Appendix IS-3

Geotechnical Investigation

5 August 2022

Shep Wainwright
Alameda Studios Owner, LLC.
1239 S. Glendale Avenue
Glendale, CA 91205

Re: Geotechnical Desktop Review
EES Art District LA
Los Angeles, California
Langan Project No.: 700118201

Dear Mr. Wainwrigth:

Langan Engineering and Environmental Services, Inc. (LANGAN) has prepared this letter report at the request of Alameda Studios Owner, LLC., (Client) to provide our desktop review of available geotechnical information for the proposed EES Art District LA (EESA ADLA) Project (the Project), located in Los Angeles, California. These services were performed in accordance with our 20 May 2022 proposal, authorized by Alameda Studios Owner, LLC. This evaluation been prepared to support initial planning for the project.

Provided herein is a brief summary of our understanding of the proposed development, an overview of the available geotechnical information we reviewed, and our initial comments regarding feasible geotechnical design and construction considerations as they pertain to the Project. A preliminary geotechnical study including field exploration, laboratory tests are recommended to be performed to refine the preliminary geotechnical design concepts presented herein and to provide supplemental design recommendations. Elevations referenced herein are based on a survey titled "Topographic Survey", dated 27 July 2022 by FORMA Engineering Inc. Elevations are reported in feet with respect to North American Vertical Datum of 1988 (NAVD88).

Existing Site Description

The Project is located on the southeast corner of Alameda Street and East 6th Street which is part of the Art District community within the City of Los Angeles. The Site is comprised of three parcels with a combined area of approximately 14.6-acres and is bound by East 6th Street to the north, commercial properties to the south, Alameda Street to the west and Mill Street to the east. The Project is occupied with two one-story warehouses with an area of approximately 104,800 and 185,500 square feet each and includes loading docks, concrete and asphalt pavement. Elevations slope toward the south and range from approximately 249 to 251 feet (NAVD88). Refer to Figure 1 for a site vicinity map.

Proposed Development

Based on the progress plans titled "East End Studios" by Grimshaw Architects, LLP., dated 21 July 2022, the Project includes demolition of existing buildings and construction of a one level below grade podium (approximately 11 feet below grade). Sixteen studio buildings and two five-story office/mill buildings are proposed at grade along the northern and southern parts of the site. A two level amenity podium above a single below grade parking level will be built in the middle of the site between the studios. The amenity podium will include additional office space.

AVAILABLE INFORMATION REVIEWED

Information that LANGAN reviewed included reports, maps, and other publically available information from the United States Geological Survey (USGS), California Geological Survey (CGS), City of Los Angeles (City), Federal Emergency Management Agency (FEMA), and California Geologic Energy Management Division (CalGEM).

LANGAN also reviewed the subsurface conditions that were reported in two reports previously performed adjacent to the site:

- EEI Geotechnical & Environmental Solutions, (2015), Due Diligence Level Geotechnical Evaluation, Proposed Mixed Use Development, Southeast Corner of East 6th Street and Alameda Street, Los Angeles, California, dated 27 February 2015.
- GPI Geotechnical Professional, Inc., (2017) Geotechnical Feasibility Investigation and Geologic-Seismic Hazard Assessment, Proposed Ava Arts District, 668 S. Alameda Street, Los Angeles, California, dated 3 March 2017.

Regional and Local Geology

The Project is located in the Peninsular Range near the boundary between the Peninsular Ranges and Transverse Ranges geomorphic provinces. The Peninsular Ranges is a series of mountain ranges and valleys that trend northwest, sub-parallel to the San Andreas fault system. To the north, the Transverse Ranges is a series of mountains and valleys trending roughly east-west, due to regional north-south compression generated from the restraining bend in the San Andreas fault to the east. The Transverse Ranges structures are generally oblique to the common northwest structural grain of coastal California. The Santa Monica and Hollywood fault system forms the boundary between the two geomorphic provinces in this region.

