APPENDIX B

Geotechnical Investigation

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September 30, 2015

Canyon Springs Marketplace Corporation
c/o TDA Investment Group
2025 Pioneer Court
San Mateo, California 94403
Attention: Ms. Paula Purcell

Job No. 14444-3

Dear Ms. Paula Purcell:

This letter transmits six copies of our Feasibility-level Geotechnical Investigation report for the proposed Canyon Springs Healthcare Center in the City of Riverside, California.

We appreciate this opportunity to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
CHJ CONSULTANTS

Maihan Noorzay, P.E.
Project Engineer

MN:lb

Distribution: Canyon Springs Marketplace Corporation - (6 and electronic)

**FEASIBILITY-LEVEL
GEOTECHNICAL INVESTIGATION
PROPOSED CANYON SPRINGS
HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA
PREPARED FOR
CANYON SPRINGS
MARKETPLACE CORPORATION
JOB NO. 14444-3**

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September 30, 2015

Canyon Springs Marketplace Corporation
c/o TDA Investment Group
2025 Pioneer Court
San Mateo, California 94403
Attention: Ms. Paula Purcell

Job No. 14444-3

Dear Ms. Purcell:

Attached herewith is the Feasibility-level Geotechnical Investigation report, prepared for the proposed Canyon Springs Healthcare Center to be located in the City of Riverside, California.

This report is based upon a scope of services generally outlined in our revised proposal dated May 13, 2014, and other written and verbal communications. We previously performed an infiltration investigation for the site and presented the results in a report dated July 9, 2014.

We appreciate this opportunity to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
CHJ CONSULTANTS

Maihan Noorzay, P.E.
Project Engineer

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PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA
PREPARED FOR
CANYON SPRINGS MARKETPLACE CORPORATION
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INTRODUCTION

During June and July of 2015, a feasibility-level geotechnical investigation was performed by this firm for the proposed Canyon Springs Healthcare Center to be located in the city of Riverside, California. The project includes a hospital and central plant, medical office buildings (MOBs) and parking structures (PSs), a senior housing complex, skilled nursing facility and assisted/independent living facilities. The purposes of this investigation were to explore and evaluate the geotechnical/geological conditions at the subject site and to determine the feasibility of the project from a geotechnical standpoint.

It should be noted that the geotechnical investigation performed for this report is a feasibility-level study and as such is limited in the field and laboratory testing performed. A more detailed geotechnical investigation will be required prior to design. The geology investigation performed for this report is intended to be in compliance with the 2013 California Building Code (CBC). Additional geological information may be required in order to comply with Office of Statewide Health Planning and Development (OSHPD) and California Geological Survey (CGS) Note 48.

The approximate location of the site is shown on the Index Map (Enclosure "A-1"). To orient our investigation at the site, an undated site plan, prepared by HGA, was furnished for our use. The site plan showed a proposed development scheme and is used as a base map for our Site Plan (Enclosure "A-2"). Aerial imagery of the area was also utilized to orient our investigation.

The results of our investigation, together with our conclusions, are presented in this report.

PROJECT CONSIDERATIONS

Based on our review of the site plan, the project consists of three general building areas, the hospital, five MOBs and two parking structures located between Valley Springs Parkway and Day Street south of Gateway Drive, the senior housing complex located southeast of Riveridge Drive and Valley Springs Parkway, and the skilled nursing/assisted living complex located northeast of Canyon Park Drive and Gateway Drive. Single- and multi-story structures of steel and/or wood frame construction are generally associated with this proposed project type. We anticipate that the buildings may be supported by shallow spread footings and concrete slabs-on-grade.

Project grading plans and planned structure elevations were not available at the time of our investigation. The site is relatively level; therefore significant grade changes are not anticipated. The final project grading plan and foundation plans should be reviewed by the geotechnical engineer.

SCOPE OF SERVICES

The scope of services provided during this geotechnical investigation included the following:

- Review of published and unpublished geologic literature, maps and prior pertinent geotechnical/geologic reports prepared by CHJ and others
- Examination of aerial photographs flown between 1948 and 2014
- Field reconnaissance of the site and surrounding area
- Marking of exploration locations in the field and notification of Underground Service Alert
- Placement of 10 exploratory borings within the anticipated building areas
- Logging and sampling of the exploratory borings for testing and evaluation
- Laboratory testing on selected samples

- Evaluation of geologic and geotechnical data including:
    - Geologic hazards potential (faulting, seismicity, landslides)
    - Liquefaction potential
    - Seismic settlement and seismic differential settlement
    - Expansive soil potential
- Seismic design parameters according to the 2013 CBC
- Determination of the feasibility of the project from a geotechnical/geological standpoint.
- Preparation of this report summarizing our findings and professional opinions for the geotechnical aspects of project

SITE DESCRIPTION

The proposed healthcare center is to be located within a partially developed area with existing street improvements and commercial/office-type buildings. A Moreno Valley school campus is located south of the proposed MOB/PS area. The site topography is relatively level and the three general construction areas consist of undeveloped open land covered by a growth of annual grasses. Existing improvements along the perimeter of building sites include parkway landscaping with trees and street lighting. The greater site area is bounded by Day Street on the east, Eucalyptus Avenue on the south, Valley Spring Parkway on the west, and Riveridge Drive/Campus Parkway on the north. A dirt road attributed to the "inland feeder" pipeline was observed traversing the northeast portions of the proposed skilled nursing, independent living and senior housing building areas.

As part of this investigation, aerial imagery from 1948 to 2014 was examined for past land usage and evidence of geotechnical hazards. In the 1948 photographs, the site appears as undeveloped, sparsely vegetated, open land. Bedrock joints are evident as lineaments northwest of the site. State Route 60 and U.S. Highway 395 are present north and west of the site. The site appears undeveloped in 1962 with the exception of a disked area in the central project area and a possible fill mound west of the school site in the area of the proposed MOBs 3 and 4 and PS 1. Disturbed ground in the alignment of the inland feeder pipeline is visible in imagery dated 1974. Backfill from the pipeline is in proximity to the northeast portions of the proposed skilled nursing, independent living and senior housing building areas. Subsequent imagery beginning in 1984 shows the site as disked until 1990 with the site area developed with streets and parkways. Grading for the existing building located north of the proposed hospital building is visible in imagery dated 1994 and 1995. Subsequent imagery depicts the site in a similar condition as that observed during our investigation.

No evidence of faulting or recent flooding was observed on the site in the aerial imagery.

FIELD INVESTIGATION

The soil conditions underlying the subject site were explored by means of 10 exploratory borings drilled to a maximum depth of 51-1/2 feet below the existing ground surface (bgs) with a truck-mounted CME 75 drill rig equipped for soil sampling. The approximate locations of our exploratory borings are indicated on the attached plan (Enclosure "A-2").

Continuous logs of the subsurface conditions, as encountered within the exploratory borings, were recorded at the time of drilling by a staff geologist from this firm. Both a ring sampler (3-1/4-inch outer diameter and 2-3/8-inch inner diameter) and a standard penetration test (SPT) sampler (2-inch outer diameter and 1-3/8-inch inner diameter) were utilized in our investigation. The penetration resistance was recorded on the boring logs as the number of hammer blows used to advance the sampler in 6-inch increments (or less if noted). The sampler was driven with an automatic hammer that drops a 140-pound weight 30 inches for each blow. After the required seating, the sampler was advanced up to 18 inches, providing a set of up to three blowcounts at each sampling interval. The recorded blows are raw numbers without corrections for hammer type (automatic vs. manual cathead) or sampler size (ring sampler vs. SPT sampler). Both relatively undisturbed and bulk samples of typical soil types obtained were returned to the laboratory in sealed containers for testing and evaluation.

Our exploratory boring logs, together with our uncorrected blowcount data and in-place density data, are presented in Appendix "B". The stratification lines presented on the exploratory boring logs represent approximate boundaries between soil types, which may include gradual transitions.

LABORATORY INVESTIGATION

Included in our laboratory testing program were field moisture content tests on all samples returned to the laboratory and field dry density tests on all relatively undisturbed samples. The results are included on the exploratory boring logs. No. 200 washes were performed on selected samples of soil for classification purposes.

Laboratory test results appear in Appendix "C". Soil classifications provided in our geotechnical investigation are in general accordance with the Unified Soil Classification System (USCS).

SITE GEOLOGY AND SUBSURFACE SOIL CONDITIONS

The site is located on the Perris Block, a portion of the Peninsular Ranges Geomorphic Province. The Perris Block is a fault-bounded region of relative tectonic stability composed of crystalline bedrock of the Southern California Batholith that is thinly and discontinuously mantled by sedimentary material. Several geomorphic surfaces that represent former, local, erosional/depositional base levels are documented for the Perris Block. The site lies in the northern portion of the Perris Block in an area of relatively low-lying Pleistocene-age and Holocene-age alluvium adjacent to elevated bedrock hills.

