PRELIMINARY GEOTECHNICAL SUMMARY REPORT
PROPOSED CORRECTIONAL FACILITY
CALIFORNIA CITY, KERN COUNTY, CALIFORNIA

Prepared for:

PSOMAS

3 Hutton Centre Drive, Suite 200
Santa Ana, California 92707

Project No. 11611.001

May 1, 2017

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

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Psomas
3 Hutton Centre Drive, Suite 200
Santa Ana, California 92707

Attention: Mr. Jim Hunter, Manager

Subject: Preliminary Geotechnical Summary Report
Proposed Correctional Facility
California City, Kern County, California

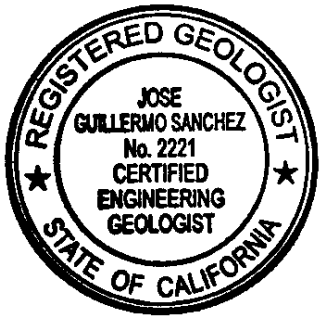
In accordance with your recent authorization, Leighton Consulting, Inc. (Leighton) has prepared this preliminary geotechnical summary report for the project site.

Based on our preliminary geologic and geotechnical findings, the project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and active and potentially active faults do not extend across, or project toward, the site. Groundwater is not expected at the site and given that bedrock is at very shallow depths, liquefaction is not anticipated to be an issue.

The impacts of strong ground shaking resulting from regional earthquakes, seismically-induced settlement, collapse potential of the onsite soils, expansion and corrosion of the onsite soils, and slope stability hazards can all be mitigated through proper and conventional engineering design practices.

Based on review of geotechnical reports for the existing adjacent facility and our recent site reconnaissance, it appears that the proposed development can be supported on shallow spread footings established in undisturbed natural earth materials or engineered fill, although this should be confirmed during future project design phases.

We appreciate the opportunity to provide our services on this project. If you have any questions about this report, please contact us at your convenience at **(866) *LEIGHTON***, direct at the phone extension or e-mail address listed below.



Respectfully submitted,

LEIGHTON and ASSOCIATES, INC.

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Leighton

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Leighton

1.0 INTRODUCTION

1.1 Site Location and Description

The project site is located east of, and adjacent to, the California City Correctional Facility in California City, Kern County, California (Latitude North 35.15177°, Longitude West 117.85016°), see Figure 1, *Site Location Map*. The site is a rectangular plot of land of approximately 215 acres in area and is currently unoccupied by any structures.

In general, the majority of the project site is gently to moderately sloping to the southwest. The elevation at the project site ranges from a topographic low of approximately 2,550 feet mean sea level (msl) at the southwestern corner of the site to a topographic high of approximately 2,670 feet msl at the northeastern corner of the site.

Currently, there is no improved vehicle access to the site. However, a dirt trail to the north of the existing correctional facility did provide access for the purpose of this report, as did the western terminus of Gordon Boulevard, an unimproved road east of the subject site. The site is currently vegetated with sparse desert shrubs. Several dirt trails traverse the site.

1.2 Proposed Development

We understand that the proposed development will consist of two 1,512-bed correctional centers, two multi-services buildings, outdoor recreational areas, an administration building, and parking areas (CoreCivic, 2017).

Based on our review of the available Conceptual Grading Plan prepared by Psomas (2017), most of the project site will be graded as a single building pad gently sloping to the southwest. Five retention basins are proposed along the southwestern perimeter of the site. In order to accommodate the proposed building pad, up to 40 feet of cut is proposed at the northeastern portion of building pad and up to 28 feet of fill is proposed at the southwestern portion of the pad. Manufactured cut and fill slopes, at a gradient of 2:1 (horizontal:vertical; h:v) are proposed around the perimeter of the building pad. The highest proposed cut slope is approximately 50 feet high located at the northeastern corner of the site and the highest proposed fill slope is approximately 30 feet high located at the southwestern corner of the site. In addition, 20-foot wide

maintenance access roads are proposed along the eastern, northern, and western margins of the site and the main entrance road is located at the northwestern corner of the site. Details about the foundation types for the proposed building structures are not available at this time.

1.3 Purpose and Scope

The purpose of this report is to summarize the known geologic and seismic hazards and potential geotechnical constraints at the site with respect to the proposed development.

The scope of this study included the following tasks:

- Reviewed available maps/plans/reports for the project site and adjacent sites.
- Reviewed in-house and published geologic reports/maps (United States Geological Survey, California Geological Survey, City of California City, Kern County).
- Reviewed historic and current aerial photos to evaluate the potential for geologic hazards.
- Performed an observational reconnaissance of the property and immediate surrounding area on April 11, 2017.
- Prepared this geotechnical summary report documenting our preliminary findings, conclusions, and recommendations.

1.4 Site Reconnaissance

On April 11, 2017 a representative of our office conducted a site reconnaissance to observe the current site conditions. The project site is undeveloped and generally consists of a pediment that is gently to moderately sloping to the southwest, and which appears to be partially mantled by surficial deposits. Bedrock outcrops were observed along the northern and northeastern potions of the site.

1.5 Previous Exploration

We are not aware of any site-specific geotechnical exploration reports for the project site. However, a design- level geotechnical study was performed for the existing correctional facility immediately adjacent to the west (RE&I, 1998). Based on our review of this geotechnical investigation report and given its close proximity to the currently proposed site, it is very likely that the adjacent site to the west will have similar geologic and geotechnical conditions as the currently proposed project site. Therefore, applicable findings in the report for the adjacent site were used for pre-screening geotechnical purposes at the currently proposed site.