Locally, according to the CGS Geologic Map of the Los Angeles 30'-by-60' Quadrangle (2014), the Project is underlain by the late Pleistocene- to Holocene-age older young alluvium deposits (Qya_2). The older young alluvial deposits are described as unconsolidated, generally friable, stream deposited silt, sand and gravel on flood plains.

Geologic Hazards Review

Our geologic hazard review was performed in general accordance with CGS Special Publication 117A, "Guidelines for Evaluating and Mitigating Seismic Hazards in California." The following subsections present the results of our review as they pertain to the site.

- Regional Faulting – According to the CGS "2010 Fault Activity Map of California", the closest known active faults to the Project are the Hollywood Fault mapped approximately 5.5 miles north, the Raymond Fault mapped approximately 5.9 miles to the northeast and the Newport-Inglewood-Rose Canyon fault zone mapped approximately 7 miles to the west. Recognized and mapped faults that are located within 100 kilometer (km) radius of the Project are shown on Figure 2A.
- Regional Seismicity – A search of the USGS ANSS Comprehensive Earthquake Catalog (ComCat) found that, as of 14 July 2022, 52 earthquakes with magnitudes 5.0 or greater have occurred within a 100-km radius of the Project since the year 1900. A summary of the USGS ANSS ComCat reported earthquake events are provided in Appendix A.

- Surface Rupture – Alquist-Priolo Earthquake Fault Zones (APEFZ) are regulatory zones delineated by CGS around active faults with the potential to cause surface rupture. Based on the CGS Earthquake Zones of Required Investigation for the Los Angeles Quadrangle released 15 June 2017, the Project is not located within a currently established APEFZ.
- Liquefaction – Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium-dense sand and gravel, and low-plasticity silts below the groundwater table. Based on the CGS Earthquake Zones of Required Investigation for the Los Angeles Quadrangle released 15 June 2017, the Project is not located within a mapped liquefaction-potential investigation zone.
- Historical High Groundwater – As noted above, the presence of groundwater may increase the susceptibility to liquefaction for loose to medium granular soils and low-plasticity silts when subjected to sufficient ground shaking. Based on the CGS Seismic Hazard Zone Report for the Los Angeles 7.5-Minute Quadrangle, Los Angeles County, California (SHZR 029) revised 13 January 2006, the historical high groundwater is mapped at a depth of approximately 150 feet.
- Landslides – Based on the CGS Earthquake Zones of Required Investigation for the Los Angeles Quadrangle released 15 June 2017, the Project is not mapped in an area required for investigation for earthquake induced landslides.
- Seismic-Induced Ground Deformations – Seismic-induced ground deformations include ground-surface settlement and differential settlement resulting from liquefaction-induced ground deformation and cyclic densification of unsaturated sands and gravels from earthquakes. A discussion on the potential for settlement due to cyclic densification is provided later in this report.
- Flood Mapping – Based on the FEMA Flood Map 06037C1636G effective 21 December 2018, the Project is mapped within Zone X or area of minimal flood hazard.
- Tsunami and Seiche – A tsunami is a long, high sea wave caused by an earthquake, submarine landslide, or other disturbance. A seiche is an oscillation of surface water in an enclosed or semi-enclosed basin such as a lake, bay, or harbor. No bodies of water are adjacent to the Project and therefore the potential for a tsunami or seiche to impact the Project is considered low.
- Subsidence – Land subsidence may be induced from withdrawal of oil, gas, or water from wells. Based on the CalGEM Well Finder website, the Project is located 800 feet south of the Union Station (ABD) oil & gas field. One well is mapped approximately 1,200 feet north and another well is mapped approximately 460 feet southeast of the Project. The mapped wells are shown to be plugged, and we conclude the potential for subsidence from oil, gas, or water withdrawal is considered low.
- Expansive Soils – Expansive soils can result in differential movement of structures, including slab heave and cracking, differential movement between foundations, and cracking of pavements and sidewalks. Potentially expansive soils are defined by the 2019 California Building Code (CBC) as soils with expansion indices (EI) greater than 20. The potential for expansive soils is discussed below.

