Appendix E
Preliminary Geotechnical Assessment

Geotechnologies, Inc.
Consulting Geotechnical Engineers
439 Western Avenue
Glendale, California 91201-2837
818.240.9600 • Fax 818.240.9675

February 21, 2020
File No. 21947

AWH Partners
1040 Avenue of the Americas
9th Floor
New York, New York 10018

Attention: Timothy Osiecki

Subject: Preliminary Geotechnical Assessment
Proposed Hotel and Parking Structure
2500 North Hollywood Way, Burbank, California

Dear Mr. Osiecki:

1.0 INTRODUCTION

The purpose and intent of this document is to evaluate the soil and geological site characteristics associated with the proposed development including potential geotechnical issues regarding environmental impacts to the surrounding area, as required by the California Environmental Quality Act (CEQA) Guidelines. This report includes information from geotechnical investigations performed in vicinity of the site, engineering analysis, review of published geologic data, and review of available geotechnical engineering information.

2.0 PROJECT SCOPE

The proposed development consists of the construction of a seven-story hotel structure, which will be located in the western half of the subject site. The hotel structure is anticipated to provide a total of 420 guestrooms and will be constructed at or near existing site grade. In addition, a four-story parking structure is anticipated to be built adjacent to the proposed hotel in the eastern half of the site. The proposed parking structure is anticipated to include double-stacked parking facilities and may include a partially subterranean parking level along the northern perimeter of the site. The proposed development is illustrated on the attached Site Plan included in the Appendix of this report.

Preliminarily, column loads are estimated to be between 800 and 1,000 kips for the hotel structure and 600 to 800 kips for the proposed parking structure. Wall loads are estimated to be between 10 and 20 kips per lineal foot. Grading will consist of excavations between 5 to 20 feet for construction of a certified recompacted fill pad for support of the proposed hotel and possible subterranean parking level for the proposed parking structure. The enclosed Site Plan illustrates the proposed structural features anticipated for the development.

3.0 SITE CONDITIONS

The subject site is located at 2500 North Hollywood Way, in the City of Burbank, California. The property is currently occupied by an existing hotel and a convention center along the southern perimeter of the property. The subject site is located in the northeast region of the property as indicated by the enclosed Site Plan. The area of planned development within the site is currently occupied by a paved parking lot and planter areas.

The site is bounded by Thornton Avenue to the north, by a paved parking lot followed by an existing four-story hospital to the east, by an existing two-story convention center building and paved parking lot to the south, and a paved parking lot followed by a six-story urgent-care building to the west. The site is shown relative to nearby topographic features in the enclosed Vicinity Map and Site Plan.

The topography observed across the site descends to the southeast. There is an estimated elevation difference of approximately 12 feet across the site for an overall site gradient of 35 to 1 (horizontal to vertical).

Vegetation at the site consists of mature trees along the perimeter, and limited amount of bushes and shrubs contained in small landscaped areas and planter boxes. Drainage across the site appears to be by sheetflow to the city streets and toward the southeast.

4.0 RESEARCH - PREVIOUS LOCAL SITE INVESTIGATIONS

This firm has conducted geotechnical engineering investigations in the immediate vicinity of the site as indicated on the enclosed Vicinity Map. The investigations in nearest proximity to the proposed development are summarized below. Pertinent results and observations from these investigations have been incorporated into the preparation of this report. Boring logs from the following site investigations are included in the Appendix of this report.

1. ***Geotechnologies, Inc., November 9, 2011, Geotechnical Engineering Investigation, Proposed Storage Facility, Northeast Corner of Hollywood Way and Thornton Avenue, Burbank, California, File Number 20195.***

   Five exploratory excavations were drilled during preparation of this geotechnical investigation report. The excavations ranged in depth from 20 to 50 feet below the existing ground surface within the site. Shallow fill and native alluvial soils were observed below the existing site grade during exploration. Groundwater was not encountered during the subsurface exploration of this site.

2. ***Geotechnologies, Inc., July 20, 2006, Geotechnical Engineering Investigation, Proposed Commercial Structure, Northwest Corner of Empire Avenue and Avon Street, Burbank, California, File Number 18954.***

   Four boring excavations were drilled within this site in preparation of the geotechnical engineering investigation. The borings ranged in depth from 50 to 80 feet. Fill material was observed between depths of 2 to 5 feet below ground surface. Native alluvial soils were encountered below the fill to a maximum excavated depth of 80 feet. Groundwater was not observed during the subsurface explorations of this site.

3. ***Geotechnologies, Inc., January 13, 2005, Geotechnical Engineering Investigation, Proposed Commercial Structures, Northeast Corner of Empire Avenue and Avon Street, Burbank, California, File Number 18771.***

   The site was explored by excavating two exploratory borings during preparation of the geotechnical engineering investigation. The borings were excavated to a depth of 80 feet. Fill and native alluvial soil was observed during onsite excavation of borings. Groundwater was not encountered during the exploration of this site to a maximum excavated depth of 80 feet.

5.0 GROUNDWATER

Review of the Seismic Hazard Zone Report (SHZR) for the Burbank 7½-Minute Quadrangle, (CDMG, 1998, Revised 2006), indicates that the historically highest groundwater level in the vicinity of the site is estimated at 58 feet below ground surface. A copy of this plate is included in the Appendix as Historically Highest Groundwater Levels Map.

Static groundwater was not encountered during exploration of the nearby sites to a maximum explored depth of 80 feet below grade. The locations of nearby site investigations are indicated on the enclosed Vicinity Map.

Groundwater Monitoring Stations -

The State of California Department of Water Resources lists a groundwater monitoring well approximately 0.8 miles southwest of the site. The well location is indicated on the enclosed Groundwater Station Map and the well data logs are also enclosed in the Appendix. The well readings are summarized in the following table:

GROUNDWATER MONITORING WELL SUMMARY			
Well Station	**Ground Surface Elevation**	**Highest Rec. Water Surface Elevation**	**Lowest Rec. Water Surface Elevation**
341864N1183612W001	661.4 feet	559.8 feet on 4/1/1952	428.8 feet on 9/17/1968

Due to the proximity of the monitoring well to the subject site and the uniform geologic conditions within the region, it is the opinion of this firm that the data readings are representative of the groundwater levels underlying the site. The highest recorded water elevation corresponds to approximately 115 feet below the ground surface at the subject site. Based on these considerations, it is the opinion of this firm that the historic high-water level indicated in the Seismic Hazard Zone Report (CDMG, 1998, Revised 2006) is a conservative estimate of historic high and future water levels anticipated within the site.

6.0 REGIONAL GEOLOGIC SETTINGS

The subject property is located in the Transverse Ranges Geomorphic Province. The Transverse Ranges are characterized by roughly east-west trending mountains and the northern and southern boundaries are formed by reverse fault scarps. The convergent deformational features of the Transverse Ranges are a result of north-south shortening due to plate tectonics. This has resulted in local folding and uplift of the mountains along with the propagation of thrust faults (including blind thrusts). The intervening valleys have been filled with sediments derived from the bordering mountains.

7.0 LOCAL GEOLOGY

Review of the geologic map indicates the subject site is located in an area underlain by alluvial sediments. This geologic characterization is consistent with the earth materials encountered on previous geotechnical investigations conducted within the vicinity of the subject site. Copies of the Local Geologic Map (Dibblee) and Regional Geologic Maps are enclosed herein.

8.0 SEISMIC AND GEOLOGIC HAZARDS

a) Regional Faulting

Based on criteria established by the California Division of Mines and Geology (CDMG) now called California Geologic Survey (CGS), faults may be categorized as active, potentially active, or inactive. Active faults are those which show evidence of surface displacement within the last 11,000 years (Holocene-age). Potentially-active faults are those that show evidence of most recent surface displacement within the last 1.6 million years (Quaternary-age). Faults showing no evidence of surface displacement within the last 1.6 million years are considered inactive for most purposes, with the exception of design of some critical structures.

Buried thrust faults are faults without a surface expression but are a significant source of seismic activity. They are typically broadly defined based on the analysis of seismic wave recordings of hundreds of small and large earthquakes in the Southern California area. Due to the buried nature of these thrust faults, their existence is usually not known until they produce an earthquake. The risk for surface rupture potential of these buried thrust faults is inferred to be low (Leighton, 1990). However, the seismic risk of these buried structures in terms of recurrence and maximum potential magnitude is not well established.

Therefore, the potential for surface rupture on these surface-verging splays at magnitudes higher than 6.0 cannot be precluded.

A list of faults located within 60 miles (100 kilometers) from the project site has been provided in the enclosed table entitled Seismic Source Summary Table. This table is based on information provided by the United States Geologic Survey (USGS) 2008 National Seismic Hazard Maps–Source Parameters database. The distances provided in the enclosed table are measured from a point selected near the center of the subject site. A Southern California Fault Map has also been enclosed for reference. The following sections describe regional active faults of interest, potentially active faults, blind thrust faults and unnamed faults:

i) Active Faults

Verdugo Fault

The Verdugo fault runs along the southwest edge of the Verdugo Mountains and is located approximately 1.4 miles to the northeast of the site. According to Weber, et.-al., (1980) 2 to 3-meter-high scarps were identified in alluvial fan deposits in the Burbank and Glendale areas. Further to the northwest, in Sun Valley, a fault was reportedly identified at a depth of 40 feet in a sand and gravel pit. Although considered active by the County of Los Angeles, Department of Public Works (Leighton, 1990), and the United States Geological Survey, the fault is not designated with an earthquake fault zone by the California Geological Survey. It is estimated that the Verdugo fault is capable of producing a maximum 6.9 magnitude earthquake.

Sierra Madre Fault System

The Sierra Madre fault alone forms the southern tectonic boundary of the San Gabriel Mountains in the northern San Fernando Valley. It consists of a system of faults approximately 75 miles in length. The individual segments of the Sierra Madre fault system range up to 16 miles in length and display a reverse sense of displacement and dip to the north. The most recently active portions of the zone include the Mission Hills, Sylmar and Lakeview segments, which produced an earthquake in 1971 of magnitude 6.4. Tectonic rupture along the Lakeview Segment during the San Fernando Earthquake of 1971 produced displacements of approximately 2½ to 4 feet upward and southwestward.

It is believed that the Sierra Madre fault zone is capable of producing an earthquake of magnitude 7.3. The closest trace of the fault is located approximately 5.7 miles to the east of the subject site.

Hollywood Fault

The Hollywood fault is part of the Transverse Ranges Southern Boundary fault system. The Hollywood fault is located approximately 6.0 miles south of site. This fault trends east-west along the base of the Santa Monica Mountains from the West Beverly Hills Lineament in the West Hollywood–Beverly Hills area to the Los Feliz area of Los Angeles. The Hollywood fault is the eastern segment of the reverse oblique Santa Monica–Hollywood fault. Based on geomorphic evidence, stratigraphic correlation between exploratory borings, and fault trenching studies, this fault is classified as active.

Until recently, the approximately 9.3-mile long Hollywood fault was considered to be expressed as a series of linear ground-surface geomorphic expressions and south-facing ridges along the south margin of the eastern Santa Monica Mountains and the Hollywood Hills. Multiple recent fault rupture hazard investigations have shown that the Hollywood fault is located south of the ridges and bedrock outcroppings along portions of Sunset Boulevard. The Hollywood fault has not produced any damaging earthquakes during the historical period and has had relatively minor micro-seismic activity. It is estimated that the Hollywood fault is capable of producing a maximum 6.7 magnitude earthquake. In 2014, the California Geological Survey established an Earthquake Fault Zone for the Hollywood Fault.

Raymond Fault

The Raymond fault is located approximately 8.7 miles southeast of the subject site. Much of the geomorphic evidence for the Raymond fault has been obscured by urbanization of the San Gabriel Valley. However, a discontinuous escarpment can be traced from Monrovia to the Arroyo Seco in South Pasadena. The very bold, “knife edge” escarpment in Monrovia parallel to Scenic Drive is believed to be a fault scarp of the Raymond fault. Trenching of the Raymond fault is reported to have revealed Holocene movement (Weaver and Dolan, 1997). The Raymond fault has been found to be an effective groundwater barrier which divides the San Gabriel Valley into groundwater sub-basins.

The recurrence interval for the Raymond fault is probably slightly less than 3,000 years, with the most recent documented event occurring approximately 1,600 years ago (Crook, et al, 1978). However, historical accounts of an earthquake that occurred in July 1855 as reported by Toppozada and others, 1981, place the epicenter of a Richter Magnitude 6 earthquake within the Raymond fault. It is believed that the Raymond fault is capable of producing a 6.8 magnitude earthquake. The Raymond Fault is considered active by the California Geological Survey.

Whittier-Elsinore Fault System

The Whittier fault is located approximately 19 miles southeast of the site. The Whittier fault together with the Chino fault comprises the northernmost extension of the northwest trending Elsinore fault system. The mapped surface of the Whittier fault extends in a west-northwest direction for a distance of 20 miles from the Santa Ana River to the terminus of the Puente Hills. The Whittier fault is essentially a strike-slip, northeast dipping fault zone which also exhibits evidence of reverse movement along with en echelon fault segments, en echelon folds and anatomizing (braided) fault segments. Right lateral offsets of stream drainages of up to 8800 feet (Durham and Yerkes, 1964) and vertical separation of the basement complex of 6,000 to 12,000 feet (Yerkes, 1972), have been documented. It is believed that the Whittier fault is capable of producing a 7.8 magnitude earthquake.

The Whittier Narrows earthquakes of October 1, 1987, and October 4, 1987, occurred in the area between the westernmost terminus of the mapped trace of the Whittier fault and the frontal fault system. The main 5.9 magnitude shock of October 1, 1987 was not caused by slip on the Whittier fault. The quake ruptured a gently dipping thrust fault with an east-west strike (Haukson, Jones, Davis and others, 1988). In contrast, the earthquake of October 4, 1987, is assumed to have occurred on the Whittier fault as focal mechanisms show mostly strike-slip movement with a small reverse component on a steeply dipping northwest striking plane (Haukson, Jones, Davis and others, 1988).

San Gabriel Fault System

The San Gabriel fault system is located approximately 9.3 miles north of the subject site. The San Gabriel fault system comprises a series of subparallel, steeply north-dipping faults trending approximately north 40 degrees west with a right-lateral sense of displacement. There is also a small component of vertical dip-slip separation. The fault system exhibits a strong topographic expression and extends approximately 90 miles from San Antonio Canyon on the southeast to Frazier Mountain on the northwest. The estimated right lateral displacement on the fault varies from 34 miles (Crowell, 1982) to 40 miles (Ehlig, 1986), to 10 miles (Weber, 1982). Most scholars accept the larger displacement values and place the majority of activity between the Late Miocene and Late Pliocene Epochs of the Tertiary Era (65 to 1.8 million years before present).

Portions of the San Gabriel fault system are considered active by California Geological Survey. Recent seismic exploration in the Valencia area (Cotton and others, 1983; Cotton, 1985) has established Holocene offset. Radiocarbon data acquired by Cotton (1985) indicate that faulting in the Valencia area occurred between 3,500 and 1,500 years before present.

It is hypothesized by Ehlig (1986) and Stitt (1986) that the Holocene offset on the San Gabriel fault system is due to sympathetic (passive) movement as a result of north-south compression of the upper Santa Susana thrust sheet. Seismic evidence indicates that the San Gabriel fault system is truncated at depth by the younger, north-dipping Santa Susana-Sierra Madre faults (Oakeshott, 1975; Namson and Davis, 1988).

Newport-Inglewood Fault System

The Newport-Inglewood fault zone is a broad zone of discontinuous north to northwestern echelon faults and northwest to west trending folds. The closest fault segment of this fault system to the subject site is located about 10.7 miles to the southwest. The fault zone extends southeastward from West Los Angeles, across the Los Angeles Basin, to Newport Beach and possibly offshore beyond San Diego (Barrows, 1974; Weber, 1982; Ziony, 1985).

The onshore segment of the Newport-Inglewood fault zone extends for about 37 miles from the Santa Ana River to the Santa Monica Mountains. Here it is overridden by, or merges with, the east-west trending Santa Monica zone of reverse faults.

The surface expression of the Newport-Inglewood fault zone is made up of a strikingly linear alignment of domal hills and mesas that rise on the order of 400 feet above the surrounding plains. From the northern end to its southernmost onshore expression, the Newport-Inglewood fault zone is made up of: Cheviot Hills, Baldwin Hills, Rosecrans Hills, Dominguez Hills, Signal Hill-Reservoir Hill, Alamitos Heights, Landing Hill, Bolsa Chica Mesa, Huntington Beach Mesa, and Newport Mesa. Several single and multiple fault strands, arranged in a roughly left stepping en echelon arrangement, make up the fault zone and account for the uplifted mesas.

The most significant earthquake associated with the Newport-Inglewood fault system was the Long Beach earthquake of 1933 with a magnitude of 6.3 on the Richter scale. It is believed that the Newport-Inglewood fault zone is capable of producing a 7.5 magnitude earthquake.

Santa Susana Fault

The Santa Susana fault extends approximately 17 miles west-northwest from the northwest edge of the San Fernando Valley into Ventura County and is at the surface high on the south flank of the Santa Susana Mountains. The fault ends near the point where it overrides the south-side-up South strand of the Oak Ridge fault. The Santa Susana fault strikes northeast at the Fernando lateral ramp and turns east at the northern margin of the Sylmar Basin to become the Sierra Madre fault. This fault is exposed near the base of the San Gabriel Mountains for approximately 46 miles from the San Fernando Pass at the Fernando lateral ramp east to its intersection with the San Antonio Canyon fault in the eastern San Gabriel Mountains, east of which the range front is formed by the Cucamonga fault. The Santa Susana fault has not experienced any recent major ruptures except for a slight rupture during the 6.5 magnitude 1971 Sylmar earthquake. The Santa Susana Fault is considered to be active by the County of Los Angeles. It is believed that the Santa Susana fault has the potential to produce a 6.9 magnitude earthquake. The closest trace of the fault is located approximately 12.4 miles northwest of the site.

Malibu Coast Fault

The Malibu Coast fault is part of the Transverse Ranges Southern Boundary fault system, a west-trending system of reverse, oblique-slip, and strike-slip faults that extends for more than approximately 124 miles along the southern edge of the Transverse Ranges and includes the Hollywood, Raymond, Anacapa–Dume, Malibu Coast, Santa Cruz Island, and Santa Rosa Island faults.

The Malibu Coast fault zone runs in an east-west orientation onshore subparallel to and along the shoreline for a linear distance of about 17 miles through the Malibu City limits, but also extends offshore to the east and west for a total length of approximately 37.5 miles. The onshore Malibu Coast fault zone involves a broad, wide zone of faulting and shearing as much as one mile in width. While the Malibu Coast Fault Zone has not been officially designated as an active fault zone by the State of California and no Special Studies Zones have been delineated along any part of the fault zone under the Alquist-Priolo Act of 1972, evidence for Holocene activity (movement in the last 11,000 years) has been established in several locations along individual fault splays within the fault zone. Due to such evidence, several fault splays within the onshore portion of the fault zone are identified as active.

Large historic earthquakes along the Malibu Coast fault include the 1979, 5.2 magnitude earthquake and the 1989, 5.0 magnitude earthquake. The Malibu Coast fault zone is approximately 15.3 miles to the southwest of the site. This fault is believed to be capable of producing a maximum 7.0 magnitude earthquake.

Palos Verdes Fault

Studies indicate that there are several active on-shore extensions of the strike-slip Palos Verdes fault, which is located approximately 19.6 miles southwest of site. Geophysical data also indicate the off-shore extensions of the fault are active, offsetting Holocene age deposits. No historic large magnitude earthquakes are associated with this fault. However, the fault is considered active by the California Geological Survey. It is estimated that the Palos Verdes fault is capable of producing a maximum 7.7 magnitude earthquake.

San Andreas Fault System

The San Andreas Fault system forms a major plate tectonic boundary along the western portion of North America. The system is predominantly a series of northwest trending faults characterized by a predominant right lateral sense of movement. At its closest point the San Andreas Fault system is located approximately 27.9 miles to the northeast of the site.

The San Andreas and associated faults have had a long history of inferred and historic earthquakes. Cumulative displacement along the system exceeds 150 miles in the past 25 million years (Jahns, 1973). Large historic earthquakes have occurred at Fort Tejon in 1857, at Point Reyes in 1906, and at Loma Prieta in 1989. Based on single-event rupture length, the maximum Richter magnitude earthquake is expected to be approximately 8.25 (Allen, 1968). The recurrence interval for large earthquakes on the southern portion of the fault system is on the order of 100 to 200 years.

ii) Potentially Active Faults

Santa Monica Fault

The Santa Monica fault, located approximately 6.8 miles to the southwest of the site, is also part of the Transverse Ranges Southern Boundary fault system. The Santa Monica fault extends east from the coastline in Pacific Palisades through Santa Monica and West Los Angeles and merges with the Hollywood fault at the West Beverly Hills Lineament in Beverly Hills where its strike is northeast. It is believed that at least six surface ruptures have occurred in the past 50 thousand years. In addition, a well-documented surface rupture occurred between 10 and 17 thousand years ago, although a more recent earthquake probably occurred 1 to 3 thousand years ago. This leads to an average earthquake recurrence interval of 7 to 8 thousand years. It is thought that the Santa Monica fault system may produce earthquakes with a maximum magnitude of 7.4.

Anacapa-Dume Fault

The Anacapa–Dume fault, located approximately 16.8 miles southwest of the subject site, is a near-vertical offshore escarpment exceeding 600 meters locally, with a total length exceeding 62 miles. This fault is also part of the Transverse Ranges Southern Boundary fault system. It occurs as close as 3.6 miles offshore south of Malibu at its western end, but trends northeast where it merges with the offshore segments of the Santa Monica Fault Zone. It is believed that the Anacapa–Dume fault is responsible for generating the historic 1930 magnitude 5.2 Santa Monica earthquake, the 1973 magnitude 5.3 Point Mugu earthquake, and the 1979 and 1989 Malibu earthquakes, each of which possessed a magnitude of 5.0. The

Anacapa–Dume fault is thought to be capable of producing a maximum magnitude 7.2 earthquake.

iii) Blind Thrusts Faults and Unnamed Faults

Blind or buried thrust faults are faults without a surface expression but are a significant source of seismic activity. By definition, these faults have no surface trace, therefore the potential for ground surface rupture is considered remote. They are typically broadly defined based on the analysis of seismic wave recordings of hundreds of small and large earthquakes in the Southern California area. Due to the buried nature of these thrust faults, their existence is sometimes not known until they produce an earthquake. Two blind thrust faults in the Los Angeles metropolitan area are the Puente Hills blind thrust and the Elysian Park blind thrust. Another blind thrust fault of note is the Northridge fault located in the northwestern portion of the San Fernando Valley.

The Elysian Park anticline is thought to overlie the Elysian Park blind thrust. This fault has been estimated to cause an earthquake every 500 to 1,300 years in the magnitude range 6.2 to 6.7. The Elysian Park thrust fault is located approximately 6.3 miles to the southeast of the site.

The Puente Hills blind thrust fault extends eastward from Downtown Los Angeles to the City of Brea in northern Orange County. The Puente Hills blind thrust fault includes three north-dipping segments, named from east to west as the Coyote Hills segment, the Santa Fe Springs segment, and the Los Angeles segment. These segments are overlain by folds expressed at the surface as the Coyote Hills, Santa Fe Springs Anticline, and the Montebello Hills. The closest segment of the Puente Hills Blind Thrust is located approximately 11.1 miles to the southeast of the site.

