UPDATED FAULT HAZARD ASSESSMENT AND RESPONSE TO CGS REVIEW LETTER EL RODEO K8 SCHOOL 655 WHITTIER DRIVE BEVERLY HILLS, CALIFORNIA

Prepared For:

BEVERLY HILLS UNIFIED SCHOOL DISTRICT

255 South Lasky Drive Beverly Hills, California 90212-3697

January 31, 2016

Project No. 10274.006





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Beverly Hills Unified School District 255 South Lasky Drive Beverly Hills, California 90212-3697

Attention: Mr. Steve Kessler, Superintendent

Subject: Updated Fault Hazard Assessment

And Response To CGS Review Letter

El Rodeo K8 School 655 Whittier Drive Beverly Hills, California

As requested and in response to the California Geological Survey (CGS) Review Letter dated June 30, 2015, Leighton Consulting, Inc. (Leighton), along with Earth Consultants International (ECI), has completed a supplemental assessment of the fault hazard at El Rodeo K8 School campus located in western Beverly Hills, California. This report addresses only the new work completed to address the CGS review comments related to surface fault rupture. For a discussion of the site and the faults in the area, and a summary and analysis of previous work done by Leighton and others in the site vicinity, refer to our two previous reports dated June 2012 and February 2015 (Leighton 2012c, 2015).

In this supplemental investigation, we have drilled and logged eight (8) new borings within the school property and on Wilshire Blvd, and excavated and logged approximately 240 feet of additional trench. With this new work, we have a combined total of 23 continuously sampled core borings on the El Rodeo K8 School campus and within Wilshire Boulevard, and excavated, logged and photographed four fault trenches for a total of approximately 385 linear feet. Included in this total are two utility trenches excavated by others that we also reviewed and logged on or near the school. All of these subsurface studies have been conducted to determine whether or not near-surface faults associated with the Santa Monica Fault Zone (SMFZ) or the West Beverly Hills Lineament (WBHL) extend across the school campus. Logs of all of these exploratory borings and trenches are presented in this report.

Previous investigators have inferred that the eastern terminus of the SMFZ occurs at or immediately to the southwest of the El Rodeo K8 School, south of Wilshire Boulevard. based primarily on topographic escarpments, differences in groundwater depth, and other indirect observations (Dolan and Sieh, 1992; Pratt et al., 1998; Dolan et al., 2000a). The same investigators have inferred the north-northwest-trending WBHL through the Beverly Hills High and El Rodeo K8 School campuses terminating where the mouth of Benedict Canyon meets the mountain front. Most recently, Geocon West Inc. (GWI, 2014) conducted a fault investigation for the property at 9900 Wilshire Boulevard, to the southeast of the El Rodeo K8 School campus. As part of their study, they emplaced several cone penetration tests and soil borings on Wilshire Boulevard, across the street from the school property, and reviewed environmental data available for the gas station at 9988 Wilshire Boulevard. Based on these data, GWI interpreted several active faults trending northeasterly toward the El Rodeo K8 School campus. We revisited these data for our February 2015 report, concluding that a few of these interpreted faults could be present in the subsurface, but that in our interpretation, Pleistocene units are continuous over the top of GWI's faults, indicating that they have been inactive for hundreds of thousands of years. CGS (2015) agreed with most of our stratigraphic interpretations, but they concluded that there were two areas where the data were not as robust due to site challenges, and requested additional study to close these gaps. CGS' review (Appendix A) necessitated this supplemental study.

ECI provided assistance with the logging and interpretation of the trenches, the age estimation of the deposits exposed in the fault trenches, the unit correlations between borings, and the review of this report. Based on a compilation and review of the original data from our 2012 and 2015 studies, and the supplemental data obtained for this study, we interpret three stratigraphic anomalies in older deposits as possible faults. However we conclude that these possible faults are not Holocene-active as we demonstrate that they are overlain by unbroken sediments and soils that are considerably older than 11,700 years, the CGS benchmark for activity. Our principal temporal control comes from the use of soil development age estimation of the sedimentary packages within the cores and trench exposures, and the correlation of depositional, erosional, and soil-formation periods as observed in the trenches and cores with the eustatic sea level curve, recognizing that channel incisions occur in response to sea level drops during glacial events, and channel infilling, landscape stability and soil development occur during interglacial periods. This has become the standard of practice for the fault studies in the Beverly Hills and Century City areas since the release of the Active Fault Map by MTA in 2011 (Parsons Brinckerhoff, 2011).



The soils and sea-level-curve correlations support an age of at least 300,000 to 500,000 years for the stratigraphy lying unfaulted over the interpreted fault traces.

Of note, and a principal change due to this new investigation, we have interpreted and redefined the Benedict Canyon Wash₁ (BCW₁) from the prior report. In that report, BCW₁ capped Benedict Canyon Wash₂ (BCW₂) everywhere on the El Rodeo K8 School campus. In this new interpretation, the El Rodeo K8 School campus is sited directly upon BCW₂, and we have restricted BCW₁ to those Pleistocene units that directly underlie the Holocene alluvium capping the lower playground area surface. change does not affect our prior interpretation of a BCW₁ - BCW₂ contact. geomorphic surface and its capping paleosol still exists and in our opinion correlates across the site, but it is now another depositional hiatus within BCW2. As defined now, BCW₁ forms an angular buttress unconformity against BCW₂. This unconformity reflects a significant erosional hiatus as the 6°-7° gently dipping BCW2 was planed (eroded) off about 30 feet in depth on its eastern edge before the now BCW₁ was deposited back onto the stripped surface. While this new definition of BCW₁ does conflict with our prior interpetation, we feel it more accurately reflects the geological conditions as we now know them, and is identical to the findings in LCI (2012a & 2012d) from the Beverly Hills High School investigation.

The second significant change in the tectonics of the region is in our discussion of a structural monocline that is present in the BCW $_2$ sediments, but not present in the BCW $_1$ units. The monocline was shown on prior Cross Section B-B' as 6° to 7° east dipping BCW $_1$ and BCW $_2$ units flattening out to horizontal in the lower eastern half of the profile. Now, based on the new borings and primarily the new trench exposures, we know BCW $_1$ is actually unconformably incised into the toe of the slope, indicating that it postdates the uplift and folding. The upper hinge for the fold lies near the crest of the hill where FT-4 shows nearly horizontal BCW $_2$ units. The lower hinge lies near the base of the slope between FT-1 and FT-3, where the Benedict Canyon channel and the modern Moreno Creek are entrained. The timing of this uplift and folding (tilting) would lie between the long depositional hiatus between BCW $_2$ and BCW $_1$, or about 200-300,000 years ago. The most likely cause of the folding is the Santa Monica Blvd North Fault which was active up until this time. This finding is clearly identical to that at Beverly Hills High School where the older BCW $_2$ units were shown in FT-2 to have a 3° unconformity against the younger and horizontal BCW $_1$ strata.

Based on all of the new data from the El Rodeo investigation, the structural geologic evolution of the eastern Cheviot Hills can now be better quantified. During San Pedro



time, the area was nearshore marine, progressively recessional to a beach environment. Conformable above the ~ 1Ma San Pedro is the Cheviot Hills unit (Kenney 2014), a low energy alluvial fan unit punctuated by periodic depositional hiatuses expressed as pedogenic weathering across regional geomorphic surfaces separated by shallow channels as the Santa Monica Mountains / Hollywood Hills uplift was underway. Conformable above the Cheviot Hills is the lower Benedict Canyon (BCW₂), a coarser, higher energy alluvial fan sequence that, in our opinion, reflects the erosional denudation of the Santa Monica Mountains and Hollywood Hills commencing about 500 ka. About 300+ ka, the locus of uplift stepped from the mountain front to a more southerly location, commencing uplift of the Cheviot Hills fan complex and trapping Benedict Canyon into an antecedent east-west channel down what is now Santa Monica Blvd, which at the time was a transtensional graben formed by the strike slip Santa Monica Blvd fault zone partitioning lateral slip onto the hanging wall of the Santa Monica thrust (Kenney 2012, 2014). During the period of lower BCW₂ fan deposition and uplift of the Cheviot Hills, the eastern side of the Cheviot Hills were structurally tilted 3°-8°. About 200-300 ka, as the SMBF became inactive, ending the tectonic depressing of the Benedict Canyon Creek channel versus the tectonic tilting. The cessation of tectonic activity facilitated Benedict Canyon Creek's capture to a straight southerly route down what is now Moreno Drive, ~150-200 ka leaving an eastwest wind gap. After the abandonment of the east-west channel, Benedict Canyon Creek incised about 30 feet deep into the easterly Cheviot Hills margin, where approximately 120 ka, the upper Benedict Canyon (BCW₁) was deposited horizontally against the Cheviot Hills margin. During the last glacial maximum of ~20-25 ka, the current Moreno Creek reincised along the same Cheviot Hills margin, subsequently backfilled with Holocene alluvium during the modern interglacial, while thin mudflow and flood plain deposits capped the Pleistocene BCW₁ fan surface.

In addition to failing to find the previously inferred active faults through the EI Rodeo K8 School, it is also important to mention what else we failed to find: *geologic evidence for a major fault intersection and step-over structure*. Zones where faults intersect (West Beverly Hills Lineament and Santa Monica fault in this case), and zones where faults step from one to another (Santa Monica to Hollywood faults in this case), are areas of intense deformation involving fracturing, folding, uplift or subsidence and fault offsets as the various micro-plates all interact together. Realistically the area should be laden with faults and fault-bounded blocks. We found none of these, not even fault-related fracturing or folding, within alluvial fan deposits that are estimated to be between about 200,000 and 500,000 years old. At greater depths (and ages), even if all stratigraphic anomalies are interpreted to be faults and not erosional channels, their vertical



displacements are trivial (mere feet to tens of feet). Using the minimum reverse rate of slip for the Santa Monica fault of 0.6 mm/yr (Dolan et al., 2000a), the vertical displacements through this area should be in the order of about 390 to 1,000 feet (120-300 meters) in just those uppermost sediments that we exposed as being undeformed. These findings call into doubt the entire structural geologic paradigm for the Newport-Inglewood, West Beverly Hills Lineament, Santa Monica and Hollywood fault interactions. More than doubt, they totally refute the published model.

Accordingly, we conclude that no faults have ruptured to the surface for at least 300,000 to 500,000 years at the El Rodeo K8 School campus, and as such, future surface rupture along active faults does not pose a hazard to the campus structures.

We appreciate the opportunity to be of continued service to Beverly Hills Unified School District. If you have any questions, please contact the undersigned directly at the e-mail address and phone extension listed below, at 866-LEIGHTON.



Respectfully submitted,

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1.0 INTRODUCTION

1.1 Purpose and Background

The purpose of this supplemental study was to respond to questions posed by reviewing geologists from the California Geological Survey (CGS, 2015) regarding the potential for active faults to underlie the El Rodeo K-8 School campus, see Figure 1, *Site Location Map*. Only the items under the header "*Fault Hazard Assessment*" in CGS' letter, in pages 7 through 10, are addressed here. We have addressed in a separate report dated January 7, 2016 (Leighton, 2016) the geotechnical items presented in the preceding sections of CGS' review letter. A copy of CGS's June 30, 2015 review letter is attached as Appendix A. The field exploration for this work took place between September 7, 2015 and October 31, 2015, and between November 23 and December 3, 2015. Locations of all explorations performed by Leighton and others in support of this study are shown on Plate 1, *Exploration Map*.

Several published reports have suggested that a series of northeast-trending topographic scarps extending from Santa Monica eastward to western Los Angeles are the surface expression of the Santa Monica fault (Dolan and Sieh, 1992; Pratt, et al., 1998; Dolan et al., 2000a). A southeast-facing scarp that extends across the Los Angeles Country Club (LACC) and possibly the southwestern portion of the El Rodeo K8 School campus as illustrated on Plate 2, Topographic Map, is considered the easternmost indicator of the Santa Monica fault. At about the location of the El Rodeo K8 School the approximately 40-km- (24-mile-) long fault is interpreted to step left about 1 mile to the north and continue eastward as the Hollywood fault (Dolan and Sieh, 1992; Dolan et al., 1997, 2000b). An inferred north-northwest-trending structure referred to as the West Beverly Hills Lineament (WBHL) is thought responsible for accommodating the left-step separation between the Santa Monica and Hollywood faults. The WBHL is also inferred through or near the western boundary of the school campus, see Figure 2, Regional Surface Fault Map. Thus, the fault investigations conducted at the El Rodeo K8 School campus have been designed to intercept both northeast- and northwest-trending structures.

Previous studies by Leighton at the El Rodeo K8 School, in the form of trenches FT-1 and FT-2 (2012a, 2015) conclusively showed that active elements of the



Santa Monica fault or the WBHL do not underlie the central portion of the school campus. As pointed out by the CGS, however, these trenches were somewhat limited in extent given that native alluvial deposits were exposed only in the western portions of the excavations, with deep fills of man-made materials encountered in their eastern ends. To extend the areas cleared of active faulting, we also drilled and continuously sampled several borings along the school's western boundary, and many more along the east-trending Wilshire Boulevard and the school's southern boundary (Leighton, 2015). Robust correlations of primary and secondary (pedogenic) stratigraphic units identified in the continuously sampled borings drilled for our February 2015 report, combined with borings and CPTs emplaced by Geocon West, Inc. (GWI, 2014) for their study of the property at 9900 Wilshire Boulevard, enlarged the area of the campus that is cleared from active faults. However, CGS geologists questioned some of the correlations we made at two specific locations. To more thoroughly investigate the areas of concern identified by the CGS, we excavated and logged two additional trenches (FT-3 and FT-4), logged a utility trench excavated by an AT&T contractor near the school's southwestern corner, and drilled, sampled, and described seven additional borings. The locations of these new exploratory trenches and borings are shown on Plate 1, Exploration Map.

1.2 Scope of Work

Tasks completed as part of this supplemental study include:

- Coordinated with Underground Service Alert (USA), district personnel and utility subconsultants to locate underground services and/or utility easements prior to the beginning of our field investigations.
- Obtained permits from the City of Beverly Hills to drill on Wilshire Boulevard; our work while on the street was limited to between 9:30 PM and 5:00 AM.
- Drilled and geologically logged 7 continuously sampled core borings (CB-8A and CB-17 through CB-22) to supplement the 16 continuously sampled core borings CB-1 through CB-16 that we completed and reported previously (Leighton, 2012c, 2015). The borings were advanced to obtain deep samples from which we could evaluate the stratigraphic continuity of the geologic units below the bottom of Moreno Creek, between borings CB-3 and CB-17 and to reduce the length of extrapolation between borings CB-2 and CB-8, and CB-11 and CB-12.



The borings were excavated by a subcontracted driller, and their depths ranged from 60 to 175 feet. The subcontracted driller used a hollow stem auger system equipped with a 5-foot long, 3-inch wide, continuous core barrel to collect cores samples. Core recovery was generally good in all holes and recovery in most intervals exceeded 90%, except where "no recovery" intervals are noted on the logs and cross sections. Core runs were hand scraped to remove the rind of disturbed material, then logged by a professional geologist. The core samples were stored in boxes for further review and photo documentation. Upon completion, the borings were backfilled with bentonite grout. The cores of every boring were logged and photographed by a professional geologist from our staff. Core logs and core photos are provided in Appendix B, *Continuous Core Boring Logs and Core Photographs*. Boring locations are shown on Plate 1, *Exploration Map*.

- Certified engineering geologists from Leighton and Earth Consultants International (ECI) conducted intensive side-by-side core logging in the field to identify, compare and correlate primary stratigraphic units and paleosols. Correlation was performed by laying out the recovered cores in the EI Rodeo K8 School basketball court and turf track area. Correlations from one core to the next were based on grain size, color, texture, buried argillic soil horizons, and the thickness of the stratigraphic units or soil horizons. We also used thin laminations and fining-upward sequences as distinctive markers that aided our unit matches. Photos of the core borings are included in Appendix B, Continuous Core Boring Logs and Core Photographs. The boring locations are shown on Plate 1, Exploration Map.
- Excavated and geologically logged fault trench FT-3 (Plate 1) to extend the area of coverage provided by trenches FT-1 and FT-2 to the east-southeast. The trench, which was excavated by a subcontractor who used a track-mounted excavator fitted with 3-foot and 5-foot wide buckets, was benched in accordance with Cal-OSHA guidelines. Both walls of the trench were cleaned (brushed and scraped), and the geologic contacts in the north wall were delineated. Fault trench FT-3 was sited roughly perpendicular to the trend of the active faults interpreted by GWI (2014) and shown on Plate 1 (blue, red and green dashed lines). Owing to deep rubble fill in the former channel of Moreno Creek, the trench was started at the approximate centerline of the former Moreno Creek channel and extended southeastward through the soccer turf field. See Plate 7a, Log of Fault Trench FT-3. Photographs of fault trench FT-3 are included in Appendix C, FT-3 and FT-4 Trench Photographs.
- Excavated and geologically logged fault trench FT-4 to provide coverage along the southwestern portion of the school. This trench was 45 feet long and ranged in depth from 2.9 to 5.2 feet. The trench was hand excavated by a subcontracted excavation crew. The south wall of the trench was cleaned (brushed and scraped), and the geologic contacts in the south wall were



delineated. Fault trench FT-4 was sited perpendicular to the regionally plotted trend of faults in this area to provide coverage between core borings CB-19 and CB-21, where a structural anomaly had previously been interpreted at depth. See Plate 7b, *Log of Fault Trench FT-4*. Photographs of fault trench FT-4 are included in Appendix C.

- Excavated and logged fault trench FT-5. Unfortunately, this trench exposed only undocumented fill to a depth of approximately 4 feet below grade, where we uncovered a sewer line running parallel to the trench, along its bottom. The excavation did not expose any native sediments and was therefore terminated and backfilled without logging it. The location of this trench is shown on Plate 1.
- Logged an AT&T utility trench dug by others to collect geologic information supplementary to core borings CB-2, CB-18 and CB-21. The data from this trench and borings complemented our fault trench FT-4 lithology interpretations. Soil samples collected from the trench allowed us to evaluate the stratigraphic continuity and age of the geologic units in the western portion of the site. The log and stratigraphic interpretations are provided on Plate 8, Wilshire Boulevard Utility Trench.
- ECI and Leighton geologists logged and described the primary stratigraphic units in the trenches described above. For the detailed descriptions of the units exposed in the trenches, refer to the appropriate trench logs.
- In situ datable organic materials, such as charcoal, were not encountered in the trenches or borings excavated for this study. ECI used soil development age dating techniques to estimate the age of the deposits and confirm that the excavations extended into Pleistocene-age sediments more than 11,700 years old. Specifically, Ms. Tania Gonzalez with ECI provided soil-stratigraphic age estimates for two soil profiles from trench FT-3 at Stations 0+15 and 1+05; two profiles from trench FT-4 at Stations 0+10 and 0+26, and one from the AT&T utility trench. Details of this relative age dating technique, and specifics regarding the soil profiles analyzed and the soil age estimates obtained are provided in Appendix D, Soil Age Estimations.
- Fault trench FT-3 (and our previous trenches FT-1 and FT-2) were reviewed by Mr. Jerry Treiman and Mr. Brian Olson with the CGS. Mr. Olson also reviewed fault trench FT-4, and the core boxes containing our flagged stratigraphic correlations across the borings.
- Once fully logged, photographed, and reviewed, trenches FT-3, FT-4 and FT-5 (log not available) were backfilled with the soils removed from the excavations. The backfill soil was moisture-conditioned and compacted with a compaction wheel or hand-held mechanical tampers. The backfills were



completed in October 2015 and December 2015. Oversize concrete debris encountered in the rubble fill during excavation of FT-3 was placed at the bottom of the Moreno Creek channel excavation under geotechnical engineering control. Upon completion of the backfill of FT-3, the surface was stripped of the remaining turf track and paved prior to placement of portable classrooms by a contractor not associated with this investigation. The surface completion at FT-4 consisted of replacement of hot rolled asphalt concrete and Portland Cement Concrete (PCC) to match pre-existing conditions.

- Prepared geologic cross-sections A-A', B-B' and C-C', along with the logs of fault trenches FT-3, FT-4, and the Wilshire Blvd. AT&T Utility Trench, to illustrate the subsurface geology and document the relative continuity of sediments exposed in the trenches and correlated from the deep core borings (Plates 3 through 8).
- The continuous core borings were excavated along two transects oriented east-west, and a third transect oriented north-south. The east-west transects include one in the play area, (CB-3, CB-4, CB-5, CB-7, CB-17 and CB-22), drilled to depths of 70 to 195 feet, and illustrated on Plate 5, Cross Section C-C'; and, the second along Wilshire Blvd. (CB-8A to CB-21), ranging in depth from 60 to 175 feet, and illustrated on Plate 3, Cross Section A-A'. The borings along the north-south transect, completed along the westerly property limits adjacent to the LACC (CB-1, CB-2, CB-6, CB-18, CB-19, CB-20 and CB-21), were drilled to depths ranging from 70 to 175 feet, and are illustrated on Plate 4, Cross Section B-B'.
- Excess soils generated during the drilling exploration were contained and removed from the site. The excess soils were placed in Department-of-Transportation-approved 55-gallon drums. Analytical testing was conducted on composite samples collected from the drums to determine appropriate disposal methods. The soils were classified as non-hazardous (see Appendix E, Analytical Laboratory Test Results).
- Prepared this response report summarizing our findings and conclusions, and addressing the specific concerns identified by the CGS geologists in their review letter (See Section 4.0).



2.0 FINDINGS

2.1 Fault Trenches

Each of the trenches mentioned above is described in detail in the following sections. Refer to the logs of the trenches (Plates 7a, 7b and 8) for additional information regarding the geologic units and soils exposed therein. Our borehole correlations are illustrated in cross-sections A-A', B-B' and C-C'. Fault trenches FT-1 and FT-2 that were excavated and logged during our previous studies at EI Rodeo K8 School are reported in our February 2015 report. Refer to that report for a detailed description of those trenches. In addition, and prior to beginning the fault investigation at El Rodeo K8 School, we observed soil exposures within a shored sewer trench excavation that extended from Whittier Drive into the campus for approximately 150 linear feet. The trench was excavated by a contractor to depths of 7 to 10 feet for purposes of replacing a 6-inch-diameter sanitary sewer line. The sidewalls of the utility trench were scraped and brushed by Leighton and ECI geologists to reveal artificial fill 3 to 10 feet thick overlying native alluvial materials consisting of silty sand and gravels, overlain by an organic rich (A soil horizon) consisting of sandy clay to silty clay. Where native alluvial sediments were observed in the trench sidewalls, these units were continuous and unbroken. However, there were several sections of trench where artificial fill was exposed to the bottom of the utility trench exposure, so the lateral continuity of the alluvial sediments could not be corroborated in this area. Due to the ongoing utility installation and caving of the sewer trench at several locations, no log was formally drafted. The thickness of the artificial fill material and native soil types are indicated on Plate 1.

2.1.1 Fault Trench FT-3

Fault Trench FT-3 was 183 feet long, 7.5 to 20 feet deep (Plate 7a) and excavated in the turf track area south and east of Buildings E and D, respectively (Plate 1). The excavation was begun at the approximate centerline of Moreno Creek Channel and was extended in a southeasterly direction through the east bank of Moreno Creek Channel and into the alluvial plain of Benedict Canyon Wash. The trench shadows the zone of faulting interpreted by GWI (2014) from across Wilshire Boulevard. Specifically, GWI's faults F, G, H, I and J are inferred to trend northeasterly across the campus and through the location of fault trench FT-3. In our Plate 1, we show the faults inferred by GWI (2014) using their interpreted strike.



Trench FT-3 exposed two generations of artificial fill. In its western end, a 17foot thick section of rubble fills in the former channel of Moreno Creek, from Station 0-20 to Station 0+10. The rubble backfill contains large fragments of concrete believed to be part of the abandoned-in-place Moreno Creek Channel stormdrain box. This fill is underlain by a 2-foot thick section of dark reddish brown imbricated gravels that comprise the only exposure in the trench of the Modern and Historic Alluvium of Benedict Canyon Wash (Station 0+00 to 0+05) (see Plate 7a). These imbricated gravels fill in the bottom of the channel (Plate 7a) that incised into underlying Pleistocene sediments; these channel sediments were likely deposited during the regionally extensive 1938 floods, given that the unit contains man-made materials, including vintage bottles, glass fragments, ash, wood, and abundant pieces of China and Syracuse cups plates (see http://www.replacements.com/webquote/SY_SY933.htm). Although the channel is historic, it is a useful indicator of the location of the original, prehistoric Moreno Creek, and provides a line (the channel thalweg) that can be used to better correlate the current topography with the 1920s topography on Hoots (1931) map. The second generation of younger artificial fill (approximately 2 to 4 feet thick), which occurs from Station 0-20 to Station 1+83, is the capping fill deposit placed to bring this part of the school site to design grade. This fill material consists of sandy clay to silty sand with asphalt fragments, pillow basalt cobbles and scattered pipe and wire debris.

Underlying the fill deposits near the current ground surface we exposed Holocene- and Pleistocene-age, laterally continuous and relatively level massive to weakly bedded mudflow deposits capping locally channelized, fluvial sediments. The fluvial sediments are typically bedded and characterized by fining upward sequences. ECI described the soils exposed in fault trench FT-3 at Station 0+15 and Station 1+05 (Plate 7a). The soil profile at Station 0+15 includes a near-surface soil with characteristics of both A and Bt soils overlying seven buried soils. The surface soil has characteristics that suggest it has been exposed to soil-forming processes at the surface for at least 10,600 years. This estimate is considered a minimum given that the uppermost section of this soil was removed during construction. The buried soils described in this profile indicate that the sediments below the near-surface soil are Pleistocene in age; the entire depositional package exposed in trench FT-3 at Station 0+15 is estimated to be at a minimum



66,500 years old, and preferably more than 200,000 years old (for a detailed description of the soils and age interpretations refer to Appendix D).

The trench was shallower at Station 1+05 than at Station 0+15. The soil profile at Station 1+05 included a near-surface soil and six buried soils. The near-surface soil was missing its A horizon, and only a thin section of the Bt horizon remained. The Bt horizon has strong coarse angular blocky soil structure and common to many thin to thick clay films. These characteristics suggest that this soil has been exposed at the surface for a minimum 9,800 years. The underlying buried soils are pre-Holocene in age, with the entire sedimentary sequence exposed at Station 1+05 estimated to be at a minimum 48,000 years old, and preferably almost 150,000 years old (see Appendix D).

2.1.2 Fault Trench FT-4

Fault trench FT-4 was sited roughly perpendicular to the regional trend of the faults that Dolan et al. (2000) and GWI (2014) projected into the school, and so as to provide coverage for the area between core borings CB-19 and CB-21, where we had previously interpreted a potential fault at depth (see Plate 5). The entryway and parking area off Wilshire Boulevard where fault trench FT-4 was excavated is in the southwestern portion of the campus, where Hoots (1931) mapped Upper Pleistocene-age alluvial plain, stream and marine terrace deposits. This hand-excavated trench was 45 feet long, and ranged in depth from 2.9 to 5.2 feet (see Plate 7b, *Log of Fault Trench FT-4*). The trench was considerably shallower than FT-3, but it was deep enough to confirm Hoot's interpretation of the age of the deposits, even though the uppermost 5 feet (approximately) were removed as part of the school construction. The south wall of the trench was cleaned (brushed and scraped), and the geologic contacts observed therein were delineated. The trench exposed layered mudflow and fluvial (channel and overbank) deposits.

ECI sampled and described the soils in this trench at two locations, near Stations 0+10 and 0+26 (for a detailed description of the soils, refer to Appendix D). The soil profile at 0+10 included a near-surface relict soil, and three buried soils. The first buried soil developed on a westward-thickening fluvial deposit that was exposed only in the western portion of the trench, and was not present in Section 0+26. The entire stratigraphic section in this portion of the trench is estimated to be at a minimum 22,000 years old, and



more likely at least 68,000 years old, but these age estimates are considered to be absolute minimums, as the sediments exposed in this trench are interpreted to be part of the Benedict Canyon Wash 2 (BCW₂) sequence (see Section 2.3.5).

The soil profile at Station 0+26 included the remains of the same relict soil at Station 0+10, which developed in debris flow sediments, and two buried soils below. These buried soils are stratigraphically below, and are thus older, than the first buried soil observed at Station 0+10. Cumulatively, the unbroken soils described in this profile are estimated to be at a minimum about 27,000 years old, and more likely at least 88,000 (median) years old. However, as above, these age estimates are considered minimums. Stratigraphically, as illustrated on Section C-C', the sediments exposed in this trench are interpreted to be part of the Benedict Canyon Wash (BCW₂) sequence, and thus several hundreds of thousands years old (Appendix D).

2.1.3 AT&T Trench Excavation

A utility trench excavation was opened by an outside contractor prior to beginning excavation for fault trench FT-3. This excavation, located outside the school grounds, within the planter area between the sidewalk and curb, immediately adjacent to Wilshire Boulevard, was approximately 2.5 feet wide, 3.5 feet deep, and nearly 13.5 feet long. The trench exposed artificial fill in its upper 1.5 feet, underlain by continuously bedded dark red clayey gravel to gravelly clay that we assign to the Benedict Canyon Wash₂ sequence. Bedding appeared continuous and paralleled the gently sloping (3°) ground surface. The trench log and soil descriptions are shown on Plate 8, *Wilshire Boulevard Utility Trench*.

The debris flow sediments exposed in this trench included the truncated remains of an argillic soil horizon that is presumed to be the bottom portion of a relict, near-surface soil, and thin portions of two buried soils. The cumulative age of these soil-modified sediments is estimated at between about 28,000 (minimum) and 85,000 (median) years. Given that all of these soils were truncated, the sediments that these soils developed into are likely to be considerably older. As with the sediments in fault trench FT-4, our interpretation is that these sediments are part of the BCW₂ unit, and thus considerably older than the soil-age estimates suggest.



2.2 Continuous Core Borings

A total of 23 continuous core borings have been sited along two parallel and one perpendicular transects across the campus (see Plate 1). The two parallel transects, Cross Section A-A' and Cross Section C-C', illustrate the geology underlying the school using an extensive set of closely spaced borings. Cross Section A-A' extends eastward to include several of the CPTs and borings drilled and logged by GWI (2014). The boring depths along Cross Section A-A' ranged from 70 feet to 175 feet, with the borings spaced 30 to 40 feet apart along Wilshire Blvd. (Plate 3). The boring depths along Cross Section C-C' ranged from 70 to 195 feet, with the borings spaced 20 to 150 feet apart. Borings CB-5 and CB-17 were located within the footprint of Trench FT-1. Borings CB-3 and CB-7 were excavated within 5 feet of the north and south sides of FT-1, respectively. Boring CB-4 was located within approximately 30 feet of the southeast end of trench FT-3.

Distinct marker beds, fining upward sequences and paleosols were encountered in each of the borings. Of primary importance were the paleosols that could be identified from one boring to the next, particularly in areas where the borings were spaced relatively close together (approximately every 30 to 40 feet) as shown on Plate 3, *Cross section A-A'*, and at distances of 20 to 150 feet, as shown on Plate 5, *Cross Section C-C'*. Cross Section C-C' also includes fault trenches FT-1, FT-2. FT-4 and FT-4. On Cross Section B-B', the distances between borings CB-1, CB-6 and CB-2 were up to 240 feet (see Plate 4, *Section B-B'*).

Because of the extensive anthropogenic alterations, we focused on the stratigraphic evidence of potential faulting within the general areas flagged by CGS in their review of our earlier report. We did find evidence of offset San Pedro Formation marker beds that we interpreted to be a result of faulting at depth between core borings CB-21 and CB-19 (Plates 3 and 5, *Cross Section A-A' and C-C'*). We excavated fault trench FT-4 perpendicular to a projection of this subsurface fault between borings CB-19 and CB-21. We uncovered no evidence of offset beds in the Pleistocene stratigraphy in trench FT-4 (see Plate 7b).

2.3 **Geologic Units**

The core borings (CB-1 through CB-22, Plate 1) and fault trenches (FT-1, FT-2, FT-3 and FT-4, Plates 6, 7a, 7b, and 8) generally exposed flat lying to gently dipping (approx. 3-7°) sediments of Pleistocene age. Most sediments range in



grain size from basal channel gravels overlain by progressively fining upward sands, silt and clays. These were mainly laid down by now dissected distributary fans emanating from the Santa Monica Mountains to the north. Clast composition typically consists of Santa Monica slate (Jsm), siltstone and sandstone of the Monterey Formation (Tm) and occasional basalt, granitic cobbles and pebbles. Regional geology of the site and surrounding area is shown on Figure 3, *Regional Geologic* Map. Detailed descriptions of the units encountered are shown on the boring logs by Leighton and GWI and included in Appendix B. The geologic units that we have interpreted from the trench exposures and borehole cores are described further below, from youngest to oldest.

2.3.1 Artificial Fill, Undocumented (Map Symbol Afu)

Up to approximately 19 feet of undocumented rubble fill was observed during our exploration onsite at the eastern ends of Fault trenches FT-1 and FT-2 and western end of FT-3 (Plates 6 and 7a). Thinner sections of fill were also observed at or near the ground surface placed to bring the site to final grade, or associated with the backfill of utility trenches. We are unaware of any documentation regarding compaction of the fill material associated with grading and construction of the campus or within Wilshire Boulevard. The fill consists of locally derived sandy silt and silty sand, locally with clay and varying amounts of gravel and man-made debris. Abundant concrete rubble, in places exceeding 24-inches in diameter, was observed in the backfill of Moreno Creek Channel in trenches FT-1, FT-2 and FT-3. Localized seepage along root traces was observed in the backfill along the southern sidewall of trench FT-1 and near the storm drain inlet of trench FT-2. In Cross-Sections A-A' B-B' and C-C', we include in this unit (Afu) the spoils from the handaugered sections of the borings and CPTs that were not logged, even though these sections may have included native sediments.

2.3.2 <u>Modern and Holocene Alluvium in Historical Channel of Moreno Creek</u> (Map Symbol Qw)

Silty sand to clayey sand grading to sand at depth, with minor gravel and thin gravel beds; light yellowish brown, brown to dark reddish brown; massive to crudely stratified, imbricated; small fragments of asphalt observed locally in CB-3. Cross-bedded (imbricated) channel gravels were observed in the western end of trench FT-3 at the lowest point of incision in former Moreno Creek Channel. These deposits included glass and pottery fragments, and are interpreted to have been deposited during the 1938 floods. The intense



oxidation of the gravels is believed to be iron leaching from man-made materials contained both within the channel debris and the artificial fill overlying the historical channel deposits.

2.3.3 <u>Holocene and Pleistocene Alluvium of Benedict Canyon Wash and the Beverly Hills Plain (Map Symbol Qal):</u>

This unit thickens southward and eastward, away from the mountains to the north and the hills west of the El Rodeo K8 School, and consists of sandy clay to clayey sand grading laterally to silty clay with few scattered slaty gravels. The uppermost few feet may include Holocene overbank flow deposits and/or mudflow deposits associated with unusual high-intensity precipitation events. Soils capping the sequence may include organic-rich A, A/Bt, Btj and Bt soil horizons displaying moderate soil structure and few thin clay films. The A soil horizons, where present, tend to be cumulic, and in that these are constantly being renewed by sedimentation and biological activity, are considered late Holocene in age. The underlying Bt horizons that are part of the surface soil observed in trench FT-3 and most of the borings on the east side of the campus have characteristics that indicate they have been exposed to soilforming processes for several thousands of years. The near-surface soil is underlain by several layers of alluvial and mudflow sediments that are also pedogenically altered. Soil-development-derived ages suggest that the entire sedimentary sequence that comprises this unit is between about 36,000 (minimum) and 108,000 (median) years old (Appendix D). These age estimates indicate this sedimentary package was deposited during the last two major interglacials, referred to as Stages 3 and 5 in the sea level curve

2.3.4 Pleistocene Alluvium of Benedict Canyon Wash (Map Symbol BCW₁)

Below the sediments and soils described above, the core borings on the central and east side of the school campus, and fault trench FT-3, exposed a repeating sequence of terrestrially derived fluvial, alluvial fan, and mudflow sediments emanating from the Santa Monica Mountains via Benedict Canyon Wash and its tributaries. This unit consists predominately of dark yellowish brown, brown, dark brown to reddish brown; mottled; locally gleyed, poorly to moderately sorted channel (fluvial) deposits occurring in fining upward sequences beginning at basal gravel or sand beds grading upwards to sandy clay, clayey sand, sand with clay, and silty sand with clay. The unit grades laterally to silty sand and sand with silt. Near the channel centerline the deposit coarsens downward to gravelly sand to clayey sand with gravel.



Material is slightly moist to moist; massive too thinly laminated with few to many scattered gravels that consist of subangular to subrounded and tabular fragments of siltstone, slate and weathered basalt.

Paleosols typically cap each of these fining-upward sequences indicating periods of depositional quiescence that allowed for soil formation. The finer-grained sections are both gleyed (reduced) and oxidized, resulting in a "tiger banded" appearance. These paleosols contain sporadic to heavy manganese oxide accumulation, generally on the faces of poorly to moderately well-developed blocky peds. These deposits are interpreted to fill in a broad channel that incised into the underlying BCW₂ unit during a major sea level lowering (glacial) event that occurred 400,000 to 340,000 years ago, during Stage 10. The deposits themselves are thought to be between about 330,000 (deeper section) and 200,000 years old (near the unit's top) (Kenney, 2014).

2.3.5 Pleistocene Alluvium of Benedict Canyon Wash (Map Symbol BCW₂)

The core borings exposed several repetitive fining-upward sequences of terrestrially derived fluvial, alluvial fan, and mudflow sediments derived from the Santa Monica Mountains to the north. This unit consists predominately of dark grayish brown, reddish brown, very dark brown, and dark yellowish brown; locally mottled and/or gleyed; poorly to moderately sorted channel (fluvial) deposits characterized as sandy clay, clayey sand and silty clay grading laterally to silty sand to sand with silt. Unit contains lenses and interbeds of sandy gravel coarsening downwards to basal channel deposits of sand, gravelly sand and gravel. Weathering consists of oxidation-reduction banding, and iron oxide and manganese oxide staining common on rock clasts and along basal channel contact. Gravel consists of fine- to mediumgrained subrounded to subangular fragments of siltstone, slate, basalt and quartz. Unit is characterized by moderate to well-developed paleosols with many thin to moderately thick clay films on ped faces and moderate to strong angular blocky soil structure, with a distinctive erosional contact with underlying Cheviot Hills deposits. Deposition of the BCW₂ sediments is thought to be related with the interglacials of Marine Isotope Stages 13 and 11, approximately 500,000 to 400,000 years ago (Kenney, 2014).

2.3.6 Pleistocene Cheviot Hills Deposits (Map Symbol CHD)

This unit correlates to Leighton's "Quaternary Old Alluvial and Fluvial deposits (Qoaf)" identified and characterized as part of the work performed on the



Beverly Hills High School (BHHS) campus (Leighton, 2012a, 2012d, 2015) and with the "Older Surficial Sediments (Qoa)" of Hoots (1931).

The Cheviot Hills Deposits are reddish brown, brown, and grayish brown, locally gleved alluvial sediments characterized as poorly to well-sorted sandy clay, clayey sand, and silty clay; with thin silty sand and gravel layers and beds. Unit is moist to wet along sand beds, with manganese oxide stains, streaks and nodules and iron oxide stains on rock fragments. Weathering, profiles of light grey to dark orange brown coloring as a result of oxidationreduction banding. Gravel consists of subrounded to subangular fragments of siltstone and slate. At depth, unit includes abundant calcium carbonate in the form of specks, filaments, horizontal layers, and coatings on ped faces; color changes to grayish brown, gray, and blue green reminiscent of the Lomita Marl with iron oxide staining along layers and locally on ped faces. Unit has been modified by soil-forming processes with pedogenic characteristics, including clay films on ped faces and moderate to strong angular blocky soil structure, observed at several intervals, including directly at or below its contact with the overlying Benedict Canyon Wash deposits. Predominately a terrestrial deposit consisting of fluvial and alluvial sediments derived from the Santa Monica Mountains and San Pedro Formation deposited over a long period of time, with depositional hiatuses that allowed for soil development. This unit was exposed at the surface for thousands of years before it was buried by the Pleistocene alluvium of Benedict Canyon Wash.

The upper portion of the CHD is recognized as an approximately 12- to 15-foot thick, fine-grained clayey-silty sequence that is typically both oxidized and gleyed, resulting in a "tiger-banded" appearance due to oxidation and reduction of individual layers, possibly indicating seasonal variations, i.e. water-logging and aeration of soils. This thick sequence is incised by paleochannels and marks the erosional boundary between the overlying Benedict Canyon Wash sediments. Several buried soils observed in borings drilled at BHHS (Leighton, 2012a, 2012d, 2015) provided an estimated minimum age for the Cheviot Hills Deposits of approximately 500,000 (top) to >1.0 million years (bottom, at the contact with the underlying San Pedro Formation), correlative with Marine Isotope Stages 15 through 19 at a minimum.



2.3.7 Quaternary San Pedro Formation (Map Symbol Qsp)

In the borings, we recognized the San Pedro Formation, as described by Parsons (2011b) and encountered during our fault study at BHHS (Leighton 2012a, 2012b, 2012d, 2015), where we referred to the unit as "Upper San Pedro Formation: (Qsp₁)". At El Rodeo, the San Pedro Formation was encountered in several borings (Plate 1) at various depths (Plates 3, 4 and 5). It is typically a massive, friable to loose, yellow, olive brown to reddish orange brown to light greenish-gray to grey, fine to medium-grained sand with scattered gravel and few silty to clayey laminations. The formation as encountered is described as loose to hard; dry near upper contact, becoming moist to wet at depth. Sand fraction consists of fine to coarse, well-rounded quartz grains with scattered bi-valve shell fragments. The San Pedro is considered a transitional terrestrial to marine unit deposited in a wave-dominated (beach) environment, and in this part of the Los Angeles Basin is estimated to be more than >1.0 million years old.

2.4 **Groundwater**

Previous investigations of the Santa Monica and Hollywood faults (for example Dolan et al., 1997, 2000) have argued that differences in the depth to groundwater define the location of these faults. In the study area, differences in the depth to groundwater in the monitoring wells emplaced by others at the gas station on 9988 Wilshire Boulevard have been provided as evidence that the Santa Monica fault extends through that site, and onto the El Rodeo K8 School campus (GWI, 2014). However, our drilling studies show that laterally and vertically discontinuous wet zones consisting primarily of permeable sands and gravels occur at various depths, as illustrated on Table 1 below. Groundwater is typically perched on clay-rich layers that are overlain by sand and gravel deposits. Our observations strongly suggest that in this area, variations in the depth to perched groundwater cannot and should not be used to infer the location or activity of faults.



Table 1. Encountered Depth to Groundwater

Boring	Perched Water Depth (feet)	Groundwa ter Depth (feet)
CB-1	20-21.8, 35-37.4, 81.8-82.5, 91.5-93, 124.4-125	NE
CB-2	36.3, 41.6-44.5, 54.5-56.4, 61.7-62.3, 70-73.9, 75-78, 80-82, 90-91,100-100.7	NE
CB-3	44-45, 45.8-49.3, 51.5-53, 55.8-58.1, 60-64.3, 66.3-66.9, 90.3-92.8, 103.8-104.3, 107.8-109.3, 111.3-112, 112.5-112.7	NE
CB-4	24.5-25.8, 40-40.6, 54.5-55.8, 70-73, 80-81.5, 101.2-105, 107.1-109.8, 120.9- 121.4	NE
CB-5	94.2-95, 101.7-103.4, 110-111.3, 113-113.9, 125-125.4, 130-130.9, 137.9-185	137.9
CB-6	25-27.5, 35-35.7, 40-76.7, 88-88.9, 90.9-92.1, 92.6-98.1, 100-101.6, 105-111, 114-115.7, 120-123.7, 130-131.3, 132.1-157.7	132
CB-7	40-40.9, 41.8-43.7, 52-52.5, 100-100.2, 105-108.1, 110-110.8, 120-121.8, 135-139, 140-140.7, 145-145.1, 145.3-148.2	135
CB-8	38.5-39.4, 40-43.6, 47.2-48.8, 51.5-52, 55-57, 58.6-59, 60-61.1,81.4-81.6, 81.9-82.2, 94.5-95, 95.7-99.3,99.7-102.4, 110-110.7, 111.6-111.9, 115-124.1, 128.4	128.4
CB-8A	38.4-44.6, 48.1-50, 51.2-51.5, 53.2-54.1 55.5-56.6	NE
CB-9	34.7-37.8, 40-41.8, 53.9-54.6	NE
CB-10	35.4-36.5, 36.8-39.6, 43-46, 48.6-50, 55-56.2	NE
CB-11	21-21.9, 34-34.5, 42-43.2, 43.8-49	NE
CB-12	32.7-33.4, 38.4-40.5, 41-43.7, 45-45.3, 60-60.5, 67.9-74.6	NE
CB-13	68.4-72.8	NE
CB-14	35-39.7, 40-41.6, 43.2-43.5, 45-47.3, 52.2-52.4, 60-60.2, 64.4-64.5, 67.7-69.7	NE
CB-15	39.4-40.4, 45.5-48.8, 65.3-65.5, 70-70.2, 71.7-71.9, 75-82.3	NE
CB-16	35-38.2, 40-42.1, 50-50.5, 53.6-54.4, 62.8-65,, 69-69.5, 70-74.2, 76.5-77	NE
CB-17	44.8-48.9', 50-54.2', 55-59.7', 60-62.2', 62.4-63.7', 65-69.2	NE
CB-18	45-46.4', 54.5-55.6', 60-60.8', 65-70'	NE
CB-19	48.6-49.6', 50-51', 55-56.7', 82.8-84.5', 85-85.6', 90-91.8', 100-100.6', 105-106', 111-112', 117.9-118.7', 120-123.4', 125-128.3', 130-133', 135-135.6'	NE
CB-20	42.7-43.7', 46.5-51.9', 52.5-52.6'	NE
CB-21	54.5-56.9', 69.3-70', 72.8-74.2', 75-78.9', 88.8-89.2', 102.2-102.5', 125-126', 143.9-144.9'	NE
CB-22	25.5-26.7', 40.3-42.1'	NE

NE=Local groundwater table not encountered



3.0 INTERPRETATIONS AND DISCUSSION

As illustrated on the cross sections that are part of this report, the Cheviot Hills deposits extend continuously across the site, with slight dips to the east (3° to 7°), except where locally incised into by channels of the overlying Benedict Canyon Wash₂ The paleosols observed within the Pleistocene alluvial deposits (BCW₁ and BCW₂) extend unbroken along the full length of the sections. Where possible, we also incorporated CPT and subsurface data from the GWI borings drilled in Wilshire Boulevard, which were drilled to depths of 70 to 145 feet below the ground surface. Where noticeable offsets of discernible units are encountered between closely spaced explorations, we have chosen to explain the offset by interpreting faults. These inferred faults best explain the stratigraphic drops across the transects within the San Pedro Formation and upwards into the Cheviot Hills Deposits. Owing to the lack of strike and dip data, these interpreted (Santa Monica Blvd-North Fault) and inferred faults (GWI's faults) are shown as vertical structures in the subsurface. Their trend in the subsurface is unknown, and determining this was not part of this scope of work. Each of the faults interpreted from our cross sections is discussed further below.

3.1 Santa Monica Blvd-North Fault

Relatively flat lying stratigraphy and distinct marker beds and units were encountered in each of the borings along Cross Section B-B' (Plate 4). Most significantly, all borings on this transect (CB-1, CB-2 and CB-6, CB-18, CB-19, CB-20 and CB-21) exposed the unconformable boundary between the Benedict Canyon Wash₂ deposits and the underlying Cheviot Hills unit as a continuous, unbroken stratigraphic horizon. Borings CB-1, CB-2, CB-6, CB-19 and CB-21 encountered the San Pedro Formation at depth. Overlying the San Pedro Formation, as encountered at the El Rodeo K8 School site and during prior studies in the area (Leighton 2012a, 2012d, 2015), is a clayey interval containing abundant calcium carbonate in the form of specks, filaments, horizontal layers, and coatings on ped faces reminiscent of the Lomita Marl, with iron oxide staining along layers and locally on ped faces. The significance of this marl unit is that it typically indicates that sands of the San Pedro Formation are about 15 to 20 feet below. Boring CB-19 was projected onto cross section B-B', and while we could account for a minor elevation difference due to projection of the boring onto the section, the marl unit was significantly lower in elevation than interpreted across borings CB-1, CB-2, CB-6, CB-18 and CB-21. As a result, we interpret a potential fault in this area to account for the vertical offset of the marl. If it is a fault however, it does not offset the top of the Cheviot Hills Deposits, a



Pleistocene deposit that, near its top, is estimated to be approximately 530,000 years old (Leighton, 2012a, 2012d, 2015). Thus, this possible fault is not active.

We have chosen to label this fault as the "Santa Monica Blvd-North Fault" per the nomenclature of Kenney (KGS 2012, Fault Zone A), due to its similarity to a fault investigated at the High School (Leighton, 2012a and 2012d; Fault Zone F, KGS 2012). That fault was east-west trending, dropped the San Pedro Formation contact approximately 75 feet down to the north, and was demonstrated to have become inactive at least 300 kya. In Kenny's (2012) analysis at that time, the Santa Monica Blvd fault was interpreted to be a pair of faults forming an east-west structural graben through which Benedict Canyon was confined during uplift of the Cheviot Hills (KGS, 2012, 2014). The timing, sense of offset, and magnitude of offset of this fault interpreted at El Rodeo K8 School is so similar to Kenny's predicted fault (Fault A of KGS 2012, 2014; (renamed Cross fault No.1 in KGS, 2016) that we have assumed that this structure forms the northern side of Kenny's graben and have labeled it accordingly.

<u>GWI Fault F:</u> Between Core Borings CB-5 and CB-7 (Plate 5, *Cross Section C-C*) we interpret a structural discontinuity at about the same location as GWI's Fault F to explain a possible 5-foot vertical offset of San Pedro Formation sediments. The fault can be interpreted upward to approximate elevation EI. 155 feet, into the lower Cheviot Hills Deposits (CHD), but several higher beds in the CHD, and the contact between the lower Benedict Canyon Wash Deposits (BCW₂) and Cheviot Hills Deposits (CHD), are not offset. This fault (GWI's Fault F) is therefore not active, since it is confined to sediments that are significantly older than 530,000 years.

GWI Fault I: Between our Core Borings CB-11 and CB-12, and between GWI's Borings B4-B and B3-B we have interpreted a fault to explain an apparent lack of correlation between sediments at depth, combined with a localized groundwater barrier (GWI, 2014) at the Unocal station across Wilshire Blvd (Plate 1). The difference in groundwater levels confines the projection of Fault I through our fault trench FT-3, which exposed undeformed late Pleistocene sediments. Additionally, from the borings (see Section C-C'), we interpret continuous stratigraphy within the uppermost 50-foot thick section below the ground surface, including the contact between the Benedict Canyon Wash 2 (BCW₂) and the Cheviot Hills Deposits (CHD). Since the upper unbroken CHD sediments are estimated to be about 530,000 years old, GWI's Fault I is not active.



4.0 CGS COMMENTS AND RESPONSES

4.1 June 30, 2015 CGS Comments and Response

The following text, *in italics*, is an excerpt from Page 8 of CGS's review letter with respect to Cross Section A-A" from our February 2015 report. To address their comments we revisited the cores of the paired borings specifically identified by CGS. Remarks provided by the CGS on specific layers in these borings are presented below, followed by our responses.

Cross Section A-A':

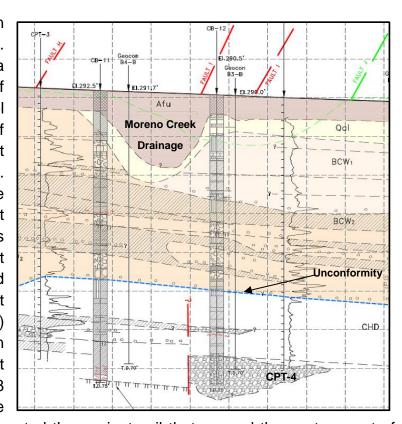
CGS Comment: The consultants identified several paleosols and other stratigraphic markers in their core borings, and reviewed the GWI boring logs for similarly described markers, which they depict and correlate on their cross section. Based on these data the consultants show GWI Faults G and H do not appear to exist where they are mapped. Instead they infer a total of four faults (Faults 1 through 4) along this cross section, which they conclude are not active because of "the presence of unbroken sediments and soils, dated by relative means to be at least 34,000 to much greater than 100,000 years old near the surface" above these faults. The interpretation of continuous unbroken stratigraphy within the various Pleistocene deposits overlying these particular faults is a valid explanation of the data. However, our review of the subsurface data suggests these deposits do not appear continuous and unbroken in other areas. Specifically, it appears the data provided in the boring and CPT logs for Cross Section AA' indicate a noticeable lack of correlation of stratigraphic markers between paired borings CB-11/B4-B and CB12/B3B. Various unique sedimentary units, which are relatively persistent elsewhere yet cannot be correlated between these borings, include the following:

CGS Comment 1: A relatively thick package of clay and silt with distinctive "oxidation reduction banding" is described between 20 and 30 feet deep in borings CB-11, B4-B and B5-B, but was not encountered in borings CB-12 or B3-B.

Response 1: It was difficult to densify the exploration due to the location of Moreno Creek storm drain box under Wilshire Blvd. However, the new fault trench FT-3 has provided us the opportunity to better understand and therefore reinterpret the upper 20-30 feet of this part of the section. First, this is the



location of the modern Moreno Creek drainage. Based on FT-3, there is a minimum of 19 feet of relief to the channel thalweg, with 2 feet of modern alluvium (Qw) at the bottom of the channel. GWI's B4-B shows the thalweg to be 22 feet deep. This channel is further complicated in that we now have determined that the prior Benedict Canyon Wash (BCW₁) channel margin was in the same location against the hill that El Rodeo K8 School sits upon. The



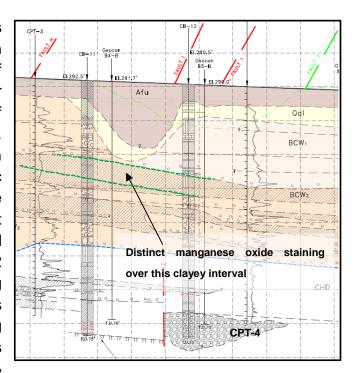
margin of this stream truncated the ancient soil that capped the eastern part of FT-1 (see Plate 5). That trench exposed what we now interpret as Benedict Canyon Wash (BCW₂) deposits, which dip ~6 degrees to the east and are continuous to the top of the El Rodeo K8 School surface. The Benedict Canyon Wash (BCW₁) sediments exposed in FT-3 are nearly horizontal. As such, we have reinterpreted Cross Section A-A' to reflect an unconformity between the near horizontal BCW₁ and the east-dipping BCW₂ units at the base of the slope, which is also where the historical channel (pre-storm drain) lay. The unconformity is most clearly shown on Cross Section A-A' where a ~10-foot-thick coarse clastic unit lies atop the ~10-foot finer-grained section mentioned in the comment. This east-dipping, paired set of units is traceable for over 100 feet easterly from CPT-1, CPT-2, CPT-3, and CB-11, where, as noted in the comment, it is not reflected in GWI's B3-B nor CB-12. However, examination of CB-12, and especially CPT-4, does reveal the lowermost 5 foot of the clayey unit. The missing upper gravels and upper half of the clay between CB-11 and CB-12 are now interpreted to have been removed by the BCW₁ incision unconformity. Subsequent BCW₁ sedimentation has resulted in multiple near-horizontal sedimentary layers correlated above the unconformity.



Trench FT-3 showed that the eastern portion of the school campus is underlain by relatively horizontal, episodically deposited alluvial and debris flow sediments that have been modified extensively by pedogenic processes between depositional events. Below about 8-10 feet deep, these deposits are interpreted to be part of the Benedict Canyon Wash- BCW₁ series. The uppermost units are assumed to be floodplain deposits from the modern and Holocene Moreno Creek, but the presence of a buried soil at about 6 feet in depth indicates that below 6 feet in depth we may already be into the latest Pleistocene (Appendix D). Relative age dating of these sediments based on their soil development indicates that the sediments below that uppermost soil are certainly Pleistocene in age, with the sediments near the bottom of the trench at a minimum about 50,000 to 65,000 years old, and most likely older. There were no faults observed in the trench FT-3 exposure.

CGS Comment 2: At a depth of approximately 30 feet a laminated sandy clay unit with manganese oxide nodules is described in CB-12 and B3-B and labeled on the cross section, but does not correlate with any units at this similar depth in CB-11 or B4-B.

Response 2: At 27 feet in CB-12 is where we place the contact between the base of the BCW₁ and the top of the BCW₂ units. This is an angular unconformity only 25 feet to the west of CB-12, but a disconformity at CB-12. The sediments noted at 27.2' – 32.7' in CB-12 are a strongly developed argillic paleosol. and have manganese staining throughout. The equivalent unit in CB-11 lies from 22.9' - 29' and while it is more gleyed than in CB-12 due to its not being reexposed during the incision of BCW₁, it also does contain similar manganese staining throughout. The elevation difference is due to the eastward dip to the BCW₂



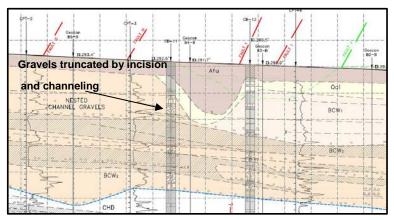
unit, and the thickness difference is due to the upper portion of the paleosol being removed by the BCW₁ incision. But, as these are essentially the only



stratigraphic intervals containing this distinct manganese staining in either CB-11 or CB-12, we disagree with the comment that they do not correlate.

CGS Comment 3: A persistent clayey sand and gravel unit, which extends for at least 135 feet laterally from CB-9 to B4-B and labeled on Cross Section A-A' was not encountered in CB-12 or B3-B.

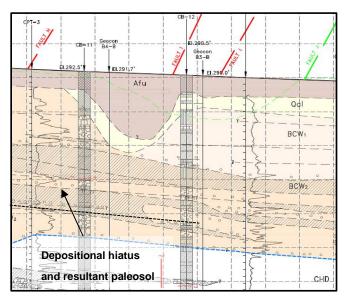
Response 3: We have reinterpreted Cross Section A-A' to reflect an unconformity between the near horizontal BCW₁ and the eastdipping BCW₂ units at the base of the slope. The missing gravels between CB-9 and CB-



12 are now interpreted to have been removed by the BCW_1 incision unconformity and Moreno Creek channeling. Subsequent BCW_1 sedimentation resulted in multiple near-horizontal sedimentary layers that can be correlated above the unconformity.

CGS Comment 4: At about 35 feet deep, another section of "oxidation reduction banding" was encountered in CB-11 and B4-B and labeled on Cross Section A-A', but this distinct banding was not observed in CB-12 or B3-B.

Response 4: At 34.5 feet in CB-11 we initially identified this paleosol horizon as the contact between BCW₁ and BCW₂. Based on the new analysis explained more fully in response No. 1 above, we have moved the BCW₁ contact higher in the section, although the obvious depositional hiatus and resultant paleosol remain as described. The "oxidation-

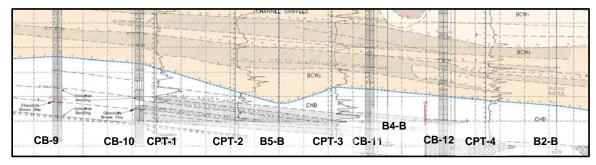




reduction banding" described within the argillic paleosol in CB-11 is equivalent to, and correlated to, the reddish-brown (oxidized) to olive-brown (reduced) paleosol at 36.9' in CB-12, which we had previously also picked as a unit contact because of its distinct stratigraphic significance. The 2.4-foot elevation difference is due to the easterly dip.

CGS Comment 5: Between a depth of 40 and 50 feet another thick clayey sand and gravel unit was encountered in CPT-3, CB-11 and B4-B, which cannot be correlated to CB-12.

Response 5: We disagree. That ~10-foot-thick sequence of gravels is continuous from at least CPT-3 eastward for 250 feet to the end of the section. It



is one of the most distinctive stratigraphic units on the section and we have interpreted it, lying above an equally impressive paleosol, as the disconformable contact between the BCW_2 unit over the Cheviot Hills Deposits (noted as blue dash line). This contact continues westerly for an additional 250 feet to the west end of the section, and its nearly perfect planar aspect is interrupted only at CPT-2 and B5-B, where the gravels thicken into what we interpret to be a BCW_2 channel cut ~10 feet deeper into the Cheviot Hills Deposits.

CGS Comment 6: Another distinct "oxidation reduction banding" unit up to 8 feet thick was encountered at approximately 65 feet deep in CB-11 and B4-B which cannot be correlated to CB-12.

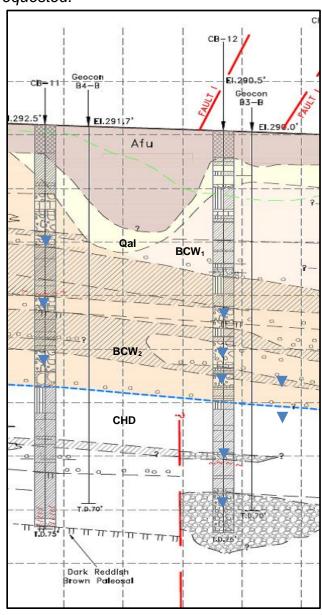
Response 6: Agree, we do not see the carbonate filaments and strongly developed paleosol of CB-11 in their equivalent position in CB-12. Instead there are channel gravels. It is certainly possible that a channel intercepted in CB-12 cut through and removed the geomorphic surface expressed by the paleosol in CB-11 sometime back at least 700+ kya. It is also possible that a fault has juxtaposed the two units. We do not have any deeper sediments in either boring from which to determine the correct interpretation. As such, we have shown a



fault between CB-11 and CB-12, but this fault is stratigraphically truncated by the Cheviot Hills / BCW₂ contact, and as such, has not moved in the past approximate 500,000 years.

CGS Comment 7: Additionally, GWI's active Fault I is mapped between these borings (CB-11 and CB-12) on their transect based on lack of stratigraphic correlation and the trend of the groundwater barrier identified at the gas station across Wilshire Boulevard. For these reasons CGS is concerned these distinct lateral discontinuities in the data provided may be related to fault offset and additional subsurface information is requested.

