APPENDIX C:

GEOTECHNICAL INVESTIGATION

GeoLabs - Westlake Village

Geo-Hazard Review, Proposed Art Complex Building
1410 Pico Boulevard, Santa Monica College,
City of Santa Monica, California

March 13, 2020.

[This Page Intentionally Left Blank]

Geo-Hazard Review,
Proposed Art Complex Building,
1410 Pico Boulevard, Santa Monica College,
City of Santa Monica, California

March 13, 2020
W.O. 8266

TABLE OF CONTENTS

ENCLOSURE LIST:

GEOLABS-WESTLAKE VILLAGE
Foundation and Soils Engineering, Geology
a dba of
R & R Services
Corporation
31119 Via Colinas, Suite 502 • Westlake Village, CA 91362
Voice: (818) 889-2562 (805) 495-2197
Fax: (818) 889-2995 (805) 379-2603

March 13, 2020
W.O. 8266

Santa Monica College
1900 Pico Boulevard
Santa Monica, California 90405

Attention: Mr. Charlie Yen

SUBJECT: Geo-Hazard Review, Proposed Art Complex Building, Santa Monica College, 1410 Pico Boulevard, City of Santa Monica, California

Mr. Yen:

In accordance with the request of your agent, Mr. Kashan Bhatti with Vanir, Geolabs-Westlake Village has prepared a geo-hazard review of information pertinent to the proposed Art Complex building at 1410 Pico Boulevard, offsite of the main Santa Monica College (SMC) campus. The purpose of this report is to provide a preliminary review of the geology and soil conditions in support of the California Environmental Quality Act (CEQA) document that is being prepared by others.

The scope of work for this project included (1) logging and sampling of five exploratory borings which were excavate with a truck-mounted, hollow-stem auger drill rig, (2) laboratory testing of selected retrieved samples (in progress), (3) review of previous work which was judged both pertinent to our purpose and readily available to our office, (4) geotechnical analysis of the assembled data, and (5) preparation of this geo-hazard review report. Storm Water infiltration testing is not a part of this investigation.

The approximate locations of exploratory excavations are shown on the enclosed boring location map [Plate 1.2]. Descriptions of the materials encountered in the exploratory excavations are summarized in subsequent sections of this report.

A complete geotechnical investigation report will be provided under separate cover. Detailed logs of exploration and laboratory test results will be provided in the geotechnical investigation report. Our review of geo-hazards for the site is presented in the following sections. Further review of these findings with respect to the proposed development and discussion of these findings and geotechnical design criteria will be presented in the geotechnical investigation report.

SITE DESCRIPTION

The subject project is proposed at 34.0159 latitude and -118.475 longitude. The site is located approximately 350 feet west of the main Santa Monica College campus, at the corner of Pico Boulevard and 14th street (Plate 1.1, Site Location Map). The site is rectangular in shape and consists of three parcels. APN 4284-034-900 is 0.65 acres at 1410 Pico Boulevard, and contains a paved parking lot with lighting and a habitable kiosk. APN 4284-034-904 is 0.87 acres at 2019 14th Street. It is separated from parcel 900 by a chain link fence and four foot masonry wall. Historically it has been developed and contained buildings since 1925. The most recent structure was demolished in October of 2018 and the parcel is currently vacant. The northwestern half is primarily dirt with occasional weeds and grass. The southeastern half consists of a paved parking lot. The northeastern corner of the parcel contains a few yards of ground concrete in stockpiles. The third parcel, APN 4284-034-903 is 0.13 acres adjacent to 14th street. It makes up the southeastern corner of the parking lot in parcel 904.

All the parcels are relatively level. Vegetation consists of shrubs and trees along the perimeter of the larger parcels. Parcels 904 and 903 are enclosed with a combination of masonry walls and chain link fencing. They can be accessed through a locked gate off of 14th Street. The parking lot on the 900 parcel is currently accessible to SMC students and staff

Figure 1 Project site outlined in red. Source: Google satellite imagery November, 2018.

PROPOSED PROJECT

Based on our discussions and the preliminary site plan provided, the project will consist of constructing a new Art Complex consisting of a rectangular building and on-grade parking. Based on our initial take-off, the site is approximately 1.65 acres, and the building footprint is on the order of 16,300 square feet.

Presently, no site development or building plans have been provided to our office. We anticipate that the structure will be located near the center of the site and the development will include associated hardscape, parking and drive, and landscape improvements.

Based on our recent experience with projects similar to this, onsite infiltration of storm water runoff may be included in the proposed project design.

PREVIOUS STUDIES ON ADJACENT PROPERTIES

Numerous geotechnical studies have been performed for previous projects on the main campus. The campus is approximately 350 feet east of the subject site, on the far side of 16th Street. The previous projects are within 4/10ths of a mile of this site. The most recent investigations on the main campus, within the last decade, were for the Student Services, IT, PE, and Math and Sciences buildings.

GEOLOGIC SETTING AND FAULTING

A Regional Geologic Map is attached as Plate 1.3, and is a partial reproduction of the Geologic Map of the Beverly Hills and Van Nuys (South-Half) Quadrangles as mapped by Dibblee (1999). As indicated, the site is situated in an area mapped as Quaternary-age marine sedimentary deposits.

The site is located at the southerly margin of the Transverse Range geomorphic province, which is comprised of a series of east-west trending mountain ranges and intervening valleys created by north-south compression, beginning during the Pliocene (roughly 2.5 to 5 million years ago). The Transverse Range is characterized by left-lateral, oblique-reverse faults, which have accommodated the relative westward motion of the Transverse Range block, along with rotation. In the immediate vicinity of the site, the Raymond, Hollywood, Santa Monica fault system bounds the southerly margin of the Santa Monica Mountains, and is responsible for the uplift of the Santa Monica Mountains. A Regional Fault Map is attached as Plate 1.4, and illustrates nearby significant faults such as the Santa Monica fault, Newport-Inglewood fault, and San Andreas Fault. Plate 1.4 is a partial reproduction of the California Geological Survey (CGS) Fault Activity Map of California (Rev. 2010).

In the West Los Angeles and Santa Monica area, researchers have identified two strands of the Santa Monica fault, the northerly branch, and the southerly branch. The available data indicates that the northerly branch has experienced displacement during the Pleistocene and Holocene, while the southerly branch is interpreted to not have displaced Quaternary strata (Wright, 1991; Tsutumi et al 2000). The southern branch of the Santa Monica fault is approximately 6,400 feet north of the site.

The site is underlain by Pleistocene-age marine terrace deposits in excess of one hundred feet in thickness that are primarily comprised of well sorted, very fine to medium grained sands. At depth, these deposits likely overlie marine sandstone deposits of the Pliocene-age Fernando Formation (Dibblee, 1991).

Earth Materials

Exploratory excavations for this investigation and excavations conducted throughout the main campus area indicate that the project area is underlain by artificial fill and marine terrace deposits. Brief summaries of the material descriptions are provided in the following sections.

Artificial Fill (af)

These soils appear to be primarily derived from on-site soils and are comprised of medium brown, red brown and dark brown silty sand. The sand fraction is predominantly fine to medium grained. These soils are typically damp to moist and in a medium dense condition. Due to their undocumented status, they are not considered appropriate for foundational support.

Marine Terrace Deposits (Qt)

These Pleistocene-age marine terrace deposits consist of reddish brown, yellow brown, light brown and tan interbedded very fine to medium grained SAND with occasional gravel content. Contacts noted in previous borings commonly are found to be laterally continuous. Blow counts and observations of the undisturbed samples obtained from the borings indicated that these materials are generally over-consolidated and in a dense to very dense condition.

Observation of the foundation excavations made in these materials for recently completed PE Building and Student Services Building underground parking structure confirmed their dense condition and suitability for foundational support. Regional geologic maps indicate these deposits are several hundred feet in thickness.

GROUNDWATER

Groundwater was not encountered in excavations in the area of the Art Complex building to the maximum depth explored of 50 feet. The deepest exploration on the main campus for the Student Services building (B11) did not encounter groundwater at its maximum depth of 100 feet (GWV, October 22, 2007). A depth to groundwater map prepared by Leighton and Associates (1995) indicated that groundwater is approximately 110 feet below ground surface in the vicinity of Santa Monica College.

SEISMICITY

The subject site contains no known active or potentially active faults, nor is it within an Alquist-Priolo Fault Rupture Hazard Zone. Therefore, the potential for ground rupture is considered to be very low. However, the property is situated within the seismically active Southern California region and ground shaking is likely to occur due to earthquakes caused by movement along faults within the region.

Historical Seismicity

To evaluate the historical seismicity at the site, the software entitled EQSEARCH v.300 (Blake, 2000) for Windows was utilized to provide a summary of historical earthquakes with epicenters within 100 miles of the site (and magnitudes greater than M=4.5.0) and their estimated ground shaking intensity (per the Modified Mercalli Intensity, MMI) at the subject site. Output is provided in Appendix B and summarized herein.

The highest ground shaking intensities estimated for the site (MMI=IX) were associated with three moderate sized earthquakes (M=4.9 to 5.0) that occurred within approximately 2.9 kilometers of the site. A Modified Mercalli Intensity of IX corresponds to "damage considerable in specially designed structures, well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse; buildings shifted off foundations; ground cracked conspicuously, underground pipes broken."

Seven historical earthquakes are estimated to have resulted in a ground shaking intensity on the Modified Mercalli Intensity scale of VIII, one of which was the January 17, 1994 Northridge Earthquake. The balance of the MMI=VIII events correspond to a series of smaller earthquakes (M=4.5 to M=5.0) located within 2.9 to 16.2 kilometers of the site between 1914 and 1930, and a larger, more distant earthquake in 1827. A Modified Mercalli Intensity scale of VIII corresponds to "damage slight in specially designed structures, considerable in ordinary substantial buildings, with partial collapse, great in poorly built structures."

The Long Beach earthquake of 1933 and San Fernando Earthquake of 1971 led to estimated Modified Mercalli Intensities of VII at the subject site. A Modified Mercalli Intensity scale of VII corresponds to "damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken."

Site Classification for Seismic Design

Recent borings for this investigation included Standard Penetration Test (SPT) sampling. Based on the blow count data included in Boring B-1, considering data for the upper 50 feet, the soils underlying the site are classified as Site Class D: Stiff Soil. The blow counts correlate with a seismic velocity of approximately 1,000 ft/sec (CBC Table 20.3-1).

As part of the Cone Penetrometer Tests performed during our previous investigations, measurements of the seismic velocity of the terrace deposits were made at approximately five foot depth intervals. The results from CPT1A, CPT2, and CPT3 performed for the Student Services Building, indicate a seismic velocity ranging from 750 ft/sec to 1,225 ft/sec, but generally about 1,000 ft/sec for the upper 25 feet of soils (GWV, October 2007). This data agrees with that obtained in a 1988 investigation performed on the Santa Monica College campus by Law/Crandall that analyzed the shear wave profile in the upper 100 feet of soil using cross-hole seismic techniques. In that study, the average shear wave of the upper 100 feet was estimated to be about 1,100 feet/sec.

While we recognize that the SPT blow counts from our borings commonly exceed 50 blows per foot, it is our opinion that the seismic velocity data is of superior quality and should be utilized for selection of the Site Class. Accordingly, the Site Class should be considered D (CBC 1613A.3.2).

Mapped Seismic Ground Motion Values

This report includes preliminary seismic ground motion values in accordance with the 2019 California Building Code (CBC). Seismic ground motion values were determined in accordance with the procedure within CBC §1613 using the U.S. Seismic Design Maps website provided by the USGS. Output from these analyses are provided in Appendix A and summarized herein.

Latitude: 34.0159º Longitude: -118.475º	**Factor/Coefficient**	**Value**
Site Profile Type	Site Class	D
Short-Period MCE at 0.2s	S_s	1.924
1.0s Period MCE	S_1	0.686
Site Coefficient	F_a	1.0
Site Coefficient	F_v	NULL
Adjusted MCE Spectral Response Parameters	S_{ms} S_{m1}	1.924 NULL
Design Spectral Acceleration Parameters	S_{DS} S_{D1}	1.282 NULL
Long-Period Transition Period	T_L	8.0 sec
Peak Ground Acceleration	PGA_M	0.904

Structures on soil profiles designated as Site Class D with S_1 values greater than or equal to 0.2, need not use site-specific ground motion values provided the value of the seismic response coefficient C_S is determined in accordance with the procedures in ASCE 7-16 §12.8.1.1 (per exception 2 of §11.4.8). The following parameters are considered appropriate for use in determining C_S per exception 2.

F_a	1.00	Site amplification factor at 0.2 second	
F_v	1.70	Site amplification factor at 1.0 second	
S_{MS}	1.924	Site-modified spectral acceleration value	(11.4-1)
S_{M1}	1.166	Site-modified spectral acceleration value	(11.4-2)
S_{DS}	1.283	Numeric seismic design value at 0.2 second SA	(11.4-3)
S_{D1}	0.77	Numeric seismic design value at 1.0 second SA	(11.4-4)

If the designer uses the simplified lateral force analysis procedure, §12.14.8 allows F_a to be taken as 1.0 for rock sites, or 1.4 for soil sites, for development of S_{DS}. Also, the value of S_S can be capped at 1.5 for development of parameters in accordance with §11.4.4. Sites are permitted to be considered rock is the soil thickness is no greater than 10 feet below the footing.

LABORATORY TESTING

Undisturbed and bulk samples of soil materials encountered at the site were collected during the course of our current exploration and past fieldwork on the main campus. Selected laboratory tests completed on the retrieved samples and a comprehensive summary of laboratory test results will be presented in the geotechnical investigation report.

LIQUEFACTION POTENTIAL

Liquefaction is a condition where the soil undergoes continued deformation at a constant low residual stress due to the build-up of high porewater pressures. The possibility of liquefaction occurring at a given site is dependent upon the occurrence of a significant earthquake in the vicinity; sufficient groundwater to cause high pore pressures; and on the grain size, relative density, and confining pressures of the soil at the site.

The subject site, like other sites in Southern California, is expected to be subjected to significant shaking from earthquakes. While the site is underlain by sandy materials, the lack of groundwater within the upper fifty feet and the high relative density render the potential for liquefaction to be very low. The site is not within a Seismic Hazard Zone delineated as having potential for liquefaction as mapped by the California Geological Survey (formerly CDMG) for neither the Beverly Hills 7.5 Minute Quadrangle (Plate 1.5, Seismic Hazard Zones) nor that mapped by Leighton and Associates in the Technical Background Report for the City of Santa Monica.

SEISMICALLY INDUCED SETTLEMENT

During seismic ground shaking, seismically induced settlement can occur. The estimation of the potential seismic settlement is divided into two separate causative mechanisms. The settlement of coarse grained soils above the groundwater table is assumed to be related primarily to ground shaking adjusting the coarse grained soils into a tighter packing configuration. This is often referred to as seismic compression. The seismic settlement below the groundwater is assumed to be related to pore pressure changes during liquefaction. Because no groundwater was encountered during our investigation, only seismic settlement of unsaturated soils requires further consideration.