2.0 SUMMARY OF GEOLOGICAL AND GEOTECHNICAL FINDINGS

2.1 Site Geology

The project site is located in the western Mojave Desert Geomorphic Province of southern California, north-northeast of Los Angeles, between the southern Sierra Nevada and San Bernardino Mountains. Geomorphic features in this area of the Mojave Desert include high-relief mountains, small hills, volcanic domes, pediments, broad alluvial valleys, and dry lakes. The mapped geology in the project site vicinity includes pre-Tertiary plutonic, metavolcanic, metasedimentary, and igneous rocks; Tertiary sedimentary and volcanic rocks; and Quaternary sediments (Figure 2, *Regional Geology Map*). The El Paso, Lockhart, Rand Mountain, Cantil Valley, and Muroc Faults, as well as the central segment of the Garlock Fault Zone, are located within the project site vicinity.

According to the Geologic Map of the Mojave and Castle Butte 15 Minute Quadrangles (Dibblee and Minch, 2008), the local geology consists of Holocene-age alluvial sediments which overlay pre-Tertiary granite and quartz monzonite bedrock.

It is likely that geological conditions at the site are very similar to those that were encountered during design and construction of the existing correctional facility immediately adjacent to the west. Based on our review of the geotechnical investigation for that facility (RE&I, 1998), the alluvial soils consisted of silty sands that were generally described as loose to medium dense and dry to moist; their thickness ranged from approximately 1½ feet to 10½ feet, but usually were about 4 feet in thickness. The bedrock consisted of granite that was described as highly weathered to weathered, the upper portion of which has gravel to boulder-size rock on its surface. Subsurface exploration in this bedrock yielded very high blow counts at shallow depths and refusal in some locations where drilling could not advance to planned depths.

2.2 Groundwater

The depth to groundwater beneath the project site is unknown. However, groundwater information provided by the California State Water Resources Control Board, GeoTracker (GAMA) Groundwater Information System online database, indicates that the depth to groundwater from a well located approximately 4 miles southeast of the site was measured at 455.5 feet below

ground surface in September 2010 (WRCB, 2017). Groundwater was not encountered during the geotechnical investigation for the existing correctional facility west of the project site and was estimated to be at least 200 feet below the ground surface at that location (RE&I, 1998).

2.3 Surface Fault Rupture

Our review of available in-house literature indicates that no known active faults have been mapped across the site. Faults are not shown to extend across the site according to the Kern County Seismic Hazard Atlas (Kern County, 1966) and it is not located within an Alquist-Priolo Earthquake Fault Zone (California Geological Survey, 2017).

2.4 Seismicity and Strong Ground Shaking

The principal seismic hazard to the site is ground shaking resulting from an earthquake occurring along any of the major active and potentially active faults in southern California. Distances to these faults to the site were assessed using the United States Geological Survey (USGS) Earthquake Hazards Program (USGS, 2008). This showed that the closest of these faults are the Lenwood-Lockhart-Old Woman Springs and Garlock faults located approximately 6 and 12 miles, respectively, from the site. A map showing regional faults surrounding the project site is presented on Figure 3, *Regional Fault and Historical Seismicity Map.*

The intensity of ground shaking at a given location depends primarily upon the earthquake magnitude, the distance from the source, and the site response characteristics. Peak horizontal ground accelerations are generally used to evaluate the intensity of ground motion. Using the United States Geological Survey (USGS) Seismic Design Maps (USGS, 2017), the peak ground acceleration for the Maximum Considered Earthquake (MCE_G) adjusted for Site Class B effects (PGA_M) is 0.428g.

2.5 Secondary Seismic Hazards

In general, secondary seismic hazards for sites in the region in which the site is located include soil liquefaction, earthquake-induced settlement, lateral displacement, landsliding, seiches, and tsunamis. The potential for each of these hazards at the subject site is discussed below.

2.5.1 Liquefaction Potential

Liquefaction is the loss of soil strength or stiffness due to a buildup of excess pore-water pressure during strong ground shaking. Liquefaction is associated primarily with low density, granular, saturated soil. Effects of severe liquefaction can include sand boils, excessive settlement, bearing capacity failures, and lateral spreading.

At this time, there is no State of California Seismic Hazard Zones Map for liquefaction potential which includes the site (California Geological Survey, 2017). Regardless, as mentioned previously, groundwater at the site is greater than 50 feet below the ground surface and the site is generally underlain by granitic bedrock. Additionally, recommendations for removal and replacement with engineered fill of the alluvial soils under structural areas will be provided. Therefore, the potential for liquefaction at the site is considered remote.

2.5.2 Seismically-Induced Settlement

Seismically-induced settlement generally consists of liquefaction-induced settlement (i.e. below groundwater) and to a lesser extent dynamic compaction of unsaturated, granular soil (i.e. above groundwater). These settlements occur primarily within low-density sandy soil due to reduction in volume during and shortly after an earthquake event. As discussed above, the depth to groundwater at the site is greater than 50 feet and recommendations will be provided to remove and recompact the loose unconsolidated alluvial soils at the site in all structural areas (see Section 3 of this report). Therefore, the potential for seismically-induced settlement at the site is considered low.