The Santa Fe Springs segment of the Puente Hills blind thrust fault is believed to be the cause of the October 1, 1987, Whittier Narrows Earthquake. The epicenter of this seismic event is located approximately 20 miles southeast of the subject site. Based on deformation of late Quaternary age sediments above this fault system and the occurrence of the Whittier Narrows earthquake, the Puente Hills blind thrust fault is considered an active fault capable of generating future earthquakes beneath the Los Angeles Basin. A maximum moment magnitude of 7.0 is estimated by researchers for the Puente Hills blind thrust fault.

The Mw 6.7 Northridge earthquake was caused by the sudden rupture of a previously unknown, blind thrust fault. This fault has since been named the Northridge Thrust; however, it is also known in some of the literature as the Pico Thrust. It has been assigned a maximum magnitude of 6.9 and a 1,500 to 1,800-year recurrence interval. The Northridge thrust is located 8.2 miles to the northwest of the site.

b) <u>Local Faulting</u>

Local faults including quaternary and pre-quaternary faults are illustrated in relation to the site on the attached “Local Fault Map”. The Raymond fault, located approximately 8.7 miles southeast of the site, contributes significantly to the historic seismic activity of the localized region as exemplified by the Pasadena earthquake of 1988 (discussed below). The Northridge fault is located 8.1 miles to the west of the site as indicated on the “Local Fault Map”. The Northridge fault specifically has demonstrated recent activity within the region and is credited with the Northridge Earthquake of 1994. Unnamed quaternary and pre-quaternary faults lie to the southeast of the site as indicated on the attached fault map. The nearest projected fault is identified as the Verdugo fault and is located approximately 1.4 miles northeast of the site.

c) <u>Significant Seismic Events (>4.0 Magnitude)</u>

Significant seismic event earthquakes (>4.0 Mag) for the greater Los Angeles area (for incident dates later than 1933) are indicated on the attached map entitled “Historical Seismic Event Map – Regional”. Seismic events in close proximity to the site are indicated on the “Historical Seismic Event Map – Local”. Historical earthquake events in close proximity to the site are discussed as follows:

Northridge Earthquake -

The Northridge earthquake event took place on January 17, 1994 at 4:30 am on a blind thrust fault directly beneath the urban developed area of the San Fernando Valley within the City of Los Angeles. Significant and widespread damage was incurred by the Northridge event including: Section collapse of major freeways, office buildings, parking structures, and residential structures. Due to the high acceleration in both vertical and horizontal direction, some structures were lifted from their foundations.

Building code revisions and earthquake mitigation policies were initiated in response to the Northridge earthquake. Due to the significant vertical accelerations, design methodologies were re-evaluated to account for vertical as well as lateral earthquake accelerations. In addition, the City of Los Angeles and adjacent unincorporated regions recently require seismic retrofit of soft-story residential structures, in part, due to lessons learned from the Northridge seismic event.

San Fernando Earthquake -

Also known as the Sylmar Earthquake, the San Fernando Earthquake took place on February 9, 1971 at 6:01 am. The earthquake was centered along the San Fernando thrust fault and exhibited surface rupture roughly 12 miles in length and a maximum slip of up to 6 feet. The San Fernando Earthquake caused approximately 500 million in property damage and 65 fatalities - primarily as a result of the partial collapse of the Veteran’s Administration Hospital.

In response to the San Fernando Earthquake, building codes were strengthened. In addition, the Alquist-Priolo Special Studies Zone Act was passed in 1972 which prohibits structures designed for human occupancy to be positioned in close proximity to active fault traces.

Whittier Narrows Earthquake -

The Whittier Narrows earthquakes of October 1, 1987, and October 4, 1987, occurred in the area between the westernmost terminus of the mapped trace of the Whittier fault and the frontal fault system in a previously unknown thrust fault approximately 20 km east of downtown Los Angeles as indicated by the "Historical Seismic Event Map – Local". The main 5.9 magnitude shock of October 1, 1987 was not caused by slip on the Whittier fault. The quake ruptured a gently dipping thrust fault with an east-west strike (Haukson, Jones, Davis and others, 1988). In contrast, the earthquake of October 4, 1987, is assumed to have occurred on the Whittier fault as focal mechanisms show mostly strike-slip movement with a small reverse component on a steeply dipping northwest striking plane (Haukson, Jones, Davis and others, 1988).

The most significant structural damage was concentrated in the uptown district of Whitter, the old downtown section of Alhambra and the regions of Pasadena that include older structures. Unreinforced masonry structures and structures which exhibit "soft-story" design sustained the most severe damage during the Whittier Narrows seismic event.

Pasadena Earthquake -

The Pasadena earthquake of December 3, 1988 has an established epicenter to the southeast of the site as indicated by the attached "Historic Seismic Event Map – Local". The earthquake was followed by an unusually small number of aftershocks. The Pasadena event of 1988 was determined to be associated with the Raymond fault and provided a clear example of left-lateral movement along the fault. The Montebello earthquake of 1989 is considered to be a potential aftershock of the Pasadena earthquake.

Montebello Earthquake -

The Montebello earthquake of June 12, 1989 was measured as a magnitude 4.9 event and was located just east of downtown Los Angeles and southeast of the site. The event was followed 25 minutes later by a magnitude 4.4 aftershock. The earthquake originated from a depth of 15.6 km, similar to the depth of the Pasadena earthquake which occurred six months earlier. As previously stated, it is considered by many that the Montebello earthquake is likely to be an aftershock of the Pasadena earthquake.

d) <u>Surface Ground Rupture</u>

In 1972, the Alquist-Priolo Special Studies Zones Act (now known as the Alquist-Priolo Earthquake Fault Zoning Act) was passed into law. The Act defines "active" and "potentially active" faults utilizing the same aging criteria as that used by California Geological Survey (CGS). However, established state policy has been to zone only those faults which have direct evidence of movement within the last 11,000 years. It is this recency of fault movement that the CGS considers as a characteristic for faults that have a relatively high potential for ground rupture in the future.

Surface rupture is defined as surface displacement which occurs along the surface trace of the causative fault during an earthquake. Based on review of the Earthquake Fault Zones Burbank Quadrangle, the site is not located within an earthquake fault zone. A copy of Earthquake Fault Zone Map may be found in the Appendix of this report.

e) Seismicity

Continual seismic activity is expected to occur within the immediate and general region of the site. The seismic conditions identified in this document and referenced reports are typical of sites within this area of Burbank and Los Angeles County, and of a type that are routinely addressed through regulatory measures. Design of the proposed development in accordance with the provisions of the applicable California Building Code will be required to mitigate the potential effects of strong ground shaking.

f) Deaggregated Seismic Source Parameters

The peak ground acceleration (PGA_M) and modal magnitude for the site was obtained from the USGS Probabilistic Seismic Hazard Deaggregation program and Structural Engineers Association of California & the Office of Statewide Health Planning and Development (OSHPD, 2020). The parameters are based on a 2 percent in 50 years ground motion (2475-year return period). A shear wave velocity (Vs30) of 259 meters per second was utilized in the computation. The USGS Seismic Hazard and OSHPD utility programs indicate a PGA_M of 0.9g and a modal magnitude of 6.69 for the site.

g) ASCE 7-16 / 2019 California Building Code Seismic Parameters

Based on information derived from nearby subsurface investigations, the subject site is classified as Site Class D, which corresponds to a "Stiff Soil" Profile, according to Table 20.3-1 of ASCE 7-16. This information and the site coordinates were input into the Structural Engineers Association of California & OSHPD seismic utility program in order to calculate ground motion parameters for the site:

CALIFORNIA BUILDING CODE SEISMIC PARAMETERS	
California Building Code	2019
ASCE Design Standard	7-16
Risk Category	II
Site Class	D
Mapped Spectral Acceleration at Short Periods (S_S)	1.990g
Site Coefficient (F_a)	1.0
Maximum Considered Earthquake Spectral Response for Short Periods (S_{MS})	1.990g
Five-Percent Damped Design Spectral Response Acceleration at Short Periods (S_{DS})	1.327g
Mapped Spectral Acceleration at One-Second Period (S_1)	0.666g
Site Coefficient (F_v)	1.7*
Maximum Considered Earthquake Spectral Response for One-Second Period (S_{M1})	1.132g*
Five-Percent Damped Design Spectral Response Acceleration for One-Second Period (S_{D1})	0.755g*

** According to ASCE 7-16, a Long Period Site Coefficient (F_v) of 1.7 may be utilized provided that the value of the Seismic Response Coefficient (C_s) is determined by Equation 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Equation 12.8-3 for $T_L \geq T > 1.5T_s$ or equation 12.8-4 for $T > T_L$. Alternatively, a site-specific ground motion hazard analysis may be performed in accordance with ASCE 7-16 Section 21.1 and/or a ground motion hazard analysis in accordance with ASCE 7-16 Section 21.2 to determine ground motions for any structure.*

h) <u>Liquefaction</u>

Liquefaction is a phenomenon in which saturated silty to cohesionless soils below the groundwater table are subject to a temporary loss of strength due to the buildup of excess pore pressure during cyclic loading conditions such as those induced by an earthquake. Liquefaction-related effects include loss of bearing strength, amplified ground oscillations, lateral spreading, and flow failures.

Based on review of the Seismic Hazards Maps of the State of California (CDMG, 1999), the site is not located within an area designated as potentially liquefiable. This determination is based on groundwater depth records, soil type and distance to a fault capable of producing a substantial earthquake. A copy of this map is included in the Appendix.

The investigations in nearest proximity to the proposed development submitted by this firm concluded that the possibility of liquefaction was considered to be remote within the sites explored. Nonetheless, a site-specific liquefaction assessment including site excavation, laboratory testing and analysis is recommended to determine the susceptibility of liquefaction of onsite soils.

i) Dynamic Settlement

Seismically-induced settlement or compaction of dry or moist, cohesionless soils can be an effect related to earthquake ground motion. Such settlements are typically most damaging when the settlements are differential in nature across the length of structures.

Some seismically-induced settlement of the proposed structures should be expected as a result of strong ground-shaking, however, due to the uniform nature of the underlying geologic materials observed in nearby site investigations, excessive differential settlements are not expected to occur.

j) Regional Subsidence

The site is not located within a zone of known subsidence due to oil or other fluid withdrawal.

k) Landsliding

The probability of seismically-induced landslides occurring on the site is considered to be negligible due to the general lack of substantive elevation difference across or adjacent to the site. Therefore, potential impacts related to landsliding would be less than significant.

l) Collapsible Soils

Based on previous geotechnical investigations conducted within the near vicinity of the site, the soils underlying the area would not be considered prone to hydroconsolidation.

m) Expansive Soils

The geologic materials previously tested by this firm for nearby sites indicate a very low expansion potential for near-surface onsite soils. Accordingly, the geologic materials are anticipated to be in the very low to low expansion range within the subject site. Special design considerations for mitigation of highly expansive soils will not likely be required. Design of the proposed structures in accordance with the California Building Code is anticipated to fully mitigate the potential effects of moderately expansive soils.

n) Tsunamis, Seiches and Flooding

Tsunamis are large ocean waves generated by sudden water displacement caused by a submarine earthquake, landslide, or volcanic eruption. The site is high enough and far enough from the ocean to preclude being prone to hazards of a tsunami.

Review of the County of Los Angeles Flood and Inundation Hazards Map (Leighton, 1990), indicates the site lies within an inundation boundary due to a seiche or a breached upgradient reservoir.

Review of the Flood Insurance Rate Map established by the Federal Emergency Management Agency (FEMA) indicates the site lies within an area of minimal flood hazard. A copy of this map is enclosed in the Appendix of this report.

o) Oil Fields and Oil Wells

Based on review of the Division of Oil, Gas, and Geothermal Resources, DOGGR Online Mapping system, http://maps.conservation.ca.gov/doms/doms-app.html, the site is not located within the limits of an oil field. No evidence of an oil or gas well has been drilled within the site. The closest oil well in proximity to the site is approximately 1.9 miles to the west and is identified as API No. 0403705527. The operator of record is listed as B. J. Jeffrey and the well status is designated as "Idle". A copy of the Oil Field & Oil Well Location Map is included in the Appendix of this report.

p) Methane Zone

Based on research of available documentation, the site does not appear to be located within a methane hazard zone as designated by state and county information resources. According to the County of Los Angeles Methane Research Tool, Department of Public Works, Los Angeles County, Methane Mitigation Website: https://dpw.lacounty.gov/epd/swims/OnlineServices/search-methane-hazards-esri.aspx, the site is not located within 300 feet of an oil or gas well or 1,000 feet of a methane producing site.

q) Temporary Excavations

All required excavations are expected to be sloped, or properly shored, in accordance with the provisions of the applicable building code. Accordingly, the project would not result in any on-site or off-site landslide. Excavations on the order of 20 feet in depth within the site are anticipated during construction of the proposed parking structure. Shoring systems, if required, may include soldier piles with rakers and/or tiebacks or trench shoring utilizing a cross-braced design. Should tiebacks be required, components of the tieback anchor would likely extend below adjacent properties and public right of ways. Appropriate notifications and agreements should be obtained by the development team prior to tieback installations.

r) Septic Tanks

It is the understanding of this firm that infrastructure and facilities are available at the site for wastewater disposal. No septic tanks or alternative disposal systems are necessary or anticipated for the proposed site project.

s) Ground Failure

The proposed construction is not anticipated to cause or increase the potential for any seismic related ground failure on the project site or adjacent sites. The project site is not located within an Earthquake Fault Zone, or a Seismically Induced Landslide Zone. The proposed structures and any required shoring system shall be designed in accordance with the City of Burbank and California Building Codes and shall mitigate the potential effects of ground failure.

t) Erosion

The project would not result in substantial off-site soil erosion or the loss of topsoil due to the paved nature of the surrounding sites, and the lack of elevation difference slope geometry across or adjacent to the site. In addition, earthwork activities associated with the grading and export of soil would occur in accordance with the city requirements as specified in the Burbank Building Code and through the grading plan review and approval process. Grading and erosion control measures shall be implemented during site grading to reduce erosion impacts as part of the regulatory requirements.

u) Landform Alterations

There are no significant hills, canyons, ravines, outcrops or other geologic or topographic features on the site. Therefore, any proposed project would not adversely affect any prominent geologic or topographic features.

9.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Based upon nearby geotechnical site exploration, laboratory testing, and research, it is the preliminary finding of Geotechnologies, Inc. that development of the site, as described here, is considered feasible from a geotechnical engineering standpoint. This report is preliminary in nature because it is based on information obtained from nearby projects.

A site-specific subsurface geotechnical exploration program, with laboratory testing and engineering analyses, should be prosecuted in order to generate a geotechnical engineering investigation for the project site. The comprehensive geotechnical report with design parameters and recommendations should be submitted to the local governing agency for review prior to construction. The proposed development shall be designed and constructed in accordance with the provisions of the most current applicable building code and requirements of the local building official.

The project site is not located within an earthquake fault zone, or a seismically-induced landslide zone. The site is not located within an area identified as potentially liquefiable. The conditions identified in this report are typical of sites within this area of Los Angeles County, and of a type that are routinely addressed through regulatory measures.

Excavations on the order of 5 to 20 feet in depth will be required for the foundation elements and anticipated elevator pit enclosures for the proposed hotel and parking structure. The excavations are expected to remove the existing fill soils and expose the underlying dense native soils. Preliminarily, it is anticipated that the proposed hotel may be supported on conventional spread footings and/or mat foundation bearing in a certified recompacted fill pad. The parking structure may be supported by conventional foundation bearing in competent undisturbed alluvial soils anticipated at the bottom of the proposed excavation.

As with all of Southern California, the site is subject to potential strong ground motion should a moderate to strong earthquake occur on a local or regional fault. Design of the project in accordance with the provisions of the applicable California Building Code will be required to mitigate the potential effects of strong ground shaking.

Stormwater Infiltration

Compliance to LID requirements and the City of Burbank guidelines regarding stormwater management within the site is viable based on existing development plans and favorable geologic conditions encountered on nearby sites. Stormwater infiltration into onsite soils will likely be feasible based on preliminary geologic assessment. Onsite percolation testing and evaluation will be necessary to determine actual infiltration performance including site specific design values.

10.0 CLOSURE

This report is general in nature and does not present specific geotechnical design criteria sufficient for use during design phase of the development. A comprehensive geotechnical investigation including subsurface exploration and laboratory testing should be prepared for design input, when necessary.

Geotechnologies, Inc. appreciates the opportunity to provide our services on this project. Should you have any questions, please contact this office.

Respectfully submitted,
GEOTECHNOLOGIES, INC.

REGISTERED PROFESSIONAL ENGINEER
SCOTT T. PRINCE
No. 83961
Exp. 09/30/21
CIVIL
STATE OF CALIFORNIA

SCOTT T. PRINCE
R.C.E. 83961

REGISTERED PROFESSIONAL ENGINEER
EDWARD F. HILL
No. 2126
GEOTECHNICAL
STATE OF CALIFORNIA

EDWARD F. HILL
G.E. 2126

STP/EFH:dy

Enclosures: References
Vicinity Map
Site Plan
Local Geologic Map
Regional Geologic Map
Historically Highest Groundwater Levels
Seismic Source Summary Table
Southern California Fault Map
Local Fault Map
Historical Seismic Event Map – Regional
Historical Seismic Event Map – Local
Earthquake Fault Zone Map
Flood Insurance Rate Map
Oil Field & Oil Well Location Map
Seismic Hazard Zone Map
Groundwater Well Station Data (13 pages)
Boring from Previous Investigation, dated November 9, 2011, Job No. 20195 (6 pages)
Borings from Previous Investigation, dated July 20, 2006, Job No. 18954 (10 pages)
Borings from Previous Investigation, dated January 13, 2005, Job No. 18771 (6 pages)

Distribution: (4) Addressee

E-mail to: [tosiecki@awhpartners.com], Attn: Timothy Osiecki

REFERENCES

Allen, C.R., 1968, The tectonic environments of seismically active and inactive areas along the San Andreas fault system, in Proc. of Conf. on Geologic Problems of the San Andreas Fault System, W.R. Dickenson and A. Grantz, Editors, Stanford Univ. Publ., Geol. Sci. Univ. Ser. 11, 70-82.

Barrows, A. G., 1974, A Review of the Geology and Earthquake History of the Newport-Inglewood Structural Zone, Southern California, California Division of Mines and Geology Special Report 114.

California Department of Conservation, Division of Mines and Geology, 1998 (Revised 2006), Seismic Hazard Zone Report of the Burbank 7½-Minute Quadrangle, Los Angeles County, California., C.D.M.G. Seismic Hazard Zone Report 016, map scale 1:24,000.z

California Department of Conservation, Division of Mines and Geology, 1999, Seismic Hazard Zones Map, Burbank 7½-minute Quadrangle, CDMG Seismic Hazard Zone Mapping Act of 1990.

California Geological Survey, 2008, Guidelines for Evaluation and Mitigation of Seismic Hazards in California, Special Publication 117A.

California Geological Survey, 2014, Earthquake Fault Zones, Burbank 7½-minute Quadrangle.

Cotton, William and Associates, Inc., 1985, Holocene Behavior of the San Gabriel Fault, Saugus/Castaic Area, Los Angeles County, California: Technical Report to U.S. Geological Survey, Contract No. 14-08-0001-21950, 26 p., 2 appendices, 3 plates.

Crook, R., Jr., Allen, C.R., Kamb, B., Payne, C.M., and Proctor R.J., 1978, Quaternary Geology and Seismic Hazard of the Sierra Madre and Associated Faults, Western San Gabriel Mountains: USGS, unpublished technical report, Contract No. 14-08-0001-15258.

Crowell, J.C., 1982, The Tectonics of Ridge Basin, Southern California, in Crowell, J.C., and Link, M.H., eds., Geologic History of Ridge Basin, Southern California: Pacific Section SEPM. p. 25-42.

Department of Public Works, Los Angeles County, 2020, Methane Mitigation Website: https://dpw.lacounty.gov/epd/swims/OnlineServices/search-methane-hazards-esri.aspx

Dibblee, T.W. Jr. 1991, Geologic Map of the Los Angeles Quadrangle, DMG Map #DF-22, map scale 1: 24,000.

Division of Oil, Gas, and Geothermal Resources, 2020, DOGGR Online Mapping system, http://maps.conservation.ca.gov/doms/doms-app.html

REFERENCES – (Continued)

Durham, D.L. and Yerkes, R.F., 1964 Geology and Oil Resources of the Eastern Puente Hills Area, Southern California: U.S. Geol. Survey, Prof. Paper 420-B, 62 p.

Ehlig, P.L., W.R. Cotton, Shaul Levi, R.B. Saul, A.E. Seward, L.T. Stitt, J.A. Treiman, F.H. Weber, and R.S. Yeats, 1986, Neotectonics and Faulting in Southern California, Guidebook and Volume for G.S.A. Cordilleran Section 82nd Annual Meeting, March 25-28, p. 123-126.

Hauksson, E., and Jones, L.M., 1989, The 1987 Whittier Narrows earthquake sequence in Los Angeles, southern California: Seismological and Tectonic Analysis: Jour. Geophysical Research 94:9569-9589.

Jahns, R.H., 1973, Tectonic evolution of the Transverse Ranges Provence as related to the San Andreas fault system, Kovach, R. L., and Nur, A., eds., Proceedings of the Conference on tectonic problems of the San Andreas fault system: Stanford University Publications in Geological Sciences, v. XIII, p. 149-170.

Leighton and Associates, Inc., 1990, Technical Appendix to the Safety Element of the Los Angeles County General Plan: Hazard Reduction in Los Angeles County.

Namson, J., and Davis, T.L., 1988, A structural transect of the western Transverse Ranges, California: Implications for lithospheric kinematics and seismic risk evaluation: Geology, v. 16, p. 675-679.

National Flood Insurance Program, 2018, Los Angeles County Triunfo Creek PMR California and Incorporated Areas, Panel 1620 of 2204.

Oakeshott, G.B., 1975, Geology of the Epicental Area, chapter 3 of Oakeshott, G.B., ed., San Fernando, California, earthquake of 9 February 1971: California Division of Mines and Geology, Bulletin 196, p. 19-30.

The Office of Statewide Health Planning and Development (OSHPD), 2020, Ground Motion Parameter Calculator. https://seismicmaps.org.

Toppozada, T.R., C.R. Real, and D.L. Parke. 1981, Preparation of Isoseismal Maps and Summaries of Reported Effects for Pre-1900 California Earthquakes, Calif. Div. Mines Geol. Open-File Rept. 81-11 SAC. 182 pp.

United States Geological Survey, 2008, U.S.G.S. Interactive Deaggregation Program. https://earthquake.usgs.gov/hazards/interactive/.

United States Geological Survey, 2018, U.S.G.S. U.S. Seismic Design Maps tool (Version 3.1.0). http://geohazards.usgs.gov/designmaps/us/application.php.

REFERENCES – (Continued)

Weaver, K.D., and Dolan, J.F., 2000, Paleoseismology and Geomorphology of the Raymond Fault, Los Angeles County, California: Seismol. Soc. America Bull. 90:1409-1429.

Weber, F.H., Hsu, E.Y., Saul, R.B, Tan, S.S., Treiman, J.A., (1982), Slope Stability and Geology of the Baldwin Hills, Los Angeles County, California, California Division of Mines and Geology Special Report 152.