Response 7: The groundwater "barrier," as interpreted from the Unocal gas station data south of Wilshire Blvd., is problematic. As we show on Cross Section A-A', this is exactly where the historical Moreno Creek and the Pleistocene Benedict Canyon Wash (BCW₁) channels repeatedly incised into the underlying BCW₂ strata. Furthermore, our borings throughout the area show as many as 10+ perched water zones within a single boring (See Table Encountered Depth to Groundwater, P.16). The classic fining-upwards alluvial fan stratigraphy is perfect for perching groundwater, and this is even more enhanced by the argillic clay the frequent development of paleosols. There is at least 22 feet of historical Moreno Creek alluvium, overlying 30 feet of BCW₁ sediments, and both are forming a buttress unconformity against the ~10-foot-thick BCW₂ gravel



Indicates perched groundwater in borings



sequence lying topographically upgradient and at only 10-20 feet in depth. In our opinion, the 10-foot higher groundwater on the west side of the "inferred fault" is much more likely due to the BCW₂ channel that is buttressed by less permeable Qal and BCW₁ sediments, the base of which is 10-feet lower than the BCW₂ channel.

Cross Section B-B':

CGS Comment 8: The consultants construct a northwest trending profile along the western edge of the campus across Wilshire Boulevard, and along the edge of the gas station and 9900 Wilshire property. The section provided in Appendix C of Report 1 includes subsurface data from four of Leighton's continuous core borings (CB-1, CB-2, CB-6 and CB-8) ranging from 125 to 160 feet deep as well as eight monitoring wells, and thirteen of GWI's borings. At the subject site they postulate the existence of a fault (Fault 1 on Plate 3 of Report 1) between CB-2 and CB-8. But state continuous and unbroken stratigraphic markers in the shallower Pleistocene deposits overlying this fault demonstrate it is not active. The subsurface data does not appear to support this conclusion. For example, the "chocolate brown soil" which is laterally continuous between CB-1 and CB-6 and CB-2 does not appear in CB-8. At the depth where this soil is projected onto CB-8 on the cross section there is a section of reddish brown clayey sand with gravel, not chocolate brown clay. Similarly the sediments above the brown soil in CB-2 consist of sandy clay with occasional thin bedded gravels and the correlative section in CB-8 shows silty to clayey gravelly sand. Lastly the base of the paleosol in CB-2 noted on the section is apparently down dropped at least three feet in CB-8. This lack of correlation may suggest the fault inferred between these borings extends higher up in the section than depicted on the cross section. Therefore the conclusion that this fault is not active is not yet clearly demonstrated.

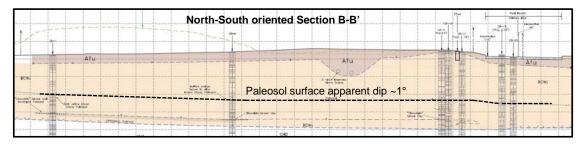
Response 8: We have drilled additional borings in order to construct the revised Cross Section B-B' (Plate 4) and excavated a 45-foot-long fault trench, FT-4 that extends partly across this area. Between core borings CB-19 and CB-21 we have identified the top contact of the San Pedro Formation as offset a total vertical distance of 53.5 feet; a similar amount of offset was noticed in work performed at the Beverly Hills High School (Leighton, 2012c). This offset is confined laterally between CB-19 and CB-21, therefore, the Santa Monica Blvd-North Fault must pass between borings CB-19 and CB-21. If the fault we have identified in the subsurface continues along the northeastern trend inferred by others (~N60°E to



N80°E), the fault would pass through our trench FT-2 (Plate 6), FT-4 (Plate 7b) and the Sewer Utility trench (Plate 1). No faults were observed in our trenches.

CGS Comment 9: The base of the Benedict Canyon Wash unit (i.e. BCW_1) is defined by an erosional surface with a basal gravel deposit and the consultants project this contact through the middle of a 12-foot thick clay unit in MW-5. Similarly the contact between BCW_2 deposits and the top of the Cheviot Hills Deposit (CHD) is defined as a basal sand and gravel layer over a moderately developed reddish brown clayey paleosol. On the cross section this contact is projected through a section of very dark greyish brown silty to gravelly sand. It appears there is also a lack of correlation between these borings which may be related to fault offset.

Response 9: Borings CB-2 and CB-18 were drilled within 5 feet of each other, and the upper portions of their cores reveal important differences between the two, with significantly more cobbles and gravels in CB-2 than CB-18, indicating that channeling is common. This too was reflected in FT-4 where despite essentially horizontal stratigraphy, channelization meant that units were not continuous across the trench, which was only 45 feet long. Consequently, there are lateral variations between borings even 5 feet apart. For correlation therefore, we relied more upon significant paleosol horizons as these are more likely to be regionally significant and stratigraphically continuous. Of course, there are numerous paleosols, and channelization could readily incise through and remove one or more of them. Nevertheless, we feel that the first major paleosol beneath the upper gravel- and cobble-dominated section is recognizable and correlatable between all of the borings at the southern end of Section B-B'. This paleosol occurs at 27.5' in CB-2 (el. 277.5), 27.6' in CB-18 (el. 277.4), 27.8' in CB-21 (el. 276.2), 27.5' in CB-19 (el. 275.5), and 26.2' in CB-20 (el. 274.8). The 2.7-foot fall between CB-2 and CB-20 results in a ~0.7 degree apparent dip, similar to that directly observed in FT-4, and this paleosol continues to the far northern end of Section B-B' at CB-1 (22.7', el. 280.4, 1° dip).





It is the paleosol upon which we previously interpreted the contact between Benedict Canyon Wash BCW₁ and BCW₂ deposits because of its regional significance. In this new analysis, and especially considering the direct observations from FT-1, FT-2, FT-3, and FT-4, we have redefined the Benedict Canyon Wash BCW₁ unit to a significant stratigraphic angular unconformity that buttresses the lower portion of the slope below the El Rodeo K8 School ridgeline. As such, all of the Benedict Canyon Wash deposits in Cross Section B-B' are now included completely within the Benedict Canyon BCW₂ unit. This redefinition is much more compatible with the geomorphic positioning of the units, their true dips, and the strongly developed soil profile on the top, their multiple weathering horizons (paleosols), and their physical appearances in the cores and especially in the four fault trenches.

Essentially, Benedict Canyon Wash BCW₂ lies directly, and conformably atop the strongly developed paleosol that caps the Cheviot Hills deposits. This surface, and all of the Cheviot Hills and BCW₂ strata, dip 3° to 7° to the east. Both units have multiple internal paleosols and reflect many hundreds of thousands of years of episodic deposition, surface stabilization, and weathering. The Cheviot Hills deposits, known only from the subsurface, have similar genetic origin to the alluvial fan and fluvial deposits of the BCW₂ materials, but are generally finergrained, contain more clays than gravels, and could reflect a lower gradient environment of deposition than the BCW₂ fans.

CGS Comment 10: CGS notes if faulting exists between CB-11 and CB-12, and if the gas station faults are projected toward that area, the resulting fault trend would roughly parallel the groundwater barrier and align with the topographic escarpment on the adjacent golf course property, which seems more geologically reasonable. Consequently, it may not be appropriate to conclude the groundwater barrier faults are inactive without additional supporting data.

Response 10: As discussed earlier (Response 7) the Gas Station's groundwater barrier is problematic as a fault barrier, and more plausibly explained stratigraphically as a buttress unconformity between the BCW₂ channel and the much finer-grained BCW₁ unit and the post-glacial Moreno Creek alluvium. No fault was observed within the Pleistocene BCW₁ deposits in FT-3, and any structural projection of the inferred groundwater barrier northwards would intersect FT-3.



5.0 CONCLUSIONS

We have completed additional excavations, borings and soil age estimates at the El Rodeo K8 School to determine if the campus is impacted by active faults. To that end ECI has estimated the age of sediments exposed in three new trenches excavated for this study, fault trenches FT-3 and FT-4 and the AT&T Utility trench, none of which exposed any faults. The findings of the age estimates provided by ECI indicate the trenches exposed Pleistocene age sediments significantly older than 11,700 years even when only minimum ages are considered. Based on this supplemental investigation performed in response to CGS comments, it remains our opinion that <u>no</u> active faults are present on the campus of El Rodeo K8 School or its associated buildings. Specifically, we documented the presence of unbroken sediments and soils, dated by relative means to be at a minimum 22,000 years old (minimum age for the relict profile at Station 0+10 in Trench FT-4), but more likely exceeding 200,000 years in age.

Significant findings of our investigation include:

- We find direct geologic evidence that there has been <u>no</u> faulting at El Rodeo K8 School for at least 22,000 years (soil at Section 0+10 in fault trench FT-4) and more likely more than 200,000 years.
- The continuous soil borings extended into undeformed Pleistocene-age sediments that are many hundreds of thousands of years old.
- The fault trenches and utility trench excavations consistently exposed Pleistoceneage sediments that are gently dipping to nearly horizontal and unbroken across the trench exposures.
- We find direct geologic evidence to conclude that the northeast-trending faults mapped by GWI immediately to the northwest of the 9900 Wilshire Boulevard site, if present at all, are not active. Fault trenches specifically excavated across the surface trace of some of these inferred faults did not encounter evidence of faulting in sediments that are a minimum of 48,000 thousand years old (soil at Section 1+05 in fault trench FT-3), and more likely 150,000 to 200,000 years old.
- We have interpreted several potential faults at depth (Santa Monica Blvd-North Fault, GWI Fault F and Fault I), however, side-by-side core boring correlations, combined with the unbroken stratigraphy revealed in the trenches, we conclude that activity along these potential faults ceased more than 500,000 years ago.
- Based on the findings presented above, we conclude that <u>no</u> fault-related structural setbacks are required for El Rodeo K8 School.



• In addition to failing to find the previously inferred active faults through the El Rodeo K8 School, it is also important to mention that we have found no geologic evidence of deformation that would be consistent with a major fault intersection and step-over structure, even in sediments that date back hundreds of thousands of years. These findings call into doubt the entire structural geologic paradigm for the Newport-Inglewood, West Beverly Hills Lineament, Santa Monica and Hollywood fault interactions. More than doubt, they totally refute the published model.

6.0 LIMITATIONS

Environmental (hazardous materials) and geotechnical (foundation) design services were not included as part of this study, nor within the scope of this report. This report was prepared for the sole use of Beverly Hills Unified School District and their consultant team, to assess the risk of faulting though this school campus in accordance with generally accepted engineering geology practices at this time in Los Angeles County.



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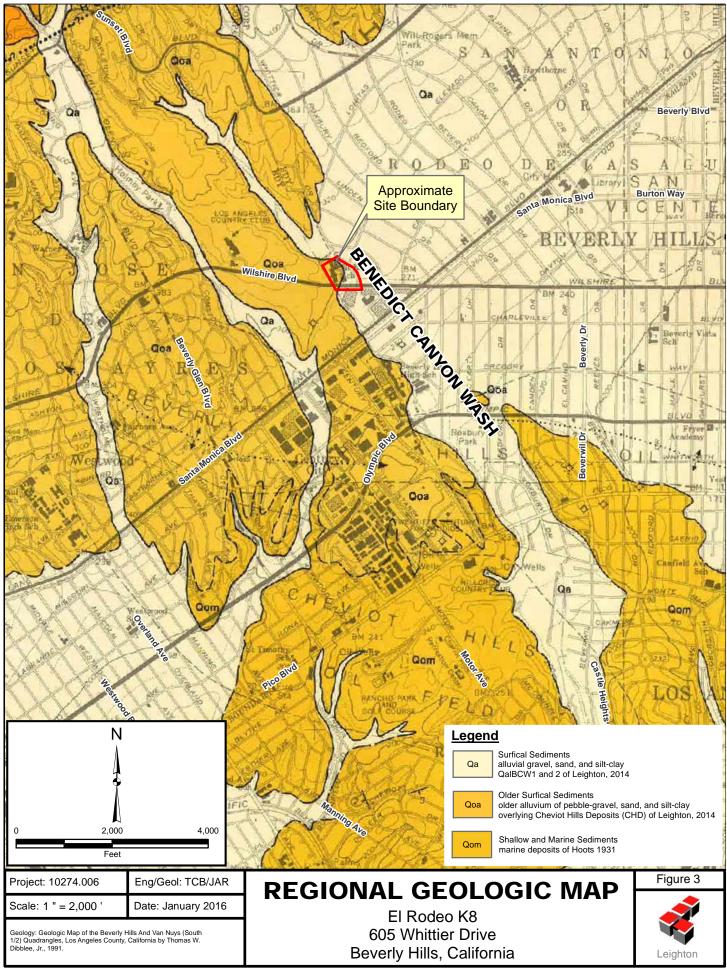
Aerial Photographs Reviewed

Date	Flight No.	Frame Nos.	Approx. Scale	Source
No date (early 1920's)	n/a	7086	n/a (oblique)	Spence Air Photos, Inc.
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11/4/1929	n/a	O-326	n/a (oblique)	Fairchild Aerial Surveys
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8/23/1931	n/a	E-46, F-57	1"=540'	Spence Air Photos, Inc.
10/10/1932	n/a	E-3782	n/a (oblique)	Spence Air Photos, Inc.
5/22/1938	AXJ	26-19, 26-20, 26-22	1:20,000	USDA
3/5/1939	n/a	O-6100	n/a (oblique)	Fairchild Aerial Surveys
11/19/1953	AXJ-14K	62, 63	1:20,000	USDA
5/8/1956	n/a	E-23A-99	n/a (oblique)	Spence Air Photos, Inc.









APPENDIX A CGS LETTER DATED JUNE 30, 2015



CGS, CALIFORNIA GEOLOGICAL SURVEY

DEPARTMENT OF CONSERVATION

CALIFORNIA GEOLOGICAL SURVEY

SCHOOL REVIEW UNIT • 801 K STREET, MS 12-31 • SACRAMENTO, CALIFORNIA 95814

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Dr. Gary Woods District Superintendent Beverly Hills Unified School District 255 S. Laskey Drive Beverly Hills, CA 90212

June 30, 2015

Subject:

Engineering Geology and Seismology Review for El Rodeo Elementary School – Seismic Mitigation 605 Whittier Drive, Beverly Hills, CA CGS Application No. 03-CGS1921

Dear Dr. Woods:

In accordance with your request and transmittal of documents on March 16, 2015, the California Geological Survey (CGS) reviewed the engineering geology and seismology aspects of the consulting reports prepared for El Rodeo Elementary School. It is our understanding future improvements are planned for the campus, but no definite site plan was provided. This review was performed in accordance with Title 24, California Code of Regulations, 2013 California Building Code (CBC) and followed CGS Note 48 guidelines. We reviewed the following reports:

- 1. Fault Hazard Assessment, El Rodeo K8 School, 655 Whittier Drive, Beverly Hills, CA: Leighton Consulting, Inc., 17781 Cowan, Irvine, CA, 92614-6009, dated February 27, 2015, Project No. 10274.006, 21 pages, six appendices, four plates, and four figures attached.
- 2. Geohazard Report, El Rodeo K-8 School, 655 Whittier Drive, Beverly Hills, Los Angeles, CA: Leighton Consulting, Inc., 17781 Cowan, Irvine, CA, 92614-6009, dated March 2, 2015, Project No. 10274.006, 33 pages, six appendices, three plates, and seven figures attached.

Based on our review of the data and reports presented by Leighton Consulting, Inc., the consultants provide a thorough and well-documented assessment of the engineering geology issues at the site. However, additional information is needed to adequately address the seismic and geologic issues at the site. Specifically, the consultants should perform a subsurface investigation at the location of the proposed improvements and perform any necessary laboratory testing and analysis to support their geotechnical recommendations.

Basis for Eligibility for Seismic Mitigation Program Funding

We understand this project is currently in Phase I (Verification of Eligibility) of the Seismic Mitigation Program (SMP), and it appears the potential for seismic shaking forms the basis for eligibility for funding under this program. Therefore, we have reviewed the consultants' seismic design parameters in accordance with DSA Procedure 08-03 (errata dated 5-22-2014). The consultants report the following General Procedure seismic parameters derived from a map-based analysis in accordance with the methods prescribed in Chapter 11 of ASCE 7-10:

$$\begin{split} S_S &= 2.276g \text{ and } S_1 = 0.835g \\ S_{MS} &= 2.276g \text{ and } S_{M1} = 1.252g \\ S_{DS} &= 1.517g \text{ and } S_{D1} = 0.835g \end{split}$$

These values appear reasonable.

The consultants also provide Earthquake Hazard Levels BSE-1 and BSE-2 parameters, but since these parameters are not used to evaluation eligibility for funding under the SMP program, they are discussed in the attached checklist comments.

Report 1 documents an investigation to evaluate the presence or absence of active faulting associated with the Santa Monica fault (SMF) at the school site. The consultants reviewed published geologic maps, literature, and aerial photos, as well as a recently completed fault investigation report for a proposed development at 9900 Wilshire Boulevard (Geocon, 2014). Geocon suggested the presence of three active northeast-trending faults to the north and west of the 9900 Wilshire property, which they projected toward the school site based on a transect of closely spaced CPTs and borings along Wilshire Boulevard and a noted groundwater barrier at an adjacent gas station.

The consultants provided CGS with a geohazards report for the campus (Report 2), which evaluated the potential geologic and seismic hazards that may impact the site. However, this report does not address any specific planned improvements at the site. It is our understanding the current project involves structural rehabilitation of Buildings A through D and structural alterations to Building E. Consequently, a geotechnical investigation should be performed to evaluate the subsurface conditions in the vicinity of the proposed rehabilitation (see attached checklist for further discussion).

In conclusion, the engineering geology and seismology issues at this site are not adequately assessed in the referenced report. Additional information should be provided as requested. The consultants are reminded one copy of all supplemental documents should be submitted directly to CGS, and should include the CGS application number. If you have any further questions about this review letter, please contact the reviewer at (213) 239-0876.

Respectfully submitted,

Brian Olson

Engineering Geologist PG 7923, CEG 2429

brian.olson@conservation.ca.gov

Brian Olson

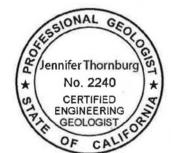
No. 2429

CERTIFIED
ENGINEERING
GEOLOGIST
OF CALIFORNIA

Concur:

Jennifer Thornburg
Senior Engineering Geologist

PG 5476, CEG 2240



Enclosures:

Note 48 Checklist Review Comments

Keyed to: Note 48 - Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings

Discussion of Fault Hazard Assessment

Copies to:

Ted Beckwith, Senior Structural Engineer

Division of State Architect, 700 North Alameda Street, Suite 5-500, Los Angeles, CA 930012

Joe Roe, Certified Engineering Geologist

Leighton Consulting, Inc., 17781 Cowan, Irvine, CA, 92614

Thomas Benson, Jr., Registered Geotechnical Engineer

Leighton Consulting, Inc., 10532 Acacia Street, #B-6, Rancho Cucamonga, CA, 91730

Note 48 Checklist Review Comments

In the numbered paragraphs below, this review is keyed to the paragraph numbers of California Geological Survey Note 48 (October, 2013 edition), *Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings*.

Project Location

- 1. Site Location Map, Street Address, County Name: Adequately addressed.
- 2. Plot Plan with Exploration Data with Building Footprint: Adequately addressed. The consultants provide a site plan with a topographic base showing the locations of their exploratory trenches, cone penetrometer tests (CPTs), and continuous core borings drilled at the site and along Wilshire Boulevard to the south of the campus.
- 3. Site Coordinates: Adequately addressed. Latitude and Longitude provided in report: 34.0676°N, 118.4158°W.

Engineering Geology/Site Characterization

- 4. Regional Geology and Regional Fault Maps: Adequately addressed.
- 5. Geologic Map of Site: Adequately addressed.
- 6. Subsurface Geology: **Additional information is requested.** Based on the subsurface data collected at the site, the campus is underlain by artificial fill and Holocene to Pleistocene alluvium. Additional subsurface exploration is required to evaluate the soils underlying the proposed structural rehabilitation improvements.
 - The consultants report perched groundwater was encountered as shallow as 20 feet deep, but they indicate static groundwater was encountered greater than 125 feet deep in their borings.
- 7. Geologic Cross Sections: Adequately addressed. The consultants provide two geologic cross sections (A and B) depicting the subsurface information collected from their CPT/boring transects, as well as subsurface data collected offsite by others.
- 8. Active Faulting & Coseismic Deformation Across Site: Additional information is requested. See attached enclosure.
- 9. Geologic Hazard Zones (Liquefaction & Landslides): Adequately addressed. The consultants report this campus is not located within a Zone of Required Investigation for liquefaction or seismically induced landsliding established by the California Geological Survey.
- 10. Geotechnical Testing of Representative Samples: **Additional information is requested.** The consultants performed limited laboratory testing on bulk samples collected from their core borings. Additional site-specific testing may be necessary for the specific improvements proposed at the site. The consultants should provide these data once they are available.
- 11. Geological Consideration of Grading Plans and Foundation Plans: **Additional information** is requested. It appears final design plans are not available at this time. They should review any plans once they are finalized in light of the subsurface geotechnical data collected for the site.

Seismology & Calculation of Earthquake Ground Motion

- 12. Evaluation of Historic Seismicity: Marginally adequate. The consultants discuss historical seismicity in the vicinity of the school site, but do not discuss any onsite effects from significant historical earthquakes. CGS notes publically available strong-motion data indicates a site approximately 1,500 feet southwest of the school experienced a peak ground acceleration of 0.35g from the Northridge earthquake (6.7Mw) in January 1994. In the future, the consultants should provide a discussion of any effects (e.g. ground failure, structural damage, etc.) from earthquakes, especially strong earthquakes, in the immediate vicinity of the site.
- 13. Classify the Geologic Subgrade (Site Class): Adequately addressed. The consultants classify the site soil profile as Site Class D, Stiff Soil, based on the subsurface data collected from their borings and CPTs.
- 14. General Procedure Seismic Parameters: **Additional information is requested.** The consultants report the following parameters derived from a map-based analysis:

```
S_S = 2.276g and S_1 = 0.835g

S_{MS} = 2.276g and S_{M1} = 1.252g

S_{DS} = 1.517g and S_{D1} = 0.835g
```

The consultants also provide Earthquake Hazard Levels BSE-IE and BSE-2E parameters. However, CGS notes the values provided are too low and not considered reasonable. Also, it appears the consultants used the methodology described in ASCE 41-13, which is not applicable under the 2013 CBC. The consultants should review the methodologies described in Chapter 34 of the 2013 CBC and ASCE 41-06 and provide the appropriate BSE-1 and BSE-2 parameters. Because a site-specific ground motion analysis is required for this project, the BSE values should be determined from the final MCE_R spectrum (see Item 16).

- 15. Seismic Design Category: Not addressed. CGS notes the value of S₁ is greater than 0.75g and, therefore, the site will be assigned to **Seismic Deign Category E**, per Section 1613A.3.5 of the 2013 CBC.
- 16. Site-Specific Ground Motion Analysis: Adequately addressed. The consultants provide a site-specific ground motion analysis as required by the 2013 CBC for sites classified as Seismic Design Category E. They utilize acceptable Next Generation Attenuation relationships, risk coefficients, and a shear wave velocity of 270 meters per second. Their probabilistic and deterministic MCE spectra appear reasonable, based on comparison with the California Geological Survey State-Wide Model (Petersen and others, 2008). The consultants' site-specific seismic design parameters are Sps=1.334g and Sp1=1.162g. These values are considered reasonable and in accordance with ASCE 7-10.
- 17. Deaggregated Seismic Source Parameters: Adequately addressed.
- 18. Time-Histories of Earthquake Ground Motion: Not applicable.

Liquefaction/Seismic Settlement Analysis

19. Geologic Setting for Occurrence of Seismically Induced Liquefaction: Additional information may be needed. The consultants characterize the general subsurface soil

conditions at the campus and conclude there is little to no potential for liquefaction due to the relatively high density of the alluvial soils below the historic high groundwater level. This conclusion appears reasonable; however, once specific improvements are planned, the consultants should review the subsurface data collected as part of the site-specific investigation (see Item 6) and comment on liquefaction potential.

- 20. Seismic Settlement Calculations: Not applicable.
- 21. Other Liquefaction Effects: Not applicable.
- 22. Mitigation Options for Liquefaction: Not applicable.

Slope Stability Analyses

- 23. Geologic Setting for Occurrence of Landslides: Adequately addressed. The consultants state no slopes exist at the campus.
- 24. Determination of Static and Dynamic Strength Parameters: Not applicable.
- 25. Determination of Pseudo-Static Coefficient (Keq): Not applicable.
- 26. Identify Critical Slip Surfaces for Static and Dynamic Analyses: Not applicable.
- 27. Dynamic Site Conditions: Not applicable.
- 28. Mitigation Options/Other Slope Failure: Not applicable.

Other Geologic Hazards or Adverse Site Conditions

- 29. Expansive Soils: Adequately addressed. The consultants report the onsite soils have "very low" expansion potential based on laboratory testing. They also note similar soils were observed and tested at nearby Beverly Hills High School, which had up to "medium" expansion potential.
- 30. Corrosive/Reactive Geochemistry of the Geologic Subgrade: Marginally adequate. The consultants did not perform corrosion testing on the onsite soils, but note surficial soils at nearby Beverly Hills High School were highly corrosive. They should perform site-specific testing of the onsite soils prior to construction.
- 31. Conditional Geologic Assessment: Selected geologic hazards addressed by the consultants are listed below:
 - C. Flooding: Adequately addressed. According to FEMA FIRM documents the site is not located in a 100-year flood zone.
 - D. Tsunami and Seiche: Adequately addressed. The consultants report the site is located away from the coast or any large inland body of water.

Report Documentation

- 32. Geology, Seismology, and Geotechnical References: Adequately addressed.
- 33. Certified Engineering Geologist: Adequately addressed.

Joe Roe, Certified Engineering Geologist #2456

34. Registered Geotechnical Engineer: Adequately addressed.

Thomas C. Benson, Jr., Registered Geotechnical Engineer #2091

Discussion of Fault Hazard Assessment

The SMF zone is expressed as a series of *en echelon* scarps in the Quaternary alluvial fan deposits emanating from the Santa Monica Mountains. It extends easterly from the coast approximately 12 km through urbanized areas of Santa Monica, Beverly Hills, and western Los Angeles. The SMF is generally steeply north-dipping and exhibits left-lateral reverse oblique motion. Many investigators believe the primary fault is a low-angle blind thrust and the surface scarps are associated with sub-vertical hanging wall normal faults.

The subject fault study (Report 1) was performed to assess the potential presence of active faulting associated with the SMF at the El Rodeo school campus. The easternmost geomorphic feature associated with the SMF is a southeast-facing scarp extending from the Los Angeles Country Club property through the central portion of the El Rodeo campus.

Previous Studies

Limited geologic studies reveal both active and inactive strands of the SMF. Dolan et al. (2000) identified an active strand of the SMF in a fault trench excavated at the base of a scarp on the Veteran's Administration Hospital property, approximately 2.5 miles southwest of the site. On the adjacent property, located at 9900 Wilshire Boulevard, Geocon (2014) performed a fault investigation and inferred five northerly trending faults, which they concluded were inactive. Based on a boring/CPT transect along Wilshire Boulevard and a groundwater barrier noted on the gas station property located at 9988 Wilshire Boulevard, Geocon inferred five closely-spaced faults trending northeasterly through the gas station, across Wilshire Boulevard, and toward the El Rodeo school site. Based on the subsurface data from their boring/CPT transect, they concluded these faults were likely active as defined by the State of California.

Fault Investigation and Discussion

As part of the current fault investigation, the consultants excavated and geologically logged two fault trenches (FT-1 and FT-2) and drilled 16 continuous core borings (CB-1 through CB-16) to evaluate the fault rupture hazard for the campus. Detailed observations were made of the soil types, textures and colors, as well as any fractures or other discontinuities. The consultants also provide interpretations of depositional environment and estimated ages of the sedimentary deposits and paleosols exposed in the trenches and core samples. Representatives from CGS visited the site on July 2, 2014 to observe the fault trenches and review the initial core samples from borings CB-1 through CB-8. CGS representatives later returned to the school site on August 1, 2014 to review rock core samples taken from additional borings drilled along the Wilshire Boulevard median, offsite to the south.

Fault Trenches (FT-1 and FT-2)

The consultants excavated two fault trenches in the southern portion of the campus. The trenches ranged from 105 feet (FT-1) to 125 feet long (FT-2) and exposed native alluvial deposits in the western portions and artificial fill in the eastern. Soil age evaluation performed by the consultants indicates the alluvium exposed in these trenches is Pleistocene in age. Minor fractures lined with calcium carbonate were documented within the alluvial sediments, but no evidence of active faulting was observed. This conclusion appears reasonable given the data provided in the

referenced reports. CGS does note these trenches are limited in lateral extent and only expose suitable alluvial sediments in their western portions, so the best quality subsurface data shows an absence of faulting beneath a very limited portion of the school campus.

A-A' (Wilshire Boulevard transect)

In their investigation for 9900 Wilshire, Geocon (2014) drilled five core borings (B1-B through B5-B) and advanced nine CPTs (CPT-1 through CPT-9) along the Wilshire Boulevard center median. For the current campus fault investigation the consultants drilled nine additional continuous core borings along Wilshire Boulevard. The consultants used all this data to generate cross section A-A'. The consultants' profile essentially follows the same alignment as Transect B-B' from the Geocon fault study, but extends slightly farther west. Along this transect, Geocon postulated the existence of three active faults (Faults G, H, and I) as depicted on Leighton's cross section.

The consultants identified several paleosols and other stratigraphic markers in their core borings, and reviewed the Geocon boring logs for similarly described markers, which they depict and correlate on their cross section. Based on these data the consultants show Geocon Faults G and H do not appear to exist where they were mapped. Instead they infer a total of four faults (Faults 1 through 4) along this cross section, which they conclude are not active because of "the presence of unbroken sediments and soils, dated by relative means to be at least 34,000 to much greater than 100,000 years old near the surface" above these faults. The interpretation of continuous unbroken stratigraphy within the various Pleistocene deposits overlying these particular faults is a valid explanation of the data. However, our review of the subsurface data suggests these deposits do not appear continuous and unbroken in other areas. Specifically, it appears the data provided in the boring and CPT logs for cross section A-A' indicate a noticeable lack of correlation of stratigraphic markers between paired borings CB-11/B4-B and CB-12/B3-B. Various unique sedimentary marker units, which are relatively persistent elsewhere yet cannot be correlated between these borings include the following:

- 1. A relatively thick package of clay and silt with distinctive "oxidation-reduction banding" is described between 20 and 30 feet deep in borings CB-11, B4-B, and B5-B, but was not encountered in borings CB-12 or B3-B.
- 2. At a depth of approximately 30 feet a laminated sandy clay unit with manganese oxide nodules is described in CB-12 and B3-B and labeled on the cross section, but does not correlate with any units at this similar depth in CB-11 or B4-B.
- 3. A persistent clayey sand and gravel unit, which extends for at least 135 feet laterally from CB-9 to B4-B, was not encountered in CB-12 or B3-B.
- 4. At about 35 feet deep, another section of "oxidation-reduction banding" was encountered in CB-11 and B4-B and labeled on cross section A-A', but this distinct banding was not observed in CB-12 or B3-B.
- 5. Between a depth of 40 and 50 feet another thick clayey sand and gravel unit was encountered in CPT-3, CB-11, and B4-B, which cannot be correlated to CB-12.
- 6. Another distinct "oxidation-reduction banding" unit up to 8-feet thick was encountered at approximately 65 feet deep in CB-11 and B4-B, which cannot be correlated to CB-12.

Additionally, Geocon's active Fault I is mapped between these borings on their transect based on lack of stratigraphic correlations and the trend of the groundwater barrier identified at the gas station across Wilshire Boulevard. For these reasons, CGS is concerned these distinct lateral discontinuities in the data provided may be related to fault offset and additional subsurface investigation is requested.

B-B' (western transect)

The consultants also construct a northwest trending profile along the western edge of the campus, across Wilshire Boulevard, and along the western edge of the gas station and 9900 Wilshire property. The section provided in Appendix C of Report 1 includes subsurface data from four of Leighton's continuous core borings (CB-1, CB-2, CB-6, and CB-8) ranging from 125 to 160 feet deep as well as eight monitoring wells, and thirteen of Geocon's borings. At the subject site, they postulate the existence of a fault (Fault 1 on Plate 3 of Report 1) between CB-2 and CB-8, but state continuous and unbroken stratigraphic markers in the shallower Pleistocene deposits overlying this fault demonstrate it is not active. The subsurface data does not appear to support this conclusion. For example, the "chocolate brown soil", which is laterally continuous between CB-1, CB-6, and CB-2, does not appear in boring CB-8. At the depth where this soil is projected onto CB-8 on the cross section, there is a section of reddish brown clayey sand with gravel, not chocolate brown clay. Similarly, the sediments above the brown soil in CB-2 consist of sandy clay with occasional thin-bedded gravels and the correlative section in CB-8 shows silty to clayey gravelly sand. Lastly, the base of a paleosol in CB-2 noted on the cross section is apparently down-dropped at least 3 feet in CB-8. This lack of correlation may suggest the fault inferred between these borings extends higher up in the section than depicted on the cross section. Therefore, the conclusion that this fault is not active is not yet clearly demonstrated. Additionally, the correlations made by the consultants between CB-8 and MW-5 do not appear reasonable either. The base of the Benedict Canyon Wash unit (i.e. BCW₁) is defined by an erosional surface with a basal gravel deposit and the consultants project this contact through the middle of a 12-foot thick clay unit in MW-5. Similarly, the contact between BCW2 deposits and the top of the Cheviot Hills deposits (CHD) is defined as a basal sand and gravel layer over a moderately developed reddish brown clayey paleosol. On the cross section this contact is projected through a section of very dark grayish brown silty to gravelly sand. It appears there is also a lack of correlation between these borings, which may be related to fault offset.

Using the data from 9900 Wilshire coupled with the limited sampling data from the monitoring well logs at the gas station, the consultants give possible interpretations to explain the lack of stratigraphic continuity in central portion of the cross section (i.e. near the gas station). The first assumes a 5 to 7 degree dip at the top of the Cheviot Hills Deposits unit, which allows this horizon to match up with a similar formational contact described in the 9900 Wilshire subsurface data. CGS notes this interpretation does not appear to be supported by the sample descriptions from the monitoring well soil samples, nor does it explain the significant and abrupt difference in groundwater elevation at the gas station site. The second interpretation postulates two faults below the gas station, which define an apparent graben. This model appears more reasonable. They correlate these two faults with Faults 2 and 3 identified in section A-A', and determined them to be inactive, since they also form an apparent graben. However, CGS notes the trend created by connecting these two faults with Faults 2 and 3 is oblique to the groundwater barrier, which does

not seem consistent with the data. CGS notes if faulting exists between CB-11 and CB-12 (see above), and if the gas station faults are projected toward that area, the resulting fault trend would roughly parallel the groundwater barrier and align with the topographic escarpment on the adjacent golf course property, which seems more geologically reasonable. Consequently, it may not be appropriate to conclude the groundwater barrier faults are inactive without additional supporting data.

Conclusions

Based on our review of the data provided in the report and our observations at the site, the consultants do not provide sufficient evidence to preclude active faulting at the site. The consultants excavated two fault trenches at the site, which exposed unfaulted alluvium but were not laterally extensive enough to cover the entire campus. Subsequently, the consultants drilled several closely-spaced borings along Wilshire Boulevard and supplemented these data with subsurface data collected by Geocon during their investigation for the 9900 Wilshire property to the south. The consultants also drilled borings along the western edge of the campus to screen for faults in this area. CGS notes these borings were very-widely-spaced, which is not typical for fault investigations; however, based on our review of the core samples from these borings in the field, the presence of several continuous and correlative layers that appear unbroken, and given the location of this portion of the campus above and behind the geomorphic escarpment, the conclusion that no active faults cross the portion of the campus between borings CB-1 and CB-2 appears reasonable. In other areas, although, CGS observed some significant marker beds and geologic contacts were not consistent or continuous between borings CB-2/CB-8, CB-8/MW-5, and CB-11/CB-12, which may be indicative of faulting. The consultants should review their subsurface data and discuss the potential for faulting in these areas. Additional subsurface data may be necessary to adequately address the potential for active faulting.

APPENDIX B

CONTINUOUS CORE BORING LOGS AND CORE PHOTOGRAPHS



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CLIENT: B				chool	District	t					JOB NO.:	603367-001
CONTRACTO											PAGE NO.:	1 of 9
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				1					INCLINED	Bit (Feet)		PREPARED BY:	
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	_	15-2		ın 3 ox 1	2.9	58		mo	16.7' to 17.9': SANE list to very moist, fir	ne sand, so	rlayered dark redo me interlayered s	dish brown to oli ilts	ve green,
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-283	20 —								20' to 21.8': SAND (nd, few scattered fir		eddish to yellowis	sh brown, wet, fii	ne to mediu
	_	20-2	<i>)</i>	ın 1 ox 2	5	100		sul @2	21.8' to 22.7': Sand pangular gravels 22.7': CLAY (CL), or gray coloring with	lark yellow	brown with orange		
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PROJECT:	El Ro	deo S	chool										TAGE 3 OF	
CLIENT: I													JOB NO.:	603367-001
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	HRS	-				r. OF	ı). BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE START:	2/14/2012
DATE	CON	- 1	WA	TER		SING	HOI			HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	: JMP
										BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	Ь,								0	ANG. FROM VERT.	Total (Feet)			
CORE DE	PTH	DEP RAN (Fee	TH GE	SAM NUM		RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an litions encountered. Trans	ly to a location of	vith time. The description	me of drilling. Subs	
-	30 —	30	35	Rui Boz		5	100		@:	33.3': Few scattered 33.7' to 35', Chocola 35' to 37.4': Sandy	ate brown, v	well developed soil AVEL (GP), dark yo	ellow brown to	gray brown,
	_	35-4	40	Rui Bo		5	100			eistocene Cheviot I 37.4': CLAY (CL), drk reddish brown, o	gular black Hills Depos ark yellow b xidation and	slate gravels, eros its (CHD): orown, moist, some	ional surface b	elow
-263	40-									39.7': Color grades	to dark red	dish brown, moder	ate blocky stru	cture,
-		40-4	45	Rui Bo:		5	100			leosol 40.4': Sandy CLAY bangular gravels the .5' to 49' 41.1': GRAVEL (GF 41.2': Sandy CLAY bangular gravels the .5' to 49' 42.7': GRAVEL (GF 42.8': Sandy CLAY bangular gravels the .5' to 49'	roughout, so y), pulse of with Gravel roughout, so y), pulse of with Gravel	gravel (CL), dark yellow ome fine sand, de	brown, moist, screase in grave	el between scattered fine el between scattered fine
200														
F.,	ELD HAI	DDNIC	20			PED	DING	Ь		TITLIDE AND ANOLE	IOINTO	CHEAD / EDACTION	MEATIFERING	
	- KNIFE (н	V.	THIN	VING <2		AI	TITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
V. HARD - KNIFE CAN'T SCRATCH HARD - SCRATCHES DIFFICULT MOD. HARD - SCRATCHES EASILY SOFT - GROVES V. SOFT - CARVES V. THIN THIN THIN THIN THICK V. THICK V. THICK						HIN DIUM HICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	MODI	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				(CO	RE	BC	RII	NG LOG			BORING NO. CB-1 PAGE 4 OF 9
CLIENT: B	Beverly DR: M	Iartini Dri	ied Sch illing C	orpor	ation							JOB NO.: 603367-001 PAGE NO.: 4 of 9
EQUIPMENT										_		ELEVATION: 302.5 Feet
GROUND			DE	PTH TO			05		ORIENTATION		ORE BARREL	DATE START: 2/14/2012
DATE	HRS A	l WA	TER	BOT.	- 1	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 2/14/2012
	COM	/IP		CASII	NG	HOL	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER: Martini
									INCLINED	Bit (Feet)	_	PREPARED BY: JMP
									BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
	L							0	ANG. FROM VERT.	Total (Feet)		
ELEVATIO	N &	CORE			₩.	_	₽		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS
CORE DEP	PTH	DEPTH RANGE	SAMF NUME	'LE DED	88	Rab	GRAPHIC LOG	The S	Soil Description applies on	y to a location	of the exploration at the ti	me of drilling. Subsurface conditions
(Feet)		(Feet)	NOME	JLIN	RECOVERY %	_	8 1	cond	differ at other locations and itions encountered. Trans	tions between	vith time. The description soil types may be gradual	is a simplification of the actual
-	45 —	45-50	Run Box		5	100		@4 sub 46. @4 @4 sub 46. @2 sub 46.	pangular gravels the 5' to 49' 47': Brown clay 48': Poorly developed 188.1': GRAVEL (GPA 188.2': Sandy CLAY pangular gravels the 5' to 49' 49': Gravelly SAND 19: Gravelly SAND 19: Gravelly SAND 19: The Subangular 50' to 50.8': No Rec	ed blocky st), pulse of with Gravel roughout, so (SP), dark gravels overy	ructure gravel (CL), dark yellow ome fine sand, de	brown, moist, scattered fine crease in gravel between brown, moist, scattered fine crease in gravel between moist, fine to medium bown, very moist, fine to
- - 248 \$	_ _ _ 55	50-55	Run Box		4.2	84		@t sor @t coa	52' to 52.9': SAND we fine gravels 52.9' to 53.6': Sand	vith Gravel / GRAVEL S vith Gravel	(GP), dark yellow l	prown, moist, fine sand, prown, very moist, fine to prown, moist, fine sand,
- - - 243 6		55-60	Run Box		3.9	78		@5 coa		(GP), dark yellow	noist, some fine sand o gray brown, moist, fine to	
FIE	LD HAF	RDNESS			BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
V. HARD - HARD - MOD. HARD - SOFT -	- KNIFE C	CAN'T SCRATO CHES DIFFICU CHES EASILY S		V. TH THI MEDI THI V. TH	HIN IN IUM CK	<2"-1: 2"-1: 12"-3 36"-1: >120	2" 6" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) PRATELY DIPPING (35-55°) P OR HIGH ANGLE (56-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre><2" 2"-12" 12"-36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

					CO	RE	ВС	KIN	IG LOG			BORING NO. PAGE 5 OF	CB-1
ROJECT:		odeo S y Hills		School	Distric	t						JOB NO.:	603367-001
ONTRACT	OR: N	Martin	ni Drilling	Corp	oration							PAGE NO.:	5 of 9
			4E-75, Co							1		ELEVATION:	302.5 Feet
GROUNI		R: AFT			TO (Fee	t): BOT.	05	Х	ORIENTATION VERTICAL	TYPE	Split Sleeve	DATE START:	2/14/2012
DATE	CO	- 1	WATER	- 1	SING	HO		- 1	HORIZONTAL	SIZE	2.5 I.D.	DATE FINISH: DRILLER:	2/14/2012 Martini
	00			-	0.110	110			INCLINED	Bit (Feet)	2.01.2.	PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATION	ON &	COI		MDI E	l ¥		₽		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE (Feet)		DEP RAN (Fe	GE NU	MPLE MBER	RECOVERY	Rap	GRAPHIC LOG	may c	oil Description applies on iffer at other locations an ions encountered. Trans	d may change v	with time. The description	n is a simplification o	
-243	60 —							@6	0' to 60.7': No Red	covery			
	_							@6	0.7': CLAY (CL), d	ark yellow b	prown, moist		
							<i>\\\\\</i>	1	, ,				
								1					
								1_	0.71				
			_{cr} _R	un 3	1				2': Thin gravel laye				
		60-		ox 4	4.3	86	670		2.2': CLAY (CL), d			da augustus	
	\dashv						200	1 @6 fine	2.4' to 65.9': Sand to medium sand,	y GRAVEL fine to coar	(GP), dark yellow	เบ gray brown, subangular bla	very moist, ck slate
							000		vels and weathered			-acangaiai bia	S. Giulo
							$\[\[\] \]$	1					
	-						00]					
							60°	-					
-238	65—												
-230	05						000	1					
							(° 0°)]					
	_						5 V.	1	5.9' to 70.4': No Ro	0001/071			
								_ @o	5.9 10 70.4 . NO RI	ecovery			
	-												
		65-		un 1	0.9								
		00-	'	ox 5	0.5	18							
-233	70-				1		-						
							,,,,,						
								@7	0.4' to 72.8': CLAY	with Grave	el (CL), dark reddis	sh brown to cho	ocolate
	_								wn, moist, few fine cture	graveis sca	attered inroughout	, weii-aevelope	eu DIOCKY
								1 3"1					
								1					
	-						/////	1					
		70-		un 2	4.6	00							
			B	ox 5		92	KH (<u></u>	2.8' to 75': Sandy	GRAVEL /C	3P) dark vellow br	own moist fin	e to medium
	٦						60°	san	ds with some clay	, fine to coa	ر رمر), dark yellow bi	avels	C to mediuli
							00]	-) ,		3.4		
							P / C	1					
								1					
							70	1					
-228	75						-Λο						
	ELD HA	RDNES	SS		BED	DING		ATT	ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
. HARD ARD			CRATCH		. THIN THIN	<2 2"-1			HORIZONTAL (0-5°) WW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
	- SCRAT	TCHES E		ME	EDIUM	12"-3 36"-1	36"	MODE	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	- GRUM					JU - I							
OFT SOFT	- GROVI - CARVE				THICK	>12	0"		VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	

					CO	RE	BC	KII	NG LOG			BORING NO. PAGE 6 OF	CB-1
ROJECT: LIENT: I		deo Sc Hills U	hool Unified So	hool I	Distric	t						JOB NO.:	603367-001
			Drilling									PAGE NO.:	6 of 9
QUIPMENT	USED:	CM	E-75, Cor	tinuo	us Cor	e						ELEVATION:	302.5 Feet
GROUNI	_		D		O (Feet				ORIENTATION		ORE BARREL	DATE START:	2/14/2012
DATE	HRS		WATER	BOT	- 1	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/14/2012
	CON	ИP		CAS	ING	HOI	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)	<u> </u>	PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	Ь ,			Ь.,		_		0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO		CORI	1	IPLE	Š.		≌ູ	l			TION, REMARKS, AND		
CORE DE (Feet)		RANG (Feet	E NUM	IBER	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	with time. The description	n is a simplification o	
-228	75—							@7	75' to 76.8': No Rec	overy			
	_	75-8		n 3	3.2			@7 me	76.8' to 77.6': Sand	y GRAVEL ome clay, fii	(GP), dark yellow ne to coarse black	brown, moist, f	ine to
		.00	Bo	x 5	V. <u>L</u>	64			77.6': CLAY (CL), d vels	ark yellow b	prown, moist, few	scattered fine s	subrounded
								@7	78.5': Color grades	to dark red	dish brown, mode	rate blocky stru	cture
-223	80—								30': Dark yellowish	hrown			
	_	80-8	h		5	100	000	sar	81.8' to 82.5': Sand nd, fine to coarse si 82.5' to 84.6': Sand	ubangular g	gravels		
80-85 Run 1 Box 6									34.6' to 85': Gravell	,	,		
-218	85—						<i>[[]]</i>	∱∖sar	nd, fine angular gra	vels	-,, sain yonow to g	,, D. OWII, IIIO	,
		85-9	()	n 2 x 6	0	0		300	35 [°] to 91.5 [°] . No Řec	overy			
-213	90-						-						
							L_,					,	_
	ELD HAF					DING			FITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD	ARD							SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	V. CLOSE CLOSE MOD. CLOSE	<2" 2"-12" 12"-36"	FRESH V. SLIGHT SLIGHT	

					CC)RE	BC	RII	NG LOG			BORING NO. PAGE 7 OF	CB-1
ROJECT:	El Ro			16.1	al Dist.	-4						JOB NO.:	602267.004
LIENT: <u>I</u> ONTRACTO												PAGE NO.:	603367-001 7 of 9
QUIPMENT												ELEVATION:	302.5 Feet
GROUNI					TH TO (Fe				ORIENTATION	C	ORE BARREL	DATE START:	2/14/2012
DATE	HRS	AFT	WATE	-p	BOT. OF	ВОТ	. OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/14/2012
DAIL	COI	MP	WAIL	-11	CASING	HC	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	
	-			\perp					BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
			- I			<u> </u>	T	0	ANG. FROM VERT.	Total (Feet)			
CORE DE (Feet)	PTH	DEP RAN (Fee	TH GE	SAMPL NUMBE	≥ ∞	Rab	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	vith time. The description	time of drilling. Subs	urface conditions f the actual
-213 -	90 —												
		90-	95	Run : Box (70		sar					
							000	fine	93' to 93.9': Sandy of to medium sand,	fine gravels	, basal gravels, e	rosional contac	t below
	-							@9	93.9' to 94.3': Claye	y SAND wi	th Gravel (SC), da	ark yellow to rec	l brown, moi
								@9	94.3': CLAY (CL), d	ark yellow b	prown, moist, Mn0	O laminations	
-208	95—								(- /, -	,	,		
	_												
		95-1	00			100		@:	97': Color grades to	olive brow	า		
202	_	95-100 Run 1 Box 7 5						@:	97.9': Color grades	to grey			
−203 1	00												
	_	100-	105	Run : Box :		100		@	01.1': Color grades	s to olive gr	een		
								@	03.5': Color grades	s to olive br	own		
-198 1	05-						()°	@	104.5' to 106.9': So	me scattere	ed fine gravels		
	EL D	DD1/=				DDING		<u> </u>	FITURE AND AND	101: ===	OUEAD / EDA CE: :==	14/5	
	ELD HAI			-	V. THIN	DDING <	2"		HORIZONTAL (0.5°)	-	SHEAR / FRACTURE	WEATHERING	
. HARD ARD IOD. HARD OFT . SOFT	RD - SCRATCHES DIFFICULT THIN 2"-12" D. HARD - SCRATCHES EASILY MEDIUM 12"-36" FT - GROVES THICK 36"-120"							SHALL	HORIZONTAL (0-5°) ON CHOW ANGLE (5-35°) FRATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 8 OF	CB-1
ROJECT: LIENT: <u>I</u> ONTRACTO	DR: M	Hills l Iartini	Unified S Drilling	g Corp	oration							JOB NO.: PAGE NO.:	603367-001 8 of 9
QUIPMENT									ODIENTATION	1 -	ODE DARREI	ELEVATION:	302.5 Feet
GROUNE		_			TO (Fee		OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	2/14/2012
DATE	HRS A		WATER		T. OF SING	BOT.		٨		SIZE	Split Sleeve	DATE FINISH:	2/14/2012 Mortini
	CON	יור		LA	DING	HOI			HORIZONTAL		2.5 I.D.	DRILLER:	Martini
									INCLINED BEARING	Bit (Feet)	5	PREPARED BY	
	-	-		+				0	ANG. FROM VERT.	Barrel (Feet) Total (Feet)	1	LOCATION:	See Plate 1
		000	-		┰. ┤			т —				<u>_</u>	
CORE DEI	РТН	DEPT RANG (Feet	H SA	MPLE IMBER	RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	vith time. The descriptio	time of drilling. Subs	urface conditions of the actual
−198 1	05 - -	105-1		un 3 ox 7	5	100			106.9': CLAY (CL),	brown, moi	st		
								@	I08': carbonate in n	natrix			
-193 1	10—				1			<u></u>	110': Grades to Silt	v CLAY (CI), brown to dark v	ellowish brown	moist few
	-	110-1		un 1 ox 8	5	100		@	attered cemented c	rom brown		of carbonate wi	th scattered
188 1	15								113.6' to 118': Colo bonate and scatter				specks of
	-	115-1		un 2 ox 8	5	100		@	I18': Color grades t	o olive brov	vn, abundant carb	oonate deposits	and nodules
—183 1	20-												
EII	LD HAR	SDNES	 S		BED	DING	Н	ΔT	TITUDE AND ANGLE	.IOINIT9	SHEAR / FRACTURE	WEATHERING	
. HARD IARD IOD. HARD IOFT	- KNIFE C - SCRATC - SCRATC - GROVES - CARVES	AN'T SC CHES DIF CHES EA	RATCH FICULT	MI	THIN THIN EDIUM HICK THICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HTODE AND ANGLE HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) FRATELY DIPPING (35-56°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 9 OF	CB-1
ROJECT:	El Ra	odeo S	chool									FAGE 9 UF	5
LIENT: E				School	Distric	t						JOB NO.:	603367-001
ONTRACTO	R: <u>I</u>	Martir	ni Drillin	g Corp	oration							PAGE NO.:	9 of 9
QUIPMENT			1E-75, C						ODIENT			ELEVATION:	302.5 Feet
GROUNE		$\overline{}$			TO (Fee	t): BOT.	OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	2/14/2012
DATE	HRS CO		WATER	· I	SING	BOT.		^	HORIZONTAL	SIZE	Split Sleeve 2.5 I.D.	DATE FINISH: DRILLER:	2/14/2012 Martini
					.5	.10			INCLINED	Bit (Feet)		PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO		DEP	TH S	AMPLE	RECOVERY	Rab	GRAPHIC LOG	Soil Description applies or	nly to a location of	TION, REMARKS, AND of the exploration at the t	ime of drilling. Subs	urface conditions	
(Feet)		RAN (Fee		JMBER	RECO	œ	GR/	may cond	differ at other locations an itions encountered. Trans	id may change v sitions between :	vith time. The description soil types may be gradua	n is a simplification o I.	f the actual
-183 1	20—						/////						
.00 .	-												
								@1	120.5' to 121.8': Gr	ades to Sar	ıdy CLAY (CL), oli	ve brown, mois	t, fine sand.
	4							sca	attered carbonate o	leposits	, ,-	-	•
								1_					
	\dashv								121.8' to 124.4': CL ween 122.1' to 122		ve brown, moist, a	abundant carbo	nate deposi
		120-		Run 3	5	100) Del	.vv.COII 122. I LU 122	5			
			"	Box 8		100							
	_												
								1					
								@1	124.4' to 125': SAN	D (SP), dar	k yellow brown, we	et, fine sand	
-178 1	25		-		1	-	 	•					
-173 1	30 —							dril Ex	cavation backfilled ling. cess soil cuttings d site.	•	·		
	_												
	\dashv												
	_												
-168 1	35—												
FIE	LD HA	RDNES	SS		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
			CRATCH		. THIN THIN	<2 2"-1			HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V SLIGHT	
OD. HARD OFT		CHES E		ME T	EDIUM HICK THICK	12"-3 36"-1 >12	36" 20"	MODE	ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	MOD. CLOSE WIDE V. WIDE	12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

					СО	RE	ВС	RII	NG LOG			BORING NO.	CB-2
PROJECT:	El R	odeo Schoo	ol									PAGE 1 OF	9
		y Hills Unit				t						JOB NO.:	603367-001
		Martini Dr										PAGE NO.:	1 of 9
		: CME-7										ELEVATION:	304.9 Feet
GROUNI			DE		TO (Feet	t): BOT	OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	2/13/2012
DATE	1	AFT WA	ATER		SING	HO		X	HORIZONTAL	SIZE	Split Sleeve 2.5 I.D.	DATE FINISH: DRILLER:	2/13/2012 Martini
	00	TVII		CA	SING	110	LL		INCLINED	Bit (Feet)	Z.3 I.D.	PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	AN 8	CORE			T _≿		ြပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE		DEPTH	SAM		¥i	Rab	₹ 8	The	Soil Description applies on	ly to a location	of the exploration at the ti	me of drilling. Subs	urface conditions
(Feet)		RANGE	NUM	BER	RECOVERY	ř.	GRAPHIC LOG	may	differ at other locations an itions encountered. Trans	d may change v	vith time. The description	is a simplification o	f the actual
		(Feet)			E .			00110	iciono encountereu. Trano	IIIOIIO DOLWOCIT	oon types may be gradear	•	
 305	0-							@9	Surface: 4" Asphal	t concrete			
								@(0.3':Artificial Fill, u	ndocument	ed (Afu):		
_] [] [].		ty SAND (SM), dark	k yellowish l	brown, moist, some	e angular blac	k slate
							$ \cdot \cdot $	gra	ivels				
							[].[']						
_	_	1-3	SB	1 _1				<u>L</u>					
		1-3		, - 1			$ \cdot $	Ple	eistocene Alluvium	of Benedic	t Canyon Wash: (I	BCW ₂):	
							[].].						
_	_						}						
							$ \cdot \cdot $	1					
-	_							-					
									1': Cobble				
								@4	4.4': Silty SAND (SI	M)			
—300	5						1111	<u> </u>	The FOLMS December				
								@:	5' to 5.9': No Recov	ery			
_	_						مکر	@:	5.9': Sandy GRAVE	L (GP), dar	k reddish brown to	dark grayish l	orown, slightly
							10°	mo	ist, fine to coarse s	sand, fine to	coarse subrounde		
							000	gra	vels, chaotic asser	nblage, oxid	dized		
-	_						600	1					
		5-10	Rui		4.1								
			Box	x 1		82	000	1					
_							[° 0°	7					
							00	1					
							P > C]					
-	_						10°	(I					
							000						
205	10						% } }						
—295	10						200	V					
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_	_						[O	7					
							20	V					
							₽Õ(
-	_						16 Q.	đ					
			Rui	n 2			000	1					
		10-15	Box		2.5	50	الم		12.5' to 15': No Rec	coverv			
-						-				,			
-													
290	15												
					<u>L</u>								
FI		RDNESS			BEDI			AT	TITUDE AND ANGLE	1	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT /. SOFT	- SCRA	CAN'T SCRAT TCHES DIFFICU	JLT	T	THIN HIN	<2 2"-1	2"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
MOD. HARD SOFT	- GROV				DIUM HICK	12"- 36"-1		MODE	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
. SOFT	- CARVI				THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	
										Fe = Iron Oxi	de Mn = Manganese Oxide	COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB-2			
ROJECT: CLIENT: E CONTRACTO	DR: N	Hills Iartin	Unified S i Drilling	Corpo	oration							JOB NO.: PAGE NO.: ELEVATION:	603367-001 2 of 9 304.9 Feet			
QUIPMENT GROUNE					ous Cor TO (Fee				ORIENTATION		ORE BARREL	DATE START:	304.9 Feet 2/13/2012			
	HRS	_			T. OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/13/2012			
DATE	CON	MP	WATER	CA	SING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini			
									INCLINED	Bit (Feet)		PREPARED BY	: JMP			
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1			
	<u> </u>						I	0	ANG. FROM VERT.	Total (Feet)						
CORE DEI (Feet)	РТН	COR DEPT RANG (Fee	TH SA GE NU	MPLE MBER	≥ .₀	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location d may change v	with time. The descripti	e time of drilling. Subston is a simplification of				
	15 - -	15-2		un 3 ox 1	1.7	34			5' to 16.7': Sandy		GP), moist, large	cobble @16.7'				
	_		D'	UX I		34										
-285	20					100	1		20' to 20.3': Silty SA	AND (SM), o	dark yellowish bro	own, moist, some	e subrounde			
					1 5				vels							
	_	20-2	<i>)</i>	un 1 ox 2				gra	20.3' to 23': Gravellist, fine to coarse s	sand, subro	unded to subang	ular fine to coars	se black slate			
	_							few	23' to 24.5': Sandy value of large cobbles		, ,		brown, moist			
—280	25										@2	24.5' to 26.1': Silty \$	SAND (SM)	i, olive gray, mois	st, fine sand	
		25-3	an R	Run 2 Box 2		78		coa	26.1' to 27.2': Sand arse black slate gra 27.2' to 27.5': SAND	ivels	. ,					
	-	20-0	B					sar @2 bar	nd, erosional contact 27.5': Sandy CLAY inded, gleyed to 31' 28.3' to 28.9': Sand	ct below (CL), olive	gray, moist, fine	sand, oxidation-r	reduction			
0==							,0,	CO	arse subrounded gr 28.9' to 30': No Rec	avels	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,				
−275	30							Γ-								
FIF	LD HAF	RDNES	ss	Τ	BED	DING		AT	ΓΙΤUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING				
. HARD IARD IOD. HARD IOFT	- KNIFE (- SCRAT(- SCRAT(- GROVE - CARVE	CAN'T SO CHES DI CHES EA	CRATCH IFFICULT	ME T	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-56°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE				

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB-2		
ROJECT:	El Ra	deo So	chool									FAGE 3 UF	<u>ت</u>		
				School	Distric	t						JOB NO.:	603367-001		
CONTRACTO	DR: N	Aartin	i Drillin	g Corpo	oration							PAGE NO.:	3 of 9		
QUIPMENT	USED:	CM		ontinuo	ous Cor	e						ELEVATION:	304.9 Feet		
GROUNI				DEPTH					ORIENTATION		ORE BARREL	DATE START:	2/13/2012		
DATE	HRS	- 1	WATER	?	T. OF	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/13/2012		
	COI	MP		CAS	SING	HOI	.E		HORIZONTAL INCLINED	SIZE Bit (Feet)	2.5 I.D.	DRILLER: PREPARED BY	Martini		
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1		
								0	ANG. FROM VERT.	Total (Feet)		- LOOATION.	occi atci		
=======================================		COR	E		T :- '		ပ		FIEL	_ ` ′	TION, REMARKS, AND	LIMITATIONS			
CORE DE		DEP1	-	AMPLE	≥ °	Rab	GRAPHIC LOG	The	Soil Description applies onl				urface conditions		
(Feet)		RANG		UMBER	RECOVERY	Ř	38.	may	differ at other locations and itions encountered. Transi	d may change v	vith time. The description	n is a simplification o	f the actual		
—275	30-	(Fee	1)		l œ			CONG	iciono enocumerea. Transi	ILIONO DELWEEN	oon types may be gradua	•			
- - -	_	30-3		Run 3 Box 2	5	100	000	gle fra	@30': CLAY (CL), dark yellow brown to dark reddish brown, some olive gramottling, moist, some fine gravels, paleosol, blocky to hackly structure, mit gleying on soil peds, moderate clay lining peds, few highly weathered siltst fragments, 2-3% oxidizied fine slaty gravels @32.5': Base of paleosol. Grades to Sandy CLAY (CL), dark yellow brown mottled with olive gray, moist, fine sand, some fine gravels @33.3': carbonate horizon						
—270 35-	_			Run 1 Box 3		100		√\@ 3	35.9': Thin gravel la 36': Sandy CLAY (C	CL)					
-	_	35-40			5				36.2': White siltston 36.4': Sandy CLAY		gravel bed				
—265 -	40 -								89': Grades to CLA\ e gravels and SILT	Y to Silty Cl	_AY (CL), dark cho	ocolate brown,	moist, some		
-				Run 2 3ox 3		100		fine	@41.6' to 44.5': Sandy GRAVEL (GP), dark yellow brown to gray fine to coarse subangular to subrounded gravels, fine to coarse so clay, erosional contact below						
—260	45							@4	14.5':Pleistocene C	 heviot Hills	Deposits (CHD):				
FI	ELD HA	RDNES	 S		BFD	DING	' 	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING			
V. HARD HARD	- KNIFE	CAN'T SO CHES DI CHES EA	CRATCH IFFICULT	ME TI	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 86" 20"	SHALL	HTODE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE			