The site of the proposed Healthcare Center is situated on a relatively flat-lying, slightly dissected land surface formed in very old alluvial fan sediments. These sediments are depicted as early Pleistocene age by Morton and Cox (2001) as shown on Enclosure "A-3".

As encountered in our explorations, the site is mantled by disturbed native soils to depths from 6 to 18 inches and locally by fill to depths of 3 to 5 feet bgs. The fill, which was encountered in Boring Nos. 4, 5, 7 and 9 (south of Gateway Drive), consists of clayey sand (SC) underlain by native alluvium that is generally medium dense to very dense. Loose, clayey, silty sand (SM-SC) was encountered in Exploratory Boring No. 4 at a depth of 5 feet bgs. The alluvium is comprised of fine- to coarse-grained clayey, silty sand (SM-SC) to silty sand (SM). Enclosure "A-3", Geologic Index Map, depicts the surface geologic conditions in the area of the project.

Bedrock was not encountered in our exploratory borings to the maximum depth attained (51-1/2 feet). Refusal to further advancement of the drilling augers was not experienced. Groundwater was encountered at depths of approximately 48 feet and 40 feet in Boring Nos. 1 and 4, respectively.

Significant caving of the bore holes was not observed upon removal of the augers.

More detailed descriptions of the subsurface soil conditions encountered are presented on the attached boring logs (Appendix "B").

FAULTING

The site does not lie within or immediately adjacent to an Alquist-Priolo Earthquake Fault Zone designated by the State of California to include traces of suspected active faulting. No active faults are shown on or in the immediate vicinity of the site on published geologic maps, nor was evidence for active faulting on or immediately adjacent to the site observed during the geologic field reconnaissance or on the aerial imagery reviewed.

The tectonics of the Southern California area are dominated by the interaction of the North American Plate and the Pacific Plate, which are sliding past each other in a translational manner. Although some of the motion may be accommodated by rotation of crustal blocks such as the western Transverse Ranges (Dickinson, 1996), the San Andreas fault zone is thought to represent the major surface expression of the tectonic boundary and to be accommodating most of the translational motion between the Pacific Plate and the North American Plate. However, some of the plate motion is apparently also accommodated by other northwest-trending strike-slip faults that are thought to be related to the San Andreas system, such as the San Jacinto fault and the Elsinore fault. Local compressional or extensional strain resulting from the translational motion along this boundary is accommodated by left-lateral, reverse and normal faults, such as the Cucamonga fault, the Crafton Hills fault zone and the blind thrust faults of the Los Angeles Basin (Matti and others, 1992; Morton and Matti, 1993).

SAN JACINTO FAULT ZONE:

The San Jacinto Valley segment of the San Jacinto fault zone, a system of northwest-trending, right-lateral strike-slip faults is located approximately 6 miles northeast of the site. The San Jacinto fault is the closest known active fault to the site and is considered to be the dominant fault to the site with respect to the hazard of seismic shaking. Traces of the San Jacinto fault zone are included in State-designated earthquake fault zones.

LOMA LINDA FAULT:

The Loma Linda fault is located approximately 7-1/2 miles north-northwest of the site (Morton and Miller, 2006). The Loma Linda fault displaces the Plio-Pleistocene San Timoteo formation south of the city of Loma Linda and has been traced along a northwest trend by magnetic and seismic evidence (Fife and others, 1976). The elevated topography of Loma Linda Hill in relation to surrounding areas is apparently the result of ancient movement along this fault. North of Loma Linda, this fault forms a partial barrier to groundwater movement, but it is overlain by more than 100 feet of unfaulted alluvial sediments (Dutcher and Garrett, 1963; Hart, 1976). The Loma Linda fault was formerly included in an Alquist-Priolo Zone; however, subsequent investigations indicated no evidence of Holocene rupture of the fault. The Loma Linda fault is not considered a significant seismic or ground rupture hazard.

RIALTO-COLTON FAULT:

The Rialto-Colton fault/groundwater barrier is depicted by U.S. Geological Survey, based on Treiman and Lundberg (1999), as a northwest-trending structure located approximately 6 miles north of the site. Additional depictions of the Rialto-Colton fault that approximate the location depicted by U.S. Geological Survey include Morton and Miller (2006), Woolfenden and Kadhim (1997), Hart (1976) and Morton (1974).

Gravity data interpreted by Andersen and others (2000) depict the trend of the Rialto-Colton fault as an 8-mile-long, 1/2-mile-wide gravity anomaly trending northwest from the San Jacinto fault zone to San Sevaine Canyon at the foot of the San Gabriel Mountains. Catchings and others (2008) interpreted vertical offset in basement rocks near the projected surface trace of the Rialto-Colton fault and thus consider this fault, rather than the San Jacinto fault, to represent the southwest margin of the San Bernardino Valley structural basin. They also interpret faults of the San Bernardino Valley—including the Rialto-Colton fault—as having multiple parallel strands. Treiman and Lundberg (1999) state that the Rialto-Colton fault has no recognized geomorphic expression and is known principally as a groundwater barrier. Trenching studies along the trend of the Rialto-Colton fault revealed 6 feet of unfaulted Pleistocene-age sediments overlying a buried fault trace. The Rialto-Colton fault is not considered a significant seismic or ground rupture hazard.

SAN ANDREAS FAULT ZONE:

The San Andreas fault zone is located along the southwest margin of the San Bernardino Mountains, approximately 15 miles northeast of the site. The mountain front in the San Bernardino area roughly demarcates the presently active trace of the San Andreas fault, which is characterized by youthful fault scarps, aligned vegetation, springs and offset drainages. The southern San Andreas fault zone is divided into 10 segments for purposes of seismic hazard modeling. Petersen et al. (2008) postulate a characteristic earthquake magnitude 7.2 for the combined northern and southern San Bernardino segments of the San Andreas fault zone. Scenario earthquakes of magnitude 8.0 are postulated for ruptures that include all 10 segments of the southern San Andreas fault zone.

FAULTS IN SAN BERNARDINO VALLEY:

Several short fault splays defined by trenching studies for the Interstate 215/State Route 210 interchange and analysis of regional photographic lineaments and seismicity were reported by Schell (2008) at a location approximately 15 miles north of the site. These features are postulated to be a portion of an active fault zone that extends southeastward from the San Gabriel Mountains into the San Bernardino Valley along a trend located between and sub-parallel to the San Andreas and San Jacinto faults. Based on length/magnitude relations, this structure is estimated to produce magnitude 6 to 6.75 earthquakes (Schell, 2008).

ELSINORE FAULT ZONE:

The Glen Ivy segment of the Elsinore fault zone is located approximately 16 miles southwest of the site. The Elsinore fault zone is composed of multiple en echelon and diverging fault traces and splays into the Whittier and Chino faults to the north. In addition to being a zone of overall right-lateral deformation consistent with the regional plate tectonics, traces of the Elsinore fault zone form the graben of the Elsinore and Temecula Valleys. Holocene surface rupture events have been documented for several principal strands of the Elsinore fault zone (Saul, 1978; Rockwell and others, 1986; Wills, 1988).

HISTORICAL EARTHQUAKES

A map of recorded earthquake epicenters is included as Enclosure "A-4" (Epi Software, 2000). This map includes a database of earthquakes with magnitudes of 4.0 or greater from 1932 through 2013.

The Working Group on California Earthquake Probabilities (1988) lists seven magnitude 6.0 or greater earthquakes that have occurred on the San Jacinto fault since 1899, although they acknowledge that several of these earlier episodes may have occurred on other nearby faults. Two of these earthquakes took place in the San Bernardino Valley. A magnitude 6.5 event in 1899 near Lytle Creek and a magnitude 6.2 event in 1923 near Loma Linda may have occurred on the San Jacinto fault. However, Fife and others (1976) and Matti and Carson (1991) suggest that the 1923 event took place on an unnamed fault parallel to and east of the San Jacinto fault.

The San Andreas fault, divided into several named segments based on geometry and characteristic slip/recurrence, is the most rapidly slipping fault and the only postulated source of magnitude 8 earthquakes in southern California (Weldon and others - WGCEP 2, 2008). No large earthquakes have occurred on the San Bernardino Mountains segment of the San Andreas fault within the regional historical time frame. Using dendrochronological evidence, Jacoby and others (1987) inferred that a great earthquake on December 8, 1812, ruptured the northern reaches of this segment. Recent trenching studies have revealed evidence of rupture on the San Andreas fault at Wrightwood within the frame of the postulated 1812 event (Fumal and others, 1993). Comparison of rupture events at the Wrightwood and Pallett Creek sites and analysis of reported intensities at the coastal missions led Fumal and others (1993) to conclude that the December 8, 1812, event ruptured the San Bernardino Mountains segment of the San Andreas fault largely to the southeast of Wrightwood and possibly into the San Bernardino Valley. The average recurrence interval for large earthquakes along the southern San Andreas fault at six paleoseismic sites is 182 years (Stone and others, 2005).