2.5.3 Lateral Spread

Liquefaction may also cause lateral spreading. For lateral spreading to occur, the liquefiable zone must be continuous, unconstrained laterally, and free to move along gently sloping ground toward an unconfined area such as an unlined river channel. Since the potential for liquefaction at the site is considered to be remote, the potential for lateral spreading at the site is also considered to be remote.

2.5.4 Seismically-Induced Landslides

A Seismic Hazard Zones Map for seismically-induced landsliding that includes the site has not been prepared by the California Geological Survey (2017). However, based on our observations during the site reconnaissance, our review of aerial photographs, and our review of available geologic maps, no landslides were identified and/or mapped at the site. Therefore, the potential for seismically-induced landslides at the site is considered low.

2.5.5 Earthquake-Induced Flooding

Earthquake-induced flooding can result from the failure of dams or other water-retaining structures resulting from earthquakes. There are no dams or reservoirs within 5 miles of the site; therefore, the potential for earthquake-induced flooding of the site due to dam failure is considered low.

2.5.6 Seiches and Tsunamis

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Similarly, tsunamis are waves generated in oceans by fault displacement or major ground movement. Based on the inland and elevated location of the site and that there are no significant retained bodies of water near the site, seiches and tsunamis are not considered hazards.

2.6 Flood Hazard

Based on the Flood Insurance Rate Map prepared by The Federal Emergency Management Agency (FEMA), the site is not located within a flood hazard zone (Figure 4, *Flood Hazard Zone Map*). Based on this information, the potential for flooding at the site is considered low.

2.7 Volcanic Hazards

No Holocene-age (i.e. 11,000 years or less) volcanoes exist in Kern County. The closest are in the Amboy Crater–Lavic Lake Area, much of which is in San Bernardino County to the southeast, and in the Owens River–Death Valley–Coso

Area northeast of the site in Inyo County (Miller, 1989; Kern County Fire Department Office of Emergency Services, 2005).

Few studies exist that enable a characterization of volcanic hazard. The Kern County Fire Department Office of Emergency Services (2005) indicates that the effects of volcanic eruptions associated with the Amboy Crater-Lavic Lake area will likely be limited to impact locally to the point of eruption; while it does not comment on the hazard from the Owens River–Death Valley–Coso Area, our opinion is that the hazard is likely to be similar. The hazard to the site from volcanic activity is likely limited to ash fall from a regional volcanic eruption. While Miller (1989) provides an estimate of the thickness of ash accumulation that could result from any one of a number of volcanic eruptions in California, an estimate for the site is not possible. Regardless, the hazard of direct volcanic impact to the site is considered low.

2.8 Mineral Resources

Based on a review of California Geological Survey (1999) the site is not located in a Mineral Resource Zone. Therefor the potential for the proposed development to restrict recovery of mineral resources is considered low.

2.9 Ground Subsidence

While ground subsidence is an issue in other areas of the Antelope Valley due to groundwater withdrawal within thick alluvial aquifers, the potential for ground subsidence at the site is considered remote since it is underlain at shallow depths by granitic bedrock.

2.10 Collapse Potential of Soils

As reported in the geotechnical report for the existing correctional facility to the west of the project site (RE&I, 1998), the alluvial soils in the general area of the site are potentially collapsible. Therefore, the collapse potential of the onsite alluvium should be characterized at the project design stage, or removed and replaced as engineered fill.

2.11 Expansion and Corrosion Potential of Soils

The geotechnical report for the existing correctional facility to the west of the project site indicated that expansive and corrosive to moderately corrosive soils occur at that site and are likely to be present at the subject site (RE&I, 1998).

2.12 Slope Stability

Landslides or signs of slope instability were not observed at the site, However, the stability of the existing and proposed slopes at the site should be assessed during the design stage of this project.

2.13 Rippability

Based on the geotechnical investigation performed for the existing correctional facility (RE&I, 1998), the surficial soils and near-surface highly weathered bedrock materials are expected to be rippable with modern earthmoving equipment. Cuts into bedrock of approximately 10 feet are expected to be rippable with a heavy duty ripper (such as a Caterpillar D-8L with a single shank). However, bedrock cuts up to 40 feet deep are proposed at the northeastern portion of the site. In these areas, very hard bedrock is anticipated. Although the hardness of the bedrock is unknown, bedrock underlying the site to the west is documented to have a seismic velocity up to 6,000 feet per second at a depth of 25 feet. While a Caterpillar D11R is capable of ripping granitic material that has a seismic velocity of as much as 8,000 feet per second (Caterpillar, 2000), non-mechanical means of bedrock removal, such as blasting, could be required if the seismic velocities are higher than 8,000 feet per second at depths of 40 feet.

2.14 Water Infiltration Characteristics

The infiltration characteristics of the subsurface soils at the site are unknown at this time and were not characterized by RE&I (1998) for the adjacent site to the west. If the future design elements of the proposed retention basins require storm water infiltration, percolation testing to evaluate the infiltration characteristics of the subsurface soils will be required at the design stage of the project.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this preliminary assessment, the proposed development is feasible from the geotechnical perspective. It appears that the proposed development can be supported on shallow spread footings established in undisturbed natural earth materials soil or engineered fill, although this should be confirmed with a comprehensive subsurface geotechnical field exploration program.

The impacts of strong ground shaking resulting from regional earthquakes, seismically-induced settlement, collapse potential of the onsite soils, expansion and corrosion of the onsite souls, and slope stability hazards can all be mitigated through proper and conventional engineering design practices.