- Methane Zone: Based on the Los Angeles Building and Safety Department Methane and Methane Buffer Map dated 31 March 2004, the Project is mapped within a methane buffer zone. The Environmental Engineer of Record should investigate and determine the potential for soil vapor intrusion.

Previous Reports

2015 EEI Geotechnical & Environmental Solutions

In 2015, as part of a due diligence, EEI performed a soil investigation for a proposed mixed-use project that included a five-story residential wood frame structure and an eight-story residential structure over one floor of ground level retail and two to three levels of below-grade parking. EEI performed five borings using a hollow-stem auger to a depth of 10 to 46 feet and in one boring a percolation test was conducted at a depth of 10 feet. The soils encountered were identified as artificial fill with a thickness 1.5 to 3.0 feet underlain by alluvial fan deposits (silty sands with gravels to sandy silts) and rock. We note that the rock identified in the EEI borings is likely cobbles and gravel from the alluvial fan deposits. No groundwater was reportedly encountered. Based on the report, settlement due to cyclic densification ranged from 3.4 in to 8.6 inches and expected to occur within the upper 25 feet of soil. EEI reported that the soil encountered are corrosive to ferrous metals, have a very low expansion potential (EI of 6) and has a generally moderate to high caving potential.

2017 Geotechnical Professional, Inc.

In 2017, Geotechnical Professional, Inc., performed a feasibility study for a five story building over a three level below grade podium. The feasibility study consisted of 3 cone penetration tests (CPTs) that were advanced to a depth of 35 to 37.5 feet. No groundwater was reportedly encountered. Undocumented fill was reported at a depth of 1 to 3 feet underlain by interbedded layers of silty sands and sands. The report describes the soils medium dense to very dense and settlement due to cyclic densification was estimated to be minimum.

Anticipated Subsurface Conditions

Based on our review of the available geologic and geotechnical information, we anticipate that the Project is underlain by undocumented fill and alluvium deposits. Undocumented fill was reported with a thickness of 1 to 3 feet and described as silty sand with some gravel. Alluvium was reported under the undocumented fill and described as sandy silts to silty sands with varying amounts of gravel. Groundwater was not encountered to a depth of 46 feet and the historical high groundwater was reported at a depth of 150 feet.

PRELIMINARY GEOTECHNICAL EVALUATION AND DISCUSSION

Presented below are preliminary conclusions and recommendations based on the available geotechnical information reviewed to date. Confirmatory geotechnical subsurface investigation and laboratory testing, analysis, and evaluation should be performed to develop specific recommendations to support the design and construction of the proposed Project. Geotechnical issues to consider are listed below:

- Presence of an undocumented fill with a thickness up to 3 feet;
- Potential presence of cobbles and boulders; and
- Mitigation of dry dynamic settlement in shallow alluvium.

Preliminary Seismic Design

The following preliminary seismic design criteria are recommended.

Table 4 – Preliminary Seismic Design Criteria	Mapped (Site Class D)
MCE_R Spectral response acceleration at Short Periods, S_S	1.930
MCE_R Spectral response acceleration at 1 second period, S_1	0.687
Site-modified MCE_R Spectral Response Acceleration at Short Periods, S_{MS}	1.930
Site-modified MCE_R Spectral Response Acceleration at 1 second period, S_{M1}	1.168
Design Spectral Response Acceleration at short periods, S_{DS}	1.287
Design Spectral Response Acceleration at 1 second period, S_{D1}	0.779
MCE_G Peak Ground Acceleration, PGA_M	0.909

Notes:

1. Recommended mapped values are based on F_a and F_v of 1.0 and 1.7, respectively.

The recommend mapped values above assume Exception No. 2 of Section 11.4.8 of ASCE 7-16 will be used for seismic design, and that the structures will not be classified as a seismically isolated structure or structure with damping systems.