For this investigation and our previous main campus investigations, we have considered the evaluation procedures proposed by Tokimatsu and Seed (1987) to evaluate the seismic settlement potential of unsaturated soil. This method utilizes the SPT blow counts from the borings to determine the relative density of the in-place soils. The high blow counts indicate that the soils are in a medium dense to very dense condition. Based on the blow count data, the potential for seismic settlement is considered low.

HYDROCONSOLIDATION POTENTIAL

Hydroconsolidation is a condition where dry or moist soils undergo settlement upon being wetted. In many cases no additional surcharge load is necessary to trigger the hydroconsolidation.

The potential for hydroconsolidation has been evaluated for previous developments within the main campus. Based upon the results of previous testing, our review of the soil textures and density descriptions from the boring logs, review of the dry density-moisture content data, and consideration of the geologic nature of the deposits, we consider the potential for hydroconsolidation to be very low within the terrace deposits underlying the site.

Site specific testing will be performed as part of the laboratory testing for the geotechnical investigation and results report under separate cover.

LANDSLIDING AND SLOPE STABILITY

The topography of the Santa Monica College campus and immediate vicinity is very flat, with grade differentials typically on the order of a couple of feet. No evidence of landsliding was observed during the course of our previous investigations throughout the campus. The site is not located within a Seismic Hazard Zone for earthquake-induced landsliding.

The proposed project may include temporary slopes. Slope stability analyses were previously performed to evaluate various temporary slope gradients and heights for other projects within the main campus. When development plans are prepared additional slope stability analysis will be provided as warranted or previous analysis confirmed based on specific development criteria.

EXCEPTIONAL GEOLOGIC HAZARDS

The following paragraphs address unusual or "exceptional" geologic hazards present in the State of California and listed in California Geological Survey Note 48.

Phase I and II Environmental Site Assessment Work

Such environmental consulting services are outside of our expertise and scope of work.

Naturally-occurring Hazardous Materials

Review of the available geologic literature does not indicate the presence of any naturally occurring hazards such as methane gas, hydrogen sulfide gas, or tar seeps at the project site.

California Environmental Quality Act

We defer issues with respect to the California Environmental Quality Act to the project architect and owner. No paleontological resources were observed in our exploratory excavations.

Groundwater Quality

The Santa Monica College campus is provided potable water by the local utility. To our knowledge, no groundwater resources are extracted by the College.

On-Site Septic Systems

This area of Santa Monica is provided with public sanitary sewer service. The adjacent residential properties have sewer easements in the rear yards. Sewers are also present in 14th and 16th Streets. Buildings existed at this site as early as 1925. The last building construction completed on the property in 1971.Though the construction of the earliest building on-site is predated by the completion of the Santa Monica sewer outfall at the pier, records were not located detailing the initiation of public sewer services in this area. During the recent geotechnical field investigation, no on-site septic systems were encountered.

Non-Tectonic Faulting and Hydrocollapse of Alluvial Fan Deposits Hazards

Review of the geologic literature does not indicate the historical occurrence of nontectonic faulting in the site vicinity due to subsurface fluid withdrawal.

The lateral continuity of the marine terrace deposits underlying the site and their low potential for hydroconsolidation indicates that the potential for non-tectonic faulting is remote.

Regional Subsidence Hazards

Review of the available literature indicates that the project site has not been subject to historical subsidence.

Volcanic Eruption Hazards

The project site is located well outside areas of active volcanism.

Tsunami and Seiche Hazards

Review of the Safety Element of the City of Santa Monica and CGS earthquake hazard zones maps indicates that tsunami run-up heights (16± feet) for the Santa Monica area are in general confined to beach areas below Palisades Park/Ocean Avenue. Seiches are seismically-induced waves or oscillations within semi-enclosed bodies of water such as lakes, reservoirs, and bays. In light of the lack of significant bodies of water adjacent to the site, the potential for a seiche to impact the site is considered low.

Naturally-Occurring Asbestos Hazards

Our review of the geologic literature and exploratory findings indicate that naturally occurring asbestos minerals are not present at the site.

Radon-222 Gas

The project site is not immediately underlain by formations known to emit hazardous levels of Radon gas. Notwithstanding, we defer the evaluation of this environmental and public health hazard to the project environmental consultant.

Flood Inundation Hazards

Plate 3 of the Safety Element of the City of Santa Monica and CGS seismic hazard zone maps illustrates the limits of potential inundation of flood waters associated with the breach of the Stone Canyon Reservoir located within the City of Los Angeles. The project location is not within this potential inundation area.

Abandoned Clay Pit Hazards

Former clay pit areas are located near the intersection of Stewart Street and Exposition Boulevard, more than 3000 feet from this project location. These pits were reportedly backfilled with some municipal waste that could create a methane hazard. Review of Plate 2 of the Safety Element and our exploratory borings indicate that the project location site is underlain by thin fill soils and native terrace soils.

DISCUSSION AND DESIGN CRITERIA

The following discussion and general information is based upon our understanding of the proposed Art Complex development and associated improvements and the site conditions at the building location. Site and building specific design criteria will be provided in the geotechnical investigation report. Our office should be provided with specific site development plans when they are available and should be kept abreast of significant modifications to the proposed project in order to provide geotechnical recommendations when appropriate.

Recompaction of Existing Fill for Near Surface Improvements

Any areas to receive foundations and slab improvements near the current ground surface should have any existing fill soils removed and recompacted to at least 90 percent relative compaction. The limit of such removal and recompaction will be determined as part of the geotechnical investigation. Foundations for at-grade structures could bear on engineered fill or be deepened to bear into native terrace deposits.

Recommended Foundational Material

Based on our findings, the native terrace deposits and certified engineered fill are suitable for foundational support of the proposed structure. Foundations should bear into either one of these materials, not both, with a minimum embedment of 24 inches below the adjacent grade. Localized deepening will likely be necessary to achieve embedment into terrace deposits. Considering the demolition of the existing buildings, the potential for significant disturbance of the near surface soils is great. For this situation it may be prudent to design for the foundation to be supported by compacted fill

Temporary Excavations

In general, temporary excavations should conform to CAL-OSHA criteria. Select temporary slope configurations (with temporary factors of safety exceeding 1.25) have been evaluated by our office utilizing site specific data. Such temporary slope configurations, their corresponding maximum heights, and other applicable recommendations are presented in the "Landsliding and Slope Stability" section of this report.

Grading – Engineered Fills

We anticipate that minor cut and fill grading and removal and recompaction of near surface pad soils will be necessary to provide a suitable building pad, prepare subgrade for paving and provide suitable site drainage for the proposed site development. Design criteria pertaining to the placement of, and preparation for, engineered fills will be presented in the geotechnical investigation report.

Foundation Systems

Based on review of preliminary geotechnical data for the site and previous work on the main campus, the proposed structure may be supported on conventional foundations. When foundation details are provided and geotechnical design criteria will be evaluated for the proposed development. Foundation design criteria are based, in part, upon the expansive properties of the materials anticipated to be present near the finished pad grade. Laboratory testing to verify the expansive properties of the near-pad-grade materials should be performed at the completion of rough grading.

Settlement

When foundation plans and loads are provided, additional review of static settlement can be provided. Based on our understanding of the proposed structure, subsurface conditions and anticipated remedial grading, static settlement of foundations is anticipated to be minor, on the order of 3/4 inch. Differential settlement between footings with is anticipated to be less than 1/3 inch. We anticipate the majority of settlement to occur during construction.

Corrosivity

For structural elements, a site is considered to be corrosive if one or more of the following conditions exist for the representative soil samples taken at the site: Chloride concentration is 500 ppm or greater, sulfate concentration is 2000 ppm or greater, or the pH is 5.5 or less (Caltrans, 2015; GMED, 2013). For structural elements, the minimum resistivity of soil and/or water indicates the relative quantity of soluble salts present in the soil or water. In general, a minimum resistivity value for soil and/or water less than 1000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion.

Samples from the soil at the site have been forwarded to consulting corrosion engineers, HDR Inc., for testing. Results of testing will be report with the geotechnical investigation report and design considerations provided.

Drainage

Positive drainage should be established to carry pad waters away from structures and foundations, and to prevent uncontrolled or sheet flow over manufactured slopes. We recommend as steep a gradient as possible be established around the structure, to the street or other non-erosive drainage devices. Fine-grade fills placed to create pad drainage should be compacted in order to retard infiltration of surface water.

Preserving proper surface drainage is also important. Planters, decorative walls, plants, trees or accumulations of organic matter should not be allowed to retard surface drainage. Area drains and roof gutters (if present) should be kept free of obstruction. Roof gutters (if present) and condensation lines from air conditioners should outlet to area drains or paved areas which conduct the water to the street. Positive drainage along the backs of retaining walls should be maintained. Any other measures that will facilitate positive surface drainage should be employed.

Storm Water Infiltration

Previous geotechnical work for main campus developments included investigating the infiltration characteristics within the soils underlying the site. If on-site storm water management is proposed at the Art Complex site, additional subsurface exploration and infiltration testing will be necessary based on the means and methods of the storm water management as provided by the Project Civil Engineer.

SUBSEQUENT GEOTECHNICAL INVESTIGATION SERVICES

As indicated previously, a detailed geotechnical investigation will be reported under separate cover. The geotechnical design criteria in the investigation report should be incorporated into the project design, construction and site maintenance of the proposed site development.

CLOSURE

This work is not intended to be used directly for design. This report has been prepared in accordance with generally accepted engineering practices at this time and location. No other warranties either express or implied are made as to the professional advice provided under the terms of our agreement and included in this report.

Thank you for this opportunity to be of service. Please do not hesitate to call if you have any questions regarding this report.

Respectfully submitted,
GEOLABS-WESTLAKE VILLAGE

Lawrence K. Stark
G.E. 2772

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE K. STARK
No. 2772
GEOTECHNICAL
STATE OF CALIFORNIA

Ronald Z. Shmerling
C.E.G. 1047
R.C.E. 35444

REGISTERED PROFESSIONAL ENGINEER
RONALD Z. SHMERLING
No. 35444
CIVIL
STATE OF CALIFORNIA

REGISTERED GEOLOGIST
RONALD Z SHMERLING
NO 1047
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

LKS:af

XC: (6) Addressee

REFERENCE LIST:

California Department of Transportation, January 2015; Corrosion Guidelines, Ver, 2.1.

California Geological Survey, January 12, 2010; Engineering Geology and Seismology Review for Santa Monica College – Student Svc/Admin Bldg + parking, 1900 Pico Boulevard, Santa Monica, CA. CGS Application No. 03-CGS0066. (adequately assessed).

..., January 1, 2004; California Geological Survey – Note 48, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings

..., 1999; Simplified Fault Activity Map of California, compiled by C.W. Jennings and George J. Saucedo (Revised 2002 by Tousson Toppozada and David Branum), Scale 1:2,500,000

..., 1998; Seismic Hazard Zone Report for the Beveryly Hills 7.5 Minute Quadrangle, Los Angeles County, California.

Geolabs-Westlake Village, April 14, 2015 Rev. September 2, 2015; Geotechnical Investigation for Proposed Student Services Building, Santa Monica College, 1900 Pico Boulevard, City of Santa Monica, California.

..., May 10, 2010 Rev. April 19, 2012; Geotechnical Investigation for Proposed Health/P.E/ Fitness/Dance Building, Santa Monica College, 1900 Pico Boulevard, City of Santa Monica, California.

..., May 6, 2010 Rev. October 11, 2011; Geotechnical Investigation for Proposed IT/Telecom building, Santa Monica College, 1900 Pico Boulevard, City of Santa Monica, California.

Geolabs-Westlake Village, October 22, 2007;Preliminary Geotechnical Investigation of Proposed Subterranean Parking Garage and Student services Building Project (Component A), Santa Monica College, City of Santa Monica, California..., May 25, 2007; Engineering Geology and Seismology Review for Santa Monica College-Drescher Hall Elevator, 1900 Pico Boulevard, Santa Monica College, Santa Monica, California 90405, DSA File No. 19-C8, DSA Application No. 03-110487

Leighton & Assciates, Inc., March 30, 1994; Technical Background Report to the Safety Element of the City of Santa Monica General Plan.

California Geological Survey, 1998; Seismic Hazard Evaluation of the Beverly Hills 7.5-Minute Quadrangle, OFR 98-14, California

..., March 25, 1999; Official Map of Seismic Hazard Zones, 7.5 Minute Beverly Hills Quadrangle, Los Angeles County, California

Catchings, R.D., G. Gandhok, M.R. Goldman, and D. Okaya, 2001; Seismic Images and Fault Relations of the Santa Monica Thrust fault, West Los Angeles, California, USGS Open File Report 01-111

County of Los Angeles Department of Public Works, Geotechnical and Materials Engineering Division (GMED), July 1, 2013; Manual for Preparation of Geotechnical Reports.