A California Environmental Quality Act (CEQA, 2017) assessment of the site with respect to Section VI, *Geology and Soils,* and Section XI, *Mineral Resources,* is shown in the following table.

	Potentially Significant Impact	Less Than Significant w/Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☒	☐	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant w/Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
XI. MINERAL RESOURCES - Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

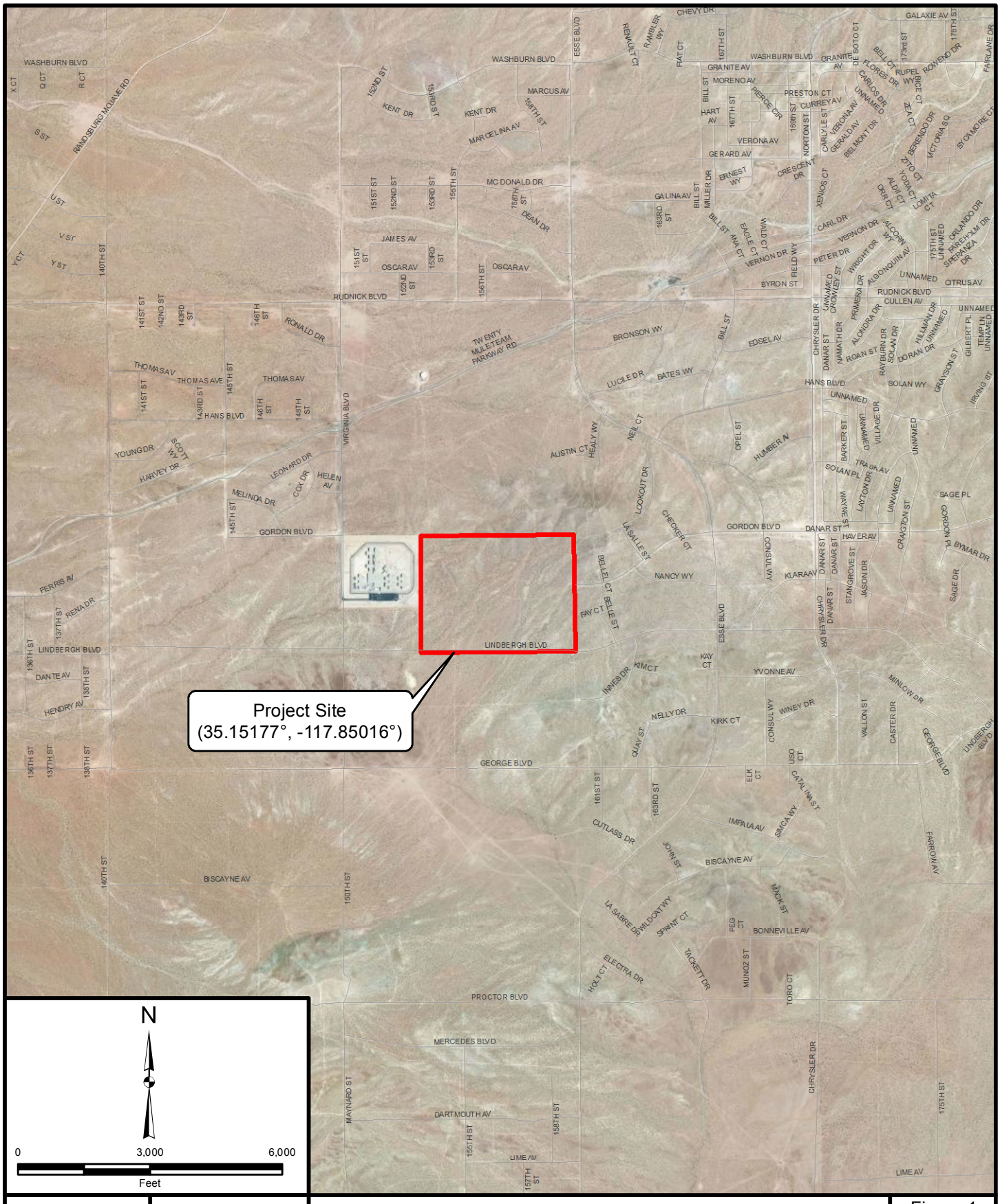
Prior to construction, geotechnical design for the proposed improvements should be performed in conformance with the California Building Code that is current at the time of project design. Subsurface geotechnical exploration and laboratory testing should be performed to develop a site-specific geotechnical design for the project. While all loose surficial materials at the site should be removed to expose competent materials (likely bedrock) prior to replacement as compacted fill, this should be verified through the subsurface field exploration. This exploration should also include a geophysical rippability assessment of the deep (approximately 40 feet depth) cuts that are proposed; it will assess seismic velocities of the underlying bedrock and, in conjunction with the *Handbook of Ripping* (Caterpillar, 2000), an assessment should be made as to the rippability of the bedrock. If the bedrock at these depths cannot be ripped by mechanical means, blasting may be required. Geotechnical design should also include slope stability analyses for the proposed manufactured slopes. Additional Expansion Index and corrosion testing should be performed on representative onsite materials to evaluate the expansion and corrosion potential for geotechnical design. If future improvements requiring onsite water infiltration are proposed for this project, the water infiltration characteristics of the onsite earth materials should be evaluated at the design stage. Site grading and foundation design recommendations should also be provided.

4.0 LIMITATIONS

The contents of this report are not suitable for construction of any kind. Prior to construction, geotechnical exploration should be performed by appropriately licensed professionals in order to develop site geotechnical design recommendations.