					СО	RE	BC	RII	NG LOG			BORING NO. CB-2 PAGE 4 OF 9
PROJECT: CLIENT: <u>B</u> CONTRACTO	everly		ied Sc			;						JOB NO.: 603367-001 PAGE NO.: 4 of 9
EQUIPMENT	_					e						ELEVATION: 304.9 Feet
GROUND			DE		ΓΟ (Feet				ORE BARREL	DATE START: 2/13/2012		
DATE I		AFT WA	WATER BOT. OF					Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 2/13/2012
	COM	/IP		CAS	SING	HOL	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER: Martini
					_				INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY: JMP LOCATION: See Plate 1
								0	ANG. FROM VERT.	Total (Feet)	3	LOCATION: See Plate 1
		CORE	<u>'</u>		<u> </u>		ပ	Т		· ' '	TION, REMARKS, AND L	IMITATIONS
CORE DEF		DEPTH	SAM	PLE	VER	Rab	Ĭσ	The S				me of drilling. Subsurface conditions
(Feet)		RANGE (Feet)	NUMI	BER	RECOVERY	2	GRAPHIC LOG	may o	differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of the actual
-	45 —	45-50	Rur Box	-	5	100		pal alo @4 gra @4 @4	eosol, fine to coars ng ped faces, mode 15' to 45.3': Silty Cla 15.3': CLAY (CL), devels 16.8': Thinly bedded 17': CLAY (CL) dark 18.4': Gravelly CLA	e slaty sanderate silica ayey SAND ark yellow b d gravels x yellowish l	d, subangular to sucement. Base of p (SC), dark yellow brown to dark reddictions of the second secon	with olive gray, moist, abrounded gravels, gleying aleosol @ 46.7' brown, moist, fine sand sh brown, moist, few fine oist, fine angular gravels e silt and fine sand, few fine
		50-55	Run 1 Box 4		١ 5	100		@5 and stru @5 and stru @5 silt:	d white siltstone chiucture 51.5': Thin bed of file 51.7': Sandy CLAY d white siltstone chiucture 54': Sandy clayey S stone rock fragmen d faces	(CL), dark y ps, 6-inch t ne to coarse (CL), dark y ps, 6-inch t ILT (ML-CL tts, poorly d	ellow brown, moist hick brown soil, up e sand /ellow brown, mois hick brown soil, up c.), light orange broveveloped blocky st	r, fine sand, fine slaty gravel per part missing, blocky t, fine sand, fine slaty grave per part missing, blocky wn, very moist, trace of tructure, minor gleying along
-	55	55-60	Rur		2.5			©5 coa me gra	d 55' to 56.4': Sandy (arse angular black s 56.4' to 57': Silty SA dium sand, thinly b	GRAVEL (Constant of the constant of the cons	GP), dark yellow to s lark yellow brown to	gray brown, wet, fine to b brown, very moist, fine to gray brown, wet, angular
FIE	ELD HAF	RDNESS			BEDI	DING	<u> </u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
V. HARD HARD MOD. HARD SOFT	- KNIFE C	CAN'T SCRATO CHES DIFFICU CHES EASILY S		MEI TH	THIN HIN DIUM HICK 'HICK	<2"-1. 12"-3 36"-1. >12'	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-2
ROJECT:		deo So			Dieteri							JOB NO.:	603367-001
LIENT: <u>I</u> E ONTRACTO			Unified S									PAGE NO.:	5 of 9
QUIPMENT												ELEVATION:	304.9 Feet
GROUNE		_			TO (Fee	,			ORIENTATION		ORE BARREL	DATE START:	2/13/2012
DATE	HRS		WATER	- 1	T. OF	BOT.	- 1	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/13/2012
	COI	MP		CA	SING	НО	LE		HORIZONTAL	SIZE Bit (Foot)	2.5 I.D.	DRILLER:	Martini
		+							INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)		EOOATION.	Occ i late i
ELEVATIO	MI P	COR	RE		T≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AN	ID LIMITATIONS	
CORE DEI	РТН	DEPT RANG (Fee	GE NU	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies or differ at other locations an itions encountered. Trans	id may change v	with time. The descript	tion is a simplification o	surface conditions of the actual
−245	60 —												
				un 3	3.3		· 0	bla	61.7': Sandy GRAV ck slate gravels, w 62.3': CLAY to San	hite siltston	e fragments, ero	sional contact be	elow
240	60-69		0-65 Box		3.3	66			iy, moist, very fine		, yellow blowl	i, angmuy mouted	with onve
-240	65—							1					
										,			
								4	35.6': CLAY with Sa	and and fine	e Gravels (CL), d	tark yellow browr	n, moist
								, <u> </u>	66': Gravel bed				
					I 5			@6	66.2': CLAY with Sa	and and fine	e Gravels (CL), d	lark yellow browr	n, moist
	_			Run 1									
		65-7	7(1)					@6	67.1': CLAY (CL), d	lark yellow l	orown, moist, so	me fine sand	
		05-7	′	ox 5	5	100							
	-						KKKK.	1	88': Gravel bed, car	rbonate			
							Δ. Δ	\sim	88.1': SAND to Gra		(SW), dark vello	ow brown, moist	to very mois
	-						Δ . Δ	fine	e to coarse sand, fi	ne gravels,	well graded	, , , , , , , , , , , , , , , , , , , ,	,
							1////	@6	69.6' to 70': CLAY (CL), dark v	ellow brown. mo	ist	
-235	70						\////	4—	70' to 70.5': Gravell				ery moist to
							Δ. Δ 0 T	⊢ we	t, fine to coarse sa	nd, fine to c	oarse subrounde	ed to subangular	gravels, we
							60.		ided		(00)		
	٦						00	4 @ <i>i</i>	70.5' to 71.7': Sand t, fine to coarse sa				
							° Ŏ C		·	·			
	_						۵.۵	@7	71.7' to 73.9': Grave	elly SAND (SW), dark yellov	w to gray brown,	gleyed
		70 -	,, R	un 2	2.0		Δ Δ		ivels, very moist to pangular gravels, w				
		70-7		ox 5	3.9	78			y, thinly laminated,				C.O DIOVVII
	4						້	1					
							Δ. Δ	1					
							Δ Δ						
	\dashv							@7	73.9' to 75': No Red	covery			
-230	75							1					
	-												
	ELD HAI	RDNES	iS		BED	DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
ARD		CHES D	IFFICULT	1 7	THIN THIN	<2 2"-1	2"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
OFT	- SCRAT - GROVE	S	ASILY	T	EDIUM HICK	12"-3 36"-1	20"		RATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
SOFT	- CARVE	S		V.	THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	
								_		V. WIDE		MOD. SEVERE V. SEVERE	

				CO	RE	BC	RII	NG LOG			BORING NO.	CB-2
PROJECT:	El Ro	deo Schoo	1								PAGE 6 OF	8
CLIENT: B				Distric	t						JOB NO.:	603367-001
CONTRACTO											PAGE NO.:	6 of 9
EQUIPMENT	_		5, Continuo								ELEVATION:	304.9 Feet
GROUND			DEPTH					ORIENTATION	С	ORE BARREL	DATE START:	2/13/2012
	HRS	AFT	BO ⁻	T. OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/13/2012
DATE	cor	MP WA	TER CA	SING	HOI	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY	: JMP
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO		CORE		l ≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	LIMITATIONS	
CORE DEF		DEPTH	SAMPLE	H.,	Rab	₹g	The	Soil Description applies on	ly to a location of	of the exploration at the ti	me of drilling. Subs	urface conditions
(Feet)		RANGE	NUMBER	RECOVERY	×	GRAPHIC LOG	may	differ at other locations and	d may change w	vith time. The description	is a simplification o	f the actual
(,		(Feet)		2		_	cond	itions encountered. Trans	itions between s	soli typės may be graduai		
_ _ _ 		75-80	Run 3 Box 5	3.3	66	000	@ass	78' to 78.3': Sandy (semblage of gravels 78.3' to 80': No Rec	GRAVEL (G s and rock f overy	SP), dark yellow to ragments, well gra	gray brown, m	oist, chaotic
-	_	80-85	Run 1 Box 6	2.6	52			30' to 82': SAND (Si 32' to 82.6': Sandy (avels, chaotic asser 32.6' to 85': No Rec	GRAVEL (C	SP), dark grav, bro	wn, moist, ang	
 220 8	85—					900		2511 20 21 2 1			1 ODAVE	(OD)
_ _ _ 		85-90	Run 2 Box 6	3.3			gra	35' to 88.3': Continu ny brown, very mois 38.3' to 90': No Rec drilling difficulty	t, weathere	d slaty gravels		
-			<u> </u>						ı			
		RDNESS			DING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- SCRAT		JLT T ME	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) :RATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	⊘" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 7 OF	CB-2	
ROJECT:	El Ro Beverly			ed Sc	hool 1	District	t						JOB NO.:	603367-001	
ONTRACTO													PAGE NO.:	7 of 9	
QUIPMENT			/IE-75								1		ELEVATION:	304.9 Feet	
GROUNI	DWATE!			DE		TO (Feet	,	05	X	ORIENTATION VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START: 2/13/2012		
DATE	COI	- 1	WAT	ER		SING	BOT. OF HOLE		^	HORIZONTAL	SIZE	2.5 I.D.	DATE FINISH: DRILLER:	2/13/2012 Martini	
					0/10/110		-			INCLINED	Bit (Feet)		PREPARED BY		
										BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1	
		COI	-				1		0	ANG. FROM VERT.	Total (Feet)				
CORE DE (Feet)	PTH	DEP RAN (Fe	TH IGE	SAM		- ·	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an	D CLASSIFICATION, REMARKS, AND LIMITATIONS ly to a location of the exploration at the time of drilling. Subsurface condition d to a location of the exploration is a simplification of the actual titions between soil types may be gradual.				
215	90 —								sar cor	90' to 91': Gravelly s nd, fine subrounded ntact below 91': Silty Clayey SA	ND (SC), y	oorly graded, upw	ard fining sequ	ry coarse ence, erosivo	
			Run		n 3					92': Thinly bedded (
9		90-95		95 Box		4.6	92			92.1': Silty Clayey S		yellow brown, mo	oist, fine sand		
										92.3': Thin GRAVEL 92.4': Silty Clayey S		yellow brown, mo	oist, fine sand		
											<u></u>	93.8': Thin GRAVEI	bed (GP)		
										94': Silty Clayey SA		ellow brown, mois	st, fine sand		
-210	95—							14///	@9	94.6' to 95': No Rec	overy				
-210	95								@9	95': Silty Clayey SA	ND (SM-SC	C)			
										00 01: 0DAVEL (0F	N 41-1 11				
							100	网:	_	96.2': GRAVEL (GF 95': Silty Clayey SA	,.	`\			
	_	95-1		Rur Box		5				99.3': GRAVEL (GF					
								M		99.4': Silty Clayey S		SC)			
-205 1	00		\dashv					///	-	100' to 100.7': Grav	•		n, wet_fine_san	d. fine to	
								· · ·		arse siltstone grave			,,	_,0 10	
		100-	105	Run 2 Box 7			68			100.7' to 103': CLA					
										103' to 103.4': Grav		(SP), dark yellow	brown, moist, fi	ne sand, fine	
	_									medium subangula 103.4' to 105': No R					
-200 1	05		_												
EII	ELD HA	RDNE	38			BED	DING		^-	TITUDE AND ANGLE	IOINIT9 /	SHEAR / FRACTURE	WEATHERING		
HARD	- KNIFE	CAN'T S	CRATCH			THIN	<2			HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH		
ARD	- SCRAT - SCRAT - GROVE - CARVE	CHES E		т.	ME Th	HIN DIUM HICK FHICK	2"-1 12"-3 36"-1 >12	36" 20"	MODE	OW OR LOW ANGLÉ (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE		

					CC	RE	во	RIN	IG LOG			BORING NO. PAGE 8 OF	CB-2
ROJECT: LIENT: I		odeo S		I Sabaa	l Dietui	·+						JOB NO.:	603367-001
ONTRACTO												PAGE NO.:	8 of 9
QUIPMENT												ELEVATION:	304.9 Feet
GROUNI					H TO (Fee				ORIENTATION	С	ORE BARREL	DATE START:	2/13/2012
DATE	HRS	S AFT	\A/A TE	В	OT. OF	BOT.	. OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/13/2012
DATE	CO	OMP	WATE	" с	ASING	но	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY:	JMP
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	S NC	CO			l≽		ပ္		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE (Feet)	PTH	DEP RAN (Fee	GE I	SAMPLE		RQD	GRAPHIC LOG	may d	Soil Description applies on differ at other locations an tions encountered. Trans	d may change v	vith time. The description	on is a simplification of	urface conditions the actual
-200 1	105						ه ب ر	_ ക1	05': GRAVEL bed	(GP)			
	_							@1	05.2' to 111': Grav ist, isolated blebs of	el bed unde		CL), dark reddish	brown,
							777777	∖@1	06.2': Thin bed of	fine to medi	um grained sand	with MnO lamin	ations
								_	05.2' to 111': Grav				
	_	105-	110	Run 3 Box 7	5	100		moi	ist, isolated blebs of 07': gley banding			, dair i Guuisii	JIOWII,
	_							@1	08.2' to 108.6': hea	avy MnO ba	nding		
405 4	110												
-195 1	110							@1	10': becomes dark	chocolate	brown, oxidation-	reduction bandir	ng, gleyed
							V/////	_			,		3, 3 - 7
	_	_						<u>ത</u> 1	11' to 113 2'· Grad	les to Sand	/ CLAY (CL) dar	rk vellow brown	moist some
	_	-						@1	11' to 113.2': Grad	les to Sand	/ CLAY (CL), dar ' to 112.8'.	k yellow brown,	moist, some
	_	-						@1 fine	11' to 113.2': Grad angular gravels b	les to Sand etween 111	y CLAY (CL), dar ' to 112.8',	k yellow brown,	moist, some
	_	_						@1 fine	11' to 113.2': Grad angular gravels b	les to Sand etween 111	y CLAY (CL), dar ' to 112.8',	k yellow brown,	moist, some
	_			Run 1				@1 fine	11' to 113.2': Grad angular gravels b	les to Sand etween 111	y CLAY (CL), dar ' to 112.8',	k yellow brown,	moist, some
	_	110-	115	Run 1 Box 8	5	100		@1 fine	11' to 113.2': Grad angular gravels b	les to Sand etween 111	y CLAY (CL), dar ' to 112.8',	k yellow brown,	moist, some
	_	110-	115		5	100		@1 fine	11' to 113.2': Grad angular gravels b	les to Sand etween 111	y CLAY (CL), dar ' to 112.8',	k yellow brown,	moist, some
	_	110-	115		5	100		fine	angular gravels b	etween 111	y CLAY (CL), dar ' to 112.8',	k yellow brown,	moist, some
	_	110-	115		5	100		fine	angular gravels be angular gravels be angular gravels	etween 111	' to 112.8',		
	_	110-	115		5	100		fine 	angular gravels be 13.2': Rounded fin 13.3': Sandy CLA	etween 111 e gravel Y (CL), dark	yellow brown, m	oist, specks of c	arbonate
	-	110-	115		5	100		fine 	angular gravels be 13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty	etween 111 e gravel Y (CL), dark	yellow brown, m	oist, specks of c	arbonate
	-	110-	115		5	100		fine 	angular gravels be 13.2': Rounded fin 13.3': Sandy CLA	etween 111 e gravel Y (CL), dark	yellow brown, m	oist, specks of c	arbonate
	- - -	110-	115		5	100		fine 	angular gravels be 13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty	etween 111 e gravel Y (CL), dark	yellow brown, m	oist, specks of c	arbonate
-1 9 0 1		110-	115		5	100		fine 	angular gravels be 13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty	etween 111 e gravel Y (CL), dark	yellow brown, m	oist, specks of c	arbonate
−190 1		110-	115		5	100		fine 	angular gravels be 13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty	etween 111 e gravel Y (CL), dark	yellow brown, m	oist, specks of c	arbonate
−190 1	_ _ _ 115—	110-	115		5	100		@1 @1 @01 moi	13.2': Rounded fin 13.3': Sandy CLA\ 14' to 115.6': Silty ist, fine sand	e gravel Y (CL), dark Clayey SAN	yellow brown, m	ioist, specks of c k yellow brown to	arbonate o brown,
– 190 1	_ _ _	110-	115		5	100		@1 @1 moi	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand	e gravel Y (CL), dark Clayey SAN	yellow brown, m ND (SM-SC), dark AY (CL), dark yell moist, some oxi	oist, specks of c k yellow brown to low brown to oliv	arbonate b brown,
-190 1		110-	115		5	100		@1 @1 @1 moi	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate	yellow brown, m ND (SM-SC), dark NY (CL), dark yell moist, some oxice	oist, specks of c k yellow brown to low brown to oliv	arbonate brown,
-190 1		110-	115		5	100		@1 @1 @1 moi	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation	yellow brown, m ND (SM-SC), dark MY (CL), dark yell moist, some oxice n (Qsp):	oist, specks of c k yellow brown to low brown to oliv	arbonate brown,
-190 1		110-	115		5	100		@1 @1 moi	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Gravese in olive color 3.3', some specks of aternary San Pedra 16.3' to 117.5', col	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t	yellow brown, m ND (SM-SC), dark moist, some oxide 1 (Qsp): o green	loist, specks of cook yellow brown to olive dation between	arbonate b brown, e brown, 115.6' to
-190 1						100		@1 @1 incr	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Gravese in olive color 3.3', some specks of aternary San Pedra 16.3' to 117.5', col 16.7': Abundant Can	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t	yellow brown, m ND (SM-SC), dark moist, some oxide 1 (Qsp): o green	loist, specks of cook yellow brown to olive dation between	arbonate b brown, e brown, 115.6' to
-190 1	_ _ _ 	110-		Box 8	5	100		@1 @1 moi	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Gravese in olive color 3.3', some specks of aternary San Pedra 16.3' to 117.5', col 16.7': Abundant Can	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t	yellow brown, m ND (SM-SC), dark moist, some oxide 1 (Qsp): o green	loist, specks of cook yellow brown to olive dation between	arbonate b brown, e brown, 115.6' to
-190 1	_ _ _ 			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi CLAY (CL)	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-190 1	_ _ _ 			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Grase in olive color 6.3', some specks of aternary San Pedra 16.3' to 117.5', col 16.7': Abundant Carl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi CLAY (CL)	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-190 1	_ _ _ 			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-190 1	_ _ _ _ _ _			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-190 1	_ _ _ _ _ _			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-190 1	_ _ _ _ _ _			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
	- -			Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
				Box 8				@11 @11 incr 1116 @11 @11 mai	13.2': Rounded fin 13.3': Sandy CLAN 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Graese in olive color 6.3', some specks of aternary San Pedro 16.3' to 117.5', color 16.7': Abundant Corl	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change t aCO ₃ as thi	yellow brown, m ND (SM-SC), dark moist, some oxide (Qsp): o green n horizontal layer	loist, specks of color k yellow brown to oliv dation between and the color of the c	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
−185 1		115-	120	Box 8	5	100		@1 @1 moi	13.2': Rounded fin 13.3': Sandy CLA\ 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Gra ease in olive color 6.3', some specks of aternary San Pedra 16.3' to 117.5', col 16.7': Abundant Carl 17.8' to 120': Silty ne slight oxidation	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation aCO ₃ as thi CLAY (CL) and specks	yellow brown, m ND (SM-SC), dark MY (CL), dark yell moist, some oxic color green n horizontal layer color grades to go of carbonate sca	loist, specks of c k yellow brown to low brown to oliv dation between 	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
—185 1		115-	120	Run 2 Box 8	5 BEE	100 DDING		@1 @1 moi	angular gravels be angular gravels be angular gravels be as a gravel of the same and a gravel of the same angular of	e gravel Y (CL), dark Clayey SAN Clayey SAN Clayey SAN Of carbonate O Formation Or change t aCO ₃ as thi CLAY (CL) and specks	yellow brown, m ND (SM-SC), dark WY (CL), dark yell moist, some oxide 1 (Qsp): o green n horizontal layer color grades to go of carbonate sca	loist, specks of control of the specks of control of	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-185 1	ELD HAP	115-	120	Run 2 Box 8	5 BEC	100	2"	@1 @1 moi	13.2': Rounded fin 13.3': Sandy CLA\ 14' to 115.6': Silty ist, fine sand 15.6' to 116.3': Gra ease in olive color 6.3', some specks of aternary San Pedra 16.3' to 117.5', col 16.7': Abundant Can 17.8' to 120': Silty ne slight oxidation	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formation or change the aCO ₃ as thi CLAY (CL), and specks	yellow brown, m ND (SM-SC), dark ND (SM-SC), dark MY (CL), dark yell moist, some oxic n (Qsp): o green n horizontal layer color grades to go f carbonate sca	loist, specks of color k yellow brown to olive dation between from the color state of grayels, particles attered grayels, particles attered grayels, particles attended to the color state of the color sta	arbonate b brown, 115.6' to , Paleosol, st, gleyed,
-185 1 FI HARD	ELD HAP	ARDNESS CAN'T STICHES DITCHES ETCHES DITCHES DITC	120	Run 2 Box 8	5 BELL V. THIN THIN	100 DDING <22-1-1	2" 36" 20"	@11 @11 @11 moi	angular gravels be angular gravels be angular gravels be as a gravel of the state o	e gravel Y (CL), dark Clayey SAN ades to CLA with depth, of carbonate o Formatio aCO ₃ as thi CLAY (CL) and specks	yellow brown, m yellow brown, m ND (SM-SC), dark ND (SM-SC), dark moist, some oxic n (Qsp): o green n horizontal layer color grades to g of carbonate sca	loist, specks of color k yellow brown to olive dation between from the color specific process of	arbonate b brown, 115.6' to , Paleosol, st, gleyed,

ROJECT:	Fl Pad	eo Schoo	1		_			RING LOG	PAGE 9 OF 9
ROJECT: ELIENT: E				ool Dis	trict	;			JOB NO.: 603367-001
ONTRACTO									PAGE NO.: 9 of 9
QUIPMENT									ELEVATION: 304.9 Feet
GROUNE	WATER:		DEI	PTH TO			05	ORIENTATION CORE BARREL	DATE START: 2/13/2012
DATE	HRS AF	I WA	TER	BOT. C	- 1	BOT. HOI		X VERTICAL TYPE Split Sleeve HORIZONTAL SIZE 2.5 I.D.	DATE FINISH: 2/13/2012 DRILLER: Martini
	COIVIE		-	CASIIN	4	поі		INCLINED Bit (Feet)	DRILLER: Martini PREPARED BY: JMP
					-			BEARING Barrel (Feet) 5	LOCATION: See Plate 1
								0 ANG. FROM VERT. Total (Feet)	LOCATION. See Flate 1
		CORE		>	- '		ပ	FIELD CLASSIFICATION, REMARKS, A	ND LIMITATIONS
CORE DEI (Feet)	РТН	DEPTH RANGE (Feet)	SAMP NUMB	PLE SER	% %	Rab	GRAPHIC LOG	The Soil Description applies only to a location of the exploration at may differ at other locations and may change with time. The descr conditions encountered. Transitions between soil types may be granted by the conditions are conditions.	the time of drilling. Subsurface conditions iption is a simplification of the actual
−185 1	20—							@120' to 120.6': gravel bed	
	_	20-125	Run Box		5	100		@120.6' to 123': Blue green CLAY to Silty CLAY of CaCO ₃ scattered gravels, abrupt contact @120.6' to 121.6': heavy MnO ₂ lamination	(CL), moist, grey marl, speck
								@123': Grades to Silty SAND (SM), blue green,	moist to very moist, fine sand
	-							@124' to 124.8': CLAY (CL), blue green, moist	
-180 1	25						11.1	_@124.8' to 125': Silty SAND (SM), blue green, r	noist fine sand
—175 1	30 —							Excavation backfilled with cuttings and patched drilling. Excess soil cuttings disposed of in D.O.T. approaffsite.	
FIE 7. HARD IARD IOD. HARD IOFT	- SCRATCH	DNESS IN'T SCRATC HES DIFFICU HES EASILY		V. THI THIN MEDIU THICK V. THIC	I IM K	22"-1. 12"-3 36"-1.	2" 36" 20"	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTUI HORIZONTAL (0-5°) V. CLOSE ⊘" SHALLOW OR LOW ANGLE (5-35°) CLOSE 2"-12" MODERATELY DIPPING (35-55°) WIDE 36°-120" VERTICAL (85-90°) V. WIDE > 120"	RE WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE

				CC	RE	BC	RII	NG LOG			BORING NO.	CB-3
ROJECT:	FI D.	odeo Schoo	nl								PAGE 1 OF	9
			fied Schoo	l Distric	t					-	JOB NO.:	603367-001
			rilling Cor							-	PAGE NO.:	1 of 9
QUIPMEN	_		5, Continu								ELEVATION:	292.4 Feet
GROUN	IDWATE	R:		TO (Fee				ORIENTATION		ORE BARREL	DATE START:	2/10/2012
DATE	- 1	AFT W	ATFR I	OT. OF	BOT.	- 1	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
	CO	MP	C.	ASING	HOI	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED BEARING	Bit (Feet)	5	PREPARED BY	
							0	ANG. FROM VERT.	Barrel (Feet) Total (Feet)	3	LOCATION:	See Plate 1
		CORE					Т		. ,	TION, REMARKS, AND L	IMITATIONS	
CORE DE		DEPTH	SAMPLE	H.S.	RQD	Ĭg	The S	Soil Description applies onl				urface conditions
(Feet		RANGE	NUMBER	RECOVERY	ĕ	GRAPHIC LOG	may	differ at other locations and itions encountered. Transi	d may change v	vith time. The description	is a simplification of	f the actual
		(Feet)		<u> </u>		_	Coria	lions encountered. Transi	uons between s	soii types may be graduai		
-292	0						@9	Surface: 3" Asphalt	concrete			
						*	_).33': 2" Aggregate				
								.4': Artificial Fill, ur		 ed (Afu):		
	_					1	Čla	yey SILT (ML), bro	wn, slightly	moist		
		1-2	SB-1			$ \cdot \cdot $		•				
		-				$ \cdot \cdot $						
	_		1			1						
						$ \cdot \cdot $						
	_											
	_											
						$ \cdot \cdot $						
						$ \cdot \cdot $						
287	5		1			$\{ \mid \mid \mid \mid$						
						Щ						
						60°	@5	5.5' to 6.5': Sandy G	RAVEL (G	P), light brown, dry	y	
	_					P.O.	4					
						200	1					
							@6	6.5' to 7.5': Clayey S	SILT (ML),	dark brown, slightly	y moist, some	coarse
	_					$ \cdot \cdot $	gra	vels and asphalt				
		5-10	Run 1	2.5		Ш						
			Box 1		50		@7	7.5' to 10': No Reco	very			
	_											
. ວຊວ	10-		<u> </u>									
-282	10-							0' to 15': SILT to C				
						$ \cdot \cdot $	anç	gular to subangular	gravels thre	oughout, trace asp	halt fragments	
	_					$ \cdot \cdot $						
						$ \cdot \cdot $						
						$ \cdot \cdot $						
	_					$ \cdot \cdot $						
			D			$ \cdot \cdot $						
		10-15	Run 2 Box 1	5	100	$ \cdot \cdot $						
	_		DOX I		'00	$ \cdot \cdot $						
						$ \cdot \cdot $						
						$ \cdot \cdot $						
	_					$ \cdot \cdot $						
						$ \cdot \cdot $						
						$ \cdot \cdot $						
- 277	15	<u></u>										
-277	15						Γ-					
	ובו ה ייי	DDNIEGO	<u> </u>	PE-5	DINC	<u> </u>		FITH IDE AND ANOLE	IOINTO (CHEAD / FDACTURE	WEATHERING	
	IELD HA	RDNESS			DING	.		FITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE <2"	WEATHERING	
	- KNIFF	CAN'T SCRAT	CH I	V. IHIN								
HARD RD	- SCRAT	CAN'T SCRAT TCHES DIFFIC TCHES FASILY	ULT	V. THIN THIN MEDIUM	<2" 2"-1: 12"-3		SHALL	OW OR LOW ANGLE (5-35°)	CLOSE	2"-12"	FRESH V. SLIGHT SLIGHT	
IARD RD D. HARD FT	- SCRAT - SCRAT - GROV	TCHES DIFFIC TCHES EASILY ES	ULT /	THIN MEDIUM THICK	12"-3 36"-1	36" 20"	MODE	OW OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	CLOSE MOD. CLOSE WIDE	2"-12" 12"-36" 36"-120"	V. SLIGHT SLIGHT MODERATE	
IARD	- SCRAT	TCHES DIFFIC TCHES EASILY ES	ULT /	THIN MEDIUM	12"-3	36" 20"	MODE	OW OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	

				CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB-3
PROJECT:	El Ro	deo Schoo	1								PAGE 2 OF	9
			ried School	Distric	t						JOB NO.:	603367-001
			illing Corp								PAGE NO.:	2 of 9
			5, Continuo								ELEVATION:	292.4 Feet
GROUND	WATER	₹:	DEPTH	TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	2/10/2012
DATE	HRS	AFT WA	TER BO	T. OF	BOT.	OF	Χ	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
DAIL	COI	MP WA	CA	SING	HOL	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY	: JMP
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	N&	CORE		⋩		ੂ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEP		DEPTH	SAMPLE	N N N	Z G	48	The S	Soil Description applies on	ly to a location of	of the exploration at the ti	me of drilling. Subs	urface conditions
(Feet)		RANGE (Feet)	NUMBER	RECOVERY	°E	GRAPHIC LOG		differ at other locations and itions encountered. Trans				f the actual
—277	15—	(reet)		i iz		1//						
- - 272 2		15-20	Run 3 Box 1	5	100		Silt slig	15': Pleistocene All y Clayey SAND with thtly moist, fine sub 19.2' to 20.7': SANE moist, fine sand 20.7' to 22.6': Grade moist with clay, pale	th Gravels (pangular to see to Sandy	SP-SC), dark redd subrounded gravel e Clay (SC), dark re	eddish brown, s	ell-graded slightly moist
		20-25	Run 1 Box 2	5	100		mo bla fac	22.6' to 25': Grades ttled, moist, few sc ck slate and siltstor es, paleosol	attered sub ne, modera	angular to angular	fine gravels of	weathered
20.	_					<i>\////</i>	@2	25': Grades to Silty	CLAY (CL)			
—262		25-30	Run 2 Box 2	5	100		@2 fine	27.5' to 28.3': Sand 28.3': Sandy GRAV e to coarse black sl	EL (GP), da	ark grayish brown,		noist, angula
FIE	LD HAI	RDNESS		BED	DING		AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
IARD IOD. HARD - IOFT -	- SCRAT		JLT 1 ME	THIN THIN EDIUM HICK THICK	<2'-1. 12"-3 36"-1. >12'	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) :RATELY DIPPING (35-55°) • OR HIGH ANGLE (55-85°) • VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB-3
ROJECT: LIENT: <u>I</u> ONTRACTO	OR: N	/ Hills Martin	Unifi 1i Dril	ling (Corpo	ration							JOB NO.: PAGE NO.:	603367-001 3 of 9
QUIPMENT			1E-75							ODIENTATION	1 -	ODE DARREI	ELEVATION:	292.4 Feet
GROUNI	DWATE			DE		O (Feet	t): BOT.	OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START:	2/10/2012
DATE	COI		WAT	ER		SING	HOI.		^	HORIZONTAL	SIZE		DATE FINISH:	2/10/2012 Martini
	001	IVIP		-	CAS	טוועט	HUI					2.5 I.D.	DRILLER:	Martini
										INCLINED BEARING	Bit (Feet)		PREPARED BY	
	1			-					0	ANG. FROM VERT.	Barrel (Feet)	5	LOCATION:	See Plate 1
			- T						т —	1	Total (Feet)			
CORE DE (Feet)	PTH	COF DEP RAN (Fee	TH GE	SAM		RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	nly to a location of	vith time. The description	time of drilling. Subs	urface conditions f the actual
262 257	35	35-4		Rur Box	x 2	4.2	100		@: an fac @: tra de:	33.7' to 34.2': Silty (gular coarse black ses) 34.2' to 35': No Recost to 39': Silty sand ce very fine sand, ce very fine sand, cring surfaces	covery dy CLAY (Contains silt	s, Paleosol, block L), hard, dark yellstone and fine sla	ky structure, gle lowish brown, ve ity rock fragmer	ery moist,
-252	40									39': Grades to Sanc nd, few fine subang			orown, very mois	st, very fine
									1-	44 01. 11-4- 1 17 1				
				D	ر ,				, <u> </u>	41.9': Isolated siltst				
		40-	45	Rur Box		5	100			42': Sandy CLAY (C		aaisn brown, very	moist, very fine	e sand, few
				יטם	`		100		1 III	e subangular grave	15			
									sa	43': Silty SAND w/ ond-sized siltstone water, minor gleying	<i>i</i> ith subroun	ded slaty pebbles	eddish brown, fii s, poorly develo	ne sand, fine ped blocky
										44' to 45': Grades q lowish brown, wet,			uence of SAND	(SP), dark
-247	45		\dashv											
FII	ELD HA	RDNES	SS			BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	_
. HARD	- KNIFE					THIN	<2 2" 1		CHVII	HORIZONTAL (0-5°)	V. CLOSE	<2" 2" 12"	FRESH	
ARD OD. HARD OFT SOFT	- SCRAT - SCRAT - GROVE - CARVE	CHES E		.1	MEI Th	HIN DIUM HICK THICK	2"-1 12"-3 36"-1 >12	36" 20"	MODI	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

						CO	RE	ВС	RII	NG LOG			BORING NO. PAGE 4 OF	CB-3
ROJECT: LIENT: <u>I</u>		Hills	Unifi				±						JOB NO.: PAGE NO.:	603367-001 4 of 9
QUIPMENT							e						ELEVATION:	292.4 Feet
GROUNI	DWATER	R:			PTH	TO (Feet	:):			ORIENTATION		ORE BARREL	DATE START:	2/10/2012
DATE	HRS	- 1	WAT	rer T		. OF	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
DATE	COI	MP	**^\		CAS	SING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	
										BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	1								0	ANG. FROM VERT.	Total (Feet)			
ELEVATION CORE DE (Feet)	PTH	DEP RAN	TH IGE	SAM		RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of	vith time. The description	ime of drilling. Subs	urface conditions f the actual
-247	45-	(Fe	et)			<u> ~</u>				15' to 45.8': No Rec		soli types may be gradue		
								•	@4	15.8' to 46.4': SANE) (SP), dark	yellowish brown,	wet, fine to coa	arse sand
	_	45-	50	Rur Box		4.2	84		@4 red sed	46.4' to 49.3': Grade Idish brown, very m condary clay, erosiv	es to Sandy	GRAVEL (GP), d	lark grayish bro	wn to dark
-242	50								fev str	49.3' to 50.9': Grade v fine gravels throug ucture	ghout, oxida	ation-reduction bar	nding, gleyed, b	olocky
	-	50-	55	Rur Box		5	100		@: @:	51.5' to 53': Grades arse angular to sub 53' to 53.3': Thin lay 53.3' to 55': Sandy (angular gra	vels Gravelly SAND (Si		n, wet, line
								000						
-237	55 —							10 L	@!	55' to 55.8': No Rec	overv			
	_									55.8' to 57.6': SANE		x yellow brown, we	et, fine to mediu	ım sand
		55-	60	Rur Box		4.2	84		sai @:	57.6' to 58.1': Sand nd, fine subangular 58.1' to 60': Clayey	gravels Sandy GRA	AVEL (GP), dark y		
									inc	rease in gravel with	depth to 6	0'		
-232	60							'						
FII	ELD HAI	RDNE:	SS	1		BEDI	L DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	_
. HARD ARD	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CAN'T S CHES E CHES E	CRATCH		T ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) POR HIGH ANGLE (55-85°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre></pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	KII	NG LOG			BORING NO. PAGE 5 OF	
ONTRACTO	DR: N	Hills Iartin	Unified S i Drilling	Corpo	oration							JOB NO.: PAGE NO.:	603367-001 5 of 9
			E-75, Co						ODIENTATION	1 -	ODE BADDEI	ELEVATION:	292.4 Feet
GROUNI					TO (Fee	t): BOT.	OF		ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	2/10/2012
DATE	HRS	- 1	WATER	1				Х		1	Split Sleeve	DATE FINISH:	2/10/2012
	CON	VIP		CAS	SING	HOI			HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
	-			-					INCLINED	Bit (Feet)	-	PREPARED BY	
				-					BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	Ι	200	-	1		1		0	ANG. FROM VERT.	Total (Feet)			
CORE DE (Feet)	PTH	COR DEPT RANG (Fee	TH SAM	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	vith time. The description	e time of drilling. Substion is a simplification of	surface conditions of the actual
-232	60-							@6	60' to 60.7': No Red	covery			
227	- 65	60-6		ın 3 ox 4	4.3	86		@@ mc	60.7' to 64.3': SANE 64.3' to 65': Sandy oist, subangular blar 65' to 66.3': No Rec	GRAVEL (C ck slate gra	GP), dark yellow t		ay brown,
-222	70	65-7		ın 1 ox 5	3.7	74			66.3' to 66.9': SANE stone rock fragmer bistocene Cheviot I 66.9' to 67.3': Claye 67.3' to 67.6': Silty 67.6': CLAY to Sandown, well oxidized, 68': Zone of increas 68.6': Color grades	hits	its (CHD): SAND (SC) ID (SM-SC) CL), mottled olive duction banding,	brown and dark gleyed, few spe	yellowish ecs of MnO
	_	70-7		ın 2 ox 5	5	100	0 0	@ lan	72.4': siltstone clast ninations 72.8': paleosol, mod own, clayey, thin be	ts, oxidatior derate soil c	n-reduction bande	ed, with gley and	d MnO
-217	75												
	ELD ! '	DDMEG		1	DEE.	DING	Ь.,		TITLIDE AND ANOLE	IONITO	CHEAD / FDAOTUSE	MEATHERNS	_
. HARD	ELD HAI			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	THIN	DING <2	.	AI	TITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE		
ARD	- KNIFE (- SCRAT) - SCRAT - GROVE - CARVE	CHES DI CHES EA S	IFFICULT	ME TI	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB-3
	El Ro													
LIENT: I													JOB NO.:	603367-001
ONTRACTO QUIPMENT													PAGE NO.: ELEVATION:	6 of 9 292.4 Feet
GROUNI			112-73			TO (Feet				ORIENTATION	С	ORE BARREL	DATE START:	2/10/2012
	HRS		10/07			OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
DATE	COI	MP	WAT	ER	CAS	SING	HO	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	: JMP
										BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	<u> </u>								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO		COF		SAMI	DI E	ERY		9,5				TION, REMARKS, AND		
CORE DE (Feet)		RAN	GE	NUMI		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change w	ith time. The description	on is a simplification o	urface conditions f the actual
—217	75 <u> </u>								@i	76.0': Grades to Gra e angular to subang	avelly CLAY	(CL), dark reddis s, few siltstone cla	sh brown, moist asts	, scattered
	_	75-8	80	Rur Box	-	5	100		@	76.7': coarse sized : 76.8': Gravelly CLA` subangular gravels,	Y (CL), dark	reddish brown, r	moist, scattered	l fine angular
-212	80				-					77.8': Grades to Sal me angular fine gra			sh to reddish bro	own, moist,
	_	80-8	85	Rur Box		5	100			31.1' to 83': Increas				
-207	85									33' to 90.3': paleoso e rounded gravel	ii, reddisii b	rown to drange b	rown, sandy sin	y ciay with
	_	85-	90	Rur Box		5	100		mo	37.5' to 89.5': CLAY derate blocky struc	tùre			
-202	90								@	39.5' to 90.3': Grave	elly CLAY (C	CL), dark reddish	brown, very mo	ist, angular
202	55													
	ELD HA				17.		DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
'. HARD IARD MOD. HARD IOFT '. SOFT	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CHES D CHES E S	IFFICUL		MEI TH	THIN HIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT:	El Ro							ВС	RII	NG LOG			PAGE 7 OF 9
LIENT: <u>I</u> ONTRACTO													JOB NO.: 603367-001 PAGE NO.: 7 of 9
QUIPMENT													ELEVATION: 292.4 Feet
GROUNE			,			ΓΟ (Fee				ORIENTATION	C	ORE BARREL	DATE START: 2/10/2012
DATE	HRS	_	WATE			OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 2/10/2012
DATE	COV	ИP	VVAIL		CAS	SING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER: Martini
										INCLINED	Bit (Feet)		PREPARED BY: JMP
										BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
							1		0	ANG. FROM VERT.	Total (Feet)		
CORE DE	РТН	DEP RAN	тн	SAMF NUME		RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and	ly to a location of	vith time. The descriptio	time of drilling. Subsurface condition is a simplification of the actual
	90-	(Fee	et)			22		KXXXX		itions encountered. Trans	itions between	soil types may be gradua	al.
	_	90-	95	Run		5	100		@9	ck slate gravels 00.3' to 92.8': Sand prounded to angula	y GRAVEL r gravel, me	(GP), dark yellow edium to coarse sa	brown, wet, fine to coarse and
										92.8' to 93.6': Sand		.), dark yellow bro	wn, moist, fine to medium
									@9	93.6' to 95.2': CLAY	(CL), dark	yellow brown, mo	oist, few fine gravels
-197	95	95-1	00	Rur Box		5	100		cor	ncentrated gravels l	oetween 95	.4' to 95.8' and 96	
-192 1	00 -								fine	e sand, few fine ang	gular gravel), dark yellow brown, moist
	-	100	105	Run	1 2	F			sar	01.1' to 102.1': Sands, fine to coarse (gravels, abi	undant black slaty	
	_	100-	105	Box		5	100		coa	arse gravels	•	, ,	y to yellow brown, wet, opment, dark yellow browr
 187 1	05							Ш		ist, very fine sand	, ,,,,,		, , , , , , , , , , , , , , , , , , ,
FI	ELD HAF	RDNES	ss			BED	DING		AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
. HARD ARD IOD. HARD OFT	- KNIFE C - SCRATO - SCRATO - GROVE - CARVES	CAN'T S CHES D CHES E	CRATCH IFFICULT		MEI TH	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"- 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) O R HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE C. OMPLETE

ROJECT:	El Rod	leo Schoo					<u> </u>	RING LOG			PAGE 8 OF 9
LIENT: B	everly	Hills Uni	fied Sc			t					JOB NO.: 603367-001
ONTRACTO											PAGE NO.: 8 of 9
QUIPMENT											ELEVATION: 292.4 Feet
GROUND	WATER:		DE		TO (Feet	t): BOT.	05	ORIENTATION X VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START: 2/10/2012
DATE	COM	I WZ	ATER		SING	HO		HORIZONTAL	SIZE	2.5 I.D.	DATE FINISH: 2/10/2012 DRILLER: Martini
	OOM	"		OAC)IIVO	110		INCLINED	Bit (Feet)	2.5 l.D.	PREPARED BY: JMP
								BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
								0 ANG. FROM VERT.	Total (Feet)		
ELEVATIO		CORE DEPTH	SAM	PLE	VERY	RQD	PHIC			TION, REMARKS, AND	LIMITATIONS time of drilling. Subsurface condition
(Feet)		RANGE (Feet)	NUMI	BER	RECOVERY	8	GRAPHIC	may differ at other locations an conditions encountered. Trans	d may change v	vith time. The description	on is a simplification of the actual
-187 1 ₀	05							@105' to 106.1': No R	decovery		
	_							@106.1' to 107.8': Sa brown	ndy SILT (N	/IL) with interlayer	red gravels, dark yellow
	1	105-110	Rur Box		3.9	78		@407.0l.to.400.0l.lpt		and CDAVELC	GP) and CLAYS (CL), da
								yellow brown, wet, fine			
								@109.3' to 110': CLA'	Y (CL), dark	yellow brown, m	oist
-182 1	10							@110' to 111.3': No R	decovery		
-177 1	15	110-115	Rur Box		3.7	74	0 1	subangular gravels @112' to 112.5': CLA' @112.5' to 112.7': GF @112.7' to 115': Clay moist, fine sand	Y with Grav RAVEL (GP) ey SAND to	el (CL) layer, fine suban	rk yellow brown, wet, fine ngular gravels, wet C-CL), dark yellowish brow
								@115' to 116': No Re	covery		
	\dashv						1////	@116' to 116.3': Clay	ev SAND /S	C) dark vellow b	rown moiet
								@116.3': CLAY to Sa			
							/////		` `		,
	\dashv		_	_			7777	@116.8': Gravelly SA	. , ,		
–172 1:	20	115-120	Rur Box		4	80		@117.2': CLAY to Sa	ndy CLAY (CL), dark yellow t	orown, moist
	-										
	LD HAR	DNESS			BEDI	L DING		ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
EIC	11/1/17	AN'T SCRAT			THIN	<2 <2	.	HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE <2"	FRESH

				C	0	RE	BC	RII	NG LOG			BORING NO. PAGE 9 OF	CB-3
ROJECT:	El Rode		. ~ -									105.115	
	Beverly H											JOB NO.:	603367-001
	OR: <u>Ma</u> r USED:					,						PAGE NO.: ELEVATION:	9 of 9 292.4 Feet
	DWATER:	CIVIE-/3,		INUOUS (PTH TO (ORIENTATION	C	ORE BARREL	DATE START:	2/10/2012
	HRS AF	т		BOT. O		BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
DATE	COMP	WATE	=R	CASING	3	HOL	E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	JMP
					Ţ				BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	<u> </u>				Ц,			0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	ON &	CORE		<u>.</u>		_	≌				TION, REMARKS, AND I		
CORE DE (Feet)	PTH F		SAMP NUMB	SER SER	%	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	n is a simplification of	
—172 1	120-						 		120' to 120.5': Grav		(SP), dark yellow b	prown, moist,	
	_ _ _ 12 _	20-125	Run Box		.5	10			120.5' to 125': No R				
								Pe 51. 10 Ex dril Ex	tal depth of boring: rched groundwater 5'-53', 55.8'-58.1', 6 7.8'-109.3', 111.3'-1 cavation backfilled ling. cess soil cuttings di site.	encountere 60'-64.3', 66 12', 112.5'- with cutting	6.3'-66.9', 90.3'-92 112.7' bgs s and patched with	.8', 103.8'-104. n asphalt upon	3', completion o
		NESS IT SCRATCH		V. THIN		DING <2' 2"-1:			TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	JOINTS / V. CLOSE CLOSE	SHEAR / FRACTURE	WEATHERING FRESH V. SLIGHT	

					CO	RE	ВС	RII	NG LOG			BORING NO. PAGE 1 OF	CB-4
PROJECT:	El Ro	odeo Schoo	ol									PAGE 1 OF	9
CLIENT: B				hool	District	t						JOB NO.:	603367-001
CONTRACTO												PAGE NO.:	1 of 9
EQUIPMENT												ELEVATION:	288.4 Feet
GROUNE			DI		TO (Feet	t): BOT	05		ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	2/9/2012
DATE	CO	AFT WA	ATER	ı	SING	HO		Х	HORIZONTAL	SIZE	Split Sleeve 2.5 I.D.	DATE FINISH: DRILLER:	2/9/2012 Martini
	- 00	TVII		CA	SING	110	LL		INCLINED	Bit (Feet)	Z.3 I.D.	PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			Coo i idio i
ELEVATIO	o	CORE			l ≿ ˈ		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE		DEPTH	SAM		¥	Rab	<u>F</u> 8	The	Soil Description applies on	ly to a location of	of the exploration at the ti	me of drilling. Subs	urface conditions
(Feet)		RANGE (Feet)	NUM	IBER	RECOVERY	Ř	GRAPHIC LOG		differ at other locations and itions encountered. Trans				f the actual
000		(1 661)			<u> </u>					adono bottroom	oon typoo may bo gradaa.	•	
288	0-								Surface: 4" Asphalt	concrete			
								' \@	0.33': 2" Aggregate	base			1
								(<u>@</u>	0.5': Artificial Fill, u	ndocumen	ted (Afu):		
_									ayey SILT to Silty C		L), brown, moist, to	race fine sand	
								@	1' to 2': some concr	ete pieces			
								1					
_									locene and Pleisto				 <u>Qal)</u>
									avelly CLAY (CL), fi				-
_	┦												
								1					
-	_												
—283	5							Ple	eistocene Alluvium	of Benedic	t Canvon Wash (E	BCW ₂):	
									5' to 5.4': Gravelly C				xidized
								@:	5.5': Clayey SILT to	Silty CLAY	(ML-CL), brown, r	noist	
-	\dashv						rara	4	6' to 7': Grades to S	-	· · · · · · · · · · · · · · · · · · ·		sand few
									e gravels, moderate				Jana, iew
									J,		,		
_	\dashv							<u></u>	7' to 10': Silty CLAY	(CL) brow	n moist soft scat	tered subandi	lar fine black
		5-10	Ru						te gravels, moderat			itered Subarige	iiai iiiic black
		3-10	Bo	x 1					,	,			
_	-												
-	\dashv												
								1					
								1					
 278	10-		 				 	(m	10' to 12.2': Gravelly	/ Silty SAN	D (SM) brown mo	nist with subro	unded fine to
							$ \cdot \cdot $		arse black slate gra				
							$\lfloor 1 \rfloor \cdot \cdot $,	,		
_	\dashv						$[\cdot] \cdot]$						
							$ \cdot \cdot $						
-	-												
		10-15	Ru		5		/////	@	12.2': Grades to Silt	v CLAY (C	L), brown, moist fe	ew scattered fir	ne gravels.
		.0 10	Во	x 1		100		mo	derate blocky struc	ture, minor			
-	\dashv								athered slaty grave		•	-	
								1					
								1					
_	\dashv							1					
							\ ////						
 273	15		1			-	<i>\////</i>	7					
		RDNESS				DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD	- SCRAT	CAN'T SCRAT TCHES DIFFICU	JLT	т	THIN THIN	<2 2"-	12"		HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
	- SCRAT	TCHES EASILY ES			EDIUM HICK	12"- 36"-		MODE	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	- CARVE				THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	
										Fe = Iron Oxi	de Mn = Manganese Oxide	V. SEVERE COMPLETE	

				C	O	RE	BC	RII	NG LOG			BORING NO.	CB-4
PROJECT:	El Ro	odeo Schoo	ol									PAGE 2 OF	9
		Hills Unit		ool Dis	trict							JOB NO.:	603367-001
CONTRACTO	OR: N	Martini Dr	illing Co	orporat	tion							PAGE NO.:	2 of 9
QUIPMENT	USED:	CME-7	5, Conti	inuous	Core	e						ELEVATION:	288.4 Feet
GROUNI			DEF	PTH TO (ORIENTATION		ORE BARREL	DATE START:	2/9/2012
DATE	HRS	AFT WA	TER	вот. о	F	BOT.		Χ	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
DATE	co	MP VV	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	CASING	G	HOL	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	: JMP
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	N &	CORE			,		OI		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE		DEPTH	SAMP			Rab	P.B	The	Soil Description applies on	ly to a location	of the exploration at the ti	me of drilling. Subst	urface conditions
(Feet))	RANGE	NUMB	ER ដ	%	œ	GRAPHIC LOG	may	differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of	f the actual
		(Feet)			-			CONG	illions choodificica. Trans	itions between	3011 types may be gradual	•	
273 -	15 —	15-20	Run Box		5	100		0.1 @ blo	16.3': Thin GRAVEL ' thick 16.4': Silty CLAY (C cky structure, mino avels	L), brown,	moist, few scattere	d fine gravels,	moderate
 268		20-25	Run Box		5	100		fine @2	21.5': Grades to Sale subangular gravel 22.3' to 24.3': Gradentinued fine gravels	s es to Sandy	SILT (ML), brown		
263	25-								24.5' to 25.8'Sandy ry fine sand	SILT to Silt	y SAND (SM-ML),	brown, very m	oist to wet,
-	_	25-30	Run Box		5			CO	25.8' to 27.5': Sandy arse subrounded to 27.5' to 30': No Rec	subangula			st, fine to
- 258	30-												
F"	ELD !!^	DUNESS			BED	סואוכ			TITLIDE AND ANOLE	IOINTO /	SHEAD / EDACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT	- KNIFE - SCRAT		JLT	V. THIN THIN MEDIUI THICK V. THIC	M	2"-1: 2"-1: 12"-3 36"-1: >120	2" 6" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT:	El Ro	nden S	chool			/1 \ L	<u> </u>	RING LOG			PAGE 3 OF 9	
LIENT:	Beverly	Hills	Unified								JOB NO.:	603367-001
ONTRACT												3 of 9
QUIPMEN			1E-75, (-	ORIENTATION		ORE BARREL	-	288.4 Feet 2/9/2012
	IDWATEI HRS	_		BO	TO (Fee	t): BOT.	OF	X VERTICAL TYP		Split Sleeve	_	2/9/2012
DATE	CO		WATE	RI	ASING	НО		HORIZONTAL SIZE	E	2.5 I.D.		Martini
								INCLINED Bit (Feet)		PREPARED BY:	JMP
									rel (Feet)	5	LOCATION:	See Plate 1
			DE		\perp				al (Feet)			
CORE DE	EPTH	DEP RAN	TH S	SAMPLE	RECOVERY	Rab	GRAPHIC	The Soil Description applies only to a may differ at other locations and may	a location o	FION, REMARKS, AND L f the exploration at the tir ith time. The description	ne of drilling. Subsur	face conditions
(Feet		(Fee	et)		Ä			conditions encountered. Transitions				
	30 —	30-	くち !	Run 3 Box 2	2.5	50		@30' to 31.5': Sandy GRA subrounded black slate gr heavily weathered, oxidized @31.5': Silty CLAY (CL), oxidized, oxidation reducti @32': Sandy CLAY (CL), siltstone fragments, mode structure, some fine subropaleosol	ravels, feed grave brown to ion band dark recent am	ew siltstone clasts, ls, siltstone, basal preddish brown, ming dish brown, fine sount of silica ceme	basal erosive of t, slate oist, homogeneral and with fine salent, moderate be	contact,
-253	35—							@35': Sandy CLAY (CL),	brown to	reddish brown, m	noist, some fine	gravels
							K///	@35.5' to 38.1': Sandy GR				
	_	35-4	71 I	Run 1 Box 3	5	100		subrounded fine gravels, s basal gravels and cobbles @38': well graded			ized, heavily we	eathered,
	_							@38.1' to 40': No Recove	ry			
-248	40							@40' to 40.6': Gravelly SA well graded	AND (SF), brown to reddis	h brown, very m	noist to wet
	_	40-		Run 2	3.1			@40.6' to 42.5': CLAY (Cl medium stiff, angular blac	sk slate (gravels, well devel	oped blocky frá	cture
	_	70-		Box 3	0.1	62		@42.5' to 44.3': Grades to moist to very moist, some @43.3' to 43.7': Very fine fragments, poorly develop sand laminations	angular sand ar oed soil,	black slate grave d clay laminations porous, 1-2 mm vo	ls s, trace siltstone oids, minor gley	sand-size
-243	45				\perp			@44.3' to 44.9': Gravelly of moist to moist, fine subrou	unded b	ack slate gravels	, to grayish brov	wii, veiy
	.5										<u> </u>	
	IELD HA					DING		ATTITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
. HARD IARD IOD. HARD OFT . SOFT		CHES D CHES E	CRATCH DIFFICULT EASILY	١ ١	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALLOW OR LOW ANGLÉ (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°)	CLOSE CLOSE DD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" 120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	DRE	BC	RII	NG LOG			BORING NO. PAGE 4 OF	CB-4
PROJECT: CLIENT: _I	Beverly	odeo Schoo y Hills Unif Martini Dr	fied Sch								JOB NO.: PAGE NO.:	603367-001 4 of 9
		CME-7									ELEVATION:	288.4 Feet
GROUNI				TH TO (Fe				ORIENTATION	C	ORE BARREL	DATE START:	2/9/2012
DATE	HRS	AFT WAY	TER	BOT. OF	ВОТ	. OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
DAIL	CO	MP VV	VILIX	CASING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY	
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
		2005		1.			0	ANG. FROM VERT.	Total (Feet)			
ELEVATION	ON &	CORE DEPTH	SAMPI	. E È		≌ຸ				TION, REMARKS, AND L		
CORE DE (Feet)	1	RANGE (Feet)	NUMBI	- 0	RQD	GRAPHIC LOG	may o	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	
—243 -	45 —						sar	14.9' to 45.8': Silty S nd 15.8' to 46.2': Grada		-		oist, fine
- - - -238	50	45-50	Run Box		100		zor	16.2' to 50': Grades ne of medium sand	@47.8' to 4	48'		
	_	50-55	Run Box	I 5	100		sub	50' to 52.6': Sandy (prounded gravels w ntact below	ith few coal	rse gravels, upward		
	_						CL stru @5	52.6': <u>Pleistocene C</u> AY (CL), olive brow ucture 53.7': Color grades	n, moist, fe	ew scattered fine gr		•
—233	55-					-		54.5' to 55.8': Grade to coarse subroun			SP), reddish br	own, wet,
-	_						to	55.8' to 57': Grades wet, fine sand,			reddish browr	n, very moist
-	-	55-60	Run Box	ו ה	100		<i>1</i> —	56.8': basal pebbly (57' to 59.8': CLAY (· · ·	moist	
	60						@5	59.3': subangular G	RAVELS (0	GP)		
—228	60											
			<u> </u>			Ι.,	1				l I	
/. HARD HARD MOD. HARD SOFT /. SOFT	- KNIFE - SCRAT			V. THIN THIN MEDIUM THICK V. THICK	DDING <2 2" 12"- 36" >12	12" 36" 120"	SHALLO	TITUDE AND ANGLE HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (56-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-4
PROJECT: CLIENT: <u>I</u> CONTRACTO	OR: N	/ Hills Martii	Unific ni Drill	ling C	Corpo	ration							JOB NO.: PAGE NO.:	603367-001 5 of 9
QUIPMENT			4E-75,							ORIENTATION		ORE BARREL	ELEVATION:	288.4 Feet
GROUNE	HRS			DE		O (Fee	t): BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE START: DATE FINISH:	2/9/2012 2/9/2012
DATE	CON	- 1	WAT	ER		SING	HOI.		^	HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	2/9/2012 Martini
	501	IVII			CAS	, v G	IJUI			INCLINED	Bit (Feet)	L.U I.D.	PREPARED BY	
		-				-+				BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
				-+		-			0	ANG. FROM VERT.	Total (Feet)	-		JOG I IGIC I
		COI	RE	I		>		O	T		. ,	TION, REMARKS, AND	I IMITATIONS	
CORE DE	PTH	DEP RAN (Fe	TH IGE	SAMI		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the to	ime of drilling. Subsi	
	65—	60-	65	Rur Box		5	100	•	e soi	59.8' to 60': Grades dish brown, fine to 60': Clay to Sandy (one gravels @60' to 61.6': thin olive gray I faces 52.9': 2-3 inch thick velopment 53': Sandy CLAY (C) 54.6: Siltstone rock 66.2': Sandy CLAY	medium sa CLAY (CL), 60.3' and (r clay lamin gravel bed CL) below g	brown to reddish @63.1' ations, gleyed aloue, erosive contact because thin bed, 2-3 inch	brown, moist to	very moist,
—218	70	65-	70	Rur Box		5	100		@: @: @: sc:	66.2': thin layer of fi 66.4': Sandy CLAY 67' to 67.5': Grades 67.5' to 70': Clay to attered throughout 68.7' to 69.2': Dark	(CL), brown to CLAY (C Sandy CLA	n, very moist, fine CL), brown, very may (CL), brown, ve	noist ery moist, fine g	
	_	70-	75	Rur Box		5	100		bla @	70' to 73': Sandy Gl ck slate gravels, er 73' to 73.8': CLAY (osive conta	ray, moist, few fin	e angular black	slate grave
213	75									73.8': Sandy Gravel pangular to subrour		L), olive gray to b	rown, moist, ge	nerally fine
FII	ELD HAI	RDNF	SS			BFD	DING		AT	TITUDE AND ANGLE	JOINTS	SHEAR / FRACTURE	WEATHERING	_
/. HARD HARD MOD. HARD SOFT	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CAN'T S CHES D CHES E	CRATCH		TI MEI TH	THIN HIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB-4
PROJECT:		odeo Schoo		1 1 1	D:1								
CONTRACT		y Hills Unit Martini Dr										JOB NO.: PAGE NO.:	603367-001 6 of 9
		CME-7										ELEVATION:	288.4 Feet
GROUN			DE		ΓΟ (Feet				ORIENTATION		ORE BARREL	DATE START:	2/9/2012
DATE	HRS	Ι \//Δ	TER		. OF	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
	CO	MP		CAS	SING	HOI	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)	_	PREPARED BY	
	+							0	BEARING	Barrel (Feet) Total (Feet)	5	LOCATION:	See Plate 1
		CORE						T	ANG. FROM VERT.	. ,	TION DEMANDES AND		
ELEVATION		DEPTH	SAMI	PLE	ER	۵	≌ູ				TION, REMARKS, AND L		
CORE DE	1	RANGE	NUMI	BER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and	d may change v	vith time. The description	is a simplification of	f the actual
(1 661	,	(Feet)			RE		g	cond	itions encountered. Trans	itions between	soil types may be gradual		
-	-	75-80	Rur Box		5			gra	76' to 80': Sandy Gf ivels	ravel (gf	P), grayish brown, s	subangular to s	subrounded
208 	80 —	80-85	Rur Box		1.5	30	• • • •	CO	30' to 81.5': Upward arse to fine sand 31.5' to 85': No Rec		uence of SAND (SI	P), grayish bro	wn, wet, very
- 203	85 —	85-90	Rur Box		5	100			35' to 90': CLAY (Cl nds, homogeneous,				
 198	90 —						Y <i>////</i>	1					
			L.,				<u> </u>			т		T	_
		RDNESS				DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT V. SOFT	- SCRAT			MEI TH	THIN HIN DIUM HICK 'HICK	<2"-1. 12"-3 36"-1. >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) :RATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	⊘" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 7 OF	CB-4
ROJECT:			chool	10		D:		•					IOD NO	00000= 004
LIENT: I							t						JOB NO.:	603367-001
ONTRACTO													PAGE NO.: ELEVATION:	7 of 9 288.4 Feet
GROUNI			IE-75,			TO (Feet				ORIENTATION		ORE BARREL	DATE START:	2/9/2012
	HRS					OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
DATE	CO		WAT	ER		SING	HOL	- 1	,,	HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
	1					- +				INCLINED	Bit (Feet)		PREPARED BY	
										BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
									0	ANG. FROM VERT.	Total (Feet)			
E1 E1/AT16		co	RE			<u></u>		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND I	LIMITATIONS	
CORE DE (Feet)	PTH	DEP RAN (Fe	IGE	NUM		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of	of the exploration at the ti vith time. The description	ime of drilling. Subs	
—198	90 —								@:	90': Sandy CLAY wi 91': thin gravel layer 91.2': Sandy CLAY	r	<i>,</i>	•	
	-	90-	95	Rur Box		5	100			92.9' to 93.1': GRA\			,	
— 193	95								@	93.1' to 95': Clayey e subrounded to su	SAND (SC), dark yellowish bi	rown, moist, fin	e sand, few
	-	95-^	100	Rur Box		5	100		CO: " @! (2)		veloped blo fragments ndy CLAY (cky structure		
—188 1	_								@	97.8': siltstone rock 97.9': Sandy CLAY	(CL), dark <u>y</u>	•	ne sand	
100 1								$^{\circ}$	@	100' to 100.4': Sand	ly GRAVEL	. (GP)		
	_	100-	105	Rur Box		5	100		@	100.4' to 101.2': San 101.2' to 105': Sand nd, fine to coarse si	ly GRAVEL	S (GP), grayish br	own, wet, fine	
	105						DING		.=		1 100.00		T.,,	
	ELD HA						DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
'. HARD IARD IOD. HARD OFT '. SOFT		TCHES E TCHES E ES	CRATCH DIFFICUL EASILY		T ME Th	THIN HIN DIUM HICK THICK	<2"-1. 12"-3 36"-1. >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 8 OF	CB-4
PROJECT: CLIENT: <u>B</u> CONTRACTO	everl	odeo School y Hills Unif Martini Dri	ied Scho								JOB NO.: PAGE NO.:	603367-001 8 of 9
		: CME-75									ELEVATION:	288.4 Feet
GROUND				H TO (Fee				ORIENTATION	С	ORE BARREL	DATE START:	2/9/2012
DATE	HRS	AFT	TED B	OT. OF	BOT.	. OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
DATE	CC	MP VVA	TER	ASING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY	: JMP
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT.	Total (Feet)			
EL EL/ATIO		CORE		<u>`</u>		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND I	LIMITATIONS	
CORE DEF		DEPTH	SAMPLE	: ≝.。	2g	₹ g	The	Soil Description applies on				urface conditions
(Feet)	- 111	RANGE	NUMBE	RECOVERY	%	GRAPHIC LOG	may	differ at other locations and	d may change v	vith time. The description	is a simplification o	f the actual
(. 551)		(Feet)		2		0	conc	litions encountered. Trans	itions between :	soil types may be gradual		
—183 10 -	05 -						@	105' to 107.1': No R	ecovery			
· ·	_	105-110	Run 3 Box 7		58		@ up	107.1' to 109.8': SA ward fining sequend	ND (SP), ce, with silts	lark gray brown, w stone sand sized ro	et, fine to coar ock fragments	se sand,
—178 1	10					0 47%		109.8' to 110': Sand	v Clavev G	RAVEL (GP-GC)	dark grav brow	n slightly
170 1	10							oist, angular black s			dant gray brot	in, ongmay
							_	110' to 110.8': No R				
						/////	_	110.8' to 111.5': Sa		CL \ dark vallavial	h brown maiat	four fine
	_							bangular black slate		CL), dark yellowisi	ii biowii, iiioisi	, iew iiie
							4					
								111.5' to 113': Grad	es to Silty S	SAND (SM), very n	noist, dark yell	owish brown,
	_						fin	e sand				
			Run 1	l _		. . .	ļ					
		110-115	Box 8	5	100		1					
	_											
							@ [113' to 113.9': Grad	es to Sand	y CLAY (CL), mois	st, dark yellowis	sh brown
							1					
							1					
•	_						@	113.9' to 115': Grad	es to CLAY	' (CL), dark reddisł	h brown, moist	
							1					
-173 1	15—					/////	1	115' to 117 2' No D	0001/05/			
							@	115' to 117.2': No R	ecovery			
	_											
	_											
			D			W.	-	117 01 += 117 01: 01	۸ ۷ ۷۰:۲۴ O	nd and Oracial (Ol	\ dowlers-1-11-1	brouges
		115-120	Run 2 Box 8	2.8	56			117.2' to 117.8': CL pist, some fine sand), uark reddish	brown, very
			DOX 0		30	KXXX	/ —	•			\ dorle erectet	brouge
•	_]				W/W		117.8' to 118.7': Gra		yey GRAVEL (GC)	, dark grayish	brown, very
							y '''(oist, subangular gra	v GIO			
								118.7' to 120': CLA	/ with Sand	l and Gravel (CL)	dark reddieh h	rown moiet
-	_					1////		me coarse sands a				
						\ ////					-	
							1					
—168 1:	20 —			+		<i>\////</i>	1—					
		ARDNESS CAN'T SCRATO	`H	BEC V. THIN	DING <2	,,,	AT	TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS /	SHEAR / FRACTURE	WEATHERING FRESH	
IARD	- SCRA	TCHES DIFFICU	ILT	THIN	2"-1	2"		OW OR LOW ANGLÉ (5-35°)	CLOSE	2"-12"	V. SLIGHT	
OD. HARD	- GROV			MEDIUM THICK	12"- 36"-1	20"		ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
. SOFT	- CARV	ES		V. THICK	>12	10"		VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	
									Fe = Iron Oxi	de Mn = Manganese Oxide	COMPLETE	
										. 5 2	1	