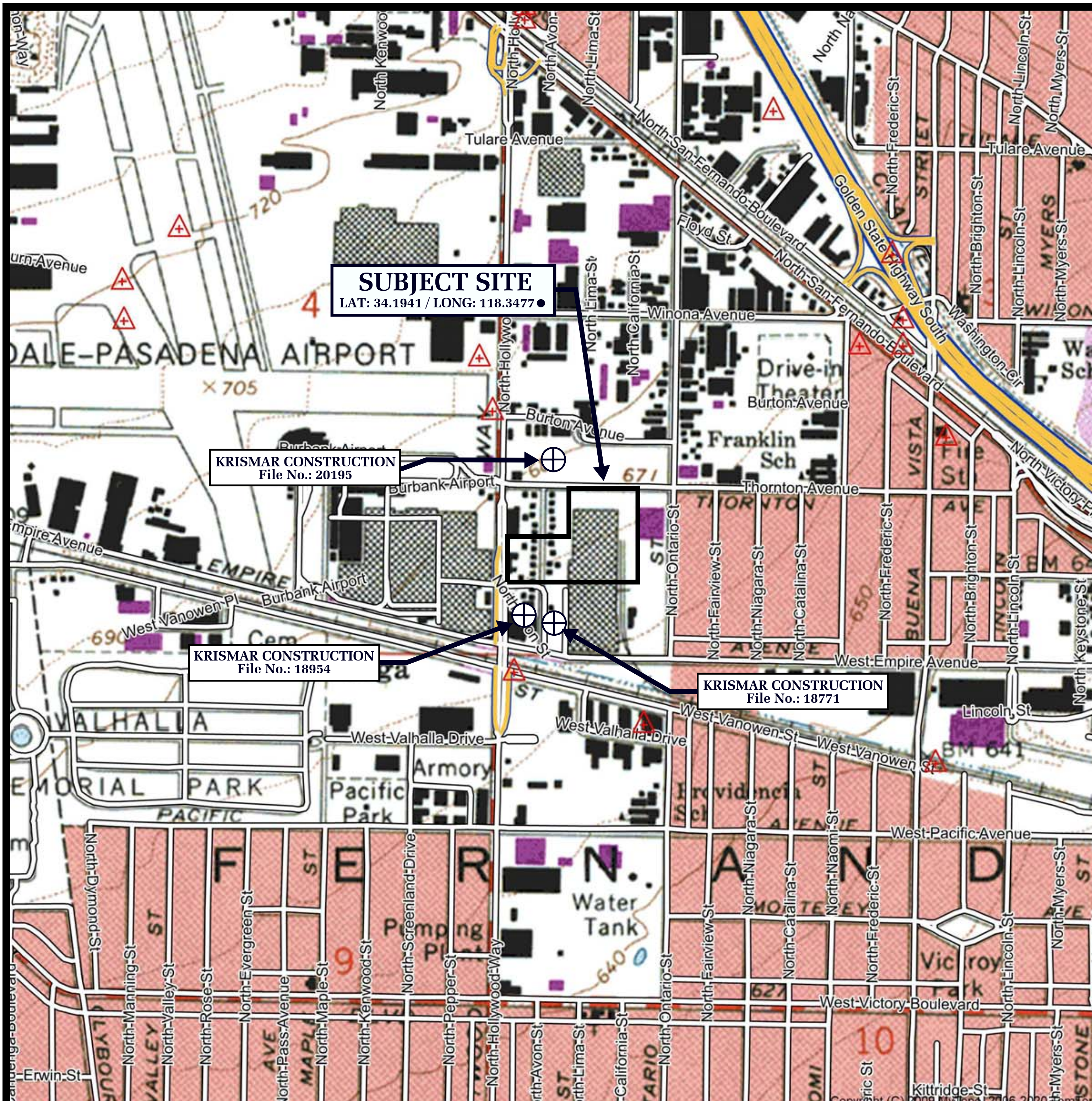
Weber, F.H. Jr., 1982, Geology and Geomorphology along the San Gabriel Fault Zone, Los Angeles and Ventura Counties, California: Calif. Div. Mines and Geology Open File Report 82-2LA.

Weber, F. H. Jr., Bennett, J.H., Chapman, R.H., Chase, G.W., and Saul, R.B., 1980, Earthquake Hazards Associated with the Verdugo-Eagle Rock and Benedict Canyon Fault Zones, Los Angeles County, California: California Division of Mines and Geology, Open File Report 80-10 LA.

Yerkes, R.F., 1972, Geology and Oil Resources of the Western Puente Hills Area, Southern California. U. S. Geological Survey Professional Paper 274-L, p. 313-334.

Yerkes, R.F., McCulloh, T.H., Schoellhamer, J.E., Vedder, J.G., 1965, Geology of the Los Angeles Basin, Southern California-An Introduction, U.S. Geological Professional Paper 420-A.

Ziony, J.I., and Yerkes, R.F., (1985), Evaluating Earthquake and Surface Faulting Potential, in Ziony, J.I., ed., Evaluating Earthquake Hazards in the Los Angeles Region – An Earth-Science Perspective: U.S. Geological Survey Professional Paper 1360, p. 43-9.



SCALE 1:12000

0.0 0.1 0.2 0.3 0.4 0.5 0.6
MILES

0 1000 2000 3000
FEET

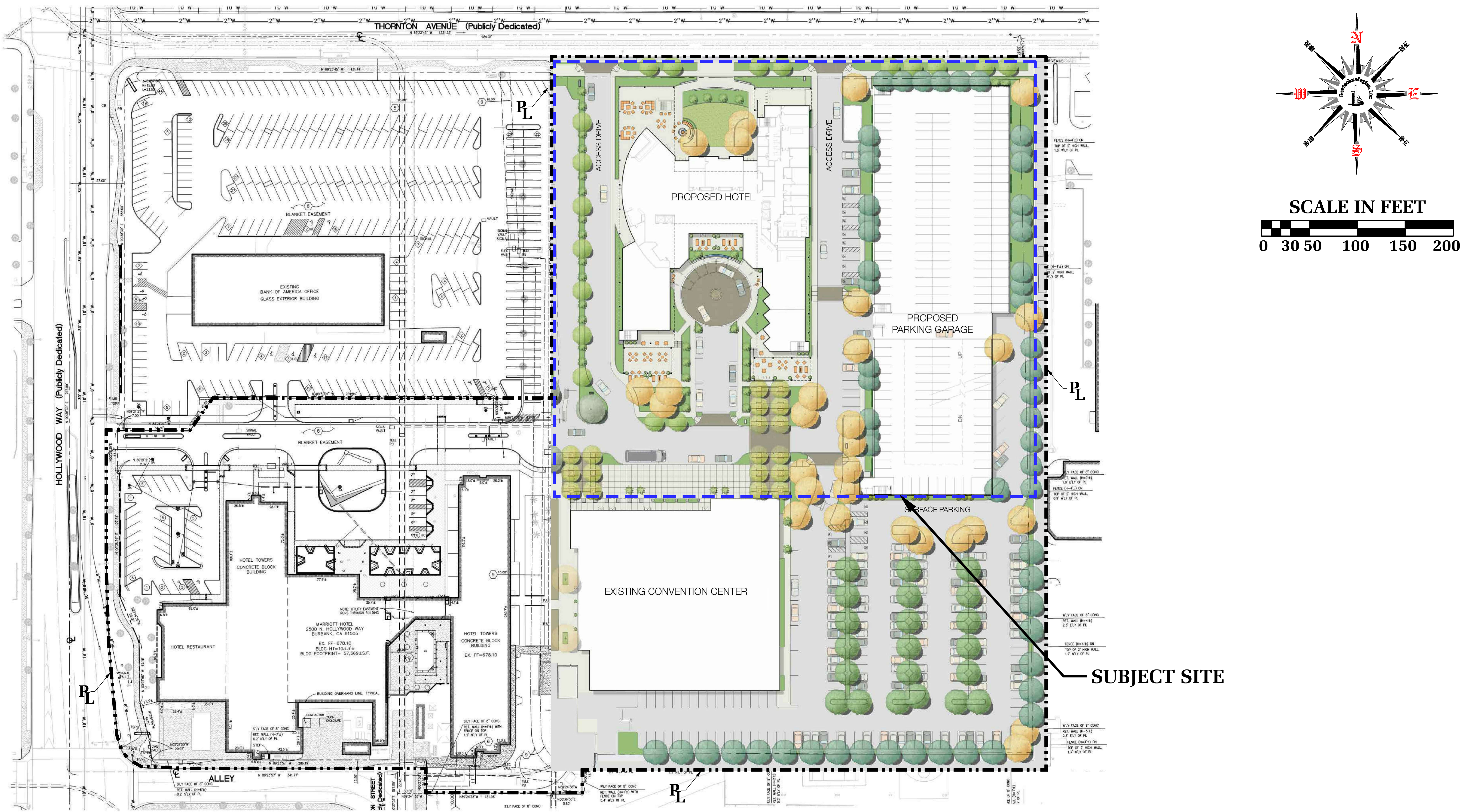
REFERENCE: U.S.G.S. TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, BURBANK, CA QUADRANGLE

VICINITY MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE NO. 21947



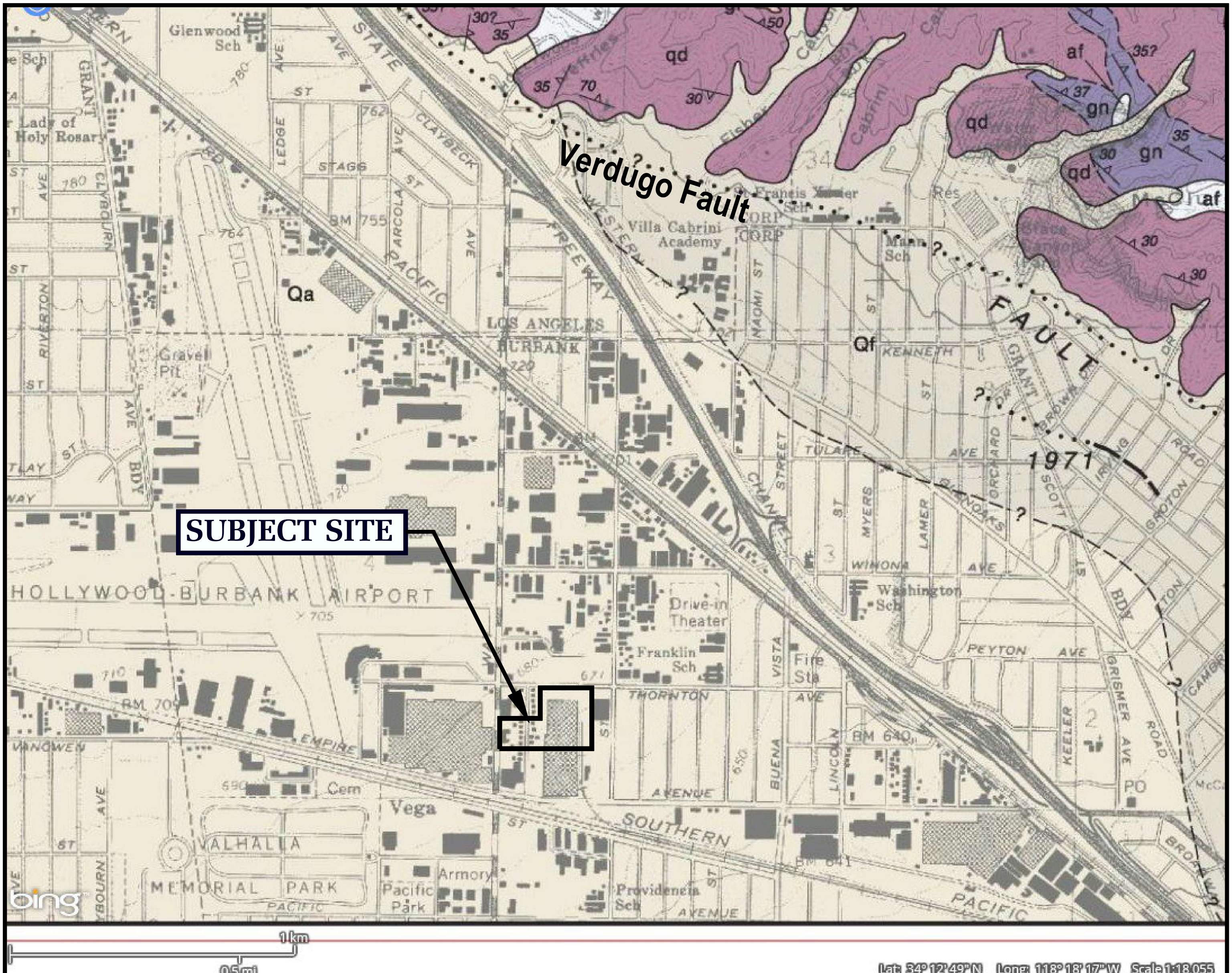
SITE PLAN

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

Geotechnologies, Inc.
Consulting Geotechnical Engineers

FILE No. 21947
DRAWN BY: TC
DATE: February 2020

REFERENCE: SITE PLAN PROVIDED BY AWH PARTNERS
DATED JUNE 27, 2019



LEGEND

Qa: Surficial Sediments - alluvium: gravel, sand and clay of valley areas

Folds - arrow on axial trace of fold indicates direction of plunge

Fault - dashed where indefinite or inferred, dotted where concealed, queried where existence is doubtful

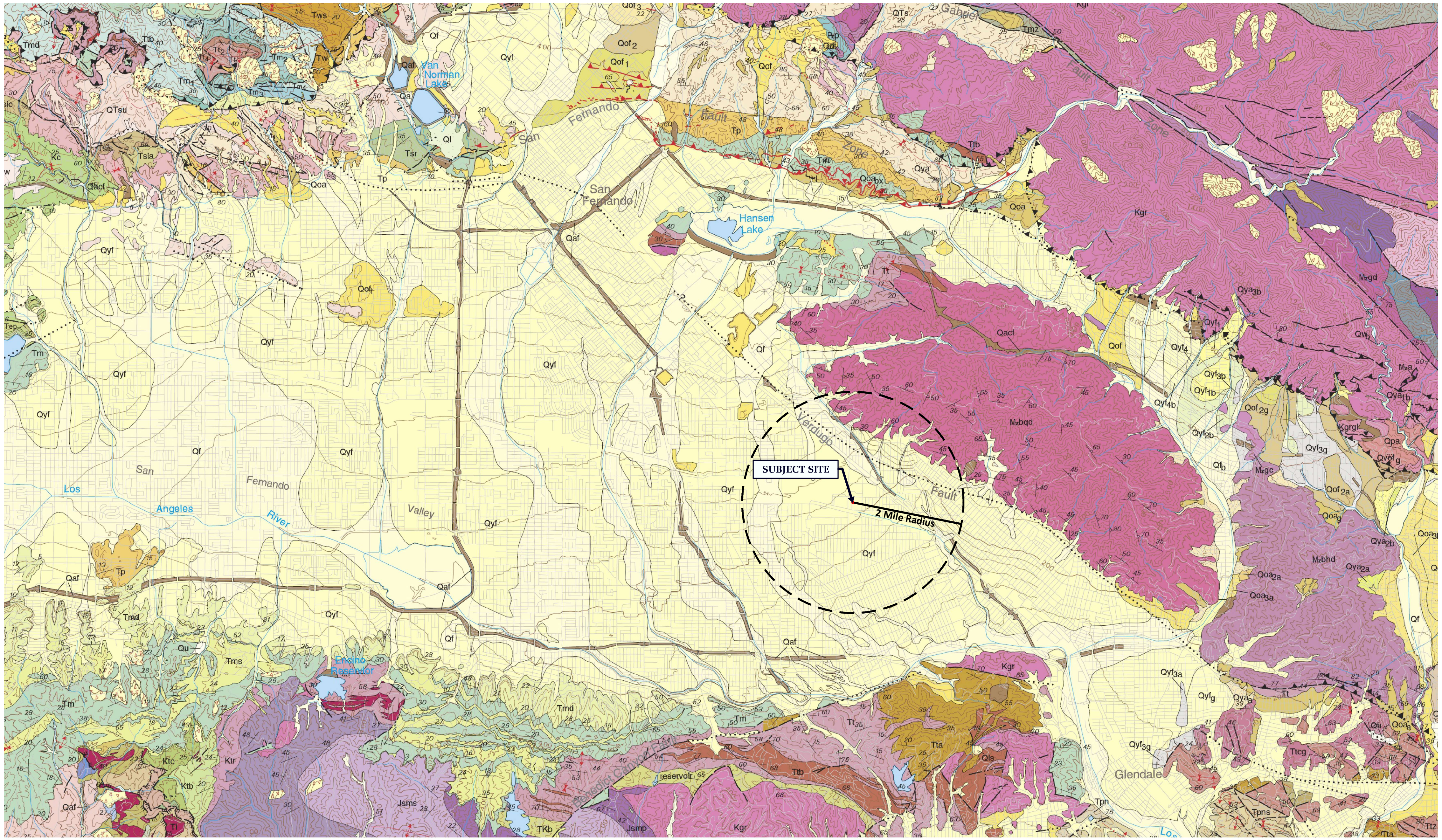
REFERENCE: DIBBLEE, T.W., (1991) GEOLOGIC MAP OF THE SUNLAND AND BURBANK QUADRANGLES (#DF-32)

LOCAL GEOLOGIC MAP - DIBBLEE

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE NO. 21947

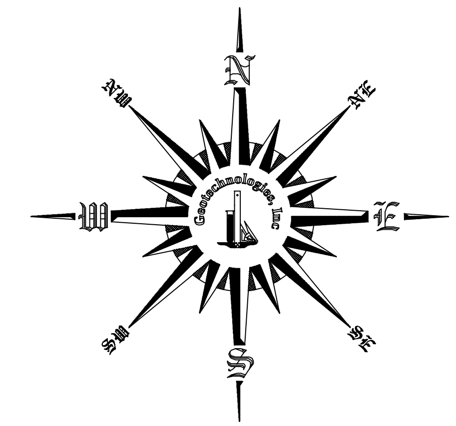


Scale 1:100,000

1 .5 0 1 2 3 4 5 6 7 MILES

1 .5 0 1 2 3 4 5 6 7 KILOMETERS

Contour Interval 40m



LEGEND

Qyf: Young alluvial-fan deposits, undivided (Holocene and late Pleistocene)—
Qf: Alluvial-Fan Deposits
Mzbqd: Biotite-quartz diorite (Mesozoic?)

Fault - Solid where accurately located, dashed where approximately located, dotted where concealed, quieried where location or existence uncertain. includes strike slip, normal, reverse, oblique, and unspecified slip.

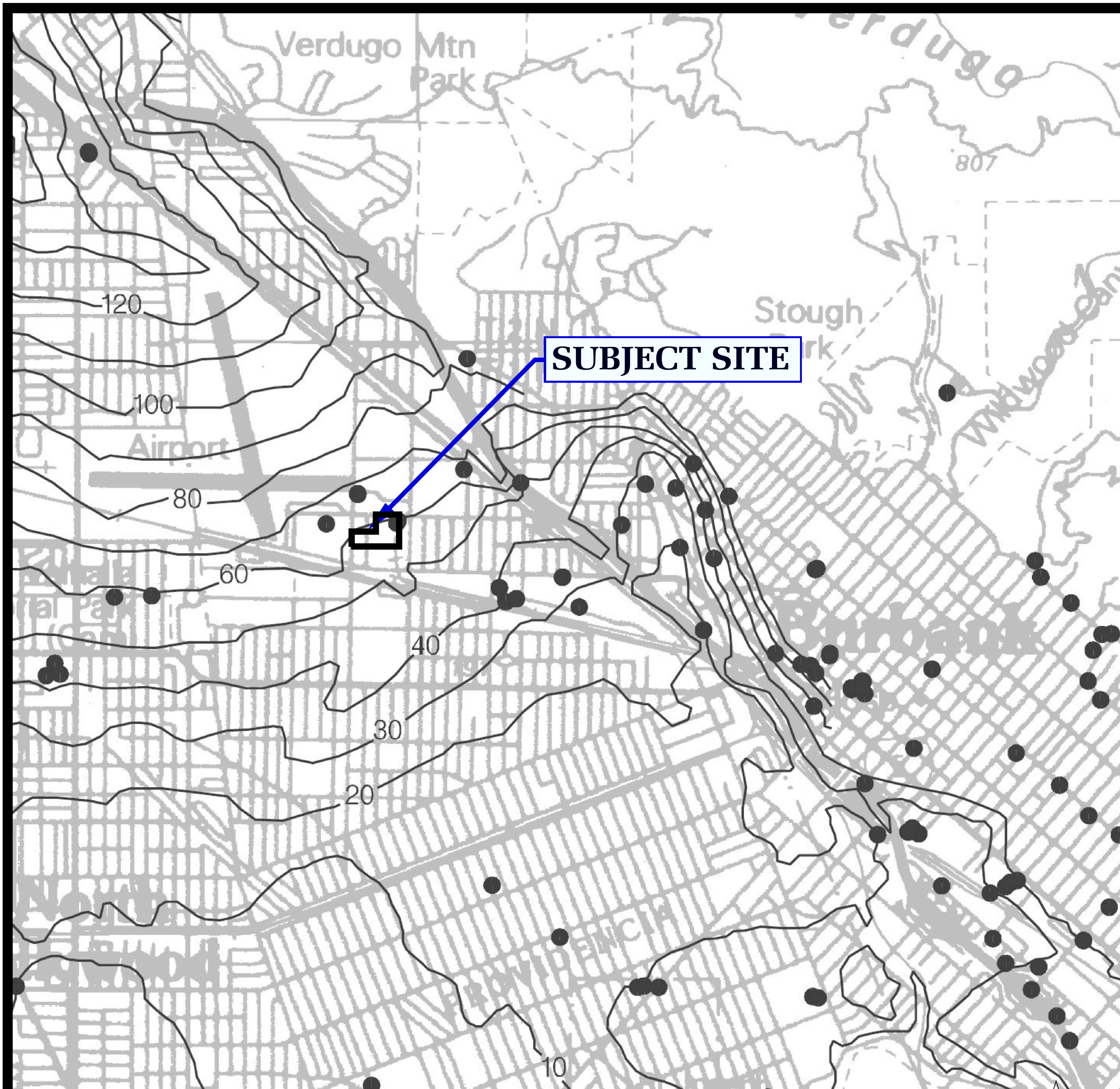
REGIONAL GEOLOGIC MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE No. 21947

REFERENCE: U.S. DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY, PRELIMINARY GEOLOGIC MAP OF THE LOS ANGELES 30' X 60' QUADRANGLE, SOUTHERN CALIFORNIA, VERSION 1.0, 2005, COMPILED BY ROBERT F. YERKES AND RUSSELL H. CAMPBELL.