REFERENCE LIST

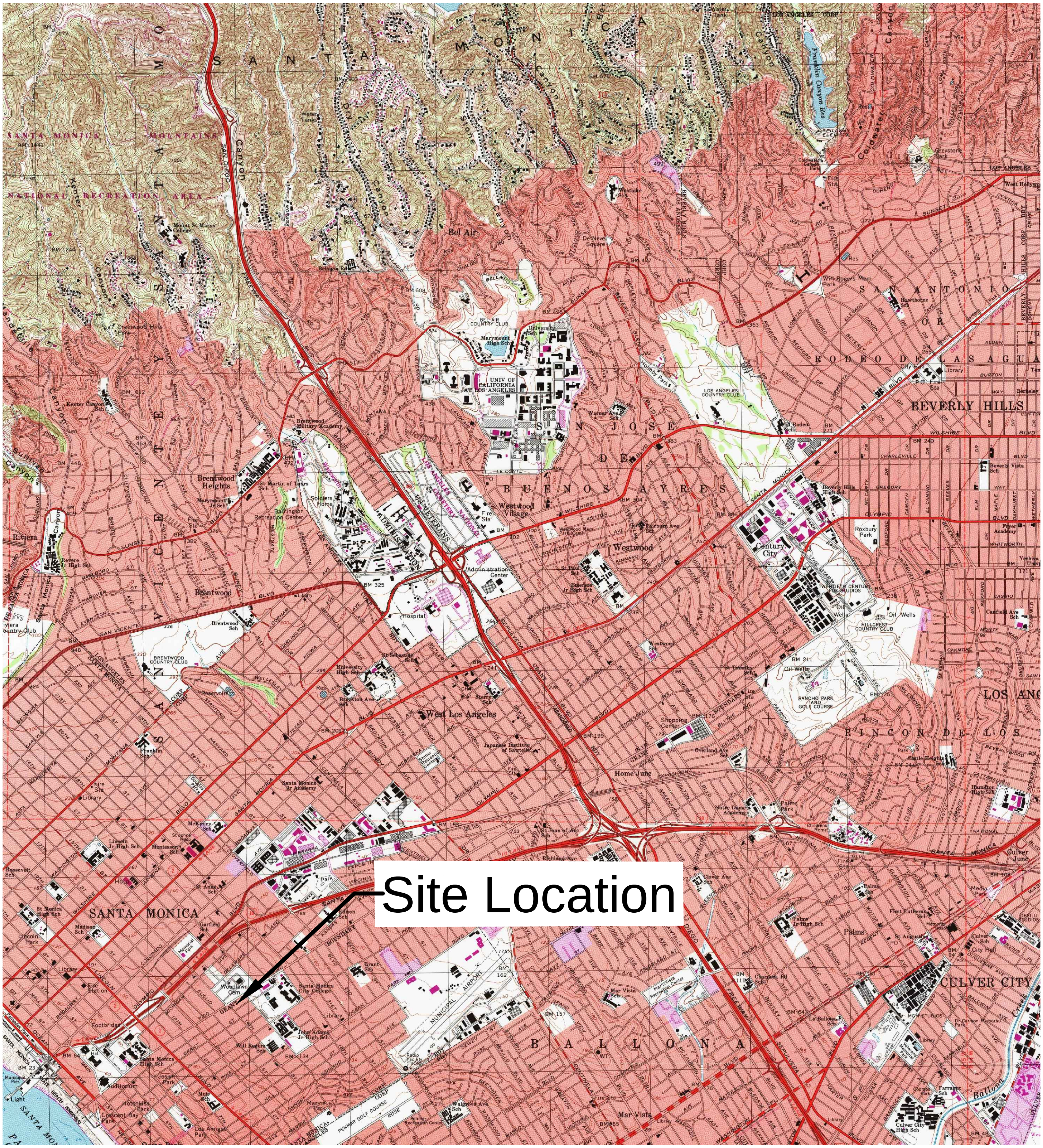
Dolan, J.F, Sieh, K., and Rockwell, T.K., 2000; *Late Quaternary activity and seismic potential of the Santa Monica fault system, Los Angeles, California*, in GSA Bulletin, October 2000, V. 112, no. 10, p. 1559-1581

Dibblee, T.W., and Ehrenspeck, H.E., ed., 1991, Geologic map of the Beverly Hills and Van Nuys (south 1/2) quadrangles, Los Angeles County, California: Dibblee Geological Foundation, Dibblee Foundation Map DF-31, scale 1:24,000

Los Angeles County GIS Data Portal 2020, n.d.; < https://apps.gis.lacounty.gov/slv/?Viewer=GISViewer> Accessed February 26, 2020

SITE LOCATION MAP

1410 PICO BOULEVARD,
SANTA MONICA, CA
LOS ANGELES COUNTY



SOURCE: U.S.G.S, Beverly Hills Quadrangle, California - Los Angeles Co. 7.5 Minute Series (Topographic), 1995

Path : P:\8266\Art Complex (1.1 Site Location)

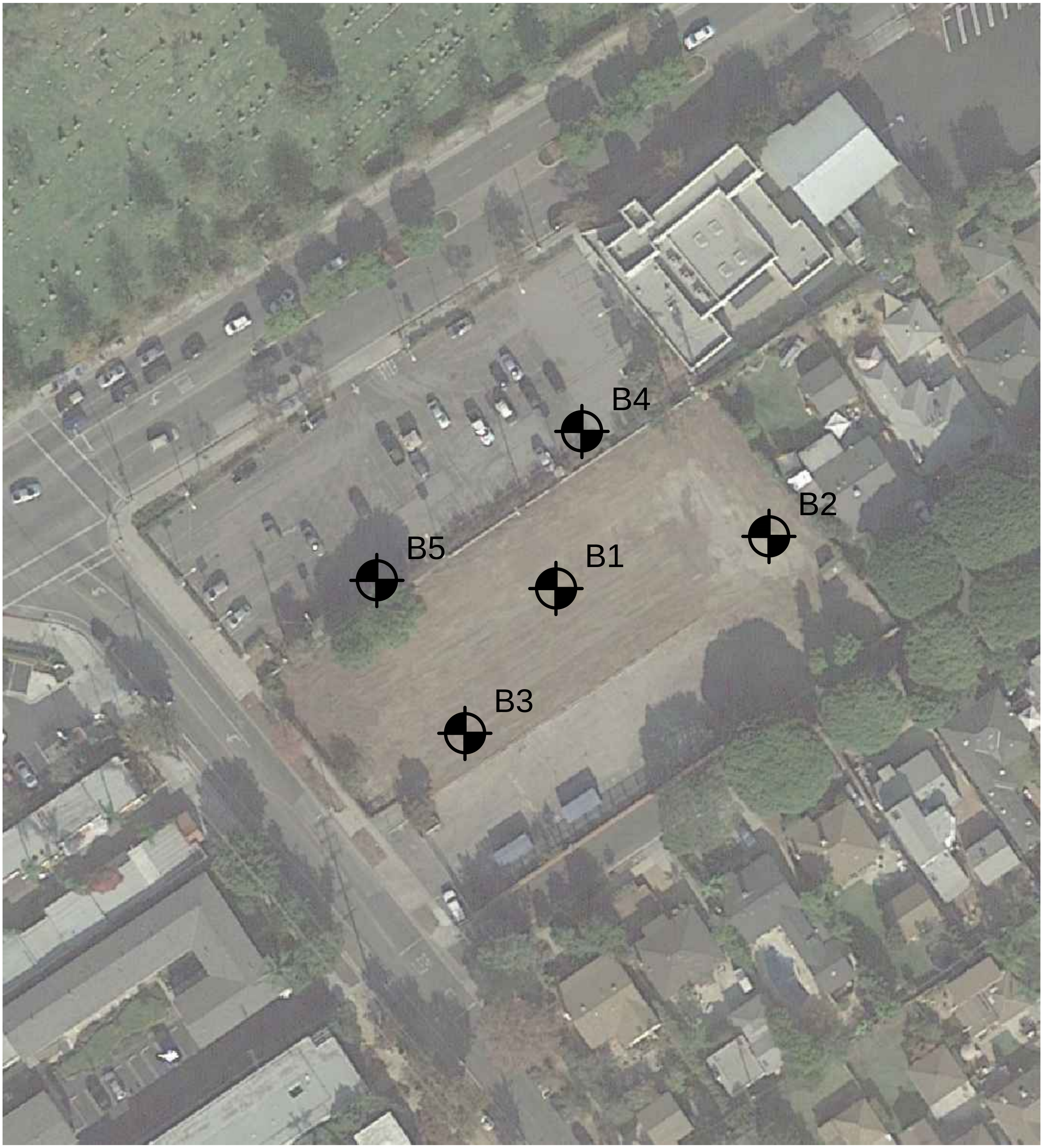
Geolabs - Westlake Village
GEOLOGY AND SOIL ENGINEERING

DATE 3/13/2020	BY AL
SCALE NTS	W.O. 8266

PLATE 1.1

BORING LOCATION MAP

1410 PICO BOULEVARD,
SANTA MONICA, CA
LOS ANGELES COUNTY



SOURCE: Google Earth Pro 7.3.2, 2018, viewed February 12, 2020

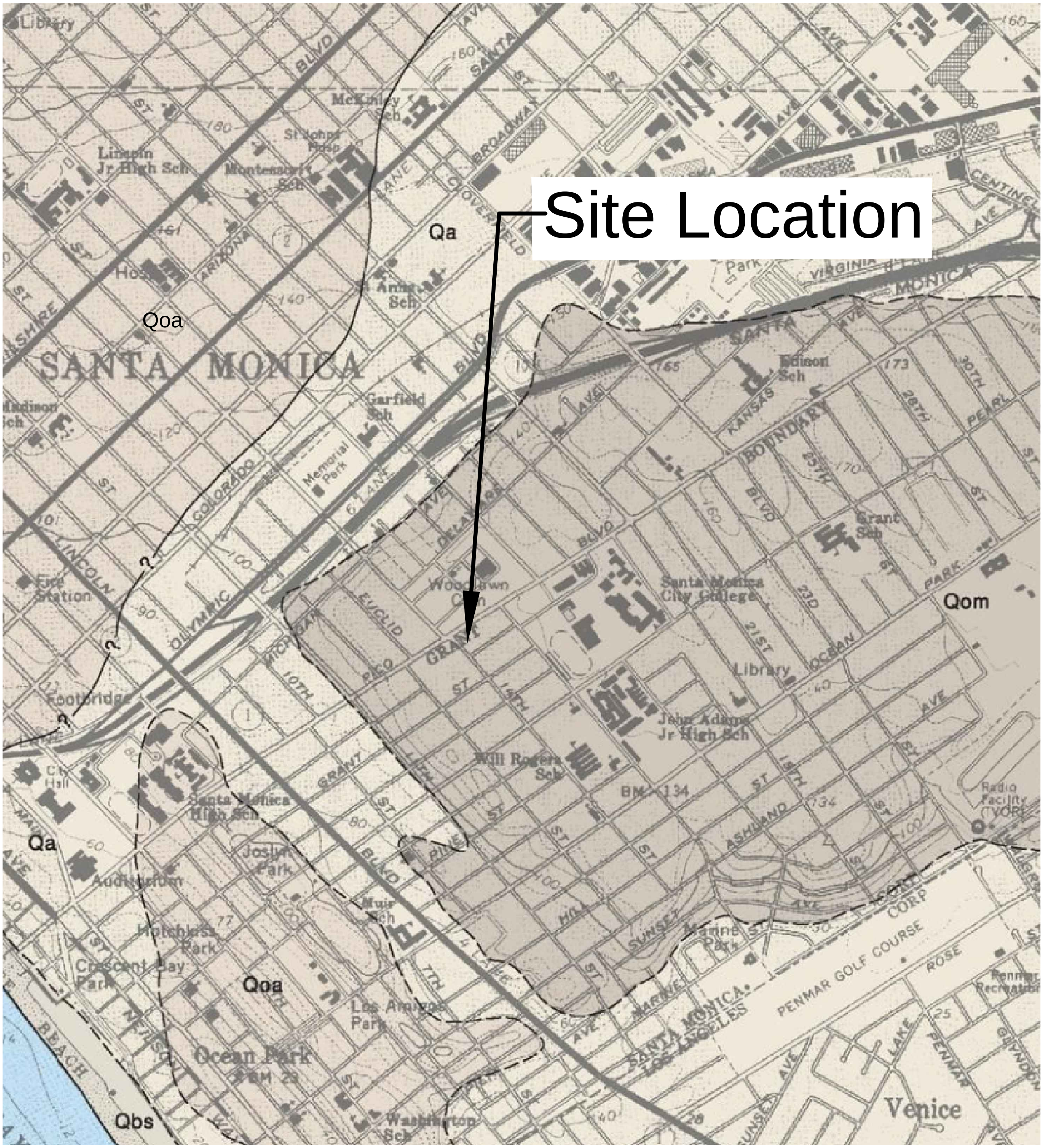
Path : P:\8266\Art Complex (1.2 Boring Location)

Geolabs - Westlake Village GEOLOGY AND SOIL ENGINEERING	
DATE 3/13/2020	BY AL
SCALE NTS	W.O. 8266

PLATE 1.2

REGIONAL GEOLOGIC MAP

1410 PICO BOULEVARD,
SANTA MONICA, CA
LOS ANGELES COUNTY



SOURCE: Dibblee, T.W., and Ehrenspeck, H.E.,Geologic map of the Beverly Hills and Van Nuys (south 1/2) quadrangle, Los Angeles County, California,1991. Scale 1:2400

Qbs	Beach Sand
Qa	Alluvial gravel, sand, silt, and silt-clay
Qoa	Old Alluvium
Qom	Marine Deposits of Hoots 1931

Geolabs - Westlake Village
GEOLOGY AND SOIL ENGINEERING

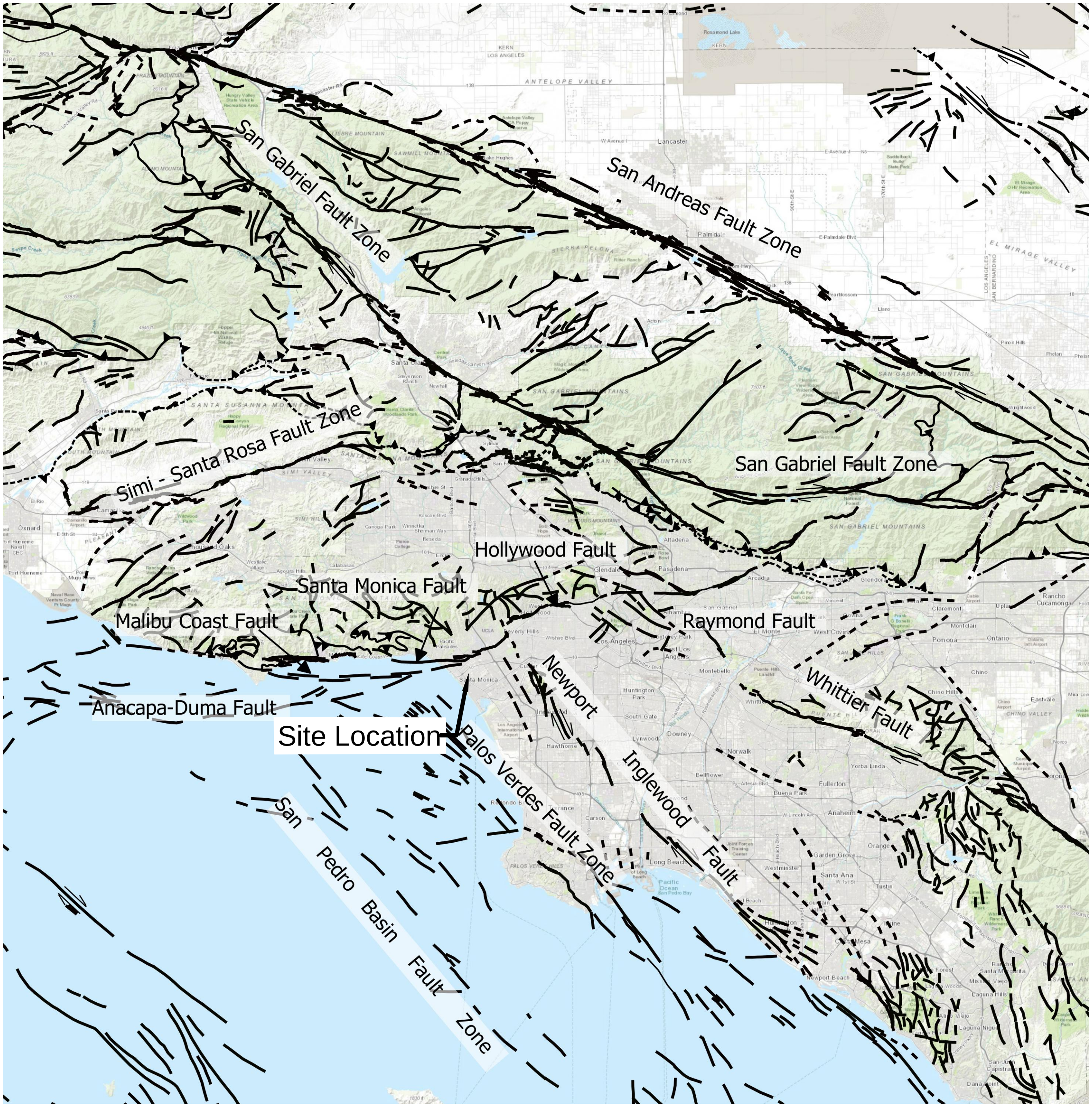
DATE 3/13/2020 BY AL
SCALE NTS W.O. 8266

