FAULT HAZARD EVALUATION
PROPOSED COMMERCIAL DEVELOPMENT
PARCELS APN 283-280-020, 283-180-001
TEMESCAL CANYON ROAD
COUNTY OF RIVERSIDE, CALIFORNIA
RIVERSIDE COUNTY GEOLOGIC REPORT # 18195

Prepared for:

MCP INDUSTRIES, INC.
23835 TEMESCAL CANYON ROAD
CORONA, CA 92883

Prepared by:

CTE, SOUTH, INC.
14538 MERIDIAN PARKWAY, SUITE A
RIVERSIDE, CA 92518

CTE JOB NO.: 40-3640G

FEBRUARY 25, 2019

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION AND SCOPE OF SERVICES

1.1 Introduction

Construction Testing and Engineering, South, Inc. (CTE), has completed the requested fault hazard evaluation for the proposed Commercial Warehouse Development, located on Parcels APN 283-280-020, & 283-180-001, on Temescal Canyon Road, County of Riverside, California (Figure 1). As shown on Figures 2 and 3, the western parcels of the site fall within the boundaries of the State of California Alquist-Priolo Earthquake Fault Zone (formerly referred to as Special Study Zones) for the Glen Ivy North Fault within the Lake Matthews 7.5 minute quadrangle, and within the boundaries of the County of Riverside Fault Zone. The subject site is located within the geological structural domain characterized by greater Elsinore Fault Zone along the segment referred to as the Glen Ivy North Fault, which is south of the Chino and Whittier Fault segments, and extends to approximately eight kilometers south of Lake Elsinore. (Smith, 1978)

Developments within these State and County hazard zones are required to be evaluated for potential ground rupture hazards in accordance with State of California Alquist-Priolo Earthquake Fault Zone (AP-Zone) Act and County of Riverside fault evaluation criteria. Therefore, MCP Industries, Inc. (client) requested that CTE complete a site-specific fault hazard investigation as a due diligence study that could be used for future site development.

It is our understanding, based on conservations with the client and review of schematic drawings, that the proposed project will consist of a commercial development. The buildings are anticipated to be multiple story structures. The structures are proposed to be founded on shallow footings with slab-on-grade base floors. Construction will also include exterior flatwork, pavements, underground utilities, runoff mitigation measures, and retaining walls.

As shown on Figures 2 and 3, the AP–Zone and Riverside County Fault Zone boundary encompasses APN 283-280-020 and transects the southwest portion of APN 283-180-001. The fault evaluation focused on the area between Lawson Road and the northeastern boundary of the AP and County of Riverside Fault Zones. This work has been performed in general accordance with the terms of CTE proposal R18056REV, dated July 12, 2018.

1.2 Scope of Services

The scope of services provided included:

- Review of readily available geologic and geotechnical reports conducted on site and within the site vicinity.
- Review of stereoscopic aerial photographs.
- Review of Published Regional Reports, including Fault Evaluation Reports from the California Division of Mines and Geology (now named California Geologic Survey).
- Coordination of Underground Service Alert utility markout.
- Excavation Exploratory Fault Trenches with a track mounted excavator.
- Conducted site meetings with County of Riverside Geologist.
- Incorporation of recent geotechnical and fault investigations with previous investigations.
- Summarizing findings in map format.
- Preparation of this Fault Hazard Evaluation.

2.0 SITE DESCRIPTION

The overall project site is located in the community of Temescal Valley, California, an unincorporated area of Riverside County and is comprised of five parcels with APN numbers 283-180-001, 283-180-002, 283-180-020, 283-180-021, and 283-280-020. The fault hazard evaluation was conducted on the two westerly parcels affected by the AP and County of Riverside Fault Zones APN 283-280-020, & 283-180-001 (Figure 3). The area under evaluation lies northeast of Lawson Road and south of Pats Point Drive. Site elevations range from approximately 1100 feet on the west to 1113 feet above mean sea level (msl). The parcels are presently vacant but were previously developed as an egg producing operation that has been demolished. Stockpiled soil is present in the west and north portions of the area being evaluated. The ground surface is sparsely vegetated with brush and grass, and slopes from the east boundary of the fault zone west-northwest toward the natural drainage area.

3.0 METHODS OF INVESTIGATION

3.1 Previous Studies

Regional geologic studies have been completed in the site area by the California Geological Survey (CGS), (formerly California Division of Mines and Geology-CDMG) and the United States Geological Survey (USGS). These studies included regional geologic maps Rodgers, 1965; Geologic Map of the Lake Matthews 7.5' Quadrangle, mapped by Weber 1976, updated and published by Morton 1993; and the Alquist- Priolo Special Studies Zone Map, 1980. In addition,

CDMG Fault Evaluation Reports (FER), FER-72 and FER-72-Supplement No. 1, by Smith; 1978 and 1979 respectively, have provided information for this site specific fault hazard evaluation.

Several previous private consultant geotechnical and fault investigations have also been completed on site and in the general site vicinity. These investigations have been combined and evaluated for the purpose of providing coverage for potential faulting and surface rupture hazards to the currently proposed development. In particular, the investigations completed by Pioneer Consultants, County Geologic Report #45 dated, February 13 1976, and Lewis S. Lohr and Associates (LLA), site specific Update of County Geologic Report #45 dated March 24, 1998 have provided direct site specific information that has been incorporated into this report. A list of these reports and other references reviewed as part of this study are included in Appendix A.

3.2 Review of Aerial Photos and Seismologic Expression

Prior to the excavation of the exploratory fault trenches, stereoscopic aerial photographs were obtained and evaluated for variations in site topography as a result of natural or man-made occurrences. Aerial photographs reviewed included the following years: 1949, 1967 1963, 1983, 1993, 1995, 1997, and 1999. Aerial photographs are referenced in Appendix A.

3.3 Field Investigation

The field investigations were conducted from October 1 to October 31, 2018. This work included excavation of exploratory trenching, preparation and logging of exposed trench walls, site meetings

with Riverside County geologists and backfilling of the exploratory trenching. Initial excavation was conducted on October 1st and 2nd and consisted of excavating approximately 470 feet of exploratory trench. Fault exploratory trenches were oriented generally northeast–southwest (N48E) in a near perpendicular manner to the prevailing trends of documented active faulting within the region, and positioned to provide coverage to clear potential building site locations from possible faulting traversing the project area

The final trench locations were influenced by stockpiled materials placed in the low drainage area in the northwest portion of the site, adjacent street locations, and preliminary renderings of proposed building locations. Three trenches were excavated and designated T-1, T-2 and T-3. Based on our initial research, boring logs from our geotechnical investigation and site elevation, T-1 (150') was excavated to a depth of approximately 10 feet below existing grades to encounter material of sufficient age for evaluating the timing of fault activity or lack thereof. The remaining two exploratory fault trenches, T-2 and T-3, were excavated to approximate depths of six (6) feet below existing grades. Based on the site meeting with the Riverside County Geologist on October 10, 2018, it was determined that satisfactory material had been exposed in exploratory trench T-1. Although, while materials of sufficient age were also encountered in exploratory trenches T-2 and T-3, the County Geologist requested that a greater thickness of formational deposits be exposed to confirm the absence or presence of faulting.

Subsequent deepening of the exploratory trenches T-2 and T-3 occurred on Oct 15th and 16th

to depths of approximately 10 feet below existing grades. A final site meeting with County representatives occurred on October 17, 2018 confirming that sufficient exposures had been obtained to meet the County criteria. The trenches were cleaned, carefully logged at a scale of one inch equal to five feet, and photographed. The soils were classified according to ASTM D-2488 and Munsell Soil Color Charts. Figure 4 shows the approximate location of the recent exploratory trenches completed by CTE, and the location of the trench excavated by LLA in 1998. The exploratory trench logs (T-1, T-2, and T-3) are presented on Plates 1-3A and included within Appendix B.

Trench logging and photographing continued periodically until the exploratory excavations were backfilled on October 31, 2018. The exploratory trenches were not compacted during backfill. A water truck was present for dust control during both excavation and backfilling operations. It is anticipated that the trench backfill will be overexcavated and removed during mass grading as recommended in our referenced geotechnical investigation.