ONE MILE

SCALE

20 Depth to groundwater in feet

REFERENCE: CDMG, SEISMIC HAZARD ZONE REPORT, 016
BURBANK 7.5 - MINUTE QUADRANGLE, LOS ANGELES COUNTY, CALIFORNIA (1998, REVISED 2006)

HISTORICALLY HIGHEST GROUNDWATER LEVELS

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

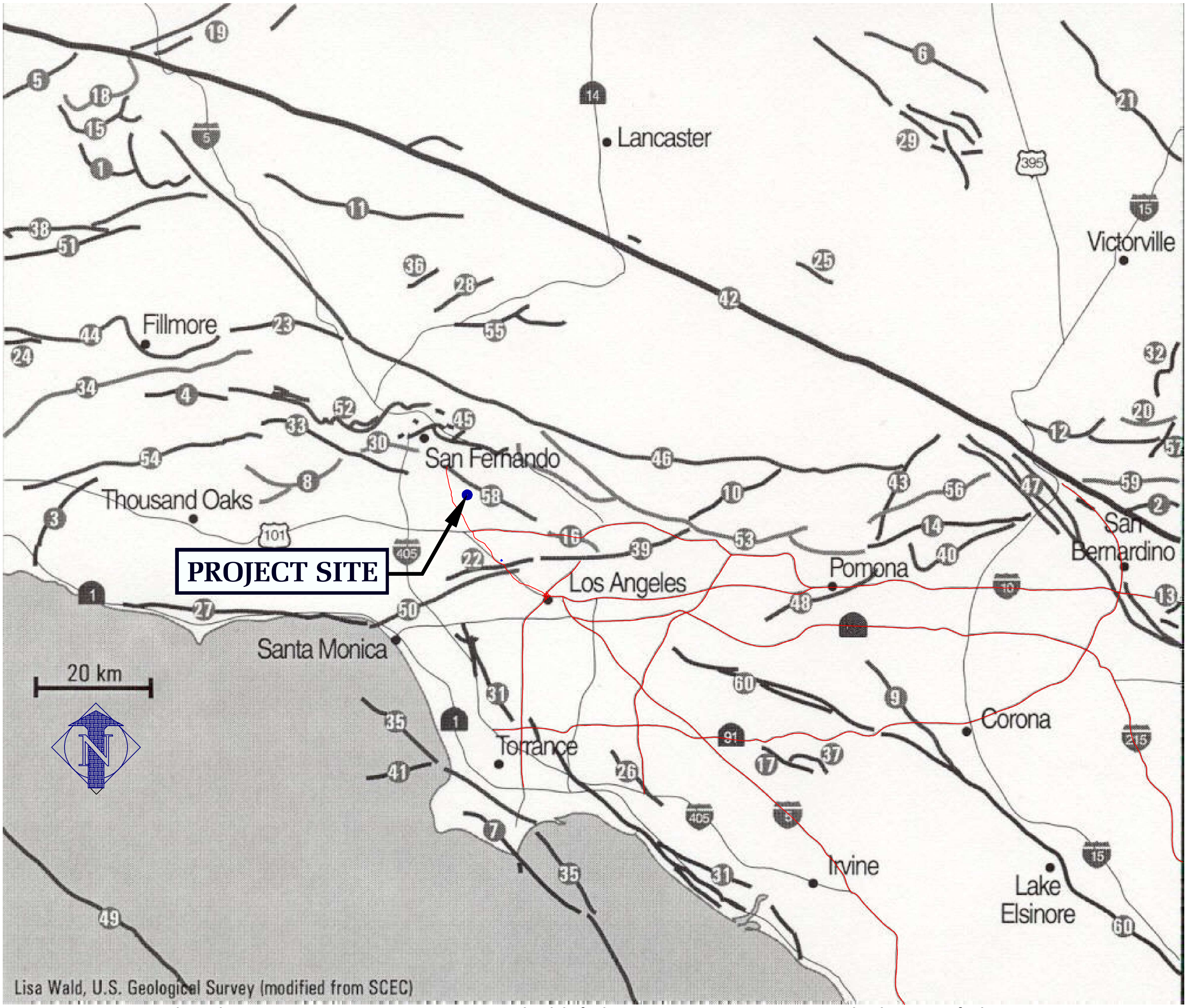
FILE NO. 21947

Seismic Source Summary Table

AWH Partners
File No. 21947

Name	Distance in Miles	Pref Slip Rate (mm/yr)	Dip (deg)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)	Mag*
Verdugo	1.41	0.5	55	NE	reverse	0	15	29	6.9
Sierra Madre (San Fernando)	5.75	2	45	N	thrust	0	13	18	6.7
Sierra Madre	5.88	2	53	N	reverse	0	14	57	7.2
Hollywood	6.01	1	70	N	strike slip	0	17	17	6.7
Elysian Park (Upper)	6.30	1.3	50	NE	reverse	3	15	20	6.7
Santa Monica Connected	6.78	2.4	44		strike slip	0.8	11	93	7.4
Northridge	8.17	1.5	35	S	thrust	7.4	17	33	6.9
Raymond	8.67	1.5	79	N	strike slip	0	16	22	6.8
San Gabriel	9.35	1	61	N	strike slip	0	15	71	7.3
Newport-Inglewood	10.68	1	88		strike slip	0	15	65	7.2
Puente Hills (LA)	11.14	0.7	27	N	thrust	2.1	15	22	7.0
Santa Susana	12.37	5	55	N	reverse	0	16	27	6.9
Malibu Coast	15.31	0.3	74	N	strike slip	0	16	38	7.0
Anacapa-Dume	16.79	3	41	N	thrust	1.2	12	65	7.2
Holser	19.22	0.4	58	S	reverse	0	19	20	6.8
Palos Verdes	19.58	3	90	V	strike slip	0	14	99	7.3
Clamshell-Sawpit	19.95	0.5	50	NW	reverse	0	14	16	6.7
Simi-Santa Rosa	21.37	1	60		strike slip	1	12	39	6.9
Elsinore	21.95	n/a	81	NE	strike slip	0	14	83	7.3
Puente Hills (Santa Fe Springs)	23.12	0.7	29	N	thrust	2.8	15	11	6.7
Anacapa-Dume	24.70	3	45	N	thrust	0	16	51	7.2
Oak Ridge Connected	25.69	3.6	53		reverse	0.6	15	94	7.4
Puente Hills (Coyote Hills)	27.09	0.7	26	N	thrust	2.8	15	17	6.9
S. San Andreas	27.94	n/a	90	V	strike slip	0	14	279	7.8
San Jose	28.87	0.5	74	NW	strike slip	0	15	20	6.7
San Cayetano	29.02	6	42	N	thrust	0	16	42	7.2
Cucamonga	35.73	5	45	N	thrust	0	8	28	6.7
Chino	36.21	1	65	SW	strike slip	0	14	29	6.8
Santa Ynez (East)	41.66	2	70	S	strike slip	0	13	68	7.2
San Joaquin Hills	41.81	0.5	23	SW	thrust	2	13	27	7.1
San Jacinto	45.27	n/a	90	V	strike slip	0	17	181	7.7
Pitas Point Connected	46.60	1	55		reverse	1.2	13	78	7.3
Ventura-Pitas Point	46.60	1	64	N	reverse	1	15	44	7.0
Mission Ridge-Arroyo Parida-Santa Ana	50.54	0.4	70	S	reverse	0	8	69	6.9
Cleghorn	51.15	3	90	V	strike slip	0	16	25	6.8
Garlock	52.70	n/a	90	V	strike slip	0.4	12	210	7.6
Channel Islands Thrust	53.79	1.5	20	N	thrust	5	12	59	7.3
Santa Cruz Island	54.36	1	90	V	strike slip	0	13	69	7.2
Red Mountain	55.68	2	56	N	reverse	0	14	101	7.4
Pleito	59.41	2	46	S	reverse	0	14	44	7.1

Reference: USGS National Seismic Hazard Maps - Source Parameters
*Maximum Magnitude - Ellsworth



1 Alamo thrust
2 Arrowhead fault
3 Bailey fault
4 Big Mountain fault
5 Big Pine fault
6 Blake Ranch fault
7 Cabrillo fault
8 Chatsworth fault
9 Chino fault
10 Clamshell-Sawpit fault
11 Clearwater fault
12 Cleghorn fault
13 Crafton Hills fault zone
14 Cucamonga fault zone
15 Dry Creek fault
16 Eagle Rock fault
17 El Modeno fault
18 Frazier Mountain thrust
19 Garlock fault zone
20 Grass Valley fault
21 Helendale fault
22 Hollywood fault
23 Holser fault
24 Lion Canyon fault
25 Llano fault
26 Los Alamitos fault
27 Malibu Coast fault
28 Mint Canyon fault
29 Mirage Valley fault zone
30 Mission Hills fault
31 Newport Inglewood fault zone
32 North Frontal fault zone
33 Northridge Hills fault
34 Oak Ridge fault
35 Palos Verdes fault zone
36 Pelona fault
37 Peralta Hills fault
38 Pine Mountain fault
39 Raymond fault
40 Red Hill (Etiwanda Ave) fault
41 Redondo Canyon fault
42 San Andreas Fault
43 San Antonio fault
44 San Cayetano fault
45 San Fernando fault zone
46 San Gabriel fault zone
47 San Jacinto fault
48 San Jose fault
49 Santa Cruz-Santa Catalina Ridge f.z.
50 Santa Monica fault
51 Santa Ynez fault
52 Santa Susana fault zone
53 Sierra Madre fault zone
54 Simi fault
55 Soledad Canyon fault
56 Stoddard Canyon fault
57 Tunnel Ridge fault
58 Verdugo fault
59 Waterman Canyon fault
60 Whittier fault

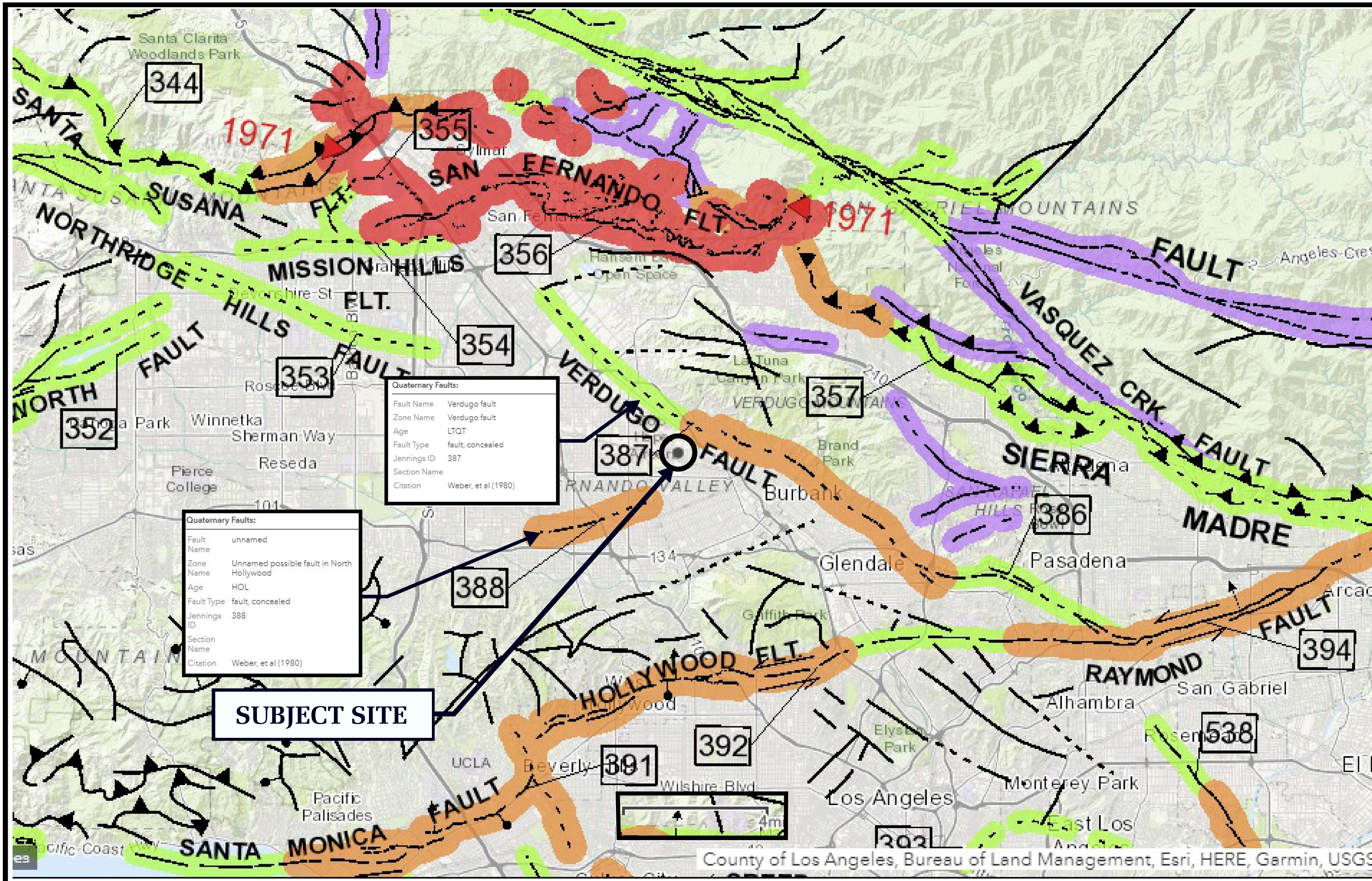
REFERENCE: http://pasadena.wr.usgs.gov/info/images/LA%20Faults.pdf

SOUTHERN CALIFORNIA FAULT MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE No. 21947

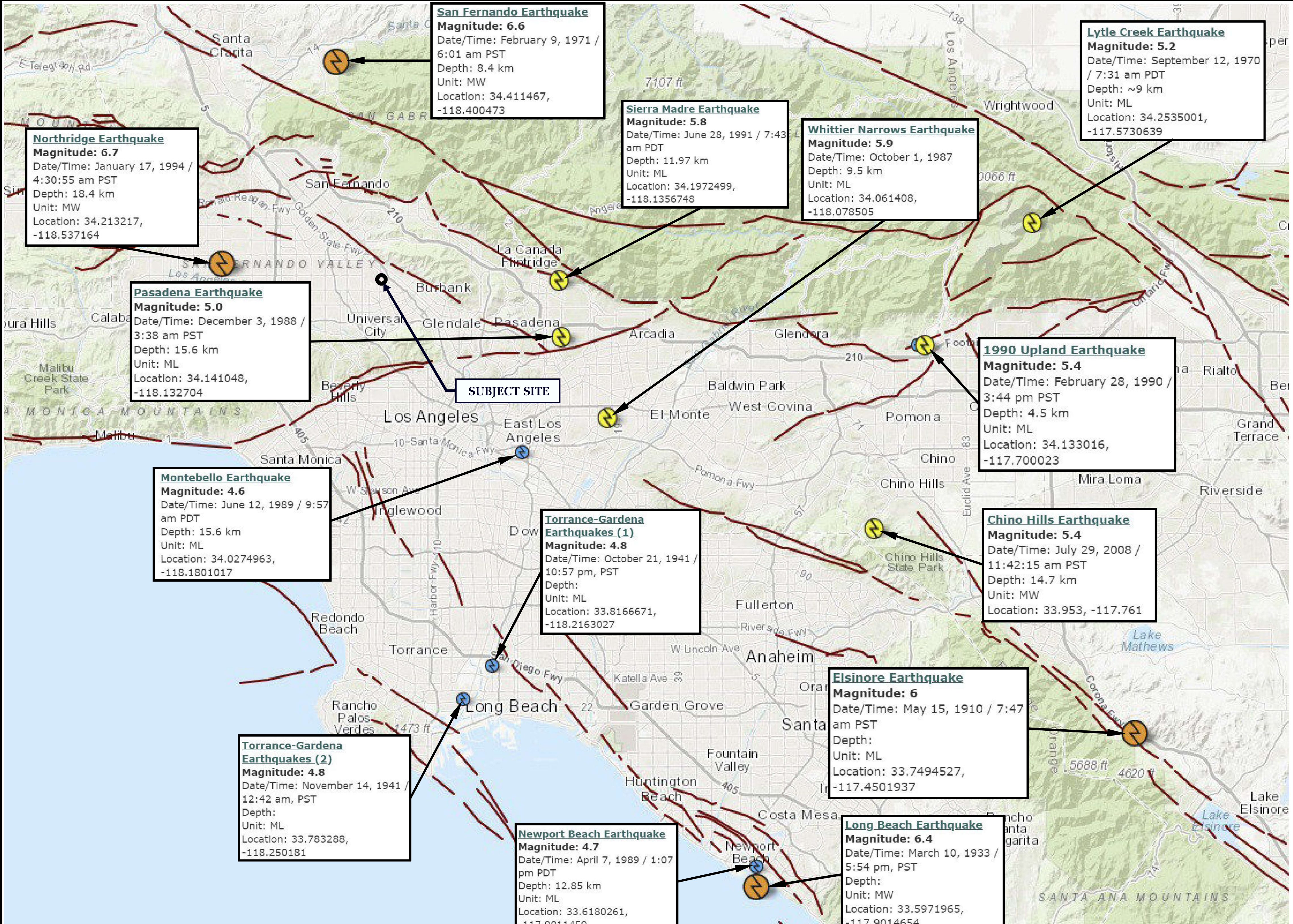


LOCAL FAULT MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE No. 21947



SIGNIFICANT EVENT BY MAGNITUDE:

Marker	Magnitude
	☑ 4 ≤ 4.9
	☑ 5 ≤ 5.9
	☑ 6 ≤ 6.9
	☑ 7 ≤ 9.0

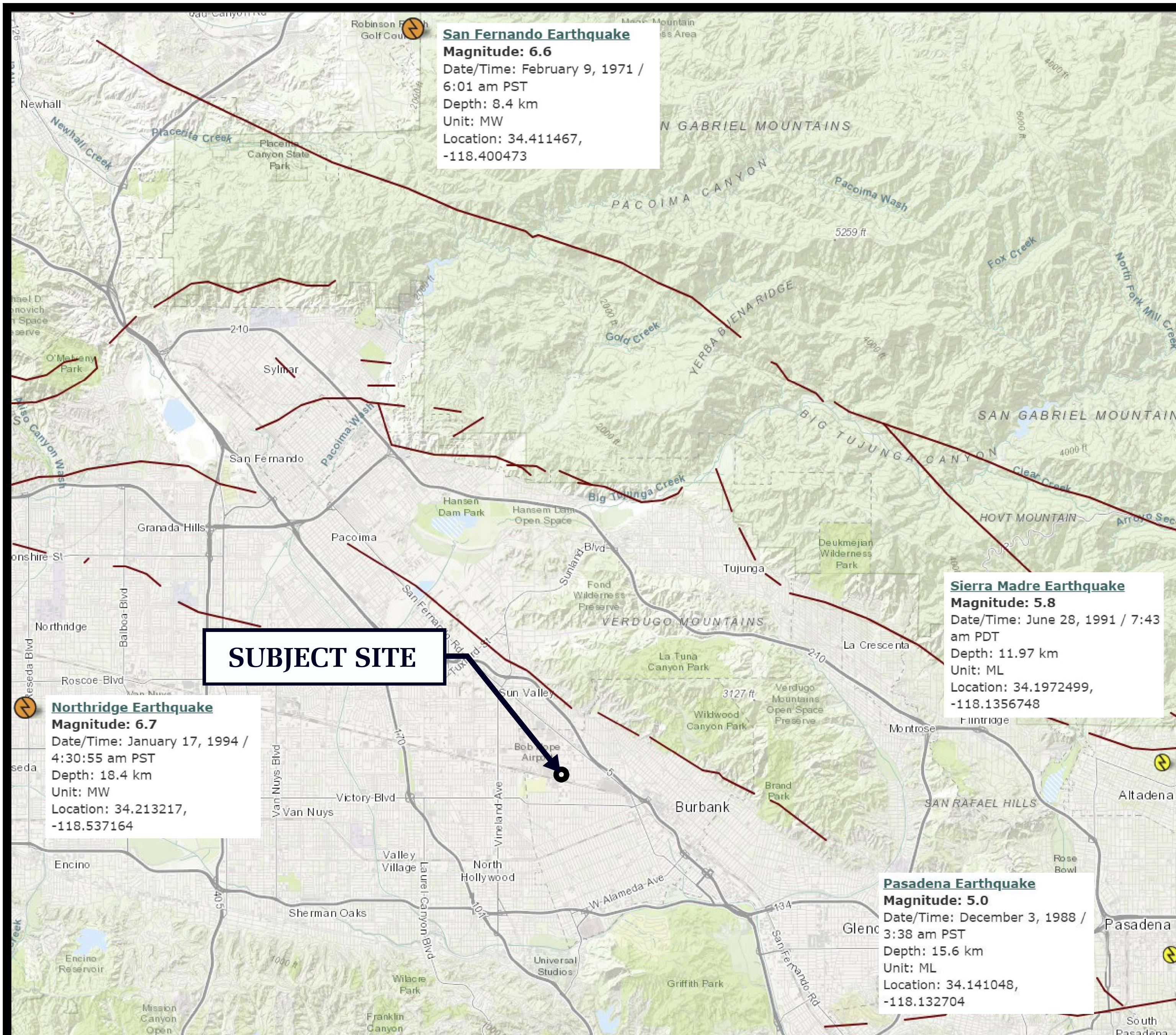
REFERENCE: SIGNIFICANT EARTHQUAKE AND FAULTS, SOUTHERN CALIFORNIA EARTHQUAKE DATA CENTER, CALTECH

HISTORICAL SEISMIC EVENT MAP - REGIONAL

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE NO. 21947



SIGNIFICANT EVENT BY MAGNITUDE:

Marker	Magnitude
	4 ≤ 4.9
	5 ≤ 5.9
	6 ≤ 6.9
	7 ≤ 9.0

REFERENCE: SIGNIFICANT EARTHQUAKE AND FAULTS, SOUTHERN CALIFORNIA EARTHQUAKE DATA CENTER, CALTECH

HISTORICAL SEISMIC EVENT MAP - LOCAL

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE No. 21947

Earthquake Fault Zones
Alquist-Priolo Earthquake Fault Zone

REFERENCE: EARTHQUAKE FAULT ZONES, BURBANK QUADRANGLE, CALIFORNIA GEOLOGICAL SURVEY, JANUARY 1979

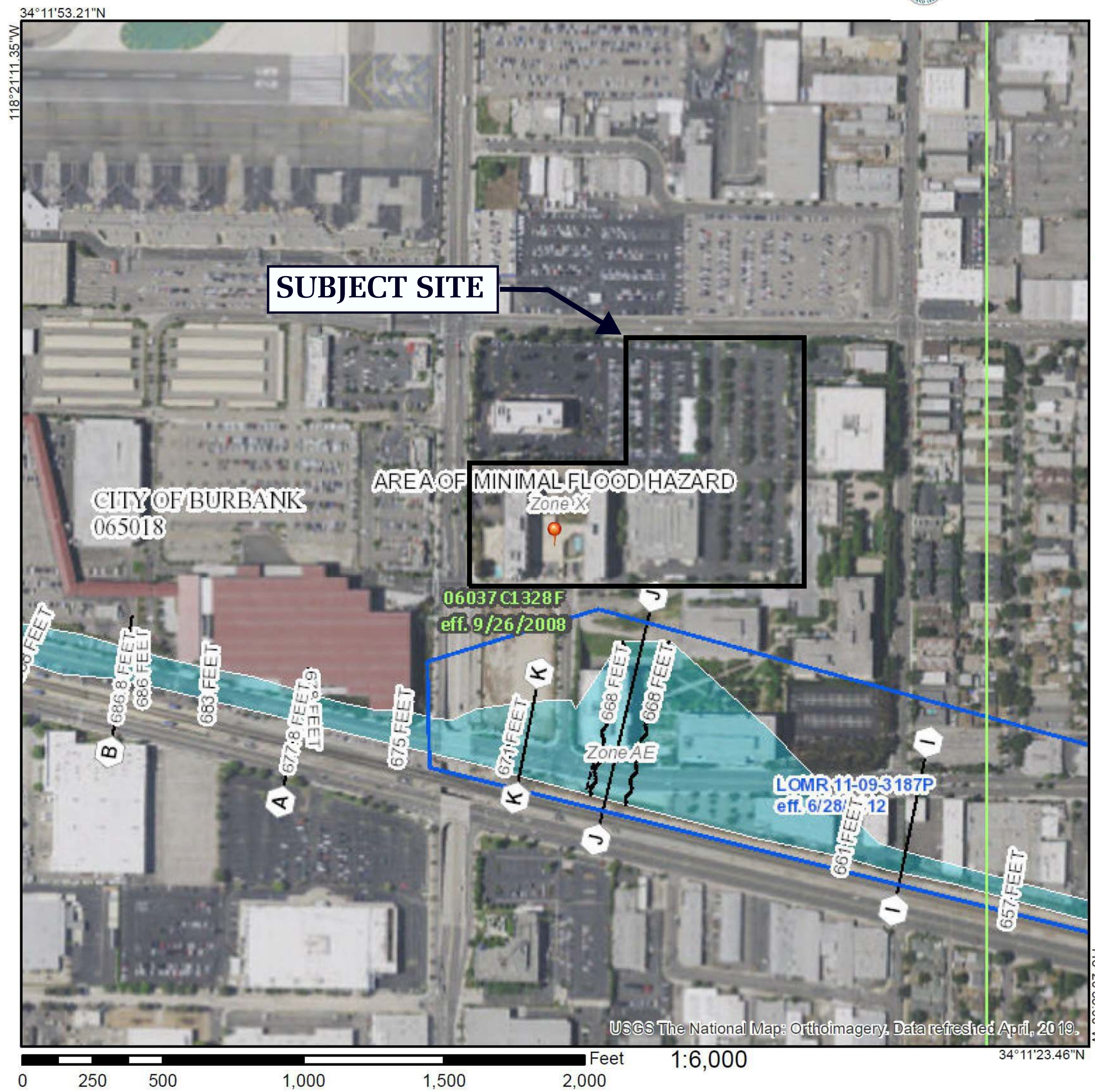
EARTHQUAKE FAULT ZONE

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE No. 21947

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

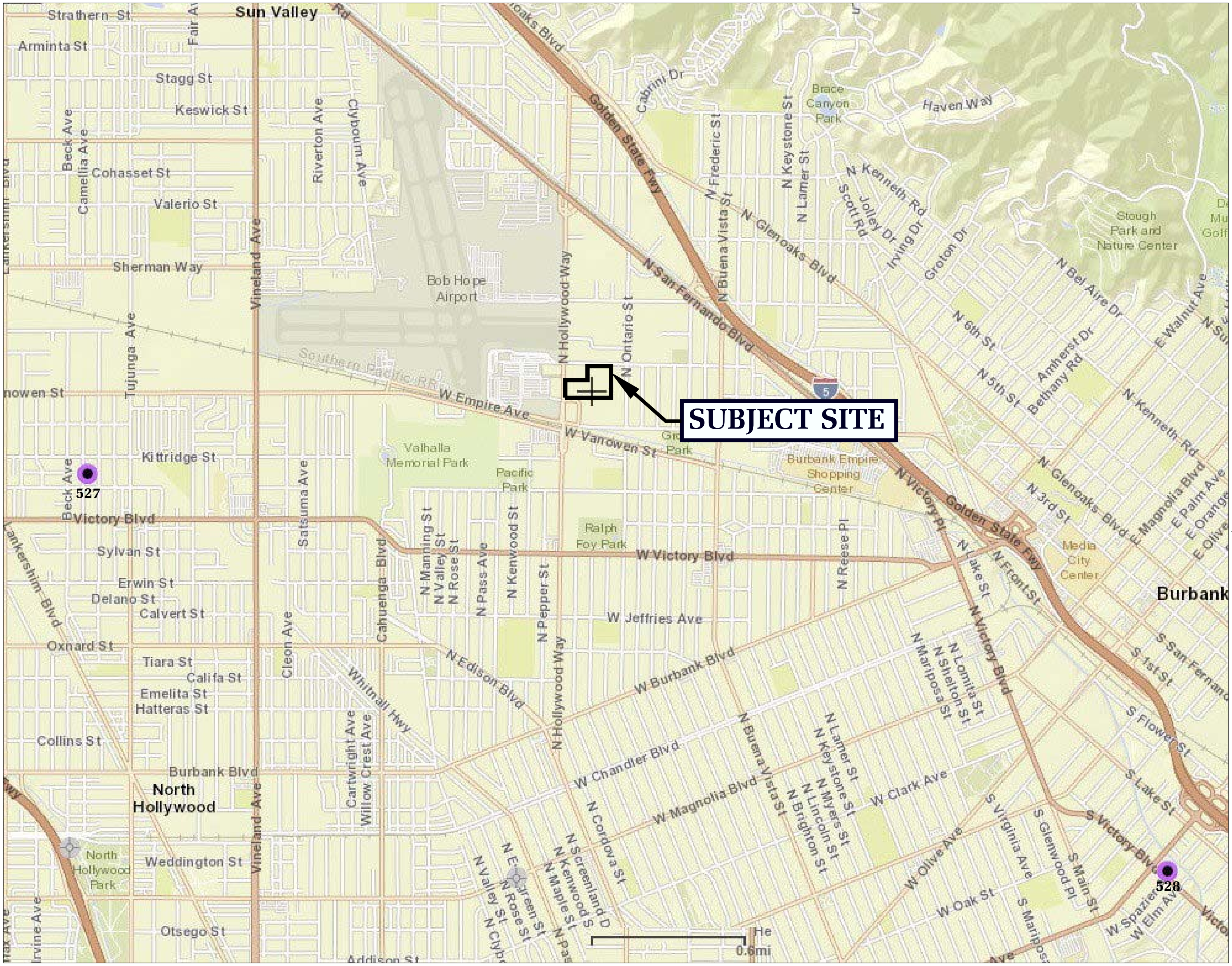
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/17/2020 at 2:27:03 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

FLOOD INSURANCE RATE MAP

Geotechnologies, Inc. *Consulting Geotechnical Engineers*	AWH PARTNERS 2500 N. HOLLYWOOD WAY, BURBANK	
	FILE No. 21947	DRAWN BY: TC
	DATE: February 2020	



OIL WELL LEGEND

API NO.	OPERATOR, WELL NO.
527	B.J. Jeffrey, #2
528	Jeffrey, Overton & Halfhill, #1

N

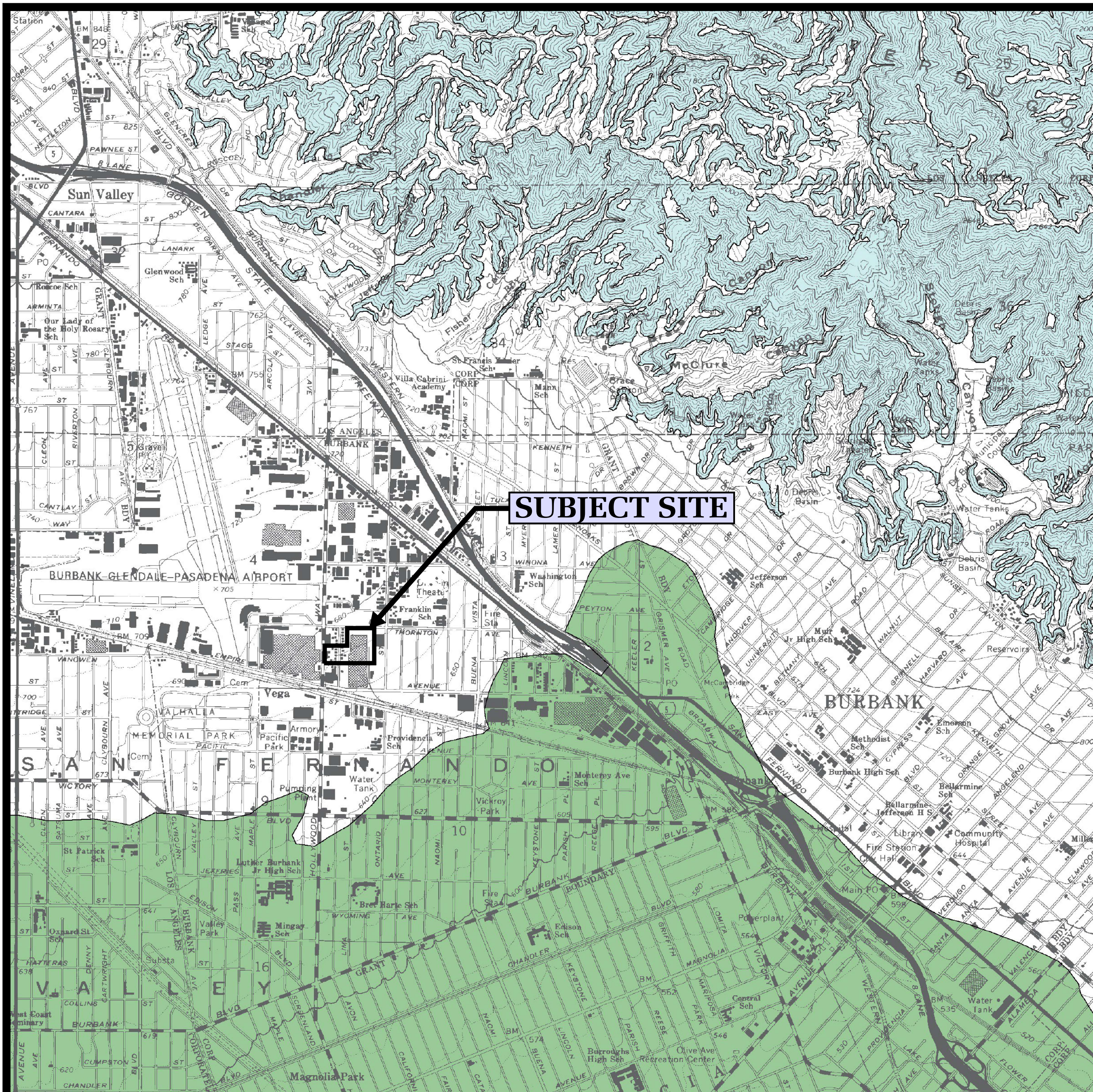
REFERENCE: DIVISION OF OIL, GAS & GEOTHERMAL RESOURCES WELL FINDER, STATE OF CALIFORNIA, 2014

OIL WELL LOCATION MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE NO. 21947



SCALE 1:24,000

LIQUEFACTION AREA

REFERENCE: SEISMIC HAZARD ZONES, BURBANK QUADRANGLE OFFICIAL MAP (CDMG, 1999)

SEISMIC HAZARD ZONE MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

AWH PARTNERS
2500 N. HOLLYWOOD WAY, BURBANK

FILE NO. 21947

GROUNDWATER DATA FROM WELL STATION (SITE CODE): 34186N1183612W001

(13 PAGES)

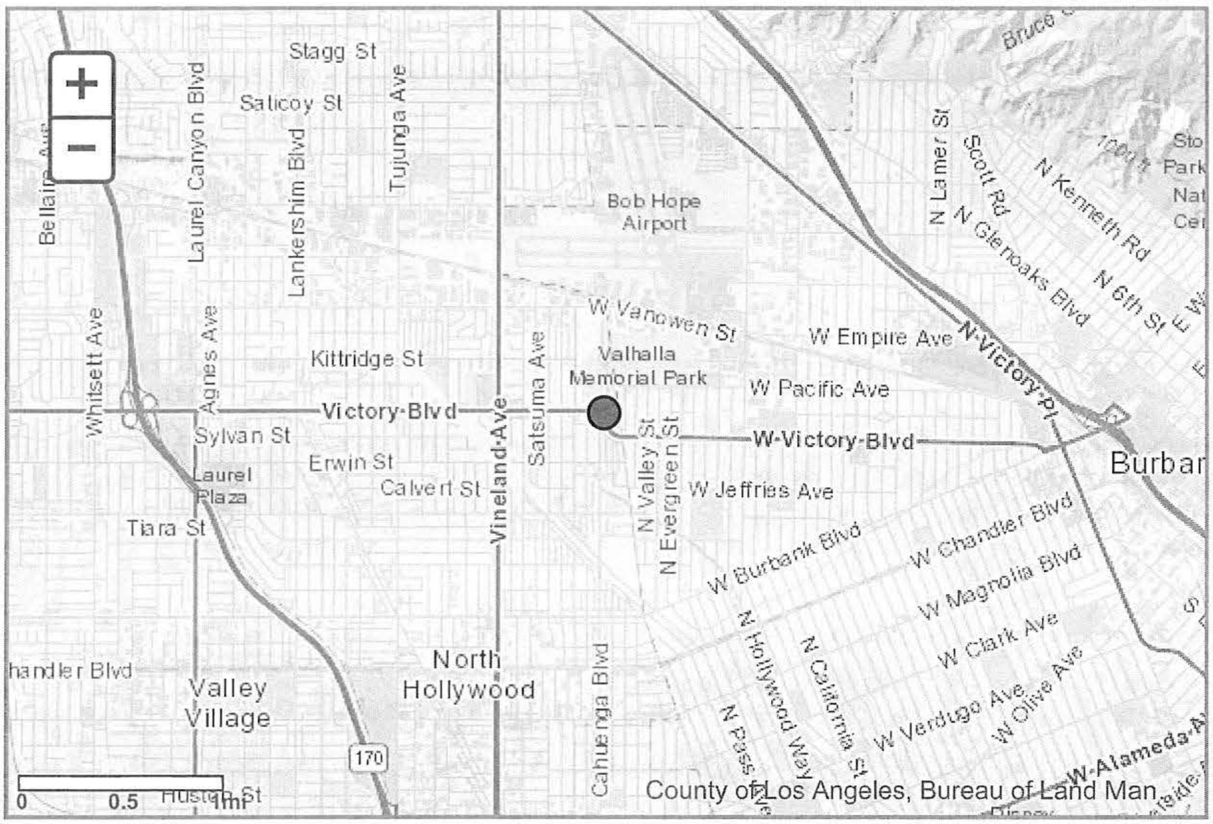
Groundwater Levels for Station 341864N1183612W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data Recent Groundwater Level Data Historical Groundwater Level Data

State Well Number: 01N14W09E003S
Local Well ID: 3841H
Site Code: 341864N1183612W001
Latitude (NAD83): 34.186434
Longitude (NAD83): -118.361198
Groundwater Basin (code): San Fernando Valley (4-012)

Well Use: Observation
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 661.400
Ground Surface Elevation (NAVD88 ft): 661.400
Total Depth (ft): 238
Perforated Interval Depths (ft): 144.000 154.000
210.000 220.000

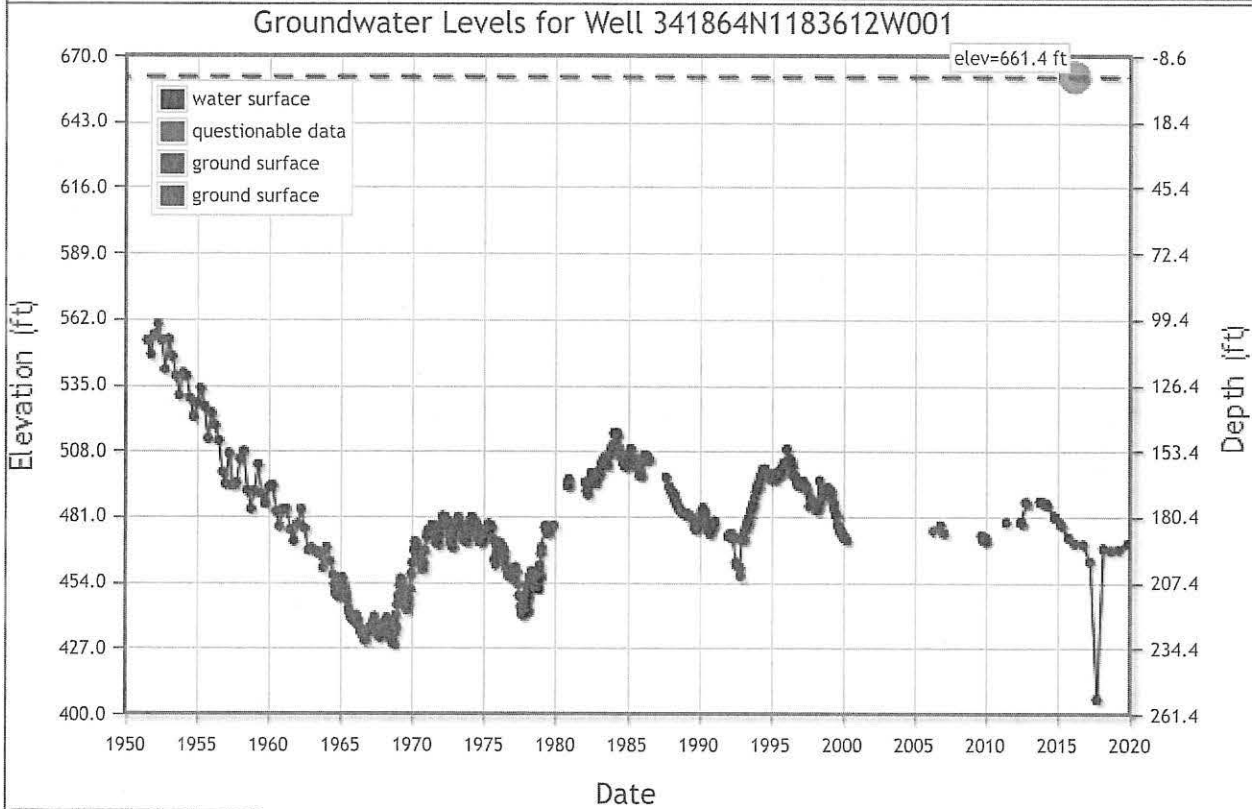


Perform a New Well Search

Groundwater Levels for Station 341864N1183612W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data » **Recent Groundwater Level Data** » Historical Groundwater Level Data



Download CSV File

Date	RPE	GSE	RPWS	WSE	GS to WS	Msmt Code	CASGEM Msmt	Agency	Co
07/01/1951 00:00	661.400	661.400	108.15	553.25	108.15		N	5123	384
10/01/1951 00:00	661.400	661.400	114.1	547.3	114.1		N	5123	384
01/01/1952 00:00	661.400	661.400	105.8	555.6	105.8		N	5123	384
04/01/1952 00:00	661.400	661.400	101.63	559.77	101.63		N	5123	384
07/01/1952 00:00	661.400	661.400	108.13	553.27	108.13		N	5123	384
10/01/1952 00:00	661.400	661.400	120.2	541.2	120.2		N	5123	384
01/01/1953 00:00	661.400	661.400	107.67	553.73	107.67		N	5123	384
04/01/1953 00:00	661.400	661.400	114.76	546.64	114.76		N	5123	384
07/01/1953 00:00	661.400	661.400	122.79	538.61	122.79		N	5123	384
10/01/1953 00:00	661.400	661.400	130.8	530.6	130.8		N	5123	384
01/01/1954 00:00	661.400	661.400	121.61	539.79	121.61		N	5123	384
04/01/1954 00:00	661.400	661.400	122.77	538.63	122.77		N	5123	384
07/01/1954 00:00	661.400	661.400	131.95	529.45	131.95		N	5123	384

10/01/1954 00:00	661.400	661.400	139.58	521.82	139.58	N	5123	384
01/01/1955 00:00	661.400	661.400	134.03	527.37	134.03	N	5123	384
04/01/1955 00:00	661.400	661.400	128.12	533.28	128.12	N	5123	384
07/01/1955 00:00	661.400	661.400	135.2	526.2	135.2	N	5123	384
10/01/1955 00:00	661.400	661.400	148.4	513	148.4	N	5123	384
01/01/1956 00:00	661.400	661.400	137.91	523.49	137.91	N	5123	384
04/01/1956 00:00	661.400	661.400	143.2	518.2	143.2	N	5123	384
07/01/1956 00:00	661.400	661.400	149.3	512.1	149.3	N	5123	384
10/01/1956 00:00	661.400	661.400	162.3	499.1	162.3	N	5123	384
01/01/1957 00:00	661.400	661.400	167.17	494.23	167.17	N	5123	384
04/01/1957 00:00	661.400	661.400	154.53	506.87	154.53	N	5123	384
07/01/1957 00:00	661.400	661.400	167.71	493.69	167.71	N	5123	384
10/01/1957 00:00	661.400	661.400	166.74	494.66	166.74	N	5123	384
01/01/1958 00:00	661.400	661.400	156.87	504.53	156.87	N	5123	384
04/01/1958 00:00	661.400	661.400	153.84	507.56	153.84	N	5123	384
07/01/1958 00:00	661.400	661.400	170.02	491.38	170.02	N	5123	384
10/01/1958 00:00	661.400	661.400	177.32	484.08	177.32	N	5123	384
01/01/1959 00:00	661.400	661.400	170.03	491.37	170.03	N	5123	384
04/01/1959 00:00	661.400	661.400	159.21	502.19	159.21	N	5123	384
07/01/1959 00:00	661.400	661.400	171.29	490.11	171.29	N	5123	384
10/01/1959 00:00	661.400	661.400	175.13	486.27	175.13	N	5123	384
01/01/1960 00:00	661.400	661.400	168.44	492.96	168.44	N	5123	384
04/01/1960 00:00	661.400	661.400	167.64	493.76	167.64	N	5123	384
07/01/1960 00:00	661.400	661.400	178.34	483.06	178.34	N	5123	384
10/01/1960 00:00	661.400	661.400	184.59	476.81	184.59	N	5123	384
01/01/1961 00:00	661.400	661.400	177.54	483.86	177.54	N	5123	384
04/01/1961 00:00	661.400	661.400	177.41	483.99	177.41	N	5123	384
07/01/1961 00:00	661.400	661.400	185.8	475.6	185.8	N	5123	384
10/01/1961 00:00	661.400	661.400	190.64	470.76	190.64	N	5123	384
01/01/1962 00:00	661.400	661.400	183.5	477.9	183.5	N	5123	384
04/01/1962 00:00	661.400	661.400	177.49	483.91	177.49	N	5123	384
07/01/1962 00:00	661.400	661.400	185.44	475.96	185.44	N	5123	384
10/01/1962 00:00	661.400	661.400	194.3	467.1	194.3	N	5123	384
01/01/1963 00:00	661.400	661.400	193.4	468	193.4	N	5123	384
04/01/1963 00:00	661.400	661.400	194.49	466.91	194.49	N	5123	384
07/01/1963 00:00	661.400	661.400	195.94	465.46	195.94	N	5123	384
10/01/1963 00:00	661.400	661.400	201.59	459.81	201.59	N	5123	384
01/01/1964 00:00	661.400	661.400	193.18	468.22	193.18	N	5123	384
04/01/1964 00:00	661.400	661.400	198.89	462.51	198.89	N	5123	384
06/16/1964 00:00	661.400	661.400	204.5	456.9	204.5	N	5123	384
07/14/1964 00:00	661.400	661.400	208.4	453	208.4	N	5123	384
08/18/1964 00:00	661.400	661.400	211.6	449.8	211.6	N	5123	384
09/15/1964 00:00	661.400	661.400	212.7	448.7	212.7	N	5123	384
10/13/1964 00:00	661.400	661.400	213.3	448.1	213.3	N	5123	384
11/17/1964 00:00	661.400	661.400	210.1	451.3	210.1	N	5123	384
12/15/1964 00:00	661.400	661.400	208.7	452.7	208.7	N	5123	384
01/12/1965 00:00	661.400	661.400	205.6	455.8	205.6	N	5123	384
02/16/1965 00:00	661.400	661.400	205.6	455.8	205.6	N	5123	384
03/16/1965 00:00	661.400	661.400	209	452.4	209	N	5123	384