PLATE 1.3

Path : P:\8266\Art Complex (1.3 Regional Geology)

REGIONAL FAULTS

1410 PICO BOULEVARD,
SANTA MONICA, CA
LOS ANGELES COUNTY



SOURCE: California Geological Survey,"Fault Activity Map of California," n.d., <https://maps.conservation.ca.gov/cgs/#datalist> Accessed February 26, 2020,

Path : P:\8266\Art Complex (1.4 Regional Geology)

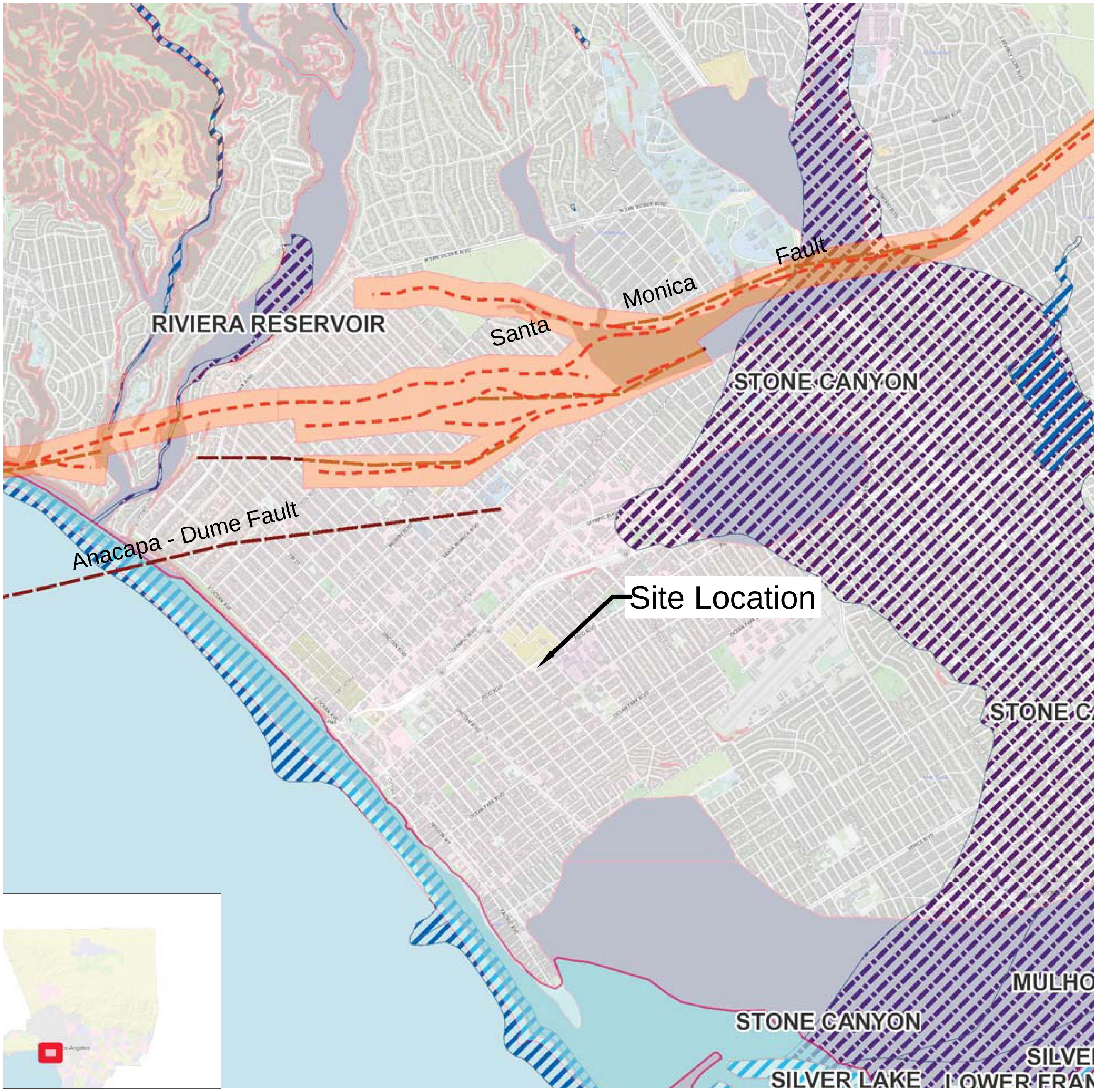
Geolabs - Westlake Village
GEOLOGY AND SOIL ENGINEERING

DATE 3/13/2020 BY AL
SCALE NTS W.O. 8266

PLATE 1.4

SEISMIC HAZARD ZONES

1410 PICO BOULEVARD,
SANTA MONICA, CA
LOS ANGELES COUNTY



SOURCE: Los Angeles County GIS Data Portal 2020, n.d.,<https://apps.gis.lacounty.gov/slv/?Viewer=GISViewer> Accessed February 26, 2020,

Legend

- Alquist-Priolo Fault Traces
- Alquist-Priolo Fault Zones
- USGS Faults
- Tsunami Inundation Runup Line
- Tsunami Inundation Zones
- Landslide zones
- Liquefaction zones
- 100-Year Flood Plain
- Dam Inundation Areas

Geolabs - Westlake Village
GEOLOGY AND SOIL ENGINEERING

DATE 3/13/2020 BY AL
SCALE NTS W.O. 8266

PLATE 1.5

HISTORIC HIGH GROUND WATER MAP

1410 PICO BOULEVARD,
SANTA MONICA, CA
LOS ANGELES COUNTY

Open-File Report 98-14

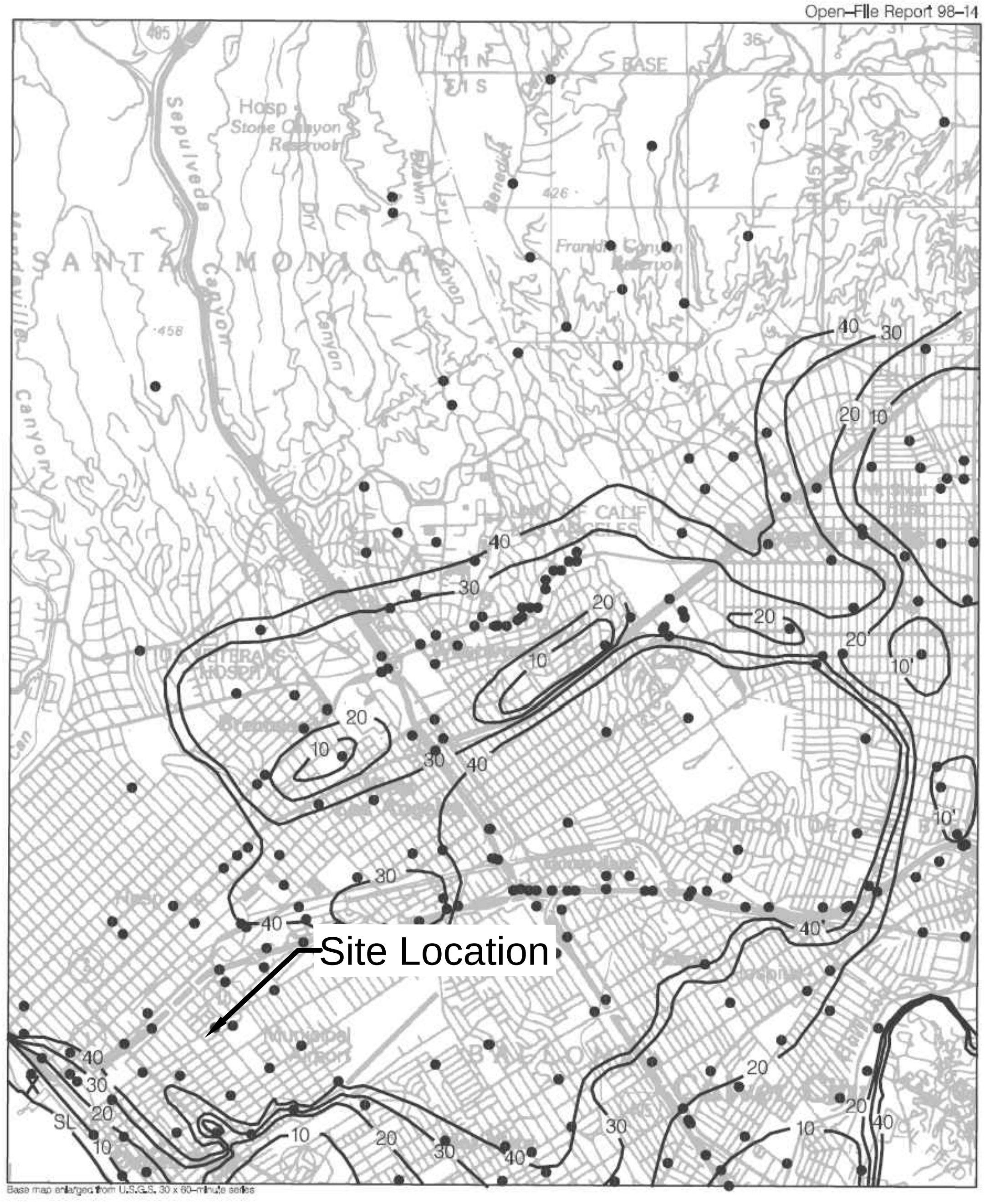


Plate 1.2 Historically Highest Ground Water Contours and Borehole Log Data Locations, Beverly Hills Quadrangle.

● Borehole Site — 30 — Depth to ground water in feet

X Site of historical earthquake-generated liquefaction. See "Areas of Past Liquefaction" discussion in text.

ONE MILE
SCALE

SOURCE: California Geological Survey, 1998; Seismic Hazard Zone Report for the Beveryly Hills 7.5 Minute Quadrangle, Los Angeles County, California.

Path : P:\8266\Art Complex (1.6 Historic Ground Water)

Geolabs - Westlake Village
GEOLOGY AND SOIL ENGINEERING

DATE 3/13/2020 BY AL
SCALE NTS W.O. 8266

PLATE 1.6

SUBSURFACE DATA

BORING LOG : B1

WO: 8266.017	**RIG TYPE:** HSA **%Eff.:** 83%	**DATE: 2/17/20**
CLIENT: SMC	**HAMMER TYPE: Auto. HAMMER DROP(IN.):** 30	**GEOLOGIST: SR**
PROJECT: Art Complex	**AUGER DIA.(IN.):** 8.625	**ELEVATION:**
LOCATION:		**DRILLING CO.: Choice HSA**

	SPT N	CAL	B	M	DD	DESCRIPTION	
0						Surface - soft disturbed brown silty sand	
2.5		17,18,19		4.6	121.9	@2.5' Brown slightly silty fine sand, massive, dry, dense, horizontally layered	
5		50/5"		4.6	106.5	@5' Reddish brown silty fine sand, massive, dry, dense	
7.5		50/6"		3.5	114.4	@7.5' Light to dark reddish brown silty fine sand mottled in yellowish brown burrow fills, dry, dense	
10	17,18,19					@10' Light to dark reddish brown silty sand as above	
12.5	6,12,22					@12.5' Light yellow fine sand, dry, dense, poorly graded and friable	
15		50/6"		5.0	103	@15' Dark reddish brown to yellow silty fine sand mottled from burrow fills, dry, dense	
17.5	15,22,32					@17.5' Dark yellow to dark yellowish brown silty fine sand, massive, slightly moist, dense	
20	14,17,22					@20' Light yellow to buff fine sand, poorly graded, dry, dense, friable	
22.5		30,50/5"		3.8	107.9	@22.5' Buff fine sand and dark yellow silty sand, both with angular fine gravel, slightly moist, dense.	
25	14,18,24					@25' Buff fine sand, dry, dense, friable, top is gradationally yellow due to oxidized grain coatings	
27.5	10,20,22					@27.5' Interbedded buff to pale yellow fine sand, beds poorly to well graded with sparse fine gravel stringers, slightly moist, dense, friable	
30		25,50/5"		3.1	101.9	@30' Buff fine sand, poorly graded, slightly moist, dense, friable	
32.5	19,27,27					@32.5' Buff fine sand with white sand burrow fills, slightly moist, dense, friable	
35	15,20,27					@35' Buff to pale yellow fine sand, local white sand burrow fills, slightly moist, dense, slightly friable	
37.5		37,50/4"		3.6	97.2	@37.5' Light yellowish gray fine sand, well-graded, with sparse white sand burrow fills, slightly moist, dense	
40	15,17,30					@40' Light grayish yellow fine sand, vague horizontal laminae, slightly moist, dense, slightly friable	
42.5	17,24,32					@42.5' Buff fine sand with white sand burrow fills, slightly moist, dense, slightly friable	
45		50/6"		3.8	97.0	See next page	

ADDITIONAL COMMENTS:	TOTAL DEPTH: NO GROUNDWATER NO CAVING	N = Field Blowcount U = Undisturbed Sample B = Disturbed Sample X = Disturbed Bulk Sample M = Moisture % S = Stand.Penetration Test C = Modified Calif. Sample

SUBSURFACE DATA **BORING LOG : B1**

WO: 8266.017	**RIG TYPE:** HSA **%Eff.:** 83%	**DATE: 2/17/20**
CLIENT: SMC	**HAMMER TYPE: Auto. HAMMER DROP(IN.):** 30	**GEOLOGIST: SR**
PROJECT: Art Complex	**AUGER DIA.(IN.):** 8.625	**ELEVATION:**
LOCATION:		**DRILLING CO.: Choice HSA**

	SPT N	CAL	B	M	DD	DESCRIPTION	
45						@45' Buff to light yellow fine sand with sparse white burrow infills, slight moist, dense, friable.	
47.5						@47.5 Light yellowish gray to buff fine sand with sparse yellow laminations at 10°, slightly moist, dense, friable	
50						@50' Light yellowish gray fine sand, slightly moist, dense, friable	