4.0 GEOLOGIC AND TECTONIC SETTING

4.1 Physiographic Setting

The subject site lies within the northwestern portion of the Peninsular Ranges physiographic province. The Peninsular Ranges physiographic province is characterized by its northwest trending mountain ranges, intervening valleys, and predominately northwest trending regional faults. The central-mountain area ranges in elevation from approximately 500 to 5000 feet above mean sea level

and is characterized by Cretaceous and Jurassic crystalline ridges and mountains with intermontane basins that are generally infilled with deep accumulations of alluvium and residual soils.

The major active faults in the Pennisular Ranges are the Elsinore, San Jacinto, and San Andreas fault zone. The Elsinore fault zone approximately parallels the San Jacinto fault zone and is subparalle1 to the San Andreas Fault Zone (Webb and Norris 1990).

The Elsinore fault zone, as described by the Southern California Earthquake Center (SCEC), consists of multiple strands and interconnected faults that trend northwest where it diverges into the Whittier and Chino faults north of the subject site. Its southerly extension, located near the US Mexico border, is referred to as the Laguna Salada fault. The Elsinore fault zone is approximately180 km long not including the Whittier, Chino, and Laguna Salada fault segments.

The site is situated within the northwest trending Temescal Valley, and lies in the northwestern portion of the Elsinore-Temecula trough. The Elsinore–Temecula trough, as described by Webb and Norris, 1990, is the linear low-lying block that lies northeast of the Santa Ana Mountains and southwest of the Perris Plain and extends from Corona on the northwest approximately 30 miles to the southeast and has a maximum width of approximately 3 miles.

Specifically, north of Lake Elsinore and within the site area, the Elsinore Fault Zone is comprised of the Glen Ivy North and Glen Ivy South fault strands. Further north the Elsinore fault bifurcates into the Chino and Whittier faults. The Glen Ivy North fault, as shown on the AP-Zone map for the Lake

Mathews 7.5 Minute Quadrangle (1980), is approximately located in on the southwest edge of the parcel 283-280-020, along Lawson Road. The northeasterly boundary of the AP- Zone is approximately 540 feet northeast of the mapped fault location dissecting parcel 283-180-001 diagonally in the northwest direction (Figure 3). A Fault Hazard evaluation conducted by LLA, 1998, on parcel number 283-280-020, supported a relocation of the Glen Ivy North fault and subsequent adjustment of the fault setback zone, which was approved by the Riverside County Planning Department 1998, but is not reflected in the AP- Zone maps because the Lake Mathews AP- Zone Map has not been revised subsequent to the 1998 report.

4.2 Earthquake History

The Elsinore Fault Zone is a northwest trending system of predominantly right-lateral strike-slip faults that is part of the larger San Andreas Fault System. This active system of faults, which delineates the broad Pacific-North American plate margin, has the potential to produce both local and regional seismic sources. Regionally, the Elsinore Fault zone has a slip rate of approximately 4.0 mm/yr (SCEC, 2016).

Although the Elsinore fault zone is one of the longest in Southern California, it is in historical times, has been one of the quietest with respect to earthquakes having magnitudes 5.2 or greater (SCEC, 2016). It is reported that the southern-most end of the Elsinore fault zone (Laguna Salada fault) ruptured in 1892 during an estimated magnitude 7 earthquake (SCEC, 2016). The Easter earthquake in Sierra El Mayor (2010), ruptured along fault segments associated with the Laguna Salada section

of the Elsinore fault zone, and had an estimated magnitude of 7.2 (SCSN 2010). In 1987(Whittier Narrows) and 2008 (Chino Hills) two earthquakes magnitudes 5.9 and 5.4 respectively, were recorded along the Whittier fault, a northern segment of the Elsinore fault zone. The main trace of the Elsinore fault zone has experienced only one historical event greater than estimated magnitude 5.2, which was the estimated 6.0 magnitude on May 15, 1910 earthquake, near Temescal Valley in the vicinity of the site. This earthquake produced no known surface rupture and has an estimated reoccurrence interval of 250 years (SCEC, 2016).

A search of the Southern California Earthquake Data Center (SCEDC) earthquake catalog was performed for earthquake events within a 10 miles radius of the site. The earthquake magnitude range of 3.0 to 9.0 was used. Excluding the 1910 earthquake, information was available from 1932 to present. Based on the information reviewed (1932-present) there were 37 earthquake events having magnitudes between 3.0 and 5.0. One event in 1938 exceeded 5.0 and plotted on the Willard fault zone northwest of Lake Elsinore.

5.0 SUMMARY OF GEOLOGIC CONDITIONS AND INVESTIGATION FINDINGS

5.1 General Geology

Based on the available geologic mapping the site is underlain by Old alluvial fan deposits (Qof) of late to middle Pleistocene Age (Morton et al, 2001). The deposits are described as reddish-brown, sandy and gravely, indurated, and slightly to moderately dissected (Figure 5)

During our previously completed geotechnical investigations dated November 6, 2018, the Old alluvial fan deposits (Qof) were found to consist of brown to red brown, interbedded layers of silty and clayey sand, with gravel in a loose to dense, and dry to moist condition. Layers of sand, fine to coarse gravel and cobbles were also encountered. Qof was observed to unconformably overlie the Silverado Formation (Tsi) at boring location B-1 at an approximate depth of 35 feet which is located in the vicinity of exploratory trench T-1. (Figure 4)

Additional observations of the Older alluvial fans deposits were made during the excavation and logging of the exploratory trenching. Descriptions of the geologic units follow.

5.1.1 Recent Deposits (Qr_1 and Qr_2)

Recently stockpiled material (Qr_1) is observed in T-1 from approximately. 35- 130 feet. The material observed is described as light to grey brown, silty and clayey sand, with gravel and some small to medium sized cobbles. It is in a very loose and dry condition. Some minor construction debris and organic material is observed within the stockpiles. The stockpiled materials overlie the disturbed surficial material (Qr_2).

Qr_2 are deposits that have been disturbed by previous agricultural, discing, tree removal and demolition activities. Qr_2 is observed at all trench locations and is described as light to grey brown, silty and clayey sand, with some small to large gravel and small cobbles. Disturbed materials are loose and appear blocky in sections.

5.1.2 Late to Middle Pleistocene Old Alluvial Fan Deposits (Qof_1, Qof_2, Qof_3)

Late Pleistocene Old alluvial fan deposits were observed in our exploratory trenches. We have grouped various layers of the deposit into units which were logged based on our field observations.

Qof_1 deposits are described as silty and clayey sand, with some fine to large gravel, varying from slightly to moderately-well indurated, and with brown 7.5YR 4/4 color. The gradational contact between Qof_1 and Qof_2 was logged, based on transitional changes in color and apparent density. Rootlets and porosity are observed within this unit.

Qof_2 deposits are described as clayey sand, with fine to large gravel and small cobbles, moderately-well indurated, and yellowish-brown 10.5YR 5/4. Gravel content in T-1 gradationally decreases between 45 to 50 feet and coarsens at approximately 126 feet. The clayey sand matrix exhibits some porosity. The bottom portion of the unit exhibit blocky texture and clay skins indicating paleosol development. The observed gravel and cobble consisted of fractured and angular shale and sandstone, some of which are highly to extremely weathered in place. The contact between Qof_2 and Qof_3 is more defined and was logged, based on textural changes of the underlying Qof_3 material and discordant relationship between the two deposits. We have interpreted the lower Qof_2 contact as erosional.

Qof_3 deposits are overall coarser than the overlying units and consist of interbedded layers of clayey sand with gravel, silty sand, with gravel, fine to large gravel, small to large cobbles and boulders. The deposits are moderately-well indurated, and reddish-brown 2.5YR 4/3-4/4. Layers are roughly normally graded relative to logged cobble layers and are parallel to subparallel and laterally discontinuous with individual layers traceable for distances on the order of 10 to 20 feet long. Lenticular accumulations of gravel were also observed. Gravel and cobbles consist of angular to subangular shale and granite. Some shale clasts are heavily weathered and some are observed to be fractured in-place with fractured faces iron stained. Multiple large gravel and cobble sized granite clasts are observed to be heavily weathered in place as indicated by having intact margins.

5.2 Groundwater Conditions

Groundwater was not encountered in any of the exploratory trenches to a maximum depth of approximately 12 feet below existing grade. Groundwater was not encountered in CTE's geotechnical investigation to a maximum depth of 51 ½ feet below the existing grade. Overall the soil was dry to moist. The soil is dry to damp in the upper layers and increased to a moist condition with depth.

5.3 Aerial Photo Reconnaissance and Surface Observations.

Surface observations made during the field investigation provided no evidence of ground fissuring on the site. The orientation of a low elevation drainage feature in the north and west portions of the

property was a feature of interest during the investigation and influenced the locations of the exploratory trenching.