				CO	RE	BC		RING NO. CB-4 GE 9 OF 9
ROJECT:	El Rodeo			ъ.				
	Beverly Hil						_	3 NO.: 603367-001
	OR: Mart						_	GE NO.: 9 of 9 EVATION: 288.4 Feet
	T USED: (.ivie-/5, C		ous Cor TO (Fee		- 1		EVATION: 288.4 Feet TE START: 2/9/2012
GROUNI	HRS AFT			T. OF	t): BOT:	OF		TE FINISH: 2/9/2012
DATE	COMP	WATER		SING	НО			LLER: Martini
	1		1					EPARED BY: JMP
							, , , , , , , , , , , , , , , , , , ,	CATION: See Plate 1
	1						0 ANG. FROM VERT. Total (Feet)	
ELEVATIO	ON & C	ORE	•	T≿		ြပ္	FIELD CLASSIFICATION, REMARKS, AND LIMITAT	TIONS
CORE DE	PTH DE		AMPLE	∫ S EE	Rab	1 E 8	The Soil Description applies only to a location of the exploration at the time of d	rilling. Subsurface conditions
(Feet)	\ RA	ANGE N	JMBER	RECOVERY	شد ا	GRAPHIC LOG	may differ at other locations and may change with time. The description is a sir conditions encountered. Transitions between soil types may be gradual.	nplification of the actual
—168 1	120	33,7					@120' to 120.9': No Recovery	
							@120.9' to 121.4': Sandy GRAVEL (GP), yellowish brown fine subangular gravels	n, very moist to wet,
							@121.4' to 122': CLAY with Sand and Gravel (CL)	
			Run 3				@122' to 122.5': Gravelly SAND (SP), dark yellow brown	, very moist
	120		Box 8	4.1	82	Шί	@122.5' to 123.3': Clayey SILT (ML), dark yellow brown,	very moist
	\dashv							
							@123.3' to 123.4': Sandy GRAVEL (GP) layer, dark yello	
							@123.4' to 124': CLAY (CL), dark yellow brown, very moi	
							@124' to 125': Gravelly SAND (SP), dark yellow brown, v	ery moist
						· · ·		
-163 1	125			1				
							disposed of offsite.	
158 1	130 —							
−153 1	135—	F99		BED	DING		ATTITUDE AND ANGLE IQUITS / SHEAD / EDACTUDE IN/CA	THEDING
−153 1	-	SCRATCH	V	BED. THIN	DING <22-1			THERING RESH

					<u>CO</u>	KE	BC		NG LOG			BORING NO. PAGE 1 OF	CB-5
ROJECT:		deo Scl											
LIENT: I												JOB NO.:	603367-001
ONTRACTO												PAGE NO.:	1 of 13
QUIPMENT									ORIENTATION		ORE BARREL	ELEVATION:	294 Feet 3/26/2012
GROUNE	HRS		D		TO (Feet	t): BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE START: DATE FINISH:	3/26/2012 3/27/2012
DATE	CON		WATER		SING	HO!		^	HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	3/2//2012 Martini
	001	\	,	0,10	5.110	110			INCLINED	Bit (Feet)	2.0 1.5.	PREPARED BY	
		 							BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	NI &	CORE	:		≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE	РТН	DEPTI RANGI (Feet)	E NUM	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	n is a simplification o	urface conditions f the actual
	5	5-10	1 1	n 1 x 1	3	60			Surface: 3" Asphalt 0.25': 3" Aggregate 0.5': Artificial Fill, up SAND (SM), dark 1.0': Pleistocene Alcy SAND (SM), orar 5.8' to 6.4': Silty SA 6.4' to 7.3': Sandy Coular gravels, fine services and services and services are services and services are services and services are se	base Indocument Vyellow bro Iluvium of E Inge brown, ND (SM), d GRAVEL (G Index and matrix, SILT (ML), c	wn, slightly moist, Benedict Canyon National Service S	wash (BCW ₂): sand, few grave moist, fine san own, moist, fine veathered	d e to coarse
- 284	10							@^ few	3' to 10': No Recove 10' to 11.1': SAND (7 fine black slate gr 11.1' to 12.3': Silty (10vels	(SP), orang avels			
- - 279		10-1	ว	n 2 x 1	5	100		@	I2.3' to 15': CLAY (CL), strong	brown to gray bro	own, moist, few	fine gravels
FI	ELD HAF	RDNESS	<u> </u>		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- SCRATO		FICULT	ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL(HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

	ELD	1 0				CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF 1	CB-5
ROJECT: CLIENT: <u>I</u> CONTRACTO	OR: N	/ Hills Martir	Unifi 1i Dril	ied Sc lling (Corpo	oration							JOB NO.: PAGE NO.:	603367-001 2 of 13
QUIPMENT			1E-75							ORIENTATION		ODE BADDE!	ELEVATION:	294 Feet
GROUNE	HRS	_		DE		TO (Fee	t): BOT.	OF	Х	VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START:	3/26/2012
DATE	COI		WAT	TER		SING	HOI.		^	HORIZONTAL	SIZE	2.5 I.D.	DATE FINISH:	3/27/2012 Martini
	001		∇		CAS	טוווכ	пОІ	LE		INCLINED	Bit (Feet)	Z.U I.D.	DRILLER:	Martini
	-		<u>¥</u>							BEARING	Barrel (Feet)	5	PREPARED BY: LOCATION:	See Plate 1
									0	ANG. FROM VERT.	Total (Feet)		LOCATION.	OCC FIARE I
		COF	RE						Т		. ,	L TION, REMARKS, AND	I IMITATIONS	
CORE DE	PTH	DEP RAN (Fee	TH GE	SAM NUM		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of	of the exploration at the vith time. The description	time of drilling. Subsui	rface conditions the actual
	15 —	15-	20	Rui Boz		5	100	0.51	e oxi	15' to 17': Gravelly Se sand, fine to coarse sand sand sand sand sand sand sand sand	nge brown (GP) bed range brow (SP) range brow SILT (ML) umnar struc CLAY (CL),	to gray brown, monto gray brown, resulting to	poist, blocky structures, blocky	ture, ucture, eosol, fine nic faces
		20-	25	Rui Box		5	100		@2	23.5' to 24.5': Sand	y CLAY (CL	.), dark yellow bro	own to gray browl	n, fine sand
-269	25-							\prod		24.7' to 25.4': Sand		, moderate brown	n, moist, fine san	d, few fine
	_	25-	30	Rur Box		4.2	84		@2 coa gra	prounded black slate 25.4' to 27.7': Sanctine to contain the contained by	y CLAY (CL , oxidized, oxidized, oxidized,	led and weathere	d black slate and	d siltstone
									@2	29.2' to 30': No Rec	covery			
-264	30													
	ELD HA						DING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
IARD IOD. HARD IOFT	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CHES D CHES E	IFFICUL		T ME Th	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. CB PAGE 3 OF 13)- 0
ROJECT:	El Ro			oheal	Dietwia							JOB NO.: 603367 -	-004
LIENT: <u>E</u> ONTRACTO												PAGE NO.: 603367-	
QUIPMENT												ELEVATION: 294 Fee	
GROUNE	WATER	₹:		EPTH	TO (Fee	t):			ORIENTATION		ORE BARREL	DATE START: 3/26/20	
DATE	HRS A	- 1	WATER	1	T. OF	BOT.	- 1	X	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 3/27/20	
	CON	NP Z	7	CAS	SING	HOL	-E		HORIZONTAL INCLINED	SIZE Bit (Feet)	2.5 I.D.	DRILLER: Martini PREPARED BY: AWS	
			<u></u>						BEARING	Barrel (Feet)	5	LOCATION: See Pla	ite 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	N &	COR			≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEI	РТН	DEPT RANG (Feet	E NUM	MPLE MBER	RECOVERY	RØD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The descriptio	time of drilling. Subsurface cor on is a simplification of the actua al.	nditions al
—264 - -	30 —	30-3		ın 3 ox 2	5	100		bro @: sai	own, moist to very n 30.9' to 32.1': Claye nd	y SAND (S	of developed soil C), dark reddish b (GC-GP), dark gra	ow brown to chocolate brown to brown, moist, ay brown, moist, fine to	fine
-259	35—							COI	34': Basal gravel co ntact below 34.2': Sandy CLAY			rely weathered, erosive	:
– 254		35-4		ın 1 ox 3	5	100		(a)	36.3' to 43.2': CLAY list, coarse sand, pa 37.2' to 37.8': Increa 38.6' to 39': Specks	aleosol		vellow brown to gray bro	own,
	-	40-4		ın 2 ox 3	5	100	000	@4 \@4 \sai	nd 13.7' to 44.3': Sand	y SAND (S ′ (CL), dark y Clayey SI	C), gray brown, m yellow brown to g LT (ML), dark yell	noist, coarse sand gray brown, moist, trace low brown, moist, fine s	sand
249	45—						<u> </u>	\[\alpha\]	14.3 to 44.7': Sandy	Silty CLA	(CL), Paleosol, o	dark yellow brown to gr	ay
248	- 5-							1					
	ELD HAF	DNEO		Г	DED	DINC	Ι		TITLINE AND ANOLE	IOINTO	SHEAR / FRACTURE	WEATHERING	_
/. HARD HARD MOD. HARD GOFT	- KNIFE C - SCRATO - SCRATO - SCRATO - GROVES - CARVES	CAN'T SC CHES DIF CHES EA S	RATCH FICULT	ME TI	THIN THIN EDIUM HICK THICK	2"-1 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre></pre>	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CC	RE	BC	RIN	IG LOG			BORING NO. CB-5 PAGE 4 OF 13
ROJECT: LIENT: I		leo Schoo Hills Uni		heel	Dietria	t						JOB NO.: 603367-001
ONTRACTO												PAGE NO.: 4 of 13
QUIPMENT												ELEVATION: 294 Feet
	DWATER:	:		EPTH	TO (Fee	t):			ORIENTATION		ORE BARREL	DATE START: 3/26/2012
DATE	HRS A	I W	ATER	l	Γ. OF	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 3/27/2012
	COM	IP		CAS	SING	HOI	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)	2.5 I.D.	DRILLER: Martini PREPARED BY: AWS
		_							BEARING	Bit (Feet) Barrel (Feet)	5	LOCATION: See Plate 1
									ANG. FROM VERT.	Total (Feet)		LOOATION: OCCTIBILET
ELEVATIO	N 8	CORE			l ≿ ˈ		ပ			D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS
CORE DE (Feet)	PTH	DEPTH RANGE (Feet)	SAM		RECOVERY	RQD	GRAPHIC LOG	may o	oil Description applies or	nly to a location of	of the exploration at the	time of drilling. Subsurface condition
—249	45—							poc @4 fine	rly developed bloc	ky fracture, y SILT (ML)	gleying along peo , dark yellow brov	wn to reddish brown, moist,
							/////					
	4						····		6.2' to 46.5': SANI	· ,	<u> </u>	
		45.50	Ru	n 3			·. ·.		6.5' to 46.8': CLA			v tine graveis brown, moist, fine to mediu
		45-50	Bo		5	100		⊥ sar		gravels, he		brown, moist, fine to mediu tact with manganese oxide
								@4	7.8': Pleistocene	Cheviot Hill		
							<i>\////</i>	ČL	AY (CL), orange br	own to gray	brown and dark	brown between 48.2' to 49'
	4							mo	ist, tew tine black this	siate gravels	s, oxidation-reduc	tion banding, gleyed, nese oxide on well
								dev	eloped pedogenic	faces, oxidi	zed	THE OC ONICE OF WEIL
								$\overline{}$	9.5': Siltstone line	-,		
-244	50		1				\ ////	7 <u> </u>		range brow	n to gray brown a	nd dark brown between 48.
	_	50-55	Ru Bo		5	100	. (1)	dev	eloped pedogenic	faces, oxidi	zed	ty gravels
-239	55							oxio	dized with mangan 3.2': Sandy CLAY	ese oxide a		
												o dark reddish brown, moist
		55-60	Ru Bo		5	100			to medium sand, y) @ 59', 59.8', an			avels (light yellow brown to y structure
											colate brown clay	with siltstone rockline at 5
							7////	y =	9': Siltstone rocklii			
	7		1					4 <u> </u>	9.1': CLAY (CL), c			
						1	<i>\////</i>	@5	9.5': Siltstone rock	fragments,	in sandy clay ma	atriv manganoso ovido and
-234	60						/////			•		atrix, manganese oxide and
-234	60						,,,,,					atrix, manganese oxide and
	60 —	DNESS			BED	DING		АТТ	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING

					CC	RE	BC	RII	NG LOG			BORING NO. CB-5 PAGE 5 OF 13		
ROJECT: LIENT: I	El Ro Beverly			School	Distric	f						JOB NO.: 603367-001		
ONTRACTO												PAGE NO.: 5 of 13		
QUIPMENT	USED:	CM								1		ELEVATION: 294 Feet		
GROUNE		_			TO (Fee				ORIENTATION		ORE BARREL	DATE START: 3/26/2012		
DATE	HRS		WATER		T. OF	BOT.		Х	VERTICAL	TYPE SIZE	Split Sleeve	DATE FINISH: 3/27/2012		
	COI		 ∇	CA	SING	НО			HORIZONTAL INCLINED	Bit (Feet)	2.5 I.D.	DRILLER: Martini PREPARED BY: AWS		
			±						BEARING	Barrel (Feet)	5	LOCATION: See Plate 1		
								0	ANG. FROM VERT.	Total (Feet)				
ELEVATIO	3 NC	COR		•	` ≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, ANI	D LIMITATIONS		
CORE DE	PTH	RANG (Fee	GE N	AMPLE JMBER	RECOVERY	Rab	GRAPHIC LOG	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.						
—234 ·	60 —			Run 3				@	<u> </u>	CLAY (CL),		to gray brown, moist		
			90		CO:	arse subrounded to	angular gra	avels, scattered	, fine sand, basal well					
									inded coarse grave		ر مار بازان ال	, mio sana, basai wen		
-229	65—				+		/////		64.5' to 65': No Rec					
	_							@	66.6' to 68': Sandy (Gravelly CL	.AY (CL), dark ye	, moist, few very fine gravels		
	_	65-7		Run 1 Box 5	4.6	92			orounded to subang			dark reddish brown		
								@(69.6' to 70': No Rec	overy				
-224	70						////	_			dark vellow brov	vn, moist, fine sand, few ver		
	_ _ _ _ _	70-75 Run 2 Box 5		5	100		find	e black slate gravel	s scattered	, minor calcium c	carbonate			
0:-	_											erosive contact below low brown, moist, fine to		
-219	75							T 👅		,, -, -, -, -, -, -, -, -, -, -, -,	(-), -3 ; 0	,,		
	EL D	DD1:==				DING	Щ,	<u> </u>	TITUDE AND ANCE	1011-5	OUEAD (ED)	-		
	ELD HAI			1/	BED THIN	DING <2	.	AT	TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE			
ARD IOD. HARD OFT	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CHES DI CHES EA	IFFICULT	ME	THIN THIN EDIUM THICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE		

					CC)KE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB-5
ROJECT:		deo S		Soboa!	Diet!	+						JOB NO.:	603367-001
LIENT: <u>I</u> ONTRACTO												PAGE NO.:	6 of 13
QUIPMENT												ELEVATION:	294 Feet
GROUNI					TO (Fee				ORIENTATION	С	ORE BARREL	DATE START:	
	HRS				T. OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	
DATE	co	MP	WATER	CA	SING	HO	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
			<u> </u>						INCLINED	Bit (Feet)		PREPARED BY	: AWS
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	<u> </u>							0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	ON &	COL			l ¥		≌		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE (Feet)	- 1	DEP RAN (Fee	GE NU	MPLE	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	on is a simplification o	surface conditions of the actual
-219	75						/////	\co	arse gravels, fine sa	and in carbo	onate lined matrix		
									75' to 76.8': Silty Gr				some fine to
									arse subangular bla			w brown, moist,	, some inte te
	-							1	9	J -			
								1					
							1444	1			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
	-							@	76.8': Clayey Grave	lly SILT (MI	_), dark yellow bro	own, moist, few	tine
		75-		un 3	5			su	bangular to subrour	iuea black s	siate graveis		
		1 3-	~ в	ox 5		100							
	\dashv												
									78.6': Siltstone roun	nded hasal o	cobble		
	4							, , _	79' to 81.6': Silty CL			very fine black o	slate oravale
									ed with carbonate	-AT (OL), DI	OWII, IIIUISI, IEW \	vory mie black s	nate graveis,
								1 ''''	oarbonato				
-214	80-				1		<i>\////</i>	1					
								1					
								1					
								1					
								1					
							600	@	31.6' to 85': Sandy	GRAVEL (G	SP), gray brown, v	ery moist, fine	to coarse
							P.O.		nd matrix, fine to co				gravels, few
		80-		un 1	5	100	000	III	nt brown siltstone g	raveis, basa	ai coarse gravei a	1 85	
				ox 6		100		1					
							200	1					
							100	1					
							0/0	1					
	-						Po V	1					
							70,	1					
							$[\circ \bigcirc]$]					
-209	85—				1		l'Ti	a	35' to 86': Clayey S	II T (MII) de	ark vellow brown	moist trace fin-	e sand
								(W	oo to oo . Glayey Si	ı∟ı (ıvı∟), üö	air yellow blown,	moist, trace IIII	- Sailu
	_								2014-07-01-0	OL AV. (OL)	-tu	-1-4	
									36' to 87.3': Sandy (nd, paleosol, coarse				
							<i>\\\\\</i>	_j sa	iu, paieusui, cuarse	gravers at	base, rounded, e	nosive contact I	O C IOW
	_							1					
			_ 👨	un 2				1_	27 014- 00 01 01 13	((OL) (!
		85-		ox 6	5	100		@	37.3' to 89.2': CLAY stic, fine gravel with	(UL), stror	ig prown, moist, v	ery nomogenoe	eus and
				-					dation-reduction ba		e, blocky structur	e, minor iamina	auons and
							<i>\////</i>	1	D	9			
							<i>\\\\\\</i>	1					
							<i>\\\\\\</i>						
									20 21 to 00 21. O====	NIV CLAY (71 \ atrana b==	moist fire to	000000
							<i>\////</i>	an	39.2' to 90.3': Grave gular to subangular	slatv eiltet	one and basalt o	i, muist, iiiie (0 (siltstone and ela	cuaise ity aravele
-204	90—							1	guiai to oubuligulai	Jiacy, Jillot	oo, and basait, s		, giuvoio
∠∪ +	30 -												
FII	ELD HA	RDNES	SS_		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
. HARD			CRATCH		. THIN	<2		CLIA!	HORIZONTAL (0-5°)	V. CLOSE	<2" 2" 12"	FRESH	
ARD OD. HARD	- SCRAT	CHES E	OIFFICULT EASILY	ME	THIN EDIUM	2"-1 12"-	36"	MOD	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
	- GROVE	ES		T	HICK	36"-1		STEE	P OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
OFT . SOFT	- CARVE			V.	THICK	>12	U''' I		VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	

ROJECT:	El Rode	eo Schoo	<u> </u>			1 \	<u> </u>	RING LOG	PAGE 7 OF 13
LIENT: B	everly I	Hills Unif	ied Scl			<u> </u>			JOB NO.: 603367-001
ONTRACTO									PAGE NO.: 7 of 13
QUIPMENT						۸.		ORIENTATION CORE BARREL	ELEVATION: 294 Feet DATE START: 3/26/2012
GROUND	WATER: HRS AF	FT		BOT	O (Feet	BOT.	OF	X VERTICAL TYPE Split Sleeve	DATE START: 3/26/2012
DATE	COMF	I WA	TER	CAS		HOI		HORIZONTAL SIZE 2.5 I.D.	DRILLER: Martini
		\Box					_	INCLINED Bit (Feet)	PREPARED BY: AWS
		- I-						BEARING Barrel (Feet) 5	LOCATION: See Plate 1
								0 ANG. FROM VERT. Total (Feet)	
ELEVATION CORE DEP (Feet)	тн	CORE DEPTH RANGE (Feet)	SAMI		RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AN The Soil Description applies only to a location of the exploration at th may differ at other locations and may change with time. The descrip conditions encountered. Transitions between soil types may be grac	ne time of drilling. Subsurface conditions tion is a simplification of the actual
-204 S	90	(1 001)					/////		
	-	90-95	Rur	- 1	5			@90.3' to 92.5': Clayey Gravelly SILT (ML), dark fine coarse subangular black slate gravels @ 92.	5'
		00 00	Вох	6	Ü	100		@92.5' to 94.2': Sandy CLAY (CL), dark yellow b fine subangular gravels	rown, moist, fine sand, few
								@93.5 Silstone rock line	
							· · · ·	@94.2' to 95': Gravelly SAND (SP), gray brown, visiltstone and slaty gravels, well graded	very moist to wet with some
—199 9	95-							@95' to 95.4': CLAY (CL), dark yellow to strong b	prown, moist
							ο Ο (@95.4' to 95.6': No Recovery	
	-	95-100	Rur	n 1	E			@95.6' to 97.5': Sandy Gravel (GP), gray brown, subrounded to subangular gravels, pulses of thin	beds of gravels
		95-100	Box	(7	5	100		@97.5' to 98.4': Silty SAND (SM), dark yellow bro	
	_							@98.4' to 99.2': Sandy GRAVEL (GP), gray brow black slate gravels, basal gravel, erosive contact	n, very moist, fine subangula below
—194 10	00-							@99.2' to 100.9': CLAY (CL), dark yellow brown,	moist, very fine sand
								@100.9' to 101.7': Gravelly SAND (SP), dark yell subangular gravels, some clay	
	1	00-105	Rur Box		5	100		@101.7' to 103.4': Sandy Gravel (GP), gray brow coarse subangular gravels, slate, siltstone, and b	n, very moist to wet, fine to asalt, erosive contact below
								@103.4' to 107': CLAY (CL), dark yellow brown, r	noist
400								@104': Thin gravel layer @104.2': CLAY (CL), dark yellow brown, moist	
—189 10	05								
	LD HARE			\/ -		DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE	
ARD - IOD. HARD - OFT -	SCRATCH	N'T SCRATO HES DIFFICU HES EASILY		TH MEI TH	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°) V. CLOSE CLOSE 2"-12" MOD. CLOSE 12"-36" WIDE 36"-120" V. WIDE >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

ROJECT:	El Ro	deo Sc	hool					RING LOG			PAGE 8 OF	13
LIENT: I	Beverly	Hills U	Unified			:					JOB NO.:	603367-001
ONTRACTO											PAGE NO.:	8 of 13
QUIPMENT			E-75, C			۸.	-	ORIENTATION		ORE BARREL	ELEVATION:	294 Feet
GROUNE	HRS				TO (Feet	:): BOT.	OE	X VERTICAL	TYPE	Split Sleeve	DATE START:	3/26/2012 3/27/2012
DATE	COL		WATER	? ∣	SING	HOI.		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
	- 001		7	- 0, (01110	1101		INCLINED	Bit (Feet)	2.0 1.5.	PREPARED BY	
		- 1-3	- '	+				BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0 ANG. FROM VERT.	Total (Feet)			
ELEVATIO	ON &	COR		AMPLE	\ <u>\</u>		≌"			TION, REMARKS, AND		
(Feet)		RANG (Feet	SE N	UMBER	RECOVERY	RaD	GRAPHIC LOG	The Soil Description applies on may differ at other locations and conditions encountered. Trans	d may change v	ith time. The description	n is a simplification o	urface conditions f the actual
		105-1		Run 3 3ox 7	5			@108.6': CLAY (CL), gravels, maganese ox @108.9'-109.8': Sand @109.8'-110': CLAY (dark yellow ninations y GRAVEL gravels with dark yellow ide staining y CLAY (CL CL), yellow	(GP), gray brown, a few coarse grab brown, moist, sor brown, oxidation lamin brown	me fine sand, for ations	ew very fine
- 179 1		110-1		Run 1 Box 8	5	100		@111.3' to 113': SILT of very fine gravels @113' to 113.9': Sand coarse sand, fine angle @113.9' to 115': No R	y GRAVEL ular black s ecovery	(GP), gray brown late gravels	, very moist to	wet, fine to
	_	115-1	701	Run 2 Box 8	2.5	50		@115' to 116.5': Sand sand, fine subangular @116.5' to 117.5': Cla moist, fine subangular cobbles @117.5' to 120': No R	gravels, erd yey GRAVI to angular	osive contact belo	ow brown to gra	ay brown,
—174 1	20											
FII	ELD HA	RDNESS	<u> </u> S		BED	DING		ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
. HARD	- KNIFE	CAN'T SC	RATCH		. THIN	<2'		HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
ARD IOD. HARD OFT		CHES DIF CHES EA S	FFICULT	MI T	THIN EDIUM HICK THICK	2"-1. 12"-3 36"-1. >12	2" 36" 20"	SHALLOW OR LOW ANGLÉ (5-35°) MODERATELY DIPPING (35-56°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT:		leo Scho Hills Un		hool 1			BC	RII	NG LOG			BORING NO. PAGE 9 OF	CB-5 13 603367-001
LIENT: <u>I</u> ONTRACTO						l .						PAGE NO.:	603367-001 9 of 13
QUIPMENT												ELEVATION:	294 Feet
GROUNE					ΓΟ (Feet	:):			ORIENTATION	C	ORE BARREL	DATE START:	3/26/2012
DATE	HRS A	AFT ,	/ATER	ВОТ	. OF	вот.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
DATE	COM	IP		CAS	SING	HOI	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
		Ψ							INCLINED	Bit (Feet)		PREPARED BY	: AWS
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	<u> </u>			L				0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	N &	CORE DEPTH	SAN	IDI F	ERY		€.,				TION, REMARKS, AND		
(Feet)		RANGE (Feet)	NUM		RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	on is a simplification o	urface conditions f the actual
−174 1	20 —		Du	- 0					120' to 121.5': SANI 121.5' to 125': No R	. ,	to coarse sand,	gray brown	
		120-12		n 3 x 8	1.5	30							
-169 1	25—								125' to 125.4': SAN Iterial)	D (SP), gra	y brown, wet, fine	to coarse (pos	sible heaved
		125-130) Ru Bo	n 1 x 9	3.3	66		@	125.4' to 128.3': CL 126': gray, few sca ucture, oxidation ba	ttered very	fine gravel, mottle	-	d, poor block
	_						(////	@	128.3'-130': No Rec	overy			
−164 1	30						Δ . Δ	fine	130' to 130'9': Grave e to coarse gravel,	elly SAND (some clay	(SW), gray brown	, wet, fine to coa	arse sand,
		130-13		n 2 x 9	0.9	18		@	130.9' to 135': No R	ecovery			
-159 1	35												
	-1.5	D1=2-					Ь,	1	TITLIDE AND AND THE		011545 : 55 - 5-		
	ELD HAR				BED			AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
ARD OD. HARD OFT	- SCRATC		CULT	ME Th	THIN HIN DIUM HICK THICK	<2"-1. 12"-3 36"-1. >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

I Rodeo Schoerly Hills Un Martini Dised: CME-ATER: HRS AFT COMP COMP COMP CORE DEPTH RANGE (Feet) 135-140	ified School rilling Corp 75, Contino DEPTH ATER CA SAMPLE NUMBER	oration			JOB NO.: 603367-001 PAGE NO.: 10 of 13 ELEVATION: 294 Feet ORIENTATION CORE BARREL DATE START: 3/26/2012 X VERTICAL TYPE Split Sleeve DATE FINISH: 3/27/2012 HORIZONTAL SIZE 2.5 I.D. DRILLER: Martini INCLINED Bit (Feet) PREPARED BY: AWS BEARING Barrel (Feet) 5 LOCATION: See Plate 1 0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
Martini D SED: CME- ATER: HRS AFT COMP CO	rilling Corp 75, Contino DEPTH ATER BC CA SAMPLE NUMBER	oration us Core TO (Fee T. OF SING	t): BOT. HO	LE	PAGE NO.: 10 of 13 ELEVATION: 294 Feet ORIENTATION CORE BARREL DATE START: 3/26/2012 X VERTICAL TYPE Split Sleeve DATE FINISH: 3/27/2012 HORIZONTAL SIZE 2.5 I.D. DRILLER: Martini INCLINED Bit (Feet) PREPARED BY: AWS BEARING Barrel (Feet) 5 LOCATION: See Plate 1 0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
ATER: HRS AFT COMP COMP CO	DEPTH ATER BC CA SAMPLE NUMBER	TO (Fee	t): BOT. HO	LE	ORIENTATION CORE BARREL DATE START: 3/26/2012 X VERTICAL HORIZONTAL SIZE 2.5 I.D. DRILLER: Martini PREPARED BY: BEARING Barrel (Feet) 0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
HRS AFT COMP COMP COMP COMP COMP COMP COMP COMP COMP COMP COMP COMP COMP COMP COM	SAMPLE NUMBER	T. OF SING	BOT. HO	LE	X VERTICAL TYPE Split Sleeve DATE FINISH: 3/27/2012 HORIZONTAL SIZE 2.5 I.D. DRILLER: Martini INCLINED Bit (Feet) PREPARED BY: AWS BEARING Barrel (Feet) 5 LOCATION: See Plate 1 0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
COMP CORE DEPTH RANGE (Feet)	SAMPLE NUMBER	SING	HO	LE	HORIZONTAL SIZE 2.5 I.D. DRILLER: Martini INCLINED Bit (Feet) PREPARED BY: AWS BEARING Barrel (Feet) 5 LOCATION: See Plate 1 O ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
& CORE DEPTH RANGE (Feet)	SAMPLE NUMBER				INCLINED Bit (Feet) PREPARED BY: AWS BEARING Barrel (Feet) 5 LOCATION: See Plate 1 0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
& CORE DEPTH RANGE (Feet)	NUMBER	RECOVERY %	RQD	GRAPHIC LOG	BEARING Barrel (Feet) 5 LOCATION: See Plate 1 0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
DEPTH RANGE (Feet)	NUMBER	RECOVERY %	RaD	GRAPHIC	0 ANG. FROM VERT. Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
DEPTH RANGE (Feet)	NUMBER	RECOVERY %	RQD	GRAPHIC	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
H DEPTH RANGE (Feet)	NUMBER	RECOVER %	RQD	GRAPHI	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
_				/////	
	Box 9	4	80		@135' to 136.7': CLAY (CL), yellow brown, moist, some silt @136.7' to 137.9': Sandy Gravelly CLAY (CL), yellow brown, moist, some fine angular gravels, dark brown 0.5" thick silty sand clay bed @137' @137.9' to 139': Sandy GRAVEL (GP), gray brown, wet, fine to coarse angula black slate gravels, fine to coarse sand @139' to 140': No Recovery
_					@140' to 140.4': SAND (SP), brown, wet, medium to coarse sand
	1	1			@140.4' to 140.5': Silty SAND (SM) with clay, brown, wet, fine sand
-					@140.5' to 141.2': Silty SAND (SM), brown, wet, fine sand, fine subangular
					gravel
					@141.2' to 142': Sandy CLAY (CL), orangish olive, wet, fine sand, oxide staining, fine subangular black slate gravel
_					<u> </u>
440.44	. Run 1	1.0			@142' to 142.7': Sandy CLAY (CL), orangish brown, wet, fine sand, oxide staining
140-14:	Box 10	4.6	92		1
4					@142.7' to 143.5': Sandy CLAY (CL), dark brown, wet, fine sand, Mn nodules,
					subangular pebbles
					@143.5': Clayey SAND (SC), brownish dark gray, wet, fine sand, MnO nodule
					oxide staining, vertical carbonate stringers @143.75' to 143.85', MnO band
					@contact with below
	1	1		//////	@144.5' to 144.6': Clayey SAND (SC), orangish olive, very moist, fine sand,
	1			//////	oxide staining, few angular coarse sand
	1	1			@144.6' to 145': No Recovery
	1	1			@145' to 145.3': Clayey SAND (SC), orangish brown, wet, fine sand,
_	1	1			subangular black slate pebbles
	1	1			@145.3' to 146': Clayey SAND to Sandy CLAY (SC-CL), orangish olive, wet,
	1	1			fine sand, oxide staining, highly weathered angular gravels and pebbles
_					@146' to 148.5': Sandy CLAY (CL), mottled orange brown to olive, very moist
	Run 2	1			to wet, fine sand, oxide staining, MnO banding, subangular to angular fine
145-150	Box 10	4.4	88		gravel
_		1		/////	
	1	1		<i>\\\\\\</i>	
	1	1			@148.5' to 149.1': CLAY (CL), mottled orange to olive, wet, oxide staining
_	1	1			
					@149.1' to 149.4': Clayey SAND (SC), mottled orange brown to olive, wet, fine
	1	1			\with few coarse sand
	+	1			@149.4' to 150': No Recovery
				<u> </u>	
HARDNESS NIFE CAN'T SCRA	тсн \				ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5°) V. CLOSE <2" FRESH
CRATCHES DIFFI	CULT	THIN	2"-1	2"	SHALLOW OR LOW ANGLE (5-35°) CLOSE 2"-12" V. SLIGHT MODERATELY DIPPING (35-55°) MOD. CLOSE 12"-36" SLIGHT
ROVES		THICK	36"-1	20"	STEEP OR HIGH ANGLE (55-85°) WIDE 36"-120" MODERATE
	v	···ion	- 12	~	VERTICAL (85-90°) V. WIDE >120" MOD. SEVERE
	D HARDNESS WIFE CAN'T SCRA'T CHES DIFFIC	145-150 Run 2 Box 10 PHARDNESS WIFE CAN'T SCRATCH BRATCHES DIFFICULT BRATCHES EASILY ROVES MERCAN'T SCRATCH BRATCHES EASILY ROVES MERCAN'T SCRATCH BRATCHES EASILY ROVES MERCAN'T SCRATCH BRATCHES EASILY ROVES	140-145 Box 10 4.6 145-150 Run 2 Box 10 4.4 145-150 Run 2 Box 10 4.4 145-150 Run 2 Box 10 4.4	140-145 Box 10	## 140-145 Run 1 Box 10 4.6 92 ## 145-150 Run 2 BEDDING BEDDING Run 2 Raraches difficult Rar

				CC	RE	BO	RING LOG			BORING NO. PAGE 11 OF	CB-5
_	Beverl	odeo School y Hills Unif Martini Dri	ied Scho							JOB NO.: PAGE NO.:	603367-001 11 of 13
EQUIPMEN	T USED	CME-75	5, Contin	ous Core	9					ELEVATION:	294 Feet
GROUN				TH TO (Fee			ORIENTATION		ORE BARREL	DATE START:	3/26/2012
DATE	- 1	AFT WA	TFR I	BOT. OF	BOT		X VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
	- 00	MP V		CASING	НО	LE	HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
	+						INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY: LOCATION:	
	+						0 ANG. FROM VERT.	Total (Feet)	3	- LOCATION.	See Plate 1
		CORE				U		. ,	TION, REMARKS, AND I	IMITATIONS	
CORE DE	-	DEPTH	SAMPL	E ₩ _	Rab	ξg	The Soil Description applies on				urface conditions
(Feet)		RANGE	NUMBE	B III	&	GRAPHIC	may differ at other locations an	d may change v	vith time. The description	n is a simplification of	the actual
— 144	150	(Feet)		<u> </u>			@150' to 150.6': Claye oxide staining, few coa	ey SAND (S	,, , <u>, , , , , , , , , , , , , , , , ,</u>		t, fine sand,
-	_	150-155	Run 3 Box 1	ו ה	100		@150.6' to 153.2': Sa sand, oxide staining, N @151': gleyed, oxidati	ndy CLAY (MnO nodule	s, with carbonate,	ge to olive, wet, with siltstone o	very fine lasts
							@153.2' to 153.7': CL	AY (CL), m	ottled orangish to	olive, wet, oxide	e staining,
							_ MnO nodules	· //			
-	_						@153.7' to 153.85': C			olive, wet, oxid	de staining,
							MnO nodules, subang				
							@153.85' to 155.8': C		nottled orangish to	dark olive, we	t, oxide
—139 1	155						staining, MnO nodules	3			
-	_	155-160	Run ²	1 5			@155.8' to 157.35': Sand, oxide staining	·			
-	_	155-160	Box 1	1 5	100		@157.35 to 158.1 : C heavy carbonate string	ger dèvelop	ment, near vertica	l, paleosol	
_	_						nodules, vertical carbo @158.6' to 159.3': CL	onate string	ers		
—134	160						@159.3' to 159.6': CL vertical carbonate strii	ngers and n	odules		
-	_						@159.6' to 160.6': Cla gravel, carbonate nod -@160.6' to 160.75': an @160.75' to 162.6': C	ules ngular grave	el layer within unit		
-	_	160-165	Run 2	2 5			pebbles, with some M @162.2' to 162.3': Mn	nÓ ánd car		o, wot, iiiic ai	.gaidi
-	_	100-100	Box 1	1 3	100		@162.6' to 165': Sand carbonate nodules	ly CLAY (C	L), brown, wet, ver	ry fine sand, ab	undant
-	_										
— 129	165 —			+	1	<i>\////</i>					
					\perp						
	IELD HA	ARDNESS		BEC	DING		ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
F۱		CAN'T SCRATO	<u>,,, , , , , , , , , , , , , , , , , , </u>	V. THIN	<2	."	HORIZONTAL (0-5°)	V. CLOSE	<2"	EDECH	
/. HARD HARD MOD. HARD SOFT /. SOFT	- SCRA	TCHES DIFFICU TCHES EASILY 'ES		THIN MEDIUM THICK V. THICK	2"-1 12"- 36"-1 >12	36" 20"	SHALLOW OR LOW ANGLÉ (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				CO	RE	BC	RIN	IG LOG			BORING NO.	CB-5
DO 1505	, pr	adac Cala									PAGE 12 OF	13
ROJECT:		odeo Schoo ly Hills Unif		Dietrio	+						JOB NO.:	603367-001
		Martini Dri									PAGE NO.:	12 of 13
		: CME-7:									ELEVATION:	294 Feet
	JNDWATE		DEPTH					ORIENTATION	С	ORE BARREL	DATE START:	3/26/2012
	HRS	SAFT	BO.	T. OF	BOT.	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
DATE	CC	OMP VVA	TER CA	SING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
		⊻						INCLINED	Bit (Feet)		PREPARED BY:	AWS
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT.	Total (Feet)			
ELEVAT	TION &	CORE DEPTH	SAMPLE	꿃		€.,				TION, REMARKS, AND L		
CORE D		RANGE (Feet)	NUMBER	RECOVERY	RQD	GRAPHI	may o	Soil Description applies on differ at other locations and tions encountered. Trans	d may change v	ith time. The description	is a simplification of	
— 129 -	165—						gra @1	65' to 165.7': Sand vel, carbonate nod 65.7' to 166': Sand	úles ly CLAY (Cl		·	
							h@1	lules, carbonate no 66' to 166.7': CLA	Y (CL), olive			
_								66.2' to 166.4': Sai				
	_		Dura 2				#	66.4' to 166.5': SA	. ,		<u> </u>	
		165-170	Run 3 Box 11	5	100			66.5' to 166.9': Cla		(SC), brown, wet, v	very fine sand,	MnO
			BOX 11		100		4 III——	lules, carbonate no				
								66.9' to 167': CLA	. ,.			
								67' to 167.2': CLA				
								67.2' to 167.25': S			<u> </u>	
	_							67.25' to 167.4': Sa	andy CLAY	(CL), dark olive, w	et, MnO nodule	es, carbonate
						/////	חנוי—	lules				
104	170							67.4' to 168.15': C	, ,,			
-124	170 —					1////		68.15' to 168.5': Cl		nottled brown olive	, wet, MnO noo	dules and
							1 ⊪ —	<u>bonate nodules pre</u>				
							∄ @1	68.5'Quaternary S	<u>an Pedro F</u>	ormation (Qsp):		
	_						1 11 -	ndy CLAY (CL), dai				
								68.6': Clayey SAN				
							@1	69.5' to 170': SANI	D (SP), dar	gray, wet, fine to	medium sand	
	_					11.1	†∖\@1	70' to 170.75': Clay	yey SAND (SC), gray brown, v	vet, fine sand, t	fine
		170-175	Run 1	3		ŀ.!· · <u> </u> .		rounded gravel				
		170-175	Box 12	٥	60		∐@1	70.75' to 170.85': 8	Silty SAND	(SM), gray olive, w	et, fine sand, N	InO nodules
	_					1.1.	@1	70.85' to 171.9': Cl	LAY (CL) w	th sand, gray to ol	ive, wet, fine sa	and, MnO
							noc	lules, few fine subr	ounded gra	vel		
								71.9' to 172.8': Silt				
	_	4					@1	72.8' to 173': Silty	SAND (SM	, dark gray, wet, fi	ne sand, oxide	staining
							@1	73' to 175': No Red	covery			
							_		•			
-119	175					 						
110	113						@1 gra	75' to 175.85': Silty vel	/ SAND (SN	1), dark gray, wet,	fine sand, fine	subrounded
	_	1						75.85' to 176.1': Cl	LAY (CL), n	narl, dark gray, we	t, MnO nodules	s, carbonate
								lules				
							@1	76.1' to 180': No R	ecovery			
	-	†										
		1	Run 2	1.1								
		175 ₋ 180	40	1 '-'	22							
		175-180	Box 12			1						
	_	175-180	Box 12									
	_	175-180	Box 12									
	_	175-180	B0X 12									
	-	175-180	Box 12									
	-	175-180	вох 12									
	_	175-180	вох 12									
-114	180	175-180	Вох 12									
-114	180—	175-180	BOX 12									
	FIELD H	ARDNESS			DING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
. HARD ARD	FIELD HA	ARDNESS E CAN'T SCRATC	CH V.	THIN THIN	<2 2"-1	2"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
HARD	FIELD HA	ARDNESS E CAN'T SCRATO TCHES DIFFICU	CH V.	THIN	<2	2" 36"	SHALL(HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH V. SLIGHT SLIGHT	
HARD ARD OD. HARD	FIELD HA - KNIFE - SCRA D - SCRA	ARDNESS SCAN'T SCRATCHES DIFFICUTCHES EASILY TESES	CH V.	THIN THIN EDIUM	<2 2"-1 12"-3	2" 36" 20"	SHALLO MODE STEEF	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	V. CLOSE CLOSE MOD. CLOSE	<2" 2"-12" 12"-36"	FRESH V. SLIGHT	

PROCES Fire Process	El Rodeo School Beverly Hills Unified School District JOB NO.: 603	
CORRECTOR COMPANDATE IN DIFFER CONCESS COMPANDATE IN DIFFER CONC	Beverly Hills Unified School District JOB NO.: 603	
SOURCE STATE PRINTED CORPORATION STATE	·	3367-001
SCHOLAMANTA STATE TO GEST OF SUT TO GEST OF SUT OF	on martin Drining Corporation	
CONTRIBUTION CONT		
DATE COMP WATER SOT OF SOT OF A VERTICAL SIZE SISSING SINGLE INSERT 2273012 VALUE ON THE INSERT SOT OF SOT OF A VERTICAL SIZE SIZE SIZE SIZE SIZE SIZE SIZE SIZE		
COMP WATER CASING HOLE HORIZONTAL SIZE 2.5 LD. CASING MARCHAIN NICKINFO SIE (Few) PREPARED IN AMB PREPARED IN AM	HRS AFT BOT OF BOT OF X VERTICAL TYPE Solit Sleeve DATE FINISH: 3/2	27/2012
SELECTION SECOND	WATER	
BEAVAING Sarrel (Feet) COATION See Prive 1 See Prive 1 Total (Feet) See Prive 1 Total (Feet) See Prive 1 Total (Feet) See Prive 1 See Prive 2 See Prive 1 See Prive 2 See Prive 1 See Prive 2 See		
ELEVATION & CORE DEPTH (NAME) SAMPLE RANGE (MAN) (Part) MANNER (Part) MA		e Plate 1
ELEVATION & CORPT DEPTH (Yead) NUMBER (Feet) NUMB	0 ANG. FROM VERT. Total (Feet)	
### 180 - 18	NI 8 CORE 🍃 U FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS	
### 180 - 18	DEPTH SAMPLE 🗒 🖁 🖁 💆 The Soil Description applies only to a location of the exploration at the time of drilling. Subsurfac-	e conditions
### 180 - 18	RANGE NUMBER 8	actual
### PEILD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAY FRACTURE WEATHERING Children Childr	@180 to 181.5" Silty SAND (SM), dark gray, wet, fine sand, massive, unconsolidated @181.5" to 183.8": CLAY (CL), dark gray, wet, with carbonate nodules increase with depth	
### Page 185 Bedding Attitude and Angle Joints / Shear / Fracture Weathering Gespen Page 186 Pag	Box 12 5 100 11.1. @183.8' to 184': Silty SAND (SM), brownish dark gray, wet, fine to versand, MnO banding 11.1. @184' to 185': CLAY (CL), mottled orange to olive, wet, carbonate strigger and nodules inclosed.	
Pield Hardness Bedding Attitude and angle Joints / Shear / Fracture Weathering Weath		and MnO
PIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING FRESH PROSPORTING (1957) SHALOW GRUDW ANGLE (5-57) SHALOW GRUDW ANGLE (, IVIIIO
Total depth of boring: 185' bgs Perched groundwater encountered at approximately 94.2-95', 101.7-103.4', 110'-111.3', 113'-113', 9', 125'-125.4', 130'-130.9', 137.9'-185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. Total depth of boring: 185' bgs Perched groundwater encountered at approximately 94.2-95', 101.7-103.4', 110'-111.3', 113'-113', 9', 125'-125.4', 130'-130.9', 137.9'-185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. Total depth of boring: 185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. Total depth of boring: 185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. Total depth of boring: 185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. Total depth of boring: 185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. Total depth of boring: 185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T.		
Total depth of boring: 185' bgs Perched groundwater encountered at approximately 94.2-95', 101.7-103.4', 110'-111.3', 113'-113.9', 125'-125.4', 130'-130.9', 137.9'-185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. 190 — FIELD HARDNESS BEDDING ATTITUDE AND ANGLE OF STATE OF STA		
Perched groundwater encountered at approximately 94 2-95', 101.7-103.4', 110'-111.3', 113'-113.9', 125'-125.4', 130'-130.9', 137.9'-185' bgs Excavation backfilled with cuttings and patched with asphalt upon completion drilling. Excess soil cuttings disposed of in D.O.T. approved drums and disposed of offsite. — 104 190— — 199 195— FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING OF THE WEAT	WIDT.OU TOU. CLAT (CL), Udik glay, Wet	
- 99 195 — FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	Perched groundwater encountered at approximately 94.2-95', 101.7-10 110'-111.3', 113'-113.9',125'-125.4', 130'-130.9', 137.9'-185' bgs Excavation backfilled with cuttings and patched with asphalt upon condrilling. Excess soil cuttings disposed of in D.O.T. approved drums and dispose	mpletion of
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	.90—	
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
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FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING		
V. HARD - KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0-5") V. CLOSE <2" FRESH HARD - SCRATCHES DIFFICULT THIN 2"-12" SHALLOW OR LOW ANGLE (5-35") V. CLOSE 2"-12" V. SLIGHT MOD. HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55") MOD. CLOSE 12"-36" SLIGHT SOFT - GROVES THICK 36"-120" STEEP OR HIGH ANGLE (65-85") WIDE 36"-120" MODERATE V. SOFT - CARVES V. THICK >120" VERTICAL (85-90") V. WIDE >120" MOD. SEVERE	³⁰	
V. HARD - KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0-5") V. CLOSE <2" FRESH HARD - SCRATCHES DIFFICULT THIN 2"-12" SHALLOW OR LOW ANGLE (5-35") V. CLOSE 2"-12" V. SLIGHT MOD. HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55") MOD. CLOSE 12"-36" SLIGHT SOFT - GROVES THICK 36"-120" STEEP OR HIGH ANGLE (65-85") WIDE 36"-120" MODERATE V. SOFT - CARVES V. THICK >120" VERTICAL (85-90") V. WIDE >120" MOD. SEVERE		
HARD - SCRATCHES DIFFICULT THIN 2"-12" SHALLOW OR LOW ANGLÉ (5-35") CLOSE 2"-12" V. SLIGHT MOD. HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55") MOD. CLOSE 12"-36" SLIGHT SOFT - GROVES THICK 36"-120" STEEP OR HIGH ANGLE (65-85") WIDE 36"-120" MODERATE V. SOFT - CARVES V. THICK >120" VERTICAL (85-90") V. WIDE >120" MOD. SEVERE		
OOMBI ETE	- SCRATCHES DIFFICULT - SCRATCHES EASILY - SCRATCHES EASILY - SCRATCHES EASILY - MEDIUM - 12"-36" - MODERATELY DIPPING (35-55°) - VERTICAL (85-90°)	
Fe = Iron Oxide Mn = Manganese Oxide COMPLETE	Fe = Iron Oxide	-

				(CO	RE	BC	RING LOG			BORING NO. CB-6 PAGE 1 OF 11
ROJECT: CLIENT: <u>B</u>	everly		ied Sch								JOB NO.: 603367-001 PAGE NO.: 1 of 11
QUIPMENT		lartini Dri CME-75									ELEVATION: 305 Feet
GROUND					O (Feet):		ORIENTATION	С	ORE BARREL	DATE START: 3/28/2012
DATE	HRS A	AFT WA	TER	вот.	OF	BOT.	OF	X VERTICAL	TYPE	Split Sleeve	DATE FINISH: 3/29/2012
DAIL	COM	IP WA	ILIX	CASII	NG	HOI	.E	HORIZONTAL	SIZE	2.5 I.D.	DRILLER: Martini
								INCLINED	Bit (Feet)		PREPARED BY: AWS
								BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
		2005			.			0 ANG. FROM VERT.	Total (Feet)		
ELEVATIO		CORE DEPTH	SAMP	n F	<u> </u>	۵	ິ ສຸ			TION, REMARKS, AND L	
CORE DEF (Feet)	PTH	RANGE (Feet)	NUMB	BER	RECOVERY %	RQD	GRAPHIC LOG	may differ at other locations and conditions encountered. Transi	l may change v	vith time. The description	me of drilling. Subsurface conditions is a simplification of the actual.
—305 - - - —300	5—								ndocument brown, mo	ist, fine to medium	medium sand, clay, pipe
- 205		5-10	Run Box		4	80		@5.8':Pleistocene Alli Silty SAND (SM), gray subangular gravel @7.3' to 7.65': Clayey coarse subrounded gray @7.65'- 8': Gravelly Salack slaty gravel	SAND (SC avels AND (SP),	ist, fine to medium), gray brown, moi gray brown, moist,	n sand, fine and coarse
—295 - -	- - -	10-15	Run Box		4.4	88		@11': Sandy CLAY (C staining @12.1' to 14.1': Grave coarse subrounded to	L), mottled Illy SAND (subangular	orange olive, mois SP), orange brown r black slate grave	
								@14.4' to 15': No Rec	overy		
— 290	15—			-+							
	-										
		DNESS			P==	NIN'S	<u> </u>	ATTITUDE AND	1011 === :	OUEAD / EDACT: :==	WEATHERWS -
	ELD HAR		<u>, </u>	\/ *'	BEDI			ATTITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
HARD MOD. HARD SOFT	 SCRATC 			V. TH THI MEDI THIO V. TH	IN IUM CK	<2"-1. 12"-3 36"-1. >12'	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	⊘" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

	T-1 -				CO	KE	RO	KII	NG LOG			BORING NO. PAGE 2 OF	CB-6
LIENT: 1		Hills	chool Unified So i Drilling			t						JOB NO.: PAGE NO.:	603367-001 2 of 11
			E-75, Co	ıtinou	s Core							ELEVATION:	305 Feet
GROUNI	_		D	_	TO (Feet	,			ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE	HRS		WATER	1	r. OF	BOT.		X	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
	COI	MP		CAS	SING	HOI	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)	-	PREPARED BY	
								0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)	5	LOCATION:	See Plate 1
	1	COR	F					Т		. , ,	TION DEMARKS AND	D I IMITATIONS	
CORE DE (Feet)	PTH	DEPT RANG (Fee	TH SAN	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	mav	Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of	ith time. The descript	e time of drilling. Subsuion is a simplification of	
- 290	15—	15-2		ın 3 ox 1	2.6	52		inte	15' to 17.3': Silty SA erbedded layers of o 17.3' to 17.6': Silty S pangular gravel, hyd 17.6' to 20': No Rec	clay (~1/2" † SAND (SM) drocarbon c	thick), olive, moi	st	
-285	20	20-2		ın 1 ox 2	3.7	74		and ma	20' to 23': Gravelly S d coarse subangula iterial 23' to 23.7': Gravelly e and coarse suban	r to subrou	nded gravel, hyd	rocarbon odor ar	nd residue or
- 280	25						· · ·	@2	23.7' to 25': No Rec	covery	-	•	
		25-3	5()	ın 2 ox 2	4.3	86		sar gra	25' to 27.5': Sandy (nd, fine and coarse ided, erosive contain 27.2': Basal cobbles	subangular ct below	to subrounded (gravel, hydrocarb	oon odor, wel
			БС	<i>ι</i> Α		00		gle	27.5': CLAY (CL), m yed, blocky structured block	re, paleosol		e prown, moist, o	xide staining
-275	30												
F-1	ELDIA	DDNES			DEC	DING		^-	TITLIDE AND ANOLE	IOINTS /	SHEAR / FRACTURE	WEATHERING	
. HARD	ELD HAI	CAN'T SC		V	THIN	DING <2		AI	TITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
IARD	- SCRAT - SCRAT - GROVE - CARVE	CHES DI CHES EA S	FFICULT	ME Th	THIN DIUM HICK THICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	MODE	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

ROJECT:	El Ro	deo S	chool					_	DRING LOG BORING NO. CB-6 PAGE 3 OF 11
LIENT: 1	Beverly	Hills	Unifie						JOB NO.: 603367-001
ONTRACTO									PAGE NO.: 3 of 11 ELEVATION: 305 Feet
QUIPMENT GROUNI			IL-/5,			O (Feet	١٠		ELEVATION: 305 Feet ORIENTATION CORE BARREL DATE START: 3/28/2012
	HRS				BOT.		BOT.	OF	X VERTICAL TYPE Split Sleeve DATE FINISH: 3/29/2012
DATE	CO		WATE	ER	CAS		HOI		HORIZONTAL SIZE 2.5 I.D. DRILLER: Martini
									INCLINED Bit (Feet) PREPARED BY: AWS
									BEARING Barrel (Feet) 5 LOCATION: See Plate 1
									0 ANG. FROM VERT. Total (Feet)
ELEVATION CORE DE (Feet)	PTH	DEP RAN	TH GE	SAMP NUMB		RECOVERY %	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
—275 —270	35	30-3		Run Box	2 1	5	100		 @30': CLAY (CL), mottled olive to red brown, moist, oxide staining, few fine subangular black slate gravel, well developed blocky fracture, gleying along so facies, paleosol @32.6' to 34.5': Clayey SAND to Sandy CLAY (SC-CL), orange, moist, fine sand, fine subangular black slate gravel, with olive clay laminations @34.5' to 35': Sandy CLAY (CL), orange brown, fine sand @35' to 35.7': Silty SAND (SM), red brown, wet, medium sand @35.7' to 36.5': Sandy CLAY (CL), orange brown, very moist, fine sand, few subangular siltstone fragments, @36.6' base of paleosol @36.5' to 38': Clayey SAND (SC), orange brown, very moist, fine sand with highly weathered angular gravels and fine subangular black slate gravel
				БОХ	3		100		@38' to 40': CLAY (CL),chocolate brown, very moist, few subangular black slate gravel, well developed blocky structure
—265	40	40-4	45	Run Box		4.1	82		@40' to 42.7': Gravelly SAND (SP), grayish brown, wet, subangular gravel, erosive contact below Pleistocene Cheviot Hills Deposits (CHD):
· 260	45								@42.7' to 43.3': Silty SAND (SM) with clay, brown, wet, very fine sand, subrounded gravel, oxidized sand with MnO @43.3' to 44.1': Gravelly SAND (SP), gray brown, wet, fine subangular gravel, well graded @44.1' to 45': No Recovery
FI	ELD HAI	RDNES	SS			BEDI	DING	<u> </u>	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING
AHARD IARD IOD. HARD IOFT SOFT		CAN'T S CHES D CHES E S	CRATCH		TH MED TH	HIN HIN DIUM	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY OIPPING (35-55°) STEEP OR HIGH ANGLE (56-85°) VERTICAL (85-90°) VERTICAL (86-90°) V. CLOSE 2"-12" V. SLIGHT SLIGHT SLIGHT SUGHT WIDE 30"-120" MOD. SEVERE V. SEVERE V. SEVERE F. E. Iron Ovide M. D. Managanese Ovide COMPLETE