The structural engineer should confirm the structural fundamental period of vibration and the seismic design approach (i.e. if the exceptions in Section 11.4.8 of ASCE 7-16 will be used). If the structural engineer elects not to use the exceptions of Section 11.4.8 of ASCE 7-16 or the structure will be designed as a seismically isolated structure or structure with damping systems, then a site-specific ground motion hazard analysis in accordance with Section 21.2 of ASCE 7-16 will be required for developing the seismic design criteria.

Seismic Settlement Potential

Based on the subsurface conditions reported and the proposed development, for studios and office buildings proposed near existing grade, settlement of up to 2 to 4 inches due to cyclic densification was estimated by a prior consultant. We note that the report by Geotechnical Professional, Inc., did not encounter these conditions in an adjacent site. Based on preliminary calculations, settlement due to cyclic densification can be minimized to one inch or less if the upper 5 to 10 feet of soil is improved. Due to the differences between the available soil exploration data, the settlement calculations and required depths of improvement should be confirmed by performing a supplemental geotechnical field exploration.

Foundation Considerations

Our recommendations provided herein should be considered preliminary and re-evaluated after performing a geotechnical field exploration program. Based on the reported subsurface conditions and assuming the upper 10 feet of soil is removed, the podium can be supported on shallow foundations bearing on alluvium. For the studios and office buildings that are proposed near existing grade, the loose soils within the upper 5 to 10 feet beneath the foundations will need to be improved. Based on the available data, over-excavation and re-compaction of the upper 10 feet of soil might be required beneath the new foundations to reduce dynamic settlement to less than 1 inch.

Podium Foundations

Shallow foundations (continuous or spread footings) bearing on properly prepared, compacted subgrade can be designed with an allowable bearing pressure of 4,000 to 6,000 psf, embedded a minimum depth of 12 inches below the lowest adjacent grade and having a minimum width of 18 inches. Recommended allowable bearing values include both dead and live loads, and may be increased by one-third for transient loads such as wind or seismic forces. Shallow foundations designed in accordance with the above parameters are anticipated to settle less than one inch under static loading with differential settlements less than half an inch between adjacent columns.

Studio and Office Building Foundations

The Studio and Office Building foundations can be supported shallow foundations bearing on 5 to 10 feet of primary structural fill. Shallow foundations can be designed with an allowable bearing pressure ranging from 3,000 to 5,000 psf, embedded a minimum depth of 24 inches with a minimum width of 12 inches. Recommended allowable bearing values include both dead and live loads, and may be increased by one-third for transient loads such as wind or seismic forces. Shallow foundations designed in accordance with the above parameters are anticipated to settle less than one inch under static loading with differential settlements less than half an inch between adjacent columns.

Floor Slabs

Floor slabs can preliminarily be designed as slabs-on-grade bearing on alluvial or primary structural fill. Steel reinforcing and concrete thickness should be designed by a Structural Engineer for soils with a very low expansion potential. At a minimum, we recommend the following:

- Subgrade modulus, K, equal to 100 pounds per cubic inch (pci),
- 5-inch minimum thickness,
- If moisture sensitive floors are proposed, a capillary break section consisting of 4 inches of sand or gravel underlying a 15-mil HDPE membrane.

We note that if the alluvium is not treated below the floor slab, the slab should be isolated from the perimeter walls to allow the slab to settlement separately from the perimeter walls and foundations under dynamic loading. Repair of the slab may be required after significant earthquake events if differential settlement of the soils beneath the slab result in cracking.

Shoring

The proposed development will require excavations on the order of 11 feet below existing grade and may require vertical cuts adjacent to existing infrastructure. Temporary shoring will be required to support the excavations; surcharge loading from the adjacent roadways should be included in design to provide lateral support for vehicular loading as appropriate.

The most common type of shoring in the greater Los Angeles area for excavations of this depth generally consists of soldier beams and timber lagging.