During our review of aerial photographs geomorphic features were observed that confirmed previous works that were interpreted as photographic lineaments on the western edge of the property line and within the right of way of Lawson Road. The photographic lineaments observed by others supported an approximate location of the Glen Ivey North Fault Zone. Additionally, a geologic investigation performed by Pioneer Consultants, 1976, for tract number 7240 in Riverside County California, Riverside County No. GR-45 was reviewed. This report approximately located the fault trace on west side of the site and established a 75 foot fault setback zone. This fault set back has since been modified by an investigation prepared by Lewis S. Lohr and Associates (LLA), 1998 as discussed in section 6.1.

An examination of aerial photographs did not recognize any geomorphic features or photographic lineaments that would support through going faulting between the fault set back zone modified by LLA and the northeastern boundary of the required zone of investigation.

5.4 Evidence of Faulting/Fissuring

No evidence of faulting or fissuring was observed in the fault trenches, such as offset of deposited layers, clay gouge zones, or zones of intensely to closely spaced fractures. Locally discontinuous, lateral pinching of layers, lenticular shaped zones, and gradational contacts appear to be characteristic of a fluvial environment.

5.5 Stratigraphic Correlation

Geologic formations were identified comparing in-situ observations with established published documents describing typical stratigraphic sections for individual formations. Lithologic units were correlated between trench logs by comparing strata having the same or similar structures and lithologic characteristics, relationships between the strata, and relative positions of the strata within the profile.

The presence paleosol development, moderately-well indurated deposits, weathered in-place sandstone and granitic gravels and cobbles, and iron-stained layers indicate the underlying formation to be late to middle Pleistocene Old alluvial fan deposits (Qof).

6.0 CONCLUSIONS

6.1 Fault Setback Zone

During the course of our literature review it was determined that portions of the overall project site are impacted by a State of California Alquist-Priolo Earthquake Fault Zone (formerly referred to as Special Study Zones) for the Glen Ivy North fault within the Lake Matthews 7.5 Minute Quadrangle (1980). This map shows the location of the Glen Ivy North fault on the southwest edge of the subject property. The map symbol designating the fault location is a long dashed line which indicates that the fault is “approximately located”.

A geologic investigation performed by Pioneer Consultants, 1976, for tract number 7240 in Riverside County California, Riverside County No. GR-45 was reviewed. This report approximately located the fault trace on the western edge of this site and established a 75 foot fault setback zone east of the "approximately located" fault. This report was one of many documents referenced during the process of creating the AP-Zone map. We know this because of its inclusion in the California Division of Mines and Geology Fault Evaluation Report FER-72, 1978 which is a supporting document for the AP- Zone Map.

In 1998, a Fault Hazard Investigation was performed by Lewis S. Lohr and Associates (LLA) as part of a proposed residential development that is referred to as an update to GR-#45 and specific to APN 283-280-020. The evaluation included the excavation of a fault trench in an attempt to encounter the fault at its mapped position and evaluate the parcel for additional fault hazards east of the fault setback zone. The investigation concluded that the trace of the Glen Ivy North fault was further to the southwest than originally mapped which shifted the fault setback zone closer toward Lawson Road.

Riverside County gave final approval to the 1998 report, modifying the fault setback zone to be a distance of 25 feet northeasterly, of the right- of -way line for Lawson Road. The approval letter from the County, dated June 1, 1998, and the referenced Plate 1 from the LLA report is presented in Appendix C.

6.2 Faulting/Fissuring

No photographic lineaments were observed to pass through the project site between the modified fault setback zone and the northeastern limit of the zone of required investigation. No evidence of faulting or fissuring was observed in the fault trenches excavated by CTE or logged in the trench log in the report by LLA 1998.

6.3 Geologic Hazards

From our investigation it appears that geologic hazards at the site are primarily limited to those caused by violent shaking from earthquake generated ground motion waves from earthquakes along the GINFZ and distant sources. The potential for damage from displacement or fault movement beneath the proposed structures should be considered low. A discussion of fault hazards and seismic design criteria is presented in the referenced geotechnical investigation prepared by CTE for the site.

7.0 RECOMMENDATIONS

Construction of the proposed project is considered to be suitable with regard to risks associated with surface rupture from active faulting. Based on the results of the field investigations, it is our opinion that an area of active faulting does not underlie the site. It is our professional opinion that the investigation findings have reasonably supported our conclusion that active fault traces do not transect the area of the site proposed for development. As such, exposures during construction are

not expected to provide additional geologic information with respect to faulting, but should be mapped during grading to confirm our conclusions.

As previously indicated exploratory fault trenches were not compacted during backfill and are anticipated to be over-excavated during future mass grading of the site. Additionally an exploratory trench excavated by LLA in 1998 was not compacted during backfill and also should be over-excavated during mass grading. All construction excavations should be monitored from a geotechnical standpoint, as recommended in the project geotechnical recommendations.

8.0 LIMITATIONS

This investigation is limited in scope and addresses location of faults with respect to the site and building pads within the site. It addresses the geologic hazard of surface displacement only and does not address related seismically induced geologic hazards.

The findings of this report are limited by the scope of the investigation methods. The investigation addresses faults within the lateral and vertical extent of the fault trenches.

The field evaluation and geological analysis presented in this report have been conducted according to reasonable geological practice and the standard of care required to achieve the project objectives. No other warranty, is expressed or implied, is made regarding the conclusions, recommendation and

opinions expresses in this report. Variations may exist and conditions not observed or described in this report may be encountered during construction. Our conclusions and recommendations are based on an analysis of the observed conditions. If conditions different from those described in this report are encountered, our office should be notified and additional recommendations, if required, will be provided upon request.

We appreciate the opportunity to be of service on this project. If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Respectfully submitted,
CONSTRUCTION TESTING & ENGINEERING, SOUTH, INC.