				(CO	RE	BC	RII	NG LOG			BORING NO. PAGE 4 OF	CB-6
PROJECT: CLIENT: <u>B</u> CONTRACTO	everly	deo Schoo Hills Unif Iartini Dri	ied Sch			:						JOB NO.: PAGE NO.:	603367-001 4 of 11
EQUIPMENT												ELEVATION:	305 Feet
GROUND			DE	PTH TC					ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE	HRS	I WA	TER	BOT.		BOT.		X	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
	CON	MP		CASIN	NG	HOL	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY:	
					_				BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVATIO	N&	CORE DEPTH			<u>₩</u>	_	₽.,		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEF	PTH	RANGE	SAMP NUMB	'LE SED	88 ∣	Rab	GRAPHIC LOG	The S	Soil Description applies on	ly to a location	of the exploration at the ti	me of drilling. Subsu	rface conditions
(Feet)		(Feet)	NOME	,LK	RECOVERY %	_	GR 1	cond	differ at other locations and itions encountered. Trans	itions between :	vitn time. The description soil types may be gradua	i is a simplification of I.	tne actual
-	45 —	45-50	Run Box	-	1.3	26	· · · · · · · · · · · · · · · · · · ·	@4 Sor @4	15' to 45.7': SAND (15.7' to 46.1': SANE 16.1' to 46.3': Grave ted, fine and coars 16.3' to 50': No Rec	O (SP), gray elly SAND (e subangula overy	v brown, wet, coars	se sand, poorly vet, coarse san ded	sorted d, poorly
-		50-55	Run Box		1.5	30		@sor	50.9' to 51.2': Grave ted, subangular gra 51.2' to 51.5': CLAY te gravel 51.5' to 55': No Rec	elly SAND (avel, well gr (CL), oran	SP), gray brown, v aded	vet, coarse san	d, poorly
 250	55												
'							۵ ۵		55' to 55.7': Gravell		N), dark gray brow	n, wet, mediun	n to coarse
-		55-60	Run Box		3.8	76		@s dev esub	nd, subangular graves 55.7' to 56.3': CLAY reloped blocky fract 66.3' to 56.7': Silty stangular gravel 66.7' to 58.8': Graves brounded to angular 68.8' to 60': No Rec	(CL), oran ture SAND (SM) elly SAND (r black slate	, red brown, wet, f	ine sand, oxide	staining, few
245	60			-									
FIF	ו ח חיי	DUNESS			BEDI	DINC			FITUDE AND ANOLE	IOINTS /	SHEAD / EDACTURE	WEATHERING	_
V. HARD HARD MOD. HARD SOFT	- KNIFE (V. TH THII MEDII THIC V. THI	IN IUM CK	<2" 2"-1: 12"-3 36"-1: >120	2" 6" 20"	SHALL	FITUDE AND ANGLE HORIZONTAL (0-5') WOR LOW ANGLE (5-35') RATELY DIPPING (35-55') OR HIGH ANGLE (55-85') VERTICAL (85-90')	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT:	El Ro	nden Sa	hael			1 \ _	<u> </u>	RING LOG			PAGE 5 OF	11
			enoor Unified Se	chool	District	<u> </u>					JOB NO.:	603367-001
_			i Drilling			*					PAGE NO.:	5 of 11
			E-75, Co								ELEVATION:	305 Feet
GROUN	_		D		TO (Feet			ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE	HRS		WATER	1	Γ. OF	BOT.		X VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
	COI	MP		CAS	SING	НО	LE	HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY LOCATION:	See Plate 1
								0 ANG. FROM VERT.	Total (Feet)	3	LOCATION.	See Flate 1
		COR	E		<u> </u>		ြပ			TION, REMARKS, AND	IMITATIONS	
CORE DE	PTH	DEPT RANC (Fee	SE NUM	MPLE MBER	RECOVERY	RQD	GRAPHIC	The Soil Description applies on may differ at other locations an conditions encountered. Trans	ly to a location of	of the exploration at the to	ime of drilling. Subsi	urface conditions f the actual
−245	60-							@60' to 60.5': SAND (subangular black slate @60.5' to 61.4': CLAY	e gravel			
								@61.4' to 61.8': Grave				
							1.1.	subangular black slate	e gravel			
		00 -	,_ Ri	ın 3			11/11	@61.8' to 62.15': Silty		,.		
		60-6		x 4	2.8	56	Δ.	@62.15' to 62.3': SAN		rk gray brown, we	t, fine to mediui	m sand,
	4							subangular black slate		\ dod(== d !	wat fine to	m, fin = 1
								@62.3' to 62.5': Sand	, 	,·	· · · · · · · · · · · · · · · · · · ·	
								@62.5' to 62.8': Grave angular to subangular		ovv), dark gray re	u prown, wet, fi	ne sand,
	4							@62.8' to 65': No Rec				
								@02.0 to 00 . 140 110 t	overy			
-240	65—						/////	@65' to 65.4': CLAY (CL), olive h	rown, wet		
								@65.4' to 65.8': Sand	•		fine sand	
							444	_	•	•		
								@65.8' to 66': Silty SA				
							11,1	@66' to 66.3': Sandy				
								@66.3' to 66.5': Silty \$. ,			
	_							@66.5' to 67.3': Sand	y CLAY (Cl	.), red olive, wet, v	ery fine sand	
		65-7		ın 1 ox 5	4.7	94		@67.3' to 68.3': CLAY	(CL), choo	olate brown, wet,	oxide staining,	MnO nodule
	=		ВС	жэ		94						
								@68.3' to 68.6': CLAY				
	4							@68.6' to 69': Silty SA				
								@69' to 69.7': CLAY (CL), olive, v	wet with brown bai	naing	
								0007// -0: :: -				
-235	70 —		-		-		/////	@69.7' to 70': No Red		anamara alta di	fina to the C	
								@70' to 70.9': Sandy	CLAY (CL),	orange olive, wet	, line to very fin	e sand
	\dashv						ΔΔ	@70.9' t0 72': Gravell	y SAND (S	N) with clay, dark	gray brown, we	et, fine to
								medium sand, subang	gular black s	slate gravel and su	ubrounded grav	el
							Δ. Δ 					
	\dashv		_	_				@72' to 72.55': CLAY	(CL), olive	brown, wet		
		70-7		ın 2 ox 5	4.4	88	////				5	- · C · ·
			00	,		00	[].[']	@72.55' to 73.15': Silf	ty SAND (S	ıvı), orange brown	, wet, fine to ve	ry tine sand
]							@73.15' to 73.5': San	dv CLAY (۲	L), dark brown w	et, verv fine sa	nd.
							1111	\subangular black slate		_,,	,,c oai	,
	4						$ \cdot \cdot $	@73.5' to 74.3': Silty 9		, orange brown, w	et, fine sand, s	ubangular
							ш	black slate gravel				
								@74.3' to 74.4': Grave	• .	SW), dark gray br	own, wet, suba	ngular grave
-230	75-							@74.4' to 75'- No Red	covery			
	ELD HA	RDNES	S		BEDI	DING		ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
'. HARD IARD		CAN'T SC			THIN HIN	<2 2"-1		HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
IOD. HARD OFT		CHES EA		ME	DIUM HICK	12"-3 36"-1	36"	MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT	
SOFT	- CARVE				THICK	>12		VERTICAL (85-90°)	V. WIDE	>120"	MODERATE MOD. SEVERE	
				1					1		V. SEVERE	-

					СО	RE	BC	DRING LOG BORING NO. PAGE 6 OF 11	CB-6
PROJECT:	El Ro	odeo Schoo	l					PAGE 6 OF 11	
CLIENT: B						t		JOB NO.: 603:	367-001
CONTRACTO		Martini Dr						PAGE NO.: 6 of	
EQUIPMENT						۸.			Feet 3/2012
GROUND	HRS	AFT			TO (Feet	BOT.	OF)/2012)/2012
DATE	COI	I WA	TER		SING	HOL		HORIZONTAL SIZE 2.5 I.D. DRILLER: Mar	
								INCLINED Bit (Feet) PREPARED BY: AWS	S
								BEARING Barrel (Feet) 5 LOCATION: See	Plate 1
	L,							0 ANG. FROM VERT. Total (Feet)	
ELEVATIO	N &	CORE DEPTH	SAMI	DI E	ΉΥ		≌.,	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS	
CORE DEF	PTH	RANGE	NUMI		Š%	Rab	GRAPHIC LOG	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface may differ at other locations and may change with time. The description is a simplification of the a	conditions
(Feet)		(Feet)			RECOVERY		2	conditions encountered. Transitions between soil types may be gradual.	otuui
— 230	75 —	75-80	Rur Box		1.7	34		@75' to 76.7': Sity SAND (SM), dark gray brown, wet, fine to medium subangular gravel, "Salt and Pepper" sands @76.7' to 80': No Recovery	sand, few
225	80 —	80-85	Rur		5	100		@80' to 80.7': Sandy CLAY (CL), orange brown, very moist, fine sand, subangular gravel @80.7' to 81.9': Sandy CLAY (CL), chocolate brown, very moist, fine s MnO nodules @81.9' to 83.7': Sandy CLAY (CL), orange brown, very moist, fine sans subangular gravel, with oxidation-reduction banded olive clayey sand	and,
- 220 8	85—							@83.7' to 85': CLAY (CL), orange brown, moist, abundant MnO nodule @85' to 85.6': CLAY (CL), red brown, moist, MnO nodules	es
_	_							@85.6 to 88': Sandy CLAY (CL), red brown, moist, fine sand, fine subagravel	angular
-	_	85-90	Rur Box		5	100		@99' to 99 0': Sandy CLAV (CL) and brown wat fine cond as here in le	r grovel
- 215 9	90-							@88' to 88.9': Sandy CLAY (CL), red brown,wet, fine sand, subangular @88.9' to 90.2': Clayey SAND (SC), orange brown, very moist, fine sar and coarse subangular gravels	
FIC	I D HV	RDNESS			BEDI	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	_
V. HARD HARD MOD. HARD SOFT	- KNIFE (CAN'T SCRATO TCHES DIFFICU TCHES EASILY ES		T ME Th	THIN HIN DIUM HICK FHICK	<2"-1: 2"-1: 12"-3 36"-1: >120	2" 66" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (65-85°) VERTICAL (85-90°) VERTICAL (85-90°) WEATHERING	

ROJECT:	FLD	odeo Sc	hoel			· I \ L		1 111	NG LOG			PAGE 7 OF	11
LIENT: I				chool	Distric	t						JOB NO.:	603367-001
ONTRACTO												PAGE NO.:	7 of 11
QUIPMENT										1 -		ELEVATION:	305 Feet
GROUNI					TO (Fee		05		ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE	HRS		WATER	1	T. OF SING	BOT. HOI	- 1	Х	VERTICAL HORIZONTAL	TYPE SIZE	Split Sleeve 2.5 I.D.	DATE FINISH:	3/29/2012
	- 001	IVIF		CA	SING	поі			INCLINED	Bit (Feet)	2.5 I.D.	DRILLER: PREPARED BY:	Martini
	1	+		1					BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
EL EL/ATIC		COR	E		\ <u>\</u>		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE (Feet)	PTH	DEPT RANC (Fee	SE NUM	MPLE MBER	RECOVERY	RQD	GRAPHIC	may o	Soil Description applies on differ at other locations an titions encountered. Trans	nly to a location of	of the exploration at the vith time. The description	time of drilling. Subsu	urface conditions the actual
-215	90—						11/1/						
								@9	90.2' to 90.6': Silty	SAND (SM)	, olive brown, very	y moist, fine san	nd
								@9	0.6' to 90.9': CLAY	(CL), olive	brown, very mois	st	
	_						$\Pi\Pi$	@9	0.9' to 91.6': Silty	SAND (SM)	, red brown, wet,	fine sand	
								_	•	` ,			
							1	@9	91.6' to 92.1': Silty \$	SAND (SM)	, olive brown, wet	, very fine sand	
	-							@0	92.1' to 92.4': Sand	V CL AV (CL) olive brown vo	ny mojet fino co	and ovido
		90-9		ın 3	5	400			ining, MnO nodule:		., olive blowii, ve	ay moist, iiile Sa	iriu, UXIUE
			Bo	x 6	-	100		ı ı\	92.4' to 92.6': CLAY		brown very mois	st oxide staining	ı Mn∩
	-								dules	(OL), Olive	Stown, very mois	z, oziac stalility	,, IVIII O
								@9	92.6' to 94.1': Claye ining, fine and coa	ey SAND (S rse subangı	C), orange olive, ular black slaty gra	wet. fine sand, c avels	oxide
	٦							ര	94.1' to 94.6': Claye	ev SAND(S(C), orange olive v	vet, verv fine sar	nd. oxide
									ining, subangular g		- ,, c igo olivo, v	, ,	, 5/1100
-210	95							<i>_</i>	94.6' to 95': Clayey	·), red olive, moist.	, very fine sand.	oxide
£ 10	33								ining				
								@9	95' to 95.7': Clayey	SAND (SC), oran <mark>ge olive, m</mark>	oist, fine sand, c	oxide stainin
									95.7' to 96.2': Claye	ey SAND (S	C), red brown, mo	oist, fine sand, o	xide stainin
								sub	angular gravel				
									96.2' to 96.7': Claye	ey SAND (S	C), orangish olive	, moist, fine san	nd, oxide
							777		ining				
		95-1		ın 1 ox 7	5	100			96.7' to 97.8': Silty \$ vels	SAND (SM)	, brown, wet, fine	sand, subangul	ar to angula
				,,,,		100		ര	97.8' to 98.1': Silty \$	SAND (SM)	olive brown wet	fine sand	
								* _	98.1' to 98.6': Claye	, ,		•	e sand
									pangular black slaty		o,, orangion onto	, 1110101, 1019 1111	o carra,
								1\@9	98.6' to 98.8': CLAY	(CL), olive	brown, moist, Mr	nO nodules	
									98.8' to 99': Clayey				
							////		99' to 100': CLAY (ining, few
-205 1	100								O nodules from 99		. 52 22 5 5, 1		٠, ٠, ٠, ٠,٠
200									100' to 100.85': Silty			wet, fine sand,	angular
							[].].		ck slaty gravels, ba			,	-
								<u></u>	100.85' to 101.6': S	andy CL∆∨	(CL) red brown	wet fine sand d	oxide
									ining, some coarse			, mio sana, t	- Aug
							<i>\}}</i>	1	3,	, 5 -,		alat fine	
							<i>\////</i>		101.6' to 103': Sand ining, MnO banding			ioist, tine sand, (uxiue
		4.5.5	_ R	ın 2			<i>\////</i>	Jua	g, willo ballulli	9, 10 W IIII C	galai giavei		
		100-1	115	x 7	5	100	<i>\////</i>	1					
	_							1_	10011 100 5: 5:		20, :		
									103' to 103.9': Clay	ey Gravel (0	ن), mottled oran	ge to olive, mois	st, oxide
								sta	ining				
	4							<u></u>	03.9' to 105': CLA	Y (CL) mot	tled orange to bro	wn moiet ovide	a etainina
								ا س	100.0 to 100. OLA	. (OL), IIIOl	aca crange to bio	wii, iiioisi, uxiut	Jacaniniy
								1					
-200 1	105-							1					
					L	L							
		RDNES				DING			FITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
'. HARD IARD	- SCRAT	CAN'T SO	FFICULT	Т Т	THIN THIN	<2 2"-1	2"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
IOD. HARD OFT	- SCRAT	TCHES EA ES	ASILY		EDIUM HICK	12"-3 36"-1			RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
. SOFT	- CARVE				THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	
				1						Fe = Iron Oxio		V. SEVERE COMPLETE	

ROJECT:	El Ro	odeo S	chool					RING LOG			PAGE 8 OF	11
LIENT: I	Beverly	Hills	Unifie								JOB NO.:	603367-001
ONTRACTO											PAGE NO.:	8 of 11
QUIPMENT GROUNI			1E-75,		ous Core HTO (Fee			ORIENTATION		ORE BARREL	DATE START:	305 Feet 3/28/2012
	HRS			B	OT. OF	BOT.	OF	X VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
DATE	CO		WATE	RI	ASING	HOI		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY	: AWS
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0 ANG. FROM VERT.	Total (Feet)			
ELEVATIO	3 NC	COF			۲.		2	FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE (Feet)	PTH	RAN (Fee	GE I	SAMPLE	≥ .₀	RQD	GRAPHIC LOG	The Soil Description applies on may differ at other locations an conditions encountered. Trans	d may change v	vith time. The description	n is a simplification o	urface conditions f the actual
-200 1	105							@105' to 105.7': CLA	Y (CL), olive	e, wet, oxide stain	ing, MnO nodul	es
	-							@105.7' to 106.3': CL subangular gravel	` '			
	_	105-	110	Run 3 Box 7	5	100		@106.3' to 109.2': CL trace MnO nodules	AY (CL), m	ottled orange to ol	live, wet, oxide	staining,
								@400 01 to 4441 CLAN	/ (CL)	Mad rad braves ha		ماناه
-195 1	110-							@109.2' to 111': CLA' staining, MnO nodules	r (CL), mot	tied red brown to (dark gray, wet,	oxide
	_							@111' to 113.2': CLA'	(CL) oran	nge brown very m	oist oxide stair	nina
	_	110-	115	Run 1 Box 8	5	100		subangular black slaty	gravel inci	easing with depth	olot, oxido otali	9,
								@113.2' to 114.1': CL staining, trace subang		h sand, orangish o	olive, very mois	t, oxide
-190 1	115							@114.1' to 115.7': CL weathered angular gra		own, very moist to	wet with few h	ighly
								@115.7' to 116.1': CL	ΔV (CL \ c''	ive brown maint to	n very maint	icaccous
								\ sharp contact with abo Quaternary San Pedro	ove			
	-	445	100	Run 2	_			@116.1' to 116.7': Sa moist, fine sand with f @116.7' to 117.4': Sa	ndy CLAY (ew subang	CL), color change ular gravel		
	_	115-	120	Box 8	5	100		@117.4' to 118.2': Cla nodules	iyey SAND	(SC), dark green,	moist, fine san	d, MnO
	_							@118.2' to 120': CLA' subrounded pebbles, calcareous lamination	carbonate r			
-185 1	120						<i>(/////</i>					
	ELD HA					DING		ATTITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
. HARD ARD OD. HARD OFT . SOFT	- SCRATCHES DIFFICULT THIN 2"-12" ARD - SCRATCHES EASILY MEDIUM 12"-36" - GROVES THICK 36"-120"							HORIZONTAL (0.5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				(CO	RE	BC	RII	NG LOG			BORING NO.	CB-6
		odeo Schoo											
CLIENT: <u>B</u> CONTRACTO		y Hills Unit Martini Dr										JOB NO.: PAGE NO.:	603367-001 9 of 11
		CME-7										ELEVATION:	305 Feet
GROUND					O (Feet):			ORIENTATION	С	ORE BARREL	DATE START:	3/28/2012
DATE	HRS	Ι \//Δ	TER	BOT.		BOT.	- 1	Χ	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
	CO	MP		CASI	ING	HOI	.E		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY	: AWS See Plate 1
								0	ANG. FROM VERT.	Total (Feet)	3	LOCATION.	See Flate 1
=======================================		CORE			<u>-</u>		ပ	Ť			TION, REMARKS, AND L	IMITATIONS	
CORE DEF		DEPTH	SAME		Š.	Rab	풀	The	Soil Description applies on				urface conditions
(Feet)		RANGE (Feet)	NUME	BER	RECOVERY	œ	GRAPHIC LOG	may	differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification o	
— 185 1: - - -		120-125	Run Box		3.8	76		Mn @ @ @ an @ an @ @ @ an @ @ @ @ @ @ @ @	120' to 120.5': CLA\ O laminations 120.5' to 121.4': SA 121.4' to 122': CLA\ 122' to 123.55': Gra gular gravel, MnO la	ND (SP), dark Y (CL), dark velly CLAY aminations AY (CL), da	ark gray, wet, fine a gray, wet, carbon (CL) with sand, da	to medium sar ate nodules ark gray, wet, s	nd
—180 1: - -	25 -	125-130	Run		5	100		@ noo	123.8' to 125': No R 125' to 125.3': Silty 125.3' to 126.15': Cl dules, MnO nodules 126.15' to 126.8': Cl ist, carbonate nodu 126.8' to 128.7': CL	SAND (SM LAY (CL), os LAY (CL), siles and me	dark gray olive, mo sharp contact with a dium sand prevale	ist to very mois above, brown, ent	st, carbonate
- 175 13	30-							@ car @	128.7' to 129.1': CL. 129.1' to 129.3': CL. bonate stringers, a 129.3' to 130': CLA 130' to 131': Clayey	AY (CL), lig brupt conta Y (CL), gray	tht brown, moist to ct with below , moist	very moist, ox	ide staining,
-	_	130-135	Run Box		3.5	70		noo	dules 131' to 131.3': Silty 131.3' to 132.1': CL ining, MnO nodules 132.1': Silty SAND (ining, angular grave	SAND (SM AY (CL), lig S SM), light y), light yellow brow ht yellow brown, m	n, wet, fine san	nd , oxide
— 170 1;	35—												
FIE	LD HA	RDNESS	.		BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT	- KNIFE - SCRAT	CAN'T SCRATO ICHES DIFFICU ICHES EASILY ES	JLT	V. TI TH MED THI V. TH	HIN HIN DIUM ICK	<2"-1 2"-1 12"-3 36"-1 >12	2" 66" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

			CC	RE	BC	RING LOG			BORING NO. PAGE 10 OF	CB-6
_	El Rodeo Schoo verly Hills Uni : Martini Di	fied Sch							JOB NO.: PAGE NO.:	603367-001 10 of 11
QUIPMENT U			inous Core						ELEVATION:	305 Feet
GROUNDW			PTH TO (Fee			ORIENTATION	C	ORE BARREL	DATE START:	3/28/2012
	HRS AFT		BOT. OF	BOT.	OF	X VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
DATE	COMP	ATER	CASING	HOI		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
	COIVII		0/10/110	1101	_	INCLINED	Bit (Feet)	2.0 i.b.		
						BEARING	Barrel (Feet)	5	PREPARED BY:	
							· ,	5	LOCATION:	See Plate 1
						0 ANG. FROM VERT.	Total (Feet)			
ELEVATION	& CORE		🕍	_	₽	FIEI	_D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEPT	H DEPTH RANGE	SAME		Rab	<u>₹</u> 8	The Soil Description applies or	nly to a location	of the exploration at the tin	ne of drilling. Subsu	rface condition
(Feet)	(Feet)	NOWE	RECOVERY	"	GRAPHIC LOG	may differ at other locations ar conditions encountered. Trans	nd may change v sitions between :	vith time. The description soil types may be gradual	is a simplification of	the actual
-170 135	 135-140 	Run Box		0		@135' to 140': No Re	covery			
-165 140	140-145	Run Box		10		@140' to 140.5': Sand subrounded gravel an @140.5' to 145': No F	d cobbles), yellowish olive, w	vet, very fine sa	and,
-160 145		Run Box		44		@145' to 145.5': Silty staining, subangular t @145.5' to 147.2': Sa staining, subangular t	o subroundo Indy SILT (N o subroundo	ed gravel /IL), yellowish olive,		
FIELD HARDNESS FIELD HARDNESS BEDDING						ATTITUDE AND ANGLE HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°)	JOINTS / V. CLOSE CLOSE MOD. CLOSE	SHEAR / FRACTURE 2" 2"-12" 12"-36"	WEATHERING FRESH V. SLIGHT SLIGHT	

				CO	RE	BC	RII	NG LOG			BORING NO.	CB-6
PROJECT:	El Rode	eo School	<u> </u>								PAGE 11 OF	11
CLIENT: B				ol Distric	t						JOB NO.:	603367-001
CONTRACTO	R: Ma	artini Dri	lling Co	rporation							PAGE NO.:	11 of 11
EQUIPMENT		CME-75									ELEVATION:	305 Feet
GROUND				TH TO (Fee			.,	ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE	HRS AF	I WA	TFR I	BOT. OF	BOT.		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
	COMF			CASING	HOI	LE.		HORIZONTAL INCLINED	SIZE Bit (Feet)	2.5 I.D.	DRILLER:	Martini
								BEARING	Barrel (Feet)	5	PREPARED BY LOCATION:	See Plate 1
							0	ANG. FROM VERT.	Total (Feet)	3	LOCATION.	See Flate 1
		CORE				0	Т			TION, REMARKS, AND L	IMITATIONS	
CORE DEP		DEPTH	SAMPLI	E House	Rab	₹ ₂	The	Soil Description applies onl				urface conditions
(Feet)	''' I	RANGE (Feet)	NUMBE	NECOVERY	&	GRAPHIC LOG	may	differ at other locations and itions encountered. Transi	d may change v	vith time. The description	is a simplification of	
— 155 18 - -	1	50-155	Run 3 Box 10	3 21	42		. @ sta	150' to 151': Silty SA 151' to 151.4': Silty sining, rounded grav 151.4' to 152.1': Silt ining, rounded grav 152.1' to 155': No R	SAND (SM vel y SAND (S rel), orangish olive, w	ret, fine sand, o	oxide
— 150 18 - -	55	55-160	Run 1 Box 1		54		@ vei	155' to 155.5': Silty 155.5' to 155.9': Silty 155.5' to 155.9': Silt y fine sand, oxide s 155.9' to 157.7': Silt nd, oxide staining, n	y SAND to staining y SAND to ounded gra	Sandy SILT (SM-N	/IL), orangish o	olive, wet,
- - - 145 16	50							tal depth of boring:	,			
-							Pe 90 13 Ex dril Ex	tal depth of boring: reched groundwater 9'-92.1', 92.6'-98.1' 0'-131.3', and 132.1 cavation backfilled values soil cuttings disite.	encountere , 100'-101.6 '-157.7' bgs with cutting	6', 105'-111', 114.1 s. s and patched with	'-115.7', 120'-1 asphalt upon	23.7', completion of
FIE V. HARD		N'T SCRATC		V. THIN	DING			TITUDE AND ANGLE HORIZONTAL (0-5°) WOOD IOW AND I G (5 35°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
MOD. HARD - SOFT -		HES DIFFICU HES EASILY		THIN MEDIUM THICK V. THICK	2"-1 12"-3 36"-1 >12	36" 20"	MODE	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	ВС	RII	NG LOG			BORING NO.	CB- 7
PROJECT:	everly		fied Scho	ol Distric	t						JOB NO.:	10274.006
CONTRACTO EQUIPMENT	_	Martini Dr CMF-7		rporation	1						PAGE NO.: ELEVATION:	1 of 14 293 Feet
GROUND				TH TO (Fee	5t).			ORIENTATION		ORE BARREL	DATE START:	6/17/2014
	HRS	AFT		BOT. OF	BOT	. OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE	COI	MP VVA	TER	CASING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	AT		40					INCLINED	Bit (Feet)		PREPARED BY	: EH
06/17/14	AT		35					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvo
		CORE				T	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	3
ELEVATIO		DEPTH	SAMPL	.E É		≌ູ				TION, REMARKS, AND L		
CORE DEF (Feet)	TH	RANGE (Feet)	NUMBE	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of	orrace conditions of the actual
-293	0-						@:	Surface: 3" Asphalt				
- - - 288	5	0-5	Run Box	ו ה	100			2": Artificial Fill, Unity CLAY with sand (e gravel sized slate of CLAY (CL), broucture, few rounded avels, grades to below 4": Clayey SAND (See gravel 4.8": Silty SAND (Shobly beds	documente (CL), brown fragments, vium of Be own to dark d slaty pebb ow C), with fine	n, moist, fine to medium subround nedict Canyon Wa brown, fine grained bles, weathered and to coarse sand and	led slate and p sh (BCW ₂): d sand, mode d subangular s	rately blocky biltstone
	_	5-10	Run 2 Box 2	1 4 4	88			7.6': Grades to hard 8.9': weathered to y 9.1': slate fragments 9.2' to 9.4': Gravel b	ellowish ox			
—283	10-		1		1	 						
		10-15	Run Box 2		100		@ sal @ sla stat stat erc	9.4' to 10': No Reco 10' to 10.6': Silty SA nd, few coarse sand 10.6' to 10.8': Lamir 10.8': Sandy GRAV tte, basalt and siltstr 11.3' to 11.9': Silty S nd, few fine gravels 11.9': Sandy GRAV tyey sand, reddish boular slate and basa sining, basal cobblesive contact at 16.4	ND (SM), red grains, few nation of sille EL (GP), su one SAND (SM), grades be EL (GP), su orown, with fine to cos and zone	w gravel sized slate ty clay ubangular to subrou , reddish brown, m low ubangular to subrou yellowish oxidation parse subrounded	e fragments unded heavily oist, fine to co unded clasts v staining, clasto subangular	weathered arse grained with matrix of ts consist of gravels, MnO
270	15-					000	1					
—278	15]						
		RDNESS			DDING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- SCRAT		JLT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-' 12"- 36"-' >12	12" 36" 120"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-56°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	
										ganoco caldo	_	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF 1	CB- 7
PROJECT:			hazard		-						_		
LIENT: B													10274.006
CONTRACTO EQUIPMENT			Drilling (-75	corpo	ration							I	2 of 14 293 Feet
GROUNE				EPTH :	TO (Fee	t):			ORIENTATION	C	ORE BARREL		6/17/2014
DATE	HRS A	AFT	WATER	ВОТ	Γ. OF	ВОТ.	OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
	COM	/IP		CAS	SING	HOI	LE		HORIZONTAL	SIZE			Martini
06/17/14	ATI								INCLINED	Bit (Feet)		PREPARED BY:	
06/17/14	ATI	D Ā	135					0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blv
		CORE			<u></u>		6	Т		. ,	TION, REMARKS, AND		
CORE DEF (Feet)	РТН	DEPTH RANGE (Feet)	SAN	IPLE IBER	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the t	ime of drilling. Subsur	face conditions he actual
-	15 —	15-20		n 2 x 2	3.9	78		@ into oxi	16.4': Silty SAND (Serbedded medium to dized 17.2': SAND bed (Sergrained sands, modern to sandy GRAV consolidated, friable 18.9' to 20': No Reconsolidated, friable 18.9' to 20': Sandy CLAY (Consolidated, gravels, ped faces, grades	o coarse gr P), dark ora oist, coarse EL (SP), fir a, heavily w overy CL), reddish gleyed, mo	ange brown with h slaty sand, abrup the gravel, dark red eathered siltstone	avily oxidized this to contact below dish brown, mois and slate	own, heavil
	-	20-25		n 1 x 3	5	100		@2	23.9': Clayey SILT (pisture, minor to poo	ML), with fi			
-268	25—						 	\@2	24.9': SAND (SP), o	orangish bro	own, fine grained		
-	_	25-30		n 2 x 3	5			@2 rec gra gra	25': Sandy GRAVE Idish brown, with ye ivel bed at 27', eros 27' to 28.9': Sandy inding, gleying along pradic fine gravels,	L (GP), sub ellow oxidat sive contact CLAY (CL), g sand lami	angular to subrou on, clayey sand n below with sand lamina nations, orangish	natrix, heavily oxi tions, oxidation-r brown to grayish	eduction brown,
- 263	30 —			-				bel @2 blo	28.9' to 30': Sandy ocky structure, MnO hined sand, with fine	CLAY (CL), and clay d	d color change to development on pe	ark reddish brow	/n, moderat
							Щ,						
		RDNESS	ATOU			DING	.	AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- SCRATO		ICULT	ME TI	THIN HIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) :RATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB- 7
PROJECT:	El Rod	eo Geoha	zard In	vestigatio	n						I AGL 3 UF	17
CLIENT: B											JOB NO.:	10274.006
CONTRACTO EQUIPMENT	_			rporation	l						PAGE NO.: ELEVATION:	3 of 14 293 Feet
GROUND				TH TO (Fee	et):			ORIENTATION		ORE BARREL	DATE START:	6/17/2014
DATE	HRS A	FT		BOT. OF	BOT	. OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
	COM	P		CASING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14 06/17/14	ATD		10					INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY	
06/17/14	ATD	<u>₹</u> 1,	35				0	ANG. FROM VERT.	Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blvd
ELEVATION	1.2	CORE				၂၀၂		FIEL	· , ,	TION, REMARKS, AND L		-
CORE DEP	тн	DEPTH	SAMPL	E 50%	gg g	GRAPHIC LOG		Soil Description applies on				
(Feet)		RANGE (Feet)	NUMBE	RECOVERY	°	S ₂		differ at other locations and litions encountered. Trans				of the actual
-		30-35	Run 2 Box 4	2 5	100		wee a larring and a larring an	30': Silty CLAY to Clathered basalt, abroadlered basalt, so and basalt	upt contact (CL), very f eying in ma BM), thin be d mdy CLAY (d MnO and mdy CLAY y CLAY (CL I sized slate LAY (CL-M eyed along)	below ine grained, orange trix, moderate block d, reddish brown to CL), with very fine soxide on ped faces (CL-ML) 1), very dark reddise fragments, base of L), poorly laminate laminations and in	e brown, gleyeky structure by yellow brown sand, reddish s h brown to choof developed s d, weathered matrix, brown	or along of along of to orange brown to cocolate soil slaty moderately
- - —253 ¥ 4	0		BOX 2	*	100		\de	39.7' to 40': Silty CL veloped blocky stru 40' to 40.9': Clayey	cure, MnO	and oxide on ped f	aces	eyed, well
- ∑	_		Run	1			fin @	40.9' to 42.2': Sand e grained, minor gle 41.6' to 42.2': coars 42.2': Gravelly SAN	eying along e slaty rour	laminations nded gravel bed, er	osive contact	below
-		40-45	Box 5		74	Δ. Δ	fra	gments to 43.2'			aa g.avol	, 5.6., 1001
							@'	43.2': Basal sandsto	one rounde	d cobbles		
- 248 4	.5						@4	43.7' to 45': No Rec	overy			
	LD HARI	DNESS		BEC	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD - MOD. HARD - SOFT -	SCRATCI	AN'T SCRATO HES DIFFICU HES EASILY		V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"-: 36"-1 >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 4 OF 14	CB- 7
PROJECT: CLIENT: B CONTRACTO	everly	deo Geoha Hills Unit	fied Scho	ol Distric	t						JOB NO.:	10274.006 4 of 14
EQUIPMENT	_			i poi ation	1							293 Feet
GROUND	WATE	R:		TH TO (Fee				ORIENTATION		ORE BARREL	DATE START:	6/17/2014
DATE	HRS	I WA	TFR I	BOT. OF	BOT		Х	VERTICAL HORIZONTAL	TYPE		1	6/17/2014
06/17/14	AT		40	CASING	НО	LE		INCLINED	SIZE Bit (Feet)		DRILLER: I PREPARED BY: I	Martini FH
06/17/14	AT		35					BEARING	Barrel (Feet)			 605 Whittier Blvd.,
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE DEPTH	SAMPL	_ &		₽.,		FIEL	D CLASSIFICA	TION, REMARKS, AND I	LIMITATIONS	
CORE DEP (Feet)	тн	RANGE (Feet)	NUMBE	- 0	RØD	GRAPHIC LOG	may o	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	n is a simplification of the	ace conditions ne actual
— 248	45 -						@4 hea cla	15' to 45.5': weather 15.5' to 47.1': Sand avily oxidized, seve sts, basal cobbles a	y GRAVEL rely weathe and slaty gr	(GP), dark reddish red gravels with M avel, erosive conta	n brown to orango InO stainiing of v act below	veathered
		45-50	Run	ו ה	400			17.1': Sandy CLAY	(CL), orang	e brown, very moi	st, fine grained, a	abrupt
			Box 8) -	100		a 🖳	7.6': Becomes dar	k reddish bi	rown to orange bro	wn, gleyina	
							4 -	18.1' to 48.3': Slaty				
_	_						, <u> </u>	18.3' to 50': Sandy (own, fine
— 243	50 -						fac	50' to 52': Silty Sandes, reddish brown,	moist, gley	ed, fine grained sa	ind	·
-	_	50-55	Run Box 6	1 5	100		bro @5	52' to 52.5': Silty SA wn 52.5' to 52.7': CLAY n yellow oxidation s	(CL) lamin			
							@5 fine	52.7' to 52.9': Grave e subangular to sub	elly SAND w rounded sla	aty gavel		
							witl @5	52.9' to 53.2': CLAY in minor gleying, yel 53.2' to 55': Pebbly	lowish oxid gravelly SA	ation staining ND (SP), olive bro	own to reddish br	own,
—238 5 —	55 - -						∖oxi \@5 \gle	yed, massive, fine didized @54.4' 55' to 55.5': Clayey yed, fine grained sa	Silty SAND and, trace n	(SC-SM), olive br	own to reddish b	rown,
_	_		Run				fine @5	55.5' to 55.9': CLAY e grained sand, gra- 55.9': Sandy CLAY ssive, fine to coars	dational cor (CL), with g	ntact below ravel, reddish brow	wn, gleyed, oxidi	zed,
_	-	55-60	Box	ויי	100		@5 cor @5	57.2': SAND (SP) be tact below 57.5' to 58.3': Sand	CLAY (CL			
_							@5	I, fine to medium gr 58.3' to 59': Gravelly e subangular slate a 59' to 59.5': Silty SA	y SAND (SF and quartz (gravels, bedded co	parse sand	
—233 6	60 —							caceous	MIND WILL CI	ay ianiinaliUN (SP-	oo, iiile graiile	u, əngritiy
FIE	LD HA	RDNESS		BED	DING		AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE	CAN'T SCRATI CHES DIFFICU CHES EASILY	JLT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"- 36"-1 >12	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) O R HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	
									⊢e = Iron Oxid	de Mn = Manganese Oxide	OOWII ELIE	

DO IEOT:	El D. J	laa C	ohozawi	Invest			ЪС	PAGE 5 OF 14
ROJECT: LIENT: $f B$			ohazard Inified So					JOB NO.: 10274.006
ONTRACTO								PAGE NO.: 5 of 14
QUIPMENT								ELEVATION: 293 Feet
GROUND			D		TO (Feet Γ. OF	t): BOT.	OF.	ORIENTATION CORE BARREL DATE START: 6/17/2014 X VERTICAL TYPE DATE FINISH: 6/17/2014
DATE	HRS A		WATER	l	SING	HOI.		X VERTICAL TYPE DATE FINISH: 6/17/2014 HORIZONTAL SIZE DRILLER: Martini
06/17/14	ATD	-	7 40	0,10	5.110	1101		INCLINED Bit (Feet) PREPARED BY: EH
06/17/14	ATD							BEARING Barrel (Feet) LOCATION: 605 Whittier Bh
		Ā	<u> </u>					0 ANG. FROM VERT. Total (Feet) Beverly Hills, Ca
ELEVATIO	N &	CORE			<u>₹</u>	_	≌	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS
CORE DEF (Feet)	тн	DEPTI RANG (Feet	E NUM	IPLE IBER	RECOVERY	RØD	GRAPHIC	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
—233 ·	60—							@59.5': Medium to coarse grained sand lamination @59.6' to 59.8': Sandy SILT with Clay (ML-CL), reddish brown, moist, fine grained sand @59.8' to 60': Clayey SAND (SC), reddish brown, fine to coarse grained sand, gleyed, trace fine slaty gravels @60' to 62': SAND (SP), brown, moist, fine to medium grained sand, quartz,
		60-6	5	n 1 x 7	2	40		white siltstone and slate grains, poorly graded, well sorted @62' to 65': No Recovery
—228 (-						• • • • • • • • • • • • • • • • • • • •	@65' to 66.8': SAND (SP), reddish brown, fine to medium grained, white siltstone, quartz and slaty sand size fragments, poorly graded, erosive contact below
	-	65-70	() -	n 2 x 7	5	100		Pleistocene Cheviot Hill Deposit (CHD): @66.8': Sandy CLAY (CL), dark reddish brown, laminated, MnO on ped faces, trace fine subrounded slaty gravels, oxidation-reduction banded, oxidized, well developed blocky structure
							; O°,	@69.2': Siltstone gravels, heavily weathered
-223	70							@70' to 70.3': Clayey SAND (SC), reddish brown, fine to medium grained, gradational contact below
	-							@70.3' to 71.3': Sandy CLAY (CL), reddish brown, minor gleying, laminated oxidation-reduction banding, spotty MnO on ped faces @71.3' to 73.7': Sandy CLAY (CL), color change to dark reddish brown, gleyed
70-75				n 1 x 8	3.7	74		MnO staining, faintly laminated, blocky structure, oxidation reduction banding
							<i>(/////</i>	@73.7' to 75': No Recovery
-218 ·	75							
FIE	LD HARI	DNESS	 }		L BEDI	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING
FIELD HARDNESS HARD - KNIFE CAN'T SCRATCH ARD - SCRATCHES DIFFICULT DD. HARD - SCRATCHES EASILY OFT - GROVES SOFT - CARVES				ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 66" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°) VERTICAL (85-90°) VERTICAL (85-90°) V. CLOSE 2"-12" V. SLIGHT SLIGHT MOD. CLOSE 12"-36" MDE 36"-120" MOD. SEVERE V. SEVERE V. SEVERE V. SEVERE COMPLETE

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB- 7
PROJECT: CLIENT: B		odeo Geoha V Hills Unif										JOB NO.:	10274.006
CONTRACTO		Martini Dr										PAGE NO.:	6 of 14
EQUIPMENT										1 -		ELEVATION:	293 Feet
GROUND	WATE		DEI	PTH TO BOT.		t): BOT.	OE	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	6/17/2014 6/17/2014
DATE	CO	I WA	TER	CASI		HOI.		^	HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	AT	TD \\ \rightarrow\dot\dot\dot\dot\dot\dot\dot\dot\dot\dot	10						INCLINED	Bit (Feet)		PREPARED BY	
06/17/14	ΑT	ΓD <u>▼</u> 1	35						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO		CORE DEPTH	SAMP	PLE	ĒŘ		ີ ສຸ				TION, REMARKS, AND L		
CORE DEF (Feet)	PTH	RANGE (Feet)	NUMB	BER	RECOVERY %	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of	
-	75 —	75-80 80-85	Run Box	2 2 8 8	5	100		sulfin @ an qu @ @ sal @ grastr @ sulfin @ str	75' to 75.6': Clayey edium grained, trace 75.5': Gravelly layer 75.6' to 76.6': Sandy bangular to subrour e siltstone and slaty 76.6' to 78.9': Sandy doxidation, sporadi artzite, moderate bloom of the substance	coarse gray, fine to coarse gray, fine to coarse gray, fine to coarse grayels, all y CLAY (CL of fine to coocky structors) (FEL (GP) the mes sandle grayel fine to the twith below y CLAY (CL of subrounder grayel later grayel later grayel later grayel later grayel graye	ained sand and fine arse rounded slate are slaty gravels, a brupt contact with but, reddish brown, rarse subangular to are, sporadic MnO are, sporadic MnO are gravel to coarse GRAVEL are fine slaty gravel are fine	e gravel gravels ing, massive, nd basalt, bas below noist, hard, m subrounded s red slate and wn, fine to me (GP) layer, sl gleyed, fine to s, moderate b dized, subroun rained sand, a	fine to coarse al weathered inor gleying slate and siltstone dium grained ate, siltstone, medium locky
- 208	- 85							sla		contact below y CLAY (CL	ow .), dark reddish bro	wn, fine grain	ed sand, trace
		@84.7' to 87.3': Sandy CLAY (CL), dark reddish b medium grained sand, sporadic fine slaty gravels, caps underlying gravels at 87.3' 85-90 Run 2 Box 9 5 @87.3' to 89.6': Sandy GRAVEL (GP), fine to coa subrounded, with tabular slate fragments, reddish weathered, oxidized, MnO coating on slaty gravels 89.6', erosive contact below			ne slaty gravels, m (GP), fine to coarsi gments, reddish bi g on slaty gravels, l	e gravels, sub rown, oxidized basal slate an	y structure, angular to , heavily d siltstone at						
							7////		89.6' to 90': Sandy (CLAY (CL).	reddish brown, po	or blocky struc	cture, clay
 203	90 —						<i>/////</i>	1 "		(),			
	ELD HA	RDNESS			BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD	FIELD HARDNESS BEDDING				2" 36"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	V. CLOSE CLOSE MOD. CLOSE WIDE	2" 2"-12" 12"-36" 36"-120"	FRESH V. SLIGHT SLIGHT MODERATE			
SOFT V. SOFT					HICK	>12	0"		VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO.	CB- 7
PROJECT:	El Re	odeo Geoh	azard Ir	vestig	gation	1						PAGE 7 OF	14
CLIENT: B		·										JOB NO.:	10274.006
CONTRACTO	_	Martini Dr		orpor	ation							PAGE NO.:	7 of 14
EQUIPMENT GROUND				отн та	O (Feet	١٠			ORIENTATION		ORE BARREL	DATE START:	293 Feet 6/17/2014
		AFT		BOT.		BOT.	OF	Х	VERTICAL	TYPE	0.12 27.11.122	DATE FINISH:	6/17/2014
DATE	CO	MP WA	ATER	CASI	NG	HOL	.E		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14			40						INCLINED	Bit (Feet)		PREPARED BY	: EH
06/17/14	Α	ΓD <u>▼</u> 1	135						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		CORE			\perp			0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	l .
ELEVATION		DEPTH	SAMP	LE	Œ	٩	ິ ສິ	The			TION, REMARKS, AND L		uface conditions
CORE DEP (Feet)	тн	RANGE (Feet)	NUMB	ER	RECOVERY %	RQD	GRAPHIC LOG	may	Soil Description applies onl differ at other locations and itions encountered. Transi	d may change v	vith time. The description	is a simplification of	
 203 9	90 —						. .	\ _{de}	velopment on ped fa	aces CaCO), cement		
								I \	90' to 90.5': Gravelly		0	own fine to coa	arse grained
									nd, fine subangular				
-	_							109	90.5' to 90.8': Sandy	/ CLAY (CL	.), with silt, reddish	brown, fine gr	ained sand,
									or blocky structure,				
_									90.8' to 91.1': Claye		C), reddish brown,	tine to mediun	n grained
			Run	₁				1 II—	nd, gradational cont 91.1' to 93.2': CLAY		ich hrown somo si	It hard trace t	fine grained
		90-95	Box		5	100		sai		(OL), read	ian brown, Sume Si	ıı, ııaıu, ılace l	mie granieu
_	_			-		- •		7 IL	91.7': Becomes darl	k chocolate	brown, clay lamina	ation, well deve	eloped blockv
								str	ucture				
								' '	91.9': Dark reddish l				
-	_								93.2' to 94.6': Sandy				
								ass	semblage of fine to edominantly slate, s	coarse gra	vel (debris flow), gr avily weathered	avels consist of	OŤ.
							e di		94.6' to 95.6': Sandy			e sand fine ro	unded
—198 9	95						\mathbb{R}^{0}		evels, oxidized, hear			e sand, iiile io	unded
							00		, ,	,			
									95.6' to 96.3': Claye		(GC), basal slaty g	gravels, oxidize	ed, abundant
-							<i>3272</i>	7	O and clay on ped				
									96.3' to 98.2': Sandy				
_									y development on padational contact	ed faces, s	sporadic fine suban	igular slaty gra	ivels,
			Run	2				gic	idational contact				
		95-100	Box		5	100							
_	_												
							e Á (@9	98.2' to 98.7': GRA\	/EL (GP) b	ed, fine to coarse s	ubangular slat	e fragments,
								erc	sive contact below			_	_
-	_								98.7' to 102': Sandy	CLAY (CL), reddish brown, m	noist, slightly m	nicaceous,
								spo	oradic fine gravel				
400								1					
—193 _∑ 10	JU —								100' to 100.2': CLAY	(CL), redo	lish brown, spotty I	MnO, staining	on faces,
							,,,,,	∖tra	ce fine sand	, ,,			•
_									100.6' to 102': Sand				
) DIC	cky structure, mino	ı gı c yirig, tr	ace iiile labulai Sla	ity graveis, coa	aleu willi cidy
								1					
_	_							1_	10014- 400 71 5	l Ower and	d Oakki- !- ! !	4n 4- 0 ' '	aa Achiid
		100 105	Run	1	E		[° \ \		102' to 102.7': Basa te, siltstone, and ba				
		100-105	Box		5	100		1					
-	_								102.7' to 104': Sand e grained sand, trac				
									sal fine angular wea			,	 ,
									-				
_	_							@	104' to 105': Sandy	CLAY (CL)	, reddish brown, fin	e grained san	d, minor
									ying, trace medium				
—188 ∑ 10)5							1					
100 - 10	,,,												
FIE	LD HA	RDNESS			BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
		CAN'T SCRAT		V. TH		<2' 2"-1		SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
MOD. HARD -		TCHES EASILY		MEDI	IUM	12"-3 36"-1	6"	MODE	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	CARVE			V. TH		>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	
										Fe = Iron Oxi	de Mn = Manganese Oxide	COMPLETE	

				CC	RE	ВС	RII	NG LOG			BORING NO.	CB- 7
PROJECT:	El Ro	deo Geoha	zard In	vestigatio	n						PAGE 8 OF	14
CLIENT: Be											JOB NO.:	10274.006
CONTRACTO		Iartini Dr		orporation	l						PAGE NO.:	8 of 14
EQUIPMENT I				TIL TO (F				ORIENTATION		ORE BARREL	DATE START:	293 Feet
GROUND\	HRS A			TH TO (Fee BOT. OF	et): BOT.	OF	Х	VERTICAL	TYPE	ORE BARREL	DATE START:	6/17/2014 6/17/2014
DATE	CON	l WA	TER	CASING	HO	- 1	,	HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	AT	D 💆 4	10					INCLINED	Bit (Feet)		PREPARED BY	
06/17/14	AT	D <u>▼</u> 1	35					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATION	1&	CORE DEPTH	SAMPL	_ };		€.,				TION, REMARKS, AND L		
CORE DEP	TH	RANGE (Feet)	NUMBE	- · · ·	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of	
— 188 10 _ _ _ _ 183 ¥ 11		105-110	Run Box 1	ו ה	100			105' to 108.1': SANIme coarse grained stract, white siltstone silt	and, fining e rock fragr ndy CLAY (parse graine CLAY (CL-) inel Gravels bunts of sla ecovery elly SAND of fine subang AY (CL), re-	CL), dark reddish to the day and, gradations to the day (SW-SC) pular slaty gravels ddish brown, fine to	prown, fine to ral contact brown, faintly la avels, consistin salt, MnO and reddish brown or medium grai	medium aminated, ng of slate, oxide n, wet, fine to ned sand,
- - 178 11	_	110-115	Run Box 1		44		ba Bail Bail Bail Bail Bail Bail Bail Bai	110.5' to 110.8': Sar arse grained sand, is salt gravels, gradati 110.8' to 111.1': San it laminations, mino 111.1' to 111.6': Sar ained sand, fine to c 111.6' to 112': Thin 112' to 112.2': Claye 112.2' to 115': No R 115' to 115.8': Sand	fine to coan onal contact ndy CLAY (or gleying, p ndy GRAVE coarse slate Sandy CLA ey SAND (S ecovery	se subangular to sict CL), reddish brownoor blocky structur EL (GP), dark reddi t, erosive contact b Y (CL) bed, moder CC), reddish brown	n, moist, fine gresh brown, fine elow rate blocky stru, moist, fine gr	te, Tm, and rained sand, to coarse ucture ained sand
- - - 173 [¥] 12	_	115-120	Run Box 1		46		sai me @ @ @ blee gra @ Mr @ coo	nd, laminated, modedium grained sand 115.8' to 115.9': Thi 115.9': Sandy CLAY 116' to 116.2': Thin ebs 116.1': Sandy GRAY avels, heavily oxidized 116.2' to 116.7': Sandy Debes, small brown 116.7' to 117.3': Graine grained sand, on inations, entire uninations,	erate blocky lens @115 n Silty CLA ' (CL), redd Silty CLAY VEL (GP) b ed, weather andy CLAY (vn blebs avelly CLAY clayey matr t laminated	y structure, thin Mn.6' Y (CL-ML) lamination of the course	ion, olive brownedium grainen, dark reddish grained sand, forown, fine grae e subangular s	ng, fine to n d sand brown, MnO fine slaty ined sand, slate, fine to
FIE	LD HAF	RDNESS	·	BED	DING	<u> </u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD - MOD. HARD - SOFT -	- SCRATCHES DIFFICULT THIN 2"-12" IARD - SCRATCHES EASILY MEDIUM 12"-36" - GROVES THICK 36"-120"				2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 2"-12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE		

				CO	RE	BC	RII	NG LOG			BORING NO. PAGE 9 OF 1	CB- 7
				estigation							JOB NO.:	10274.006
LIENT: <u>B</u>												9 of 14
QUIPMENT				poracion						 _	ELEVATION:	293 Feet
GROUND	WATER:			ΓΗ ΤΟ (Fee				ORIENTATION		ORE BARREL	DATE START:	6/17/2014
DATE	HRS AFT	Γ WAT	TER I	BOT. OF	BOT	- 1	Х	VERTICAL	TYPE			6/17/2014
06/47/44	COMP			CASING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY:	Martini
06/17/14 06/17/14	ATD ATD	¥ 41 ▼ 13						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
00/11/14	7110	<u>A</u>					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	OGO WIIILIGI BII
ELEVATIO	N.S. C	ORE		≿		၂၀၂		FIEL	D CLASSIFICA	TION, REMARKS, AND I	LIMITATIONS	
CORE DEF (Feet)	TH R	EPTH ANGE (Feet)	SAMPL NUMBE	≥ .∘	Rap	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	face conditions the actual
—173 1:	12	20-125	Run 1 Box 1		36		coa	120' to 121.8': SANI arse grained sand, i 121.8' to 125': No R	trace fine s			and, trace
—168 1ž		25-130	Run 2 Box 1		38		coi sla @ sai gra gra gra	125' to 125.2': Sandarse grained sand, ity gravels, clay coal 125.2' to 126.1': Sand, poor blocky struavel @125.6', gradal 126.1' to 126.5': Siltained sand, fine gradal 126.5' to 126.9': Cla	fine to coan ted grains ndy CLAY (icture, MnO tional conta y CLAY (Cl vel, shimma yey GRAV	CL), reddish brown blebs, trace fine gact L-ML), reddish brown properties to the control of the	n, fine to medium gravel, lens of sa wn, trace fine to dish brown, hard	m grained and and medium
—163 ^又 1:	30					6 X X	@	edium grained sand 126.9' to 130': No R 130' to 130.8': Claye arse grained sand,	ecovery ey GRAVEL	. (GC), with sand,	grayish brown, v	wet, fine to
163 [¥] 130	13	0-135	Run 1 Box 1		72		erc @ su be @ @	osive contact below 130.8' to 133.1': Sal prounded gravels, g comes less apparer 131': sharp contact, 132.7', gradational of	ndy CLAY (gleyed, bloc nt, oxidatior gleyed, cla contact, Mn	CL), reddish brow ky structure, MnO n reduction banding y below oxidation- O lamination	n, laminated, ha spotting, lamina g reduction bande	rd, few fine ations
- 158 ¥ 1;	35						ma \sul	133.1' to 133.6': Silt issive, fine to medit prounded slaty grav 133.6' to 135': No R	um grainèd rels at base	sand, trace coarse		
.50 1												
EIC	LD HARDN	NESS		RED	DING		ΔΤ	TITUDE AND ANGLE	IOINT9 /	SHEAR / FRACTURE	WEATHERING	_
/. HARD HARD MOD. HARD SOFT	- KNIFE CAN' - SCRATCHE - SCRATCHE - GROVES - CARVES	T SCRATC		V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"- 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				C	DRE	ВС	RII	NG LOG			BORING NO. CB- 7
PROJECT: CLIENT: B CONTRACTO	everly	Hills Unif	ied Sch	ool Distr	ict						JOB NO.: 10274.006 PAGE NO.: 10 of 14
EQUIPMENT											ELEVATION: 293 Feet
GROUND			DEF	PTH TO (Fe		. OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: 6/17/2014
DATE	HRS	I WA	TER	CASING	HC		\	HORIZONTAL	SIZE		DATE FINISH: 6/17/2014 DRILLER: Martini
06/17/14	AT		10	0/10/110	1			INCLINED	Bit (Feet)		PREPARED BY: EH
06/17/14	AT	D <u>¥</u> 1	35					BEARING	Barrel (Feet)		LOCATION: 605 Whittier Blvd
		Ā			<u> </u>		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATION	N &	CORE DEPTH	SAMP			₹,,				TION, REMARKS, AND L	
CORE DEP (Feet)	тн	RANGE (Feet)	NUMB	و. حرا	RQD	GRAPHIC	may		d may change v	vith time. The description	me of drilling. Subsurface conditions is a simplification of the actual .
— 158 13 - - - - - -		135-140	Run Box	1 1 1 1 1 1	84			arse grained sand, s 135.5' to 135.6': Gra it, fine to coarse gra avels 135.6' to 137.7': Sar e to coarse grained adational contact 137.7' to 138.1': Bec it, mostly fine to me brounded slate and 138.1' to 139': GRA' coarse grained sand artz gravels 139' to 140': No R 140': Silty SAND (Si edium grained sand 140.5': Becomes mo 140.7': Becomes mo 140.7': Becomes mo 140.7': Becomes mo 140.9' to 141.2': Cla e to coarse grained	some fine gavelly CLAY ined sand, fine to comes Silty dium graine quartz grav VEL (GP), I d, fine to comes Silty dium graine quartz grav VEL (GP), I d, fine to come fine to c	ravels at contact by (CL), with sand la fine to coarse subscitch (GP), with clay, to coarse subround SAND (SM), with ed sand, trace coarse subangular to large subscitch (GE), with head sand, find to coarse subangular to egrained sand, find to coarse subangular to coarse subangular to gravels, within clay gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse subangular gravels, within clay (GC), with sand to coarse gr	dark reddish brown, wet, ded slaty gravels, dark reddish brown, wet, ded slaty gravels, gravel, dark reddish brown, ree grained sand, fine ark reddish brown, wet, fine o subrounded slate and willy oxidized orange yellow brown, wet, mostly fine to ine slaty gravels
— 148 14 - - - - 143 15	_	145-150	Run Box	ו ה	100		recent with the same of the sa	Idish brown, wet, fir 145.1' to 145.3': Sarnd, trace coarse granor gleying, faint ox 145.3': Sandy GRAN brounded platy slate 146.3' to 146.9': Bas 146.9': Increases in 147.2', gravels becoming the sand, I gments, minor gleying 148.6' to 148.8': Claarse grained sand, I garse grained sand, I garse grained sand, I gravels bas 148.6' to 148.8': Claarse grained sand, I	ne to coarse andy CLAY (ained sand, idized lamin VEL (GP), verand basal sal channel clayey mat ome subang ((CL), redd MnO spottir ing, abrupt ingy Sandy fine subrou	e grained sand, fine CL), reddish brown fine slaty gravels, nations, abrupt convet, fine to coarse t gravels, clayey m gravel with the coarse triangle of the co	n, fine to medium grained moderate blocky structure, stact grained sand, fine to coarse satrix, gleyed , yellow oxide band stact below medium grained sand, trace sy structure, trace siltstone), reddish brown, fine to
	I D HAI	RDNESS	\vdash	PE	DDING	1	ΔΤ	TITUDE AND ANGLE	. PTINIOI.	SHEAR / FRACTURE	WEATHERING
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE (CAN'T SCRATO CHES DIFFICU CHES EASILY		V. THIN THIN MEDIUM THICK V. THICK	2" 12"- 36" 212'	12" -36" 120"	SHALL	HTUDLE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (56-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2" 12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

				CC	RE	BC	RI	NG LOG			BORING NO. CB- 7
PROJECT: CLIENT: Be	everly		ied Scho	ol Distric	t						JOB NO.: 10274.006 PAGE NO.: 11 of 14
EQUIPMENT L	_			poration							ELEVATION: 293 Feet
GROUND	NATER	₹:		H TO (Fee				ORIENTATION		ORE BARREL	DATE START: 6/17/2014
DATE	HRS	I WA	TFR I	BOT. OF CASING	BOT. HO		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: 6/17/2014
06/17/14	AT			JASING	пО	LE		INCLINED	Bit (Feet)		DRILLER: Martini PREPARED BY: EH
06/17/14	AT							BEARING	Barrel (Feet)		LOCATION: 605 Whittier Blv
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATION		CORE DEPTH	SAMPLI	_ }		€.,				TION, REMARKS, AND LI	
CORE DEP	тн	RANGE (Feet)	NUMBE	≥ .∘	Rab	GRAPHIC	may	Soil Description applies onl differ at other locations and ditions encountered. Transi	d may change v	ith time. The description	ne of drilling. Subsurface conditions is a simplification of the actual
— 143 15 - - - - 138 15	_	150-155	Run 1 Box 10	ויי	100			ace coarse grained seying, spotty oxides, 150' to 151.4': Sand nd, trace coarse graminations, moderate 151.4' to 151.6': Incocky structure, oxida 151.6' to 152.4': Sand, poor blocky stru 152.4': Sand lamina 152.5' to 152.7': Sand, gleyed, moderat 152.7' to 152.8': Lar 152.8' to 153.3': Fin	and, fine granderate by CLAY (Clained sand, blocky structures in salation reduction CLAY (cture, modution and CLAY (te blocky structure) blocky structure, modution and the control of the blocky structure with the control of the blocky structure in the control of the control o	ravel, MnO spotting blocky structure L), reddish brown, f fine slaty gravels, gucture, abundant Mind content, increas on banding CL), reddish brown erately gleyed CL), reddish brown ructure h increase in coars sequence, Sandy (CLAY (CL), reddish brown
		155-160	Run 2 Box 10	1 5	100	0 0 0 0 0 0 0 0 0 0 0		ained sand, fine to cocky structure, MnO 153.3' to 153.8': Sand, trace coarse gra 153.8' to 154.4': Sandined sand, trace cooderate blocky struct 154.4' to 155': No R 155' to 155.4': Sandind, laminated, mode 155.4' to 155.6': Finocky structure 155.6' to 156.5': Sand, minor gleying, m	oarse grain spotting, g andy CLAY (alined sand, andy CLAY (barse graine ture, MnO secovery by CLAY (Clerate block) e to coarse	ned at base, trace fileyed CL), reddish brown poor blocky structucL), dark reddish bid sand, fine gravel spotting L), reddish brown, for structure, trace fir GRAVEL (GP) zor	ine to medium grained
		160-165	Run 1 Box 1	ויי	100			156.5' to 158.6': Silt idation-reduction batce coarse grained states of the coarse grained sand, can be can be coarse grained sand, can be coarse grained sand, can be coarse grained sand, can be	nded, progrand, minor e slaty GRA yey SAND Sandy CLA d, gleyed, m Sandy CLA nded lamin D spotting, g reasing sar dark reddisl y Sandy CL	ressively clayier, fingleying, MnO spotta AVEL bed with Clay (SC), reddish brow Y (CL-ML), dark restored to the spots Y (CL-ML), dark restored to the spots at content, fine to many product to the spots AY (CL-ML), dark is AY (CL-ML), dark is	n, fine to medium grained ddish brown, fine grained ucture, MnO spotting ddish brown, sand, poor blocky
					<u> </u>						<u> </u>
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE (LT	V. THIN THIN MEDIUM THICK V. THICK	<pre>>DING</pre>	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5") .0W OR LOW ANGLE (5-35") ERATELY DIPPING (35-55") POR HIGH ANGLE (55-85") VERTICAL (85-90")	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