ADDITIONAL COMMENTS:

TOTAL DEPTH:
NO GROUNDWATER
NO CAVING

N = Field Blowcount
U = Undisturbed Sample
B = Disturbed Sample
X = Disturbed Bulk Sample
M = Moisture %
S = Stand.Penetration Test
C = Modified Calif. Sample

SUBSURFACE DATA

BORING LOG : B2

WO: 8266.017	**RIG TYPE:** HSA **%Eff.:** 83%	**DATE: 2/17/20**
CLIENT: SMC	**HAMMER TYPE: Auto. HAMMER DROP(IN.):** 30	**GEOLOGIST: SR**
PROJECT: Art Complex	**AUGER DIA.(IN.):** 8.625	**ELEVATION:**
LOCATION: SE Corner		**DRILLING CO.: Choice HSA**

	SPT N	CAL	B	M	DD	DESCRIPTION
0						Artificial Fill: Reddish brown silty SAND, slightly moist, medium dense below top 2'.
2.5		7,9,10		4.8	117.9	@2.5' - Reddish brown silty fine SAND, slightly moist, medium dense, sparse small roots.
5	7,14,16					@5.0' - Reddish brown slightly silty fine SAND, slightly moist, dense.
7.5		17,33,50		3.6	122.9	@7.5' - Dark reddish brown slightly silty fine SAND, with sparse dark yellow burrow fills to stringers, slightly moi dense.
10	4,7,11					@10' - Dark yellow well-graded SAND (3") over buff fine sand, slightly moist, dense, friable. Top sand has ox stai
12.5	16,17,18					@12.5' - Dark yellowish brown silty SAND with trace clay, slightly moist, massive, cohesive but not plastic.
15		15,32,50		5.7	109.4	@15' - Dark yellowish brown silty SAND with sparse pale yellow fine sand burrow fills, slightly moist, dense, sparse fine gravel.
17.5	10,11,13					@17.5' - Dark yellow and dark yellowish brown bands o oxidation stains through slightly silty fine sand, slightly moist, medium dense.
20	8,24,25					@20' - Dark yellow fine to medium SAND, generally wel graded, slightly moist, dense, friable bands of dark yellowish brown oxidation throughout.
22.5		20,50/5"		5.2	100.5	@22.5' - Dark yellowish brown slightly silty fine SAND and buff fine SAND, moist, dense, horizontally bedded units.
25	10,16,24					@25' - Light to yellow to buff interbedded fine SAND, well-graded fine SAND and poorly graded medium SANI all slightly moist, dense, friable.

ADDITIONAL COMMENTS:	TOTAL DEPTH: NO GROUNDWATER NO CAVING	N = Field Blowcount U = Undisturbed Sample B = Disturbed Sample X = Disturbed Bulk Sample M = Moisture % S = Stand.Penetration Test C = Modified Calif. Sample

BORING LOG : B3

WO: 8266.017	**RIG TYPE:** HSA **%Eff.:** 83%	**DATE: 2/17/20**
CLIENT: SMC	**HAMMER TYPE: Auto. HAMMER DROP(IN.):** 30	**GEOLOGIST: SR**
PROJECT: Art Complex	**AUGER DIA.(IN.):** 8.625	**ELEVATION:**
LOCATION:		**DRILLING CO.: Choice HSA**

	SPT N	CAL	B	M	DD	DESCRIPTION	
0						Artificial Fill: Dark brown silty fine SAND	
2.5		27,50/4"		7.6	129.6	@2.5' - Debris? Dark brown silty SAND, slightly moist, dense fragment of CI pipe in shoe.	Move 3' south @3.5 color change to reddish brown.
5		8,14,20		9.3	126.5	@5' - Dark reddish brown silty SAND with clay, moist, dense, cohesive.	
7.5	3,3,5					@7.5' - Dark yellowish brown fine SAND, moist, mediur dense, poorly graded, friable.	
10	5,6,10					@10' - Dark yellowish brown fine SAND with sparse buf sand stringers, moist, medium dense, friable.	
12.5		12,24,42		2.7	107.1	@12.5' - Buff to pale yellow medium SAND with dark yellow oxidation streaks, moist, dense, nearly infriable.	
15	12,17,18					@15' - Buff to pale yellow fine SAND with dark yellow oxidation streaks, moist, dense, slightly friable.	
17.5	12,22,30					@17.5' - Dark yellow fine to medium SAND pervasive oxidation stains throughout, moist, dense, friable.	
20		16,40,50/5"		3.0	107.2	@20' - Dark yellow well-graded SAND, generally mediu with stringers of coarse sand and sparse fine angular gravel, moist, dense.	
22.5	13,24,25					@22.5' - Dark yellow fine to medium sand, sparse oxidation streaks and patches, moist, dense.	
25	15,18,30					@25' - Light yellow fine SAND, poorly graded, moist, dense, friable.	

ADDITIONAL COMMENTS:	TOTAL DEPTH: NO GROUNDWATER NO CAVING	N = Field Blowcount U = Undisturbed Sample B = Disturbed Sample X = Disturbed Bulk Sample M = Moisture % S = Stand.Penetration Test C = Modified Calif. Sample

SUBSURFACE DATA

BORING LOG : B4

WO: 8266.017	**RIG TYPE:** HSA **%Eff.:** 83%	**DATE: 2/17/20**
CLIENT: SMC	**HAMMER TYPE: Auto.** **HAMMER DROP(IN.):** 30	**GEOLOGIST: SR**
PROJECT: Art Complex	**AUGER DIA.(IN.):** 8.625	**ELEVATION:**
LOCATION:		**DRILLING CO.: Choice HSA**

	SPT N	CAL	B	M	DD	DESCRIPTION
0						Artificial Fill: Dark brown silty SAND, slightly moist, dens
2.5		9,15,25		5.0	120.5	@2.5' - Dark brown silty SAND, moist, dense.
5	13,12,11					@5' - Dark yellow silty SAND, mottled in dark yellowish brown, slightly moist, dense.
7.5	10,14,14					@7.5' - Dark yellow silty fine SAND mottled in dark brown, slightly moist, dense.
10		10,22,50		4.0	113.2	@10' - Dark yellowish brown silty fine SAND with burrow infills of pale yellow medium sand, slightly moist, dense.
12.5	10,17,22					@12.5' - Dark yellow silty SAND and light yellow sand, slightly moist, dense. Sparse vague horizontal bedding.
15	12,17,19					@15' - Dark to light medium SAND with dark yellowish brown oxidation patches, moist, dense, infriable due to oxidation cementation.
17.5		32,50/5"		4.5	105.8	@17.5' - Dark yellow fine SAND with laminae of buff fine SAND, horizontal bedding, moist, dense.
20	12,14,14					@20' - Well-graded yellow to yellowish brown fine to coarse SAND with very fine angular gravel, moist, dense.
22.5	11,16,18					@22.5' - Well-graded yellow to dark yellow fine to medium SAND, moist, dense, vague horizontal bedding.
25		12,50/6"		4.3	97.2	@25' - Dark yellow to yellow SAND and silty SAND, moist, dense, sparse oxidation laminations.

ADDITIONAL COMMENTS:

TOTAL DEPTH:
NO GROUNDWATER
NO CAVING

N = Field Blowcount
U = Undisturbed Sample
B = Disturbed Sample
X = Disturbed Bulk Sample
M = Moisture %
S = Stand.Penetration Test
C = Modified Calif. Sample

SUBSURFACE DATA

BORING LOG : B5

WO: 8266.017	**RIG TYPE:** HSA **%Eff.:** 83%	**DATE: 2/17/20**
CLIENT: SMC	**HAMMER TYPE: Auto. HAMMER DROP(IN.):** 30	**GEOLOGIST: SR**
PROJECT: Art Complex	**AUGER DIA.(IN.):** 8.625	**ELEVATION:**
LOCATION:		**DRILLING CO.: Choice HSA**

	SPT N	CAL	B	M	DD	DESCRIPTION	
0						Artificial Fill: Dark brown silty SAND, scattered wood chips (eg. 2X4)	
2.5		24,21,24		4.6	127.1	@2.5' - Layered dark brown silty SAND and dark yellowish brown sand with silt, slightly moist, dense.	
5	13,20,20					@5' - Brown silty fine SAND, dry, dense.	
7.5	13,17,20					@7.5' - Yellowish brown fine SAND, slightly moist, dense.	
10		22,50		4.5	111.9	@10' - Yellowish brown to brown SAND and silty SAND with sparse pale yellow fine sand burrow infills, slightly moist, dense, sparse horizontal laminations.	
12.5	16,20,30					@12.5' - Light to dark yellow moderately graded medium SAND, slightly moist, dense, slightly cemented by oxidatior	
15		30,50/4"		4.1	106.3	@15' - Brown to dark yellowish brown medium to fine SAND with pale yellow medium sand burrow infills, slightly moist, dense.	
17.5	12,17,18					@17.5' - Light brown to yellow medium to fine SAND, slightly moist, dense, very slightly friable.	
20	17,18,18					@20' - Pale brown to yellowish brown fine to medium SAND, slightly moist, dense, friable, each unit poorly graded, high-angle (large burrow?) contacts.	
22.5		13,30,50		7.1	94.7	@22.5' - Pale brown fine SAND and dark yellow fine SAND stained by oxidation, slightly moist, medium dense, non-oxidized areas friable.	
25	13,15,50					@25' - Pale brown fine to medium (sparse) SAND, clean, slightly moist, medium dense, friable.	

ADDITIONAL COMMENTS:	TOTAL DEPTH: NO GROUNDWATER NO CAVING	N = Field Blowcount U = Undisturbed Sample B = Disturbed Sample X = Disturbed Bulk Sample M = Moisture % S = Stand.Penetration Test C = Modified Calif. Sample

APPENDIX A

Seismicity Analyses

March 13, 2020
W.O. 8266

8266

Latitude, Longitude: 34.015934, -118.475062

Date	3/9/2020, 2:54:52 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.924	MCE_R ground motion. (for 0.2 second period)
S_1	0.686	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.924	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.282	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.821	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.904	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.924	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.118	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.458	Factored deterministic acceleration value. (0.2 second)
S1RT	0.686	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.759	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.831	Factored deterministic acceleration value. (1.0 second)
PGAd	0.995	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.908	Mapped value of the risk coefficient at short periods

Type	Value	Description
C_{R1}	0.903	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

While the information presented on this website is believed to be correct, SEAOC /OSHPD and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in this web application should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. SEAOC / OSHPD do not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the seismic data provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the search results of this website.

APPENDIX B

Historical Seismicity

March 13, 2020
W.O. 8266

```
*************************
*                       *
*    E Q S E A R C H    *
*                       *
*     Version 3.00      *
*                       *
*************************
```

ESTIMATION OF
PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS

JOB NUMBER: 8266

DATE: 03-13-2020

JOB NAME: SMC Art Complex

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

MAGNITUDE RANGE:
   MINIMUM MAGNITUDE: 4.50
   MAXIMUM MAGNITUDE: 9.00

SITE COORDINATES:
   SITE LATITUDE: 34.0159
   SITE LONGITUDE: 118.4751

SEARCH DATES:
   START DATE: 1800
   END DATE: 2020

SEARCH RADIUS:
   100.0 mi
   160.9 km

ATTENUATION RELATION: 3) Boore et al. (1997) Horiz. - NEHRP D (250)
   UNCERTAINTY (M=Median, S=Sigma): M   Number of Sigmas: 0.0
   ASSUMED SOURCE TYPE: DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]
   SCOND: 0 Depth Source: A
   Basement Depth: 5.00 km   Campbell SSR: Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km): 0.0