04/13/1965 00:00	661.400	661.400	209.8	451.6	209.8	N	5123	384
05/18/1965 00:00	661.400	661.400	212.2	449.2	212.2	N	5123	384
06/15/1965 00:00	661.400	661.400	214.7	446.7	214.7	N	5123	384
07/20/1965 00:00	661.400	661.400	218.1	443.3	218.1	N	5123	384
08/17/1965 00:00	661.400	661.400	220.1	441.3	220.1	N	5123	384
09/21/1965 00:00	661.400	661.400	222	439.4	222	N	5123	384
10/19/1965 00:00	661.400	661.400	222.1	439.3	222.1	N	5123	384
11/23/1965 00:00	661.400	661.400	223.1	438.3	223.1	N	5123	384
12/07/1965 00:00	661.400	661.400	223.4	438	223.4	N	5123	384
12/14/1965 00:00	661.400	661.400	223	438.4	223	N	5123	384
12/21/1965 00:00	661.400	661.400	223.2	438.2	223.2	N	5123	384
12/28/1965 00:00	661.400	661.400	223.2	438.2	223.2	N	5123	384
01/18/1966 00:00	661.400	661.400	222.3	439.1	222.3	N	5123	384
02/15/1966 00:00	661.400	661.400	221	440.4	221	N	5123	384
03/15/1966 00:00	661.400	661.400	222.7	438.7	222.7	N	5123	384
04/19/1966 00:00	661.400	661.400	225.2	436.2	225.2	N	5123	384
05/17/1966 00:00	661.400	661.400	226.8	434.6	226.8	N	5123	384
06/14/1966 00:00	661.400	661.400	228	433.4	228	N	5123	384
07/12/1966 00:00	661.400	661.400	228.9	432.5	228.9	N	5123	384
08/16/1966 00:00	661.400	661.400	230.5	430.9	230.5	N	5123	384
09/13/1966 00:00	661.400	661.400	231.5	429.9	231.5	N	5123	384
10/18/1966 00:00	661.400	661.400	228.7	432.7	228.7	N	5123	384
11/15/1966 00:00	661.400	661.400	227.2	434.2	227.2	N	5123	384
01/17/1967 00:00	661.400	661.400	226.6	434.8	226.6	N	5123	384
02/14/1967 00:00	661.400	661.400	225.9	435.5	225.9	N	5123	384
03/14/1967 00:00	661.400	661.400	225.3	436.1	225.3	N	5123	384
04/18/1967 00:00	661.400	661.400	223.2	438.2	223.2	N	5123	384
05/16/1967 00:00	661.400	661.400	221.6	439.8	221.6	N	5123	384
06/20/1967 00:00	661.400	661.400	224.7	436.7	224.7	N	5123	384
07/18/1967 00:00	661.400	661.400	227.3	434.1	227.3	N	5123	384
08/15/1967 00:00	661.400	661.400	229.2	432.2	229.2	N	5123	384
09/19/1967 00:00	661.400	661.400	230.2	431.2	230.2	N	5123	384
10/24/1967 00:00	661.400	661.400	228.4	433	228.4	N	5123	384
11/24/1967 00:00	661.400	661.400	228.4	433	228.4	N	5123	384
01/16/1968 00:00	661.400	661.400	224.3	437.1	224.3	N	5123	384
02/13/1968 00:00	661.400	661.400	224.6	436.8	224.6	N	5123	384
03/19/1968 00:00	661.400	661.400	222.2	439.2	222.2	N	5123	384
04/23/1968 00:00	661.400	661.400	223.6	437.8	223.6	N	5123	384
05/14/1968 00:00	661.400	661.400	226.5	434.9	226.5	N	5123	384
06/18/1968 00:00	661.400	661.400	230.1	431.3	230.1	N	5123	384
07/16/1968 00:00	661.400	661.400	231.4	430	231.4	N	5123	384
08/20/1968 00:00	661.400	661.400	232.2	429.2	232.2	N	5123	384
09/17/1968 00:00	661.400	661.400	232.6	428.8	232.6	N	5123	384
10/15/1968 00:00	661.400	661.400	228.7	432.7	228.7	N	5123	384
11/19/1968 00:00	661.400	661.400	221	440.4	221	N	5123	384
12/12/1968 00:00	661.400	661.400	226.2	435.2	226.2	N	5123	384
12/17/1968 00:00	661.400	661.400	216.9	444.5	216.9	N	5123	384
01/14/1969 00:00	661.400	661.400	213.1	448.3	213.1	N	5123	384
02/18/1969 00:00	661.400	661.400	208.9	452.5	208.9	N	5123	384

03/18/1969 00:00	661.400	661.400	206	455.4	206	N	5123	384
04/15/1969 00:00	661.400	661.400	206.2	455.2	206.2	N	5123	384
05/20/1969 00:00	661.400	661.400	210.1	451.3	210.1	N	5123	384
06/17/1969 00:00	661.400	661.400	213.6	447.8	213.6	N	5123	384
07/15/1969 00:00	661.400	661.400	217.7	443.7	217.7	N	5123	384
08/19/1969 00:00	661.400	661.400	218.9	442.5	218.9	N	5123	384
09/16/1969 00:00	661.400	661.400	215.8	445.6	215.8	N	5123	384
10/14/1969 00:00	661.400	661.400	214.2	447.2	214.2	N	5123	384
11/18/1969 00:00	661.400	661.400	210.5	450.9	210.5	N	5123	384
12/16/1969 00:00	661.400	661.400	204.1	457.3	204.1	N	5123	384
01/13/1970 00:00	661.400	661.400	199.6	461.8	199.6	N	5123	384
02/17/1970 00:00	661.400	661.400	194.1	467.3	194.1	N	5123	384
03/17/1970 00:00	661.400	661.400	190.6	470.8	190.6	N	5123	384
04/14/1970 00:00	661.400	661.400	191.6	469.8	191.6	N	5123	384
05/19/1970 00:00	661.400	661.400	194.1	467.3	194.1	N	5123	384
06/16/1970 00:00	661.400	661.400	196.4	465	196.4	N	5123	384
07/14/1970 00:00	661.400	661.400	198.1	463.3	198.1	N	5123	384
08/18/1970 00:00	661.400	661.400	200.6	460.8	200.6	N	5123	384
09/15/1970 00:00	661.400	661.400	202.4	459	202.4	N	5123	384
10/13/1970 00:00	661.400	661.400	199.5	461.9	199.5	N	5123	384
11/17/1970 00:00	661.400	661.400	194.5	466.9	194.5	N	5123	384
12/29/1970 00:00	661.400	661.400	188.9	472.5	188.9	N	5123	384
01/19/1971 00:00	661.400	661.400	186.6	474.8	186.6	N	5123	384
02/16/1971 00:00	661.400	661.400	186.8	474.6	186.8	N	5123	384
03/16/1971 00:00	661.400	661.400	186	475.4	186	N	5123	384
04/20/1971 00:00	661.400	661.400	186.9	474.5	186.9	N	5123	384
05/18/1971 00:00	661.400	661.400	184.1	477.3	184.1	N	5123	384
06/01/1971 00:00	661.400	661.400	184.2	477.2	184.2	N	5123	384
07/13/1971 00:00	661.400	661.400	188.3	473.1	188.3	N	5123	384
08/17/1971 00:00	661.400	661.400	191.4	470	191.4	N	5123	384
09/14/1971 00:00	661.400	661.400	190.8	470.6	190.8	N	5123	384
10/12/1971 00:00	661.400	661.400	191.9	469.5	191.9	N	5123	384
11/16/1971 00:00	661.400	661.400	188.8	472.6	188.8	N	5123	384
12/14/1971 00:00	661.400	661.400	185.2	476.2	185.2	N	5123	384
01/11/1972 00:00	661.400	661.400	183.2	478.2	183.2	N	5123	384
02/15/1972 00:00	661.400	661.400	180.2	481.2	180.2	N	5123	384
03/14/1972 00:00	661.400	661.400	180.8	480.6	180.8	N	5123	384
04/18/1972 00:00	661.400	661.400	180.8	480.6	180.8	N	5123	384
05/16/1972 00:00	661.400	661.400	182.4	479	182.4	N	5123	384
06/20/1972 00:00	661.400	661.400	184.5	476.9	184.5	N	5123	384
07/18/1972 00:00	661.400	661.400	188.2	473.2	188.2	N	5123	384
08/15/1972 00:00	661.400	661.400	191.2	470.2	191.2	N	5123	384
09/19/1972 00:00	661.400	661.400	192.7	468.7	192.7	N	5123	384
10/03/1972 00:00	661.400	661.400	192.8	468.6	192.8	N	5123	384
10/17/1972 00:00	661.400	661.400	191.3	470.1	191.3	N	5123	384
11/14/1972 00:00	661.400	661.400	188.3	473.1	188.3	N	5123	384
12/12/1972 00:00	661.400	661.400	185.4	476	185.4	N	5123	384
01/16/1973 00:00	661.400	661.400	184.6	476.8	184.6	N	5123	384
02/13/1973 00:00	661.400	661.400	182	479.4	182	N	5123	384

03/13/1973 00:00	661.400	661.400	180.7	480.7	180.7	N	5123	384
04/17/1973 00:00	661.400	661.400	182.9	478.5	182.9	N	5123	384
05/15/1973 00:00	661.400	661.400	185.1	476.3	185.1	N	5123	384
06/19/1973 00:00	661.400	661.400	187.2	474.2	187.2	N	5123	384
07/17/1973 00:00	661.400	661.400	189.9	471.5	189.9	N	5123	384
08/14/1973 00:00	661.400	661.400	189.8	471.6	189.8	N	5123	384
09/18/1973 00:00	661.400	661.400	190.6	470.8	190.6	N	5123	384
10/16/1973 00:00	661.400	661.400	190.1	471.3	190.1	N	5123	384
11/13/1973 00:00	661.400	661.400	187.9	473.5	187.9	N	5123	384
12/18/1973 00:00	661.400	661.400	184.2	477.2	184.2	N	5123	384
01/19/1974 00:00	661.400	661.400	182.2	479.2	182.2	N	5123	384
02/19/1974 00:00	661.400	661.400	181.1	480.3	181.1	N	5123	384
02/26/1974 00:00	661.400	661.400	180.8	480.6	180.8	N	5123	384
03/12/1974 00:00	661.400	661.400	184.2	477.2	184.2	N	5123	384
04/09/1974 00:00	661.400	661.400	186.9	474.5	186.9	N	5123	384
05/21/1974 00:00	661.400	661.400	184	477.4	184	N	5123	384
05/28/1974 00:00	661.400	661.400	183.7	477.7	183.7	N	5123	384
06/11/1974 00:00	661.400	661.400	183.1	478.3	183.1	N	5123	384
07/02/1974 00:00	661.400	661.400	184.4	477	184.4	N	5123	384
07/16/1974 00:00	661.400	661.400	186.1	475.3	186.1	N	5123	384
07/30/1974 00:00	661.400	661.400	187.5	473.9	187.5	N	5123	384
08/13/1974 00:00	661.400	661.400	189.4	472	189.4	N	5123	384
08/27/1974 00:00	661.400	661.400	190.9	470.5	190.9	N	5123	384
09/17/1974 00:00	661.400	661.400	189.7	471.7	189.7	N	5123	384
09/24/1974 00:00	661.400	661.400	190.9	470.5	190.9	N	5123	384
10/15/1974 00:00	661.400	661.400	190.1	471.3	190.1	N	5123	384
11/12/1974 00:00	661.400	661.400	189.4	472	189.4	N	5123	384
11/26/1974 00:00	661.400	661.400	188.2	473.2	188.2	N	5123	384
12/17/1974 00:00	661.400	661.400	187.4	474	187.4	N	5123	384
01/07/1975 00:00	661.400	661.400	187.3	474.1	187.3	N	5123	384
02/18/1975 00:00	661.400	661.400	185.7	475.7	185.7	N	5123	384
03/25/1975 00:00	661.400	661.400	185.2	476.2	185.2	N	5123	384
04/22/1975 00:00	661.400	661.400	183.5	477.9	183.5	N	5123	384
05/27/1975 00:00	661.400	661.400	184.7	476.7	184.7	N	5123	384
06/24/1975 00:00	661.400	661.400	184	477.4	184	N	5123	384
07/29/1975 00:00	661.400	661.400	189.7	471.7	189.7	N	5123	384
09/16/1975 00:00	661.400	661.400	198	463.4	198	N	5123	384
10/14/1975 00:00	661.400	661.400	200.3	461.1	200.3	N	5123	384
11/18/1975 00:00	661.400	661.400	196.3	465.1	196.3	N	5123	384
12/16/1975 00:00	661.400	661.400	192.6	468.8	192.6	N	5123	384
01/13/1976 00:00	661.400	661.400	191.1	470.3	191.1	N	5123	384
02/17/1976 00:00	661.400	661.400	191.6	469.8	191.6	N	5123	384
03/16/1976 00:00	661.400	661.400	194.5	466.9	194.5	N	5123	384
04/13/1976 00:00	661.400	661.400	193.2	468.2	193.2	N	5123	384
05/18/1976 00:00	661.400	661.400	194.4	467	194.4	N	5123	384
06/15/1976 00:00	661.400	661.400	197.7	463.7	197.7	N	5123	384
07/13/1976 00:00	661.400	661.400	200.8	460.6	200.8	N	5123	384
08/17/1976 00:00	661.400	661.400	202.8	458.6	202.8	N	5123	384
09/14/1976 00:00	661.400	661.400	205	456.4	205	N	5123	384

10/12/1976 00:00	661.400	661.400	204.2	457.2	204.2	N	5123	384
11/16/1976 00:00	661.400	661.400	205.2	456.2	205.2	N	5123	384
12/14/1976 00:00	661.400	661.400	204.8	456.6	204.8	N	5123	384
01/18/1977 00:00	661.400	661.400	202.9	458.5	202.9	N	5123	384
02/15/1977 00:00	661.400	661.400	202	459.4	202	N	5123	384
03/15/1977 00:00	661.400	661.400	201.2	460.2	201.2	N	5123	384
04/19/1977 00:00	661.400	661.400	203.3	458.1	203.3	N	5123	384
05/17/1977 00:00	661.400	661.400	208.2	453.2	208.2	N	5123	384
06/14/1977 00:00	661.400	661.400	213	448.4	213	N	5123	384
07/19/1977 00:00	661.400	661.400	217.6	443.8	217.6	N	5123	384
08/16/1977 00:00	661.400	661.400	220.3	441.1	220.3	N	5123	384
09/13/1977 00:00	661.400	661.400	221	440.4	221	N	5123	384
10/18/1977 00:00	661.400	661.400	219.4	442	219.4	N	5123	384
11/15/1977 00:00	661.400	661.400	218.8	442.6	218.8	N	5123	384
12/06/1977 00:00	661.400	661.400	218.4	443	218.4	N	5123	384
12/13/1977 00:00	661.400	661.400	218.2	443.2	218.2	N	5123	384
12/20/1977 00:00	661.400	661.400	218.1	443.3	218.1	N	5123	384
12/27/1977 00:00	661.400	661.400	217.6	443.8	217.6	N	5123	384
01/03/1978 00:00	661.400	661.400	215.8	445.6	215.8	N	5123	384
01/10/1978 00:00	661.400	661.400	213.9	447.5	213.9	N	5123	384
01/17/1978 00:00	661.400	661.400	212.7	448.7	212.7	N	5123	384
01/24/1978 00:00	661.400	661.400	211.5	449.9	211.5	N	5123	384
01/31/1978 00:00	661.400	661.400	210.5	450.9	210.5	N	5123	384
02/07/1978 00:00	661.400	661.400	209.4	452	209.4	N	5123	384
02/14/1978 00:00	661.400	661.400	208.5	452.9	208.5	N	5123	384
02/21/1978 00:00	661.400	661.400	208	453.4	208	N	5123	384
02/28/1978 00:00	661.400	661.400	207.4	454	207.4	N	5123	384
03/07/1978 00:00	661.400	661.400	207	454.4	207	N	5123	384
03/14/1978 00:00	661.400	661.400	206.4	455	206.4	N	5123	384
03/21/1978 00:00	661.400	661.400	205.8	455.6	205.8	N	5123	384
03/28/1978 00:00	661.400	661.400	205.3	456.1	205.3	N	5123	384
04/04/1978 00:00	661.400	661.400	205	456.4	205	N	5123	384
04/11/1978 00:00	661.400	661.400	204.5	456.9	204.5	N	5123	384
04/18/1978 00:00	661.400	661.400	204.2	457.2	204.2	N	5123	384
04/25/1978 00:00	661.400	661.400	204.7	456.7	204.7	N	5123	384
05/02/1978 00:00	661.400	661.400	204	457.4	204	N	5123	384
05/09/1978 00:00	661.400	661.400	203.1	458.3	203.1	N	5123	384
05/16/1978 00:00	661.400	661.400	202.7	458.7	202.7	N	5123	384
05/23/1978 00:00	661.400	661.400	203.2	458.2	203.2	N	5123	384
05/30/1978 00:00	661.400	661.400	203.2	458.2	203.2	N	5123	384
06/06/1978 00:00	661.400	661.400	204.1	457.3	204.1	N	5123	384
06/13/1978 00:00	661.400	661.400	204.5	456.9	204.5	N	5123	384
06/20/1978 00:00	661.400	661.400	204.8	456.6	204.8	N	5123	384
06/27/1978 00:00	661.400	661.400	205.1	456.3	205.1	N	5123	384
07/04/1978 00:00	661.400	661.400	206.3	455.1	206.3	N	5123	384
07/11/1978 00:00	661.400	661.400	207.6	453.8	207.6	N	5123	384
07/18/1978 00:00	661.400	661.400	209.1	452.3	209.1	N	5123	384
07/25/1978 00:00	661.400	661.400	209.3	452.1	209.3	N	5123	384
08/01/1978 00:00	661.400	661.400	208.9	452.5	208.9	N	5123	384

08/08/1978 00:00	661.400	661.400	208.9	452.5	208.9	N	5123	384
08/15/1978 00:00	661.400	661.400	208.9	452.5	208.9	N	5123	384
08/22/1978 00:00	661.400	661.400	209.1	452.3	209.1	N	5123	384
08/29/1978 00:00	661.400	661.400	209.1	452.3	209.1	N	5123	384
09/05/1978 00:00	661.400	661.400	209	452.4	209	N	5123	384
09/12/1978 00:00	661.400	661.400	206.8	454.6	206.8	N	5123	384
09/19/1978 00:00	661.400	661.400	205.2	456.2	205.2	N	5123	384
09/26/1978 00:00	661.400	661.400	204.2	457.2	204.2	N	5123	384
10/03/1978 00:00	661.400	661.400	203.5	457.9	203.5	N	5123	384
10/10/1978 00:00	661.400	661.400	204.6	456.8	204.6	N	5123	384
10/17/1978 00:00	661.400	661.400	204.6	456.8	204.6	N	5123	384
10/24/1978 00:00	661.400	661.400	204	457.4	204	N	5123	384
10/31/1978 00:00	661.400	661.400	202.9	458.5	202.9	N	5123	384
11/28/1978 00:00	661.400	661.400	200.4	461	200.4	N	5123	384
12/19/1978 00:00	661.400	661.400	195.7	465.7	195.7	N	5123	384
01/02/1979 00:00	661.400	661.400	193.3	468.1	193.3	N	5123	384
03/27/1979 00:00	661.400	661.400	185	476.4	185	N	5123	384
04/24/1979 00:00	661.400	661.400	184.7	476.7	184.7	N	5123	384
05/01/1979 00:00	661.400	661.400	184.2	477.2	184.2	N	5123	384
05/08/1979 00:00	661.400	661.400	184.9	476.5	184.9	N	5123	384
05/15/1979 00:00	661.400	661.400	185.8	475.6	185.8	N	5123	384
05/22/1979 00:00	661.400	661.400	186.7	474.7	186.7	N	5123	384
05/29/1979 00:00	661.400	661.400	187.4	474	187.4	N	5123	384
11/13/1979 00:00	661.400	661.400	184.1	477.3	184.1	N	5123	384
11/04/1980 00:00	661.400	661.400	167.9	493.5	167.9	N	5123	384
11/11/1980 00:00	661.400	661.400	167.5	493.9	167.5	N	5123	384
11/18/1980 00:00	661.400	661.400	166	495.4	166	N	5123	384
11/25/1980 00:00	661.400	661.400	165	496.4	165	N	5123	384
01/19/1982 00:00	661.400	661.400	166.5	494.9	166.5	N	5123	384
02/18/1982 00:00	661.400	661.400	169.9	491.5	169.9	N	5123	384
03/23/1982 00:00	661.400	661.400	171.5	489.9	171.5	N	5123	384
04/13/1982 00:00	661.400	661.400	168.3	493.1	168.3	N	5123	384
05/11/1982 00:00	661.400	661.400	165.8	495.6	165.8	N	5123	384
06/15/1982 00:00	661.400	661.400	162.6	498.8	162.6	N	5123	384
07/20/1982 00:00	661.400	661.400	163.3	498.1	163.3	N	5123	384
08/31/1982 00:00	661.400	661.400	164.4	497	164.4	N	5123	384
09/21/1982 00:00	661.400	661.400	165.6	495.8	165.6	N	5123	384
10/12/1982 00:00	661.400	661.400	166.7	494.7	166.7	N	5123	384
11/16/1982 00:00	661.400	661.400	163.8	497.6	163.8	N	5123	384
12/14/1982 00:00	661.400	661.400	162.2	499.2	162.2	N	5123	384
01/11/1983 00:00	661.400	661.400	162.7	498.7	162.7	N	5123	384
02/22/1983 00:00	661.400	661.400	160.9	500.5	160.9	N	5123	384
03/15/1983 00:00	661.400	661.400	158.7	502.7	158.7	N	5123	384
04/12/1983 00:00	661.400	661.400	158.2	503.2	158.2	N	5123	384
05/17/1983 00:00	661.400	661.400	156.4	505	156.4	N	5123	384
06/14/1983 00:00	661.400	661.400	158	503.4	158	N	5123	384
07/19/1983 00:00	661.400	661.400	158.7	502.7	158.7	N	5123	384
08/16/1983 00:00	661.400	661.400	159.1	502.3	159.1	N	5123	384
09/20/1983 00:00	661.400	661.400	155.8	505.6	155.8	N	5123	384