				CC	DRE	BC	RII	NG LOG			BORING NO. PAGE 12 OF	CB- 7
ROJECT:				vestigatio								
LIENT: B											JOB NO.:	10274.006
ONTRACTO				orporatio	n						PAGE NO.:	12 of 14
QUIPMENT		CME-75		DTU TO 17	-4\-			ORIENTATION	_	ORE BARREL	ELEVATION:	293 Feet
GROUNE	HRS AFT	-		PTH TO (Fe BOT. OF	et): BOT	OE	Х	VERTICAL	TYPE	ORE BARREL	DATE START: DATE FINISH:	6/17/2014 6/17/2014
DATE	COMP	WA1	TER	CASING	HO		^	HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATD		0	2010	1	-		INCLINED	Bit (Feet)		PREPARED BY:	
06/17/14	ATD	<u>▼</u> 13						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N& C	CORE				ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEF	PTH R	EPTH ANGE Feet)	SAMPI NUMBI	- · ·	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	ith time. The description	ne of drilling. Subsuis a simplification of	rface conditions the actual
	70	5-170	Run Box 1	1 5	100	0.000	ap de la calacterista de la cala	164.3' to 165': Becoparent and abundar 165' to 166.5': Silty medium grained salingers, moderate blace. Becomes Salifor.2' to 167.6': Specomes leader. Specomes	nt CLAY (CL-Ind, trace fir ocky struction of the season of	ML), with sand, verse slaty gravels, abure, basal slaty gravels, abure, basal slaty gravels, abure, basal slaty gravels, abure, basal slaty gravels, minor carbon slaty GRAVEL in Soft CL), reddish brownd, trace fine slaty attention CL), dark reddish be sand, trace fine slaty attention CL), dark reddish be sand, trace fine slaty attention carbon slaty attention carbo	y dark reddish undant vertical vel late stringers candy Clay mat in, fine to mediu and Tm gravel brown, fine to naty gravels, sp	brown, fine carbonate ontinue rix (GC), m grained s, poor nedium oradic
	75	5-180	Run Box 1	1 5	100		978 978 978 978 978 978 978 978 978 978	174.7' to 175': Sandained sand, sporadic adational contact 175' to 175.3': Sandand, few medium grained sand, 175.4' to 175.6': Sandation grained sand, 175.6' to 175.6': Sandating, poor blocky stand, trace coarse grained sand, trace medium to 177.9': Sand, trace medium to bonate stringers, stadium grained sandation grained sandations.	y CLAY (Clined sand, mination of trace coar ndy CLAY (Structure, slined sand, po Formation of the coarse graphell fragmenty Silty Solution (Structure) of the coarse graphell fragmenty Si	stringers, oxidized L), grayish brown, oxidized Sandy CLAY to Clase grained sand CL), grayish brown ightly micaceous Clayey SAND (SC) slate fragments (Qsp) CL), color change, ained sand, trace fints, poor blocky strans (SC-SM), grayish (SC-SM), graying (SC-SM),	I blebs, MnO b very moist, fine aces, gradatior ayey SAND (So , slight reddish), fine to mediu ————— grayish brown ne gravel, Tm ucture, gradati	e grained hal contact C-CL), fine to brown m grained , fine grained and slate, onal contact
	I D I I A D D :	IECO				1	٠-	TITLIDE AND ANOLE	IONITC :	CHEAD / EDACT: IDE	MEATHERNS	
	LD HARDN				DDING)"	AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- KNIFE CAN' - SCRATCHE - SCRATCHE - GROVES - CARVES	S DIFFICUI		V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"- 36"-1 >12	12" 36" 120"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO.	CB- 7
PROJECT:		deo Geoha Hills Unif									JOB NO.:	10274.006
CONTRACTO	_	Iartini Dri		orporation	1						PAGE NO.:	13 of 14
EQUIPMENT I				OTU TO /Fac	.4\.			ORIENTATION		ORE BARREL	DATE START:	293 Feet 6/17/2014
GROUND\	HRS A	AFT		PTH TO (Fee BOT. OF	BOT	OF	X	VERTICAL	TYPE	ORE BARREL	DATE FINISH:	6/17/2014
DATE	CON	l WA	TER	CASING	НО			HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATE	D	10					INCLINED	Bit (Feet)		PREPARED BY	: EH
06/17/14	ATE	D <u>¥</u> 1:	35					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		Ā			Ļ		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	ı
ELEVATION	۱&	CORE	SAMP	≿		9 .,		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
(Feet)	ТН	DEPTH RANGE (Feet)	NUMB	<u>></u>	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	ne of drilling. Subsitis a simplification of	urface conditions f the actual
— 113 18 - - - 108 18		180-185	Run Box	1 19 2	40			178.8': MnO 178.9' to 179.9': Silt rbonate stringers, si 179.9' to 180': Lamind 180' to 180.4': Sand ained sand, modera adational contact 180.4' to 180.5': GR avels 180.5' to 180.9': Sand ucture, faintly lamin 182' to 185': No Rec 185' to 185.4': Interink gray, clay is well 185.4' to 188.1': Silt nd, minor carbonate	nation of Si y CLAY to te blocky si AVEL (GP) ndy Silty Cl , carbonate y CLAY (C ated, carbo covery aminated S developed, y CLAY (C	faces, thin sandy la lty SAND (SM), gra Clayey SAND (SC- tructure, carbonate) layer, fine subrour LAY (CL-ML), gray, stringers and nodu L), gray, fine graine mate stringers	amination @17 by, fine to med CL), gray, very stringers, calculated slate and fine grained s alles, gradation and sand, mode rey SAND (SM) faces, fine gr	79.2' ium grained y moist, fine ite crystals, l quartz and, trace al contact rate blocky
			Box '	19	74		bro	188.1' to 188.7': Silt own staining, fine gr 188.7' to 190': No R	ained sand	L-ML), with sand, g , carbonate blebs, ı	ray, with abun minor carbona	dant reddish te stringers
— 103 19 - -	_	190-195	Run Box 2		84			190' to 193.8': Silty rbon concretions an				sporadic
-	+						tra	193.8' to 194.2': Sai ce medium flat rour	nded sand o		gray, fine grai	ned sand,
00 **	_						(0)	194.2' to 195': No R	ecovery			
 98 1 9	5											
FIE	I D HAF	RDNESS	<u> </u>	REF	DDING		ΔΤ	TITUDE AND ANGLE	PAINIOI	SHEAR / FRACTURE	WEATHERING	
/. HARD - HARD - MOD. HARD - SOFT -	FIELD HARDNESS BEDDING					12" 36" 120"	SHALL	HORIZONTAL (0-5°) HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CO	RE	BC	RII	NG LOG			BORING NO.	CB- 7
PROJECT:	El Rada	o Geohazaro									PAGE 14 OF	14
		ills Unified									JOB NO.:	10274.006
		rtini Drilling									PAGE NO.:	14 of 14
QUIPMENT		CME-75									ELEVATION:	293 Feet
GROUNE			DEPTH T					ORIENTATION		ORE BARREL	DATE START:	6/17/2014
DATE	HRS AF	WATER	BOT		BOT.		Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
06/17/14	COMP ATD		CAS	SING	HOI	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini
06/17/14	ATD	<u>¥</u> 40						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	NIX I	CORE		`~		ပ		FI	ELD CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEI	PTH R		MPLE IMBER	RECOVERY %	RQD	GRAPHIC LOG	may	differ at other locations	and may change v	of the exploration at the til vith time. The description soil types may be gradual	is a simplification of	urface conditions f the actual
—98 1	95	(1 eet)		<u> </u>			00.10	Mone one and an area.	TOTAL OF THE STATE	on types may be gradual.	•	
90 I	55											
-	\dashv						_		105			
							To	tal depth of boring	i: 195' bgs	d @ 40'-40.9', 41.8	8'_43 7' 53' 53	5'
							10	0'-100.2'. 105'-10	3.1', 110'-110	.8', 120'-121.8', 13	5'-139'. 140'-1	.o , 40.7'.
-	\dashv						14	5'-145.1', and 145	.3'-148.2' bgs	3	,	- ,
								cal groundwater t			on completie	of drilling
							B0	ring backilled Wit	i benionite a approximateli	nd soil cuttings upon 6-inches of cold p	on completion patch mix asph	or uriiirig. ialt.
-	\dashv						Ex	cess cuttings disp	osed of in D.	O.T. approved dru	ms and dispos	sed offsite
										-	•	
-	7											
—93 2	00—											
9 5 Z												
-	\exists											
-	\dashv											
_	\dashv											
-	7											
—88 2	05											
00 2												
-	\dashv											
-	\dashv											
-	\dashv											
-	7											
02 ^	10_											
—83 2	10—											
FIF	LD HARDI	NESS	\perp	BEDI	DING	\vdash	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD	- KNIFE CAN	'T SCRATCH		THIN	<2			HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
HARD MOD. HARD	 SCRATCHE SCRATCHE 	ES DIFFICULT	MED	HIN DIUM	2"-1 12"-3	36"	MODE	OW OR LOW ANGLÉ (5-35 ERATELY DIPPING (35-55°)	MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
OFT	- GROVES			HICK HICK	36"-1 >12		STEE	OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD. SEVERE	
	- CARVES											

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB- 8
PROJECT:		deo Geo											
LIENT: 1						<u> </u>						JOB NO.:	10274.006
ONTRACTO	_			Corpo	oration							PAGE NO.: ELEVATION:	1 of 10 299.5 Feet
GROUNI				FPTH	TO (Feet	.).			ORIENTATION	С	ORE BARREL	DATE START:	
	HRS	AFT			T. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE	CON	лР V	VATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	AT	D	38.5						INCLINED	Bit (Feet)		PREPARED BY	: EH
06/17/14	AT		128.4						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
	<u> </u>	<u>Ā</u>	_		\perp			0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
CORE DE	PTH	CORE DEPTH RANGE		/IPLE /IBER	RECOVERY	RQD	GRAPHIC LOG	The	FIEL Soil Description applies on differ at other locations and	ly to a location of	TION, REMARKS, AND I of the exploration at the ti	ime of drilling. Subs	urface conditions
(Feet)	0	(Feet)	+		Ä		5	conc	litions encountered. Trans	itions between s			
300	0						o b 1	_	Surface: 5-inches A	•			
							1 4 A	. @	0.4': 8-inches Portla	ina Cement			
	\dashv							₹@	1':Artificial Fill, Und	documented	d (Afu):		
							\bowtie	} ĕ	1' to 5': Hand auger				
							\bowtie	Ĭ.					
-	\neg						\bowtie	Ž					
							\bowtie	}					
							\bowtie	K					
-	٦						\bowtie	\$					
							\bowtie	\$					
							\bowtie	\$					
	٦						\bowtie	}					
							\bowtie	}					
-295	5—						\bowtie	}					
233	J						XXX	ı , —	5' to 5.2': Asphalt ch		· 		
							Ш	Ĺ@	5.2': Pleistocene Al	luvium of E	Benedict Canyon V	Wash (BCW ₂):	
-							0		ndy SILT (ML), with	ı clay, brow	n, moist, fine grair	ned sand, trace	medium to
									arse grained sand	ما ما مناط	المحادة المحاددة	:41	
									5.7'-7': Gravel (GP), pedogenic faces	, thin bea, g	lieyea, oxialzea, w	ıtın minor manç	janese oxide
									6' to 7': Sandy CLA	Y (CL) with	silt brown fine a	rained sand sl	iahtly
			Ru	ın 1					caceous, silt and fin			iairieu sariu, si	igittiy
		5-10		x 1	2	40			7' to 10': No Recove		<u> </u>		
-	4									,			
-	-												
-290	10-												
230							$ \cdot \cdot $		10' to 11': Sandy SI		ddish brown, mois	t, fine grained	sand, trace
							$ \cdot \cdot $	cla	y, gradational conta	act			
							Щ	1					
							[]. · ·		11' to 11.9': Silty SA			grained sand,	trace
							[.]•	me	edium grained sand	, abrupt cor	ııacı		
	4						 U (<u></u>	11.9' to 12.0': Sand	v GRAV/FI	(GP) reddish brow	wn matriy with	fine to
		40.15	Ru	ın 2			$\langle \circ \rangle$		edium grained sand		(C.), reduisir blov	vii iliaula, willi	
		10-15		x 1	3.2	64	60		J :				
	4						1	ര	12.9' to 13.2': Sand	v SILT (MI.)	, with clay olive h	rown, moist la	minated fine
									ained sand, oxidized			,	
								@	13.2' to 15': No Red	covery			
-	\dashv									-			
	_												
285	15												
		RDNESS				DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
'. HARD IARD	- SCRAT	CAN'T SCRA	CULT	Т Т	THIN THIN	<2 2"-1	2"		HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
IOD. HARD OFT	- SCRATO	CHES EASIL S	_Y		EDIUM HICK	12"-: 36"-1			ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
					THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	
. SOFT	- CARVE	3					I		12111012 (00 00)	1	120	V. SEVERE	

	***						RO	RING LOG	BORING NO. CB- 8 PAGE 2 OF 10
ROJECT:									JOB NO.: 10274.006
ONTRACTO						<u>, </u>			PAGE NO.: 2 of 10
QUIPMENT									ELEVATION: 299.5 Feet
GROUND		_	DE		ΓΟ (Feet				DATE START: 6/17/2014
DATE	HRS AF	I W	ATER		OF SING	BOT. HOI		X VERTICAL TYPE HORIZONTAL SIZE	DATE FINISH: 6/17/2014 DRILLER: Martini
06/17/14	ATD	▼ 3	38.5	OAC	SING	1101		INCLINED Bit (Feet)	PREPARED BY: EH
06/17/14	ATD	<u>∓</u> 1:						BEARING Barrel (Feet)	LOCATION: 605 Whittier
		Ā						0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATIO CORE DEF	N& C	CORE DEPTH RANGE	SAM		RECOVERY	RQD	GRAPHIC LOG	The Soil Description applies only to a location of t	ON, REMARKS, AND LIMITATIONS the exploration at the time of drilling. Subsurface condition time. The description is a simplification of the actual
(Feet) 285	15—	(Feet)			RE		. <u>a</u>	conditions encountered. Transitions between soil @15' to 16.4': Silty SAND (SM), oliv	types may be gradual. /e brown, laminated, mostly fine grained ed sand, trace clay, abrupt contact, with
		15-20	Rur		2.5			gravel below @16.4' to 16.7': GRAVEL (GP) bed gravels, basal cobble (siliceous), er	, gray, fine subangular to subrounded slat
			Вох	κ2		50		@17' to 17.5': Sandy GRAVEL (GP), reddish brown, moist, fine to coarse and basalt gravels, trace coarse gravels,
—280 :	20						;0°;	@20' to 20.6': Sandy GRAVEL (GP grained sand, fine to coarse subang @20.6' to 25': No Recovery), reddish brown, moist, fine to coarse gular slate and basalt gravels
		20-25	Rur Box		0.6	12			
—275 :	25							grained sand, fine subrounded slate contact below), with gravel, brown, moist, fine to coarse and basalt gravels, heavily oxidized at
		25-30	Rur Box		2.4	48		sand, well oxidized @25.9' to 26.2': Sandy CLAY (CL), poor blocky structure @26.2' to 27.4': Sandy GRAVEL (G	CLAY (CL), reddish brown, fine grained brownish gray, moist, fine grained sand, GP), reddish brown with gray mottling, and, fine to coarse subangular slaty grave
- 	30								
			<u> </u>					1	
					BEDI				HEAR / FRACTURE WEATHERING
IARD IOD. HARD SOFT	ARD - SCRATCHES DIFFICULT DD. HARD - SCRATCHES EASILY FT - GROVES				THIN HIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°) V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxide	2" FRESH 2"-12" V. SLIGHT 12"-36" SLIGHT 36"-120" MODERATE MOD. SEVERE V. SEVERE V. SEVERE COMPLETE

				C	ORE	ВС	RII	NG LOG			BORING NO.	CB- 8	
PROJECT: CLIENT: BO CONTRACTO	everly l	leo Geoha Hills Unif artini Dri	ied Sch	ool Distr	ict						JOB NO.: PAGE NO.:	10274.006 3 of 10	
EQUIPMENT											ELEVATION:	299.5 Feet	
GROUND			DE	PTH TO (F BOT. OF		T. OF		ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	6/17/2014	
DATE	HRS A	I WA	TER	CASING		OLE	X	HORIZONTAL	SIZE		DATE FINISH: DRILLER:	6/17/2014 Martini	
06/17/14	ATD		3.5	OAOIIVO	+ "	JLL		INCLINED	Bit (Feet)		PREPARED BY		
06/17/14	ATD							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.	
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a	
ELEVATION	1 &	CORE		≿		2		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS		
CORE DEP (Feet)		DEPTH RANGE (Feet)	SAMF NUME		Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and ditions encountered. Trans	d may change v	vith time. The description	is a simplification of		
-	35	30-35	Run Box		78		Sin co @sa @ @co @ba	35.3'-37.5': Sandy 0	d basalt graces silty san ND (SM), r d, poor bloce y GRAVEL ravel, oxidiz overy SILT (ML), angular silts GRAVEL (G	reddish brown, moi ky structure, minor (GP), reddish brow ed	st, fine to med carbonate str	lium grained ingers rise grained assive, fine to	
- - - - - - -260 ¥ 4		35-40	Run Box	רו	100		@35.3'-37.5': Sandy GRAVEL (GP), fine to coarse rounded gravels, slaty, basalt, feldspar, siltstone, heavily weathered with heavy oxidation at basal coarse gravel, manganese and oxide rimming of weathered slate, erosive contact below @37.5' to 38': Sandy CLAY (CL), with gravel, reddish brown, moist, fine grain sand, trace medium grained sand, moderate blocky structure, white siltstone cobble at 38', rockline @38' to 42.9': Sandy GRAVEL (GP), reddish brown, very moist, fine to mediu grained sand, trace coarse grained sand, fine gravel, poor to moderate blocky structure, yellowish oxidation staining, @42.9': bottom of gravel, top of clay						
-		40-45	Run Box				@ he ab	42.9': Sandy CLAY avy oxidation, with o 43.6' to 44.3': Silty (undant oxide stringo 44.3' to 45': No Rec	oxide string CLAY (CL-Ners, laminal	ers ML), olive brown, m	oist, trace fine		
							<u></u>						
	LD HAR	DNESS		В	DDING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING		
HARD - MOD. HARD - SOFT -	SCRATC			V. THIN THIN MEDIUM THICK V. THICK	2' 12 36'	-12" -12" "-36" -120" 20"	MOD	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE		

PO IFOT	FI D.	dos C	oobe====1	In			<u> </u>	RING LOG	BORING NO. CB- 8 PAGE 4 OF 10
ROJECT: CLIENT: ${f B}$			eohazard Unified Sc						JOB NO.: 10274.006
ONTRACTO		Iartini	i Drilling (PAGE NO.: 4 of 10
QUIPMENT			E-75				- 1	ODIENTATION CODE DADDEL	ELEVATION: 299.5 Feet
GROUND	WATER HRS A	_	D		TO (Feet	:): BOT.	OF	ORIENTATION CORE BARREL X VERTICAL TYPE	DATE START: 6/17/2014 DATE FINISH: 6/17/2014
DATE	COM		WATER		SING	HO		HORIZONTAL SIZE	DRILLER: Martini
06/17/14	ATE	Z	Z 38.5					INCLINED Bit (Feet)	PREPARED BY: EH
06/17/14	ATE		Z 128.4					BEARING Barrel (Feet)	LOCATION: 605 Whittier Bl
			<u> </u>					0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATIO CORE DEF (Feet)		COR DEPT RANG (Fee	TH SAN	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AND LIN The Soil Description applies only to a location of the exploration at the tim may differ at other locations and may change with time. The description is conditions encountered. Transitions between soil types may be gradual.	e of drilling. Subsurface conditions
255	45 —	45-5	50 Ru Bo	n 1 x 5	3.8	76	0.27	Pleistocene Cheviot Hills Deposits (CHD): @45' to 47.2': Sandy CLAY (CL), olive brown, moist, moderate blocky structure, abundant reddish brown oxide stringers, oxidation-reduction banding @47.2' to 48.4': Clayey SAND (SC), reddish brown, we dark reddish brown staining, fine grained sand, minor clayey sand @48.4': Pebbly fine Sandy Gravel bed (GP), wet, oxide clayey sand @48.6': Clayey SAND (SC), reddish brown, wet, lamited brown staining, fine grained sand, minor sand @48.8' to 50': No Recovery	wet, laminated, abundant r sandy clay laminations dized at contact below wit
-250		50-5		n 2 x 5	3.8	76	000	@50' to 51.5': Silty SAND (SM), reddish brown, clear fine grained sand, some medium grained sand @51.5' to 52': Becomes Sandy GRAVEL (GP), reddiscoarse grained sand, fine to coarse subangular to su weathered gravels, erosive basal contact below @52' to 52.2': Lamination of reddish brown SILT (ML @52.2' to 52.6':Sandy CLAY (CL), reddish brown, fin moderate blocky structure @52.6': Rock line, siltstone clasts @52.7' to 53.8': Sandy CLAY (CL), reddish brown, m coarse sand, with white siltstone clasts, moderate blorich laminations, abundant manganese oxide @53.8' to 55': No Recovery	sh brown, wet, fine to brounded gravel,) e to coarse grained sand, loist to very moist, fine to bocky structure, minor clay
· ·		55-6	80 Ru Bo	n 1 x 6	3.6	72		@55' to 55.9': Silty SAND (SM), reddish brown, wet, sand @55.9' to 56.2': Sandy GRAVEL (GP), reddish brown grained sand, fine subrounded slaty gravel, erosive c @56.2' to 56.4': Silty CLAY (CL-ML), reddish brown, sand, heavily oxidized @56.4' to 56.9': Sandy GRAVEL (GP), reddish brown grained sand, fine subrounded gravel, oxidized, heav @57' to 58': Sandy CLAY (CL), reddish brown to gray laminated, fine to medium grained sand, trace coarse moderate blocky structure, slightly micaceous, MnO (@58' to 58.6': Sandy Clayey GRAVEL (GC), heavily (@58.6' to 59': Clayey SAND (SC), reddish brown, glegrained sand @59' to 60': No Recovery, possible gravels	n, wet, fine to coarse contact below wet, trace fine grained n, wet, fine to coarse rily weathered yish olive brown, e grained sand, gleyed, spotting oxidized
FIE	LD HAF	RDNES	 S		BED	DING	<u> </u>	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE	WEATHERING
/. HARD HARD MOD. HARD SOFT	- SCRATCHES DIFFICULT						2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (56-85°) VERTICAL (85-90°) VERTICAL (85-90°) V. CLOSE 2" CLOSE 2"-12" WIDE 36"-120" V. WIDE >120" Fe = Iron Oxide Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

					CC	RE	BC	RII	NG LOG			BORING NO. CB- 8 PAGE 5 OF 10
ROJECT:			hazard									
CLIENT: E			nified So Drilling (JOB NO.: 10274.006 PAGE NO.: 5 of 10
CONTRACTO EQUIPMENT				согре	ภ สนเปก							ELEVATION: 299.5 Feet
GROUNE				EPTH	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START: 6/17/2014
DATE	HRS A	Ι \	VATER		T. OF	BOT.	- 1	Χ	VERTICAL	TYPE		DATE FINISH: 6/17/2014
06/17/14	COM		38.5	CAS	SING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: Martini PREPARED BY: EH
06/17/14	ATE		128.4						BEARING	Barrel (Feet)		LOCATION: 605 Whittier E
		Ā						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATIO	N &	CORE			RY		⊋		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS
CORE DEI		DEPTH RANGE (Feet)	-	IPLE IBER	RECOVERY	Rab	GRAPHIC LOG	may		d may change v	vith time. The descripti	e time of drilling. Subsurface condition on is a simplification of the actual ual.
—240 -	60—							sa	nd, normally graded			et, fine to medium grained
								· -	61.1': Basal gravels			
		60-65		n 2 x 6	5	100		lar	61.1': Silty CLAY (C ninated, oxidation-rocky structure	CL-ML), with	sand, reddish bi nding, MnO spot	rown to grayish brown, thinly ting, gleyed. well developed
								@ (64.1' to 67.4': Sand	y CLAY (CL	.), reddish brown	and gray, with oxidation
												ccasional fine slate and loped paleosol, siltstone
—235	-235 65								sal rockline at 67.4'		100 Woll 00VC	
-	-	65-70		n 1 x 7	5	100			37.4'-68.7': Sandy (dation-reduction ba			
							7	@	68.7'-69.3': abundaı	nt angular s	iltstone and slate	e clasts, basal rounded slaty
							<i>\$337</i>	_	avel at 69.3'.			
-230	70								70' to 70.9': Sandy (nination, moderate			nd gray, with faint MnO lium grained sand
								1	70.011. 70.0: 7	**		- IM 01 1 "
		70-75		n 2 x 7	5	100		rec		l, gray mottl	ing, fine to medi	onal MnO laminations, ium grained sand, poor to stringers
-	+							@	72.8': Siltstone and	pebbly slat	e rock line	
-	+							@	73.7'-74.7': Gravelly	/ CLAY (CL), angular silston	e and slate gravels
225	75							@	74.7'-75.3': Sandy (CLAY (CL),	fine grained, bas	al coarse rounded slaty
		DN=5-				DII.:			TITUDE AND AND		011545 : 55 : 55 : 55	T
/. HARD	LD HAR		ATCH	V		DING <2		AT	TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH
IARD IOD. HARD SOFT	- SCRATCHES DIFFICULT THIN 2"-12" HARD - SCRATCHES EASILY MEDIUM 12"-36" - GROVES THICK 36"-120"						2" 36" 20"	MODI	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

				CC	RE	BC	RII	NG LOG			BORING NO.	CB- 8		
PROJECT:	El Rode	o Geoha	zard Inve	stigation	n						I AGE O OF	10		
CLIENT: Be											JOB NO.:	10274.006		
CONTRACTO			lling Corp	poration	l						PAGE NO.:	6 of 10		
EQUIPMENT (CME-75						ODIENTATION		ODE DADDE!	ELEVATION:	299.5 Feet		
GROUND	NATER: HRS AF	_		TO (Fee	t): BOT.	OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: DATE FINISH:	6/17/2014 6/17/2014		
DATE	COMP	' WA	TFR I	ASING	HO		^	HORIZONTAL	SIZE		DRILLER:	Martini		
06/17/14	ATD	☑ 38		101110	110			INCLINED	Bit (Feet)		PREPARED BY			
06/17/14	ATD	▼ 128						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd		
		<u> </u>					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca			
ELEVATION	1.2	CORE	'	T≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS			
CORE DEP	тн [DEPTH	SAMPLE	H	P. P	<u>F</u> 8		Soil Description applies on						
(Feet)	F	RANGE	NUMBER	RECOVERY	<u>«</u>	GRAPHIC LOG		differ at other locations and itions encountered. Trans				f the actual		
 225 7	5-	(Feet)		<u> </u>			CONG	illions checumered. Trans	dions between	3011 types may be gradual.	•			
-	_	75-80	Run 1 Box 8	5	100		000	avel at 75.3' 75.3'-80': Sandy CL casional fine slaty g	ravėl, clay	laminations, MnO s	stained, oxidize	ed		
- ∑	- -		D 0				he: pe	30'-82.2': Clayey Sa avily weathered gra d faces, erosive cor	vel, oxidize ntact below	d, rounded slaty gr	avels, clay in r	natrix and on		
-	- 8	30-85	Run 2 Box 8	5	100		sar str	32.2' to 82.9': Sandy nd, trace medium to ucture 32.9' to 83.4': Sandy	coarse gra	ained sand, modera	ate to strong b	locky		
- 245 0	_						@	ghtly micaceous 33.4' to 83.5': Thin s 33.5' to 85': Become e grained sand, whi	es less san	dy, reddish brown,	moderate bloc			
—215 8 -	5						fine	85' to 86': Sandy CL edium grained sand e gravel, clay on pe	trace coar d faces	se grained sand, p	oor blocky stru	icture, trace		
-	- 8	35-90	Run 1 Box 9	5	100		@86': Thinly laminated brown clay, oxidation-reduction banding of 1-foot thic clays @87.3' to 88.3': increase in fine angular gravel content, gravels are coated v clay, white siltstone and weathered slaty gravel to 88.3'							
- 210 9	0						gle	38.3' to 91.7': Sand eying, fine to mediur ty gravel, blocky str	n grained s	and, trace coarse				
FIFI	 LD HARD	NESS		BED	DING	<u> </u>	ДТ	TITUDE AND ANGLE	JOINTS	SHEAR / FRACTURE	WEATHERING			
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE CAN	I'T SCRATC	LT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) WORLOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (56-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2" 12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE			

				CC	RE	BC	RII	NG LOG			BORING NO.	CB- 8
PROJECT:	El Ro	deo Geoh	azard In	vestigatio	n						PAGE / OF	10
CLIENT: Be	everly	Hills Uni	fied Sch	ool Distric	t						JOB NO.:	10274.006
CONTRACTO				orporation	l						PAGE NO.:	7 of 10
EQUIPMENT (OTU TO (Fee	.4\.			ORIENTATION		ORE BARREL	DATE START:	299.5 Feet 6/17/2014
GROUND\	HRS	AFT		BOT. OF	BOT.	OF	Х	VERTICAL	TYPE	ONE BANNEL	DATE FINISH:	6/17/2014
DATE	CON	I WA	ATER	CASING	НО			HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	AT	D	8.5					INCLINED	Bit (Feet)		PREPARED BY	: EH
06/17/14	AT	D <u>▼</u> 12	28.4					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	ı .
ELEVATION	1&	CORE DEPTH	SAMPI			€.,				TION, REMARKS, AND L		
CORE DEP	ТН	RANGE (Feet)	NUMB	- ·	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of	
- - - - -	5	90-95	Run Box		100	0000	en in	91.2': Sand rich lame 91.7' to 91.9': Lamir caceous 91.9' to 94.5': Sandy ce medium to coars ocky structure, MnO 92.1'-92.4': CLAY (092.4'-94.5': Sandy Condier laminations, material properties of the properties	pation of orange of the control of t	angish brown fine go., reddish brown, reand, minor sandien faces own to yellow brown reddish brown, moocky structure, Mnoocky s	moist, fine grain r laminations, mn, MnO laminations, mn, MnO laminations, mn, MnO laminations, mn, MnO laminations, fine grained sand, mn, fine to coarsivery moist, fine ture, fining upwet, fine to coarsivery moist, fine	ned sand, moderate ation d sand, minor aces, abrupt fine to coarse e grained e grained ward,
↓ - - 	_	95-100	Run Box		100	• • • • • • • • • • • • • • • • • • •		96.5' to 96.9': Claye ghtly micaceous 96.9' to 97.1': Slate 97.1' to 97.7': Interb 98.8' to 99.1': Fine to tact below 99.1' to 99.3': Silty \$ and, trace gravel, grave	y SAND (S GRAVEL (edded San o coarse sl SAND (SM) dational co	C), reddish brown, GP) bed d (SP), fine to med aty GRAVEL (GP) , reddish brown, we	wet, fine grain lium grained so bed, subangul et, fine to coar	and ar, erosive se grained
_ _ _ 195 10		100-105	Run Box	1.51	62		grade de la constant	99.3' to 99.7': Sandained sand, modera 99.7' to 100': Clayey e subangular slaty of 100': SAND (SP), gr 101.2' to 102': Medi gments, basalt peb 102' to 102.4': Sand ce medium grained 102.4' to 103.1': Sand e to medium grained 103.1' to 105': No R	te blocky st y Sandy GF gravels rayish brow um to coars ble gravel of y CLAY (C sand, MnC ndy GRAVE d sand, car	ructure RAVEL (GC), wet, f on to reddish brown se grained sand, sl contact below L), reddish brown, spotting EL (GP), mottled ye	ine to coarse on the to coarse on the to coarse on the to coarse on the total of th	grained sand, owards d siltstone ed sand,
						Щ,	1			Т	<u> </u>	
		RDNESS			DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD - MOD. HARD - SOFT -	SCRAT		ULT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"-: 36"-1 >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						BC	RII	NG LOG			BORING NO. PAGE 8 OF	CB- 8
ROJECT: CLIENT: <u>B</u> CONTRACTO CQUIPMENT	R: Mart	ls Unified tini Drilli	d School	Distric	t						JOB NO.: PAGE NO.: ELEVATION:	10274.006 8 of 10 299.5 Feet
GROUND		NIE-75	DEPTH '	TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	6/17/2014
	HRS AFT	WATE	BOT	T. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE	COMP		CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATD	☑ 38.5						INCLINED	Bit (Feet)		PREPARED BY	
06/17/14	ATD	▼ 128.4	+				0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blv
	Co	ORE		<u> </u>		O	T		. ,	 TION, REMARKS, AND L		•
CORE DEF (Feet)	TH RA	EPTH :	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	y to a location of	of the exploration at the tir vith time. The description	me of drilling. Subsi	urface conditions f the actual
—195 10 - - - -190 ¥ 1°	10	0.115	Run 1 Box 11 Run 2 Box 11	4.5	90	\$ 5000	sain e e e e e e e e e e e e e e e e e e e	105.6' to 106': Beco 106' to 106.5': Sand ined sand, poor blo 106.5' to 106.9': Beco 106.9' to 107.2': Sand 107.2' to 107.6': Sand 107.6' to 108.1': Beco 108.1' to 108.3': Lar arse grained sand 108.3' to 108.7': Sand idium grained sand 108.7': Dark brown 109.5' to 110': No R 110' to 110.7': Clayd arse grained sand, 1 110.7' to 111.2': Sand 110.7' to 111.2': Sand 111.2' to 111.6': Sand 111.2' to 111.6': Sand 111.6' to 111.9': Sand 111.6' to 111.9': Sand 10 spotting, blebs, g	mes less si y CLAY (Ci cky structu comes less ady laminat ady CLAY (comes lami anination of any CLAY (MnO spott amination ecovery ey Gravelly grine slaty gr ady CLAY (d sand, Mn ady GRAVE arse gravel andy CLAY (grades coar	andy, MnO spotting L), reddish brown, re sandy, MnO spotting CL), reddish browr nated, gleyed Clayey SAND (SC CL), reddish browr ing, carbonate strii SAND (SW-SC), reavels, gradational CL), reddish browr O spotting L (GP) bed, fine to CL), reddish browr ser	moist, fine to r ing n, fine grained n, fine grained n, fine grained ngers eddish brown, contact n, with minor gl	medium sand, some vn, fine to sand, trace wet, fine to leying, faintly ed sand, fine sand, wet,
			вох 11		/8		coa	I11.9' to 113.9': Charse grained sand, the sand, the sand, the sand, the sand, the sand, the sand the	ine to coar	sits, Sandy Clayey se subangular slate	r GRAVEL (GF e fragments ar	P), fine to nd gravels
—185 ^又 1 [.] -			Run 1 Box 12	5	100		@? gra	115' to 118.8': Silty iined sand, some cl	SAND (SM) ay), medium reddish	brown, wet, fir	ne to medium
-	\perp						10	118.8' to 118.9': Thi	n layer of o	ray shale fragment	is	
								118.9': Silty SAND (ained sand
						$ \cdot \cdot \cdot $	' "		,,	5.5711, 1700, 11110	oa.a gi	u Jania
_180 1°	20					<u>}</u>						
—180 12	20					'''						
						Ц,						
							AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
IARD IOD. HARD SOFT	- SCRATCHES DIFFICULT THIN 2"-12 ARD - SCRATCHES EASILY MEDIUM 12"-36 - GROVES THICK 36"-12					2" 36" 20"	MODE	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	" 2"-12" 12"-36" 36"-120" 120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				CO	RE	BC	RII	NG LOG			BORING NO. PAGE 9 OF	CB- 8
PROJECT: CLIENT: B CONTRACTO	everly		ied Schoo	l Distric	t						JOB NO.: PAGE NO.:	10274.006 9 of 10
EQUIPMENT	_	Martini Dri CME-75		poration							ELEVATION:	299.5 Feet
GROUND				H TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	6/17/2014
DATE	HRS	I WA	TFR I	OT. OF	BOT.		Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
06/17/14	COI			ASING	HOI	Ŀ		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini
06/17/14	AT							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.,
		<u>Ā</u>					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATION CORE DEP		CORE DEPTH RANGE	SAMPLE		RQD	GRAPHIC LOG	The S	FIEL Soil Description applies on differ at other locations and	ly to a location of	TION, REMARKS, AND L of the exploration at the til	me of drilling. Subst	urface conditions
(Feet)	20	(Feet)		Ä		<u>5</u>		itions encountered. Trans				
— 180 12 —	_	120-125	Run 2 Box 12	1 4 1	82			121.6' to 124.1': Sliç 124.1' to 125': No R	•	er		
— 175 12 - - - - -	_	125-130	Run 1 Box 13	5	100	Δ A A A A	gle car @7 mo gra @6 mo fine blo we car	125' to 125.6': Sandyed, fine grained sabonate 125.6' to 126.1': Sandyels 126.6' to 126.1': Sandyels 126.1' to 128.4': Grained saboles 126.1' to 128.4': Grained saboles 126.4': Clayey Gravels 128.4': Clayey Gravels, fine to coarse grained sabonate blebs 128.4' to 130': Missi	and, trace nondy CLAY (sand, some avelly Sand ne to media ravels, without contact elly SAND ined sand,	nedium to coarse of CL), with gravel, do medium to coarse of CLAY (CL), reddum grained sand, so carbonate nodule (SW-SC), reddish	grained sand, r ark reddish bro e grained sand ish brown with some coarse gra s and concretion	minor wwn with gray fine slaty gray ained sand, ons, poor y, gleyed,
170 13	_	130-135	Run 2 Box 13		24		gra \@^ to c red fine	130' to 130.5': Silty inned sand, some or 130.5' to 130.7': Bascoarse subangular in 130.7' to 131.2': Silty idish brown to black a slaty gravels, fine 131.2' to 135': No R	parse grain sal Gravelly to subround y Clayey Sa c, orange an to medium	ed sand SAND (SW), fine led slaty gravels AND (SM-SC), with nd tan, MnO bandi	to coarse grain	ned sand, fine
FIE	LD HAI	RDNESS	<u> </u>	BED	DING	<u>'</u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE (CAN'T SCRATO CHES DIFFICU CHES EASILY	LT	V. THIN THIN MEDIUM THICK V. THICK	<2' 2"-1. 12"-3 36"-1. >12	2" 36" 20"	SHALLO	HORIZONTA (0-5°) OW OR LOW ANGLE (5-35°) PRATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT: LIENT: I	mr :	<u> </u>				RO	RING LOG	BORING NO. CB- 8 PAGE 10 OF 10
			zard Inves ed School					JOB NO.: 10274.006
ONTRACTO	OR: Mai	rtini Dril	lling Corp					PAGE NO.: 10 of 10
	r USED:	CME-75						ELEVATION: 299.5 Feet
GROUNI	DWATER: HRS AFT	-		TO (Feet	t): BOT.	OF	ORIENTATION CORE BARREL X VERTICAL TYPE	DATE START: 6/17/2014
DATE	COMP	' WAT	TER I	SING	HOI.		HORIZONTAL SIZE	DATE FINISH: 6/17/2014 DRILLER: Martini
06/17/14	ATD	☑ 38		51140	1101		INCLINED Bit (Feet)	PREPARED BY: EH
06/17/14	ATD	▼ 128					BEARING Barrel (Feet)	LOCATION: 605 Whittier Blv
		Ā					0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATION CORE DE	DN & r	CORE DEPTH	SAMPLE	, VER ≺	Rab	GRAPHIC LOG	FIELD CLASSIFICATION, REMARK The Soil Description applies only to a location of the exploration	
(Feet)	\ R	RANGE (Feet)	NUMBER	RECOVERY	×	GRA	may differ at other locations and may change with time. The di- conditions encountered. Transitions between soil types may be	escription is a simplification of the actual
—165 1 - -	135—						@135' to 136.9': Clayey SAND (SC), orangis sand, trace fine slaty gravels, carbonate nod downward, poor blocky structure, minor MnO @136.9' to 137.5': Clayey Sandy SILT (ML-C	ules and concretions, coarsens spotting, gradational contact
	13	35-140	Run 1 Box 14	3.4	68		sand, trace medium grained sand, trace fine carbonate, gradational contact	gravel, MnO banding, minor
-						44.	@137.5' to 138': Clayey SAND (SC), with gra fine to coarse grained sand, fine slaty gravels abrupt contact	s, oxidation staining, faintly gleyed
-	-						@138.1' to 138.3': Silty SAND with Clay (SM-grained sand, laminated, MnO band @138.3' to 138.4': Becomes fine to medium	
							@138.4' to 140': No Recovery	granicu Silly SAND (SNI)
-160 1	140			+		• . -	@140' to 144.8': SAND with Silt (SP-SM), me	edium brown very moist fine to
-								
	14	10-145	Run 2 Box 14	5	100			
- - - 155 - 1	145	10-145		5	100		_ @144.8' to 145': Lamination of Sandy CLAY ∖fragments. laminated. carbonate concretions	
- 155 1 -		10-145		5	100		@144.8' to 145': Lamination of Sandy CLAY fragments, laminated, carbonate concretions Total depth of boring: 145' bgs Perched groundwater encountered @ 38.5'-3 51.5'-52', 55-57', 58.6-59', 60'-61.1', 81.4'-81. 94.5'-95',95.7'-99.3', 99.7'-102.4', 110'-110.7' 128.4' bgs Boring backfilled with bentonite and soil cutting boring capped with approximately 6-inches of Excess cuttings disposed of in D.O.T. approximately 6-inches of the control	39.4', 40'-43.6', 47.2'-48.8', .6', 81.9'-82.2', , 111.6'-111.9', 115'-124.1', and ngs upon completion of drilling. f cold patch mix asphalt.
		10-145		5	100		Total depth of boring: 145' bgs Perched groundwater encountered @ 38.5'-3 51.5'-52', 55-57', 58.6-59', 60'-61.1', 81.4'-81. 94.5'-95',95.7'-99.3', 99.7'-102.4', 110'-110.7' 128.4' bgs Boring backfilled with bentonite and soil cuttin Boring capped with approximately 6-inches o	39.4', 40'-43.6', 47.2'-48.8', .6', 81.9'-82.2', , 111.6'-111.9', 115'-124.1', and ngs upon completion of drilling. f cold patch mix asphalt.
		10-145		5	100		Total depth of boring: 145' bgs Perched groundwater encountered @ 38.5'-3 51.5'-52', 55-57', 58.6-59', 60'-61.1', 81.4'-81. 94.5'-95',95.7'-99.3', 99.7'-102.4', 110'-110.7' 128.4' bgs Boring backfilled with bentonite and soil cuttin Boring capped with approximately 6-inches o	39.4', 40'-43.6', 47.2'-48.8', .6', 81.9'-82.2', , 111.6'-111.9', 115'-124.1', and ngs upon completion of drilling. f cold patch mix asphalt.
- 150 1	_ _ _ _ _		Box 14		100		Total depth of boring: 145' bgs Perched groundwater encountered @ 38.5'-3 51.5'-52', 55-57', 58.6-59', 60'-61.1', 81.4'-81. 94.5'-95',95.7'-99.3', 99.7'-102.4', 110'-110.7' 128.4' bgs Boring backfilled with bentonite and soil cuttin Boring capped with approximately 6-inches o	39.4', 40'-43.6', 47.2'-48.8', .6', 81.9'-82.2', , 111.6'-111.9', 115'-124.1', and ngs upon completion of drilling. If cold patch mix asphalt. yed drums and disposed offsite

					СО	RE	ВС	RII	NG LOG			BORING NO.	CB-8A
PROJECT:		odeo Schoo											
CLIENT: I						t						JOB NO.:	10274.006
CONTRACTO EQUIPMENT	_			corpo	oration							PAGE NO.: ELEVATION:	1 of 5 300 Feet
GROUNI				EPTH	TO (Feet	t):			ORIENTATION	C	ORE BARREL	DATE START:	8/31/2015
DATE	HRS	I WZ	ATER		Γ. OF	ВОТ		Х	VERTICAL	TYPE		DATE FINISH:	9/1/2015
	CO	MP		CAS	SING	HC	LE		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	: ARR 605 Whittier Blvd
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	3 NC	CORE			`		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE (Feet)	PTH	DEPTH RANGE (Feet)	SAM NUM		RECOVERY	Rab	GRAPHIC	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of	
300	0-						XXX	-	inches Asphalt				
_	_							@(0.3'-1.2': Artificial F	<u>ill (Atu)</u>			
_	_	0-5	Rui Bo					@ chi	eistocene Alluvium 1.2'-3.1': Sandy CLA ips, clay developme ists	AY (CL), da	rk brown, hard, wh	ite sand sized	
-	_							sla	3.1'-3.6': Silty SANE ty gravels	, ,,			
_	_							∖an	3.6'-3.9' Basal Sand d white siltstone chi 3.9'-5': Sandy CLAY	ps, erosive	contact below		
—295	5							an	d white siltstone chi 5'-6': Gravelly SAND	ps, oxidize	d, gleyed		
-	_							@(d siltstone chips 6'6'-6.8': Silty SAND bly gravel) (SM), brov	wn fine sand, trace	coarse sand,	and fine to
_	_	5-10	Rui				000	ab	6.8'-7.7': Sandy GR. ove, weathered bas			from 7.3' to 7.	7', silty sand
_	_								7.7'-10.2': Sandy Cl	_AY (CL), li	ght brown, fine sar	d	
—290	10-												
_	_								10.2'-13.5': SAND wathered slate and s			, fine to coarse	e sand,
_	-												
_	_	10-15	Rui Bo										
								@	13.5'-13.9': Basal G	ravel (GP),	weathered slate a	nd siltstone gra	avels, erosive
_								_	ntact below 13.9'-15.5': Silty SA	ND (SM), li	ght gray brown (co	lor change from	m above)
285	15						<u> </u> * * .† 						
FI	ELD HA	RDNESS	1		BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT V. SOFT	- SCRAT		JLT	T ME Th	THIN THIN EDIUM HICK THICK	2"- 12"- 36"- >12	12" :36" 120"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	
										Fe = Iron Oxi	de Mn = Manganese Oxide	COMPLETE	-

	 -					CO	KE	BU	RING LOG			PAGE 2 OF 5	
ROJECT:					hool 1	District	t					JOB NO.:	10274.006
CONTRACT													2 of 5
QUIPMEN	T USED:	: CN							-			ELEVATION:	300 Feet
GROUN				DE		TO (Feet	,	0.5	ORIENTATION		RE BARREL		8/31/2015
DATE	HRS	- 1	WAT	ΓER		OF SING	BOT.		-	TYPE SIZE		DATE FINISH: DRILLER:	9/1/2015 Martini
	+ 00	1011			OAC	JII VO	110			Bit (Feet)		PREPARED BY:	
										Barrel (Feet)			605 Whittier Bl
									0 ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATION CORE DE	PTH	COI DEP RAN	TH IGE	SAM NUM		RECOVERY	RQD	GRAPHIC LOG	The Soil Description applies only may differ at other locations and	to a location of may change wil	h time. The description	ime of drilling. Subsur	
 285	15	(Fe	et)			≅		1 1.1.	conditions encountered. Transit	ions between sc	ni types may be gradua	II.	
										ravel, oxidiz d cobble, n	red clasts at 16'. ested channel	Basal cobble at	16.7'-17',
	_	15-	20	Rur Box									and basan
									@19'-20': No recovery				
—280		20-2	22.5	Rur Box		2.4	96		gravels, nested channe	weathered s			
		22.5	5-25	Rur Box		2.5	100		@22.4': No recovery @22.5': Gravelly SANI trace clay			noist, fine to coa	irse sand,
								670	@24.5'-25': Basal San	dy GRAVEL	. (GP)		
—275	25—	25-2	27.5	Rur		2.5	100		@25'-25.7': Sand (SP) @25.7'-26.8': Sandy G gravels, erosive contact	ravel (GP),	 orange brown to		
	_							PTI	@26.8': Silty SAND (S	M) olive bro	own maist fine s	and trace and	lar gravel
									@27.3': Gravelly SANE gravel, rounded gravels) (SP), olive	brown, moist, fir		
	_	27.5	5-30	Rur Box		2.5							
270	30							100°	@29.3'-30': Basal Sandoxidized crystalline roc	dy GRAVEL k fragments	(GP), heavily ox at 29.3'.	kidized slate and	siltstone,
	IELD HA						DING		ATTITUDE AND ANGLE		HEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT /. SOFT	ARD						2"-1 12"-; 36"-1	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre><?" 2"-12" 12"-36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF 5	CB-8A
PROJECT:	El Ro				h 1 '	D:-+- '								74.000
CLIENT: <u>I</u>													JOB NO.: 102 PAGE NO.: 3 o	74.006 of 5
QUIPMENT					orpe	71 11 11 11 11								Feet
GROUNI				DE		TO (Fee				ORIENTATION		ORE BARREL		1/2015
DATE	HRS		WAT	TER		T. OF SING	BOT.		Х	VERTICAL HORIZONTAL	TYPE SIZE			2015 rtini
	- 00	IVIF			CAG	SING	по	LE		INCLINED	Bit (Feet)		PREPARED BY: ARI	
										BEARING	Barrel (Feet)			Whittier Blv
									0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATION CORE DE	- 1	DEP	тн	SAM		RECOVERY	RQD	GRAPHIC LOG	The S	FIEL Soil Description applies on		TION, REMARKS, AND I		conditions
(Feet)	- 1	RAN (Fe		NUM	BER	RECC	ě.	GRA	may	differ at other locations and tions encountered. Trans	d may change v	vith time. The description	is a simplification of the a	actual
270 265	30 — — — — — 335 — —	30-	35	Rui Bo:		4.5	90		@3 with @3 and @3 @3	30'-31.7': Sandy GF anded to small cobb 31.7'-32.6': Sandy Ch and white siltstone ch 32.6'-33': SAND (SF -33.2': Basal cobble 33.2'-34.5': Sandy Ch di severely oxidized 34.5': No recovery 35'-36.2': Gravelly Sarse rounded slaty	Gravel (GP) ips P), fine to coes, heavily of gravel (GP) gravels GAND (SP),	, nested channels , oxidized, weather parse sand, oxidized weathered siltstone , fine to coarse san	red, rounded slaty of ed, with white siltstone cobble, nested chand, fine to coarse ro	gravels one chip nannel ounded , fine to
· ·	40	35-	40	Rui Bo:		5	100		gilt @3 fra	36.2'-37.6': Sandy C stone from 36.9 to 37.6': Becomes Gra gment at 39.2', nes	37.1, basal	contact below O(SP) to Sandy Gf	RAVEL (GP) @ 38.	.1, basal
	-	40-	45	Rui Bos		4.6	92		rou @4 dar	10'-42.2': Gravelly S inded gravels, basa 12.2': Sandy GRAV k reddish brown cla indstone and granition	el cobble at	42.2', well rounded	d oxidized rimming of	gravels,
- 255	45							.0°.	-	14.6': No recovery				
FII	ELD HA	RDNF	SS			BFD	L DING	Ь Т	AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	_
/. HARD HARD	- KNIFE - SCRAT - SCRAT - GROVE - CARVE	CAN'T S TCHES E TCHES E	CRATC		ME TI	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (5-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 4 OF	CB-8A
PROJECT:	El Ro	deo Schoo	<u> </u>									PAGE 4 OF	<u> </u>
CLIENT: B				100l I	District	t						JOB NO.:	10274.006
CONTRACTO				orpo	ration							PAGE NO.:	4 of 5
EQUIPMENT		- 1										ELEVATION:	300 Feet
GROUNE			DE		O (Feet	:): BOT.	05		ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	8/31/2015
DATE	HRS	I WA	TER		SING	HOI.		Х	HORIZONTAL	SIZE		DATE FINISH: DRILLER:	9/1/2015 Martini
	CON	VII		CAG	JING	1101			INCLINED	Bit (Feet)		PREPARED BY	
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO		CORE			≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE		DEPTH	SAMF		VEF °	Rab	풀	The	Soil Description applies on	ly to a location	of the exploration at the tir	ne of drilling. Subs	urface conditions
(Feet)		RANGE	NUME	BER	RECOVERY	ř	GRAPHIC LOG	may	differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	f the actual
 255	45-	(Feet)			~		<u> </u>	CONG	inions checonnected. Trans	ILLOTIS DCLWCCIT	3011 types may be gradual.		
-		45-50	Run Box	. – 1	5	100		@4 blo	eistocene Cheviot Ma5": CLAY (CL), broucky fracture, oxide 48.1": Sandy GRAV d gravel, oxidized, v	wn to oranga and manga	ge brown, moist, ox inese oxide on ped ark olive brown, sat	ogenic faces	coarse sand
— 250 —		50-55	Run		3.8	76		@s sla wh	50': No recovery (du 51.2': Silty SAND (S ty gravel and weath ite siltstone fragme 52.5'-53.2': Sandy S	SM), reddisl ered basal nts	n brown, wet, fine to t; basal erosive cor	o coarse sand ntact, coarse s	and size
- - 245								@t fine	53.2'-54.3': Sandy C e to coarse slaty gra 54.3': Sandy SILT (I own	GRAVEL (G avel. Basal ML), lamina	iP), fine to coarse r contact at 54.3'. ated, very fine sand	ounded sand a	and pebbles,
		55-60		win 2 ox 6 100 Continue Con								nic faces nded slaty re, fine sand, ly rounded	
240	60							str	ucture, manganese	oxide on p	edogenic faces, oc	casional round	ded slaty fine
FIE	LD HAI	RDNESS		!	BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- SCRATCHES DIFFICULT THIN 2"-12" HARD - SCRATCHES EASILY MEDIUM 12"-36' - GROVES THICK 36"-120								HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2", 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

			С	ORE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-8A
PROJECT:	El Rodeo	School								17.62 0 0.	<u> </u>
	Beverly Hill									JOB NO.:	10274.006
	TOR: Mart		Corporat	ion						PAGE NO.: ELEVATION:	5 of 5 300 Feet
	IDWATER:		EPTH TO (Feet):			ORIENTATION	С	ORE BARREL	DATE START:	8/31/2015
	HRS AFT		BOT. OF		T. OF	Х	VERTICAL	TYPE		DATE FINISH:	9/1/2015
DATE	COMP	WATER	CASING	Э Н	OLE		HORIZONTAL	SIZE		DRILLER:	Martini
							INCLINED	Bit (Feet)		PREPARED BY:	
<u> </u>						0	BEARING ANG. FROM VERT.	Barrel (Feet)		LOCATION:	605 Whittier Blvd.,
		DRE		1		T		Total (Feet)	 TION, REMARKS, AND L	Beverly Hills, Ca	
CORE DE	ON & DE		REC OVERY	% and a	GRAPHIC LOG	The	Soil Description applies onl	v to a location	of the exploration at the til	me of drilling Subsu	urface conditions
(Feet	t) RA		MBER S	» »	Ä	may	differ at other locations and	d may change v	vith time. The description	is a simplification of	the actual
<u> </u>		eet)	<u> </u>		+	CONC	litions encountered. Transi	illoris betweem	soii types may be graduai	•	
240	60 —					\gra	avel				/
L											
						To	tal depth of boring:	60 feet bgs			
						Pe	rched groundwater ring backfilled with	encountere	ed at approximately	/ 48.1-50', 51.2	-52.5'
L	_						phalt	Deritorite-c	ement grout and p	atched with col	u pateri
F	-										
	-										
005	05										
235	65—										
L											
_	_										
-	-										
F	_										
	70										
230	70-										
L	_										
L	_										
il											
<u>:</u> -	-										
						1					
F	7										
	75										
225	75—										
<u> </u>						1	TITLIDE AND AND THE		OUEAR : == : ==	<u>-</u>	
·	TELD HARDNE		V. THIN	BEDDING	-2"	AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
V. HARD HARD	- KNIFE CAN'T - SCRATCHES	DIFFICULT	V. THIN THIN MEDIUM	2'	<2" '-12"		HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	2"-12" 12"-36"	FRESH V. SLIGHT	
MOD. HARD SOFT V. SOFT	SCRATCHESGROVESCARVES	LMOILT	THICK V. THIC	36'	"-36" '-120" 120"	STEE	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	MOD. CLOSE WIDE V. WIDE	36"-120" >120"	SLIGHT MODERATE	
5	- GARVEO		v. Inici	^	.20		- ETTIONE (00-90)		de Mn = Manganese Ovide	MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. CB- 9 PAGE 1 OF 6
	El Rodeo										
CLIENT: B				ol Distric rporation							JOB NO.: 10274.006 PAGE NO.: 1 of 6
QUIPMENT		CME-75		F						-	ELEVATION: 298 Feet
GROUND	WATER: HRS AFT			TH TO (Fee	t): BOT	OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: 7/7/2014 DATE FINISH: 7/8/2014
DATE	COMP	WA ⁻	TFR I	CASING	HO		^	HORIZONTAL	SIZE		DRILLER: Martini
07/07/14	ATD	∑ 34						INCLINED	Bit (Feet)		PREPARED BY: EH
		Ā						BEARING	Barrel (Feet)		LOCATION: 605 Whittier Blvd
		ORE		-	Ι		0	ANG. FROM VERT.	Total (Feet)	TION DEMARKS AND	Beverly Hills, Ca
CORE DEP	TH D	EPTH	SAMPLI	- 0	ZgD	GRAPHIC LOG	The			TION, REMARKS, AND L of the exploration at the til	me of drilling. Subsurface conditions
(Feet)	R	ANGE Feet)	NUMBE	R So	ř.	GRA L	may	differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of the actual
	0-							i ificial Fill, Undocu l)'-5': Hand Auger	mented (Afi	<u>u):</u>	
- 293	_	5-10	Run 1 Box 1	1 5	100		Sa over one of the column of t	erlies abruptly 5.2' to 6.9': Silty SA arse grained sand, versions 6.9' to 7.9': Sandy Country athered and oxidized athered and oxidized athered silty SA sive contact below 6.3' to 10': Sandy Country 6.3' to 10': Sandy C	ND (SM), wwell oxidize gravels, gravels, gravels, fine to control (SM), fill LAY (CL), reture, minor	fine to medium gravith gravel, dark redd, rounded coarse aded below P), fine to coarse goarse gravels, coane grained, well oxeddish brown, moi	ash (BCW ₂): ained sand, laminated, ddish brown, moist, fine to grained sand and pebbly grained sand, heavily rse basal gravel, abrupt didized, poorly graded, ist, fine grained sand, rs, oxide and manganese
	- - 1	0-15	Run 2 Box 1		100		@ str	nderate blocky struc 10.8': Rock line 10.9': Clayey SILT (ucture, laminated n	ture, siltsto ML), dark re ear base at	ne fragments eddish brown, soft 12.3'	oist, fine grained sand, , oxidized, minor blocky ne to medium grained sand,
	15						qu @ sai	artz gravels, heavily 14.2' to 14.5': Layer nd, trace coarse gra	of SAND (sained sand,	l, oxidized with ma SP), reddish browr fine subangular sl	n, fine to medium grained ate gravels, laminated and
	LD HARDN				DING	,,,	AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
HARD - MOD. HARD - SOFT -	KNIFE CAN' SCRATCHE SCRATCHE GROVES CARVES	S DIFFICU		V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"- 36"-1 >12	12" 36" 120"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<1" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

				CC	RE	BC	RII	NG LOG			BORING NO. CB- 9 PAGE 2 OF 6	
PROJECT:	El Rode	o Geoha	zard Inv	estigatio	1						PAGE 2 OF 6	
CLIENT: BO			ied Schoo lling Cor								JOB NO.: 10274.006 PAGE NO.: 2 of 6	
EQUIPMENT				poration							ELEVATION: 298 Feet	
GROUND				H TO (Fee				ORIENTATION		ORE BARREL	DATE START: 7/7/2014	
DATE	HRS AFT	T WA	TFR I	OT. OF ASING	BOT.		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: 7/8/2014 DRILLER: Martini	
07/07/14	ATD	<u>⊽</u> 34		AOINO	110			INCLINED	Bit (Feet)		PREPARED BY: EH	
		Ţ						BEARING	Barrel (Feet)		LOCATION: 605 Whittier	Blv
		CORE					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
CORE DEP	1 & L	DEPTH	SAMPLE	: 🖁 .	Rab	1 H 2	The			TION, REMARKS, AND L	IMITATIONS ne of drilling. Subsurface condition	nne
(Feet)	R	RANGE (Feet)	NUMBER	RECOVERY	<u>8</u>	GRAPHIC LOG	may	differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification of the actual	#10
— 283 1 - -	15 —	15-20	Run 1 Box 2	5	100		@ co. an e e ab e of e e e e e e e e e e e e e e e e e	arse grained sand, id white siltstone grained sand, idea in the siltstone grained in the siltstone grained in the siltstone grained in the siltstone grained in the siltstone in	fine to coanavel oxidized sla change, Cl d sand, Mn (CL), grey (SP) bed, gravels y CLAY (CL	se rounded, heavily aty gravel and cobt ayey SAND (SC), of O staining, coarse brown, fine grained olive gray to reddist), gray brown, gley	on to orange brown, fine to weathered slaty, basalt ble sized white siltsto blive brown to gray brown siltstone gravel @17.4', d sand, basal siltstone, to sh gray, moist, minor ted, faintly laminated, wit locky structure, oxidized	n, op
-278 2	- 2	20-25	Run 2 Box 2	١ ٦			witt @ tra pee @ fin fin do silt an	th contact below 18.9' to 19.4': Sandy ce coarse grained sidogenic faces, mind 19.4' to 20.3': Sandy derate blocky struct gravel at contact 120.3' to 21.6': Sandy coarse grained sandstone gravels, well d clay on pedogen	y CLAY (CL and, fine g or calcium o y CLAY (CL ture, clay o pelow y CLAY (CL d, fine to co developed	.), reddish brown, gravel, poor blocky scarbonate on pedoc.), reddish brown, gn faces, abrupt cor.), with gravel, dark parse subangular to blocky structure, he (GP), dark reddish	pleyed, fine grained sand structure, with clay on genic faces pleyed, fine grained sand atact, heavily oxidation a reddish brown, moist, fine o subrounded slate and eavily oxidized clasts, ox brown, oxidized, heavily	I, nd ne
	_						(co	arse subangular to 24.5' to 27.9': Sand	subrounded y GRAVEL	Slaty gravels (GP), fine to coarse	e grained sand, fine to e grained sand, reddish siltstone, basalt, and sla	
— 273 2 - -	- 2	25-30	Run 1 Box 3	5			ba ne		nd cobble, a	at 27.6 to 27.9' ero	silve planar contact belov	
- 268 3						@: silt	28.7' to 30.2': Basal	coarse gra	vels, cobbles, slaty	/ siliceous crystalline, upt erosive contact below	v	
FIE	LD HARDI	NESS		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD - MOD. HARD - SOFT -	D - SCRATCHES DIFFICULT THIN 2"-12" 1. HARD - SCRATCHES EASILY MEDIUM 12"-36" T - GROVES THICK 36"-120"							HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