RECOMMENDED FUTURE STUDIES

Conclusions and preliminary recommendations provided herein are based on available geotechnical information provided to date and a review of publically available documents. At this time, we recommend performing the following supplemental studies:

- A design geotechnical investigation and evaluation should be performed to meet the City of Los Angeles requirements, including:
    - A field exploration program to supplement and confirm subsurface conditions including;
    - A laboratory testing program.
- Confirm the potential for settlement due to cyclic densification and the depth of ground improvement, if needed.

To maintain our continuity of responsibility on this Project, we recommend the above work be performed by LANGAN.

LIMITATIONS

The conclusions and preliminary recommendations provided in this report result from our interpretation of the geotechnical conditions existing at the Project inferred from available reports and public information. Actual subsurface conditions may vary. Recommendations provided are dependent upon one another and no recommendation should be followed independent of the others.

Any proposed changes in structures or their locations should be brought to Langan's attention as soon as possible so that we can determine whether such changes affect our recommendations. Information on subsurface strata shown on the logs represent conditions encountered at the locations indicated and at the time of investigation. If different conditions are encountered during construction, they should immediately be brought to Langan's attention for evaluation, as they may affect our recommendations.

This report has been prepared to assist the owner in their due diligence and concept design process and is only applicable to the design of the specific project identified. The information in this report cannot be utilized or depended on by engineers or contractors who are involved in evaluations or designs of facilities (including underpinning, grouting, stabilization, etc.) on adjacent properties which are beyond the limits of that which is the specific subject of this report.

Environmental issues (such as permitting or potentially contaminated soil and groundwater) are outside the scope of this study and should be addressed in a separate evaluation.

We appreciate the opportunity to have provided these services for this project. Should you have any questions regarding this letter, please feel free to contact us.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Diane M. Fiorelli, PE, GE
Principal/Vice President
GE 3042

Jose Alberto Baron Jr, PE
Project Engineer
C 90890

Enclosures: References
Figure 1 – Site Vicinity Map
Figures 2A to 2B – CGS Fault Activity Map of California and Legend
Appendix A – USGS ANSS Catalog Search Results

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REFERENCES

Publications

American Society of Civil Engineers (2016), Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16.

California Building Standards Commission (2019), California Building Code, California Code of Regulations, Title 24.

California Geological Survey, (2006), Seismic Hazard Zone Report for the Los Angeles 7.5-Minute Quadrangle, Los Angeles County, California (SHZR 029), revised 13 January 2006

California Geological Survey, (2010), Fault Activity Map of California, dated 2010

California Department of Conservation, California Geological Survey, (2014), Geologic Map of the Los Angeles 30' x 60' Quadrangle, California, prepared by Russell H. Campbelle, Chris J. Wills, Pamela J. Irvine and Brian J. Swanson, dated 2014.

California Geological Survey, (2017), Earthquake Zones of Required Investigation Los Angeles Quadrangle released 15 June 2017

EEI Geotechnical & Environmental Solutions, (2015), Due Diligence Level Geotechnical Evaluation, Proposed Mixed Use Development, Southeast Corner of East 6th Street and Alameda Street, Los Angeles, California, dated 27 February 2015.

Federal Emergency Management Agency, (2018), Flood Map 06037C1636G effective 21 December 2018

Los Angeles Building and Safety Department, (2004), Methane and Methane Buffer Map dated 31 March 2004

GPI Geotechnical Professional, Inc., (2017) Geotechnical Feasibility Investigation and Geologic-Seismic Hazard Assessment, Proposed Ava Arts District, 668 S. Alameda Street, Los Angeles, California, dated 3 March 2017.

Plans

Grimshaw Architects, LLP., (2022), East End Studios Progress Drawings, received 21 July 2022.

FIGURES

Legend

Approximate Site Boundary

Notes:
1. Aerial imagery provided through Langan's subscription to NearMap.com, flown 05/11/2022.