Vincent J. Patula, CEG #2057
Senior Engineering Geologist

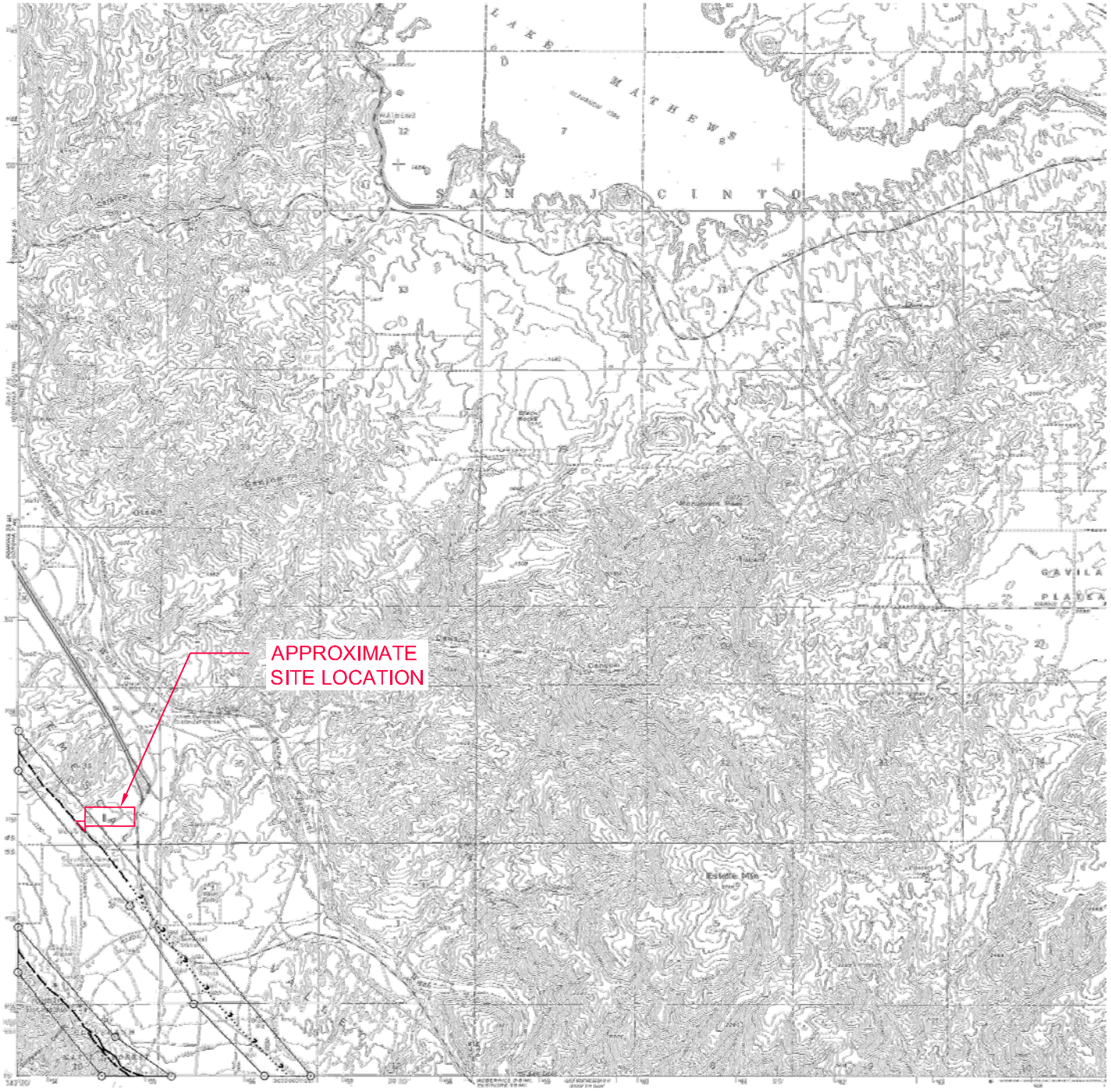
NO SCALE

CTE SOUTH Construction Testing & Engineering, South, Inc.
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

SITE LOCATION MAP

PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD, TEMESCAL VALLEY, CA

Job No.	Date	Figure
40-3640G	OCT 2018	1



\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Figure 2.dwg

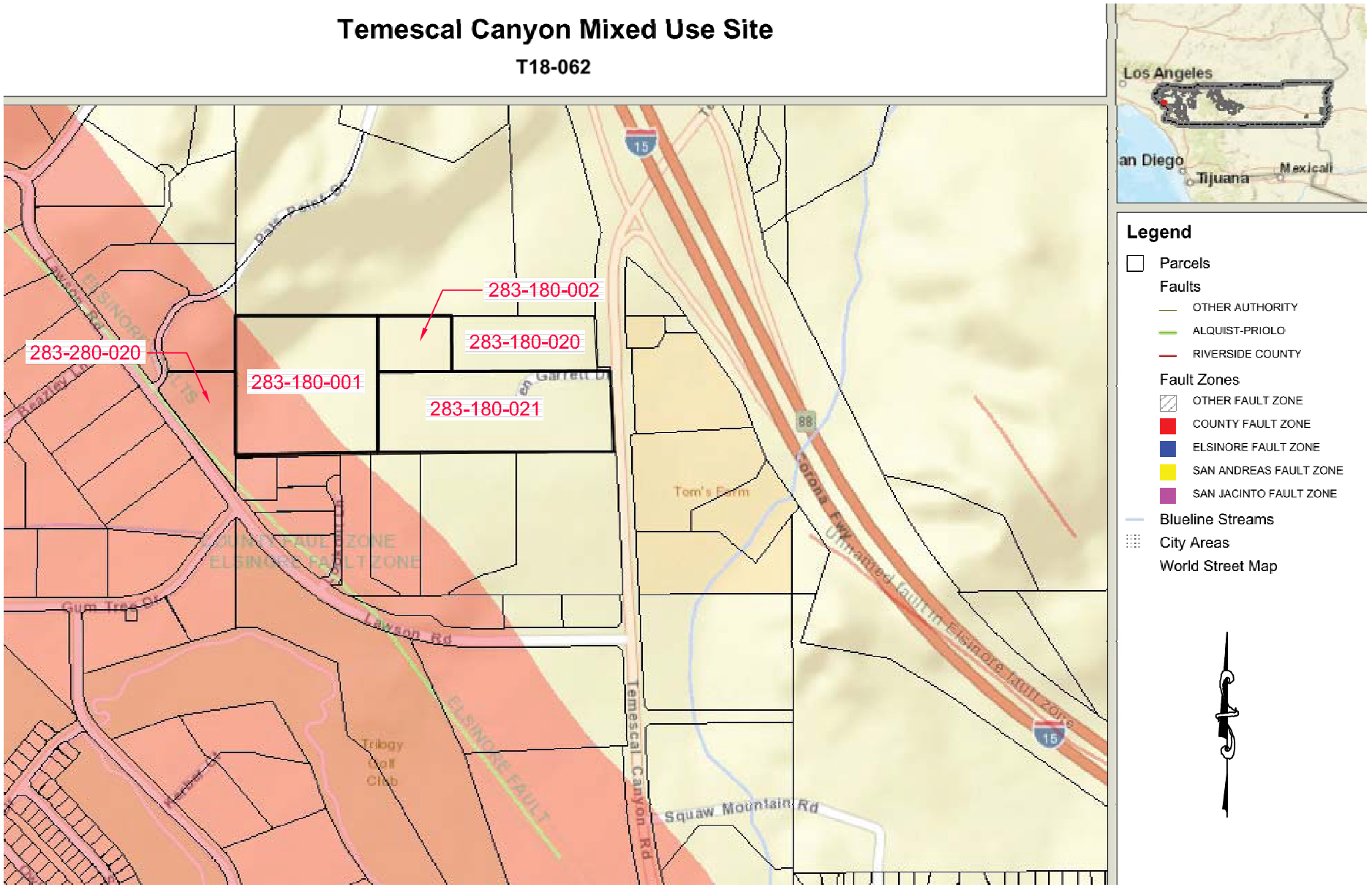
CTE SOUTH
Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

ALQUIST PRIOLO EARTHQUAKE FAULT ZONES
LAKE MATHEWS 7.5' QUADRANGLE
PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

SCALE:	DATE:
1"~5000'	2/19
CTE JOB NO.:	FIGURE:
40-3640G	2

Temescal Canyon Mixed Use Site

T18-062



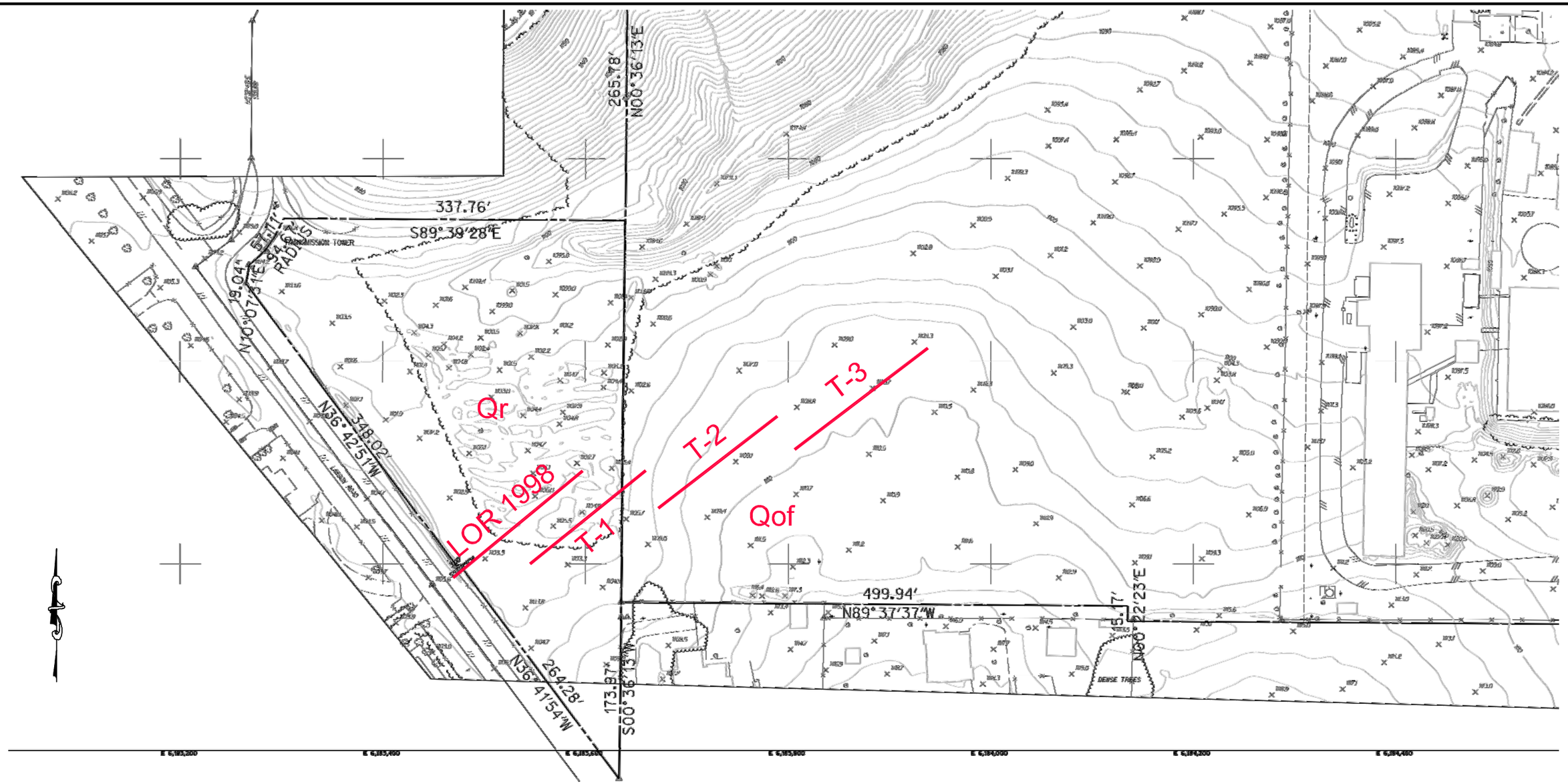
CTE SOUTH
Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