DO 177	DI P	1. 6	7				DU	RING LOG	BORING NO. CB- 9 PAGE 3 OF 6
ROJECT:									JOB NO.: 10274.006
ONTRACTO	R: N	Iartir	ni Drill						PAGE NO.: 3 of 6
QUIPMENT			AE-75						ELEVATION: 298 Feet
GROUNE	WATEF HRS /	$\overline{}$			H TO (Fee	et): BOT.	OE	ORIENTATION CORE BARREL X VERTICAL TYPE	DATE START: 7/7/2014 DATE FINISH: 7/8/2014
DATE	CON	- 1	WATE	=R	ASING	HO		HORIZONTAL SIZE	DRILLER: Martini
07/07/14	ATI				7 (01140	110		INCLINED Bit (Feet)	PREPARED BY: EH
			Ţ					BEARING Barrel (Feet)	LOCATION: 605 Whittier Bl
								0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATIO	N &	COF			. ≿	_	≌ _	FIELD CLASSIFICATION, REMARKS, A	AND LIMITATIONS
CORE DEI (Feet)		DEP RAN (Fee	IGE	SAMPLE NUMBER	- · · ·	Rab	GRAPHIC LOG	The Soil Description applies only to a location of the exploration at may differ at other locations and may change with time. The descr conditions encountered. Transitions between soil types may be grant to the conditions between soil types may be grant to the conditions between soil types may be grant to the conditions between soil types may be grant to the conditions are conditionally as the conditions are conditionally as the conditions are conditionally as the conditional conditions are conditionally as the conditions are conditionally as the conditional conditions are conditionally as the conditional conditions are conditionally as the conditional conditions are conditionally as the conditions are conditionally as the conditional conditional conditional conditional conditions are conditionally as the conditional condi	iption is a simplification of the actual
—268	30 —							@30.2':Sandy CLAY (CL), reddish brown, dark i very moist, gleyed, oxidation-reduction banding, structure, few sand laminations	fine grained sand, poor blocky
								@31.1' to 32.1': Clayey SAND (SC) laminated, r sand	eddish brown, fine grained
	_	30-	35	Run 2 Box 3	5	100		@32.1' to 34.4': Sandy CLAY (CL), reddish brow more massive than above, moderate blocky stru abrupt contact below	vn, minor gleying, becomes ucture, sandy laminations,
<u>⊽</u> −263	35—						000	@34.4' to 35.4': Sandy GRAVEL (GP), reddish ligrained sand, fine gravels, basal cobbles at 35.4	orown, moist, fine to coarse 4', nested channel
	- - -	35-	40	Run 1 Box 4	4.6	92		silt lamination @36.3', weathered gravels, MnO 40.7' layer of yellow brown	avels, thin clay and windblown
-258	40—						· V/2	@39.6' to 40': No Recovery	
	-	40	45	Run 2 Box 4	4.6	92		@40.7' to 42.1': Sandy GRAVEL (GP), reddish I grained sand, fine to coarse slaty gravel, heavily basal zone heavily oxidized, manganese oxide a erosive contact below @41.8': Pleistocene Cheviot Hills Deposits (CH Sandy CLAY (CL), reddish brown to orange brown grained sand, oxidized, gleved, oxidation stringer	y weathered basalt gravels, and oxidized weathered gravels
	_			DUX 4		32		@44.6' to 45': No Recovery, sand in sampler	
-253	45—				+			<u> </u>	
							<u> </u>		
							.	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTUR	
MOD. HARD SOFT	FIELD HARDNESS BEDDING					2"-1 12"-; 36"-1	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°) V. CLOSE 2"-12" MOD. CLOSE 12"-36" WIDE 36"-120" V. WIDE >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE V. SEVERE

					CO	RE	BC	RII	NG LOG			BORING NO.	CB- 9
PROJECT:	El Ro	deo Geoh	azard	Invest								PAGE 4 OF	6
CLIENT: B					-							JOB NO.:	10274.006
CONTRACTO		Aartini Di										PAGE NO.:	4 of 6
EQUIPMENT	USED:	CME-7		_								ELEVATION:	298 Feet
GROUND			D		TO (Feet				ORIENTATION		ORE BARREL	DATE START:	7/7/2014
DATE	HRS	1 W/	ATER	l	r. OF	BOT.		Х	VERTICAL	TYPE		DATE FINISH:	7/8/2014
07/07/44	CON		14.7	CAS	SING	HOL	.E		HORIZONTAL	SIZE		DRILLER:	Martini
07/07/14	AT	D <u>⊽</u> 3	34.7						INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	: EH 605 Whittier Blvd.,
		<u> </u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	•
		CORE					ပ	Ť			TION, REMARKS, AND		1
ELEVATION CORE DEP		DEPTH	SAN	IPLE	Æ	RQD	اقظ	The	Soil Description applies onl				urface conditions
(Feet)	'IH	RANGE	NUM	BER	RECOVERY	8	GRAPHIC	may	differ at other locations and	d may change v	vith time. The description	n is a simplification o	f the actual
(1 001)		(Feet)			22		9	cond	itions encountered. Transi	tions between	soil types may be gradua	l	
-		45-50	Ru Bo	n 1 x 5	5	100		@4 dev @4 48.	47.2' to 47.8': Silty for the velopment at contact to 47.9' Sandy 47.9' to 48.9': Becorg', heavily oxidized 48.9' to 53.9': Sandy dium grained sand, dogenic faces, gleyo	ine SAND (ct below CLAY bed mes fine Sil at contact / CLAY (CL well devel	(SM), coarse grain Ity SAND (SM), ba _), reddish brown, oped blocky struct	ed basal sand, sal rounded fin gleyed and oxidure. clay and o	MnO le gravel at dized, fine to
— 248 5 _ _ _ _		50-55	1	n 2 x 5	5	100		sar ∖ wit	53.9' to 54.6': Sandy nd, fine subangular h coarse sand-sized	slate grave d siltstone f	els, siltstone clasts	, base of conta	ct is sand
- - -		55-60	Ru Bo	n 1 x 6	5	100		@s fine bar Mn	avily weathered class 54.6' to 59.5': Sandy 6 to medium grained be on and oxide on per of 59.5' to 60': Sandy 6	y CLAY (CL d sand, few elow, very s dogenic	rcoarse grained sa sporadic fine subro	and, Öxidation-I ounded white sl	reduction aty gravels,
							Ь.,					, · · · · · · · · · · · · · · · · · · ·	
		RDNESS				DING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD - MOD. HARD - SOFT -	SCRAT		ULT	ME TI	THIN HIN DIUM HICK THICK	<2"-1. 12"-3 36"-1. >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) PARTELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

CLIENT: Bever CONTRACTOR COUIPMENT US GROUNDW	everly R: M JSED: WATER HRS A COM ATT	Aartini Dri CME-75 R: AFT WA D	ied School illing Corp DEPTH TER BO CA	District	t		The Soil Description applies on	CORE BATTYPE SIZE Bit (Feet) Barrel (Feet) Total (Feet) D CLASSIFICATION, R by to a location of the ex	EMARKS, AND LIN	JOB NO.: PAGE NO.: ELEVATION: DATE START: DATE FINISH: DRILLER: PREPARED BY: LOCATION: Beverly Hills, Ca	10274.006 5 of 6 298 Feet 7/7/2014 7/8/2014 Martini EH 605 Whittier Blvd
GROUNDW DATE 07/07/14 ELEVATION CORE DEPT (Feet)	R: M JSED: WATER HRS A COM ATI	Aartini Dri CME-75 R: AFT WA D	DEPTH TER BO CA 1.7 SAMPLE	TO (Feet T. OF SING	t): BOT. HOL	E	X VERTICAL HORIZONTAL INCLINED BEARING 0 ANG. FROM VERT. FIEL The Soil Description applies on	TYPE SIZE Bit (Feet) Barrel (Feet) Total (Feet) D CLASSIFICATION, R	EMARKS, AND LIN	PAGE NO.: ELEVATION: DATE START: DATE FINISH: DRILLER: PREPARED BY: LOCATION: Beverly Hills, Ca	5 of 6 298 Feet 7/7/2014 7/8/2014 Martini EH 605 Whittier Blvd
GROUNDW DATE 07/07/14 ELEVATION CORE DEPT (Feet)	JSED: WATER HRS A COM ATI	CME-75 R: AFT WA D Z 3 CORE DEPTH RANGE (Feet)	DEPTH TER BO CA 1.7 SAMPLE	TO (Feet	t): BOT. HOL	E	X VERTICAL HORIZONTAL INCLINED BEARING 0 ANG. FROM VERT. FIEL The Soil Description applies on	TYPE SIZE Bit (Feet) Barrel (Feet) Total (Feet) D CLASSIFICATION, R	EMARKS, AND LIN	ELEVATION: DATE START: DATE FINISH: DRILLER: PREPARED BY: LOCATION: Beverly Hills, Ca	298 Feet 7/7/2014 7/8/2014 Martini E EH 605 Whittier Blvd
GROUNDW DATE 07/07/14 ELEVATION CORE DEPT (Feet)	WATER HRS / COM ATI	AFT WA D \(\sum_{\text{a}} \) 34 \(\sum_{\text{b}} \) CORE DEPTH RANGE (Feet)	TER BO CA	T. OF SING	BOT. HOL	E	X VERTICAL HORIZONTAL INCLINED BEARING 0 ANG. FROM VERT. FIEL The Soil Description applies on	TYPE SIZE Bit (Feet) Barrel (Feet) Total (Feet) D CLASSIFICATION, R	EMARKS, AND LIN	DATE START: DATE FINISH: DRILLER: PREPARED BY: LOCATION: Beverly Hills, Ca	7/7/2014 7/8/2014 Martini EH 605 Whittier Blvd
DATE 07/07/14 ELEVATION CORE DEPT (Feet)	HRS A COM ATE	AFT WA D	TER BO CA	T. OF SING	BOT. HOL	E	X VERTICAL HORIZONTAL INCLINED BEARING 0 ANG. FROM VERT. FIEL The Soil Description applies on	TYPE SIZE Bit (Feet) Barrel (Feet) Total (Feet) D CLASSIFICATION, R	EMARKS, AND LIN	DATE FINISH: DRILLER: PREPARED BY: LOCATION: Beverly Hills, Ca	7/8/2014 Martini EH 605 Whittier Blvd
07/07/14 ELEVATION CORE DEPT (Feet)	ATE	D 2 34 CORE DEPTH RANGE (Feet)	SAMPLE				INCLINED BEARING 0 ANG. FROM VERT. FIEL The Soil Description applies on	Bit (Feet) Barrel (Feet) Total (Feet) D CLASSIFICATION, R		PREPARED BY: LOCATION: Beverly Hills, Ca	: EH 605 Whittier Blvd
ELEVATION CORE DEPT (Feet)	I & TH	CORE DEPTH RANGE (Feet)	SAMPLE	RECOVERY %	RQD	GRAPHIC LOG	BEARING 0 ANG. FROM VERT. FIEL The Soil Description applies on	Barrel (Feet) Total (Feet) D CLASSIFICATION, R		LOCATION: Beverly Hills, Ca	605 Whittier Blvd
CORE DEPT (Feet)	тн	CORE DEPTH RANGE (Feet)		RECOVERY	RQD	GRAPHIC LOG	0 ANG. FROM VERT. FIEL The Soil Description applies on	Total (Feet) D CLASSIFICATION, R		Beverly Hills, Ca	
CORE DEPT (Feet)	тн	DEPTH RANGE (Feet)		RECOVERY	RQD	GRAPHIC LOG	FIEL The Soil Description applies on	D CLASSIFICATION, R			
CORE DEPT (Feet)	тн	DEPTH RANGE (Feet)		RECOVERY	RQD	GRAPHIC LOG	The Soil Description applies on			MITATIONS	
(Feet)		(Feet)	NUMBER	RECOV	a.	GRAF		ly to a location of the ex			ufoss sonditions
	0			R		ြိ	may differ at other locations and	d may change with time.	The description is		
— 238 60 - -	0 —						conditions encountered. Trans	itions between soil types	s may be gradual.		
-		~~ ~-					oxidized, fine to mediu faint carbonate stringe "Chocolate brown clay @60' to 66.4': Sandy oxidation-reduction ba grained sand, heavily MnO and clay on pedo	ers, moderate block "CLAY (CL), reddis nding, gleyed, fin oxidized, well dev	sh brown and e	minor MnO sp gray, laminate d, trace medi	potting, ed, um to coarse
—233 65	5—	60-65	Run 2 Box 6	5	100						
		65-70	Run 1 Box 7 5	5	100		@66.4': Color change developed blocky stru				
-228 70	0						@68.2' to 70.2': Grave grained sand, trace co gravels, moderate blo gravels, basal gravel to	oarse grained san cky structure, hea	d, fine subrou	nded slate an	nd siltstone
	@70.2' to 71.7': Sandy CLAY (CL), recognized sand, few medium to coarse grained sand,							ained sand, tra late and weath	ace fine grave	el, MnO e gravels, oxidized, MnO	
- 223 - 7 5	5										
FIELI	L LD HAF	RDNESS		BED	DING	' 	ATTITUDE AND ANGLE	JOINTS / SHEAR	/ FRACTURE	WEATHERING	
V. HARD - K HARD - S MOD. HARD - S	KNIFE C SCRATO SCRATO GROVES	CAN'T SCRATO CHES DIFFICU CHES EASILY	ILT M	THIN THIN EDIUM HICK THICK	<2" 2"-1: 12"-3 36"-1: >120	2" 66" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-56°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE		FRESH V. SLIGHT SLIGHT MODERATE	N

				(CO	RE	BC	RII	NG LOG			BORING NO.	CB- 9
PROJECT:	El Rodeo	Coohoz	ord Ir									PAGE 6 OF	6
CLIENT: I												JOB NO.:	10274.006
CONTRACTO		tini Dril										PAGE NO.:	6 of 6
EQUIPMENT	USED: (CME-75										ELEVATION:	298 Feet
GROUNI	DWATER:		DEI		O (Feet				ORIENTATION		ORE BARREL	DATE START:	7/7/2014
DATE	HRS AFT	WAT	ER	BOT.		BOT.		Х	VERTICAL	TYPE		DATE FINISH:	7/8/2014
07/07/14	COMP	☑ 34.	7	CASI	NG	HOI	_E		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini
07/07/14	AID	<u>¥</u> 34.	′						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.,
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATION	ON & C	ORE			≿ ˈ		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L		
CORE DE	PTH D	EPTH	SAMP	LE	% E	Rab	₹8		Soil Description applies on				
(Feet)	١ ١	ANGE Feet)	NUMB	ER	RECOVERY %	œ	GRAPHIC LOG	may	differ at other locations an itions encountered. Trans	d may change v itions between :	vith time. The description soil types may be gradual.	is a simplification of	f the actual
—223	75												
223	73												
L													
									tal depth of boring: rched groundwater		nd @34 7' 27 9' 40'	_41 8' and 52	0'-54 6' bas
								Pe	ring backfilled with	bentonite a	വ ധാ പ . r -3 r .o , 40 nd soil cuttings und	- 1.0 , and 33 on completion	of drilling
⊢	4							Bo	ring backlined with ap	proximately	y 6-inches of Rapid	Set Concrete	- · · · · · · · · · · · · · · · · · · ·
1									•	•	•		
F	\dashv												
F	\dashv												
 218	80—												
L													
L	4												
F	-												
213	85—												
_	7												
L													
L	\perp												
F	4												
<u> </u>	90—												
				_			L						
FI	ELD HARDN	IESS			BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD	- KNIFE CAN' - SCRATCHE			V. TI TH		<2 2"-1		SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH	X
	- SCRATCHE		.	MED	IUM	12"-3	36"	MODE	ERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	V. SLIGHT SLIGHT	
V. SOFT	- GROVES - CARVES			THIO V. TH		36"-1 >12		SIEE	P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. WIDE	36"-120" >120"	MODERATE MOD. SEVERE	
										Fe = Iron Oxio	de Mn = Manganese Oxide	V. SEVERE COMPLETE	
		* * * TL											

					CC)KE	BC	KII	NG LOG			BORING NO. PAGE 1 OF	CB-10
		deo Geob											
CLIENT: E												JOB NO.:	10274.006
ONTRACTO QUIPMENT	_			Corpo	oration	l						PAGE NO.: ELEVATION:	1 of 6 296.5 Feet
GROUNE				EPTH	TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START:	7/8/2014
	HRS	AFT			T. OF	BOT	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/9/2014
DATE	COI	MP VV	ATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/08/14	AT		35.4						INCLINED	Bit (Feet)		PREPARED BY	: EH
		<u> </u>							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
	<u> </u>	CORE	_		\Box	1	T	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO		DEPTH	SAN	IPLE	<u> </u>		<u>⊇</u> 5	Th			TION, REMARKS, AND I		
CORE DE	- 1	RANGE	NUM	IBER	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and	d may change v	vith time. The description	n is a simplification o	f the actual
		(Feet)			<u> </u>		0	cond	itions encountered. Trans	itions between	soil types may be gradual	l.	
—297	0-						\bowtie	Art	tificial Fill, Undocu	mented (Af	u):		
							\bowtie	@(0'-5': Hand Auger	·			
							\bowtie	2.5	ft Runs to 30				
							\bowtie	}					
							\bowtie	}					
_							\bowtie	}					
							\bowtie	}					
							\bowtie	}					
							\bowtie	}					
							\bowtie	}					
							\bowtie	}					
	4						\bowtie	}					
							\bowtie	}					
							\bowtie	}					
-292	5—							} = ,	El Dioistagana Alle	vium of B	nodict Convers	ob (PCW):	
								@: Sa	5': <u>Pleistocene Allu</u> ndy SILT with Clay	(ML-CL) m	nedict Canyon wa nedium brown, moi	<u>isn (BCvv₂):</u> ist_fine grained	l sand
								oco	casional fine slaty g	ravel, block	ky structure, clay a	nd oxide on pe	ed faces,
-	-								dized	•		•	
	-												
		5-10		n 1	5	100		1					
			Во	x 1		100		1					
-	٦							1					
								1					
								1					
								1					
									9.4' to 10': Clayey S				
-287	10							mo	stly fine to medium	grained sa	ind, some coarse of		
	-						000		pangular slate and			adium bassas t	o oliab#i:
							000	(@ ´	10' to 12.1': Sandy (Idish brown, moist,	JKAVEL (C	יב), with gravel, m lium grained sand	SOME COARSE	u Siightiy arained sand
-	4						600	hia	h fines content, fine				
							(° 0°)	gra	vels, erosive conta			-	-
							000]					
	\dashv						P	_	10 41 1- 44 41 01	OU T 4.) d-d'		
		10-15		n 2	5	,			12.1' to 14.1': Claye htly micaceous, po				ned sand,
		•	Bo	x 1		100		3116	,, modecous, po	or blocky 5	a dotaro, wirro on p	14003	
	\dashv												
	٦						ŀĂſ	@	14.1' to 15.7': Sand	v GRAVEI	(GP), reddish bro	wn, moist. mos	stly fine to
							l° 0°.	mo	edium grained sand				
282	15						50	1					
	.												
FI	ELD HA	RDNESS			BEC	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
		CAN'T SCRAT			THIN THIN	<2 2"-1			HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH	
IOD. HARD	- SCRAT	CHES EASIL'		ME	EDIUM	12"-	36"	MODE	RATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	V. SLIGHT SLIGHT	
	 GROVE CARVE 				HICK THICK	36"-1 >12		SIEE	P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD. SEVERE	
. SOFT	0,								1211110/12 (00 00)			V. SEVERE	

					CO	RE	ВС	RII	NG LOG			BORING NO.	CB-10
PROJECT:	El Ro	odeo Geoh	azard Iı	nvestig	ation	1						PAGE 2 OF	6
CLIENT: B				- 0								JOB NO.:	10274.006
CONTRACTO				orpora	tion							PAGE NO.:	2 of 6
EQUIPMENT												ELEVATION:	296.5 Feet
GROUND			DE	PTH TO	$\overline{}$,	05		ORIENTATION		ORE BARREL	DATE START:	7/8/2014
DATE	HRS CO	I WA	ATER	BOT. C	- 1	BOT.		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH:	7/9/2014
07/08/14	AT		5.4	CASIN		HOI	LE		INCLINED	Bit (Feet)		DRILLER: PREPARED BY	Martini
07/06/14	AI	<u>¥</u> 3	55.4						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.
		<u>A</u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
		CORE	T '		_		0	Т			.TION, REMARKS, AND L		
CORE DEF		DEPTH	SAME	PLE {	Ä,	Rab	Ξg	The	Soil Description applies on				urface conditions
(Feet)	1111	RANGE	NUME	BER 8	RECOVERY %	&	GRAPHIC LOG	may	differ at other locations and	d may change v	vith time. The description	is a simplification of	
()		(Feet)		- 1	Ž		0	cond	itions encountered. Trans	itions between	soil types may be gradual.		
 282	15						by (
							\bigcirc	}					
							}	<u></u>	15.7' to 17.2': SANE	(SP) with	gravel reddish hro	own moist mo	stly fine to
_	_								dium grained sand				
							· · · ·		g	,	gramma, m		, 3
_	\dashv												
		15-20	Run		5		57.9		17.2'-18.9': Sandy C				
		10-20	Box	2	•	100	βΩ,		orange, fine to coar		ne to coarse slate a	and siltstone gr	avels,
-	\dashv						600	erc	sional contact belo	W			
							676	1					
							P. J.	1					
-	\dashv						11///	@	18.9' to 19.6': Sand	y CLAY (CL	.), reddish brown, n	noist, fine grai	ned sand,
									idational contact	. () -		,	,
							SS/X	<u>1</u>	19.4' to 20': Clayey	GRAVEL (GC) mottled reddis	sh brown to vel	lowish brown
—277	20—						117X4		orange, fine to med				
								_∖cla	sts			, , , ,	
									20' to 20.5': Sandy (
_	-								nd, with trace mediu			e gravel, poor	blocky
								7 1 1	ucture, abundant M		<u> </u>		
									20.5' to 20.6': Lamir	nation of Cl	ayey SAND (SC), fi	ine to coarse g	rained sand,
_	_							⊿ <u>–</u>	idational contact	01.41/./01			
		00.05	Run	2	_			@2	20.6' to 22.6': Sand nd, faint gleying, oc	/ CLAY (CL	.), readish brown, v	ery moist, fine	grained
		20-25	Box	2	5	100	644	$\uparrow \searrow \sim \sim$	ated, poor to moder				S are clay
_	_						(° 0°)	_	22.6' to 24.6': Sand				allowish
							00		own to greenish bro				
							PÕC		arse subangular to	subrouned	slaty gravels, weatl	hered heavily,	oxidized, with
_	_						\mathbb{C}^{0}	Mr	0				
							000]					
							9 J.	<u></u>	24.6' to 25.8': Basal	CORRI ES	reddish hrown m	nist mostly fir	e to medium
 272 2	25—		-				人从	_	ined sand, fine slat		,	,	ic to medium
								3 3.3	, J.,	4	J : : :	-	
							7	l					
_	4								25.8' to 27.5': Claye				
								a .	own, faintly gleyed,		,	-	
								Silt	stone gravels, occa	isionai yello	wish oxidation stai	riing, abrupt co	ritact
_	4							1					
		05.00	Run	1	_			1					
		25-30	Box		5	100	kặ.(@2	27.5' to 28.3':Sandy	GRAVEL	GP), dark reddish	brown, moist.	fine to coarse
_	4						$\c \circ$	gra	ined sand, fine sub	angular to	subrounded slate g	ravels, gradati	
							M	_	condary clay develo	pment, bas	sal cobble, nested of	channel	
							ιος, (*Ο°,	@2	28.3' to 30.3': Sand				
_	_							7 ~. ~	own to red and olive				
							60 C	داء ا	ined sand, fine sub				
							10/0	erc	y development high sional contact	ny weather	eu ariu UxiuiZEU Cla	isis, iairii yieyii	ig, abiupt
—267	30—						200	1	2.2 0011401				
_5. '													
FIE	LD HA	RDNESS			BEDI	L DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
		CAN'T SCRAT		V. THI		<2 2"-1		SHVII	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH	X
MOD. HARD	- SCRAT	CHES EASILY		MEDIL	JM	12"-3	36"	MODE	ERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	V. SLIGHT SLIGHT	
	- GROVE - CARVE			THIC V. THI		36"-1 >12		SIEE	OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD. SEVERE	
										F	de Mastronia 611	V. SEVERE COMPLETE	
										re = iron Oxi	de Mn = Manganese Oxide		· ·

				CC	RE	ВС	RII	NG LOG			BORING NO. CB-10 PAGE 3 OF 6
CLIENT: B	everly	Hills Unif		Distric	t						JOB NO.: 10274.006
CONTRACTO	_		illing Corp	oration							PAGE NO.: 3 of 6 ELEVATION: 296.5 Feet
GROUND\				TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START: 7/8/2014
DATE	HRS A	FT		T. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH: 7/9/2014
DATE	COM	IP	CA	SING	НО	LE		HORIZONTAL	SIZE		DRILLER: Martini
07/08/14	ATE		5.4					INCLINED	Bit (Feet)		PREPARED BY: EH
		¥						BEARING	Barrel (Feet)		LOCATION: 605 Whittier Blvd
		CORE			1	I	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATION		DEPTH	SAMPLE	l Æ	ے ا	J S S	The			TION, REMARKS, AND L	
CORE DEP	ТН	RANGE (Feet)	NUMBER	RECOVERY	RQD	GRAPHIC LOG	may o	differ at other locations and itions encountered. Trans	d may change v	vith time. The description	me of drilling. Subsurface conditions is a simplification of the actual
-		30-35	Run 2 Box 3	5	92		gle development de	ying, MnO streaking veloped soil 31.5', 31.8', 32', and 33.3': siltstone rock 33.3': siltstone rock silted sand, faintly govelopment on ped fast of the sand, faintly govelopment on ped fast of the sand sand, faintly govelopment on ped fast of the sand sand sand sand sand sand sand sand	CLAY (CL), leyed, MnC aces y SAND (S streaking o (SP), redo	reddish brown, ver be spotting, poor blocomer, very compared by the spotting of the spotting o	ry moist, fine to medium cky structure, clay wet, faint gleying, poor ry low clay content, abrupt rk reddish brown, wet, fine b subrounded slate and few O in matrix and at basal
- - _ ¥		@39.6' to 40': No Recovery @40' to 43': Sandy GRAVEL (GP), orange brown to reddine to coarse sand, fine to coarse heavily weathered grand at basal erosive contact below Run 2 Box 4 5 100 @43': Pleistocene Cheviot Hills Deposits (CHD): Sandy CLAY (CL), reddish brown, wet, fine to medium goneth, thin beds, very fine, friable, poor blocky structur gleying, minor sand rich laminations							d gravels, MnO in matrix um grained sand, high sand		
						L .					
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE CA		JLT MI	BED THIN THIN EDIUM THICK THICK	<pre>>DING</pre>	2" 36" 20"	SHALLO	TITUDE AND ANGLE HORIZONTAL (0-5') OR ANGLE (5-35') PRATELY DIPPING (35-55') OR HIGH ANGLE (55-85') VERTICAL (85-90')	JOINTS / V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxid	SHEAR / FRACTURE 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

							RO	RING LOG			BORING NO. PAGE 4 OF	CB-10
ROJECT: LIENT: B	El Rode										JOB NO.:	10274.006
ONTRACTO						l .					PAGE NO.:	4 of 6
QUIPMENT		CME-75		, от ро							ELEVATION:	296.5 Feet
GROUND				PTH T	ΓΟ (Feet	t):		ORIENTATION	CC	RE BARREL	DATE START:	7/8/2014
DATE	HRS AFT	T WA	TER	ВОТ	. OF	BOT.		X VERTICAL	TYPE		DATE FINISH:	7/9/2014
	COMP			CAS	SING	HOI	.E	HORIZONTAL	SIZE		DRILLER:	Martini
07/08/14	ATD	<u> </u>	5.4					INCLINED	Bit (Feet)		PREPARED BY	
		<u>¥</u>						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
		ZODE Ā				I	T	0 ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	N& D	CORE DEPTH	SAME	PIF	E E		≌ູ			ION, REMARKS, AND I		
CORE DEF (Feet)	TH R	ANGE (Feet)	NUME		RECOVERY	RØD	GRAPHIC LOG	The Soil Description applies on may differ at other locations an conditions encountered. Trans	d may change wi	th time. The description	is a simplification of	f the actual
—252 4	45—							@45' to 45.6': Silty Cl micaceous, low fines	content			
								@45.6' to 46': Clayey	. ,		et, fine graine	d sand
	٦							@46': 1-foot thick bed	of sand on	top of clay		
							·					
_							<u>. </u>					
			D					@47' to 48.6': Sandy				d, faint
	4	5-50	Run Box		5	100		laminations, oxidation	-reduction ba	anded, MnO strea	iking	
	\exists		20%	. •		.50						
$\bar{\Delta}$								@ 40 CL += FOL OL=:	CAND (CC)	roddich br	ot fire to	lium erele - 1
								@48.6' to 50': Clayey sand, trace coarse gra				
								Janu, Have Warse gra	amicu saliu, l	ine graver, gleyet	a, pennie neu (ו.טדעש.ו
-247 <u>:</u>	50											
,							[][]	@50' to 53.3': Silty SA				
								coarse grained sand very low silt content, t				
							ŀ.!· 1 .	below	race clay, rie	avy willo develop	omeni ai abrup	Contact
							. .					
							- -					
			Run	12	_		ŀ.ŀ.\- <u>\</u> .					
	5	0-55	Box		5	100						
-	\dashv						.					
								@53.3' to 53.7': Claye	AV SAND With	n Silt (SC-SM) ro	ddish brown a	leved
							HAKK	increasingly clayier, m				
-	\dashv							@53.7' to 55': Sandy				
							Po	brown to yellowish ora	ange brown,	fine to coarse gra		
								slaty gravels, 3-inch c	obble stuck	in shoe	•	
–242 ∑ ;	55—						$\langle \circ \circ \rangle$	@55' to 56.2': wet, gra	adae coorso	gradational con	tact	
							000	@55' to 56.5': basal g				
							ЬĂŹ	g	, worup			
	\dashv						10°C					
							00					
							V/X//	@56.5' to 57': Interlan				
	\dashv							√ brown, moist, gleyed, grained sand in clayer				
	5	5-60	Run		2.7			@56.2' to 56.8': minor				anung
			Box	(6		54	<i>[]]]]]</i>	√@56.8': sandy clay, g				
	\dashv							@57' to 57.7': Sandy			d gray, oxidatio	n-reduction
								banding, gleyed, heav	ily oxidized z			
								@57.7' to 60': No Red	covery			
	\exists											
007	00											
-237 (60											
FIE	ELD HARDN			,,,		DING		ATTITUDE AND ANGLE	-	SHEAR / FRACTURE	WEATHERING	
LIADD	 KNIFE CAN 			TI	THIN HIN	<2"-1	2"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
ARD -	- SCRATCHE					4011.0	C."	MODERATELY DIPPING (35-55°)				
ARD OD. HARD OFT	 SCRATCHE GROVES 			TH	DIUM HICK	12"-3 36"-1	20"	STEEP OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
ARD IOD. HARD OFT	- SCRATCHE			TH			20"					

					CO	RE	BC	RII	NG LOG			BORING NO.	CB-10
PROJECT:	El Ro	deo Geol	nazard	Inves	tigation	1						FAGE 3 UF	0
CLIENT: B												JOB NO.:	10274.006
CONTRACTO	_	<u> </u>		Corpo	oration							PAGE NO.: ELEVATION:	5 of 6
QUIPMENT GROUND				EDTH :	TO (Feet	+ \-			ORIENTATION		ORE BARREL	DATE START:	296.5 Feet 7/8/2014
	HRS	AFT			r. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/9/2014
DATE	CON	MP W	/ATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/08/14	AT		35.4						INCLINED	Bit (Feet)		PREPARED BY	: EH
		¥							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		CODE <u>Ā</u>					T	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	<u> </u>
ELEVATION		CORE DEPTH	SAN	IPLE	Ę.	_	≅ູ	Th			TION, REMARKS, AND L		
CORE DEP (Feet)	тн	RANGE	NUM	IBER	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and	d may change v	vith time. The description	is a simplification o	
(1 661)		(Feet)			2		g	cond	litions encountered. Trans	itions between	soil types may be gradual.		
— 237 6 - -	-	60-65	1	n 2 x 6	5	100		ba fac @ oxi	60' to 60.7': Sandy onding, laminated with the sign of	th minor sa us, heavily blate brown AY (CL), re developed	nd rich zones, MnC oxidized and gleye clay, paleosol ddish brown to ora block structure, hea	D spotting, clayed nge brown, he avy MnO and o	on ped
—232 € - -	-	65-70		Run 1 Box 7 5				ba @	55' to 67.2': Sandy (nding, fine grained 65.8' and 67' moder	sand, abun rate blocky ange, dark	dant MnO spotting structure	and streaking.	sandy zones
-	_		Во	х /		100	-X-11	fac	68.8': thin gravel be 68.9' to 73': Sandy (casional fine subrou	d over dark	reddish brown cla dark reddish brow	yey soil n, laminated, ç	gleyed,
		70-75		@68.9' to 73': Sandy CLAY (CL), dark reddish brown, laminated, gle occasional fine subrounded slaty gravels, gravel bed @73', erosive obelow @69.2': Siltstone rock line @73': Sandy CLAY (CL), dark reddish brown, laminated, gleyed, occ fine subrounded slaty gravels, gravel bed @73', erosive contact below fine subrounded slaty gravels, gravel bed @73', erosive contact below @73' to 75': Sandy CLAY (CL), dark reddish brown to orange brown							elow		
- - 222 - 7	- 75								ucture, oxidized	(52), 0			
FIE	LD HAF	RDNESS			BED	L DING	\vdash	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE C	CAN'T SCRA CHES DIFFI CHES EASIL	CULT	ME TI	THIN THIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HTODE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) PRATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre>2" 2"-12" 12".36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB-10
PROJECT:	El Ro	deo Geohaz	ard In	vestigation	1						I AOL U UF	
		Hills Unifie									JOB NO.:	10274.006
	_	Iartini Drill	ing Co	orporation							PAGE NO.:	6 of 6
		CME-75							_		ELEVATION:	296.5 Feet
GROUNI				TH TO (Fee		05	· · ·	ORIENTATION		ORE BARREL	DATE START:	7/8/2014
DATE	HRS	Ι \Λ/ΔΤ	FR I	BOT. OF CASING	BOT.		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: DRILLER:	7/9/2014 Martini
07/08/14	AT			3, 101110	.10			INCLINED	Bit (Feet)		PREPARED BY:	
		<u> </u>						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE		B III		₽		FIEL	D CLASSIFICA	TION, REMARKS, AND LI	MITATIONS	
CORE DE		DEPTH RANGE	SAMPI NUMBE	FR 8%	Rab	GRAPHIC LOG	The	Soil Description applies on differ at other locations and	ly to a location of	of the exploration at the time	e of drilling. Subsu	irface conditions
(Feet)		(Feet)		B		P.	cond	itions encountered. Trans	itions between s	soil types may be gradual.	3 a 3impilioation of	tric actual
222	75—											
-	4						T-	tal danth of haring.	75' bas			
							Pe	tal depth of boring: rced groundwater e	ncountered	@ 35.4'-36.5' 36.8	3'-39.6' 43'-46)'.
							48	6'-50'and 55'-56.5'	bgs	_		
_	\dashv						Bo	ring backfilled with	bentonite a	nd soil cuttings upo	n completion	of drilling.
							Bo	ring capped with ap	proximately	o-inches of Rapid	Set concrete	and black
								cess cuttings dispo	sed of in D.	O.T. approved drur	ns and dispos	ed offsite
-	╛							0 1		••	,	
							1					
_							1					
							1					
—217	80—											
_	4						1					
							1					
							1					
-	\dashv						1					
							1					
_	\exists											
_												
212	85—											
							1					
-	4						1					
							1					
							1					
-	\dashv											
_												
	٦											
_												
207	90—											
FI	LD HAI	RDNESS		BED	DING	<u>'</u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD		CAN'T SCRATCH		V. THIN	<2		CUALI	HORIZONTAL (0-5°)	V. CLOSE	<2" 2"-12"	FRESH	
HARD MOD. HARD SOFT	- SCRAT	CHES DIFFICUL' CHES EASILY	'	THIN MEDIUM	2"-1 12"-:	36"	MODE	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°)	MOD. CLOSE	12"-36"	V. SLIGHT SLIGHT	
UF I	GROVECARVE			THICK V. THICK	36"-1 >12		STEE	P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD. SEVERE	
/. SOFT	0,							. (/	1		V. SEVERE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB-11
ROJECT:		leo Geoh											
CLIENT: <u>I</u>												JOB NO.: PAGE NO.:	10274.006 1 of 6
QUIPMENT				Corpo	ration							ELEVATION:	292.5 Feet
GROUNE				EPTH	ΓΟ (Feet	t):			ORIENTATION	C	ORE BARREL	DATE START:	7/9/2014
DATE	HRS A	FT W/	ATER	ВОТ	. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/10/2014
	COM	P		CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/09/14	ATD		34						INCLINED	Bit (Feet)		PREPARED BY:	
		Ţ						0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blv
		CORE					0	Т	1	. ,	⊥ .TION, REMARKS, AND I		
CORE DEI	РТН	DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of	of the exploration at the ti vith time. The description	me of drilling. Subsu	rface conditions the actual
—293 - - - - - - - - - - -	5	5-10	1	n 1 x 1	5	100		@ @ @ @ e s e ve	5' to 5.2': Chunks of 5.2': Hand Auger 5' to 5.2': Chunks of 5.2': Holocene and ndy CLAY (CL), dary occasional reddiscky structure	f asphalt Pleistocen rk olive bro	e Alluvium of Ben wn, moist, soft, littl	e fine grained s	sand, minor
- - - -278	15 ————————————————————————————————————	10-15		n 2 x 1	5	100		Octobro Sul	10.9': Pleistocene Acasional fine subro de and MnO with or 11.1': Dark 11.4' to 12.9': Clayer own to greenish broorounded gravels, how to 14.3': Sandained sand, heavily 14.2': thin clayey lare 14.3' to 15.8': Become and the sand sand sand sand sand sand sand sand	unded grav xide stringe reddish bro by SAND (S wn, fine to neavy oxide y GRAVEL oxidized an minations mes Silty S	els, with reddish beens wn, coarse slaty group. C), with gravel, mocoarse grained sar and MnO, basal crops, reddish browd weathered grave. AND (SM), dark re	rown oxide stail ravel @11.4' ottled brown to o nd, fine subang ontact @12.9' vn, moist, fine tels with MnO	reddish ular to o medium
	ELD HAR					DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT /. SOFT	- SCRATC		ULT	ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				CC	RE	BC	RII	NG LOG			BORING NO. CB-11
PROJECT:	El Ro	deo Geoh	azard In	vestigatio	n						PAGE 2 OF 6
CLIENT: B											JOB NO.: 10274.006
CONTRACTO		Aartini Dr		rporation	1						PAGE NO.: 2 of 6
EQUIPMENT				TH TO (F				ORIENTATION		ORE BARREL	ELEVATION: 292.5 Feet DATE START: 7/9/2014
GROUND	HRS			TH TO (Fee	et): BOT	OF	Х	VERTICAL	TYPE	ORE BARREL	DATE START: 7/9/2014 DATE FINISH: 7/10/2014
DATE	CO	I WZ	ATER	CASING	HO		^	HORIZONTAL	SIZE		DRILLER: Martini
07/09/14	AT	D \(\overline{\bar{V}}\):	34					INCLINED	Bit (Feet)		PREPARED BY: EH
		¥						BEARING	Barrel (Feet)		LOCATION: 605 Whittier Bl
					<u> </u>		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATIO	N &	CORE DEPTH	SAMPL	_ <u>}</u>		9 .,		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS
CORE DEF (Feet)	тн	RANGE (Feet)	NUMBE	۰.۰	RgD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	ne of drilling. Subsurface conditions is a simplification of the actual
 278	15—	,						arse grained sand, o			
_						بمركة		15.8' to 16.2': Basal			
						670			/EL (GP) la	yer, tine subangula	ar slate gravels in sandy
_						19	_	y matrix 16.8' to 20.0': Sand	, CDAVE	(CD) mattled road	ish brown to brown to
-	_	15-20	Run Box		100		yel sul no	lowish brown, fine t	o coarse gratone, and s	rained sand, fine to sandstone gravels,	isn brown to brown to coarse subangular to appears chaotic, minor
—273 2	20—					7///	ര	20' to 20 7'· Clavey	SAND (SC	reddish brown al	eyed, fine grained sand,
-	_	20-25	Run Box		100			ntact below 20.7' to 21.9': SANE poist to wet, gleyed, f porly graded, gradati 21.9' to 22.3': Sandy arse grained sand, i ntact with below 22.3' to 22.9': Sandy me medium grained or blocky structure 22.9' to 25.0': Sandy	O (SP), with ne to coars onal contact GRAVEL normally gr. CLAY (CL sand, abu	gravel, reddish brose grained sand, finet (GP), reddish gray aded, some fine graded, some fine graded, brown, gendant brownish ble	t on ped faces, abrupt own and grayish brown, ver ie subangular slaty gravels brown, very moist, fine to avels at base, abrupt lleyed, fine grained sand, bs, gleyed on laminations, llightly gleyed, moderate d, MnO spotting, well
								veloped blocky stru			
— 268 2	-	25-30	Run Box	וח	100		oxi	25.0' to 29': Sandy (dation-reduction ba otting, clay and oxid	nding, gley	ed, laminated, fine	h grayish grained sand, MnO
_											
_											rown, oxidation-reduction sand and fine gravel
—263	30-				-						
FIE	LD HAI	RDNESS		BEI	DDING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
V. HARD - HARD - MOD. HARD - SOFT -	- KNIFE (CAN'T SCRAT CHES DIFFICU CHES EASILY	JLT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"- 36"-1 >12	12" 36" 120"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	≥" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE
									. 3011 0/4		

					CC	RE	BC	KII	NG LOG			BORING NO. PAGE 3 OF	CB-11
ROJECT:			ohazard									IOD I'C	100=1
LIENT: E												JOB NO.: PAGE NO.:	10274.006 3 of 6
ONTRACTO QUIPMENT			Drilling	Corpe	ration							ELEVATION:	292.5 Feet
GROUNE				EPTH	TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	7/9/2014
	HRS A				r. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/10/2014
DATE	COM	IP	WATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/09/14	ATE		34						INCLINED	Bit (Feet)		PREPARED BY	
		Ţ	-						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		CORE	:					0	ANG. FROM VERT.	Total (Feet)	TION DEMARKS AND I	Beverly Hills, Ca	1
CORE DE		DEPT	- 1	IPLE	Æ	Rab	و≩	The	Soil Description applies on		TION, REMARKS, AND L		urface conditions
(Feet)	716	RANG	- 1	IBER	RECOVERY	2	GRAPHIC LOG	may	differ at other locations and	d may change v	vith time. The description	is a simplification of	f the actual
	30-	(Feet)		ॡ		/////		litions encountered. Trans 30' to 32': Sandy CL				own moist
	_	30-3	าเ	ın 2 ox 3	5	100	; O.	mo @	e grained sand, with oderate blocky structures 32': Lamination of c 32.1' to 33.7': Claye	arbonate, c	ubangular basal sla aliche, very hard b RAVEL (GP), mottl	aty gravels, ab asalt clasts led reddish bro	rupt contact
								sul dis	llowish brown, gleye brounded slate and crete sand rich lam	siltstone gr inations,	avels, abundant ye		
. \(\sum_{\sum}\)	4						6	$\overline{}$	33.7' to 34': Grades				
							000	_ @:	34' to 34.5': Sandy (brounded slate frag	JKAVEL (C	6P), wet, medium t	o coarse grain	ed sand, fine
								<i>^</i>	34.5': Sandy CLAY			vidation_roduc	tion handing
—258	35—							∖gle @:	eyed, fine to mediun 35' to 36.3': Sandy (ce medium grained	grained sa CLAY (CL),	and, few fine slaty reddish brown, gle	gravels, oxidiz eyed, fine grair	ed
	_	35-4		ın 1 ox 4	5	100		coa	36.3' to 38.7': Sand dation-reduction ba arse grained sand, (nding, fine gleyed, bloo	grained sand, with	occasional mond fine sand o	edium to n ped faces
								sol gra	38.7': Clayey SAND me medium to coan anitic gravels and si 39.6': Basal weathe	se grained tstone grav	sand, fine subanguels	ular slaty grave	
-253	40		+					_	40' to 41.2': Sandy (· · · · · · · · · · · · · · · · · · ·		dish brown
								gle	eyed, mostly fine gra casional fine slaty g	ined sand, ravels, finir	some medium to ong upward sequence	coarse grained ce, MnO spotti	l sand,
Ψ	-	40.4	- Ru	ın 2	_			@fra	41.3': Basal weathe 41.3' to 42.0': Sandy gments 42' to 43.8': Clayey	CLAY (CL), reddish brown, f	ine grained san brown, wet, f	ine to coarse
		40-4	าเ	ox 4	5	100		gra	ained sand, fine sub annels 43.8': Channel Depo	angular sla	ty gravels, basal c	obble @43.8,	nested
—248	45							fin	e to coarse grained avels, poorly stratifie	sand, fine	subangular to subr		
Fir		חורפי			PE-	DINC	<u> </u>	A T	TITLIDE AND ANOLE	IOINTO /	CHEAD / EDACTURE	MEATHERING	
/. HARD HARD MOD. HARD GOFT	- KNIFE C. - SCRATC - SCRATC - GROVES - CARVES	AN'T SCI CHES DIF CHES EAS	RATCH FICULT	ME TI	THIN THIN DIUM HICK THICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	JOINTS / V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2"-12" 12"-36" 36"-120" >120"	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				CC	RE	ВС	RII	NG LOG			BORING NO. CB-11 PAGE 4 OF 6
PROJECT:	El Ro	deo Geoh	azard Inves	tigatio	n						1. AGE 7 01 0
			fied School								JOB NO.: 10274.006
CONTRACTO	_		rilling Corp 5	oration	l						PAGE NO.: 4 of 6 ELEVATION: 292.5 Feet
GROUNE				TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START: 7/9/2014
DATE	HRS	I WZ	ATFR I	T. OF	BOT		Х	VERTICAL	TYPE		DATE FINISH: 7/10/2014
	COI	MP	CA	SING	НО	LE		HORIZONTAL	SIZE		DRILLER: Martini
07/09/14	AT	D <u>∑</u> :	34					INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY: EH LOCATION: 605 Whittier Blv
		<u> </u>					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATIO	AL P	CORE	T '	⊺ ≿ ′		ပ			<u> </u>	TION, REMARKS, AND L	'
CORE DEI		DEPTH RANGE	SAMPLE NUMBER	RECOVERY	RgD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	me of drilling. Subsurface conditions n is a simplification of the actual
240	45	(Feet)		<u>~</u>		_	00110	miorio eriodanterea. Trano	itiono between	Join types may be gradeal	•
248	45—							46 0'· Basal cobble	rounded h	eavily weathered	MnO in in basal gravel
	_	45-50	Run 1 Box 5	5	100		@4	46.7': Basal slate, h ntact @49'	eavily oxidi	eavily weathered, zed sandy gravel b	pelow, abrupt basal erosive
 243	50—						@4 gle		CLAY with Sand, occasi	Silt (CL-ML), reddis	sh brown, moist, minor parse grained sand, MnO
	_	50-55	Run 2 Box 5	5	100			F2 Older FFIs Conden	As Carely C	NAV (OL) with an	
-238	55-						mc sul	bist, fine to medium bangular slaty grave	grained sar els, MnO	nd, some coarse g	
	_	55-60	Run 1 Box 6	5	100		bro gra		d, mostly final fine sub	ne grained sand, s	SAND (SC-CL), reddish some medium to coarse wels, MnO spotting
- 233	60						gra	ained sand, occasio	nal fine gra	vel, massive	gleyed, fine to coarse yey SAND (SC-CL), reddish
FIE	ELD HA	RDNESS	<u>' </u>	BED	DING	<u>' </u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
/. HARD HARD MOD. HARD SOFT	- KNIFE (CAN'T SCRATI CHES DIFFICU CHES EASILY	JLT M	THIN THIN EDIUM THICK THICK	<2 2"-1 12"- 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-56°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE
									Fe = Iron Oxid	de Mn = Manganese Oxide	COMPLETE

PROJECT:	El Ro	deo Ger	hazard	Inves			ВС	RIN	IG LOG			BORING NO. PAGE 5 OF	CB-11
CLIENT: B	everly	Hills U	nified S	chool	Distric	t						JOB NO.:	10274.006
CONTRACTO EQUIPMENT				Corpo	oration							PAGE NO.: ELEVATION:	5 of 6 292.5 Feet
GROUNE				EPTH	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START:	7/9/2014
DATE	HRS /	AFT	WATER		T. OF	BOT	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/10/2014
DATE	COV	/IP \	WATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/09/14	ATI		34						INCLINED	Bit (Feet)		PREPARED BY:	
		Ţ							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		CODE				1	T	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
CORE DEF (Feet)		CORE DEPTH RANGE (Feet)	SAN	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may d	FIEI ioil Description applies or liffer at other locations ar lions encountered. Trans	nly to a location	vith time. The description	e time of drilling. Subsu ion is a simplification of	urface conditions the actual
-	65	60-65		ın 2 ox 6	5	100		@6 @6	wn, gleyed, mostly O nodules, sand le 2.1' to 62.4': sand 3' to 65': Sandy C dium grained sand	LAY (CL), red, some coa	eddish brown, glerse grained sand	and siltstone eyed, faintly lamir, well oxidized	nated, fine to
—223		65-70		ın 1 ox 7	5	100		occ	ding, fine grained asional fine subro ngers begin, @70-	unded slaty	some medium to gravel, MnO stre	coarse grained s eaks, @64.1' carl	sand, bonate
-223 70		70-75	. .	ın 2 ox 7	5	100			4.4': Dark reddish			osal, oxide, clay,	and MnO on
218	75						<i>\////</i>	ped	faces, minor carb	onate string	gers at 74.4		
210	. 🏺												
F	10.1145	DNIEGO		1	P. C. C.	DINIC	Ь.		TILIDE AND ANOLE	IONITO	CUEAD / EDAOTUSE	MEATUEDING	
		RDNESS CAN'T SCR	ATCH	\ \v	THIN	DING <2			HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
HARD MOD. HARD SOFT	- SCRATO	CHES DIFF CHES EASI S	ICULT	ME TI	THIN THIN EDIUM HICK THICK	2"-1 12"- 36"-1 >12	2" 36" 20"	SHALLO MODE! STEEP	HORIZON FAL (0-5°) WW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxi	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

			(COI	RE	BC	RING	LOG			BORING NO.	CB-11
ROJECT:	El Rodo	o Geohazard									PAGE 6 OF	U
		ills Unified S									JOB NO.:	10274.006
		rtini Drilling									PAGE NO.:	6 of 6
QUIPMENT	USED:	CME-75	_						1		ELEVATION:	292.5 Feet
GROUNE			DEPTH TO			05		TATION		ORE BARREL	DATE START:	7/9/2014
DATE	HRS AFT	WATER	BOT. (- 1	BOT. HOL		X VERTION HORIZ		TYPE SIZE		DATE FINISH: DRILLER:	7/10/2014 Martini
07/09/14	ATD	<u>⊽</u> 34	CASIN	10	HUL	-	INCLIN		Bit (Feet)		PREPARED BY:	
	,,,,,	¥ 54		-+			BEARII		Barrel (Feet)		LOCATION:	605 Whittier Blvd
							0 ANG. F	ROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	NX.	CORE		<u>≽</u>		≌		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE	7TH R		MPLE MBER	88	RQD	GRAPHIC LOG				of the exploration at the tir with time. The description		
(Feet)	l l	(Feet)		RECOVERY		GF	conditions en	countered. Trans	sitions between s	soil types may be gradual.	io a ompinication of	the detail
— 218	75—											
-	\dashv						Total da	oth of boring:	75' bas			
										d @ 21'-21.9', 34'-	34.5'. 42'-43 2'	. and
							43.8'-49'	bgs		_		
-	\dashv						Boring ba	ackfilled with	bentonite a	nd soil cuttings upo	on completion	of drilling.
							Boring ca	ipped with ap	proximately	6-inches of Rapid	Set Concrete	
-	7											
-213	80—											
-	\dashv											
-	\dashv											
-	7											
_												
	\neg											
-208	85—											
_55												
-	\dashv											
-	\dashv											
-	\dashv											
-	7											
202	00—											
—203	90—											
Fir	I D HVDD	VIESS	\top	BEDD	INC	1		AND ANOLE	IOINTO /	SHEAD / EDACTURE	WEATHERING	
	ELD HARDI - KNIFE CAN	T SCRATCH	V. TH	BEDD IIN	OING <2"	.		AND ANGLE NTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
/. HARD			THI		2"-12		SHALLOW OR L	OW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT	
/. HARD HARD MOD. HARD	 SCRATCHE 						MODERATE! V					
HARD MOD. HARD SOFT			MEDIU THIC V. THI	UM CK	12"-3 36"-12 >120	6" 20"	STEEP OR HIG	DIPPING (35-55°) H ANGLE (55-85°) AL (85-90°)	MOD. CLOSE WIDE V. WIDE	12"-36" 36"-120" >120"	SLIGHT MODERATE MOD. SEVERE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB-12
ROJECT:		leo Geoh											
CLIENT: <u>E</u> CONTRACTO												JOB NO.: PAGE NO.:	10274.006 1 of 6
QUIPMENT				Corpo	oration							ELEVATION:	290.5 Feet
GROUNE				EPTH	TO (Feet):			ORIENTATION		ORE BARREL	DATE START:	7/10/2014
DATE	HRS A	FT	ATER		T. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/11/2014
DATE	СОМ	IP		CAS	SING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	ATD		32						INCLINED	Bit (Feet)		PREPARED BY	
		Ā						0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)		LOCATION:	605 Whittier Blv
		CORE	T				0	Т	1	. ,	I TION, REMARKS, AND	Beverly Hills, Ca	
CORE DEI	PTH	DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an litions encountered. Trans	ly to a location	of the exploration at the ti vith time. The description	ime of drilling. Subsi	urface conditions f the actual
- - - -286	5							@ 2.5	5': Holocene and P ndy CLAY (CL), da ucture, heavily oxid 5.8' to 6.5': Sandy Cocky structure, heave	eistocene rk brown to ized with o CLAY (CL), ily oxidized	Alluvium of Benec reddishy brown, w kide on ped faces dark brown to redd	vell developed be	olocky
	-	5-10		n 1 x 1	3.4	68		@ gra	7.5': Sandy CLAY wained sand, some o	vith Silt (CL xidation, tra	-ML), medium brov ace fine subrounde	wn, slightly moi d gravel, soft, i	st, fine rootlets in un
281 	10	10-15		in 2 ix 1	4.6	92		ba_ ba_ Sill browe tra	10'-10.5': Sandy GF unded, weathered s sal contact 10.5': Pleistocene A ty Sandy CLAY (CL own, mostly fine gra athered slaty grave ces at 14'	late and sill Alluvium of -ML), mottl ined sand, ls. Heavy o	stone gravels, oxiderate structure, control o	Wash (BCW ₁): to olive brown exidized with so	y oxidation a to reddish me heavily
—276	15—							@	14.6' to 15': No Rec	overy			
210	13												
		DNIEGO			L	DINC	Ь.,	1	TITLIDE AND ANOLE	IOINTO	OUEAD / EDAOTUSE	MEATIFERING	
	ELD HAR	AN'T SCRAT	CH	V	BEDI THIN	DING <2		AI	TITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
IARD IOD. HARD SOFT	- SCRATC	CHES DIFFIC CHES EASILY S	ULT	ME TI	THIN THIN EDIUM HICK THICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	MOD	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxi	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC		NG LOG			BORING NO. PAGE 2 OF	CB-12
ROJECT:												100.00	4005.55
LIENT: E												JOB NO.:	10274.006
ONTRACTO QUIPMENT				Corpo	ration							PAGE NO.: ELEVATION:	2 of 6 290.5 Feet
GROUNE		CNIE-7		EDTH 1	TO (Fee	t)·			ORIENTATION	С	ORE BARREL	DATE START:	7/10/2014
	HRS AF	-T			r. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/11/2014
DATE	COMP	- WA	ATER	CAS	SING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	ATD	Ţ.	32						INCLINED	Bit (Feet)		PREPARED BY	: EH
		¥							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		Ā						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	NX I	CORE DEPTH	SAM	IDI E	盗		9 €				TION, REMARKS, AND LI		
(Feet)	PTH 1	RANGE (Feet)		IBER	RECOVERY	RØD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description		
-276	15).100 - 100 e	†@	15' to 15.1': siltstone	e fragment	n sample, subangu	ılar, 2-inch dia	meter
—271	20	15-20	Ru Bo	n 1 x 2	5	100		@ modalcd @ grastri @ grastri @ grastri @ grastri @ grastri @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @	15.1' to 15.9': Silty of the state of the st	Gravelly SA nd, trace fin ns and thin CLAY (CL-N ry fine tabu rse well rou CLAY (CL), n ped faces Bed (GP), g roots trace (CL), dark r o on ped fac vels in matr xidized ven CLAY (CL).	ND (SM), dark gray e siltstone and tabi sand beds, basal ed L), with sand, redolar slate fragments unded siltstone gray dark brown, oxidized ray, coarse, weathers, basal erosive coeddish brown, blockes, fine sand with hix, oxidized	vish brown to oular slaty graverosive contact dish brown, mo, poorly developed at 16.4' and moderate before slaty and intact below ky structure, coneavily weather on ish brown, mo	orange brown els, oxidized t below bist, fine oped blocky blocky silstone clay ered fine
—266		20-25	Ru Bo	n 2 x 2	5	100		gra @: find blo	ucture, with few ślai avels in matrix, coar 23': Light reddish st 23.5': Light gray gle e grained sand lens ocky structure	aining in sa ying more pes, occasion	nd and gravel bed brevalent, fine subronal coarse grained, subangular siltsto	ounded slaty g sand, poorly	gravels, thin developed
	30	25-30	Ru Bo	n 1 x 3	5	100		gracol @: ercol @: sailt silt Ple @: me	24.8' to 25.6': Silty Sained sand, poorly distact below 25.6'-25.8': Gravel Essive contact below 25.8' to 27.2': Clayend, occasional coarstone gravels, poor stone gravels, eroseistocene Alluvium 27.2' to 30.4': Becordium brown, blocky verely weathered sil	y GRAVEL se grained ly to moder ve contact of Benedic mes Sandy structure,	locky structure, mir ounded basalt and v (GC), reddish brows sand, fine subangu ately developed blobelow t Canyon Wash (Bu Silty CLAY (CL-ML clay and MnO on p	white siltstone wn, moist, fine lar to subroun ocky structure, <u>CW₂):</u> .), reddish bro	grained ded slate and basal
FII	LD HARD	ONESS	1		BED	L DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD	- KNIFE CAI - SCRATCH - SCRATCH - GROVES - CARVES	N'T SCRAT	JLT	ME Th	THIN THIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre></pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB-12
	El Rodeo												
CLIENT: B						t						JOB NO.:	10274.006
CONTRACTO		ini Dril		corpoi	ration							PAGE NO.:	3 of 6
QUIPMENT GROUND		ME-75		DTU 7	O (Feet	٠١٠	- 1		ORIENTATION	_	ORE BARREL	DATE START:	290.5 Feet 7/10/2014
	HRS AFT	1.		BOT.		BOT.	OF	Х	VERTICAL	TYPE		DATE START:	7/10/2014
DATE	COMP	WAT	ER	CAS		HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	ATD	∑ 32	2						INCLINED	Bit (Feet)		PREPARED BY:	EH
		Ţ								Barrel (Feet)		LOCATION:	605 Whittier Blv
		<u>Ā</u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
CORE DEF (Feet)	TH RA	ORE PTH NGE	SAME		RECOVERY %	RQD	GRAPHIC LOG	may	Soil Description applies only differ at other locations and	y to a location of	vith time. The description is	e of drilling. Subsu	
	30 — (F	eet)			ž			cond	litions encountered. Transi	tions between	soli typės may be graduai.		
- <u>▽</u>	30)-35	Rur Box	. – 1	5	100		@ bro	30.4' to 32.7': Sandy bist, thinly laminated aining 32.7' to 33.4': Sandy bwn to medium brow 33.4' to 35.4': Grade ce coarse grained soken fine siltstone ro	/ CLAY (CL /n, very mo es to Sandy and, fine so	e staining on partin interbedded with sist to wet GRAVEL (GP), verubrounded slaty grants, olive gray mottli	g surfaces, sp Silty SAND (S ry moist, fine givels, trace me ing, poorly to	M), reddish grained sancechanically moderately
256 · :	35							fra fra ne @ we co	veloped blocky structure gment, @35.4' trace gments, coarse bas sted channel 35.4'-36.9': Sandy Gathered slaty and sintact below at 36.9'.	e fine subar al slaty gra GRAVEL (G ltstone gra	ngular dark purplish vel and cobble, sec P), fine to coare sal vels, secondary cla	red siltstone condary clay d and, fine to coa y developmen	rock evelopment, irse heavily t, erosive
<u> </u>	35	5-40	Rur Box		5	100		fin sa	36.9' to 38.4': Silty Ce grained sand, tracend	e fine suba	ngular slaty gravels	to olive brown	, moist, trace e grained
—251	40							po (a)	38.4' to 39.3': Sandy tt, fine grained sand orly developed block 39.3' to 43.7':Sandy arse grained sand, f	, trace coar ky structure GRAVEL (se grained sand, tra e, grades to gravel GP), olive brown to	gray brown, v	gravels, vet, fine to
	40)-45	Rur Box		4.7	94		3"	avels				
	45							ox @	43.7' to 44': Sandy S idized 44'-44.2': Gravel bed 44.2' to 44.7': Sandy	d	-		
		_		_		L	L	L					
FIE	LD HARDNE	ESS			BEDI	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
IARD IOD. HARD SOFT	KNIFE CAN'T SCRATCHES SCRATCHES GROVES CARVES	DIFFICUL		TH MED TH	THIN HIN DIUM ICK HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MOD	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