It should be noted that the recommendations in this report are subject to the limitations presented in this section. This report was based in part on data obtained and reviewed and our site visit. Such information is, by necessity, incomplete. The nature of many sites is such that differing soil or geologic conditions can be present within small distances and under varying climatic conditions. Changes in subsurface conditions can and do occur over time. Therefore, the findings, conclusions, and recommendations presented in this report are only valid if Leighton has the opportunity to observe subsurface conditions during future geotechnical exploration, grading, and construction, to confirm that our preliminary data are representative for the site. Leighton should also review the construction plans and project specifications, when available, to comment on the geotechnical aspects.

Our professional services were performed in accordance with the prevailing standard of professional care as practiced by other geotechnical engineers in the area. We make no other warranty either expressed or implied. The report may not be used by others or for other projects without the expressed written consent of our client and our firm.



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Scale: 1 " = 3,000 '	Date: April 2017

Base Map: ESRI ArcGIS Online 2017
Thematic Information: Leighton
Author: Leighton Geomatics (mmurphy)

SITE LOCATION MAP

Proposed Correctional Facility
California City, Kern County, California

Figure 1

Leighton

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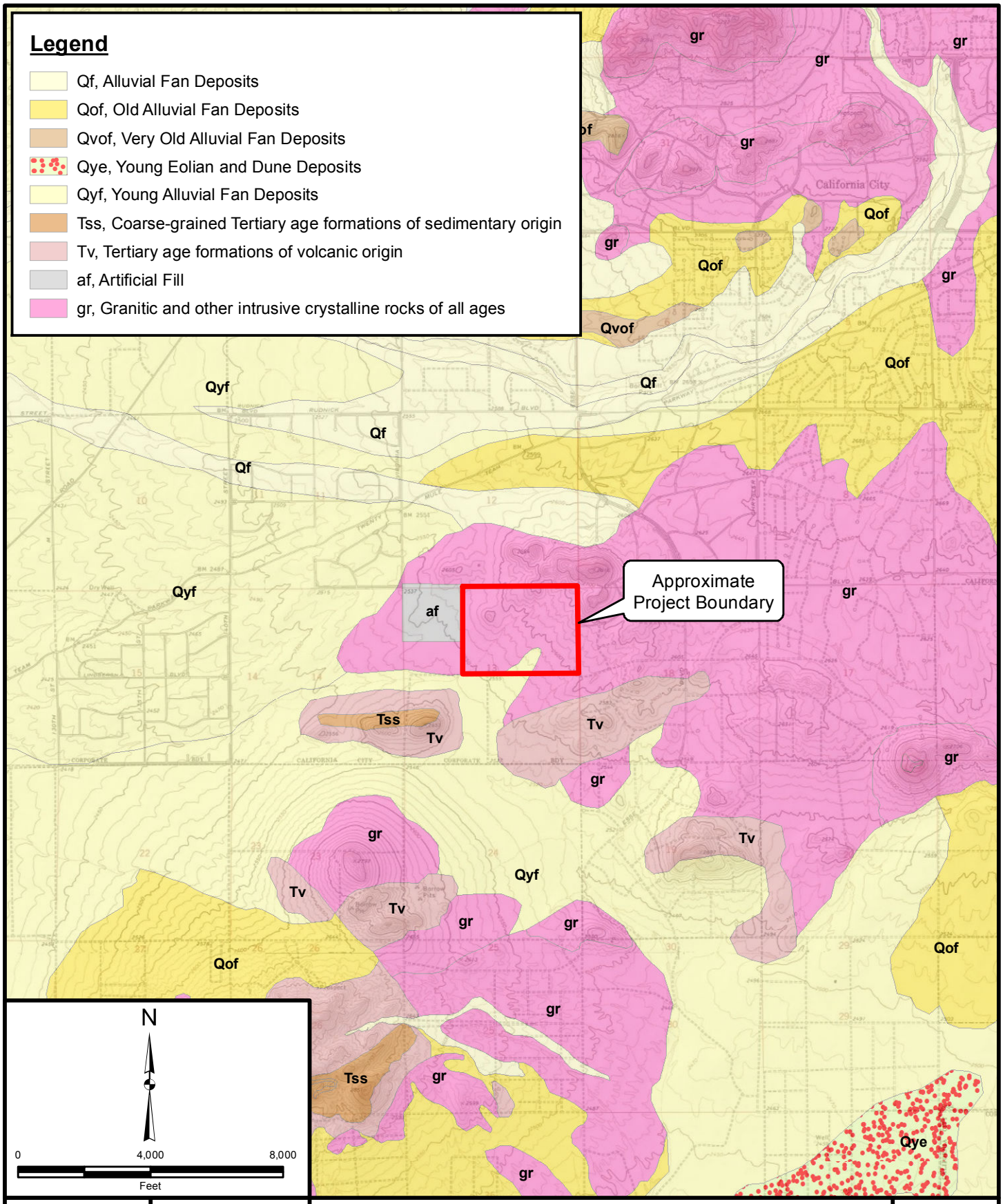

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Thematic Information: Leighton
Author: Leighton Geomatics (mmurphy)