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	34.0000	118.5000	06/22/1920	248 0.0	0.0	4.90	0.226	IX	1.8(2.9)
DMG	34.0000	118.5000	08/04/1927	1224 0.0	0.0	5.00	0.238	IX	1.8(2.9)
MGI	34.0000	118.5000	11/19/1918	2018 0.0	0.0	5.00	0.238	IX	1.8(2.9)
DMG	34.0000	118.5000	11/08/1914	1140 0.0	0.0	4.50	0.183	VIII	1.8(2.9)
MGI	34.0000	118.4000	02/07/1927	429 0.0	0.0	4.60	0.145	VIII	4.4(7.1)
MGI	34.0000	118.4000	10/01/1930	040 0.0	0.0	4.60	0.145	VIII	4.4(7.1)
MGI	34.0000	118.4000	02/22/1920	1610 0.0	0.0	4.60	0.145	VIII	4.4(7.1)
GSP	33.9380	118.3360	05/18/2009	033936.3	13.0	4.70	0.096	VII	9.6(15.5)
DMG	33.9500	118.6320	08/31/1930	04036.0	0.0	5.20	0.121	VII	10.1(16.2)
MGI	34.0000	118.3000	09/03/1905	540 0.0	0.0	5.30	0.128	VIII	10.1(16.2)
PAS	33.9190	118.6270	01/19/1989	65328.8	11.9	5.00	0.103	VII	11.0(17.7)
MGI	34.1000	118.3000	07/16/1920	2127 0.0	0.0	4.60	0.080	VII	11.6(18.6)
MGI	34.1000	118.3000	07/16/1920	2022 0.0	0.0	4.60	0.080	VII	11.6(18.6)
MGI	34.1000	118.3000	07/16/1920	2130 0.0	0.0	4.60	0.080	VII	11.6(18.6)
PAS	33.9440	118.6810	01/01/1979	231438.9	11.3	5.00	0.092	VII	12.8(20.6)
DMG	33.8830	118.3170	03/11/1933	1457 0.0	0.0	4.90	0.087	VII	12.9(20.7)
T-A	34.0000	118.2500	03/26/1860	0 0 0.0	0.0	5.00	0.091	VII	12.9(20.8)
T-A	34.0000	118.2500	09/23/1827	0 0 0.0	0.0	5.00	0.091	VII	12.9(20.8)
T-A	34.0000	118.2500	01/10/1856	0 0 0.0	0.0	5.00	0.091	VII	12.9(20.8)
MGI	34.0800	118.2600	07/16/1920	18 8 0.0	0.0	5.00	0.091	VII	13.1(21.0)
GSP	34.2150	118.5100	01/19/1994	140914.8	17.0	4.50	0.067	VI	13.9(22.3)
GSP	34.2130	118.5370	01/17/1994	123055.4	18.0	6.70	0.210	VIII	14.1(22.6)
GSP	34.2310	118.4750	03/20/1994	212012.3	13.0	5.30	0.097	VII	14.8(23.9)
GSP	34.2280	118.5730	01/17/1994	175608.2	19.0	4.60	0.064	VI	15.7(25.2)
MGI	34.0000	118.2000	02/13/1917	13 5 0.0	0.0	4.60	0.064	VI	15.8(25.4)
MGI	34.0000	118.2000	06/26/1917	2130 0.0	0.0	4.60	0.064	VI	15.8(25.4)
MGI	34.0000	118.2000	06/26/1917	2120 0.0	0.0	4.60	0.064	VI	15.8(25.4)
MGI	34.0000	118.2000	06/26/1917	2115 0.0	0.0	4.60	0.064	VI	15.8(25.4)
DMG	33.8500	118.2670	03/11/1933	1425 0.0	0.0	5.00	0.076	VII	16.5(26.6)
GSP	34.2540	118.5450	01/17/1994	130627.9	0.0	4.60	0.061	VI	16.9(27.2)
DMG	33.7670	118.4500	10/11/1940	55712.3	0.0	4.70	0.063	VI	17.2(27.7)
GSP	34.2610	118.5340	01/17/1994	123939.8	14.0	4.50	0.057	VI	17.2(27.8)
MGI	33.9000	118.2000	10/08/1927	1914 0.0	0.0	4.60	0.059	VI	17.7(28.4)
DMG	33.8670	118.2170	06/19/1944	0 333.0	0.0	4.50	0.055	VI	18.0(29.0)
GSP	34.2740	118.5630	01/27/1994	171958.8	14.0	4.60	0.057	VI	18.5(29.8)
DMG	34.2860	118.5150	03/31/1971	145222.5	2.1	4.60	0.056	VI	18.8(30.2)
GSB	34.3000	118.4660	01/21/1994	183915.3	10.0	4.70	0.057	VI	19.6(31.6)
GSP	34.2930	118.3890	12/06/1994	034834.5	9.0	4.50	0.051	VI	19.7(31.8)
DMG	33.8170	118.2170	10/22/1941	65718.5	0.0	4.90	0.062	VI	20.2(32.5)
DMG	34.3080	118.4540	02/09/1971	144346.7	6.2	5.20	0.073	VII	20.2(32.5)
GSB	34.3010	118.5650	01/17/1994	204602.4	9.0	5.20	0.072	VII	20.3(32.7)
GSB	34.2850	118.6240	01/17/1994	135602.4	19.0	4.70	0.055	VI	20.4(32.9)
DMG	33.7830	118.2500	11/14/1941	84136.3	0.0	5.40	0.080	VII	20.6(33.2)
GSP	34.3170	118.4550	01/17/1994	132644.7	2.0	4.70	0.055	VI	20.8(33.5)
GSP	34.3050	118.5790	01/29/1994	112036.0	1.0	5.10	0.067	VI	20.8(33.5)
DMG	34.3000	118.6000	04/04/1893	1940 0.0	0.0	6.00	0.108	VII	20.9(33.6)
GSB	34.3190	118.5580	01/18/1994	132444.1	1.0	4.50	0.048	VI	21.5(34.5)
PAS	34.1490	118.1350	12/03/1988	113826.4	13.3	4.90	0.059	VI	21.5(34.6)
PAS	34.0490	118.1010	10/01/1987	144541.5	13.6	4.70	0.053	VI	21.5(34.6)
PAS	34.0600	118.1000	10/01/1987	1449 5.9	11.7	4.70	0.053	VI	21.7(34.9)
DMG	33.7590	118.2530	08/31/1938	31814.2	10.0	4.50	0.047	VI	21.8(35.1)
GSP	34.3310	118.4420	01/17/1994	141430.3	1.0	4.50	0.047	VI	21.8(35.1)
PAS	34.0730	118.0980	10/04/1987	105938.2	8.2	5.30	0.072	VI	21.9(35.3)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
PAS	34.0520	118.0900	10/01/1987	151231.8	10.8	4.70	0.052	VI	22.2(35.7)
MGI	34.1000	118.1000	07/11/1855	415 0.0	0.0	6.30	0.121	VII	22.2(35.8)
DMG	33.7830	118.2000	12/27/1939	192849.0	0.0	4.70	0.052	VI	22.5(36.2)
PAS	34.0610	118.0790	10/01/1987	144220.0	9.5	5.90	0.096	VII	22.9(36.8)
DMG	33.9000	118.1000	07/08/1929	1646 6.7	13.0	4.70	0.051	VI	22.9(36.9)
GSB	34.3450	118.5520	01/24/1994	041518.8	6.0	4.80	0.053	VI	23.1(37.2)
DMG	34.3530	118.4560	03/07/1971	13340.5	3.3	4.50	0.045	VI	23.3(37.5)
DMG	34.3350	118.3310	02/09/1971	155820.7	14.2	4.80	0.053	VI	23.5(37.8)
GSB	34.3600	118.5710	01/19/1994	044048.0	2.0	4.50	0.044	VI	24.4(39.2)
DMG	34.3440	118.6360	02/09/1971	143436.1	-2.0	4.90	0.054	VI	24.4(39.3)
PAS	34.0770	118.0470	02/11/1988	152555.7	12.5	4.70	0.048	VI	24.8(40.0)
GSP	34.3260	118.6980	01/17/1994	233330.7	9.0	5.60	0.077	VII	24.9(40.1)
GSB	34.3580	118.6220	01/18/1994	040126.8	1.0	4.50	0.043	VI	25.1(40.3)
PAS	34.3470	118.6560	04/08/1976	152138.1	14.5	4.60	0.045	VI	25.1(40.4)
PAS	34.3800	118.4590	08/12/1977	21926.1	9.5	4.50	0.043	VI	25.2(40.5)
DMG	33.7830	118.1330	10/02/1933	91017.6	0.0	5.40	0.068	VI	25.4(40.8)
GSP	34.3790	118.5610	01/18/1994	152346.9	7.0	4.80	0.049	VI	25.5(41.1)
DMG	34.3610	118.3060	02/09/1971	141021.5	5.0	4.70	0.047	VI	25.7(41.4)
GSP	34.3740	118.6220	01/17/1994	155410.8	12.0	4.80	0.048	VI	26.1(42.0)
DMG	34.3920	118.4270	02/21/1971	71511.7	7.2	4.50	0.041	V	26.1(42.0)
GSP	34.3780	118.6180	01/19/1994	211144.9	11.0	5.10	0.056	VI	26.3(42.3)
DMG	34.3970	118.4390	02/21/1971	55052.6	6.9	4.70	0.046	VI	26.4(42.5)
DMG	34.3990	118.4730	03/09/1974	05431.9	24.4	4.70	0.046	VI	26.4(42.6)
GSP	34.3770	118.6490	04/27/1997	110928.4	15.0	4.80	0.047	VI	26.8(43.2)
GSP	34.3690	118.6720	04/26/1997	103730.7	16.0	5.10	0.056	VI	26.8(43.2)
DMG	33.7500	118.1330	03/11/1933	11 4 0.0	0.0	4.60	0.043	VI	26.9(43.2)
MGI	34.0000	118.0000	12/25/1903	1745 0.0	0.0	5.00	0.052	VI	27.2(43.8)
MGI	34.0000	118.0000	05/05/1929	1 7 0.0	0.0	4.60	0.042	VI	27.2(43.8)
DMG	34.4110	118.4010	02/09/1971	141028.0	8.0	5.30	0.060	VI	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 150.0	8.0	4.50	0.040	V	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 231.0	8.0	4.70	0.044	VI	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 853.0	8.0	4.60	0.042	VI	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 1 8.0	8.0	5.80	0.079	VII	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 745.0	8.0	4.50	0.040	V	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 041.8	8.4	6.40	0.108	VII	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 244.0	8.0	5.80	0.079	VII	27.6(44.4)
DMG	34.4110	118.4010	02/09/1971	14 838.0	8.0	4.50	0.040	V	27.6(44.4)
MGI	34.1000	118.0000	01/27/1930	2026 0.0	0.0	4.60	0.042	VI	27.8(44.7)
GSP	34.3770	118.6980	01/18/1994	004308.9	11.0	5.20	0.057	VI	28.0(45.0)
DMG	34.0170	118.9670	04/16/1948	222624.0	0.0	4.70	0.043	VI	28.1(45.3)
GSP	34.3940	118.6690	06/26/1995	084028.9	13.0	5.00	0.051	VI	28.4(45.6)
GSB	34.3790	118.7110	01/19/1994	210928.6	14.0	5.50	0.066	VI	28.5(45.8)
DMG	34.4260	118.4140	02/10/1971	518 7.2	5.8	4.50	0.039	V	28.5(45.9)
DMG	33.7500	118.0830	03/11/1933	227 0.0	0.0	4.60	0.040	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	216 0.0	0.0	4.80	0.045	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	910 0.0	0.0	5.10	0.052	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	230 0.0	0.0	5.10	0.052	VI	29.0(46.7)
DMG	33.7500	118.0830	03/14/1933	1219 0.0	0.0	4.50	0.038	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	210 0.0	0.0	4.60	0.040	V	29.0(46.7)
DMG	33.7500	118.0830	03/12/1933	1738 0.0	0.0	4.50	0.038	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	513 0.0	0.0	4.70	0.042	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	2 9 0.0	0.0	5.00	0.050	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	2 4 0.0	0.0	4.90	0.047	VI	29.0(46.7)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7500	118.0830	03/13/1933	432 0.0	0.0	4.70	0.042	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	8 8 0.0	0.0	4.50	0.038	V	29.0(46.7)
DMG	33.7500	118.0830	03/13/1933	131828.0	0.0	5.30	0.058	VI	29.0(46.7)
DMG	33.7500	118.0830	03/12/1933	2354 0.0	0.0	4.50	0.038	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	259 0.0	0.0	4.60	0.040	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	439 0.0	0.0	4.90	0.047	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	436 0.0	0.0	4.60	0.040	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	1653 0.0	0.0	4.80	0.045	VI	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	323 0.0	0.0	5.00	0.050	VI	29.0(46.7)
DMG	33.7500	118.0830	03/12/1933	616 0.0	0.0	4.60	0.040	V	29.0(46.7)
DMG	33.7500	118.0830	03/11/1933	440 0.0	0.0	4.70	0.042	VI	29.0(46.7)
PAS	34.0160	118.9880	10/26/1984	172043.5	13.3	4.60	0.040	V	29.3(47.2)
MGI	34.2000	118.0000	01/09/1921	530 0.0	0.0	4.60	0.039	V	30.0(48.3)
DMG	34.0000	119.0000	09/24/1827	4 0 0.0	0.0	7.00	0.139	VIII	30.1(48.4)
MGI	34.0000	119.0000	12/14/1912	0 0 0.0	0.0	5.70	0.070	VI	30.1(48.4)
GSP	34.2620	118.0020	06/28/1991	144354.5	11.0	5.40	0.057	VI	31.9(51.4)
DMG	33.7000	118.0670	03/11/1933	85457.0	0.0	5.10	0.049	VI	32.0(51.5)
DMG	33.7000	118.0670	03/11/1933	51022.0	0.0	5.10	0.049	VI	32.0(51.5)
DMG	34.0650	119.0350	02/21/1973	144557.3	8.0	5.90	0.074	VII	32.2(51.8)
GSP	33.9325	117.9158	03/29/2014	040942.2	5.1	5.10	0.048	VI	32.5(52.4)
DMG	33.6830	118.0500	03/11/1933	658 3.0	0.0	5.50	0.058	VI	33.5(53.9)
DMG	33.6170	118.1170	01/20/1934	2117 0.0	0.0	4.50	0.034	V	34.4(55.3)
DMG	34.2000	117.9000	08/28/1889	215 0.0	0.0	5.50	0.056	VI	35.2(56.7)
DMG	34.2000	117.9000	07/13/1935	105416.5	0.0	4.70	0.037	V	35.2(56.7)
DMG	33.5000	118.2500	06/18/1920	10 8 0.0	0.0	4.50	0.031	V	37.9(61.0)
DMG	33.6170	118.0170	03/14/1933	19 150.0	0.0	5.10	0.043	VI	38.1(61.3)
DMG	33.6170	118.0170	03/15/1933	111332.0	0.0	4.90	0.038	V	38.1(61.3)
DMG	34.5190	118.1980	08/23/1952	10 9 7.1	13.1	5.00	0.040	V	38.2(61.4)
DMG	33.6000	118.0170	12/25/1935	1715 0.0	0.0	4.50	0.030	V	38.9(62.6)
DMG	33.6000	118.0000	03/11/1933	217 0.0	0.0	4.50	0.030	V	39.6(63.7)