COUNTY OF RIVERSIDE FAULT ZONE

PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO:	40-3640G
SCALE:	1" ~ 800'
DATE:	2/19
FIGURE:	3

\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Figure 3.dwg



EXPLANATION

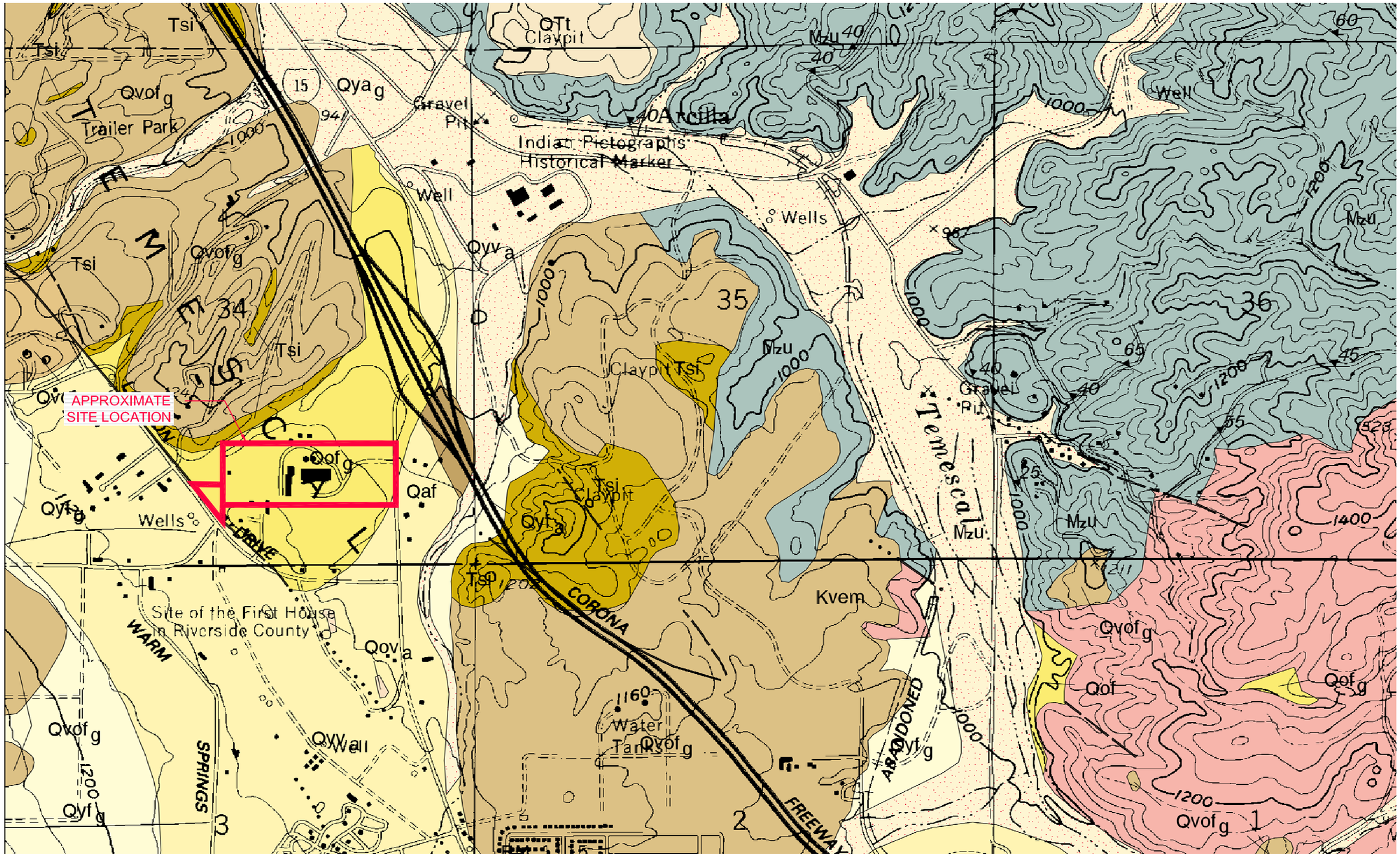
	APPROXIMATE LOCATION OF EXPLORATORY FAULT TRENCH
Qr	RECENTLY DEPOSITED STOCKPILES
Qof	OLD ALLUVIAL FAN DEPOSITS

CTE SOUTH — Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

EXPLORATORY FAULT TRENCH LOCATION MAP
PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO: 40-3640G
SCALE: 1" ~ 100'
DATE: 2/19
FIGURE: 4

\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Figure 4.dwg



CTE SOUTH
Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

REGIONAL GEOLOGY MAP
PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO:	40-3640G
SCALE:	1" ~ 500'
DATE:	2/19
FIGURE:	5

APPENDIX A

REFERENCES

REFERENCES

1. California Division of Mines and Geology, Fault Evaluation Report FER-72, September 6, 1978.

2. California Division of Mines and Geology, Supplement #1 to Fault Evaluation FER-72, January 30, 1979.

3. California Division of Mines and Geology, Lake Matthews 7.5 Minute Quadrangle, Special Studies Zone January 1, 1980

4. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:2,000. C135-36-11-12. 2 March 1999.

5. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:2,000. C117-36-166-167. 15 October 1997.

6. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:2,000. C103-36-39-40. 29 January 1995.

7. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:2,000. C94-12-71-72. 24 June 1993.

8. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:2,000. 218-16-9-10. 8 April 1983.

9. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:1,666. 4HH-95-96-97. 15 May 1967.

10. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:1,666. 061-152832. 24 June 1963

11. Continental Aerial Photo, Inc. Riv-804-D-5-6 Temescal Canyon, Corona., Scale 1:1,666. 3F-9-10-11. 6 May 1949.

12. Hart, Earl W. and Bryant, W.A., Revised 1997, "Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps," California Division of Mines and Geology, Special Publication 42.

13. Lewis S. Lohr & Associates, Fault Hazard Evaluation for the Southerly Portion of Lot 10 of Tract Number 7240 Which is Parcel 2 of Parcel Map Number 13386, Recorded in Book 76, Pages 53-54 of the Records of Riverside County, CA Assessor's Parcel Number 283-260-020, March 24, 1998, Unpublished consultant's report for Harry Kerber.