REGIONAL GEOLOGY MAP

Proposed Correctional Facility
California City, Kern County, California

Figure 2

Leighton

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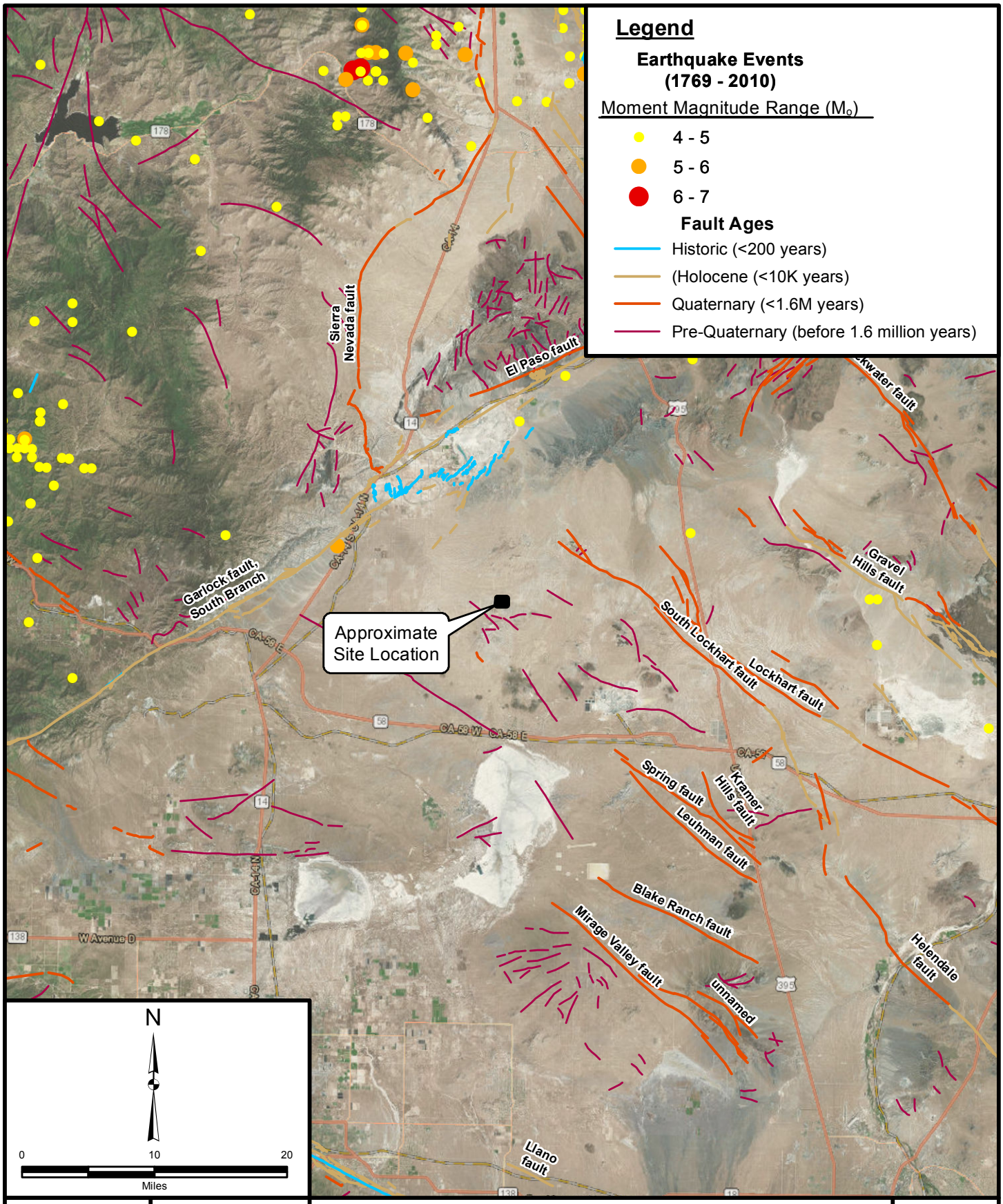

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Author: Leighton Geomatics (mmurphy)