Surface rupture occurred on the Mojave segment of the San Andreas fault in the great 1857 Fort Tejon earthquake. The Coachella Valley segment of the San Andreas fault was the locus of the 1948 magnitude 6.5 earthquake in the Desert Hot Springs area and for the 1986 magnitude 5.6 earthquake in the North Palm Springs area.

No significant historical earthquakes have been specifically attributed to the Cucamonga fault. The following table summarizes the historic seismic events in the region.

Summary of Historic Seismicity				
Event ID	**Date**	**Magnitude**	**Distance from Site (miles)**	**Direction from Site**
Whittier Narrows	10/1/1987	5.9	47	W
Upland	2/28/1990	5.4	29	NW
Sierra Madre	6/28/1991	5.8	47	NW
Landers	6/28/1992	7.3	52	NE
Big Bear	6/28/1992	6.4	32	NE
Northridge	1/17/1994	6.7	75	NW
Hector Mine	10/16/1999	7.1	75	NE
Yucaipa (14155260*)	6/16/2005	4.9	14	NE
Chino Hills	7/29/2008	5.4	27	W

* SCSN earthquake catalog

SEISMIC DESIGN PARAMETERS

Based on the geologic setting and anticipated earthwork for construction of the proposed project, the soils underlying the site are classified as Site Class "D", according to the 2013 CBC and ASCE 7-10. The design acceleration parameters are summarized in the following table.

Seismic Design Parameters	
Mapped Spectral Acceleration Parameters	$S_s = 1.50$ and $S_1 = 0.61$
Site Coefficients	$F_a = 1.0$ and $F_v = 1.5$
Adjusted Maximum Considered Earthquake Spectral Response Parameters	$S_{MS} = 1.50$ and $S_{M1} = 0.91$
Design Spectral Acceleration Parameters	$S_{DS} = 1.0$ and $S_{D1} = 0.61$

The value of peak ground acceleration (PGA_M) from the mapped geometric mean maximum considered earthquake (MCE) is 0.56g. Based on the design spectral acceleration parameters and ASCE 7-10, the project is considered Seismic Design Category "D".

GROUNDWATER

The site is located in Section 3 of Township 3 South, Range 4 West, in the San Jacinto Groundwater Basin. Depth to groundwater data in the vicinity of the site is available from the Western Municipal Water District - Cooperative Well Program (2014) and State of California GeoTracker (2015). Groundwater data are summarized in the following table.

Summary of Groundwater Data

Well No./ID	Date Measured	Depth to Water (feet)	Approximate Water Surface Elevation (feet)	Location of Well/Boring
3S/4W-3D (MW-1)	4-5-2005	27.46	1,471	1/2 mile NW
	10-1-2004	30.28	1,468	
3S/4W-3D (MW-2)	11-3-2005	36.76	1,455	
	10-1-2004	35.71	1,456	
3S/4W-3H (MW-1)	1-28-2008	10.7	1,587	1/2 mile NE
	10-20-2004	11.5	1,586	
3S/4W-3H (MW-6)	1-28-2008	9.7	1,585	
	5-5-2005	7.5	1,587	
6287 Day Street	11-2002	5	--	0.1 mile NE
6189 Day Street	1-2008	9.5	--	0.2 mile NE

Groundwater was encountered at depths of approximately 48 feet and 40 feet in Boring Nos. 1 and 4, respectively. Based on available groundwater data, a historic high groundwater of 5 feet bgs is estimated for the project. Groundwater levels in the Perris/Moreno Valley area show a rising trend since the 1990s. Excavations within the March Air Reserve Base, located approximately 1-1/2 miles to the south, have encountered shallow groundwater. However, based on groundwater conditions encountered in the current borings, we do not anticipate groundwater within shallow excavations at the site.

LIQUEFACTION POTENTIAL AND SEISMIC SETTLEMENT

According to the County of Riverside (2015) and City of Riverside (2004), the site is located within an area identified as having a "low" potential for liquefaction.

Liquefaction is a process in which strong ground shaking causes saturated soils to lose their strength and behave as a fluid (Matti and Carson, 1991). Ground failure associated with liquefaction can result in severe damage to structures. Soil types susceptible to liquefaction include sand, silty sand, sandy silt and silt, as well as soils having a plasticity index (PI) less than 7 (Boulanger and Idriss, 2008). Loose soils with a PI less than 12 and moisture content greater than 85 percent of the liquid limit are also susceptible to liquefaction (Bray and Sancio, 2006). For sandy soils, the geologic conditions for increased susceptibility to liquefaction are: 1) shallow groundwater (generally less than 50 feet in depth), 2) the presence of unconsolidated sandy alluvium, typically Holocene in age, and 3) strong ground shaking. All three of these conditions must be present for liquefaction to occur. Based on the generally dense nature of the native soils underlying the site, potential for liquefaction at the site is considered low.

Seismic-induced settlement includes settlement that occurs both in dry sands and saturated sands (California Geological Survey, 2008). Severe seismic shaking may cause dry sands to densify, resulting in settlement expressed at the ground surface. Seismic settlement in dry soils generally occurs in loose sands and silty sands, with cohesive and fine-grained soils being less prone to significant settlement. For saturated soils, significant settlement is anticipated if the soils exhibit liquefaction during seismic shaking.

Research related to the estimation of dry sand settlement during earthquake excitation was initiated in the early 1970s by Silver and Seed (1971), followed by the works of several researchers (Seed and Silver, 1972; Pyke et al., 1975; Tokimatsu and Seed, 1987; and Pradel, 1998). A simplified method of evaluating earthquake-induced settlement in dry, sandy soils based on the Tokimatsu and Seed procedure has been developed by Pradel (1998) and is recommended by Martin and Lew (1999) as one of the standard methods for the estimation of earthquake-induced settlement of dry sands in California. These methods generally utilize SPT data that were incorporated into a liquefaction and seismic settlement program, GeoSuite, version 2.3 (Yi, 2015).

Seismic settlement was estimated for the soil profile encountered in Exploratory Boring No. 4. Our analysis indicates total seismic settlement of approximately 1/2 inch may be encountered. Differential seismic settlement is anticipated to be approximately half the total seismic settlement.

SLOPE STABILITY AND LANDSLIDE POTENTIAL

The relatively flat-lying topography of the site precludes the potential for slope instability or landslides. Temporary slopes for construction should be managed according to applicable safety and building regulations. The soils on-site are considered Type "C" with regard to CAL OSHA excavation standards. The potential for landsliding or lateral spreading is considered very low.

FLOODING

No evidence of recent flooding of the site or surrounding area was observed during the geologic mapping or on the aerial photographs reviewed. The site is located in an area designated by FEMA (2008) as "Zone X", an area with minimal flood hazard. An evaluation of the hazard of flooding to the site and the adequacy of existing flood control measures near the site falls outside the purview of this firm.

No large surface water storage facilities are known to exist within the area of the site; therefore, the potential for seismically induced dam failure or seiche to affect the site appears low. The site is not located within a coastal area; therefore, tsunami is not a potential hazard to the site. A large-diameter water pipeline is located in the subsurface along the northeast margin of the proposed development area. This pipeline is managed by Metropolitan Water District of southern California.

SUBSIDENCE POTENTIAL

The site is located within an area identified as having a potential for subsidence (County of Riverside, 2015); however, subsidence is not documented in the site area. The site is underlain at relatively shallow depths by dense older alluvium. These materials and underlying granitic bedrock are not considered susceptible to subsidence effects. The potential for regional subsidence effects at the site is considered very low.

EXPANSIVE SOILS

Materials encountered during this investigation included silty and clayey sands (SM, SM-SC, SC). We anticipate that these materials may have expansive properties. An evaluation of the expansive potential of the site soils was beyond the scope of this study and should be performed during the site-specific geotechnical investigation.

CONCLUSIONS

On the basis of our research and field and laboratory investigations, it is the opinion of this firm that design and construction of the proposed multi-story office, hospital and parking structures are feasible from a geotechnical standpoint. It should be emphasized that the geotechnical investigation performed for this report is a feasibility level study and as such is limited in the field and laboratory testing performed. A more detailed geotechnical investigation will be required prior to design. The geology investigation performed for this report is intended to be in compliance with the 2013 CBC. Additional geological information may be required in order to comply with Office of Statewide Health Planning and Development and California Geological Survey Note 48.

The presence of the inland feeder pipeline should be considered during design and construction of the project.

Fill was encountered locally to a maximum depth of 5 feet bgs. Bedrock was not encountered in any of the exploratory borings. Refusal was not encountered by the drilling auger.