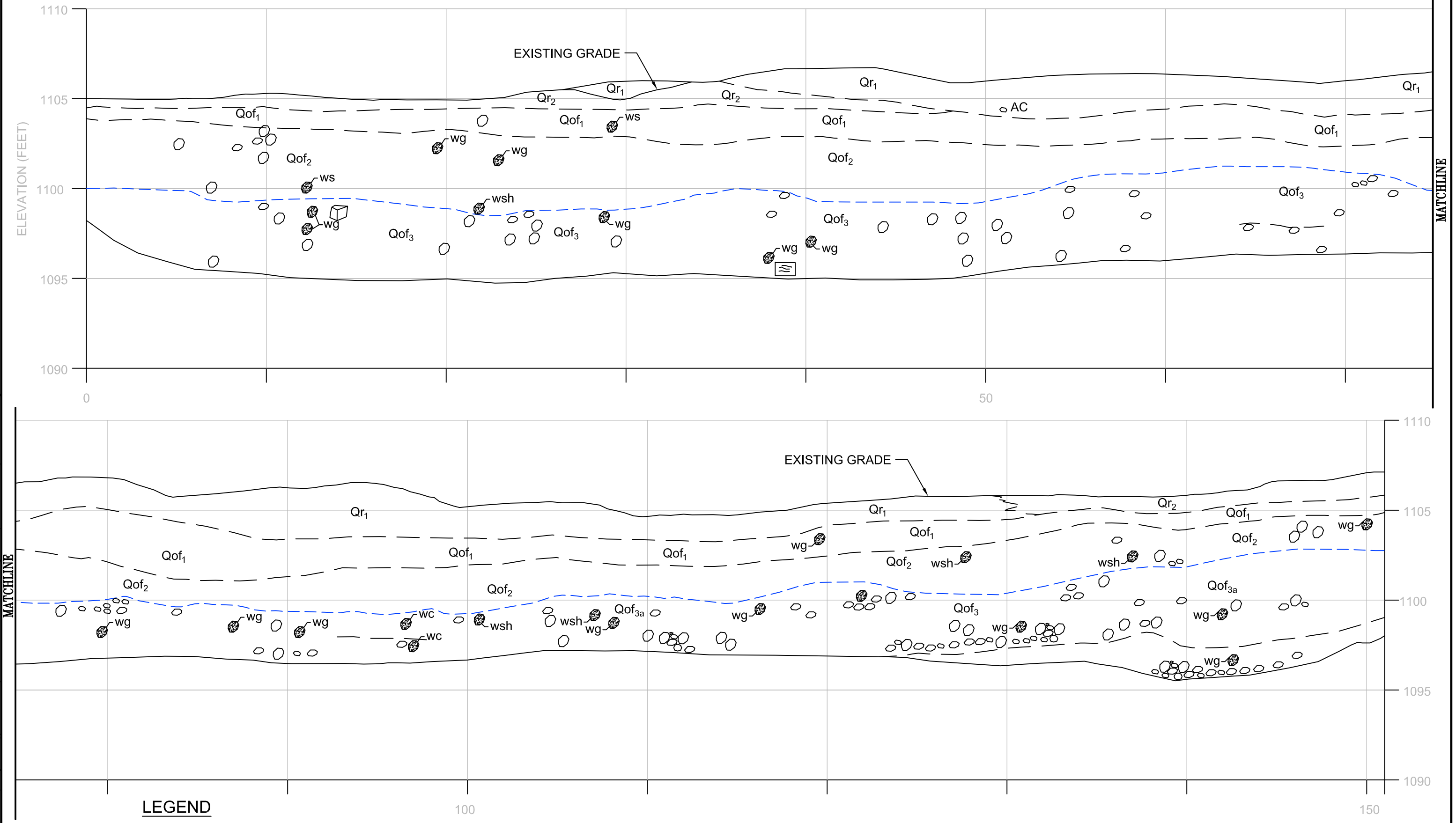
14. Morton, Douglas M., et al, 2001, Geologic Map of the Lake Mathews 7.5' Quadrangle, Riverside County, California: U.S. Geological Survey Open-File Report 01-479, *https://pubs.usgs.gov/of/2001/0479/*.

15. Pioneer of Consultants, Geologic Investigation for Tract no. 12406, Riverside County, California, February 13, 1976, Unpublished consultant's report for Temescal Sales Company, Corona, California, 9p. (a-Pno. C-88, Riverside County, no. GR-45)

16. Webb, R.W. and Norris, R.M., 1990, Geology of California.

17. Weber, F.H., 1977, Seismic hazards related to geologic factors, Elsinore and Chino fault zones, northwestern Riverside County. California: California Division of Mines and Geology Open File Report 77-4LA, 96 p. Map Scale 1:24,000.

APPENDIX B
TRENCH LOGS



LEGEND

AC	ASPHALT CONCRETE	wg	WEATHERED GRANITE
ws	WEATHERED SANDS	wsh	WEATHERED SHALE

CTE SOUTH — Construction Testing & Engineering, South

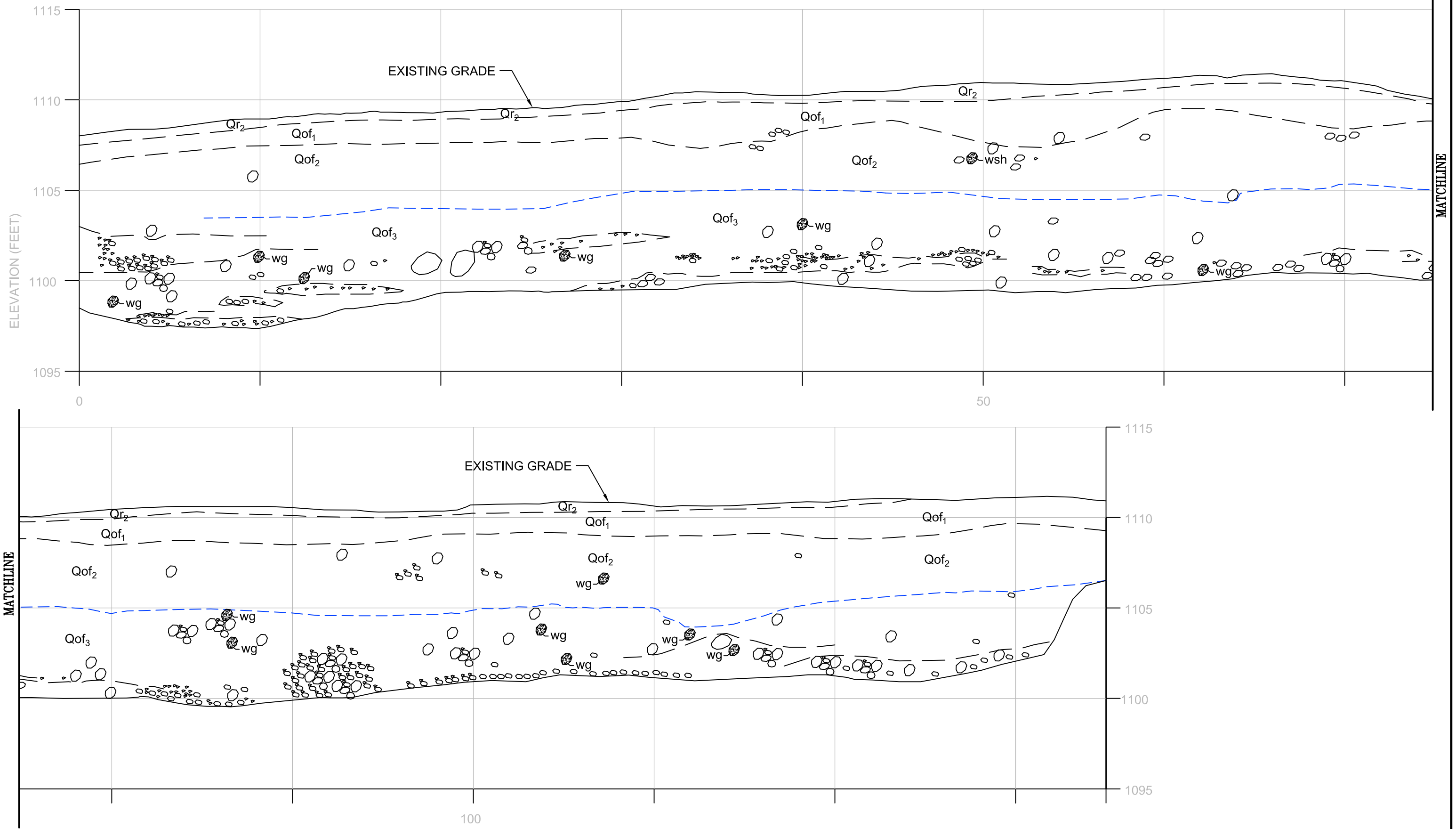
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

TRENCH 1

PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO:	40-3640G
SCALE:	1" = 5'
DATE:	2/19
PLATE:	1

