identified as Riverside County APNs 439-030-009, 439-030-010 and 439-400-023. The land surface across the site is relatively flat with a pronounced northwest trending 15 to 20-foot-high escarpment rising upward along the western part of the site.

The site is located within a portion of a state designated Alquist-Priolo Fault Hazard Zone, a Riverside County fault hazard zone is coincident with the limits of the State A-P Zone at this location. The central portion of the property coincides with a mapped segment of the Casa Loma branch of the San Jacinto fault zone. The San Jacinto fault zone is one of several major active faults within the region and is considered capable of ground rupture and surface displacements during strong earthquakes.

As indicated above, the focus of the investigation centers on the potential Fault Rupture Hazard for the Proposed S2A Showroom and Factory Compound. The consultant performed the following tasks:

- Review of available geologic reports for the general site area and stereo pair aerial photos for the site and surrounding areas.
- Logging of two fault trenches (FT-1 and FT-2), which encompassed approximately 850 linear feet of excavation to depths of up to approximately 12 feet.
- Review of available geologic and geotechnical data and conditions exposed during site fault trench excavation.
- Preparation of an illustrated report presenting their observations, findings, and recommendations.

SUMMARY OF FINDINGS

The consultant performed a review of historic aerial photos and identified the prominent geomorphic lineament formed by the scarp where it crosses the site as well as several weaker lineaments to its southwest. Field review and exploratory trenching by the consultant identified active faulting in the area of the scarp, but not in the vicinity of the southwest lineaments.

The exploratory trenches (FT-1 and FT-2) were 560 feet and 290 feet respectively and approximately 10 to 12 feet in depth. Both trenches traversed the southwestern portion of the A-P Fault Zone, extended across the scarp where the fault zone was exposed and continued 50 to 150 feet beyond the scarp to the northeast. However, the extent of the

trenches as presented in the report do not appear to cover the entire A-P Fault Hazard Zone.

The site is primarily underlain by deposits of late Holocene (recent) alluvium and colluvium. The exploratory trench logs indicate the near surface deposits consist of topsoil, undocumented man-made artificial fill soils, alluvial and colluvial sediments. The presence of ground water was not indicated in review of the documents that we examined.

The fault structures exposed in the trenches coincide with the slope of the scarp landform and break to the surface or near surface. These faults exhibit apparent displacement (downward to the east) of differing deposits across the individual fault planes and collectively across the zone. The apparent age of the faulted deposits and elevation of fault rupture (to the surface) indicate a Holocene-age and active fault structures in this area.

The consultant delineates a recommended fault setback zone of 50 feet along either side of their projected surface trace of the fault zone. The fault trace as mapped on the site plans shows three segments of different orientation traversing the site. The northern most segment between the northern project boundary and trench FT-1 appears to strike approximately north 38 degrees west. Continuing to the southeast, the mapped fault trace between trench FT-1 and the internal property corner (~380 feet southeast of trench FT-2) is oriented approximately 50 to 53 degrees west of north. Continuing to the south the trace presented follows the southeast trending (N32°W) property boundary line. Consultant indicates that the mapped trace presented on the plans is based both on the location and orientation of the fault planes exposed in the trenches and the location of the scarp landform.

CONCLUSIONS AND RECOMMENDATIONS

Based on our review, we recommend the following additional information be provided or performed by the consultant to support their findings:

- Consult with Riverside County Geologist and or City to review any available reports relative to faulting on the adjacent or nearby developed properties. A discussion of those findings should be provided.
- Include limits of Alquist-Priolo zone on Site Plan (Plate 1).
- For proposed buildings “D” and “E” that occupy un-trenched portions of the A-P Zone, provide clear evidence of the absence of faulting at those building locations.
- Discuss the potential for possible Holocene-aged faulting buried by young deposits or obscured by historic land use in the lower lying eastern un-trenched portions of A-P Zone.

- Secondary seismic hazards including; ground subsidence and liquefaction, ground lurching, lateral spreading, and seismically induced flooding should also be addressed and mitigation recommendations provided as necessary.

We appreciate the opportunity to be of service. If you have any questions or concerns, please contact us at your convenience. The undersigned can be reached at 951.296.0530.

Respectfully submitted,

LEIGHTON CONSULTING, INC.



Mitchel S. Bornyasz, CEG 2416
Project Geologist



Distribution: (1) Addressee