No evidence of active faulting was observed on or adjacent to the site. The site does not lie within or immediately adjacent to an Alquist-Priolo Earthquake Fault Zone designated by the State of California to include traces of suspected active faulting.

Moderate to severe seismic shaking of the site can be expected during the lifetime of the proposed project.

Groundwater was encountered within Boring Nos. 1 and 4 at depths of approximately 48 and 40 feet bgs, respectively. Based on available groundwater data, a historic high groundwater of 5 feet bgs is estimated for the project.

Based on the relative density exhibited by the underlying granular soils (below projected groundwater), liquefaction potential of the site is low. Maximum seismic-induced settlement of approximately 1/2 inch is anticipated. The maximum differential seismic-induced settlement is estimated to be approximately half the total seismic settlement.

The relatively flat-lying topography of the site precludes the potential for slope instability or landslides.

No evidence of recent significant flooding of the site was observed during the geologic field reconnaissance or on the aerial photographs reviewed.

The potential for regional subsidence effects at the site is considered very low.

As clayey soils were encountered during our investigation, the expansive potential of the soil should be evaluated during the site-specific investigation.

LIMITATIONS

CHJ Consultants has striven to perform our services within the limits prescribed by our client, and in a manner consistent with the usual thoroughness and competence of reputable geotechnical engineers and engineering geologists practicing under similar circumstances. No other representation, express or implied, and no warranty or guarantee is included or intended by virtue of the services performed or reports, opinion, documents, or otherwise supplied.

This report reflects the testing conducted on the site as the site existed during the investigation, which is the subject of this report. However, changes in the conditions of a property can occur with the passage of time, due to natural processes or the works of man on this or adjacent properties. Changes in applicable or appropriate standards may also occur whether as a result of legislation, application or the broadening of knowledge. Therefore, this report is indicative of only those conditions tested at the time of the subject investigation, and the findings of this report may be invalidated fully or partially by changes outside of the control of CHJ Consultants. This report is therefore subject to review and should not be relied upon after a period of one year.

The conclusions in this report are based upon observations performed and data collected at separate locations, and interpolation between these locations, carried out for the project and the scope of services described. It is assumed and expected that the conditions between locations observed and/or sampled are similar to those encountered at the individual locations where observation and sampling was performed. However, conditions between these locations may vary significantly. Should conditions that appear different from those described herein be encountered in the field, by the client or any firm performing services for the client or the client's assign, this firm should be contacted immediately in order that we might evaluate their effect.

If this report or portions thereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for information only and should be used as such.

The report and its contents resulting from this investigation are not intended or represented to be suitable for reuse on extensions or modifications of the project, or for use on any other project.

CLOSURE

We appreciate this opportunity to be of service and trust this report provides the information desired at this time. Should questions arise, please do not hesitate to contact this firm at your convenience.

Respectfully submitted,
CHJ CONSULTANTS

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Vice President

Robert J. Johnson, P.E.
President

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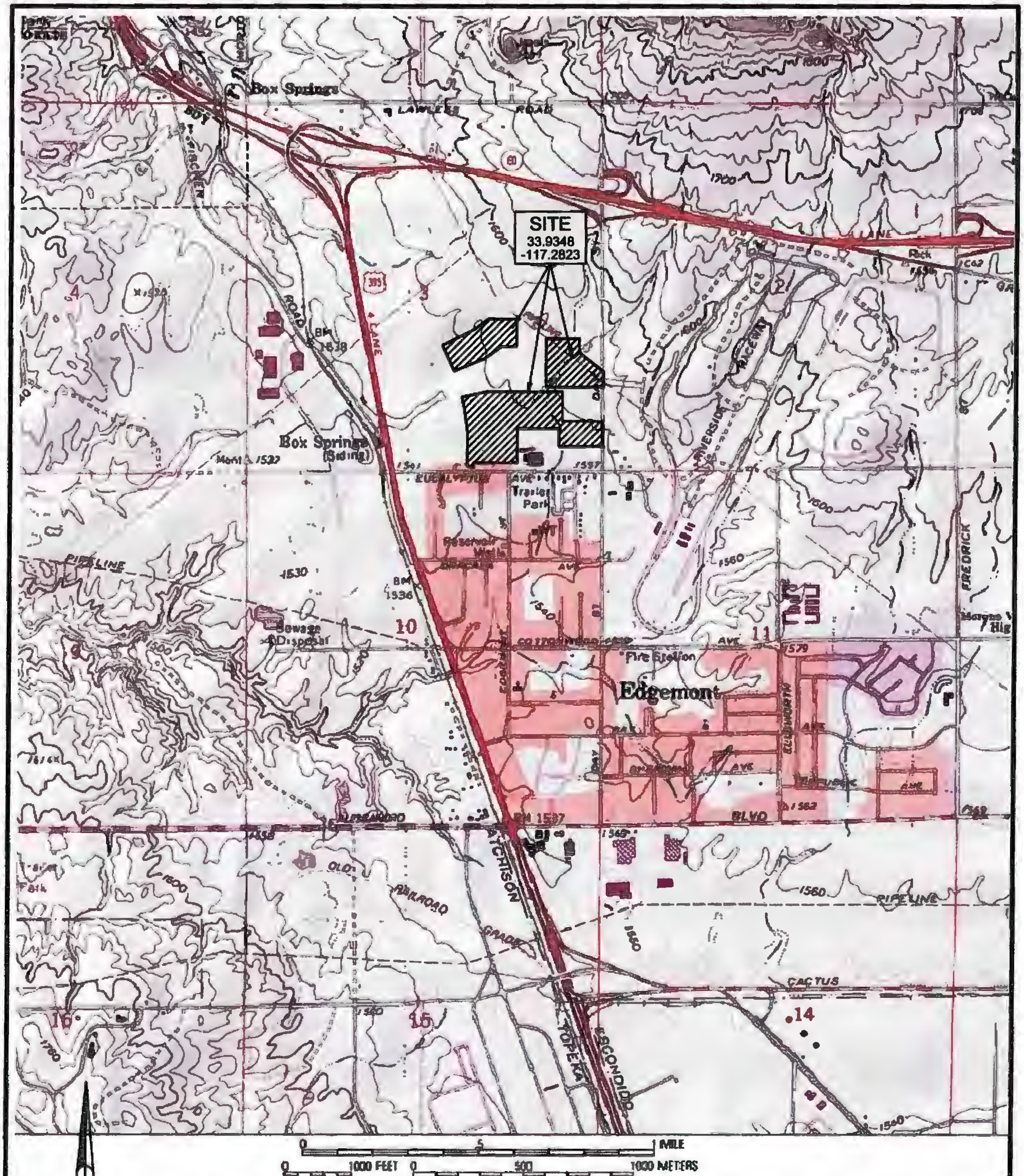
APPENDIX "A"

GEOTECHNICAL MAPS



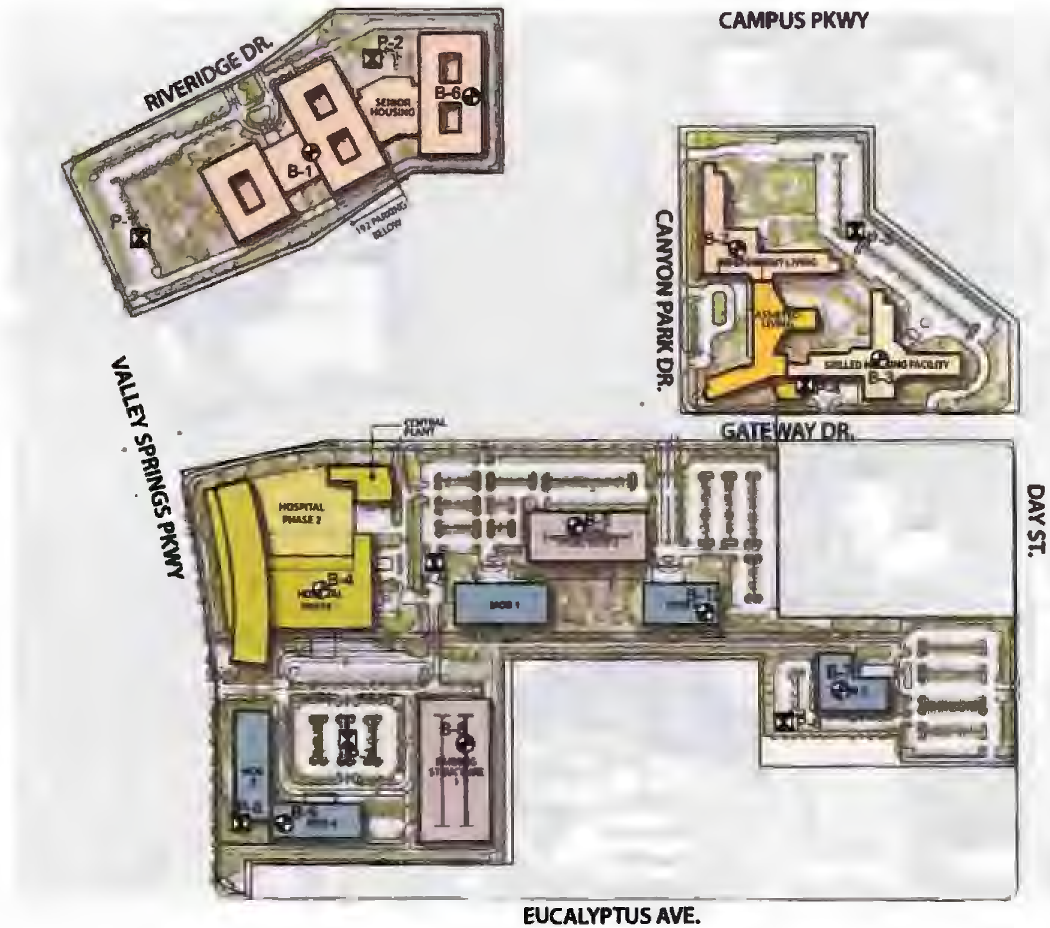
-N-

SCALE: 1" = 2000'