200 0 200
SCALE IN FEET

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Project
EES ARTS DISTRICT LA
LOS ANGELES
LOS ANGELES COUNTY CALIFORNIA

Figure Title
SITE VICINITY MAP

Project No.	700118201
Date	7/15/2022
Scale	1" =200'
Drawn By	GS

Figure 1

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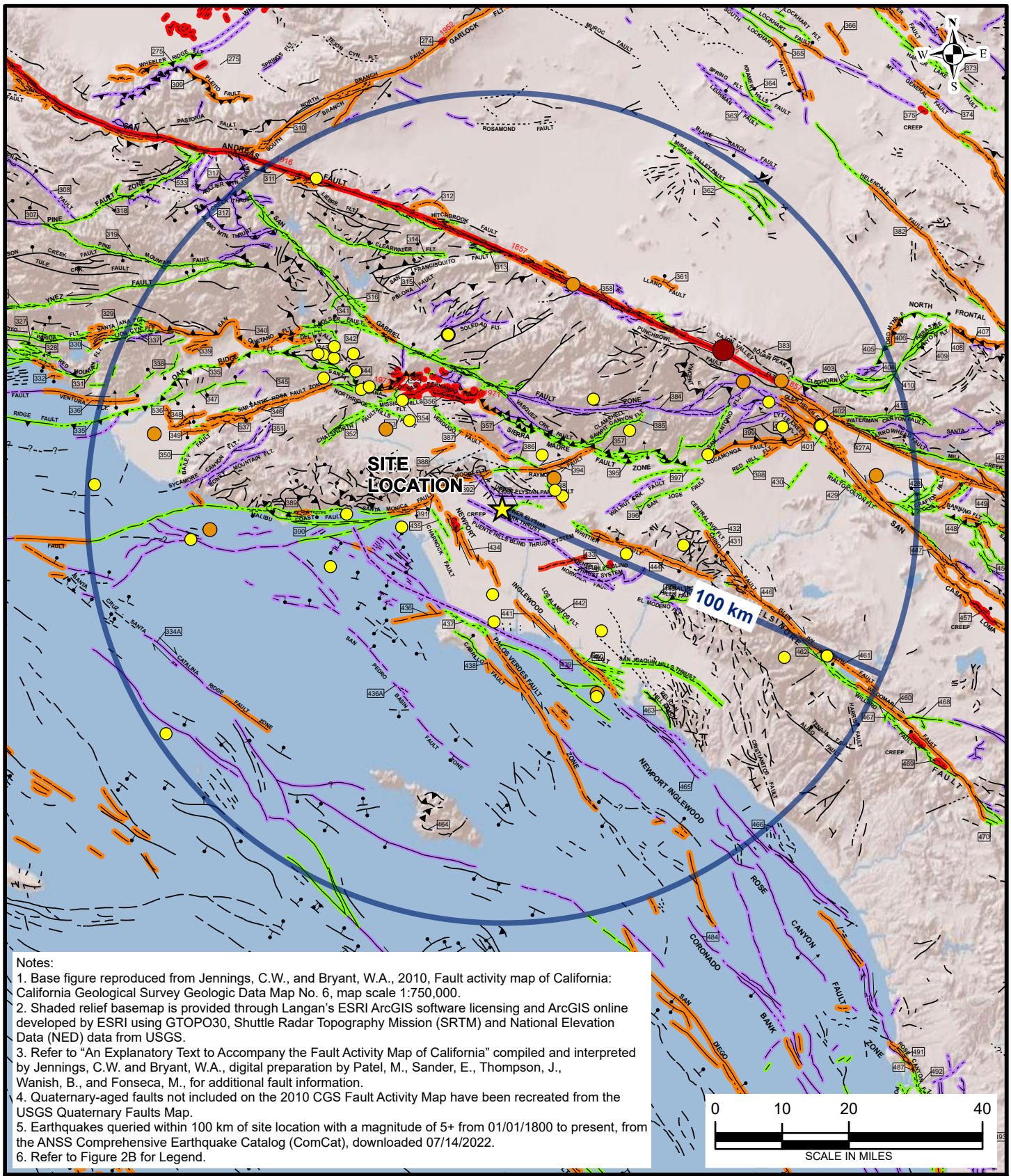