REGIONAL FAULT AND HISTORIC SEISMICITY MAP

Proposed Correctional Facility
California City, Kern County, California

Figure 3

Leighton

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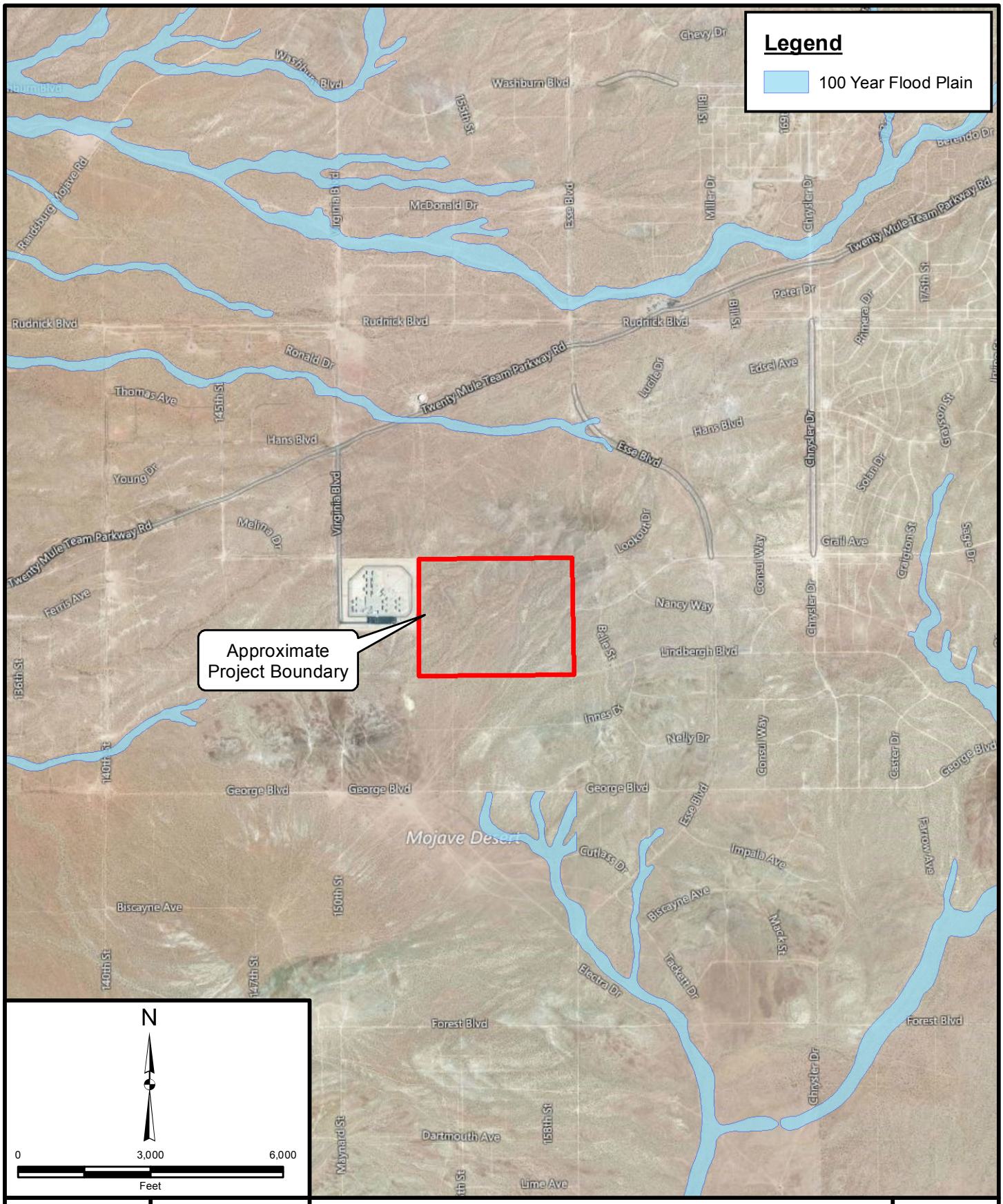

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Author: Leighton Geomatics (mmurphy)

FLOOD HAZARD ZONE MAP

Proposed Correctional Facility
California City, Kern County, California

Figure 4

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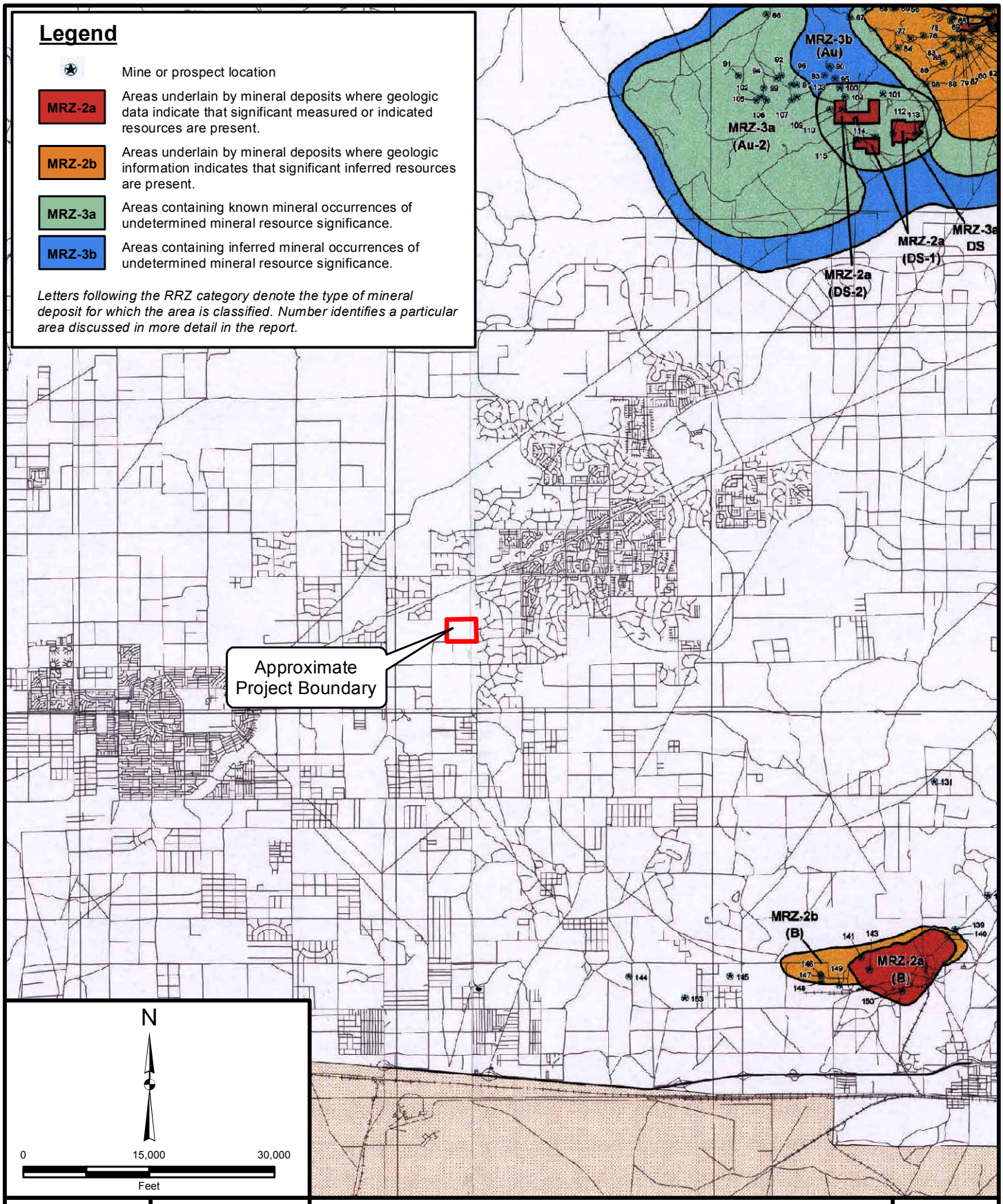