INDEX MAP

FOR: CANYON SPRINGS MARKETPLACE CORPORATION	FEASIBILITY-LEVEL GEOTECHNICAL INVESTIGATION PROPOSED CANYON SPRINGS HEALTHCARE CENTER RIVERSIDE, CALIFORNIA	ENCLOSURE "A-1"
DATE: SEPTEMBER 2015		JOB NUMBER 14444-3

CHJ Consultants



SCALE: 1" = APPROX. 300'

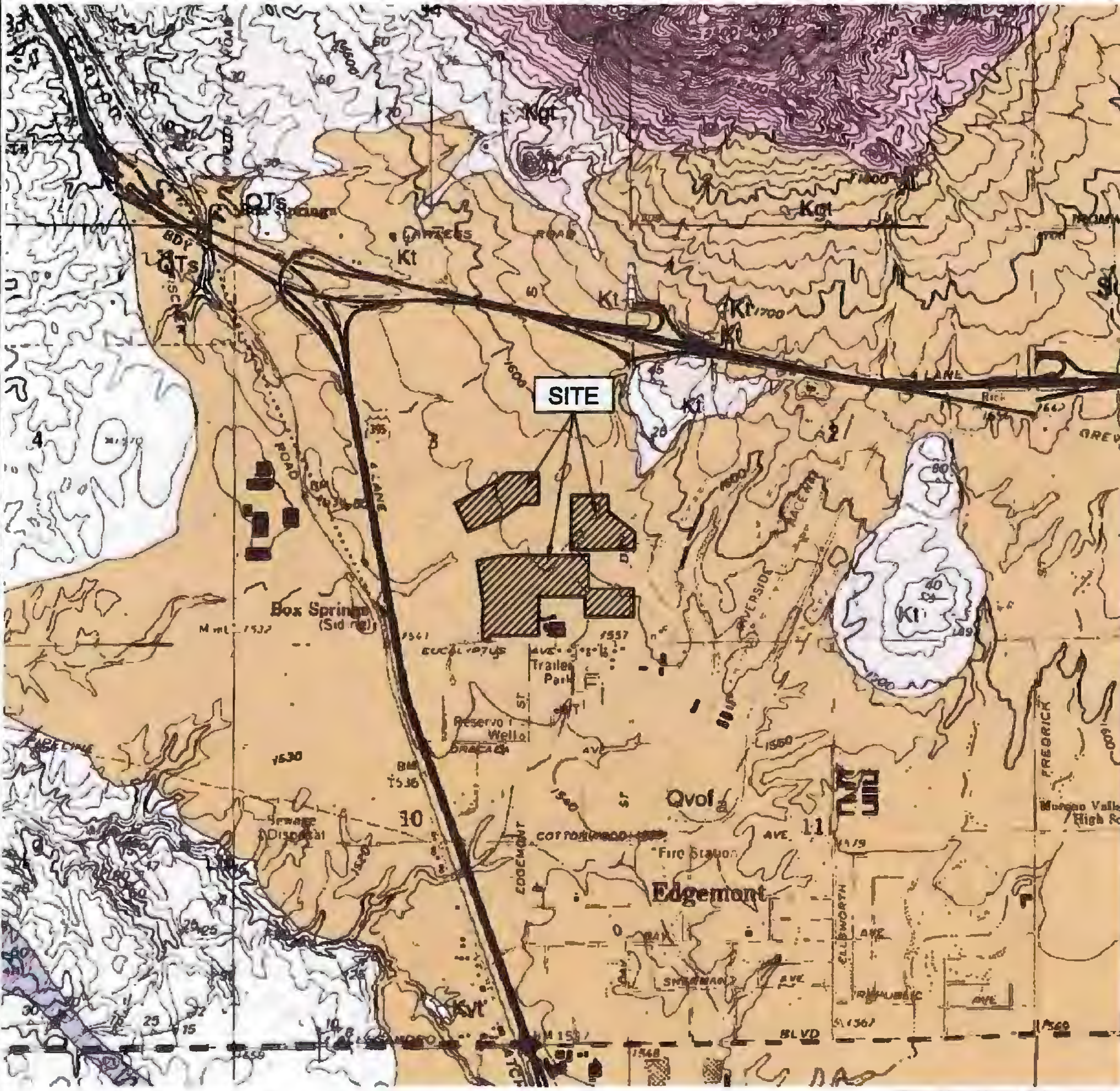
LEGEND:

B-10 EXPLORATORY BORINGS

P-8 DOUBLE RING INFILTROMETER TESTS (2014)

SITE PLAN		
FOR: CANYON SPRINGS MARKETPLACE CORPORATION	FEASIBILITY-LEVEL GEOTECHNICAL INVESTIGATION PROPOSED CANYON SPRINGS HEALTHCARE CENTER RIVERSIDE, CALIFORNIA	ENCLOSURE "A-2"
DATE: SEPTEMBER 2015		JOB NUMBER 14444-3

CHJ Consultants



(Base Map: Morton & Cox, 2001)

GEOLOGIC UNITS:

Qvof - Very old alluvial fan deposits (early Pleistocene)
Kt - tonalite, undifferentiated (Cretaceous)

geologic contact

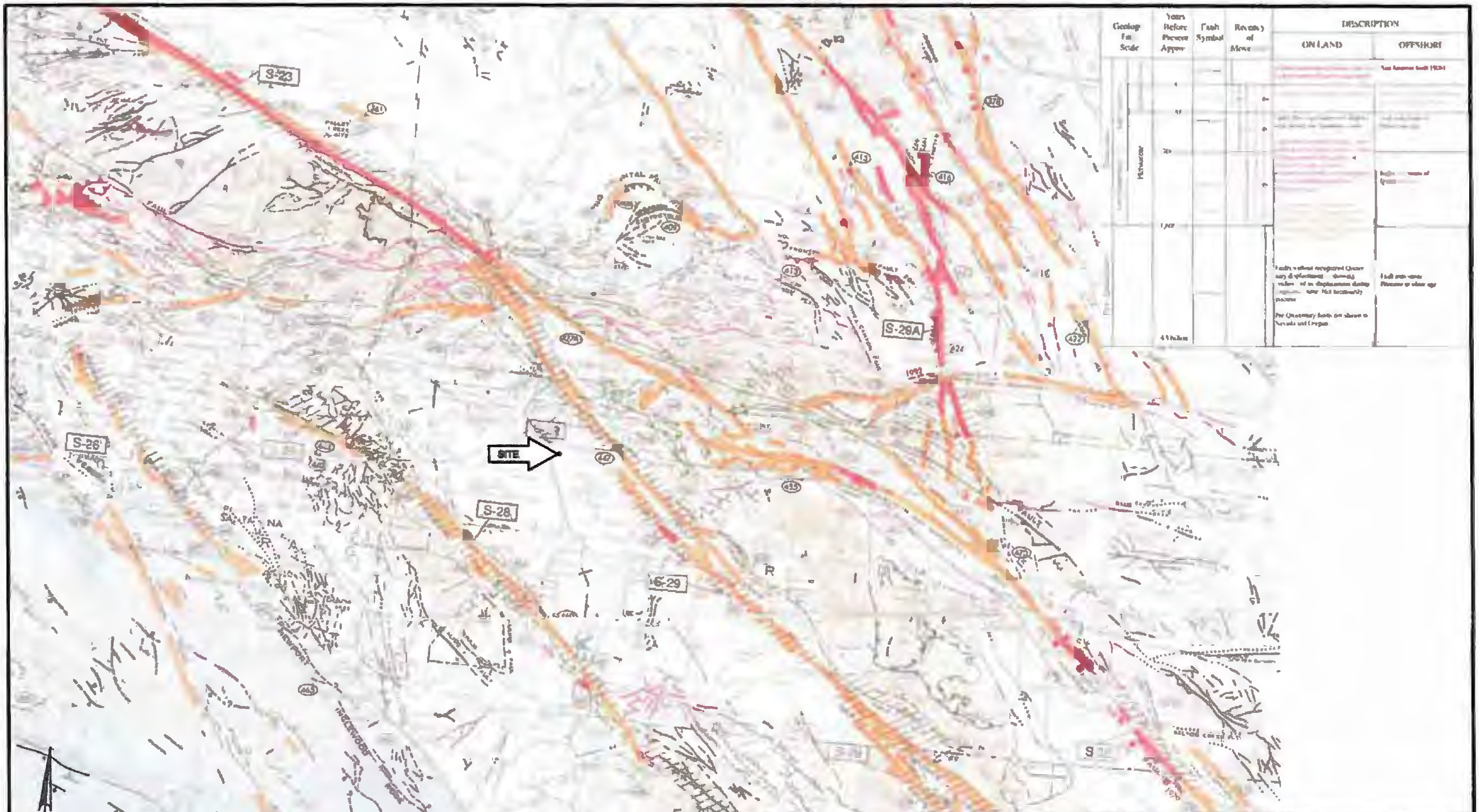
-N-

SCALE: 1" = 2000'