Notes:
1. Base figure reproduced from Jennings, C.W., and Bryant, W.A., 2010, Fault activity map of California: California Geological Survey Geologic Data Map No. 6, map scale 1:750,000.
2. Shaded relief basemap is provided through Langan's ESRI ArcGIS software licensing and ArcGIS online developed by ESRI using GTOPO30, Shuttle Radar Topography Mission (SRTM) and National Elevation Data (NED) data from USGS.
3. Refer to "An Explanatory Text to Accompany the Fault Activity Map of California" compiled and interpreted by Jennings, C.W. and Bryant, W.A., digital preparation by Patel, M., Sander, E., Thompson, J., Wanish, B., and Fonseca, M., for additional fault information.
4. Quaternary-aged faults not included on the 2010 CGS Fault Activity Map have been recreated from the USGS Quaternary Faults Map.
5. Earthquakes queried within 100 km of site location with a magnitude of 5+ from 01/01/1800 to present, from the ANSS Comprehensive Earthquake Catalog (ComCat), downloaded 07/14/2022.
6. Refer to Figure 2B for Legend.

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Project	EES ART DISTRICT LA LOS ANGELES LOS ANGELES COUNTY CALIFORNIA
Figure Title	QUATERNARY FAULT ACTIVITY AND EARTHQUAKE EPICENTER MAP
Project No.	700118201
Date	JULY 2022
Scale	1 inch = 20 miles
Drawn By	GS
Figure	2A

Path: \\langan.com\data\IRV\data2\700118201\Project Data\ArcGIS\APRX\700118201\700118201_v2.aprx Date: 8/5/2022 User: Toulie Time: 3:16 PM

LEGEND:

Site Location

Fault Age

- Historic
- Holocene
- Late Quaternary
- Early Quaternary
- Pre-Quaternary Fault
- 100 km Search Radius

Earthquake Epicenter

- Magnitude 5.0 to 5.9
- Magnitude 6.0 to 6.9
- Magnitude 7.0 to 7.4
- Magnitude 7.5 to 8.0

Fault Symbols

- Bar and ball on downthrown side (relative or apparent).
- Relative or apparent direction of lateral movement.
- Direction of dip.
- Low angle fault (barbs on upper plate). Fault surface generally dips less than 45° but locally may have been subsequently steepened.
- 491 — Numbers refer to annotations listed in the appendices of the accompanying report.
- Structural discontinuity (offshore) separating differing Neogene structural domains.
- Brawley Seismic Zone.

Fault Classification

Fault along which historic (last 200 years) displacement has occurred and is associated with one or more of the following:
(a) a recorded earthquake with surface rupture. (Also included are some well-defined surface breaks caused by ground shaking during earthquakes, e.g. extensive ground breakage, not on the White Wolf fault, caused by the Arvin-Tehachapi earthquake of 1952). The date of the associated earthquake is indicated. Where repeated surface ruptures on the same fault have occurred, only the date of the latest movement may be indicated, especially if earlier reports are not well documented as to location of ground breaks.
(b) fault creep slippage - slow ground displacement usually without accompanying earthquakes.
(c) displaced survey lines.

1906 ▶ / 1906 ▷ — A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangle indicates known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.

▶1906◀ — Date bracketed by triangles indicates local fault break.

1906 — No triangle by date indicates an intermediate point along fault break.

CREEP — Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.

1906 ■ / 1906 ■ — Square on fault indicates where fault creep slippage has occurred that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points).