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Scale: 1 " = 15,840 '	Date: April 2017

Base Map: Mineral Land Classification of Southeastern Kern County, California. Areas Classified for Borates (B), Limestone (LS), Gold (Au), Bimension Store (DS, Sillica (S), and Pozzolan (P) with mines and prospects by Bret M. Koehler, 1999. Author: Mmuprhy

MINERAL RESOURCES ZONE MAP

Proposed Correctional Facility
California City, Kern County, California

Figure 5

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APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

Bryant, W.A., (compiler), 2005, Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California, Version 2.0 California Geological Survey WebPage, http://www.conservation.ca.gov/cgs/information/publications/Pages/QuaternaryFaults_ver2.aspx

_____ and Hart, E.W., 2007, 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, Interim Revision 2007. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf

California Building Code (CBC), 2016, "*California Code of Regulations*," Title 24, Part 2, Vol. 2, Based on 2013 Uniform Building Code.

California Environmental Quality Act (CEQA), 2017, Statute and Guidelines.

California Department of Water Resources, Division of Safety of Dams (DSOD), 2017, Website, http://www.water.ca.gov/damsafety/

California Geological Survey (CGS; previously known as the California Division of Mines and Geology), 1999, Mineral Land Classification of Southeastern Kern County, California, CGS Open-File Report 99-15, by Koehler, B., Plate 2A.

_____, 2002, California Geomorphic Provinces, CGS Note 36, dated 2002.

_____, 2012, Geologic Compilation of Quaternary Surficial Deposits in Southern California, Cuddeback Lake 30' x 60' Quadrangle (Revised), CGS Special Report 217, Plate 5, July 2012.

_____, 2017, Regulatory Maps (see: http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps) accessed April, 2017.

Caterpillar, 2000, Handbook of Ripping, Twelfth Edition, dated February, 2000.

City of California City, 2009, Final General Plan 2009-2028, Adopted October 6, 2009.

CoreCivic, 2017, California City, California, (2) 1,512 Bed Correctional Facilities, Scale 1"= 100', dated April 14, 2017.

Dibblee, Jr., T.W. and Minch, J. A., 2008, Geologic Map of the Mojave & Castle Butte 15 Minute Quadrangles, Kern County, California, Dibblee Geology Center Map #DF-401, August 2008.

Google Earth Pro, 2017, Aerial Images, accessed April 2017.

Jennings, Charles W., 1994, Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions, California Geologic Data Map Series, Map No. 6, California Division of Mines and Geology, Scale of 1:750,000

Kern County Fire Department Office of Emergency Services, 2005, Kern County, California Multi-Hazard Mitigation Plan, dated November, 2005.

Kern County, 2009, Safety Element of the General Plan, Kern County Planning Department, Accessible at: http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp4Safety.pdf

_____, 1966, Seismic Hazard Atlas (7.5 Minute Quadrangles), –Galileo Hill (10-D-1), Prepared for the Kern County Council of Governments. Scale of 1:24,000.

Miller, C.D., 1989, Potential Hazards from Future Volcanic Eruptions in California, United States Geological Survey Bulletin 1847.Psomas, 2017, Conceptual Grading Plan, Proposed Correction Facility, California City, Sheet 1 of 1, Scale 1" = 120', dated March 23, 2017.

Rust Environment & Infrastructure (RE&I), 1998, Geotechnical Investigation Report for the Proposed Prison Facility, California City, Kern County, California, Project No. 201940, dated January 29, 1998.

State of California Water Resources Control Board (WRCB), 2017, Geotracker (GAMA) Groundwater Information System Online Database, Accessed July 2, 2013, website: http://geotracker.waterboards.ca.gov/gama/

United States Geological Survey (USGS), 2008b, National Seismic Hazard Maps – Fault Parameters, Accessed April 2017: http://geohazards.usgs.gov/cfusion/hazfaults_search/hf_search_main.cfm

_____, 2012, Surficial Geologic Map of the Cuddeback Lake 30' x 60' Quadrangle, San Bernardino and Kern Counties, California, Scientific Investigation Map 3107, 2012.

_____, 2017, U.S. Seismic Design Maps, Accessed April 2017: http://earthquake.usgs.gov/designmaps/us/application.php

_____, 2017, Accessed April, 2017: http://earthquake.usgs.gov/earthquakes/map/