GEOLOGIC INDEX MAP

FOR: CANYON SPRINGS MARKETPLACE CORPORATION	FEASIBILITY-LEVEL GEOTECHNICAL INVESTIGATION PROPOSED CANYON SPRINGS HEALTHCARE CENTER RIVERSIDE, CALIFORNIA	ENCLOSURE "A-3"
DATE: SEPTEMBER 2015		JOB NUMBER 14444-3

CHJ Consultants



REGIONAL FAULT MAP

CANYON SPRINGS MARKETPLACE CORPORATION

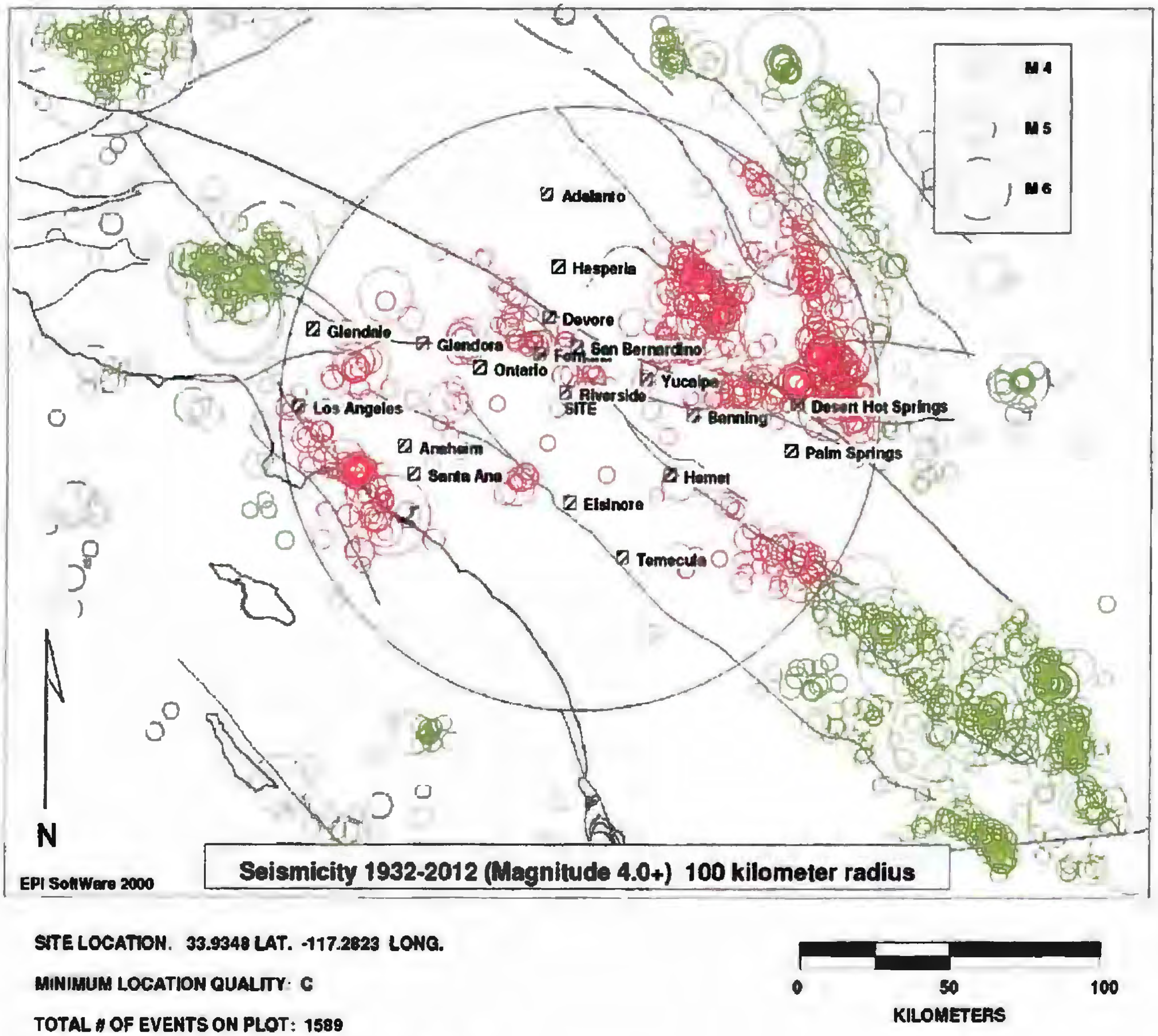
SEPTEMBER 2015

FEASIBILITY-LEVEL GEOTECHNICAL INVESTIGATION
PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

"A-4"

14444-3

CHJ Consultants



SITE LOCATION. 33.9348 LAT. -117.2823 LONG.

MINIMUM LOCATION QUALITY: C

TOTAL # OF EVENTS ON PLOT: 1589

TOTAL # OF EVENTS WITHIN SEARCH RADIUS: 653

MAGNITUDE DISTRIBUTION OF SEARCH RADIUS EVENTS:

4.0- 4.9 : 590
5.0- 5.9 : 58
6.0- 6.9 : 4
7.0- 7.9 : 1
8.0- 8.9 : 0

CLOSEST EVENT. 4.5 ON SUNDAY, FEBRUARY 17, 1952 LOCATED APPROX. 7 KILOMETERS NORTH OF THE SITE

LARGEST 5 EVENTS:

7.3 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 83 KILOMETERS NORTHEAST OF THE SITE
6.4 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 51 KILOMETERS NORTHEAST OF THE SITE
6.4 ON SATURDAY, MARCH 11, 1933 LOCATED APPROX. 72 KILOMETERS SOUTHWEST OF THE SITE
6.1 ON THURSDAY, APRIL 23, 1992 LOCATED APPROX. 89 KILOMETERS EAST OF THE SITE
6.0 ON SATURDAY, DECEMBER 04, 1948 LOCATED APPROX. 82 KILOMETERS EAST OF THE SITE

EARTHQUAKE EPICENTER MAP

FOR: CANYON SPRINGS MARKETPLACE CORPORATION	FEASIBILITY-LEVEL GEOTECHNICAL INVESTIGATION PROPOSED CANYON SPRINGS HEALTHCARE CENTER RIVERSIDE, CALIFORNIA	ENCLOSURE "A-5"
DATE: SEPTEMBER 2015		JOB NUMBER 14444-3

CHJ Consultants

APPENDIX "B"

EXPLORATORY LOGS

KEY TO LOGS

LEGEND OF LAB/FIELD TESTS:

Blows	A measure of the penetration resistance of soil expressed as the number of hammer blows required to advance the indicated sampler 6 inches (or less if noted). Samplers are driven with an automatic hammer that drops a 140-pound weight 30 inches for each blow. After the required seating, samplers are advanced up to 18 inches ahead of the boring, providing up to three sets of blows per drive.
Bulk	Indicates Disturbed or Bulk Sample
Dist.	Indicates Disturbed Sample
Pass No. 200	Wash through No. 200 Screen
PI	Plasticity Index
Ring	Indicates Relatively Undisturbed Ring Sample. Relatively Undisturbed Ring Samples are obtained with a "Modified California Sampler" (3-1/4" O.D. and 2-3/8" I.D.) lined with rings driven with a 140-pound weight falling 30 inches.
SPT	Indicates a sample obtained with an unlined Standard Penetration Test sampler (2" O.D. and 1-3/8" I.D.).

