



# GEO ENVIRON

GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING CONSULTANTS, INC.

4071 E. La Palma Ave., Ste. B, Anaheim, Ca 92807 • (714) 632-3190 • Fax (714) 632-3191

Job No. 20-1041P

March 29, 2021

**Mr. Joseph Karaki**  
**Karaki Western State Eng. & Construction, Inc.**  
**4887 E. La Palma Street, Ste #707**  
**Anaheim, Ca**

**Subject:** Addendum Geotechnical Report per County of Riverside  
**Project Address:** N.W.C Central Ave (74 Hwy) & Allan St, Lake Elsinore California

**Gentlemen:**

With regard to the soils report correction letter, the following responses are presented for your review. A copy of the review sheet is attached for your convenience.

**Item No. 1**

**Response:**

The property is not located in a Riverside County or Alquist-Priolo (AP) earthquake fault zone. Stereo pair aerial photographs, as referenced below, were reviewed to evaluate for any lineaments or fault-related geomorphic features trending towards the property. No indications of natural lineaments or other fault-related features indicative of Holocene or older faulting were noted. No indications of faulting were noted during our reconnaissance at and in the vicinity of the site. Based on our evaluation, we conclude that there are no active or potentially active faults trending towards or through the property, and additional fault investigations are not necessary. The potential for surface fault rupture to occur at the site is considered low. As is the case with most of southern California, the property is expected to experience strong ground shaking during the lifetime of the project.

Photos

RC 8-16\_1962-10, 11,12 (natural hillside areas directly southeast of the site)

Source

The Joseph Andrew Rowe Water Resources Archives, Historic Aerial Photo Collection, Water Resources Institute, CSUSB, Moreno Valley Photo Collection, Riverside County Flood Control

**Item No. 2**

**Response:**

The property is located in the Peninsular Ranges geomorphic province of California. The Peninsular Ranges province extends from the Los Angeles Basin southeast to Baja California and from the Pacific Ocean eastward to the Coachella Valley and Colorado Desert. The province consists of numerous northwest to southeast-trending mountain ranges and valleys that are geologically controlled by several major active faults. The site is located at the southwestern edge of the Elsinore trough near the Elsinore fault zone, the boundary of two structural blocks, the structurally down-dropped Perris block to the northeast and the mountainous Santa Ana block to the southwest. Specifically, the site is situated on alluvial sediments at the edge of the flood plain of Warm Springs Valley. Site exploration encountered Holocene and possibly older alluvium to the to the total depth explored. Mesozoic phyllite is mapped in the very north/northeastern corner of the site and does not impact the site or proposed improvements.

**Item No. 3**

**Response:**

According to the Riverside County Hazards report (Earth Consultants International, 2001), subsidence in Riverside County has been linked to significant fluctuations in groundwater levels within deep alluvial basins, and generally, the subsidence occurs throughout the valley region. Three areas have been identified with documented subsidence; the Elsinore Trough, the San Jacinto Valley, and the southern Coachella Valley. The property is not situated within an area of Riverside County with documented subsidence. The potential for subsidence to impact the site is considered low.

**Item No. 4**

**Response:**

A Regional Geologic Map is attached to this response report.

**Item No. 5**

**Response:**

Using the recommended bearing value and the maximum assumed wall and column loads, the total settlement is estimated to be 0.5 inches. The differential settlement is estimated to be on the order of 0.25 inches, between similarly loading footing of the same size, over a minimum horizontal distance of 30 feet. Based on the liquefaction analysis attached herein, it has been found that there will be no seismic settlement to occur at the subject property.

**Item No. 6**

**Response:**

Excavation should be found within the natural bottom. Gravel encountered above 6 inches in diameter, shall be removed from the natural bottom. The bottom is to be scarified 6 inches and compacted to a minimum of 90% relative compaction.

**Item No. 7**

**Response:**

The elevation for the borings is as follows:

B-1: 1356 ft above MSL

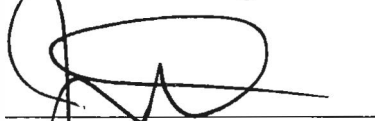
B-2 1354 ft above MSL

B-3: 1352 ft above MSL

We appreciate this opportunity to be of service. If you have any question concerning our findings, please call at your convenience.