GSP	33.9050	117.7920	08/08/2012	062334.1	10.0	4.50	0.030	V	39.9(64.1)
GSP	33.9040	117.7910	08/08/2012	163322.1	10.0	4.50	0.030	V	39.9(64.3)
DMG	33.6170	117.9670	03/11/1933	154 7.8	0.0	6.30	0.077	VII	40.1(64.5)
DMG	34.5860	118.6130	02/07/1956	31638.6	2.6	4.60	0.031	V	40.1(64.6)
GSP	33.9170	117.7760	09/03/2002	070851.9	12.0	4.80	0.035	V	40.6(65.3)
PAS	33.6300	119.0200	10/23/1981	172816.9	12.0	4.60	0.031	V	41.1(66.1)
GSG	33.9530	117.7610	07/29/2008	184215.7	14.0	5.30	0.045	VI	41.1(66.2)
MGI	33.8000	117.8000	11/04/1926	2238 0.0	0.0	4.60	0.031	V	41.5(66.7)
MGI	33.8000	117.8000	11/10/1926	1723 0.0	0.0	4.60	0.031	V	41.5(66.7)
MGI	33.8000	117.8000	11/09/1926	1535 0.0	0.0	4.60	0.031	V	41.5(66.7)
MGI	33.8000	117.8000	11/07/1926	1948 0.0	0.0	4.60	0.031	V	41.5(66.7)
DMG	33.5750	117.9830	03/11/1933	518 4.0	0.0	5.20	0.042	VI	41.5(66.8)
PAS	33.5080	118.0710	11/20/1988	53928.7	6.0	4.50	0.029	V	42.0(67.7)
PAS	33.6370	119.0560	10/23/1981	191552.5	6.3	4.60	0.030	V	42.4(68.2)
GSP	33.6200	117.9000	04/07/1989	200730.2	13.0	4.50	0.028	V	42.8(68.9)
DMG	34.1180	119.2200	03/18/1957	185628.0	13.8	4.70	0.031	V	43.2(69.5)
MGI	34.2000	119.2000	06/16/1914	1052 0.0	0.0	4.60	0.030	V	43.3(69.7)
DMG	34.4830	118.9830	09/04/1942	63433.0	0.0	4.50	0.028	V	43.4(69.8)
DMG	34.4830	118.9830	09/03/1942	14 6 1.0	0.0	4.50	0.028	V	43.4(69.8)
PAS	33.6710	119.1110	09/04/1981	155050.3	5.0	5.30	0.043	VI	43.5(70.1)
GSP	34.1100	117.7200	04/17/1990	223227.2	4.0	4.60	0.029	V	43.7(70.3)
GSP	34.1500	117.7200	03/01/1990	032303.0	11.0	4.70	0.031	V	44.2(71.1)
PAS	34.1360	117.7090	06/26/1988	15 458.5	7.9	4.60	0.029	V	44.6(71.8)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.1400	117.7000	02/28/1990	234336.6	5.0	5.20	0.039	V	45.1(72.6)
DMG	34.1000	117.6830	01/09/1934	1410 0.0	0.0	4.50	0.027	V	45.7(73.5)
GSP	34.1400	117.6900	03/02/1990	172625.4	6.0	4.60	0.028	V	45.7(73.6)
DMG	33.5450	117.8070	10/27/1969	1316 2.3	6.5	4.50	0.025	V	50.3(80.9)
MGI	34.3000	119.3000	05/01/1904	1830 0.0	0.0	4.60	0.026	V	51.0(82.1)
MGI	33.8000	117.6000	04/22/1918	2115 0.0	0.0	5.00	0.032	V	52.3(84.2)
DMG	34.3700	117.6500	12/08/1812	15 0 0.0	0.0	7.00	0.089	VII	53.1(85.4)
DMG	34.1000	119.4000	05/19/1893	035 0.0	0.0	5.50	0.041	V	53.2(85.6)
DMG	34.3000	117.6000	07/30/1894	512 0.0	0.0	6.00	0.052	VI	53.7(86.4)
DMG	33.4300	119.0960	10/31/1969	103929.0	7.3	4.80	0.028	V	53.9(86.8)
DMG	34.6170	119.0830	02/26/1950	0 622.0	0.0	4.70	0.026	V	54.1(87.0)
DMG	34.1830	117.5480	09/01/1937	163533.5	10.0	4.50	0.024	IV	54.2(87.3)
GSP	33.6660	119.3300	03/16/2002	213323.8	7.0	4.60	0.025	V	54.7(87.9)
DMG	34.1670	117.5330	03/01/1948	81213.0	0.0	4.70	0.026	V	54.9(88.3)
DMG	34.2110	117.5300	09/01/1937	1348 8.2	10.0	4.50	0.023	IV	55.7(89.6)
MGI	34.0000	117.5000	12/16/1858	10 0 0.0	0.0	7.00	0.086	VII	55.8(89.8)
DMG	34.7000	119.0000	10/23/1916	254 0.0	0.0	5.50	0.039	V	55.9(90.0)
DMG	34.2700	117.5400	09/12/1970	143053.0	8.0	5.40	0.037	V	56.2(90.5)
DMG	34.2000	117.5000	06/14/1892	1325 0.0	0.0	4.90	0.028	V	57.2(92.0)
DMG	33.9860	119.4750	08/06/1973	232917.0	16.9	5.00	0.029	V	57.3(92.2)
DMG	33.6820	117.5530	07/05/1938	18 655.7	10.0	4.50	0.022	IV	57.7(92.8)
T-A	34.8300	118.7500	11/27/1852	0 0 0.0	0.0	7.00	0.083	VII	58.3(93.9)
DMG	34.0000	119.5000	02/18/1926	1818 0.0	0.0	5.00	0.029	V	58.7(94.4)
DMG	34.3000	117.5000	07/22/1899	2032 0.0	0.0	6.50	0.063	VI	59.1(95.0)
DMG	33.3390	119.1040	10/24/1969	202642.5	-1.8	4.70	0.025	V	59.1(95.1)
DMG	33.9170	119.5000	08/26/1954	1348 3.0	0.0	4.80	0.026	V	59.1(95.1)
DMG	33.6990	117.5110	05/31/1938	83455.4	10.0	5.50	0.037	V	59.4(95.7)
DMG	33.7250	117.4980	01/03/1956	02548.9	13.7	4.70	0.024	V	59.5(95.8)
DMG	34.1320	117.4260	04/15/1965	20 833.3	5.5	4.50	0.022	IV	60.5(97.4)
DMG	34.2500	119.5000	04/13/1917	359 0.0	0.0	4.50	0.022	IV	60.8(97.8)
GSP	33.7330	117.4660	09/02/2007	172914.0	2.0	4.70	0.024	IV	61.1(98.2)
MGI	34.0000	117.4000	05/22/1907	652 0.0	0.0	4.60	0.023	IV	61.5(99.0)
DMG	34.3490	119.4920	07/14/1958	52555.3	16.0	4.70	0.023	IV	62.5(100.5)
DMG	34.2000	117.4000	07/22/1899	046 0.0	0.0	5.50	0.036	V	62.8(101.0)
GSP	34.1900	117.3900	12/28/1989	094108.1	15.0	4.50	0.021	IV	63.2(101.7)
DMG	34.8670	118.9330	09/21/1941	1953 7.2	0.0	5.20	0.030	V	64.3(103.5)
DMG	34.8000	119.1000	09/05/1883	1230 0.0	0.0	6.00	0.045	VI	64.8(104.3)
DMG	33.2910	119.1930	10/24/1969	82912.1	10.0	5.10	0.028	V	64.9(104.4)
DMG	33.7000	117.4000	05/13/1910	620 0.0	0.0	5.00	0.027	V	65.4(105.2)
DMG	33.7000	117.4000	05/15/1910	1547 0.0	0.0	6.00	0.045	VI	65.4(105.2)
DMG	33.7000	117.4000	04/11/1910	757 0.0	0.0	5.00	0.027	V	65.4(105.2)
DMG	34.1270	117.3380	02/23/1936	222042.7	10.0	4.50	0.020	IV	65.5(105.4)
DMG	34.9000	118.9000	10/23/1916	244 0.0	0.0	6.00	0.045	VI	65.7(105.7)
PAS	34.9430	118.7430	06/10/1988	23 643.0	6.8	5.40	0.033	V	65.8(105.9)
DMG	34.0330	117.3170	09/03/1935	647 0.0	0.0	4.50	0.020	IV	66.3(106.7)
DMG	34.9000	118.9500	08/01/1952	13 430.0	0.0	5.10	0.028	V	66.8(107.4)
DMG	34.3330	119.5830	07/01/1941	2354 0.0	0.0	4.50	0.020	IV	67.0(107.8)
DMG	34.3330	119.5830	09/08/1941	31245.0	0.0	4.50	0.020	IV	67.0(107.8)
DMG	34.3330	119.5830	07/12/1941	1618 0.0	0.0	4.50	0.020	IV	67.0(107.8)
DMG	34.8850	119.0020	02/23/1939	91846.7	10.0	4.50	0.020	IV	67.1(108.0)
GSP	34.1070	117.3040	01/09/2009	034946.3	14.0	4.50	0.020	IV	67.3(108.3)
DMG	34.5000	119.5000	12/05/1920	1158 0.0	0.0	4.50	0.020	IV	67.4(108.4)
DMG	34.5000	119.5000	08/05/1930	1125 0.0	0.0	5.00	0.026	V	67.4(108.4)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	34.5000	119.5000	06/29/1926	2321 0.0	0.0	5.50	0.034	V	67.4(108.4)
T-A	34.9200	118.9200	05/23/1857	0 0 0.0	0.0	5.00	0.026	V	67.4(108.4)
T-A	34.9200	118.9200	01/20/1857	0 0 0.0	0.0	5.00	0.026	V	67.4(108.4)
MGI	34.1000	117.3000	12/27/1901	11 0 0.0	0.0	4.60	0.021	IV	67.5(108.6)
MGI	34.1000	117.3000	07/15/1905	2041 0.0	0.0	5.30	0.030	V	67.5(108.6)
DMG	34.3670	119.5830	07/01/1941	75054.8	0.0	5.90	0.041	V	67.8(109.0)
DMG	34.9110	118.9730	02/23/1939	84551.7	10.0	4.50	0.020	IV	68.0(109.4)
DMG	34.0000	117.2830	11/07/1939	1852 8.4	0.0	4.70	0.022	IV	68.2(109.8)
DMG	34.9500	118.8670	07/21/1952	121936.0	0.0	5.30	0.030	V	68.2(109.8)
DMG	33.9960	117.2700	02/17/1952	123658.3	16.0	4.50	0.020	IV	69.0(111.0)
DMG	34.9030	119.0380	05/08/1939	248 5.3	10.0	4.50	0.020	IV	69.1(111.2)
DMG	34.9320	118.9760	03/01/1963	02557.9	13.9	5.00	0.025	V	69.4(111.6)
DMG	35.0000	118.7330	04/29/1953	124745.0	0.0	4.70	0.022	IV	69.5(111.9)
GSP	34.0470	117.2550	02/21/2000	134943.1	15.0	4.50	0.019	IV	69.8(112.4)
DMG	34.0000	117.2500	07/23/1923	73026.0	0.0	6.25	0.049	VI	70.1(112.8)
DMG	34.9410	118.9870	11/15/1961	53855.5	10.7	5.00	0.025	V	70.2(113.0)
PAS	34.0230	117.2450	10/02/1985	234412.4	15.2	4.80	0.023	IV	70.4(113.3)
DMG	34.1180	119.7020	07/05/1968	04517.2	5.9	5.20	0.028	V	70.5(113.5)
DMG	35.0000	118.8330	07/23/1952	75319.0	0.0	5.40	0.031	V	70.9(114.1)
DMG	35.0000	118.8330	07/23/1952	181351.0	0.0	5.20	0.028	V	70.9(114.1)
GSP	34.0240	117.2300	03/11/1998	121851.8	14.0	4.50	0.019	IV	71.3(114.7)
DMG	34.9330	119.0670	02/10/1954	235838.0	0.0	4.50	0.019	IV	71.7(115.4)
DMG	34.9670	119.0000	09/02/1952	204556.0	0.0	4.70	0.021	IV	72.1(116.1)
GSP	33.8375	119.7258	04/05/2018	192916.5	9.9	5.31	0.029	V	72.7(117.0)
DMG	34.9830	118.9830	05/23/1954	235243.0	0.0	5.10	0.026	V	72.8(117.1)
PAS	34.3470	119.6960	08/13/1978	225453.4	12.8	5.10	0.026	V	73.4(118.1)
DMG	35.0330	118.8500	10/07/1953	145921.0	0.0	4.90	0.023	IV	73.4(118.1)
DMG	33.9000	117.2000	12/19/1880	0 0 0.0	0.0	6.00	0.041	V	73.5(118.2)
DMG	34.9830	119.0330	07/21/1952	235328.0	0.0	4.50	0.019	IV	73.9(119.0)
DMG	34.1760	119.7540	07/07/1968	143330.8	12.8	4.50	0.019	IV	73.9(119.0)
DMG	35.0000	119.0000	02/16/1919	1557 0.0	0.0	5.00	0.024	V	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1210 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	12 6 0.0	0.0	4.80	0.022	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1240 0.0	0.0	4.90	0.023	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1638 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1359 0.0	0.0	4.60	0.019	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1225 0.0	0.0	4.70	0.021	IV	74.2(119.4)
DMG	35.0000	119.0000	07/22/1952	133143.0	0.0	4.80	0.022	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	18 0 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1222 0.0	0.0	4.90	0.023	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	12 531.0	0.0	6.40	0.050	VI	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1313 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1553 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	1212 0.0	0.0	4.60	0.019	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	13 8 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	132512.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	03/13/1929	228 0.0	0.0	4.50	0.018	IV	74.2(119.4)
DMG	35.0000	119.0000	07/21/1952	12 7 0.0	0.0	4.70	0.021	IV	74.2(119.4)
DMG	35.0000	119.0170	01/12/1954	233349.0	0.0	5.90	0.038	V	74.6(120.1)
DMG	35.0000	119.0170	07/21/1952	115214.0	0.0	7.70	0.099	VII	74.6(120.1)
DMG	35.0000	119.0170	05/25/1953	324 1.0	0.0	4.80	0.022	IV	74.6(120.1)
MGI	34.4000	119.7000	03/25/1806	8 0 0.0	0.0	5.00	0.024	IV	74.8(120.4)
DMG	35.0330	118.9330	07/22/1952	223133.0	0.0	4.70	0.020	IV	74.9(120.5)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.0000	119.0330	07/21/1952	12 2 0.0	0.0	5.60	0.033	V	75.0(120.7)
DMG	35.0000	119.0330	07/21/1952	1157 0.0	0.0	4.50	0.018	IV	75.0(120.7)
DMG	35.0000	119.0330	07/21/1952	1159 0.0	0.0	4.50	0.018	IV	75.0(120.7)
DMG	35.0000	119.0330	07/21/1952	1158 0.0	0.0	4.60	0.019	IV	75.0(120.7)
DMG	35.0000	119.0330	07/21/1952	1154 0.0	0.0	4.50	0.018	IV	75.0(120.7)
DMG	35.0000	119.0330	07/21/1952	1155 0.0	0.0	4.50	0.018	IV	75.0(120.7)
DMG	35.0830	118.7500	07/22/1952	84734.0	0.0	4.70	0.020	IV	75.3(121.2)
DMG	35.0000	119.0500	09/12/1952	103525.0	0.0	4.50	0.018	IV	75.4(121.3)
T-A	34.5000	119.6700	06/01/1893	12 0 0.0	0.0	5.00	0.024	IV	75.9(122.2)
DMG	35.0000	119.0830	11/07/1952	85535.0	0.0	4.60	0.019	IV	76.2(122.7)