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size)		
	Clean Gravels (Less than 5% fines)	
GRAVELS More than 50% of coarse fraction larger than No.4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
	Clean Sands (Less than 5% fines)	
SANDS 50% or more of coarse fraction smaller than No.4 sieve size	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

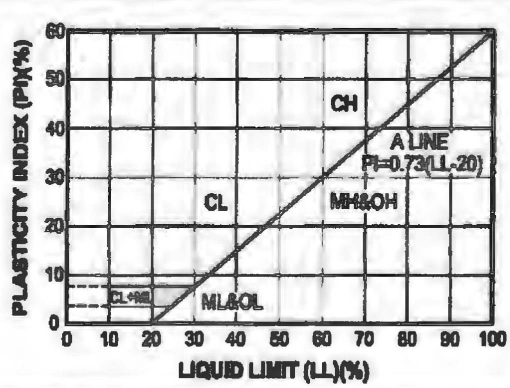
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size). Coarse-grained soils are classified as follows:

Less than 5 percent..GW, GP, SW, SP
More than 12 percent..GM, GC, SM, SC
5 to 12 percent........................Borderline cases requiring dual symbols

PLASTICITY CHART



EXPLORATORY BORING NO. 1

Date Drilled: 6/24/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): 48.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SM-SC) Clayey Silty Sand, fine to coarse, few gravel to 1/4", strong brown	Disturbed Native		X		2.9		PI
				X		26 29 31			SPT
					X		6.4		
5			Iron Oxide Staining	X		4 7 7			Pass #200, SPT
10				X		11 19 24			SPT
15		(SM) Silty Sand, fine to coarse, few gravel to 1/2", yellowish brown	Iron Oxide Staining Added Water	X		10 18 24			Pass #200, SPT
20		(SM) Silty Sand, fine to coarse, strong brown	Iron Oxide staining	X		17 30 35			SPT
25			Iron Oxide Staining	X		6 14 27			Pass #200, SPT
					X		8.8		

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-1a

EXPLORATORY BORING NO. 1

Date Drilled: 6/24/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): 48.0

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, few gravel to 1/4", strong brown	Added Water	X		20 26 30			SPT
35				X		18 28 30			SPT
40			Added Water	X		21 32 40			SPT
45				X		17 20 30			SPT
					▓		5.4		
			▼ Groundwater						
50				X		22 50			SPT
		END OF BORING NO REFUSAL, NO BEDROCK NO CAVING, NO FILL, TOP 1' DISTURBED GROUNDWATER ENCOUNTERED AT 48'							
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 2

Date Drilled: 6/24/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SM-SC) Clayey Silty Sand, fine to coarse, few gravel to 1/4", strong brown	Disturbed Native						
				X		33 50 5"	3.9	Dist	Ring
					X		4.1		Pass #200
5				X		12 33 20	3.9	126	Ring
					X		4.9		Pass #200
10		(SM) Silty Sand, fine to coarse, strong brown		X		11 50	4 2	Dist.	Ring
15				X		50	10.6	Dist.	Ring
					X		7.0		Pass #200
20			Added Water	X		50	8.8	Dist.	Ring
25			Iron Oxide Staining Added Water	X		50/5"	9.0	Dist.	Ring

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-2a

EXPLORATORY BORING NO. 2

Date Drilled: 6/24/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, few gravel to 1/4", yellowish brown	Iron Oxide Staining	X		50	6.0	Dist.	Ring
					X		7.1		
35		(SM) Silty Sand, fine to coarse, yellowish brown	Iron Oxide Staining	X		50	4.6	Dist.	Ring
		END OF BORING							
		NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, NO FILL, TOP 1' DISTURBED							
40									
45									
50									
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 3

Date Drilled: 6/24/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SM-SC) Clayey Silty Sand, fine to coarse, few gravel to 1/4", strong brown	Distrubed Native						
				X		24 50			SPT
					X		3.6		PI
5				X		8 42 34			SPT
10		(SM) Silty Sand, fine to coarse, few gravel to 1/4", strong brown	Iron Oxide Staining	X		15 24 47			SPT
					X		6.3		Pass #200
15			Iron Oxide Staining Added Water	X		13 30 42			SPT
20			Iron Oxide Staining Added Water	X		22 42 50			SPT
25			Iron Oxide Staining	X		17 29 35			SPT
					X		8.0		Pass #200

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-3a

EXPLORATORY BORING NO. 3

Date Drilled: 6/24/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, few gravel to 1/4", strong brown	Iron Oxide Staining	X		19 35 50			SPT
35			Added Water	X		26 41 50			SPT
40			Iron Oxide Staining	X		18 30 31			SPT
45			Iron Oxide Staining	X		21 38 40			SPT
					X		5.9		Pass #200
50				X		23 32 36			SPT
		END OF BORING NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, NO FILL, TOP 1' DISTURBED							
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 4

Date Drilled: 6/23/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): 40.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SC) Clayey Sand, fine to coarse, with silt and gravel to 1/4", brown	Fill						
				X		14 21 24			SPT Pass #200
					■		3.0		
3		(SM-SC) Clayey Silty Sand, fine to coarse, brown	Native						
					■		5.0		Pass #200, PI
5				X		6 5 5			SPT
					■		7.9		
10				X		11 22 26			SPT
15			Iron Oxide Staining	X		8 17 34			SPT
20		(SM) Silty Sand, fine to coarse, with gravel to 1", brown	Iron Oxide Staining	X		32 50			Pass #200, SPT
25			Added Water	X		15 29 40			SPT

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-4a

EXPLORATORY BORING NO. 4

Date Drilled: 6/23/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): 40.5

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, with gravel to 1/4", reddish brown		X		14 30 35			SPT
35			Added Water	X		14 24 30			SPT
40			Groundwater	X		6 8 14			SPT
					X		9.4		
45				X		7 14 23			SPT
50				X		10 17 35			SPT
		END OF BORING							
		NO REFUSAL, NO BEDROCK NO CAVING, FILL TO 3' GROUNDWATER ENCOUNTERED AT 40.5'							
55									

EXPLORATORY BORING NO. 5

Date Drilled: 6/23/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SC) Clayey Sand, fine to coarse, with silt and gravel to 1/2", strong brown	Fill						
				X		19 31 34	4.9	137	Ring
					X		2.8		Pass #200
		(SM-SC) Clayey Silty Sand, fine to coarse, with gravel to 1/2", strong brown	Native						
					X		5.6		Pass #200
5			Iron Oxide Staining	X		12 21 50	8.2	Dist.	Ring
10			Iron Oxide Staining	X		30 38 50/4"	8.3	Dist.	Ring
15			Iron Oxide Staining	X		24 50/5"	6.8	Dist.	Ring
20				X		50	8.5	Dist.	Pass #200, Ring
25				X		20 50/5"	6.0	Dist	Ring
					X		5.4		

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-5a

EXPLORATORY BORING NO. 5

Date Drilled: 6/23/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, with gravel to 1/2", strong brown	Iron Oxide Staining Added Water	X		33 50/5"	6.7	Dist.	Ring
35				X		21 50	8.7	Dist.	Ring
		END OF BORING NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, FILL TO 3'							
40									
45									
50									
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 6

Date Drilled: 6/24/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SM-SC) Clayey Silty Sand, fine to coarse, few gravel to 1/4", yellowish brown	Disturbed Native	X		13 17 22	7.4	126	Ring
					X		4.6		Pass #200
					X		6.3		
5			Iron Oxide Staining	X		16 24 15	6.1	129	Ring
10				X		16 37 50/5"	6.8	Dist.	Ring
					X		8.0		Pass #200
15			Added Water	X		34 50	7.1	Dist.	Ring
20		(SM) Silty Sand, fine to coarse, with clay and few gravel to 1/4", strong brown	Added Water	X		34 50/4"	6.7	Dist.	Ring
25				X		26 50	6.6	Dist.	Ring

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-6a

EXPLORATORY BORING NO. 6

Date Drilled: 6/24/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, few gravel to 1/4", strong brown		X		24 50	8.5	Dist.	Ring
35			Iron Oxide Staining	X		37 50/5"	6.1	Dist.	Ring
		END OF BORING NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, NO FILL, TOP 1' DISTURBED							
40									
45									
50									
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 7

Date Drilled: 6/23/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SC) Clayey Sand, fine to coarse, with silt and gravel to 1/4", strong brown	Fill						
				X		19 17 13			SPT
					▒		2.9		PI
		(SM-SC) Clayey Silty Sand, fine to coarse, with gravel to 1/4", reddish brown	Native		▒		7.7		Pass #200
5				X		13 32 50			SPT
10			Carbonate Staining	X		10 19 28			SPT
					▒		5.9		Pass #200
15			Added Water	X		22 40 50			SPT
20				X		25 50			SPT
25				X		21 30 43			SPT