10/25/1983 00:00	661.400	661.400	153.5	507.9	153.5		N	5123	384
11/22/1983 00:00	661.400	661.400	154	507.4	154		N	5123	384
12/13/1983 00:00	661.400	661.400	151.2	510.2	151.2		N	5123	384
01/24/1984 00:00	661.400	661.400	146.5	514.9	146.5		N	5123	384
02/21/1984 00:00	661.400	661.400	146.1	515.3	146.1		N	5123	384
03/20/1984 00:00	661.400	661.400	147.1	514.3	147.1		N	5123	384
04/24/1984 00:00	661.400	661.400	146.1	515.3	146.1		N	5123	384
05/22/1984 00:00	661.400	661.400	151.6	509.8	151.6		N	5123	384
06/19/1984 00:00	661.400	661.400	153.6	507.8	153.6		N	5123	384
07/10/1984 00:00	661.400	661.400	154.9	506.5	154.9		N	5123	384
08/14/1984 00:00	661.400	661.400	156.7	504.7	156.7		N	5123	384
09/18/1984 00:00	661.400	661.400	158.3	503.1	158.3		N	5123	384
10/16/1984 00:00	661.400	661.400	159.3	502.1	159.3		N	5123	384
11/13/1984 00:00	661.400	661.400	160	501.4	160		N	5123	384
12/11/1984 00:00	661.400	661.400	159.2	502.2	159.2		N	5123	384
01/15/1985 00:00	661.400	661.400	156.9	504.5	156.9		N	5123	384
02/12/1985 00:00	661.400	661.400	156.9	504.5	156.9		N	5123	384
03/27/1985 00:00	661.400	661.400	152.6	508.8	152.6		N	5123	384
04/16/1985 00:00	661.400	661.400	154	507.4	154		N	5123	384
05/21/1985 00:00	661.400	661.400	159.3	502.1	159.3		N	5123	384
06/25/1985 00:00	661.400	661.400	156.5	504.9	156.5		N	5123	384
07/30/1985 00:00	661.400	661.400	158.2	503.2	158.2		N	5123	384
08/27/1985 00:00	661.400	661.400	159.2	502.2	159.2		N	5123	384
09/24/1985 00:00	661.400	661.400	160.7	500.7	160.7		N	5123	384
10/29/1985 00:00	661.400	661.400	163.7	497.7	163.7		N	5123	384
11/26/1985 00:00	661.400	661.400	163.3	498.1	163.3		N	5123	384
12/10/1985 00:00	661.400	661.400	162.3	499.1	162.3		N	5123	384
01/28/1986 00:00	661.400	661.400	158	503.4	158		N	5123	384
02/25/1986 00:00	661.400	661.400	155.6	505.8	155.6		N	5123	384
03/25/1986 00:00	661.400	661.400	155.2	506.2	155.2		N	5123	384
04/29/1986 00:00	661.400	661.400	156.8	504.6	156.8		N	5123	384
05/27/1986 00:00	661.400	661.400	155.9	505.5	155.9		N	5123	384
07/01/1986 00:00	661.400	661.400	156.7	504.7	156.7		N	5123	384
09/22/1987 00:00	661.400	661.400	164.3	497.1	164.3		N	5123	384
11/24/1987 00:00	661.400	661.400	168.1	493.3	168.1		N	5123	384
12/29/1987 00:00	661.400	661.400	168.8	492.6	168.8		N	5123	384
01/26/1988 00:00	661.400	661.400	170.5	490.9	170.5		N	5123	384
02/23/1988 00:00	661.400	661.400	170.9	490.5	170.9		N	5123	384
03/29/1988 00:00	661.400	661.400	170.6	490.8	170.6		N	5123	384
04/26/1988 00:00	661.400	661.400	173.4	488	173.4		N	5123	384
05/24/1988 00:00	661.400	661.400	174.2	487.2	174.2		N	5123	384
06/21/1988 00:00	661.400	661.400	175.5	485.9	175.5		N	5123	384
07/26/1988 00:00	661.400	661.400	176.7	484.7	176.7		N	5123	384
08/23/1988 00:00	661.400	661.400	177.2	484.2	177.2		N	5123	384
09/20/1988 00:00	661.400	661.400	177.8	483.6	177.8		N	5123	384
10/25/1988 00:00	661.400	661.400	178.6	482.8	178.6		N	5123	384
11/22/1988 00:00	661.400	661.400	179	482.4	179		N	5123	384
12/20/1988 00:00	661.400	661.400	179	482.4	179		N	5123	384
01/24/1989 00:00	661.400	661.400	179	482.4	179		N	5123	384

02/21/1989 00:00	661.400	661.400	179.3	482.1	179.3	N	5123	384
03/21/1989 00:00	661.400	661.400	179.5	481.9	179.5	N	5123	384
04/18/1989 00:00	661.400	661.400	179.9	481.5	179.9	N	5123	384
05/16/1989 00:00	661.400	661.400	180.1	481.3	180.1	N	5123	384
06/20/1989 00:00	661.400	661.400	181	480.4	181	N	5123	384
07/18/1989 00:00	661.400	661.400	181.5	479.9	181.5	N	5123	384
08/22/1989 00:00	661.400	661.400	184	477.4	184	N	5123	384
09/26/1989 00:00	661.400	661.400	185.8	475.6	185.8	N	5123	384
10/31/1989 00:00	661.400	661.400	184.8	476.6	184.8	N	5123	384
11/28/1989 00:00	661.400	661.400	184.4	477	184.4	N	5123	384
12/19/1989 00:00	661.400	661.400	183.4	478	183.4	N	5123	384
01/23/1990 00:00	661.400	661.400	182.2	479.2	182.2	N	5123	384
02/27/1990 00:00	661.400	661.400	179	482.4	179	N	5123	384
03/27/1990 00:00	661.400	661.400	177.8	483.6	177.8	N	5123	384
04/17/1990 00:00	661.400	661.400	176.8	484.6	176.8	N	5123	384
05/29/1990 00:00	661.400	661.400	179.1	482.3	179.1	N	5123	384
06/26/1990 00:00	661.400	661.400	182.4	479	182.4	N	5123	384
07/31/1990 00:00	661.400	661.400	183.3	478.1	183.3	N	5123	384
08/28/1990 00:00	661.400	661.400	185.4	476	185.4	N	5123	384
09/18/1990 00:00	661.400	661.400	186.5	474.9	186.5	N	5123	384
10/02/1990 00:00	661.400	661.400	187.5	473.9	187.5	N	5123	384
11/13/1990 00:00	661.400	661.400	185.3	476.1	185.3	N	5123	384
12/04/1990 00:00	661.400	661.400	184.4	477	184.4	N	5123	384
01/08/1991 00:00	661.400	661.400	183.3	478.1	183.3	N	5123	384
02/05/1991 00:00	661.400	661.400	182.1	479.3	182.1	N	5123	384
01/14/1992 00:00	661.400	661.400	188.6	472.8	188.6	N	5123	384
02/18/1992 00:00	661.400	661.400	187.8	473.6	187.8	N	5123	384
03/10/1992 00:00	661.400	661.400	187.8	473.6	187.8	N	5123	384
04/21/1992 00:00	661.400	661.400	187.6	473.8	187.6	N	5123	384
05/05/1992 00:00	661.400	661.400	189.4	472	189.4	N	5123	384
07/21/1992 00:00	661.400	661.400	199.3	462.1	199.3	N	5123	384
08/04/1992 00:00	661.400	661.400	200.1	461.3	200.1	N	5123	384
09/01/1992 00:00	661.400	661.400	200.4	461	200.4	N	5123	384
10/06/1992 00:00	661.400	661.400	201.2	460.2	201.2	N	5123	384
11/10/1992 00:00	661.400	661.400	204.9	456.5	204.9	N	5123	384
12/01/1992 00:00	661.400	661.400	189.7	471.7	189.7	N	5123	384
01/12/1993 00:00	661.400	661.400	188.5	472.9	188.5	N	5123	384
02/04/1993 00:00	661.400	661.400	189.7	471.7	189.7	N	5123	384
03/10/1993 00:00	661.400	661.400	186	475.4	186	N	5123	384
04/13/1993 00:00	661.400	661.400	184.2	477.2	184.2	N	5123	384
05/04/1993 00:00	661.400	661.400	182.9	478.5	182.9	N	5123	384
06/01/1993 00:00	661.400	661.400	181.5	479.9	181.5	N	5123	384
07/06/1993 00:00	661.400	661.400	180.4	481	180.4	N	5123	384
08/03/1993 00:00	661.400	661.400	178.2	483.2	178.2	N	5123	384
09/14/1993 00:00	661.400	661.400	176.2	485.2	176.2	N	5123	384
10/05/1993 00:00	661.400	661.400	175	486.4	175	N	5123	384
11/02/1993 00:00	661.400	661.400	172.9	488.5	172.9	N	5123	384
12/07/1993 00:00	661.400	661.400	170.2	491.2	170.2	N	5123	384
01/04/1994 00:00	661.400	661.400	168.2	493.2	168.2	N	5123	384

02/01/1994 00:00	661.400	661.400	167.5	493.9	167.5	N	5123	384
03/01/1994 00:00	661.400	661.400	166.4	495	166.4	N	5123	384
04/05/1994 00:00	661.400	661.400	164.4	497	164.4	N	5123	384
05/03/1994 00:00	661.400	661.400	162.8	498.6	162.8	N	5123	384
06/01/1994 00:00	661.400	661.400	161.1	500.3	161.1	N	5123	384
07/13/1994 00:00	661.400	661.400	160.8	500.6	160.8	N	5123	384
08/11/1994 00:00	661.400	661.400	160.8	500.6	160.8	N	5123	384
09/13/1994 00:00	661.400	661.400	162.5	498.9	162.5	N	5123	384
10/20/1994 00:00	661.400	661.400	164.5	496.9	164.5	N	5123	384
12/06/1994 00:00	661.400	661.400	164.7	496.7	164.7	N	5123	384
01/18/1995 00:00	661.400	661.400	163.4	498	163.4	N	5123	384
03/14/1995 00:00	661.400	661.400	165	496.4	165	N	5123	384
04/25/1995 00:00	661.400	661.400	164.9	496.5	164.9	N	5123	384
05/16/1995 00:00	661.400	661.400	162.7	498.7	162.7	N	5123	384
06/06/1995 00:00	661.400	661.400	162.7	498.7	162.7	N	5123	384
07/11/1995 00:00	661.400	661.400	161.7	499.7	161.7	N	5123	384
08/08/1995 00:00	661.400	661.400	162.6	498.8	162.6	N	5123	384
09/06/1995 00:00	661.400	661.400	162.3	499.1	162.3	N	5123	384
10/03/1995 00:00	661.400	661.400	160.8	500.6	160.8	N	5123	384
11/07/1995 00:00	661.400	661.400	159.4	502	159.4	N	5123	384
12/04/1995 00:00	661.400	661.400	158.2	503.2	158.2	N	5123	384
01/17/1996 00:00	661.400	661.400	158.8	502.6	158.8	N	5123	384
02/01/1996 00:00	661.400	661.400	152.8	508.6	152.8	N	5123	384
03/05/1996 00:00	661.400	661.400	157.9	503.5	157.9	N	5123	384
04/02/1996 00:00	661.400	661.400	156.5	504.9	156.5	N	5123	384
05/07/1996 00:00	661.400	661.400	157.2	504.2	157.2	N	5123	384
06/18/1996 00:00	661.400	661.400	159.7	501.7	159.7	N	5123	384
07/02/1996 00:00	661.400	661.400	163.3	498.1	163.3	N	5123	384
08/06/1996 00:00	661.400	661.400	163	498.4	163	N	5123	384
09/18/1996 00:00	661.400	661.400	164.7	496.7	164.7	N	5123	384
10/17/1996 00:00	661.400	661.400	166.9	494.5	166.9	N	5123	384
11/26/1996 00:00	661.400	661.400	167.7	493.7	167.7	N	5123	384
12/31/1996 00:00	661.400	661.400	167.5	493.9	167.5	N	5123	384
01/28/1997 00:00	661.400	661.400	166.6	494.8	166.6	N	5123	384
02/04/1997 00:00	661.400	661.400	166.4	495	166.4	N	5123	384
03/04/1997 00:00	661.400	661.400	166	495.4	166	N	5123	384
04/01/1997 00:00	661.400	661.400	165.9	495.5	165.9	N	5123	384
05/27/1997 00:00	661.400	661.400	167.6	493.8	167.6	N	5123	384
06/11/1997 00:00	661.400	661.400	168	493.4	168	N	5123	384
07/09/1997 00:00	661.400	661.400	169.5	491.9	169.5	N	5123	384
08/20/1997 00:00	661.400	661.400	176.2	485.2	176.2	N	5123	384
09/05/1997 00:00	661.400	661.400	172	489.4	172	N	5123	384
10/22/1997 00:00	661.400	661.400	173.5	487.9	173.5	N	5123	384
11/26/1997 00:00	661.400	661.400	174.7	486.7	174.7	N	5123	384
12/10/1997 00:00	661.400	661.400	175.4	486	175.4	N	5123	384
01/14/1998 00:00	661.400	661.400	175.8	485.6	175.8	N	5123	384
02/04/1998 00:00	661.400	661.400	176.6	484.8	176.6	N	5123	384
03/04/1998 00:00	661.400	661.400	177.7	483.7	177.7	N	5123	384
04/15/1998 00:00	661.400	661.400	176.1	485.3	176.1	N	5123	384

05/21/1998 00:00	661.400	661.400	165.6	495.8	165.6		N	5123	384
06/01/1998 00:00	661.400	661.400	174.8	486.6	174.8		N	5123	384
07/01/1998 00:00	661.400	661.400	172.5	488.9	172.5		N	5123	384
08/01/1998 00:00	661.400	661.400	171.9	489.5	171.9		N	5123	384
10/01/1998 00:00	661.400	661.400	170.6	490.8	170.6		N	5123	384
11/01/1998 00:00	661.400	661.400	169.1	492.3	169.1		N	5123	384
12/01/1998 00:00	661.400	661.400	169.1	492.3	169.1		N	5123	384
01/01/1999 00:00	661.400	661.400	168.5	492.9	168.5		N	5123	384
02/01/1999 00:00	661.400	661.400	169.5	491.9	169.5		N	5123	384
03/01/1999 00:00	661.400	661.400	169.8	491.6	169.8		N	5123	384
04/01/1999 00:00	661.400	661.400	172.7	488.7	172.7		N	5123	384
05/01/1999 00:00	661.400	661.400	174.8	486.6	174.8		N	5123	384
06/01/1999 00:00	661.400	661.400	177.2	484.2	177.2		N	5123	384
07/01/1999 00:00	661.400	661.400	179.6	481.8	179.6		N	5123	384
08/01/1999 00:00	661.400	661.400	179.9	481.5	179.9		N	5123	384
09/01/1999 00:00	661.400	661.400	183.6	477.8	183.6		N	5123	384
10/01/1999 00:00	661.400	661.400	185.3	476.1	185.3		N	5123	384
11/01/1999 00:00	661.400	661.400	186.6	474.8	186.6		N	5123	384
12/01/1999 00:00	661.400	661.400	187.1	474.3	187.1		N	5123	384
01/01/2000 00:00	661.400	661.400	188.4	473	188.4		N	5123	384
02/01/2000 00:00	661.400	661.400	189.1	472.3	189.1		N	5123	384
04/01/2000 00:00	661.400	661.400	190	471.4	190		N	5123	384
05/05/2006 00:00	661.400	661.400	186.3	475.1	186.3		N	5123	384
10/27/2006 00:00	661.400	661.400	183.9	477.5	183.9		N	5123	384
01/20/2007 00:00	661.400	661.400	187.1	474.3	187.1		N	5123	384
09/18/2009 00:00	661.400	661.400	188.2	473.2	188.2		N	5123	384
10/06/2009 00:00	661.400	661.400	189.7	471.7	189.7		N	5123	384
12/03/2009 00:00	661.400	661.400	190.1	471.3	190.1		N	5123	384
12/03/2009 00:00	661.400	661.400	190.1	471.3	190.1		N	5123	384
01/05/2010 00:00	661.400	661.400	189	472.4	189		N	5123	384
06/13/2011 00:00	661.400	661.400	182.8	478.6	182.8		Y	5123	384
10/01/2011 00:00	661.400	661.400				N-9	Y	5123	384
06/13/2012 00:00	661.400	661.400	182.8	478.6	182.8		Y	5123	384
06/13/2012 00:00	661.400	661.400	182.8	478.6	182.8		N	5123	384
10/15/2012 00:00	661.400	661.400	174.7	486.7	174.7		Y	5123	384
10/15/2012 00:00	661.400	661.400	174.7	486.7	174.7		N	5123	384
03/01/2013 00:00	661.400	661.400				N-9	Y	5123	384
10/02/2013 00:00	661.400	661.400	174.3	487.1	174.3		N	5123	384
10/02/2013 00:00	661.400	661.400	174.3	487.1	174.3		Y	5123	384
12/09/2013 00:00	661.400	661.400	174.3	487.1	174.3		Y	5123	384
03/13/2014 00:00	661.400	661.400	175.23	486.17	175.23		Y	5123	384
03/13/2014 00:00	661.400	661.400	175.23	486.17	175.23		N	5123	384
10/15/2014 00:00	661.400	661.400	180.52	480.88	180.52		N	5123	384
10/15/2014 00:00	661.400	661.400	180.52	480.88	180.52		Y	5123	384
03/18/2015 11:25	661.400	661.400	183.6	477.8	183.6		N	5123	384
03/18/2015 11:25	661.400	661.400	183.6	477.8	183.6		Y	5123	384
10/08/2015 12:22	661.400	661.400	189.05	472.35	189.05		Y	5123	384
03/03/2016 00:00	661.400	661.400	191.34	470.06	191.34		Y	5123	384
10/13/2016 09:40	661.400	661.400	191.9	469.5	191.9		Y	5123	384

04/10/2017 09:20	661.400	661.400	198.87	462.53	198.87		Y	5123	384
10/03/2017 00:00	661.400	661.400	255.3	406.1	255.3		Y	5171	384
03/15/2018 00:00	661.400	661.400	193.58	467.82	193.58		Y	5123	384
10/03/2018 00:00	661.400	661.400	194.21	467.19	194.21		Y	5123	384
04/09/2019 00:00	661.400	661.400	193.98	467.42	193.98		Y	5123	384
11/07/2019 00:00	661.400	661.400	191.7	469.7	191.7		Y	5123	384

All elevation and depth measurements are in feet. The vertical datum for recent measurements is NAVD88.

Perform a New Well Search

EXCAVATION LOGS FROM PREVIOUS EXPLORATION BY GEOTECHNOLOGIES, INC. FILE NO. 20195

(6 PAGES)

EXCAVATION LOG NUMBER 1

Krismar Construction Company, Inc. **Date: 09/01/11** **Elevation: 688.0'**

File No. 20195 **Method: 8-inch diameter Hollow Stem Auger**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt
				0 --		4-inch Asphalt, No Base
1	12	4.5	105.3	1 --		FILL: Silty Sand to Sand, dark to yellowish brown, slightly moist, medium dense, fine grained
				2 --		
3	9	5.2	94.3	3 --	SP	Sand, yellowish brown, slightly moist, medium dense, fine grained
				4 --		
5	9	6.8	104.4	5 --	SM/SP	Silty Sand to Sand, dark to yellowish brown, slightly moist, medium dense, fine grained
				6 --		
7	22	2.8	115.7	7 --		
				8 --	SP	Sand, yellowish brown, slightly moist, dense, fine grained
				9 --		
10	19	2.0	102.6	10 --		Sand, yellowish brown to brown, slightly moist, medium dense to dense, fine to medium grained
				11 --		
				12 --		
				13 --		
				14 --		
15	33	2.1	108.5	15 --		
				16 --		
				17 --		
				18 --		
				19 --		
20	57	2.1	112.8	20 --	SP/SW	Sand, yellowish brown, slightly moist, very dense, fine to coarse grained, with gravel
				21 --		Total depth: 20 feet; No Water; Fill to 2 feet
				22 --		
				23 --		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual
				24 --		
				25 --		Used 8-inch diameter Hollow-Stem Auger 140-lb. Slide Hammer, 30-inch drop Modified California Sampler used unless otherwise noted

EXCAVATION LOG NUMBER 2

Krismar Construction Company, Inc. **Date: 09/01/11** **Elevation: 684.75'**

File No. 20195 **Method: 8-inch diameter Hollow Stem Auger**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt
				0		5-inch Asphalt, No Base
				1		FILL: Silty Sand to Sand, yellowish brown, slightly moist, medium dense, fine grained
2.5	27	1.8	108.6	2		
				3	SP	Sand, yellow to olive brown, slightly moist, medium dense to dense, fine grained
				4		
5	12	2.9	SPT	5		
				6		
7.5	28	2.3	116.2	7		
				8		
				9		
10	20	2.7	SPT	10		
				11		
12.5	28	4.0	118.2	12		
				13	SM/SP	Silty Sand to Sand, dark to yellowish brown, slightly moist, dense, fine grained
				14		
15	24	2.8	SPT	15		
				16	SP	Sand, yellow to grayish brown, slightly moist, dense, fine grained, occasional cobble
17.5	77 50/5"	1.8	129.9	17		
				18	SP/SW	Sand to Gravelly Sand, yellowish brown, slightly moist, very dense, fine grained
				19		
20	34	2.8	SPT	20		
				21	SP	Sand, yellow to grayish brown, slightly moist, dense, fine grained
22.5	49	2.9	114.2	22		
				23		Sand, yellow to grayish brown, slightly moist, dense, occasional gravel
				24		
25	22	3.2	SPT	25		

EXCAVATION LOG NUMBER 2

Krismar Construction Company, Inc.

File No. 20195

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				26 -- 27 --		
27.5	38	11.7	112.0	28 -- 29 --		
30	28	3.1	SPT	30 -- 31 -- 32 --		
32.5	47 50/3"	2.5	122.9	33 -- 34 --		
35	29	2.6	SPT	35 -- 36 -- 37 --		
37.5	78	1.9	113.3	38 -- 39 --		
40	67	2.1	SPT	40 --		
				41 -- 42 --	SP/SW	Sand, yellow to grayish brown, slightly moist, very dense, fine to coarse grained, occasional gravel
42.5	66 50/3"	1.9	113.9	43 -- 44 --		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual
45	52	1.7	SPT	45 -- 46 -- 47 --		Used 8-inch diameter Hollow-Stem Auger 140-lb. Slide Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
47.5	24 50/6"	2.6	114.4	48 -- 49 --	SP	Sand, yellow to grayish brown, slightly moist, very dense, fine grained
50	59	3.1	SPT	50 --		Total depth: 50 feet; No Water; Fill to 2½ feet

EXCAVATION LOG NUMBER 3

Krismar Construction Company, Inc. **Date: 09/01/11** **Elevation: 683.50'**

File No. 20195 **Method: 8-inch diameter Hollow Stem Auger**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt
				0 --		4-inch Asphalt, No Base
1	33	3.4	106.8	1 --		FILL: Silty Sand, dark to yellowish brown, slightly moist, dense, fine grained
				2 --		
3	24	3.5	107.5	3 --	SP	Sand, yellow to grayish brown, slightly moist, dense, fine grained
				4 --		
5	17	4.9	103.2	5 --		
				6 --		
7	33	3.5	111.0	7 --		Sand, yellowish brown, slightly moist, dense, fine to medium grained
				8 --		
				9 --		
10	36	5.7	108.0	10 --		
				11 --		
				12 --		
				13 --		
				14 --		
15	28	7.1	109.8	15 --	SM/SP	Silty Sand to Sand, dark to yellowish brown, slightly moist, dense, fine grained
				16 --		
				17 --		
				18 --		
				19 --		
20	84	1.8	127.1	20 --	SP	Sand, yellowish brown, slightly moist, very dense, fine grained
				21 --		Total depth: 20 feet No Water Fill to 2 feet
				22 --		
				23 --		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual
				24 --		
				25 --		Used 8-inch diameter Hollow-Stem Auger 140-lb. Slide Hammer, 30-inch drop Modified California Sampler used unless otherwise noted

EXCAVATION LOG NUMBER 4

Krismar Construction Company, Inc. **Date: 09/15/11** **Elevation: 685.75'**

File No. 20195 **Method: 8-inch diameter Hollow Stem Auger**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt
				0 --		3-inch Asphalt, No Base
				-		FILL: Silty Sand, dark brown, slightly moist, medium dense, fine grained
				1 --		
				-		
2	11	2.2	100.2	2 --		
				-	SP	Sand, grayish brown, slightly moist, medium dense, fine grained
				3 --		
				-		
4	15	10.8	106.0	4 --		
				-	SM/SP	Silty Sand to Sand, dark to grayish brown, moist, medium dense, fine grained
				5 --		
				-		
				6 --		
				-		
7	21	1.8	101.2	7 --		
				-	SP	Sand, gray to light gray, slightly moist, dense, fine grained
				8 --		
				-		
				9 --		
				-		
10	28	1.3	111.2	10 --		
				-		
				11 --		
				-		
				12 --		
				-		
				13 --		
				-		
				14 --		
				-		
15	32	1.9	112.6	15 --		
				-		Sand, light brown, slightly moist, dense, fine grained
				16 --		
				-		
				17 --		
				-		
				18 --		
				-		
				19 --		
				-		
20	44	2.9	104.3	20 --		
				-		Total depth: 20 feet
				21 --		No Water
				-		Fill to 2 feet
				22 --		
				-		
				23 --		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual
				-		
				24 --		
				-		Used 8-inch diameter Hollow-Stem Auger
				25 --		140-lb. Slide Hammer, 30-inch drop
				-		Modified California Sampler used unless otherwise noted