Respectfully submitted,

**Geo Environ Eng. Consultants, Inc.**



Jabel Masud, MSCE  
Principal  
JM/ER/gm



Esmail Rastegari, P.E.  
Principal



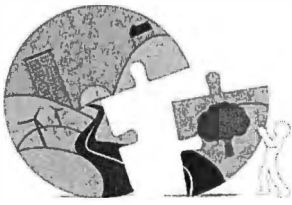
Andy Stone  
Engineering Geologist, #1648

Attachments:

- 1. Regional Geologic Map

## **REFERENCES**

1. *Preliminary Geologic Map of the Elsinore 7.5' Quadrangle, Riverside County, California*, Morton, D.M. and Weber, F.H., 2003, published the United States Geological Survey in Cooperation with the California Geological Survey, OFR 03-281
2. *State of California, Special Studies Zones, Elsinore Quadrangle*, published by the California Geological Survey, January 1, 1980
3. WS Eng., Inc , 6/9/20, "Site Plan, Proposed Commercial Retail, N.W.C Central Ave (74 Hwy) & Allan St, Lake Elsinore California
4. Liquefaction Analysis for N.W.C Central Ave (74 Hwy) & Allan St, Lake Elsinore



# RIVERSIDE COUNTY PLANNING DEPARTMENT

*Charissa Leach, P.E.*  
*Assistant TLMA Director*

March 9, 2021

Geotechnical and Environmental Engineering Consultants, Inc.  
Attn: Esmail Rastegari

**RE: Review Comments**  
**County Geologic Report No. 210009**  
**“Preliminary Geotechnical Investigation Report for Foundation Design, Proposed Commercial Retail, NWC Central Ave (74 Hwy) & Allan St, Lake Elsinore, California,” dated July 20, 2020.**

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County Geologic Report GEO No. 210009, submitted for the project CUP200006, was prepared by Geotechnical and Environmental Engineering Consultants, Inc. and is titled; “Preliminary Geotechnical Investigation Report for Foundation Design, Proposed Commercial Retail, NWC Central Ave (74 Hwy) & Allan St, Lake Elsinore, California,” dated July 20, 2020.

Prior to scheduling this project for public hearing, the following clarification and/or additional information shall be submitted to the County Geologist for review and approval:

1. The consultant should provide an evaluation and opinion of the potential for surface rupture at the site using the positive lines of evidence (i.e., aerial photo analysis, site geologic mapping, exploratory trenching, etc.).
2. Please provide a discussion on the regional geologic setting including geomorphic province description, geomorphology of the project site, and geology of the vicinity.
3. The site is within an area mapped as being susceptible to subsidence due to groundwater withdrawal. The consultant should provide an evaluation of the potential for subsidence to occur at the site.
4. Please provide a geologic map with north arrow, a minimum scale of (1in:2,000 ft.), legend, and reference indication.
5. Provide an estimate of the total and differential seismic settlement potential for the site.
6. Provide the criteria for establishing suitability of soil and/or rock to be left-in-place (removal bottoms), which should be demonstrated using appropriate qualitative and/or quantitative assessments. Qualitative assessments could include criteria such as removing unsuitable soils to expose bedrock, while quantitative assessments could include criteria based on such physical properties as unit weight, degree of saturation, in-situ relative compaction, or hydrocollapse analysis results. These assessments should be tied to site-specific data gathered from the subsurface investigation program and will ultimately form the basis for determining removal depths during construction. Simply using terms such as “competent”, “dense”, “hard”, “unyielding”, or “undisturbed” without supporting quantitative and/or qualitative data is not sufficient.
7. Provide a Top of Hole elevation for each exploratory boring log.

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P.O. Box 1409, Riverside, California 92502-1409  
(951) 955-6892 · Fax (951) 955-1811

Desert Office · 77588 El Duna Court  
Palm Desert, California 92211  
(760) 863-8277 · Fax (760) 863-7555

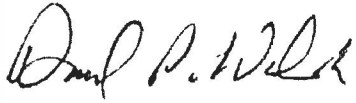
It should be noted that no engineering review of this report or formal review of provided building code information are a part of this review. Formal review of engineering design and code data will be made by the County of Riverside, as appropriate, at the time of grading and/or building permit submittal to the County.

Please email me at [dwalsh@rivco.org](mailto:dwalsh@rivco.org) if you have any questions.