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 7

Date Drilled: 6/23/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, with gravel to 1/4", reddish brown		X		18 32 45			SPT
35			Iron Oxide Staining	X		20 33 50.5"			SPT
40		(SM) Silty Sand, fine to coarse, with gravel to 1/4", strong brown		X		21 40 46			SPT
					X		8.4		Pass #200
45			Iron Oxide Staining Added Water	X		16 27 42			SPT
					X		8.0		
50			Iron Oxide Staining	X		21 19 25			SPT
		END OF BORING NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, FILL TO 4'							
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-7b

EXPLORATORY BORING NO. 8

Date Drilled: 6/23/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM-SC) Clayey Silty Sand, fine to coarse, with gravel to 1", strong brown	Disturbed Native	X		50 5"	7.4	Dist.	Ring
					X		7.0		
		(SM) Silty Sand, fine to coarse, with gravel to 1/4", strong brown			X		6.6		Pass #200
5			Iron Oxide Staining	X		22 50/5"	7.9	Dist.	Ring
10			Carbonate and Iron Oxide Staining	X		50	4 4	Dist.	Ring
15			Added Water	X		50	4.4	Dist.	Pass #200, Ring
					X		3.7		
20				X		32 50	3 4	Dist.	Ring
25				X		41 50/4"	3.8	Dist.	Ring

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

CHJ

PROPOSED CANYON SPRINGS HEALTHCARE CENTER
RIVERSIDE, CALIFORNIA

Job No. 14444-3

Enclosure B-8a

EXPLORATORY BORING NO. 8

Date Drilled: 6/23/15 | Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig | Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A | Logged by: GA | Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, few gravel to 1/4", strong brown		X		32 50	2.6	Dist.	Pass #200, Ring
					X		4.7		
35				X		42 50	4.4	Dist.	Ring
		END OF BORING NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, NO FILL, TOP 1' DISTURBED							
40									
45									
50									
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 9

Date Drilled: 6/23/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SC) Clayey Sand, fine to coarse, with silt and gravel to 1", strong brown	Fill						
				X		15 14 13	4.9	124	Ring
					X		4.9		
5		(SM-SC) Clayey Silty Sand, fine to coarse, with gravel to 1", strong brown	Native	X		31 50/5"	8.2	Dist.	Ring
			Iron Oxide Staining		X		7.6		
10			Iron Oxide Staining	X		31 50.5"	7.9	Dist.	Ring
			Added Water						
15			Iron Oxide Staining	X		28 50/5"	8.7	Dist	Ring
					X		7.2		Pass #200
20			Iron Oxide Staining	X		33 50.5"	5.9	Dist.	Ring
					X		4.5		Pass #200
25		(SP-SM) Sand, fine to coarse, with silt, reddish brown		X		26 40 50.5"	3.7	Dist.	Ring

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

EXPLORATORY BORING NO. 9

Date Drilled: 6/23/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./3.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SP-SM) Sand, fine to coarse, with silt, reddish brown		X		25 50	4.1	Dist.	Ring
		(SM) Silty Sand, fine to coarse, few gravel to 1/4", reddish brown			X		6.9		Pass #200
35				X		50	6.3	Dist.	Ring
		END OF BORING							
		NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, FILL TO 5'							
40									
45									
50									
55									

EXPLORATORY BORING NO. 10

Date Drilled: 6/25/15

Client: Canyon Springs Marketplace Corporation

Equipment: CME75 Truck Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
0		(SM-SC) Clayey Silty Sand, fine to coarse, yellowish brown	Disturbed Native		X		4.8		Pass #200
1				X		11 23 21			SPT
5				X		14 22 15			SPT
7		(SM) Silty Sand, fine with medium, dark yellowish brown							
10				X		8 33 50/3"			SPT
12					X		5.8		Pass #200
15				X		30 31 33			SPT
20		(SM) Silty Sand, fine to coarse, dark yellowish brown		X		20 37 50			SPT
25				X		25 38 50/5"			SPT

10331-3 14444-3 GPJ CHJ GDT 7/14/15

EXPLORATORY BORING NO. 10

Date Drilled: 6/25/15
Client: Canyon Springs Marketplace Corporation
Equipment: CME75 Truck Rig
Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.
Surface Elevation(ft): N/A
Logged by: VJR
Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
		(SM) Silty Sand, fine to coarse, dark yellowish brown		X		22 40 50/5"			SPT
35				X		30 40 50			SPT
		END OF BORING NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, NO FILL, TOP 1' DISTURBED							
40									
45									
50									
55									

10331-3 14444-3.GPJ CHJ.GDT 7/14/15

APPENDIX "C"

LABORATORY TESTING

FINES CONTENT (ASTM C117)

Boring No.	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	5
Depth (ft)	5	15	25	3	8	17	12	27	47	2	4	20	2	4	20	29
Fine Contents (%)	43	20	38	36	34	43	41	38	35	32	36	25	27	32	30	39
Classification	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM
Boring No.	6	6	7	7	7	8	8	8	8	8	9	9	9	10	10	
Depth (ft)	2	14	4	13	42	3	15	17	30	33	17	22	34	1	12	
Fine Contents (%)	38	43	40	39	41	38	24	28	18	30	41	29	33	32	39	
Classification	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	

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TEST DATA SUMMARY					
Project:	Proposed Canyon Springs Healthcare Center				
Location:	Riverside, California				
Job Number:	14444-3	Engineer:	MNoorzay	Enclosure:	C-1

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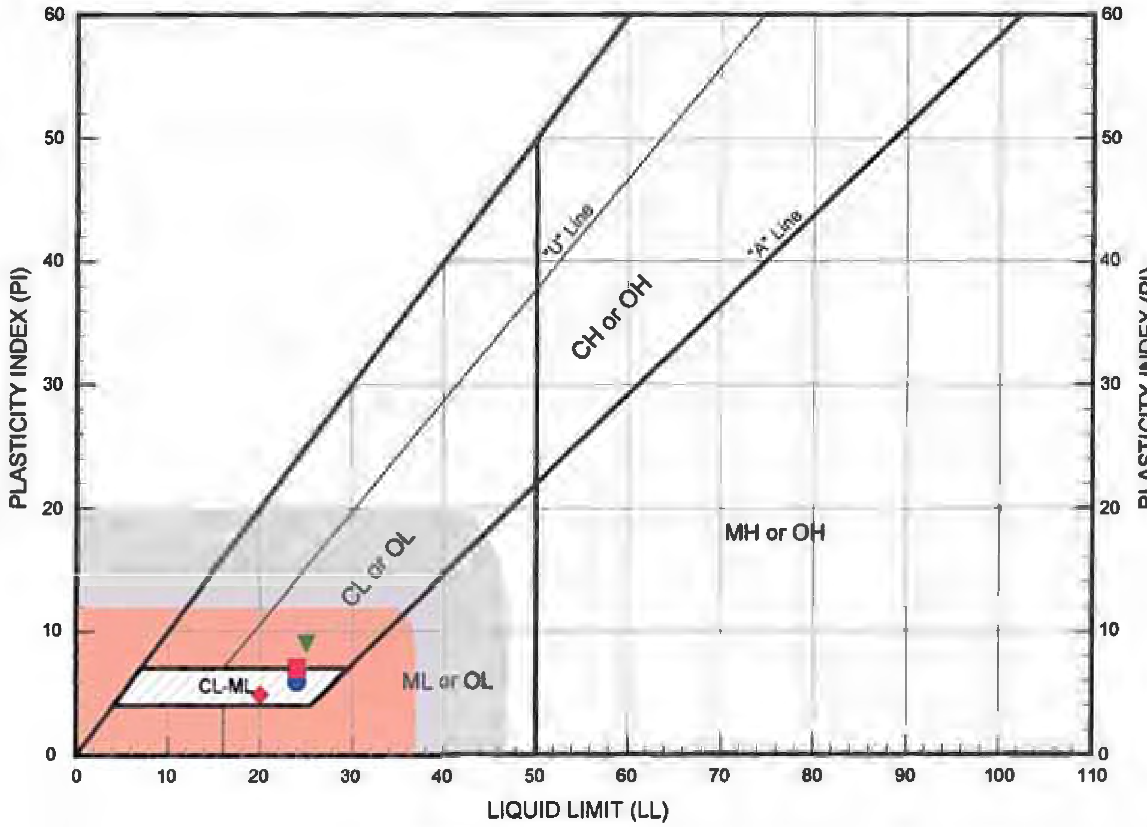

	Boring No.	Depth (ft)	USCS Classification	PL	LL	PI
●	1	1	Silty Clayey Sand, fine to coarse	18	24	6
■	3	3	Silty Clayey Sand, fine to coarse	17	24	7
◆	4	4	Silty Clayey Sand, fine to coarse	15	20	5
▼	7	2	Clayey Sand, fine to coarse	16	25	9

PLASTICITY CHART (ASTM D4318)

Project:	Proposed Canyon Springs Healthcare Center				
Location:	Riverside, California				
Job Number:	14444-3	Engineer:	MNoorzay	Enclosure:	C-2

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