EXCAVATION LOG NUMBER 5

Krismar Construction Company, Inc. **Date: 09/15/11** **Elevation: 685.25'**

File No. 20195 **Method: 8-inch diameter Hollow Stem Auger**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt
				0 --		3½-inch Asphalt, No Base
1	15	11.4	103.3	1 --		FILL: Silty Sand, dark brown, moist, medium dense, fine grained
3	17	2.0	105.8	3 --	SP	Sand, dark brown, slightly moist, medium dense, fine grained
5	25	3.6	108.3	5 --	SM/SP	Silty Sand to Sand, dark to grayish brown, slightly moist, dense, fine grained
7	25	2.2	108.9	7 --	SP	Sand, light gray, slightly moist, dense, fine to medium grained
10	32	5.0	111.4	10 --		
15	57	10.6	113.5	15 --	SM/SP	Silty Sand to Sand, dark brown to grayish brown, moist, very dense, fine grained
				19 --	SP	Sand, light gray to yellowish brown, slightly moist, very dense, fine grained, occasional cobbles
20	78	1.4	128.8	20 --		Total depth: 20 feet No Water Fill to 2 feet NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual Used 8-inch diameter Hollow-Stem Auger 140-lb. Slide Hammer, 30-inch drop Modified California Sampler used unless otherwise noted

EXCAVATION LOGS FROM PREVIOUS EXPLORATION BY GEOTECHNOLOGIES, INC. FILE NO. 18954

(10 PAGES)

BORING LOG NUMBER 1

Drilling Date: 07/07/05 **Elevation: 670.10'***

Project: File No. 18954 **Krismar Construction**

km *Based on Topographic Survey provided by Client

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Bare Ground
				0 --		FILL: Silty Sand, grayish-brown, moist, medium dense, fine grained, minor gravel
				1 --		
2	48	11.3	113.7	2 --	SM	Silty Sand, grayish-brown, moist, very dense, fine grained, some gravel
				3 --		
				4 --		
5	48	6.0	106.9	5 --	SP	Sand, gray, slightly moist, dense, fine grained, some gravel
				6 --		
7	67	10.0	105.8	7 --	SM	Silty Sand, olive-brown, moist, dense, fine grained, some gravel
				8 --		
				9 --		
10	30	8.3	106.9	10 --	SM/SP	Silty Sand to Sand, grayish-brown, moist, dense, fine grained, some gravel
				11 --		
				12 --		
				13 --		
				14 --		
15	36	21.8	97.8	15 --	SP	Sand, grayish-brown, moist, dense, fine grained, some gravel
				16 --	SM	Silty Sand, olive-brown, moist, dense, fine grained, some gravel
				17 --		
				18 --		
				19 --		
20	69	2.6	114.9	20 --	SW	Sand with Gravel, grayish-brown, slightly moist, very dense, fine to coarse grained
				21 --		
				22 --		
				23 --		
				24 --		
25	63	6.0	109.2	25 --	SP	Sand, grayish-brown, slightly moist, dense, fine grained
				26 --	SM	Silty Sand, grayish-brown, slightly moist, dense, fine grained
				27 --		
				28 --		
				29 --		
30	50/6"	3.2	SPT	30 --	SP	Sand, gray, slightly moist, very dense, fine to medium grained, some gravel

BORING LOG NUMBER 1

Project: File No. 18954 **Krismar Construction**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				31 --		
				32 --		
				33 --		
				34 --		
35	75/7"	3.2	128.0	35 --	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained
				36 --		
				37 --		
				38 --		
				39 --		
40	50/6"	3.4	SPT	40 --	SP	Sand, gray, slightly moist, very dense, fine grained, minor gravel
				41 --		
				42 --		
				43 --		
				44 --		
45	22 50/5"	7.8	109.1	45 --	SW	Sand with Gravel, grayish-brown, slightly moist, very dense, fine to coarse grained
				46 --		
				47 --		
				48 --		
				49 --		
50	50/6"	4.2	SPT	50 --		
				51 --		
				52 --		
				53 --		
				54 --		
55	24 50/5"	2.9	114.6	55 --	SP	Sand, gray, slightly moist, very dense, fine grained, some gravel
				56 --		
				57 --		
				58 --		
				59 --		
60	68	2.4	SPT	60 --	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained

BORING LOG NUMBER 1

Project: File No. 18954 **Krismar Construction**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				61		
				62		
				63		
				64		
65	75/7"	3.3	113.8	65		
				66		
				67		
				68		
				69		
70	50/6"	2.2	SPT	70		abundant gravel
				71		
				72		
				73		
				74		
75	69	6.0	113.9	75	SP	Sand, grayish-brown, slightly moist, very dense, fine grained, minor gravel
				76		
				77		
				78		
				79		some cobbles
80	50/6"	4.3	SPT	80		Total depth: 80 feet No Water Fill to 2 feet
				81		
				82		
				83		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual
				84		
				85		For Borings 1 and 2: Used 8-inch diameter Hollow-Stem Auger 140-lb. Slide Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
				86		
				87		SPT=Standard Penetration Test
				88		
				89		
				90		

BORING LOG NUMBER 2

Drilling Date: 07/07/05 | **Elevation: 672.0'***

Project: File No. 18954 | **Krismar Construction**

km

*Based on Topographic Survey provided by Client

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Bare Ground
				0 --		FILL: Silty Sand, gray, slightly moist, medium dense, fine grained
				1 --		
2	72	1.6	117.2	2 --		
				-	SP	Sand, gray, slightly moist, very dense, fine grained, minor gravel
				3 --		
				4 --		
5	21 50/5"	2.6	114.9	5 --		- - - - - - - - - -
				-		more gravel
				6 --		
7	26 50/4"	2.9	113.1	7 --		
				8 --		
				9 --		
10	75/6"	1.7	115.7	10 --		
				-	SM	Silty Sand, gray, slightly moist, very dense, fine grained, gravel
				11 --		
				12 --		
				13 --		
				14 --		
15	68	33.6	88.2	15 --		
				-	ML	Sandy Silt, olive-brown, very moist, firm
				16 --		
				17 --		
				18 --		
				19 --		
20	75/6"	4.3	116.3	20 --		
				-	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained
				21 --		
				22 --		
				23 --		
				24 --		
25	22 50/3"	3.8	111.0	25 --		- - - - - - - - - -
				-		fine to medium grained
				26 --		
				27 --		
				28 --		
				29 --		
30	75/7"	2.1	117.9	30 --		
				-	SP	Sand, gray, slightly moist, very dense, fine grained, minor gravel

BORING LOG NUMBER 2

Project: File No. 18954 **Krismar Construction**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				31 --		
				32 --		
				33 --		
				34 --		
35	28 50/4"	5.3	117.1	35 --	SM	Silty Sand, grayish-brown, slightly moist, very dense, fine grained, minor gravel
				36 --		
				37 --		
				38 --		
				39 --		
40	30 50/2"	3.8	111.2	40 --	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained
				41 --		
				42 --		
				43 --		
				44 --		
45	22 50/5"	2.3	113.8	45 --		
				46 --		
				47 --		
				48 --		
				49 --		
50	68	8.4	107.1	50 --	SM	Silty Sand, olive brown, moist, very dense, fine grained
				51 --		
				52 --		
				53 --		
				54 --		
55	55	12.5	107.7	55 --	ML	Sandy Silt, olive-brown, moist, hard
				56 --		
				57 --		
				58 --		
				59 --		
60	19 50/5"	3.1	114.4	60 --	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained

BORING LOG NUMBER 2

Project: File No. 18954 **Krismar Construction**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				61		
				62		
				63		
				64		
65	75/6"	3.9	112.7	65		
				66		
				67		
				68		
				69		
70	75/6"	4.6	111.2	70		some cobbles
				71		
				72		
				73		
				74		
75	75/7"	4.5	113.3	75	SM	Silty Sand, olive-brown, slightly moist, very dense, fine grained, minor gravel
				76		
				77		
				78		
				79		
80	75/7"	6.8	106.6	80	SP	Sand, olive-brown, moist, very dense, fine grained, minor gravel
				81		Total depth: 80 feet No Water Fill to 2 feet
				82		
				83		
				84		
				85		
				86		
				87		
				88		
				89		
				90		

BORING LOG NUMBER 3

Drilling Date: 07/18/05 | **Elevation: 668.0'***

Project: File No. 18954 | **Krismar Construction**

km

*Based on Topographic Survey provided by Client

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Bare Ground
				0 --		FILL: Silty Sand to Sand, grayish-brown, moist, medium dense, fine grained, minor gravel
				1 --		
				2 --		
				3 --		
				4 --		
5	4/12"	2.8	119.2	5 --		
				-	SW	Sand with Gravel, grayish-brown, slightly moist, dense, fine to coarse grained
				6 --		
				7 --		
				8 --		
				9 --		
10	7/12"	6.9	103.3	10 --		
				-	SP	Sand, gray, slightly moist, very dense, fine grained, some gravel
				11 --		
				12 --		
				13 --		
				14 --		
15	8/12"	3.5	111.6	15 --		
				-	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained, some cobbles and gravel, slight caving
				16 --		
				17 --		
				18 --		
				19 --		
20	6/12"	4.5	120.0	20 --		
				-		grayish-brown
				21 --		
				22 --		
				23 --		
				24 --		
25	4/12"	4.1	106.2	25 --		
				-	SP	Sand, gray, slightly moist, dense, fine grained, some gravel
				26 --		
				27 --		
				28 --		
				29 --		
30	10/12"	6.5	109.1	30 --	SM	Silty Sand, olive-brown, moist, very dense, fine grained, some cobbles and gravel

GEOTECHNOLOGIES, INC.

BORING LOG NUMBER 3

Project: File No. 18954 **Krismar Construction**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				31 --		
				32 --		
				33 --		
				34 --		
35	11/12"	3.0	107.0	35 --		
				36 --	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained
				37 --		
				38 --		
				39 --		
40	12/12"	2.5	110.4	40 --		
				41 --		
				42 --		
				43 --		
				44 --		
45	12/12"	2.0	121.9	45 --		
				46 --		
				47 --		
				48 --		
				49 --		
50	17/12"	2.3	113.2	50 --		
				51 --		Total depth: 50 feet No Water Fill to 5 feet Caving from 30 feet to 50 feet below grade For Borings 3 and 4: Used 24-inch diameter Bucket Auger Sampled with a 2½ diameter California Modified Split-Spoon Sampler Kelley Weights: 0 - 24' = 1590# 25 - 50' = 765#
				52 --		
				53 --		
				54 --		
				55 --		
				56 --		
				57 --		
				58 --		
				59 --		
				60 --		

BORING LOG NUMBER 4

Drilling Date: 07/18/05 | **Elevation: 672.0'***

Project: File No. 18954 | **Krismar Construction**

km

*Based on Topographic Survey provided by Client

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Bare Ground
				0 --		FILL: Silty Sand, gray, brown, moist, medium dense, fine grained, minor gravel, slight caving
				1 --		
				2 --		
				3 --		
				4 --		
5	5/12"	3.2	114.2	5 --		
				-	SW	Sand with Gravel, gray, slightly moist, dense, fine to coarse grained
				6 --		
				7 --		
				8 --		- - - - - - - - - - -
				-		abundant gravel
				9 --		
10	6/12"	9.1	116.8	10 --		
				-	SM	Silty Sand, olive-brown, moist, very dense, minor gravel
				11 --		
				12 --		
				13 --		
				14 --		
15	7/12"	2.6	113.5	15 --		
				-	SW	Sand with Gravel, gray, slightly moist, very dense, fine to coarse grained, slight caving
				16 --		
				17 --		
				18 --		
				19 --		
20	8/12"	3.3	119.9	20 --		
				21 --		
				22 --		
				23 --		
				24 --		
25	8/12"	3.4	116.7	25 --		- - - - - - - - - - -
				-		more gravel, slight caving
				26 --		
				27 --		
				28 --		
				29 --		
30	19/12"	3.0	116.2	30 --		- - - - - - - - - - -
				-		more gravel

BORING LOG NUMBER 4

Project: File No. 18954 **Krismar Construction**

km

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				31		
				32		
				33		
				34		
35	19/12"	3.2	117.4	35		slight caving
				36		
				37		
				38		
				39		
40	27/12"	3.8	122.9	40		some cobbles
				41		
				42		
				43		
				44		
45	33/12"	4.5	122.5	45		slight caving
				46		
				47		
				48		
				49		
50	35/12"	4.5	122.3	50		Total depth: 50 feet No Water Fill to 5 feet Slight Caving 15 to 50 feet
				51		
				52		
				53		
				54		
				55		
				56		
				57		
				58		
				59		
				60		

EXCAVATION LOGS FROM PREVIOUS EXPLORATION BY GEOTECHNOLOGIES, INC. FILE NO. 18771

(6 PAGES)

BORING LOG NUMBER 1

Drilling Date: 11/09/04

Project: File No. 18771 **Krismar Construction**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Barren Ground
				0 --		FILL: Sand to Silty Sand, medium brown, moist, dense, fine grained
				1 --		
				2 --		
				3 --		
				4 --		
5	19 50/4"	3.9	116.0	5 --	SW	Sand with gravel, medium brown, moist, very dense, fine to coarse grained
				6 --		
				7 --		
				8 --		
				9 --		
10	21 50/4"	1.4	SPT	10 --	SP/SM	Sand to Silty Sand, medium brown, moist, very dense, fine to medium grained
				11 --		
				12 --		
				13 --		
				14 --		
15	44	3.9	99.8	15 --	SP	Sand, medium brown, moist, dense, fine grained
				16 --		
				17 --		
				18 --		
				19 --		
20	28	7.1	SPT	20 --		
				21 --		
				22 --		
				23 --		
				24 --		
25	45	5.8	108.8	25 --		
				26 --		
				27 --		
				28 --		
				29 --		
30	66	2.6	SPT	30 --		

BORING LOG NUMBER 1 (continued)

Project: File No. 18771 **Krismar Construction**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				31		
				32		
				33		
				34		
35	68	3.9	114.4	35		cobbles
				36		
				37		
				38		
				39		
40	50/6"	2.8	SPT	40		no cobbles
				41		
				42		
				43		
				44		
45	26 50/3"	3.1	113.6	45		
				46		
				47		
				48		
				49		
50	59	3.5	SPT	50		
				51		
				52		
				53		
				54		
55	18 50/3"	3.1	111.6	55		
				56		
				57		
				58		
				59		
60	72	3.0	SPT	60		

BORING LOG NUMBER 1 (continued)

Project: File No. 18771 **Krismar Construction**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				61		
				62		
				63		
				64		
65	23 50/4"	2.4	117.7	65		
				66		
				67		
				68		
				69		
70	73	9.3	SPT	70		
				71		
				72		
				73		
				74		
75	19 50/4"	3.9	103.8	75		fine grained
				76		
				77		
				78		
				79		
80	50/4"	2.6	SPT	80		fine to coarse grained
				81		Total depth: 80 feet No Water Fill to 5 feet
				82		
				83		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual
				84		
				85		Used 8-inch diameter Hollow-Stem Auger 140-lb. Slide Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
				86		
				87		SPT=Standard Penetration Test
				88		
				89		
				90		

BORING LOG NUMBER 2

Drilling Date: 11/09/04

Project: File No. 18771 | **Krismar Construction**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Barren Ground
				0 --		FILL: Sand with gravel, light brown, moist, dense, fine to coarse grained
				1 --		
				2 --		
				3 --		
				4 --		
5	34	16.2	107.8	5 --		
					SM	Silty Sand, brown, moist, dense, fine grained
				6 --		
				7 --		
				8 --		
				9 --		
10	30	8.0	Disturbed	10 --		
						cobble
				11 --		
				12 --		
				13 --		
				14 --		
15	47	4.5	110.4	15 --		
					SP	Sand, brown, moist, dense, fine to medium grained
				16 --		
				17 --		
				18 --		
				19 --		
20	75/3"	No Recovery		20 --		
				21 --		
				22 --		
				23 --		
				24 --		
25	50/2"	No Recovery		25 --		
				26 --		
				27 --		
				28 --		
				29 --		
30	71	3.2	108.6	30 --		
						fine to medium grained

BORING LOG NUMBER 2 (continued)

Project: File No. 18771 **Krismar Construction**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				31		
				32		
				33		
				34		
35	17 50/4"	2.7	122.1	35		cobbles
				36		
				37		
				38		
				39		
40	75	3.0	113.2	40		fine to coarse grained
				41		
				42		
				43		
				44		
45	22 50/3"	6.2	112.4	45		fine to medium grained
				46		
				47		
				48		
				49		
50	89	2.9	104.4	50		light brown, fine grained
				51		
				52		
				53		
				54		
55	22 50/4"	2.7	113.3	55		fine to medium grained, cobbles
				56		
				57		
				58		
				59		
60	21 50/3"	2.2	115.4	60		

BORING LOG NUMBER 2 (continued)

Project: File No. 18771 **Krismar Construction**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				61		
				62		
				63		
				64		
65	22 50/4"	3.9	101.2	65		fine grained, no cobbles
				66		
				67		
				68		
				69		
70	20 50/4"	5.7	102.3	70		
				71		
				72		
				73		
				74		
75	76	3.2	102.8	75		fine to coarse grained
				76		
				77		
				78		
				79		
80	28 50/4"	2.9	115.8	80		fine to coarse grained
				81		Total depth: 80 feet No Water Fill to 5 feet
				82		
				83		
				84		
				85		
				86		
				87		
				88		
				89		
				90		

Geotechnologies, Inc.
Consulting Geotechnical Engineers

439 Western Avenue
Glendale, California 91201-2837
818.240.9600 • Fax 818.240.9675

December 2, 2020
File No. 21947

AWH Partners
1040 Avenue of the Americas
9th Floor
New York, New York 10018

Attention: Timothy Osiecki

Subject: Addendum to Preliminary Geotechnical Assessment
Proposed Hotel and Parking Structure
2500 North Hollywood Way, Burbank, California

Reference: *Report by Geotechnologies, Inc.*:
Preliminary Geotechnical Assessment, dated February 21, 2020.

Document by Leighton Consulting, Inc.:
Geotechnical Peer Review, Project Number 12937.001, dated November 19, 2020.

Dear Mr. Osiecki:

INTRODUCTION

This addendum has been prepared after review of the referenced Geotechnical Peer Review. Therein the review found the Preliminary Geotechnical assessment, prepared by this office to be "adequate". However, one issue was noted which the peer reviewer recommended clarification. A typographical error appeared on Page 3 in the Groundwater section of the referenced February 21, 2020 report. That typographical error appeared in a table showing the highest and lowest readings from a nearby water well. Below the correct elevations from the groundwater records are noted in the table.

GROUNDWATER

GROUNDWATER MONITORING WELL SUMMARY			
Well Station	**Ground Surface Elevation**	**Highest Rec. Water Surface Elevation**	**Lowest Rec. Water Surface Elevation**
341864N1183612W001	661.4 feet	101.63 feet on 4/1/1952	406.1 feet on 10/3/2017

Due to the proximity of the monitoring well to the subject site and the uniform geologic conditions within the region, it is the opinion of this firm that the data readings are representative of the groundwater levels underlying the site. The highest recorded water elevation corresponds to approximately 110 feet below the ground surface at the subject site. Based on these considerations, it is the opinion of this firm that the historic high-water level indicated in the Seismic Hazard Zone Report (CDMG, 1998, Revised 2006) is a conservative estimate of historic high and future water levels anticipated within the site.

CLOSURE

The peer reviewer noted that the typographical error was "not a significant impact". This office agrees with that assessment. Groundwater is very deep and should be of no consequence to the proposed development as it is currently understood. All other geotechnical aspects of the proposed development addressed in the referenced report by this office remain applicable. A comprehensive geotechnical investigation including subsurface exploration and laboratory testing should be prepared for design input.

Geotechnologies, Inc. appreciates the opportunity to provide our services on this project. Should you have any questions, please contact this office.

Respectfully submitted,
GEOTECHNOLOGIES, INC.

REGISTERED PROFESSIONAL ENGINEER
EDWARD F. HILL
No. 2126
Exp. 6/30/20
GEOTECHNICAL
STATE OF CALIFORNIA

EDWARD F. HILL
G.E. 2126

STP/EFH:dy

Distribution: (4) Addressee

Email to: [tosiecki@awhpartners.com], Attn: Timothy Osiecki

Geotechnologies, Inc.
Consulting Geotechnical Engineers

439 Western Avenue
Glendale, California 91201-2837
818.240.9600 • Fax 818.240.9675

September 22, 2023
File No. 21947

AWH Partners
1040 Avenue of the Americas
9th Floor
New York, New York, 10018

Attention: Timothy Osiecki

Subject: Update of Geotechnical Engineering Investigation
2500 North Hollywood Way, Burbank, California

References: *Reports by Geotechnologies, Inc.:*
Geotechnical Engineering Investigation, dated February 21, 2020;
Addendum, dated December 2, 2020.

INTRODUCTION

This letter has been prepared at the request of the design team. It is the understanding of this office that changes have been made to the design of the project. At the time the referenced geotechnical engineering investigation was prepared the proposed project consisted of a seven-story hotel and a four-story parking structure. Both structures were to be built at existing site grades.

The current proposed project consists of a seven-story hotel and a four-story parking structure. The hotel and parking structure are about the same size and shape as that addressed by this office in 2020. The pool has been removed from the roof of the hotel and is planned at site grade.

It is the opinion of this office that the changes in design do not affect the geotechnical data presented in the referenced reports. Since the building code has changed in the intervening years, updated seismic parameters have been included herein.

SEISMIC DESIGN CONSIDERATIONS

Based on information derived from the subsurface investigation, the subject site is classified as Site Class D, which corresponds to a “Stiff Soil” Profile, according to Table 20.3-1 of ASCE 7-16. This information and the site coordinates were input into the OSHPD seismic utility program in order to calculate ground motion parameters for the site.

CALIFORNIA BUILDING CODE SEISMIC PARAMETERS	
California Building Code	2022
ASCE Design Standard	7-16
Risk Category	II
Site Class	D
Mapped Spectral Acceleration at Short Periods (S_S)	1.990g
Site Coefficient (F_a)	1.0
Maximum Considered Earthquake Spectral Response for Short Periods (S_{MS})	1.990g
Five-Percent Damped Design Spectral Response Acceleration at Short Periods (S_{DS})	1.327g
Mapped Spectral Acceleration at One-Second Period (S_1)	0.677g
Site Coefficient (F_v)	1.7*
Maximum Considered Earthquake Spectral Response for One-Second Period (S_{M1})	1.132g*
Five-Percent Damped Design Spectral Response Acceleration for One-Second Period (S_{D1})	0.755g*

** According to ASCE 7-16, a Long Period Site Coefficient (F_v) of 1.7 may be utilized provided that the value of the Seismic Response Coefficient (C_s) is determined by Equation 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Equation 12.8-3 for $T_L \geq T > 1.5T_s$ or equation 12.8-4 for $T > T_L$. Alternatively, a site-specific ground motion hazard analysis may be performed in accordance with ASCE 7-16 Section 21.1 and/or a ground motion hazard analysis in accordance with ASCE 7-16 Section 21.2 to determine ground motions for any structure.*

CLOSURE

Geotechnologies, Inc. appreciates the opportunity to provide our services on this project. Should you have any questions please contact this office.

Respectfully Submitted,
GEOTECHNOLOGIES, INC.

EDWARD F. HILL
G.E. 2126

EFH:km

Email to: dominicd@archdim.com