Sincerely,

RIVERSIDE COUNTY PLANNING DEPARTMENT

John Earle Hildebrand III, Planning Director

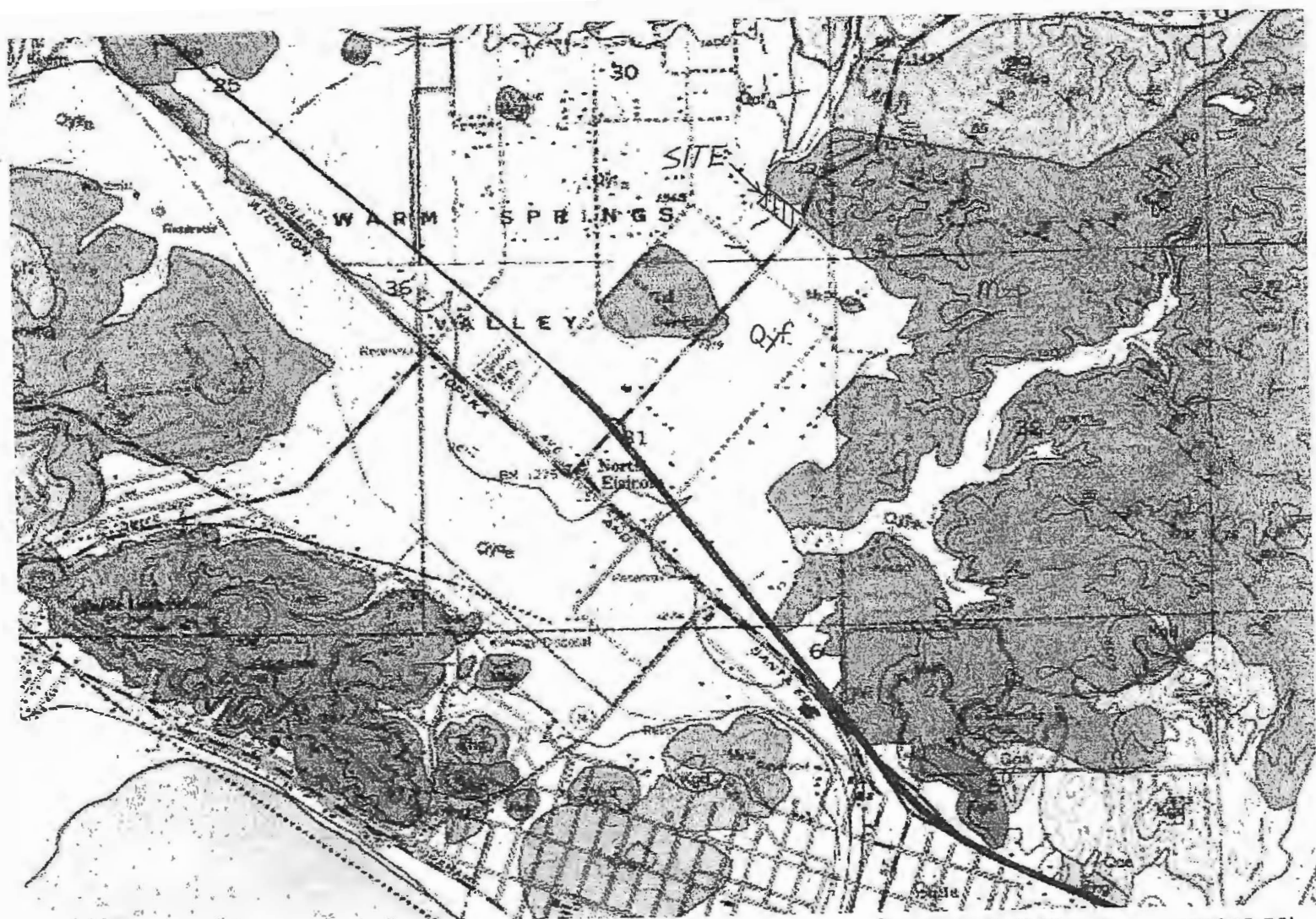


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Daniel P. Walsh, CEG No. 2413  
County Geologist, TLMA-Planning

cc: Planner: Tim Wheeler ([twheeler@rivco.org](mailto:twheeler@rivco.org))  
Applicant: Joseph Karaki ([jkaraki@karakiws.com](mailto:jkaraki@karakiws.com))

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Qyf ALLUVIUM  
MzP PHYLLITE

PORTION OF USGS OPEN FILE RPT. 03-281