DMG	33.2670	119.4500	11/18/1947	2159 3.0	0.0	5.00	0.024	IV	76.2(122.7)
PAS	35.0000	119.1030	05/13/1975	02135.6	19.1	4.50	0.018	IV	76.8(123.5)
DMG	34.2000	119.8000	12/21/1812	19 0 0.0	0.0	7.00	0.067	VI	76.8(123.6)
DMG	35.1330	118.5170	07/22/1952	141 2.0	0.0	4.50	0.018	IV	77.2(124.2)
GSP	35.0430	119.0130	09/22/2005	202448.6	11.0	4.70	0.020	IV	77.2(124.3)
DMG	35.0330	119.0500	08/18/1952	44010.0	0.0	4.70	0.020	IV	77.5(124.7)
DMG	35.0330	119.0500	08/07/1952	163151.0	0.0	4.90	0.022	IV	77.5(124.7)
DMG	35.1330	118.7000	09/02/1952	124132.0	0.0	4.60	0.019	IV	78.2(125.8)
MGI	34.3000	119.8000	07/03/1925	1821 0.0	0.0	5.30	0.027	V	78.2(125.8)
MGI	34.3000	119.8000	07/03/1925	1638 0.0	0.0	5.30	0.027	V	78.2(125.8)
DMG	34.3000	119.8000	06/29/1925	144216.0	0.0	6.25	0.045	VI	78.2(125.8)
DMG	35.1500	118.6330	01/27/1954	141948.0	0.0	5.00	0.023	IV	78.8(126.8)
PAS	35.0180	119.1410	11/10/1981	223435.5	3.1	4.50	0.018	IV	78.9(126.9)
DMG	35.1330	118.7670	07/21/1952	194122.0	0.0	5.50	0.030	V	78.9(127.0)
DMG	35.1500	118.6830	08/13/1952	173925.0	0.0	4.70	0.020	IV	79.2(127.4)
PAS	32.9900	117.8490	07/13/1986	14 133.0	12.0	4.60	0.018	IV	79.5(127.9)
DMG	34.2000	117.1000	09/20/1907	154 0.0	0.0	6.00	0.039	V	79.6(128.1)
GSB	35.0380	119.1300	02/14/2004	124311.4	12.0	4.60	0.018	IV	79.8(128.4)
GSP	34.1920	117.0950	04/06/1994	190104.1	7.0	4.80	0.020	IV	79.8(128.5)
DMG	35.1000	118.9670	08/25/1952	62026.0	0.0	4.70	0.019	IV	79.9(128.6)
DMG	35.0670	119.0670	02/24/1954	223022.0	0.0	4.50	0.017	IV	80.0(128.7)
PAS	32.9710	117.8700	07/13/1986	1347 8.2	6.0	5.30	0.027	V	80.1(128.9)
MGI	34.4000	119.8000	09/09/1929	515 0.0	0.0	4.60	0.018	IV	80.2(129.0)
DMG	32.8670	118.2500	02/13/1952	151337.0	0.0	4.70	0.019	IV	80.4(129.3)
GSB	35.0270	119.1780	04/16/2005	191813.0	10.0	4.60	0.018	IV	80.4(129.5)
DMG	35.1830	118.6000	07/26/1952	2241 3.0	0.0	4.60	0.018	IV	80.9(130.2)
DMG	35.1830	118.6000	07/29/1952	154950.0	0.0	4.90	0.021	IV	80.9(130.2)
DMG	35.1830	118.6500	07/21/1952	151358.0	0.0	5.10	0.024	IV	81.2(130.7)
DMG	34.0170	117.0500	02/19/1940	12 655.7	0.0	4.60	0.018	IV	81.6(131.2)
T-A	34.4200	119.8200	00/00/1862	0 0 0.0	0.0	5.70	0.032	V	81.7(131.5)
DMG	33.7000	117.1000	06/11/1902	245 0.0	0.0	4.50	0.017	IV	81.8(131.6)
DMG	32.8170	118.3500	12/26/1951	04654.0	0.0	5.90	0.035	V	83.1(133.7)
DMG	35.0500	119.2330	08/19/1952	191226.0	0.0	4.50	0.017	IV	83.4(134.2)
GSP	34.0580	117.0100	06/16/2005	205326.0	11.0	4.90	0.021	IV	83.9(135.0)
DMG	35.2330	118.5330	07/21/1952	174244.0	0.0	5.10	0.023	IV	84.1(135.3)
DMG	35.2330	118.6000	07/22/1952	91025.0	0.0	4.50	0.017	IV	84.3(135.7)
DMG	34.0000	117.0000	06/30/1923	022 0.0	0.0	4.50	0.017	IV	84.4(135.9)
GSP	34.2823	117.0267	07/05/2014	165934.1	7.3	4.58	0.017	IV	84.8(136.4)
DMG	35.2170	118.8170	12/15/1953	124436.0	0.0	4.60	0.018	IV	85.2(137.1)
DMG	35.2170	118.8170	07/23/1952	1317 5.0	0.0	5.70	0.031	V	85.2(137.1)
GSP	35.2100	118.0660	07/11/1992	181416.2	10.0	5.70	0.031	V	85.7(137.8)
DMG	33.8000	117.0000	12/25/1899	1225 0.0	0.0	6.40	0.045	VI	85.8(138.1)
GSP	35.1490	119.1040	05/28/1993	044740.6	21.0	5.20	0.024	IV	86.0(138.4)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7500	117.0000	04/21/1918	223225.0	0.0	6.80	0.055	VI	86.5(139.2)
DMG	33.7500	117.0000	06/06/1918	2232 0.0	0.0	5.00	0.021	IV	86.5(139.2)
GSP	34.4062	119.9198	05/29/2013	143803.4	7.1	4.80	0.019	IV	86.8(139.6)
DMG	35.2830	118.5500	07/23/1952	34928.0	0.0	4.70	0.018	IV	87.6(141.0)
DMG	35.2830	118.5500	07/23/1952	737 0.0	0.0	4.80	0.019	IV	87.6(141.0)
DMG	35.2830	118.5500	08/01/1952	31611.6	0.0	4.50	0.016	IV	87.6(141.0)
DMG	35.2830	118.5830	07/31/1952	1719 8.0	0.0	4.50	0.016	IV	87.7(141.1)
DMG	34.2670	116.9670	08/29/1943	34513.0	0.0	5.50	0.027	V	87.9(141.5)
DMG	35.2890	118.4110	08/10/1952	122318.0	4.0	4.60	0.017	IV	88.0(141.6)
DMG	35.1840	119.0990	07/01/1959	234923.4	9.0	4.70	0.018	IV	88.1(141.8)
DMG	34.0000	120.0170	04/01/1945	234342.0	0.0	5.40	0.026	V	88.3(142.0)
DMG	35.2940	118.4010	08/13/1952	42940.6	14.5	4.60	0.017	IV	88.3(142.2)
DMG	35.2990	118.4350	07/25/1952	20 6 6.1	-1.4	4.80	0.019	IV	88.6(142.6)
DMG	35.3000	118.5330	07/21/1952	182338.0	0.0	4.50	0.016	IV	88.7(142.8)
GSP	34.1210	116.9280	08/16/1998	133440.2	6.0	4.70	0.018	IV	88.8(142.9)
DMG	32.7500	118.2000	06/25/1939	149 0.0	0.0	4.50	0.016	IV	88.8(142.9)
GSP	34.1120	116.9200	10/01/1998	181816.0	4.0	4.70	0.018	IV	89.2(143.5)
GSP	34.2900	116.9460	02/10/2001	210505.8	9.0	5.10	0.022	IV	89.4(143.9)
DMG	35.3110	118.4990	07/25/1952	1313 8.2	2.8	5.00	0.021	IV	89.4(143.9)
GSP	34.1780	116.9220	06/28/1992	170131.9	13.0	4.70	0.018	IV	89.5(144.0)
DMG	35.3140	118.4820	08/30/1952	45559.8	5.5	4.70	0.018	IV	89.6(144.2)
DMG	34.1800	116.9200	01/16/1930	034 3.6	0.0	5.10	0.022	IV	89.6(144.2)
DMG	34.1800	116.9200	01/16/1930	02433.9	0.0	5.20	0.023	IV	89.6(144.2)
DMG	35.3150	118.5160	07/25/1952	194323.7	11.2	5.70	0.030	V	89.7(144.4)
DMG	35.3160	118.4870	09/15/1952	44013.2	4.2	4.90	0.020	IV	89.8(144.5)
DMG	35.3170	118.4940	07/25/1952	19 944.6	5.5	5.70	0.030	V	89.8(144.6)
DMG	35.3210	118.4940	02/11/1955	194431.5	14.7	4.50	0.016	IV	90.1(145.0)
GSP	35.3180	118.6540	01/25/2003	091610.2	5.0	4.50	0.016	IV	90.5(145.6)
DMG	35.3000	118.8000	12/23/1905	2223 0.0	0.0	5.00	0.021	IV	90.6(145.7)
GSP	34.2560	116.9120	06/28/1992	170557.5	8.0	4.60	0.017	IV	90.9(146.2)
DMG	35.3350	118.4740	07/23/1952	172224.0	6.6	4.50	0.016	IV	91.1(146.6)
DMG	35.3330	118.6000	07/23/1952	164853.0	0.0	4.50	0.016	IV	91.2(146.8)
DMG	35.3330	118.6000	07/23/1952	161838.0	0.0	4.50	0.016	IV	91.2(146.8)
DMG	35.3330	118.6000	07/31/1952	12 9 9.0	0.0	5.80	0.031	V	91.2(146.8)
DMG	34.1000	116.8830	10/24/1935	1452 0.0	0.0	4.50	0.016	IV	91.3(146.8)
DMG	34.1000	116.8830	10/24/1935	1451 0.0	0.0	4.50	0.016	IV	91.3(146.8)
DMG	32.7180	118.1720	04/28/1938	6 728.0	10.0	4.50	0.016	IV	91.3(146.9)
DMG	33.7100	116.9250	09/23/1963	144152.6	16.5	5.00	0.020	IV	91.3(147.0)
PAS	34.2460	116.9010	06/29/1979	55320.5	5.7	4.60	0.017	IV	91.4(147.0)
PAS	32.7560	117.9880	01/12/1975	212214.8	15.3	4.80	0.018	IV	91.4(147.1)
DMG	35.3400	118.4730	07/24/1952	5 249.6	2.1	4.50	0.016	IV	91.4(147.1)
PAS	34.2490	116.9000	06/30/1979	7 353.0	5.6	4.50	0.016	IV	91.4(147.2)
PAS	34.2430	116.8960	06/30/1979	03411.6	5.8	4.90	0.019	IV	91.6(147.4)
DMG	33.5000	117.0000	08/08/1925	1013 0.0	0.0	4.50	0.016	IV	91.9(147.8)
GSP	34.3770	116.9180	12/04/1992	052511.2	2.0	4.80	0.018	IV	92.3(148.6)
GSP	34.3400	116.9000	11/27/1992	160057.5	1.0	5.30	0.024	IV	92.7(149.2)
DMG	34.4000	116.9170	02/01/1942	16 334.0	0.0	4.50	0.016	IV	92.8(149.4)
DMG	34.4000	116.9170	02/01/1942	151828.0	0.0	4.50	0.016	IV	92.8(149.4)
GSP	34.1950	116.8620	08/17/1992	204152.1	11.0	5.30	0.024	IV	93.0(149.7)
DMG	33.9500	116.8500	09/28/1946	719 9.0	0.0	5.00	0.020	IV	93.1(149.9)
GSP	34.1630	116.8550	06/28/1992	144321.0	6.0	5.30	0.024	IV	93.2(150.0)
GSP	34.3690	116.8970	12/04/1992	020857.5	3.0	5.30	0.024	IV	93.4(150.2)
DMG	35.3670	118.5830	07/23/1952	4 140.0	0.0	4.70	0.017	IV	93.5(150.4)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.3670	118.5830	07/23/1952	04738.0	0.0	4.60	0.016	IV	93.5(150.4)
DMG	35.3670	118.5830	07/23/1952	03832.0	0.0	6.10	0.036	V	93.5(150.4)
DMG	35.3670	118.5830	07/23/1952	31923.0	0.0	5.00	0.020	IV	93.5(150.4)
MGI	35.3000	119.0000	09/04/1908	0 0 0.0	0.0	4.60	0.016	IV	93.5(150.5)
MGI	35.3000	119.0000	01/08/1903	030 0.0	0.0	4.60	0.016	IV	93.5(150.5)
DMG	34.3330	116.8830	10/14/1943	142844.0	0.0	4.50	0.015	IV	93.5(150.5)
DMG	35.3330	118.9170	07/31/1952	195314.0	0.0	4.50	0.015	IV	94.3(151.8)
DMG	35.3330	118.9170	08/22/1952	224124.0	0.0	5.80	0.030	V	94.3(151.8)
DMG	35.3330	118.9170	07/29/1952	195132.0	0.0	4.50	0.015	IV	94.3(151.8)
DMG	34.3250	116.8650	10/29/1962	24253.9	8.6	4.80	0.018	IV	94.4(151.9)
DMG	35.3830	118.5670	07/23/1952	546 3.0	0.0	4.70	0.017	IV	94.5(152.1)
GSP	32.6810	118.1090	06/20/1997	043540.5	6.0	4.70	0.017	IV	94.6(152.2)
DMG	34.3500	116.8670	10/15/1943	1650 1.0	0.0	4.50	0.015	IV	94.7(152.4)
GSP	34.2390	116.8370	07/09/1992	014357.6	0.0	5.30	0.023	IV	94.9(152.7)
GSP	34.3100	116.8500	02/22/2003	193345.8	3.0	4.50	0.015	IV	95.0(152.9)
DMG	32.6800	118.0770	10/28/1973	22 0 2.7	8.0	4.50	0.015	IV	95.0(153.0)
GSN	34.2030	116.8270	06/28/1992	150530.7	5.0	6.70	0.049	VI	95.1(153.0)
GSG	34.3100	116.8480	02/22/2003	121910.6	1.0	5.20	0.022	IV	95.1(153.1)
GSP	35.3900	118.6230	09/29/2004	225454.2	3.0	5.00	0.020	IV	95.2(153.3)
GSP	34.3150	116.8440	02/25/2003	040304.8	2.0	4.60	0.016	IV	95.4(153.6)
GSP	34.3230	116.8440	10/27/1998	010840.7	5.0	4.90	0.019	IV	95.6(153.8)
DMG	35.3950	118.6200	08/08/1955	32150.5	4.1	4.70	0.017	IV	95.6(153.8)
DMG	34.1000	116.8000	10/24/1935	1448 7.6	0.0	5.10	0.021	IV	96.0(154.5)
DMG	33.5000	116.9170	11/04/1935	355 0.0	0.0	4.50	0.015	IV	96.3(154.9)
DMG	34.7000	117.0000	07/16/1916	1150 0.0	0.0	4.50	0.015	IV	96.4(155.2)
DMG	35.3830	118.8500	07/29/1952	7 347.0	0.0	6.10	0.035	V	96.8(155.7)
DMG	34.2290	116.7950	05/11/1956	163050.5	13.3	4.70	0.017	IV	97.1(156.3)
DMG	33.9760	116.7750	10/17/1965	94519.0	17.0	4.90	0.018	IV	97.4(156.7)
DMG	33.0000	117.3000	11/22/1800	2130 0.0	0.0	6.50	0.043	VI	97.4(156.8)
DMG	35.4000	118.8170	07/29/1952	8 146.0	0.0	5.10	0.021	IV	97.5(156.9)
DMG	34.0140	116.7710	06/10/1944	111150.5	10.0	4.50	0.015	IV	97.5(156.9)
GSP	32.6260	118.1510	06/20/1997	080413.6	6.0	4.60	0.016	IV	97.8(157.3)
DMG	34.4360	116.8340	07/14/1973	8 020.1	8.0	4.80	0.017	IV	98.1(157.8)
GSP	34.2110	116.7600	06/28/1992	152429.3	6.0	4.50	0.015	IV	99.0(159.3)
GSP	35.4530	118.4310	05/06/1997	191253.8	6.0	4.50	0.015	IV	99.3(159.7)
DMG	35.3530	117.8260	07/03/1944	53823.5	-2.0	4.70	0.016	IV	99.4(160.0)
GSP	34.1300	116.7340	06/30/1992	212254.4	12.0	4.80	0.017	IV	99.9(160.7)

****

-END OF SEARCH- 408 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 2020

LENGTH OF SEARCH TIME: 221 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 1.8 MILES (2.9 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 7.7

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.238 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:
a-value= 3.002