\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Trenches.dwg

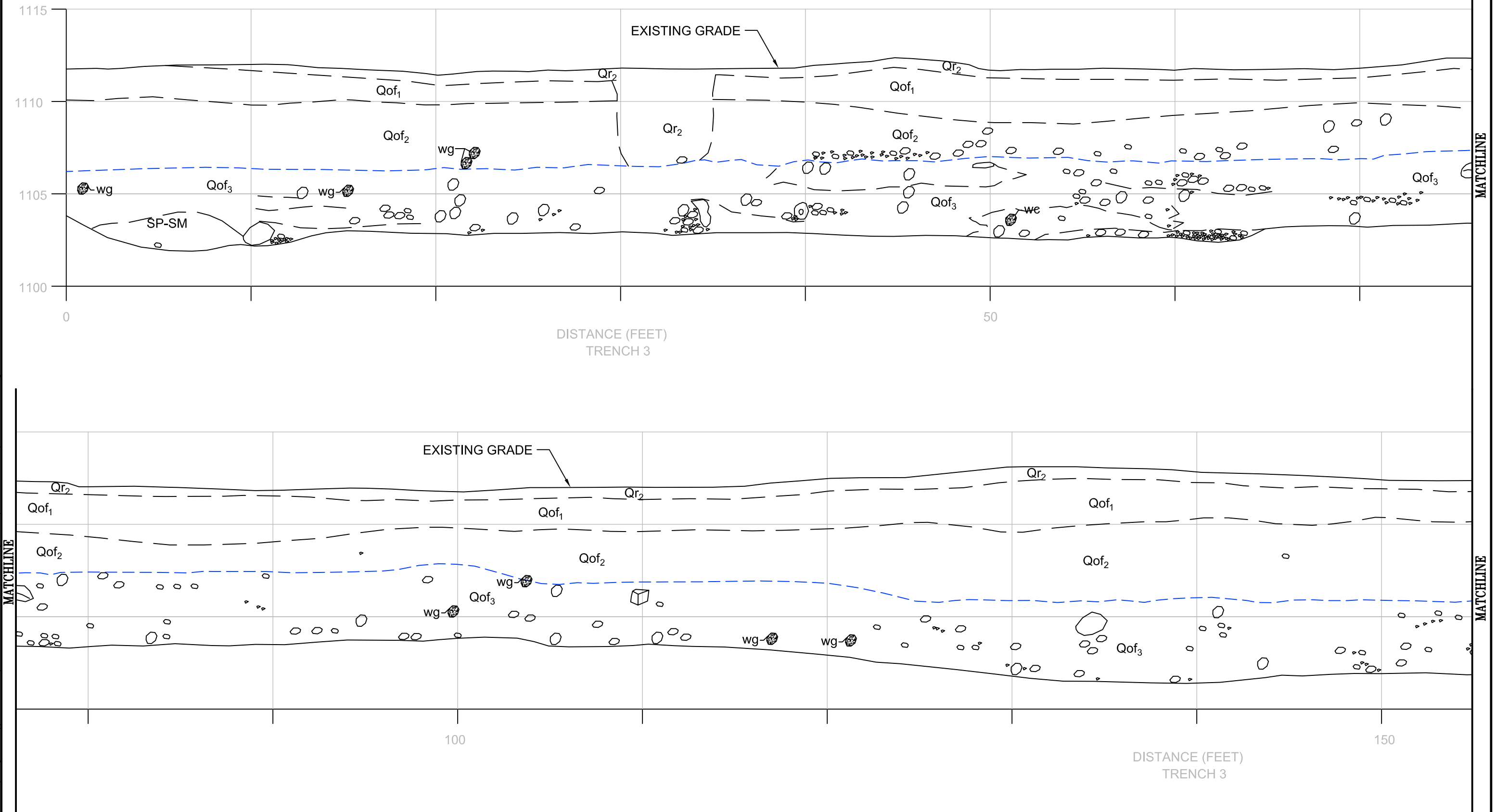


\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Trenches.dwg

Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

TRENCH 2
PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO: 40-3640G
SCALE: 1" = 5'
DATE: 2/19
PLATE: 2

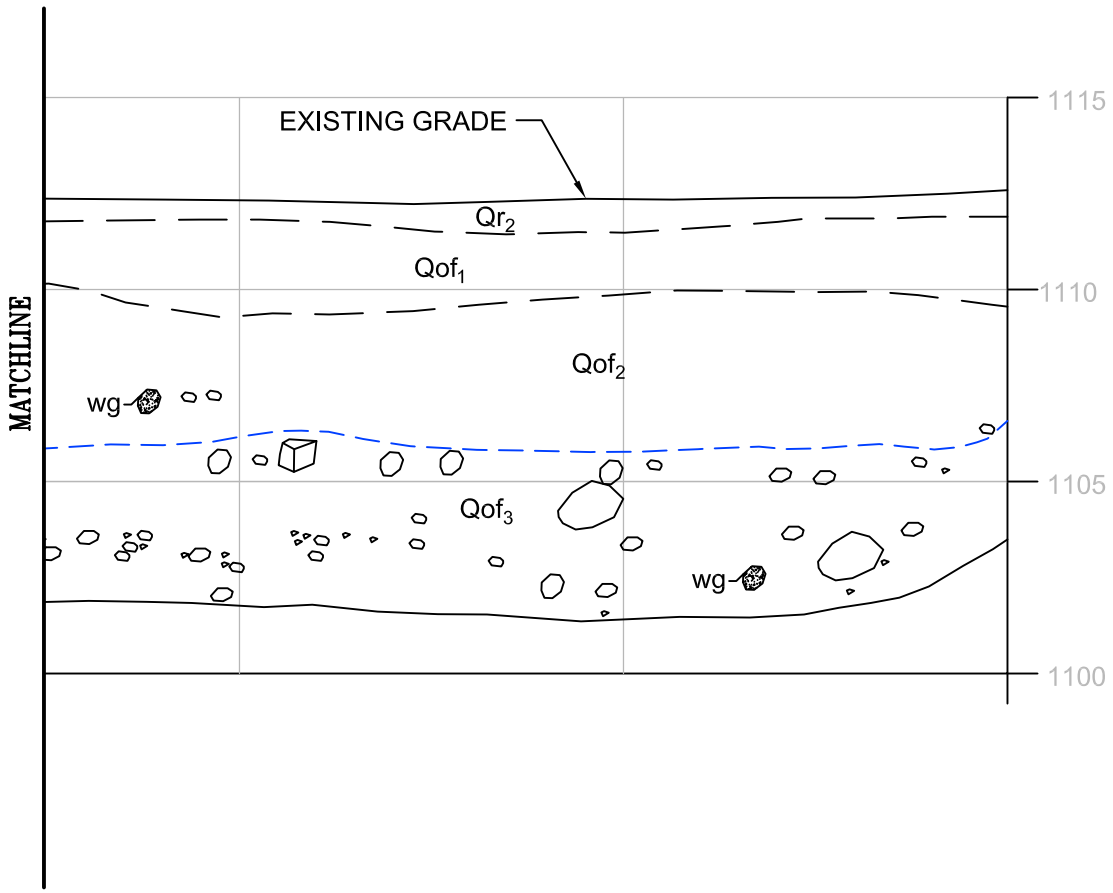


\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Trenches.dwg

CTE SOUTH Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

TRENCH 3
PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO: 40-3640G
SCALE: 1" = 5'
DATE: 2/19
PLATE: 3A



\\ESC_SERVER\Projects\(40-0000) Riverside Office Projects\40-3640G\Trenches.dwg

CTE SOUTH Construction Testing & Engineering, South
Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

TRENCH 3
PROPOSED COMMERCIAL DEVELOPMENT
TEMESCAL CANYON ROAD
TEMESCAL VALLEY, CALIFORNIA

CTE JOB NO: 40-3640G
SCALE: 1" = 5'
DATE: 2/19
PLATE: 3B

DESCRIPTION OF GEOLOGIC UNITS

Qr **Recent Material**

Qr_1-Recent stockpile

Light to grey brown with gravel, some small to medium sized cobbles. Loose and dry with some construction debris and organic material is observed.

Qr_2-Disturbed surficial material

Light to grey brown silty and clayey sand with some small to large gravel and small cobbles. Loose and dry.

Qof **Old alluvial fan deposits (late to middle Pleistocene)**

Qof_1

Silty and clayey sand with some fine to large gravel, slightly to moderately-well indurated and brown 7.5YR 4/4. Rootlets and porosity observed.

Qof_2

Clayey sand, angular to subangular, fine to large gravel and small cobbles, moderately-well indurated and yellowish-brown 10.5YR 5/4. Paleosol development observed.