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Project	Figure Title	Project No.	Figure
EES ART DISTRICT LA LOS ANGELES LOS ANGELES COUNTY CALIFORNIA	QUATERNARY FAULT ACTIVITY AND EARTHQUAKE EPICENTER MAP	700118201	2B
		Date: JULY 2022	
		Scale: NOT TO SCALE	
		Drawn By: GS	

Path: \\langan.com\data\IRV\data2\700118201\Project Data\ArcGIS\APRX\700118201\700118201_v2.aprx Date: 7/15/2022 User: Gsajbel Time: 9:12 AM

APPENDIX A

TABLE A.1 - USGS ANSS CATALOG SEARCH RESULTS

Date [1,3]	Latitude [1,3]	Longitude [1,3]	Approximate Magnitude [1,3]	Magnitude Type [2]	Approximate Distance from Site (km) [1,3]
3/29/2014	33.933	-117.916	5.10	mw	32
7/29/2008	33.949	-117.766	5.44	mw	44
4/26/1997	34.369	-118.670	5.07	ml	54
6/26/1995	34.394	-118.669	5.02	ml	56
3/20/1994	34.231	-118.475	5.24	ml	31
1/29/1994	34.306	-118.579	5.06	ml	43
1/19/1994	34.378	-118.619	5.07	ml	52
1/19/1994	34.379	-118.712	5.06	ml	58
1/18/1994	34.377	-118.698	5.24	ml	57
1/17/1994	34.326	-118.698	5.58	ml	53
1/17/1994	34.340	-118.614	5.20	ml	48
1/17/1994	34.275	-118.493	5.89	ml	35
1/17/1994	34.213	-118.537	6.70	mw	34
6/28/1991	34.270	-117.993	5.80	mw	34
2/28/1990	34.144	-117.697	5.51	ml	51
12/3/1988	34.151	-118.130	5.02	ml	16
10/4/1987	34.074	-118.098	5.25	ml	13
10/1/1987	34.061	-118.079	5.90	mw	15
9/4/1981	33.558	-119.120	5.45	ml	97
1/1/1979	33.917	-118.687	5.21	ml	44
2/21/1973	33.979	-119.050	5.30	mw	75
2/9/1971	34.416	-118.370	5.30	mh	44
2/9/1971	34.416	-118.370	5.80	mh	44
2/9/1971	34.416	-118.370	5.80	mh	44
2/9/1971	34.416	-118.370	6.60	mw	44
9/12/1970	34.255	-117.534	5.22	ml	69
11/14/1941	33.791	-118.264	5.12	ml	28
5/31/1938	33.699	-117.511	5.23	ml	77
3/11/1933	33.850	-118.266	5.00	ml	21
3/11/1933	33.624	-118.001	5.29	mh	51
3/11/1933	33.767	-117.985	5.02	mh	38
3/11/1933	33.631	-118.000	6.40	mw	50
8/31/1930	34.030	-118.643	5.25	ms	37
4/18/1928	34.100	-119.300	5.20	uk	98
8/4/1927	34.000	-118.500	5.30	uk	25
7/23/1923	34.089	-117.259	6.21	mw	90
3/10/1922	34.209	-119.143	6.53	mw	86
5/15/1910	33.700	-117.400	5.30	mw	86
5/13/1910	33.700	-117.400	5.00	ml	86
4/11/1910	33.700	-117.400	5.00	ml	86
7/22/1899	34.300	-117.500	6.36	mw	74
7/22/1899	34.200	-117.400	5.90	ml	79

7/30/1894	34.300	-117.600	6.20	mw	65
4/4/1893	34.300	-118.600	5.80	ml	44
6/14/1892	34.200	-117.500	5.50	ml	70
8/28/1889	34.200	-117.900	5.60	ml	36
12/16/1858	34.200	-117.400	6.00	ml	79
1/16/1857	34.520	-118.040	6.30	mw	57
1/10/1857	34.760	-118.710	5.60	ml	91
7/11/1855	34.100	-118.100	6.00	ml	14
9/24/1827	34.000	-119.000	6.00	mw	70
12/8/1812	34.370	-117.650	7.50	mw	65

Notes:

1. The listed Earthquake Catalog Search results were obtained from USGS ANSS website on 11 December 2021.
2. Earthquake Catalog search results include earthquake events within 100 km of the Site with magnitudes of 5.0 or greater since 1991.