Qof_3

Coarser than overlying units, consists of interbedded layers of clayey sand with gravel, silty sand with gravel, fine to large gravel, small to large cobbles and boulders. Moderately-well indurated, reddish-brown 2.5YR 4/3-4/4. Layers are roughly normally graded relative to cobble layers. Gravel and cobbles are angular to sub-angular. Some shale and granite clasts are highly weathered having intact margins. Some shale clasts observed to be fractured in- place. Iron-staining observed on fracture surfaces.

CTE SOUTH

DESCRIPTION OF GEOLOGIC UNITS PROPOSED COMMERCIAL DEVELOPMENT TEMESCAL CANYON ROAD TEMESCAL VALLEY,CAIFORNIA		
Job No. 40-3640G	Date OCT 2018	PLATE 4

APPENDIX C
LLA Plate I & COUNTY APPROVAL LETTER

COUNTY OF RIVERSIDE

TRANSPORTATION AND LAND MANAGEMENT AGENCY

Planning Department

Richard K. Lashbrook
Agency Director

Aleta J. Laurence, A.I.C.P.
Planning Director

June 1, 1998

Mr. Lewis S. Lohr, Registered Geologist
2177 Le Grande Drive
Hemet, CA 92544

RE: Alquist-Priolo Earthquake Fault Zoning Act
Job No. 240-98-03
Update to County Geologic Report #45
Parcel 2, Parcel Map No. 13386
APN: 283-260-020
Glen Ivy Area

Dear Mr. Lohr:

We have reviewed your report entitled "Fault Hazard Investigation for the Southerly Portion of Lot 10 of Tract Number 7240 Which is Parcel 2 of Parcel Map Number 13386, Recorded in Book 76, Pages 53-54 of the Records of Riverside County, CA, Assessors Parcel Number 283-260-020," dated March 24, 1998.

It should be noted that you modified your March 24, 1998 report based upon comments submitted to you by the County on May 7, 1998. It should also be noted that the County did not field review the exploratory trench excavated for this project.

Your report determined that:

1. Your exploratory trenching on the subject property revealed that there is no evidence of Holocene faulting on the site.

2. The active, Glen Ivy North fault, a branch of the Elsinore Fault Zone lies approximately 100 feet to the southwest of the subject property. The approximate location of the Glen Ivy North fault is delineated on Plate I, Trench Location Map accompanying your report.

3. It is unlikely that ground rupture could occur across those portions of the subject property that are not located within your fault setback zone as recommended below.

Your report recommended that:

1. The previously recommended 75 foot wide fault setback zone in County Geologic Report No. 45 should

Riverside Office • 4080 Lemon Street, 9th Floor •
P. O. Box 1409 • Riverside, California 92502-1409 •
(909) 955-3200 • FAX (909) 955-3177

Indio Office • 46-209 Oasis Street, 2nd Floor •
Indio, California 92201 •
(760) 863-7055 • FAX (760) 863-7015

be reduced to a 25 foot fault setback zone located northeasterly of the right-of-way line for Lawson Road, as delineated on Plate I, Trench Location Map, accompanying your report dated March 24, 1998.

2. All structures proposed on this property shall be designed to consider the seismic groundshaking data presented in your report.

3. The exploratory trench excavated for this investigation was backfilled but not compacted. Therefore, prior to construction of any structures and/or driveways, this trench shall be re-excavated and compacted under the direction of a licensed soils engineer.

Your report is satisfactory as an update to County Geologic Report No. 45. It should be noted that your report only modifies the fault setback on Parcel 2 of Parcel Map No. 13386. Final approval of your report is hereby given.

The following is recommended:

1. Parcel Map No. 13386 currently is a recorded map with the previously approved fault setback of 75 feet. In order to revise the 75 foot setback currently delineated on PM 13386 to the 25 foot setback recommended in the above referenced report, the developer/land owner may either apply for an amended map with the Riverside County Planning Department; or apply for a Certificate of Correction with the Riverside County Surveyor.

2. Prior to issuance of any grading permits associated with this parcel, the developer shall provide a soils engineering report that addresses the excavation and recompaction of the uncompacted exploratory trench backfill.

The recommendations made in your report shall be adhered to in the design and construction of this property.

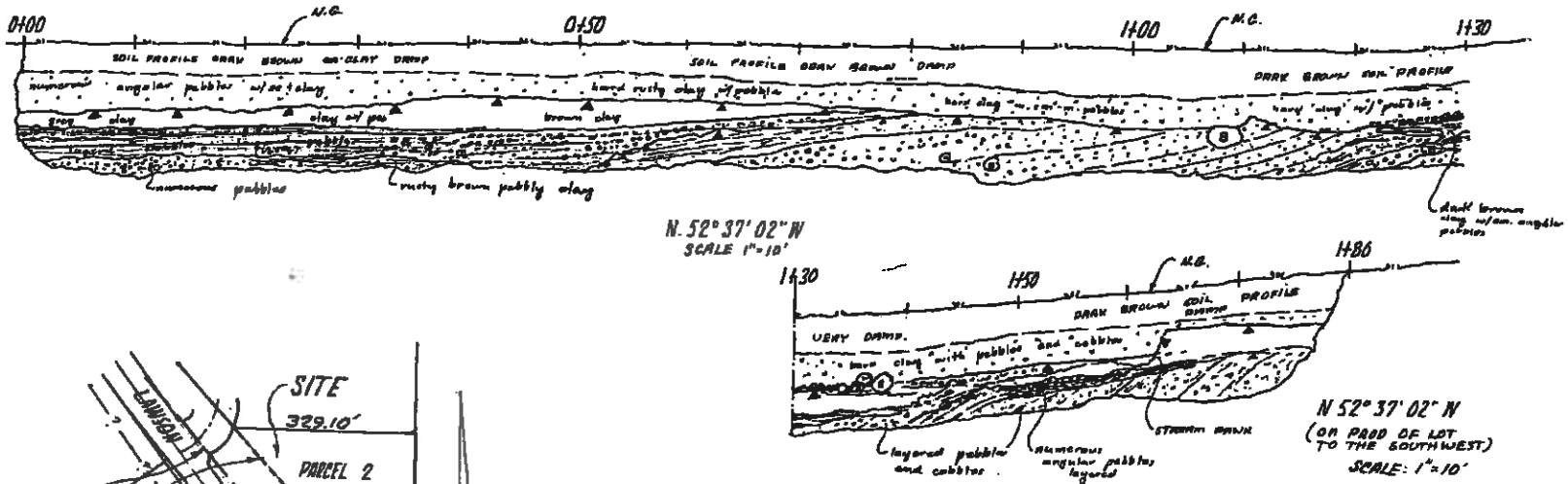
Sincerely,

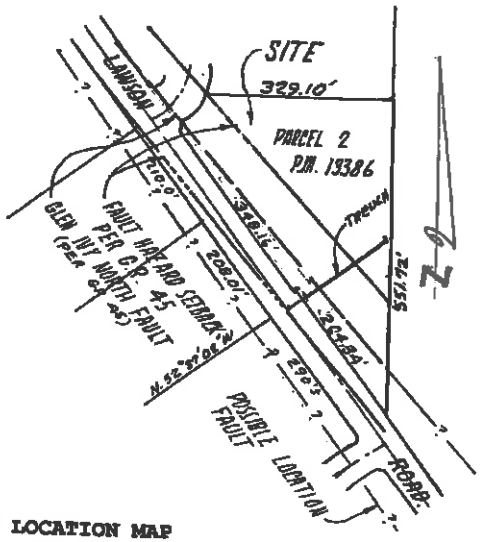
RIVERSIDE COUNTY PLANNING DEPARTMENT
Aleta J. Laurence, A.I.C.P., Planning Director

Steven A. Kupferman, Senior Engineering Geologist
CEG 1205

cc: Applicant - Harry Kerber
California Division of Mines and Geology
Planning Department - Land Use Section

C:\WP\GEOLOGY\CORCORAN.WPD





TRENCH LOCATION MAP
Scale 1" = 20'

LEGEND

Natural Ground	M.G.
Sand	
Silty sand	
Pebbles	
Cobbles	
Boulder	
Erosion surface	
Layering	

TRENCH CROSS SECTION
FOR
PARCEL 2 OF PARCEL MAP NO. 13386

LEWIS B. LOHR & ASSOCIATES

PLATE I.

GEO 0045