							BC	KII	NG LOG			BORING NO. PAGE 4 OF	CB-12
ROJECT: LIENT: <u>E</u> ONTRACTO	Beverly DR: M	Hills Uı Iartini I	Orilling (chool l	Distric	t						JOB NO.: PAGE NO.:	10274.006 4 of 6
QUIPMENT				רחדיי	TO /5-	4).	 1		ORIENTATION		ORE BARREL	DATE START:	290.5 Feet 7/10/2014
GROUNE	HRS A	AFT			TO (Fee	t): BOT.	OF	Х	VERTICAL	TYPE	ONE DAINEL	DATE START:	7/10/2014 7/11/2014
DATE	CON	I V	WATER		SING	НО	- 1		HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	ATE	> \\notin \alpha	32						INCLINED	Bit (Feet)		PREPARED BY	: EH
		Ā							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
	<u> </u>	CORE				1		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	l
CORE DEI (Feet)	PTH	DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	Rab	GRAPHIC LOG	may o	FIEL Soil Description applies on differ at other locations and tions encountered. Trans	ly to a location of	ith time. The description	me of drilling. Subs	urface conditions f the actual
-246	45-							<i>≯</i> ⊓\∟	I defined lamination		n-reduction banded	d	
							600		4.7' to 45': No Rec		(CM CC) == ddiab	h	
	\dashv						β. Q.	J 11	5' to 45.3': Silty Clained sand, grades	ayey SAND coarser_tra	(SIVI-SC), reddish	prown, wet, fir	ie to medium
							000		5.3' to 45.5': Sand			o olive brown	ine grained
							[. O.	sar	id, trace medium to				
	\dashv		_				20	@4	5.5' to 47.6':Sandy	GRAVEL (GP), reddish brow	n, mostly fine	o coarse
		45-50		n 1 x 5	4.5	90	600		ined sand, fine sub O, abrupt contact b		subrounded slaty g	gravels, heavy	oxidation and
			60	λÜ		90		'ı —	O, abrupt contact t 7.6': Pleistocene (S Denosite (CHD)		
								Sai	ndy CLAY to Claye	v SAND (S	C/CL), reddish brov	wn and gray, g	leved.
							/////	√lam	inated, fine to med	lium graine	d sand, trace coars	se grained san	
	4								vels, poor blocky s				
								@4	7.9' to 48.5': Claye ined sand, normall	y SAND (S	C), reddish brown,	gleyed, fine to	coarse
							////		ined sand, normall upt contact below	y graded Se	quence, pasai fine	s subrounded g	ıı aveis,
-241	50-				-		/////	1004	8.5': Sandy CLAY	(CL), olive I	orown, greenish br	own, fine sand	, spotty
									dation, with minor N		nes dark reddish o	range at 49.2'-	49.4'
								4 1 -	9.5' to 50': No Rec 0':Sandy CLAY (C		brown to gray glay	ed fine grains	nd sand was
	\dashv								sh on moderately d				a sanu, wax
								<i>-</i>	0.3' to 51': Grades				n to greenis
									y, highly gleyed, pl				
	7		Ru	n 🤈					2' to 55': Sandy CL				
		50-55		x 5	5	100		fine	grained sand, with subscending	n occasiona and siltstor	i medium to coarso	e grained sand elonment on n	ı, occasional ed faces
	4							@5	3.9': becomes darl	k brown to r	eddish brown, oxid	dation-reductio	n banding,
									I developed blocky		Alam handed of cold of	hin launi	
								@5	4.5': becomes oxic	ation-reduc	tion banded with th	nın ıamınations	5
	\dashv												
-236	55												
								@5	55' to 55.9': Sandy (nd, well developed t	CLAY (CL), faces, oxidi:	reddish brown, gle zed	eyed, moist, fin	e grained
								1					
	\exists								55.9' to 58': Sandy (
									nding, mostly fine g asional fine suban				rameu Sand,
	\perp							1		J, S	, , , , , , , , , , , , , , , , , , , ,		
			Ru	n 1	_			1					
		55-60		x 6	5	100							
	\dashv								19' to 60': Docomo-	more mes	sivo with increase	in fine gravels	ovidized
									68' to 60': Becomes ne @59.2', @59' to				
								1	<u></u>		2 22309010	, 5.4.510	
	\dashv							1					
								1					
–231 ∑	60—		_					1					
		D1/= : -				DIN: 2			TIDE 113		011545 / 55 - 55 - 55	<u>.</u>	
_	ELD HAR		ATCH	V.	BED THIN	DING <2			HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
	- KNIFE C	AN I SUR											
. HARD ARD	- SCRATO	CHES DIFFI	ICULT	T	HIN DIUM	2"-1 12"-			DW OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT	
. HARD ARD OD. HARD OFT	- SCRATO	CHES DIFFI CHES EASI S	ICULT	ME TI	HIN		36" 20"	MODE	OW OR LOW ANGLÉ (5-35°)				

				CO	RE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-12
PROJECT: CLIENT: B CONTRACTO	everly l	Hills Unif	zard Investied School	Distric	t						JOB NO.: PAGE NO.:	10274.006 5 of 6
EQUIPMENT	_	CME-75									ELEVATION:	290.5 Feet
GROUND				TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/10/2014
DATE	HRS A	I WA	TFR I	OT. OF	BOT. HOI		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH:	7/11/2014
07/10/14	ATD			SING	поі	-E		INCLINED	Bit (Feet)		DRILLER: PREPARED BY	Martini · EH
07710714	7110	<u> </u>	,					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.,
		<u>Ā</u>					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE		7		2		FIELI	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEP (Feet)		DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies onl differ at other locations and itions encountered. Transi	d may change v	vith time. The description	is a simplification of	
		60-65	Run 2 Box 6	5	100		gra @c bro sar hea fair ero gra @c	50' to 60.5': Sandy (ined sand, fine sub 50.5' to 61.3': Becorewn, highly oxidized and, fine subrounded 51.3' to 64.4': Sandy avily gleyed, fine to a to the sive contact below 54.4'-65': Sandy CL ined sand, basal sil 55'-66.8': Sandy CL dominantly fine sar stone chips	rounded slames Sandy, fine to me slaty grave, CLAY (CL coarse grazed, carbot AY (CL), relistone cob	aty gravels, gradati GRAVEL (GP), re- dium grained sancels, secondary clay), with gravel, redo ined sand, fine sub- nate blebs in matri ddish brown to gre ble at 64.9' ive brown to orang	ddish brown to d, with some co development dish brown to go bangular slaty (x, basal gravel	orangish parse grained preenish gray, gravels, at 64.4,
_ ♀ _ ♀ 	70-						fine gra hea gle gle fine gra Mn	66.8' to 67.3': Sandy to to medium grained evels, normally grad avily weathered, sec 67.3' to 67.7': Becory yed, fine grained sa 67.7' ': Sandy GRAN to coarse grained evels. heavily weath O and oxide on roc	d sand, sor ed, with fin condary cla mes Clayey and, fine su /EL (GP), r sand, fine se ered gravel	ne coarse grained e to coarse basal sy development (SAND (SC), with bangular slaty graveddish brown to groto coarse subangula, secondary clay	sand, fine sub- slate and siltsto gravel, reddish- vels eenish gray, g lar slate and si	angular slaty one gravels, i brown, leyed, wet, ltstone
	_	70-75	Run 2 Box 7	4.6	92			74 0140 751 11 0				
	75			<u> </u>		<u></u>	@7	74.6' to 75': No Rec	overy			
216 7	75											
						L.,					-	
V. HARD - HARD - MOD. HARD - SOFT -	SCRATCI	AN'T SCRATO HES DIFFICU HES EASILY	ILT M	BED THIN THIN EDIUM FHICK THICK	22"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLO	TITUDE AND ANGLE HORIZONTAL (0-5") DW OR LOW ANGLE (6-35") FARTELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	JOINTS / V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxiv	SHEAR / FRACTURE 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RF	BC	RII	NG LOG			BORING NO.	CB-12
	T-1	, ~										PAGE 6 OF	6
ROJECT:		deo Geo										JOB NO.:	10274.006
		Hills U										PAGE NO.:	6 of 6
ONTRAC [*] QUIPMEN		Martini I CME		Corpo	ı atlon							ELEVATION:	290.5 Feet
	NDWATE			ЕРТН Т	ΓΟ (Fee	t)·			ORIENTATION	C	ORE BARREL	DATE START:	7/10/2014
	HRS	AFT		BOT		BOT.	. OF	Х	VERTICAL	TYPE		DATE FINISH:	7/11/2014
DATE	co	I V	VATER	CAS		HOI			HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	- A1	D Z	32						INCLINED	Bit (Feet)		PREPARED BY	
		Ţ							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		Ā						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVAT	3 NOI	CORE			R۲		2		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE D		DEPTH		IPLE	%	Rab	F 8		Soil Description applies on				
(Fee	et)	RANGE (Feet)	NUN	IBER	RECOVERY	E	GRAPHIC LOG	may	differ at other locations and tions encountered. Trans	d may change wittions between s	vith time. The description	is a simplification o	f the actual
040		(1 661)			Œ			00.10	tione oneounterou. Trans		on types may be gradau.	·	
-216	75												
								Tot	al depth of boring:	75' bas			
									ched groundwater		d @ 32.7'-33.4', 38	3.4'-40.5', 41'-4	1 3.7',
								45'	-45.3', 60'-60.5' and	1 67.9'-74.6	bgs 'bgs		
	\dashv							Bo	ing backfilled with	bentonite aı	nd soil cuttings upo	on completion	of drilling.
									ring capped with ap	proximately	иб-inches of Rapid	Set Concrete	and black
								dye	e. cess cuttings dispo	sed of in D	O T approved day	me and dienoc	ed offeito
	-								coo cullings uispo	scu OI III D.	o. i. appioved diu	ina anu uispos	ocu onait
	4												
-211	80—												
	-												
	-												
	\dashv												
-206	85-												
	4												
	_												
	٦												
-201	90												
F	FIELD HA	RDNESS			BED	DING	<u>' </u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD	- KNIFE	CAN'T SCRA			THIN	<2			HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
ARD DD. HARD	- SCRAT	CHES DIFF	CULT	TH	HIN DIUM	2"-1 12"-3	2"		DW OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
	- GROVI	ES	•	TH	HICK	36"-1 >12	20"		OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE	
FT SOFT	CADY					>12	.u I		VERTICAL (AD-901)				
SOFT	- CARVE	ES		V. 1	HICK				V211110712 (00 00)	V. WIDE	>120	MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB-13
PROJECT:	El Ro	deo Geoha	zard In	vestigatio	n						FAGE I UF	0
CLIENT: B	everly	Hills Unif	ied Scho	ol Distric	et						JOB NO.:	10274.006
CONTRACTO	_	Martini Dri		rporation	1						PAGE NO.:	1 of 6
EQUIPMENT				TU TO "	.4\.			ORIENTATION		ORE BARREL	DATE START:	287.5 Feet 7/11/2014
GROUND	HRS			TH TO (Fee BOT. OF	et): BOT	OF	Х	VERTICAL	TYPE	ORE BARREL	DATE START:	7/11/2014 7/12/2014
DATE	COI	I WA	TFR I	CASING	HO			HORIZONTAL	SIZE		DRILLER:	Martini
07/11/14	AT	D 🛂 3	37					INCLINED	Bit (Feet)		PREPARED BY	
		Ţ						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
							0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
ELEVATIO	N &	CORE DEPTH	SAMPL	_ &		€.,				TION, REMARKS, AND L		
CORE DEF	TH	RANGE	NUMBE	- 0	Z G	GRAPHIC LOG		Soil Description applies on differ at other locations and				
(Feet)		(Feet)		Ä		20		itions encountered. Trans				. the detail
288	0-						a	Surface: 6" Asphalt	Concrete			
							w.	Surface. O Aspiran	Concrete			
						7 b 1	@(0.5': 8" Portland Ce	ment Conci	rete		
-	\dashv					\$ N √ N √	<u>.</u>					
						\bowtie		tificial Fill, Undocu	mented (Af	<u>u):</u>		
						\bowtie	На	nd augered to 5'				
-	-					\bowtie	}					
						\bowtie	}					
						\bowtie	}					
_	٦					\bowtie	3					
						\bowtie	}					
_						\bowtie	}					
	٦						3					
							}					
—283	5—					\bowtie	<u></u>					
200	J						@:	5': Holocene and Ple	eistocene A	Illuvium of Benedi	ct Canyon Wa	sh (Qal):
						17.1		ty SAND (SM), yello				
_							_ <u>_</u>	nined sand, trace fir				graveis
						$ \cdot \cdot $	@:	5.4': Becomes brow	m in color, p	porous, unimea pin	noie voias	
						11,11	1					
_						$ \cdot $	•					
			Run	1		<u> </u>	.					
		5-10	Box	1 5	100	$ \cdot \cdot $	1					
_	_					[1][]	1					
						$[\cdot]$	•					
						<u> </u>	.					
_	-					$ \cdot \cdot $	1					
						[][]	@9	9.2': Gravelly Silty S	SAND (SM).	brown, fine graine	ed sand, fine s	ubrounded
						[-[-]-		ty gravel with round				
 278	10—					┼ ╎┤						
							1					
-	-						10	11.0': Coarse pebbl	y sand bed	, erosive contact		
							<u> </u>	11.0': Pleistocene A	Alluvium of	Benedict Canyon		
								ndy CLAY with Silt				
_	-							nd, trace coarse gra	ained sand,	tew subangular to	subrounded fi	ne to coarse
		10-15	Run	ו ה			_	ained gravel	, CII T;+L	Clay (MI CI) h	un maiat fir-	arainad aas
			Box	' ັ	100	ЩИ	4	12.4' to 12.9': Sand				
_	-						@	12.9' to 15.1': Sand	y CLAY with	n Silt (ML-CL), dark	k brown, moist	, fine grained
							sai	nd, trace coarse gra	ained sand,	tew subangular to	subrounded fi	ne to coarse
							yıa	avel, moderate bloc	ny suuclule	, some mie Sand a	ind millor cidy	on peu laces
_	٦											
272	15-											
— 273	15] ,	1					
FIE	I D LIA	DDNESS		DEF	חואיכ	<u> </u>		TITLIDE AND ANOLE	IOINTO /	SHEAD / EDACTURE	MEATHERING	
		RDNESS CAN'T SCRATO	CH	V. THIN	DDING <2			TITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
HARD -	- SCRAT	CHES DIFFICU CHES EASILY		THIN MEDIUM	2"-1 12"-	12"		OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
SOFT	- GROVE - CARVE	S		THICK V. THICK	36"-1 >12	120"		P OR HIGH ANGLE (55-85°)	WIDE V. WIDE	36"-120" >120"	MODERATE	
7. 301 1	OARVE			v. HIION	-12	.~		VERTICAL (85-90°)	V. WIDE	~120	MOD. SEVERE V. SEVERE	
									Fe = Iron Oxi	de Mn = Manganese Oxide	COMPLETE	

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	
PROJECT:			ohazard										
LIENT: E												JOB NO.:	10274.006
ONTRACTO				Corpo	oration							PAGE NO.: ELEVATION:	2 of 6 287.5 Feet
QUIPMENT GROUNE				EDTU :	TO (Fee	4 \-			ORIENTATION		ORE BARREL	DATE START:	
	HRS A	AFT			r. OF	BOT.	OF	X	VERTICAL	TYPE	J. 12 27 11 11 12 2	DATE FINISH:	
DATE	COM	иР I '	WATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/11/14	ATI	o Ž	37						INCLINED	Bit (Feet)		PREPARED BY	: EBP
		Ţ							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
	L							0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
ELEVATIO	N &	CORE DEPTH		IDI E	≿		€		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEI (Feet)		RANGE (Feet)	NUM	IPLE IBER	RECOVERY	Rap	GRAPHIC LOG	may	Soil Description applies on differ at other locations and ditions encountered. Trans	d may change v	vith time. The description	n is a simplification of	
— 273 - -	15— — —	15-20		n 1 x 2	5	100		fin fac	15.1' to 16.7': Silty (e grained sand, well ees, trace rounded particles, trace rounded particles, trace rounded particles, trace rounded particles, to 19.1': Silty Sith few subangular particles, to 19.8': Grave 19.8'	I developed bebbly grave al gravel SAND (SM) ebbly grave	I block structure wel	e to coarse sa	nd, rounded
							<u> </u>			24ND (21"	E	the sale of the	1 - 94 - 4
—268	20—						7		19.8' to 20.0': Silty s nd fragements	SAND (SM)	, tine to coarse gra	ained slaty and	siitstone
	-	20-25		n 2 x 2	5	100		gra @a gra gra	20' to 22.1': Gravelly ained, fine to coarse 22.1' to 24.2': Sandy ained, few fine grave avel, clast supported	y GRAVEL els, spotty (d, sharp cor	iltstone, slate, and (GP), yellowish br gleying, bottom of ntact with below	feldspar sand own, moist, fin channel depos	e to coarse it, weathered
—263 -	25							sa on	24.2': CLAY (CL), d nd, gleying, heavily ped face	oxidized, w	ell developed bloc	ky structure, N	
- - - 258		25-30		n 1 x 3	5	100		@: co rec an @: we	eistocene Alluvium 26.1': Silstone grave 26.2' to 27.3': CLAY arse grained sand, i duction banding, sul d pedogenic faces 27.3' to 31.8': Sand ill developed blocky bbly gravel, gleyed,	el bed, angu with Sand trace fine g bangular to y CLAY (CL structure, f	ular, weathered (CL), dark yellowis ravel, blocky struc subrounded, mind) with gravel, redo ine to coarse grain	sh brown, moisture, clay films or gleying along lish brown to oned sand, fine	range brown, subrounded
CII		RDNESS			RED	DING			TITUDE AND ANGLE	IOINITE /	SHEAR / FRACTURE	WEATHERING	_
/. HARD HARD MOD. HARD SOFT	- KNIFE C	CAN'T SCR CHES DIFF CHES EAS S	ATCH ICULT	ME Th	THIN THIN EDIUM HICK THICK	2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB-13
ROJECT:		eo Geoh										105.110	40071.055
CLIENT: B		lills Unit artini Dr										JOB NO.: PAGE NO.:	10274.006 3 of 6
QUIPMENT				corpt	,, acivil							ELEVATION:	287.5 Feet
GROUNE				EPTH :	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START:	7/11/2014
DATE	HRS AF	I WA	ATER	l	Γ. OF	BOT.		Χ	VERTICAL	TYPE		DATE FINISH:	7/12/2014
07/44/44	COMF		~=	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/11/14	ATD	<u> </u>	37						INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY	605 Whittier Bl
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO		CORE					ပ			. ,	TION, REMARKS, AND L		
CORE DEF	тн	DEPTH RANGE (Feet)	SAM NUM		RECOVERY	RaD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of	of the exploration at the till with time. The description	me of drilling. Subsu	
-	35	30-35	Ru Bo		5	100		saı	31.8' to 35.2': Sand' nd, trace coarse gra d minor clay on ped	ained sand,	, dark yellowish bro poorly graded, mo	own, moist, fine oderate blocky	e grained structure, sill
. <u>⊽</u>	_	35-40	Ru Bo		4.6	92		mo bas @s gra @s con @s	35.2' to 36.1': Sand- pist, fine grained sand sal siltstone and sla 35.7' to 36.9': Sand- pined, trace fine sub 36.9' to 37.1': Grave- tract below with car 37.1' to 37.9': Sand- pined, trace fine sub 37.9' to 38.8': Silty \$	nd, fine sub aty gravel @ y CLAY (CL pangular to el bed, fine rbonate at c y CLAY (CL pangular to	angular to subrour (36.1' .), dark yellowish be subrounded slaty or counded slaty and contact .), dark yellowish be subrounded slaty a	orown, very monogravels siltstone grave brown, very monograve	els, coarse ist, fine I, erosive ist, fine one gravel
								sai @: silt		l bed, fine t	o coarse rounded M-SC), brown, very	to subangular s	slate and
—248 - -	40	40.45	Ru	n 2	4.5			@ silt \ sh: \ @ co: \ @ d	39.6' to 40': No Rec 40.1' to 41': Sandy of stone and weathers arp basal coarse sa 41': Sandy SILT (Ma arse grained sand, 41.9' to 42.4': Silty Se to medium graine	GRAVEL (Ced basalt grand contact L), yellowist coarse grav	GP) fine to coarse (avel, trace clay, o@41' n brown, moist, fine el @41.9" Clay (SM-SC), dari	grained, rounde xidation of slat e grained, trace	y gravels, e fine gravel,
	_	40-45	Во		4.5	90		@4 cla sul	42.4' to 44.5': Sand y, medium to coars orounded FeO stair	y GRAVEL se grained s ning, basalt	(GP), yellowish broand, fine to coarse	own, moist, tra e gravel, suban	ce silt and gular to
—243	45							@4	14.5' to 45': No Rec	overy			
243	+5												
	1011400	NECO.	<u> </u>			DINIC			TITLIDE AND ANOLE	IOINTO	CUEAD / FDAOTUDE	MEATIFERING	
/. HARD HARD MOD. HARD SOFT	- SCRATCH	N'T SCRATI HES DIFFICU HES EASILY	JLT	ME TI	THIN THIN DIUM HICK THICK	2"-1 12"- 36"-1 >12	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

DO IEOT	El Da	dos Cos	hanand	Turrage			ьс	וואל	NG LOG			BORING NO. PAGE 4 OF	CB-13
ROJECT: :LIENT: I			hazard nified So									JOB NO.:	10274.006
ONTRACTO												PAGE NO.:	4 of 6
QUIPMENT			2-75									ELEVATION:	287.5 Feet
GROUNI			D		TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/11/2014
DATE	HRS	1 1	WATER		T. OF	BOT.	- 1	Х	VERTICAL	TYPE		DATE FINISH:	7/12/2014
07/11/11	CON		27	CAS	SING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER:	Martini
07/11/14	AT	D ∑	37						BEARING	Barrel (Feet)		PREPARED BY: LOCATION:	605 Whittier BI
		<u> </u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
		CORE					O	T		. ,	TION, REMARKS, AND		
CORE DE (Feet)	PTH	DEPTH RANGE (Feet)	NUN	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	y to a location of may change w	of the exploration at the trith time. The description	ime of drilling. Subsu	ırface conditions the actual
-243	45—							4	15.0' to 45.5': Basal				
	_						7///	saı saı	45.5' to 46.3': Sandy nd, oxidation stainin nd 46.2': 1-inch gravel	g and gleyi	ng along lamination	ons, trace coars	e grained
	-						111	saı	nd matrix 16.3' to 46.9': Sand				
		45-50		ın 1 ox 5	5	100		gle	ying along lamination 46.9' to 47.6': Silty S	ons, trace c	oarse grained sar	nd	
	7						500	√gra	ined, lenses with tr 17.6' to 48.3': Sand	ace clay			
							Щ		18.3' to 48.8': Sand				
	\dashv						['.	. 1111	18.5': 1-inch lens of	. ,	· · · · · · · · · · · · · · · · · · ·		
							$ \cdot \cdot $		18.6': Sandy SILT (I			ed .	
							<u>- </u>		18.8' to 49.8': SANE				ine to coars
-238	50—								ined, few fine grave		,, , ,	,	
							PA ($1\sqrt{\omega}$	19.8' to 50.3': Sand		. gravish brown, r	noist, fine grain	ed. few fine
							$ \circ \bigcirc \circ $	∖to	coarse subangular	o subround	ed slaty gravels	3	
	_								50.3' to 51.9': Sand			own, fine to coa	arse grained
							000		nd, fine subrounded	to subangi	ılar gravels, abru	ot erosive conta	ct below
							$[\circ \bigcirc \circ]$,	J	3,		
	_) m	51.9': Sandy SILT w	ith Clay (M	-CL) brown moi	ist fine grained	sand trace
			. Ru	ın 2	l _				arse grained sand,				ouria, tracc
		50-55		x 5	5	100			,	, ,	J	•	
	_						TIT	\@:	52.8' to 52.9': Sand	bed, yellow	brown, fine to me	edium grained s	and, few fin
									ivels, erosive conta				
								@:	52.9' to 55.0': Sand	SILT (ML)	, olive gray to ora	nge brown, fine	grained,
	_							fac	otty oxidation, well dies, pebbly fine grav	leveloped b vels, rounde	locky structure, s d @54.9' to 55.0'	ilt, oxide, and cl	ay on ped
-233	55 —						1///	PI	eistocene Cheviot H	 Iills Deposi	ts (CHD):		
								@: lan	55' to 56.6': Sandy (ninations, blocky str 55.8' to 56.1', FeO s nination @57.6', sh	CLAY (CL), ructure, few	brown, moist, fine fine subangular s	slate and basalt	gravels
									56.6' to 59.3 : CLAY				
	٦		_						ninations, blocky str	ucture, bas	al gravel, heavily	weathered siltst	tone and
		55-60)	ın 1	5	100		sia	te rock line				
			l RC	x 6		100		1					
	٦							1					
	╛												
									59.3' to 60.0': CLAY			oarse sand to f	ine gravel
-228	60							siz	e slate grains @60'	, abrupt cor	ntact below		
E.i.	ELDHV	RDNESS			BED	DING		^+	TITUDE AND ANGLE	IOINITE /	SHEAR / FRACTURE	WEATHERING	_
. HARD		CAN'T SCR	ATCH	V	THIN	DING <2		AI	HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
IARD	- SCRAT	CHES DIFF	ICULT	Т Т	HIN DIUM	2"-1 12"-	2"		OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
OD, HARD			••		HICK	36"-1			OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
IOD. HARD OFT . SOFT	- GROVE				THICK	>12	∩" I		VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-13
ROJECT:		eo Geoh											
LIENT: <u>B</u> ONTRACTO		Hills Uni artini Dr										JOB NO.: PAGE NO.:	10274.006 5 of 6
QUIPMENT											 _	ELEVATION:	287.5 Feet
GROUNE			DI		TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/11/2014
DATE	HRS AF	I WA	ATER	l	r. of	BOT.	- 1	Х	VERTICAL	TYPE		DATE FINISH:	7/12/2014
07/11/14	COMF	_	37	CAS	SING	НО	Ŀ		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini - ERD
07/11/14	AID	¥ V	31						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE			RY		2		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEF (Feet)	PTH	DEPTH RANGE (Feet)	NUM		RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	urface conditions f the actual
	60 —	60-65	Ru Bo		5	100		der bas	50.0' to 60.9': Silty (veloped blocky stru salt gravel @60.9' 50.9' to 65.0': Sand yed, laminated clay	cture, gleye	ed with MnO and cl	ay on ped face	es, weathered
-223	65—							0	65' to 68.2': Sandy (CLAY (CL)	laminated with dis	seminated wh	ite siltstone
	_	65-70	Ru Bo		5	100		and de	d slaty gravel in ma velopment on ped f	ss , blocky aces	structure, fine grai	ned sand, clay	
$\bar{\Delta}$							٩		88.2' to 68.4': Grave				
								Sol	58.4' to 68.8': Silty 5 me clay 58.8' to 70.0': Sand nd, fine to coarse si	y GRAVEL ubangular te	(GP), brown, wet, o subrounded grav	medium to coa	rse grained
-218	70		1		-			T	d siltstone rock frag		•		
							$ \cdot \cdot $		70' to 70.6': Sandy \$ ce coarse grained s			wn, wet, fine gr	ained sand,
								@ra	70.6' to 72.2': Sand ined sand, trace fir pangular gravel, tra	y GRAVEL ne to mediu	(GP), dark yellowis m grained sand, fir	ne subrounded	to
	-	70-75	Ru Bo		5	100		gle	72.2' to 73.4': SILT yed, oxidation at co	ontact and i	n matrix as óxide s	stringers	
- 213	75							gle SA	73.4' to 75': Silty CL yed sand, trace fine ND (SM) lamination dation	e to coarse	gravels, oxide stai	ning, @74.5' 1	/4-inch Silty
2.0													
FIE	LD HARD	ONESS			BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
. HARD IARD IOD. HARD IOFT	- KNIFE CA - SCRATCH	N'T SCRAT HES DIFFICI HES EASILY	JLT	ME TI	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre><!--!</td--><td>FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE</td><td></td></pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

				CO	RE	BC	RI	NG LOG			BORING NO.	CB-13
ROJECT:	El Roc	leo Geohaza	rd Ins								PAGE 6 OF	0
		Hills Unifie									JOB NO.:	10274.006
ONTRACTO	OR: M	artini Drilli									PAGE NO.:	6 of 6
QUIPMENT		- 1	DE	TU TO :=	4).			ODIENTATION	1 ^	ODE BARDEI	ELEVATION:	287.5 Feet
GROUNE	HRS A	FT	F	TH TO (Fee BOT. OF	t): BOT.	OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: DATE FINISH:	7/11/2014 7/12/2014
DATE	COM	I WATE	RI	CASING	HO		``	HORIZONTAL	SIZE		DRILLER:	Martini
07/11/14	ATE							INCLINED	Bit (Feet)		PREPARED BY	
		¥	-				_	BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		CORE					0	ANG. FROM VERT.	Total (Feet)	 TION, REMARKS, AND L	Beverly Hills, Ca	
CORE DE		DEPTH	SAMPLI	- · · ·	Rab	GRAPHIC LOG	The S	Soil Description applies or	nly to a location of	of the exploration at the tir	ne of drilling. Subsi	urface conditions
(Feet)	1	(Feet)	NUMBE	ık Öğ	"	R ₂	condi	differ at other locations an itions encountered. Trans	id may change v sitions between s	with time. The description soil types may be gradual.	is a simplification of	the actual
—213	75											
-	\dashv						Tot	al depth of boring:	75' has			
							Pei	rched groundwater	encountere	d @ 68.4'-73.4' bg	S	
							Boi	ring backfilled with	bentonite a	nd soil cuttings upo	on completion	of drilling.
-							Ex	ring capped with ap cess cutting stored	oproximately in D O T a	/ 6-inches of rapid	set concrete a	nd black dye
									2.0.1. a	rr.0.04 4141110		
-												
-	-											
200	00											
-208	80—											
-	4											
-	\dashv											
-												
-	_											
-203	85—											
-												
-	4											
-	-											
-												
 198	90—											
.50												
	LLD HAR	DNESS		BED	DING		AT	ΓΙΤUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
	- KNIFE C	AN'T SCRATCH		V. THIN	<2			HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
HARD MOD. HARD	- SCRATC	HES DIFFICULT HES EASILY		THIN	2"-1 12"-3	36"	MODE	DW OR LOW ANGLÉ (5-35°) (RATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36" 26" 120"	V. SLIGHT SLIGHT	
OFT	- GROVES			THICK	36"-1		STEEF	OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
	- CARVES			V. THICK	>12	o I		VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	

				_ (CO	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB-14
ROJECT:	El Rode												
CONTRACTO												JOB NO.: PAGE NO.:	10274.006 1 of 6
QUIPMENT				orpor	auon							ELEVATION:	286.5 Feet
GROUNE				PTH TO) (Feet):			ORIENTATION	C	ORE BARREL	DATE START:	7/14/2014
DATE	HRS AFT	T WAT	rer T	вот.		вот.		Х	VERTICAL	TYPE		DATE FINISH:	7/15/2014
	COMP			CASI	NG	HOL	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/14/14	ATD	<u> </u>	ا د		+				INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	: JWJ 605 Whittier Bl
		<u>Ā</u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE			۲		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEF	TH R	DEPTH RANGE (Feet)	NUME	BER	RECOVERY %	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	is a simplification of	urface conditions f the actual
—287 - - - —282									Surface: <u>Artificial Fi</u> '': Hand auger	II, Undocur	nented (Afu):		
	- 4	5-10	Run Box		5	100		© ver © s © s grading	locene and Pleisto 5' to 5.3': Silty SAN y fine subangular s 5.3' to 5.4': GRAVE 5.4': Silty SAND (SI sined sand, fine tab 7.5': Becomes Grav y brown, dry, fine g subangular slate, T	D (SM), with laty gravels L (GP) laye M), with tracular slaty gravelly SAND grained sandm, and bas	n trace clay, medius, fine grained sand r, subrounded slat ee gravel, medium ravels, trace rootle (SP), with trace sil d, trace coarse gra alt gravels	Im to olive browd, trace rootlets e brown, slightly ts, minor clay t, reddish brownined sand, fine	wn, dry, traces
	- -	10-15	Run Box		5	100		gradev dev pin ver	eistocene Alluvium 10': Clayey SAND v ined sand, trace co 10.3': Sandy CLAY veloped blocky stru 10.7' to 10.8': Thin s 10.8' to 15': Sandy hole voids, very ligh y fine subangular s 13.6' to 15': Increas	vith Gravel operse graine (CL), reddiscture, trace Silty SAND CLAY (CL), ht frosting claty gravels	(SW-SC), reddished sand, fine subarsh brown, moist, fir subangular slaty (SM) lens, light tar reddish brown, mof sand grains between, poorly developed	to dark brown, ngular slate and grained san gravels n, moist, fine goist, fine grained een pedogenical blocky structu	d Ťm gravels d, poorly rained sand ed sand, c faces, trace ire
FIE	LD HARDI	NESS			BEDI	DING	'	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
### PICK SET CARVES #### PICK S							<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE					

							RO	RING LOG		BORING NO. CB-14 PAGE 2 OF 6
ROJECT:			eohazard Unified Sc							JOB NO.: 10274.006
ONTRACTO										PAGE NO.: 2 of 6
QUIPMENT								ODIENTATION	OODE DADDE!	ELEVATION: 286.5 Feet
GROUND	WATER:				TO (Fee	t): BOT.	OF	ORIENTATION X VERTICAL TYPE	CORE BARREL	DATE START: 7/14/2014 DATE FINISH: 7/15/2014
DATE	COM	- 1	WATER	l	SING	HOL		HORIZONTAL SIZ		DRILLER: Martini
07/14/14	ATD		<u>Z</u> 35						Feet)	PREPARED BY: JWJ
		Ž	-						rel (Feet)	LOCATION: 605 Whittier BI
		COR					ပ		ASSIFICATION, REMARKS, A	Beverly Hills, Ca
CORE DEF (Feet)		DEPT RANG (Feet	H SAN	IPLE IBER	RECOVERY	RØD	GRAPHIC LOG		a location of the exploration at the change with time. The descrip	he time of drilling. Subsurface conditions of the actual
—272 - -	15—	15-2		n 1 x 2	5	100		@16.8' to 18.1': Clayey S fine grained sand, subang @18.1' to 19': Grades to fine grained sand, subang @19' to 20.5': Sandy CLA	e subangular slate and ilty SAND (SC-SM), wit jular to subrounded slat Clayey SAND (SC), with jular slaty gravels, poor	siltstone gravels, gradational h gravel, reddish brown, moist
—267 :		20-2		n 2 x 2	5	100		fine subangular slate and oxidized and gleyed	siltstone gravel, very p	wn, moist, trace very fine to oor blocky structure, heavily
—262 ;	25							moist, more developed th staining between pedoger pedogenic faces, porous Pleistocene Alluvium of @25.6' to 26.8': Sandy C	in laminations, moderatic faces, trace fine slate with root holes, clay film and the control of	ty gravels, heavily gleyed alongs 1 (BCW ₂): ge brown to medium brown to
	-	25-3	()	n 1 x 3	5	100		26.1' @26.8': Trace fine slaty structure, waxy finish on plaminations, color change @27.7' to 28': Sandy CLA light olive gray, moist, mosiltstone gravel @28' to 2	gravels, moderately to votedogenic faces, oxidation below Y (CL), reddish orange derately developed blocks. Y (CL), with sand and oftion banding	well developed blocky ion-reduction banded thin
—257	30—)			
								ATTITUDE AND ANGLE		
IARD IOD. HARD IOFT	HARD - KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0-5") V. CLOSE <2" RD - SCRATCHES DIFFICULT THIN 2"-12" SHALLOW OR LOW ANGLE (5-35") CLOSE 2"-12" ID. HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55") MOD. CLOSE 12"-36" FT - GROVES THICK 36"-120" STEEP OR HIGH ANGLE (5-85") WIDE 36"-120"						FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE V. SEVERE COMPLETE			

				CC	RE	BC	RII	NG LOG			BORING NO. CB-14 PAGE 3 OF 6
CLIENT: B	everly		fied Scho	ool Distri	ct						JOB NO.: 10274.006
CONTRACTO EQUIPMENT		1artini Dr CME-7		rporatio	n						PAGE NO.: 3 of 6 ELEVATION: 286.5 Feet
GROUND				TH TO (Fe	et):			ORIENTATION	С	ORE BARREL	DATE START: 7/14/2014
DATE	HRS /	1 W/A	ATER	BOT. OF	BOT		Χ	VERTICAL	TYPE		DATE FINISH: 7/15/2014
07/14/14	CON		35	CASING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: Martini PREPARED BY: JWJ
07714714	711	y ¥						BEARING	Barrel (Feet)		LOCATION: 605 Whittier Blvd.
		Ā			Ļ	,	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATION	N &	CORE DEPTH	SAMPL	_ \		€.,				TION, REMARKS, AND L	
CORE DEP (Feet)	тн	RANGE (Feet)	NUMBE	- · ·	Rap	GRAPHIC	may		d may change v	vith time. The description	ne of drilling. Subsurface conditions is a simplification of the actual
		30-35	Run Box	ו ה	100		grablo blo grablo grabl	sined sand, trace slacky structure 32.2' to 32.9': Sandy derately developed dogenic faces 32.9': Clayey GRAV bangular slate, silts lined sand,	y CLAY (CL blocky stru /EL (GC), re tone, and b	co subrounded grave.), reddish brown, reddish brown to da asalt gravels, fine g	moist, fine grained sand, nate development between rk olive gray, moist, grained sand, trace coarse ular gravels, abrupt change
232 - 33							@3 oliv sub to gradev esan gragra	34.8' to 35': Silty Sa ist, moderately dev ist, moderately dev ist, moderately dev ist, moderately dev ist of 35.4': SAND ver ist to 36.2': Sand- ist, fine grained sa ist, to wet, fine grainely ist, trace carbonately ist, to 39.7': Clayed ind, trace coarse grainely	veloped bloc with Gravel to wet, med rels, gradati y CLAY (CL nd, modera mes Sandy ned sand, fi e developm cture	(SP), reddish brown to coarse grain onal contact below to the last of the last	medium brown, very moist
	45	40-45	Run Box	4 5	100		we grade we sult sult sult sult sult sult sult sult	t, subrounded fine sinitic cobble, @40.6 11' to 41.6': Become own, wet, fine to me or ounded quartz gravels 11.6' to 41.7': Thin of ty gravels 11.7' to 43.2': Sandiderately developed es, tabular slaty fine 13.2' to 43.5': Clayer or or oungular gravels, travels and the sangular gravels, travels and the sangular gravels and the sangular siltstone received.	AND with G slaty gravel: 'to 41' dar es Silty SAI dium graine avel, suban; coarse grain y CLAY (CL blocky strue e gravels, s y SAND (S ace FeO sta mes Clayey ock fragmen	s, with carbonate s k red staining, abru ND with Gravel (SNed sand, trace coar gular fine slaty graved Clayey SAND (C.), with gravel, very acture, trace oxide subangular siltstone (C) lens, wet, coars aining (GRAVEL (GC), rents	moist, fine grained sand, staining on pedogenic gravels e grained, with fine distributions of the staining on pedogenic e gravels e grained, with fine distributions of the staining on the staining on pedogenic e gravels e grained, with fine distributions of the staining on pedogenic e gravels e grained, with fine distributions of the staining of th
		RDNESS			DDING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
HARD - MOD. HARD - SOFT -	SCRATO		ULT	V. THIN THIN MEDIUM THICK V. THICK	<2"- 2"- 12"- 36"- >12	12" 36" 120"	MODE	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) STATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

							BO	RING LOG			BORING NO. PAGE 4 OF 6	
	El Rode										IOR NO :	0274 000
CONTRACTO	everly H					Ī .						0274.006 of 6
QUIPMENT		CME-7		-01 po	1441011							86.5 Feet
GROUNE	WATER:		DE		ΓΟ (Feet			ORIENTATION		RE BARREL	DATE START: 7	//14/2014
DATE	HRS AF	I WA	ATER		. OF	BOT.		X VERTICAL TY			1	//15/2014
07/44/44	COMP		0.5	CAS	SING	HOI	LE	HORIZONTAL SIZ			 	Martini
07/14/14	ATD	<u> </u>	35						(Feet)		PREPARED BY: J	i WJ 605 Whittier Bl
		<u>A</u>							tal (Feet)		Beverly Hills, Ca	IOS WIIILLIEI DI
EL ELVATIO		CORE	Τ		≿		ြပ		` '	ON, REMARKS, AND L		
CORE DEF (Feet)	PTH F	DEPTH RANGE (Feet)	NUMI		RECOVERY	RaD	GRAPHIC	The Soil Description applies only to may differ at other locations and ma conditions encountered. Transition	a location of ay change wit	the exploration at the tile th time. The description	me of drilling. Subsurfa	ace conditions e actual
—242 -	45 							@44.1': trace coarse grai @44.6' to 45': No Recove @45' to 47.3': Clayey SA brown to reddish brown, s subangular slaty gravels	ery ND with G	Gravel (SW-SC), irained sand, trac	and trace silt, me e coarse grainec	edium I sand,
		45-50	Rur Box		2.3	46	- (<i>y</i> /	@47.3' to 50': No Recove	ery			
-237 ·	50						Δ	@50' to 51.5': Clayey SA very moist, fine to coarse and quartz gravel @51.5' to 52.2': No Reco	e grained,	fine subrounded	to subangular sla	ate, basalt,
		50-55	Rur Box		4.3	86		@52.2': Clayey SAND wi wet, fine to coarse graine below @52.4': Pleistocene Che Sandy CLAY (CL), reddis grained sand, trace fine s developed blocky structu MnO nodules	ed sand, tr eviot Hills sh brown t subangula	Deposits (CHD): o medium brown r slate rock fragn	slaty gravels, abro ——————— to dark olive gra nents, moderately	upt contac — — — — y, fine y to well
—232 ·	55		_	,			333	@55' to 55.6': Sandy CL/grained sand, oxide stain gleying, poorly to modera developed pedogenic fac @55.6' to 57.1': Grades to brown to light olive gray, fragments, dark reddish to structure, oxidation-reduce	ing preval ately devel es o Sandy (wet @51. prown oxio	ent, MnO develo oped blocky stru- CLAY (CL), reddis 1' to 51.5', trace to the staining preval	pment, light olive cture, shimmer o sh orange brown fine subrounded ent, well develop	e gray on well to mediun slate oed blocky
		55-60	Rur Box		5	100		@57.1' to 57.6': Silty CLA to light olive gray, modera gleying prevalent, well de @57.6' to 58.1': Grades to @58.1' to 60': Grades to olive gray, moist, modera oxide staining, shimmer of	AY (CL-MI ately deve eveloped to so Sandy so Silty CLA ately devel	.), with trace sandleped blocky structions aminations Silty CLAY (CL-MY (CL-ML), with soped blocky structions.	d and gravel, red acture, oxide stain L) and, reddish bro cture, gleying pre	dish brown ning, wn to light
–227 ∑	60 —						1111/2/2					
	LD HARD					DING		ATTITUDE AND ANGLE		HEAR / FRACTURE	WEATHERING	
HARD MOD. HARD GOFT	- KNIFE CAN - SCRATCH - SCRATCH - GROVES - CARVES	IES DIFFICU	JLT	ME ME	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLOW OR LOW ANGLÉ (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°)	V. CLOSE CLOSE OD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CO	RE	ВС	RII	NG LOG			BORING NO. CB-14 PAGE 5 OF 6
			zard Inve								
CLIENT: BO			ied Schoo Illing Corp								JOB NO.: 10274.006 PAGE NO.: 5 of 6
EQUIPMENT	_	CME-75		poi ation							ELEVATION: 286.5 Feet
GROUND				TO (Fee				ORIENTATION		ORE BARREL	DATE START: 7/14/2014
DATE	HRS A	I WA	TFR I	OT. OF ASING	BOT.		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: 7/15/2014 DRILLER: Martini
07/14/14	ATD		35	AOIIVO	110			INCLINED	Bit (Feet)		PREPARED BY: JWJ
		Ţ						BEARING	Barrel (Feet)		LOCATION: 605 Whittier Blvd.,
		Ā			1		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
ELEVATION CORE DEP		CORE DEPTH	SAMPLE	Ę,	Rab	일	The			TION, REMARKS, AND L	IMITATIONS ne of drilling. Subsurface conditions
(Feet)	14	RANGE (Feet)	NUMBER	RECOVERY	S	GRAPHIC	may		d may change v	vith time. The description	is a simplification of the actual
		60-65	Run 2 Box 6	5	100		dev frage grade grade structure frage grade structure frage grade structure frage grade gr	by, moist, fine graining gments, gleying preducture 64.4' to 64.5': Thin (over gray, wet, fine to 64.5' to 65': Silty CL prounded slate fragreyalent, gleying previous for the form of 67.7': Sandy (over gray).	Clayey SAN coarse gra AY (CL-ML ments, well valent, thin! CLAY (CL), aining prev	finish on faces, tra I), massive, reddish toe fine subangular the staining, modera ID with Gravel (SW tined sand, subrour I), light olive gray to developed blocky y laminated weak b reddish brown to li alent, gleying preva	rece fine slaty rock n orange brown to light olive slate and siltstone rock ately developed blocky r-SC) lens, reddish brown to nded fine slaty gravels o medium brown, trace fine structure, oxide staining peds, trace MnO nodules oght olive gray, moist, fine alent, trace fine slate and
	70	65-70	Box 7	5	100		gra silt bro gra	y, wet, fine to coars stone gravel 68.5' to 68.8': Becon wan and black MnO 68.8' to 68.9': Claye lined, wet, subround 68.9' to 69.4': Silty	mes Silty S. laminations y SAND wided slate, s	AND (SM), with fines, wet th Gravel (SW-SC) iltstone, and quartz), with fine gravels,	e gravels, wispy thin light lens, fine to coarse z rock fragments medium brown to light bangular slaty gravel
_ _ _ 		70-75	Run 2 Box 7	5	100		@6 oliv @6 sta pec dev pec gra sub	69.4' to 69.7': Claye ye gray, wet, subrou 69.7': Sandy CLAY ining, moist, moder dogenic faces, trace 71' to 72.3': Sandy (ist, gleying prevale yelopment on pedo dogenic faces 72.3' to 75': Become by with orange brow by pangular slate, siltsi	y SAND winded slaty (CL), with the safety developed fine grains CLAY (CL), and, moderat genic faces es Sandy Constaining, tone and questioned slaty.	th Gravel (SW-SC) fine gravel race gravels, light oped blocky structured sand grains between the sand grains between the sand grains between the sand grains between the sand grained that (CL), with gramoist, fine grained partz gravels, FeO sand gravels, FeO sand gravels	, medium brown to light blive gray with orange redure, MnO development on ween pedogenic faces h orange brown staining, ky structure, MnO sand grains between vel, medium brown to olive sand, fine subrounded to
		DNESS		DED	DINC	Ь Т		TITLIDE AND ANOLE	IOINTO /	CHEAD / EDACTURE	MEATHERING
V. HARD - HARD - MOD. HARD - SOFT -	SCRATCI	AN'T SCRATO HES DIFFICU HES EASILY	ILT N	BED V. THIN THIN MEDIUM THICK /. THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5') WOR LOW ANGLE (5-35') PARTELY DIPPING (35-55') OR HIGH ANGLE (55-85') VERTICAL (85-90')	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2":12" 12":36" 36":120" >120" de Mn = Manganese Oxide	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

ECT: El Rodeo Geohazard Investigation T: Beverly Hills Unified School District RACTOR: Martini Drilling Corporation PAGE N ELEVATION THE HRS AFT COMP WATER CASING HOLE HORIZONTAL SIZE DRILLEF WATER CASING BEARING Barrel (Feet) DOCATION WATER CORE DEPTH SAMPLE	O.: 6 of 6 ION: 286.5 Feet
T: Beverly Hills Unified School District RACTOR: Martini Drilling Corporation PAGE N ELEVAT ROUNDWATER: DEPTH TO (Feet): ORIENTATION CORE BARREL DATE S' LITE COMP WATER CASING HOLE HORIZONTAL SIZE MATERIA ST COMP WATER CASING HOLE HORIZONTAL SIZE MICHIEF WATER ST COMP WATER CASING HOLE HORIZONTAL SIZE MICHIEF WATER ST COMP WATER CASING HOLE HORIZONTAL SIZE MICHIEF WATER ST COMP WATER CASING HOLE HORIZONTAL SIZE MICHIEF WATER ST COMP WATER CASING HOLE HORIZONTAL SIZE MICHIEF WATER ST COMP WATER CASING HOLE HORIZONTAL SIZE MICHIEF WATER ST COMP WATER CASING BARREL DATE SIZE MICHIEF WATER ST COMP WATER CASING BARREL TYPE MICHIEF WATER ST COMP WATER CASING BARREL TYPE MATERIA SIZE DATE ST COMP WATER SIZE DATE SIZE	O.: 6 of 6 ION: 286.5 Feet
RACTOR: Martini Drilling Corporation PAGE N ELEVAT PAGE N ELEVAT COUNDWATER: DEPTH TO (Feet): ORIENTATION CORE BARREL DATE ST ATE HRS AFT COMP WATER BOT. OF WATER CASING HOLE X VERTICAL TYPE BOT. OF WATER CASING HOLE SIZE DRILLER 4/14 ATD ▼ 35 INCLINED Bit (Feet) PREPAR 4/14 ATD ▼ 35 BEARING Barrel (Feet) LOCATION ▼ 0 ANG. FROM VERT. Total (Feet) Beverly Inclined	O.: 6 of 6 ION: 286.5 Feet
PMENT USED: CME-75 ELEVAT ROUNDWATER: DEPTH TO (Feet): ORIENTATION CORE BARREL DATE STATE ATE HRS AFT COMP WATER BOT. OF BOT. OF BOT. OF BOT. OF BOT. OF WATER CASING HOLE X VERTICAL TYPE BOT. OF BOT. OF BOT. OF WATER CASING HOLE NICLINED BIT (Feet) DRILLER DRILLER 4/14 ATD ▼ 35 INCLINED Bit (Feet) PREPAR ▼ BEARING BARREL LOCATION DATE STATE STA	ION: 286.5 Feet
ROUNDWATER: DEPTH TO (Feet): ORIENTATION CORE BARREL DATE S' ATE HRS AFT COMP WATER BOT. OF BOT. OF BOT. OF CASING HOLE X VERTICAL TYPE SIZE DATE FI 4/14 ATD ▼ 35 INCLINED Bit (Feet) PREPAR ▼ BEARING Barrel (Feet) LOCATIONS Beverly FI	
ATE HRS AFT COMP WATER BOT. OF CASING BOT. OF HOLE X VERTICAL HORIZONTAL TYPE SIZE DATE FIDE 4/14 ATD ▼ 35 INCLINED Bit (Feet) PREPAFICATION ▼ BEARING Barrel (Feet) LOCATION ▼ 0 ANG. FROM VERT. Total (Feet) Beverly Inclined	TART: 7/14/2014
COMP CASING HOLE HORIZONTAL SIZE DRILLER 4/14 ATD ▼ 35 INCLINED Bit (Feet) PREPAR ▼ BEARING Barrel (Feet) LOCATION ▼ 0 ANG. FROM VERT. Total (Feet) Beverly Included	NISH: 7/15/2014
▼ BEARING Barrel (Feet) LOCATION ▼ 0 ANG. FROM VERT. Total (Feet) Beverly the property of th	R: Martini
■ Total (Feet) Beverly H	RED BY: JWJ
	ON: 605 Whittier Blv
EVATION & CORE DEPTH SAMPLE SAMPLE SAMPLE NUMBER SS GRANGE NUMBER SS GRANG	
RE DEPTH RANGE NUMBER ON THE Soil Description applies only to a location of the exploration at the time of drilling	S
	. Subsurface conditions
(Feet) (Feet) (Feet) (Feet) U U U U U U U U U U U U U U U U U U U	cation of the actual
2 75—	
Total depth of boring: 75' bgs	
Perched groundwater encountered @ 35'-39.7', 40'-41.6', 43	.2'-43.5', 45'-47.3',
52.2'-52.4', 60'-60.2', 64.4'-64.5' and 67.7'-69.7' bgs	
Boring backfilled with bentonite and soil cuttings upon compl	etion of drilling.
Boring capped with approximately 6-inches of Rapid Set Con dye.	icrete and black
Excess cuttings disposed of in D.O.T. approved drums and c	disposed offsite
	,
7	
7 80—	
-	
-	
-	
-	
2 85—	
-	
-	
-	
-	
7 90—	
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHER	RING
D - KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0.5°) V. CLOSE <2" FRESH - SCRATCHES DIFFICULT THIN 2"-12" SHALLOW OR LOW ANGLE (5-35°) CLOSE 2"-12" V. SLIG	
HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55°) MOD. CLOSE 12"-36" SLIGH	Т
- GROVES THICK 36"-120" STEEP OR HIGH ANGLE (55-85°) WIDE 36"-120" MODERA T - CARVES V. THICK >120" VERTICAL (85-90°) V. WIDE >120" MOD. SEV	ERE
V. SEVEI	RE
Fe = Iron Oxide Mn = Manganese Oxide COMPLE	

				CC	RE	ВС	RII	NG LOG			BORING NO.	CB-15
PROJECT:	FLDa	deo Geoha	zard Invo								PAGE 1 OF	1
CLIENT: B											JOB NO.:	10274.006
CONTRACTO											PAGE NO.:	1 of 7
EQUIPMENT	USED:	CME-75	5								ELEVATION:	285.5 Feet
GROUND	WATER	₹:	DEPTH	TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START:	7/15/2014
DATE	HRS	AFT WA	TER BO	OT. OF	BOT.	OF	Χ	VERTICAL	TYPE		DATE FINISH:	7/16/2014
DATE	COI	ИP	CA	ASING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	AT		8.7					INCLINED	Bit (Feet)		PREPARED BY	
		<u> </u>						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.,
				$\overline{}$			0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	N &	CORE DEPTH	SAMPLE	<u>₩</u>		€.,				TION, REMARKS, AND L		
CORE DEF	PTH	RANGE	NUMBER	§%	RgD	GRAPHIC		Soil Description applies on differ at other locations and				
(Feet)		(Feet)		RECOVERY		2	cond	itions encountered. Trans	itions between	soil types may be gradual		i tile dotadi
— 286 — —								Surface: Artificial Fi)'-5': Hand auger	ll, Undocur	mented (Afu):		
5-10 Run 1 Box 1 5 100 Sand							Sar Gry Gry Bro Sla Bro Subro	5': Holocene and P ndy CLAY to Clayend, trace fine slaty of 5.4' to 5.9': Silty Clayend, fine grained sand 5.7', light reddish brown, dry to slightly rete and siltstone graf 7.5' to 10': Sandy, Cown, to medium brown angular slate and sidized	y SAND (So gravels yey SAND trace subrown, grada CLAY (CL), noist, fine g vels, poorly Clayey GRA vn, slightly	C-CL), with silt, oliv (SM-SC), olive bro ounded fine slaty of tional contact with gravels, light r grained sand, trace of developed blocky VEL (GC), reddish moist, fine grained	we brown, dry, wan to light red gravels, clay la reddish brown fine tabular to structure a brown to light sand, subrour	dish brown, mination to medium subrounded orange nded to
 276	10-			+			_ =:	10': Pleistocene All		opodict Capyon W	lach (BCW):	
_ _ _ 271		10-15	Run 2 Box 1	5	100		Sa pod	no. <u>Prestocene An</u> ndy CLAY (CL), with orly developed bloc d siltstone gravel, g	h trace grav ky structure	vels, reddish browr e, pinhole voids, tra	n, moist, fine g	
FIE	ELD HAI	RDNESS		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT	FIELD HARDNESS BEDDING - KNIFE CANT SCRATCH V. THIN <2" - SCRATCHES DIFFICULT THIN 2"-12" - GROVES HICK 36"-120" - CARVES V. THICK 36"-120"						SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF 7	CB-15
ROJECT:			eohazar										
CLIENT: E			Unified S i Drilling									JOB NO.: PAGE NO.:	10274.006 2 of 7
ONTRACTO QUIPMENT	_			; corpo	บา สนาปก							ELEVATION:	285.5 Feet
GROUNE				DEPTH	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START:	7/15/2014
DATE	HRS	- 1	WATER	- 1	T. OF	BOT.		Χ	VERTICAL	TYPE			7/16/2014
	CON	-		CA	SING	HOI	.E		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	AT	_	<u>⊽</u> 38.7 ▼						INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY: LOCATION:	JWJ 605 Whittier Blv
		_	<u>1</u>					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	003 WHILLIEF BIV
=======================================		COF			T >- 1		ပ	Ť		. ,	TION, REMARKS, AND		
CORE DEI	РТН	DEP RAN	TH SA	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	ly to a location of	of the exploration at the t	time of drilling. Subsui	
	15—	15-2		un 1 ox 2	5	100		tra be @ wit str	17.4' to 17.9': Claye ce fine tabular and low 17.9' to 21.5': Grade h minor olive gray g ucture, trace fine gr	subangular es to Sandy gleying, mo avel, trace	CLAY (CL), reddist, fine grained sarootlets	e silt, gradationa ish brown to meand, poorly devel	dium brown oped blocky
	_	20-2		un 2 ox 2	5	100		mo str lar	oist, fine grained sai ucture, @22' very fa ninations 24.1': Becomes Silt	nd, trace fir aint thin ligh	ne subaṅgular grav nt olive gray and o SAND (SW-SM), v	vel, poorly devel range reddish bi	oped blocky rown ght reddish
—261	25						. a . a . a		own to medium brow			ned sand, subrou	unded to
	-	25-		un 1 ox 3	2.4	48		CL su gle	25.9': Pleistocene A AY (CL) with Sand, brounded slaty grav eying, poorly develo 27.4' to 30': No Rec	reddish ora rels, modera ped thin lar	ange brown to ligh ately developed bl	nt olive gray, moi locky structure, s	some
- - 256	30												
	ELD HAF	RDNES	ss		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT /. SOFT	- KNIFE (- SCRAT(- SCRAT(- GROVE - CARVE	CHES D CHES E S	IFFICULT	ME T	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MOD	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. C	CB-15
ROJECT: CLIENT: B	everly H	ills Unifi	ied Scho	estigation ol Distric poration	t							4.006 7
QUIPMENT		CME-75		poracion								Feet
GROUND		-		H TO (Fee		05		ORIENTATION		ORE BARREL	DATE START: 7/15/2	
DATE	HRS AF	I WA	TFR I	OT. OF CASING	BOT.	- 1	Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: 7/16/3	
07/15/14	ATD	☑ 38		3/10/110	110			INCLINED	Bit (Feet)		PREPARED BY: JWJ	
		Ţ						BEARING	Barrel (Feet)		LOCATION: 605 V	Whittier Blvd
		Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N& r	CORE DEPTH	SAMPLE	_ }		≗ ಜ	l _			TION, REMARKS, AND L		
CORE DEP (Feet)	'ТН Б	RANGE (Feet)	NUMBE	- · ·	Rab	GRAPHIC LOG	may		d may change v	ith time. The description	me of drilling. Subsurface of is a simplification of the act.	
-	35	30-35	Run 2 Box 3	ויי	100		mo sla	oderately developed ty gravel, trace Mno	l blocký střu O developm y Silty CLA	icture, fine grained ient, gleyed Y (CL-ML), light rec	light olive gray, moi I sand, trace fine sul ddish brown to medi ped blocky structure	bangular
Ţ -		35-40	Run 1 Box 4	ר ו	100	Δ	find grade de sul	e subrounded slaty 36.2': Sandy CLAY ained sand, trace fir veloped dark purplis 38': Clayey SAND wry moist, fine to merounded to subang 38' to 39.4': Become adium brown, with darse grained sand,	im brown to olive givel, blocky structur (SW-SC), medium d sand, trace coar siltstone, and basa LAY (CL-ML), with a red stained nodul nded slate, siltstone.	gray, very moist, fine e, with pods of well brown to reddish br se grained sand, wilt gravels gravels, reddish br es, very moist, fine e, and basalt gravel el, medium brown to	rown, th fine own to to	
-	45	4 0-45	Run 2 Box 4		74		grade sales sul	40' to 40.4': Sandy of the to coarse grained avel 40.4': Sandy CLAY ay gleying, fine grain 40.7' sandstone condier	GRAVEL (C sand, subro (CL), light red sand, tro bble, trace	eddish to medium ace fine subangula carbonate stringer	brown to olive gray, tone, basalt, and quibrown with minor ligar slaty fragments, (s, @42' to 42.1' become medium brown, moult gravels, @43.3' s	ght olive @40.5' comes
	10	NECC			 	Ц.,	<u> </u>	TITLIDE AND AND	1017:	OUEAD / FDAST: TE	14/F A T. / F S 11 /	
	LD HARD		Н		DING		AT	HORIZONTAL (0.5°)		SHEAR / FRACTURE <2"	WEATHERING	
HARD - MOD. HARD - SOFT -		I'T SCRATC ES DIFFICU ES EASILY	LT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	⊘" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				(CO	RE	BC	RII	NG LOG			BORING NO. PAGE 4 OF	CB-15
PROJECT: CLIENT: Be	everly	deo Geoha Hills Unit Iartini Dr	fied Sch	ool Di	istrict							JOB NO.: PAGE NO.:	10274.006 4 of 7
EQUIPMENT I	USED:	CME-7	5									ELEVATION:	285.5 Feet
GROUND			DE	PTH TC					ORIENTATION		ORE BARREL	DATE START:	7/15/2014
DATE	HRS	I WA	TER	BOT.		BOT.		X	VERTICAL	TYPE		DATE FINISH:	7/16/2014
	CON			CASIN	NG	HOL	.E		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	AT		8.7						INCLINED	Bit (Feet)		PREPARED BY	
		Ţ			-				BEARING ANG. FROM VERT.	Barrel (Feet)		LOCATION:	605 Whittier Blvo
					.			0		Total (Feet)		Beverly Hills, Ca	1
ELEVATION		CORE DEPTH	SAME	DI E	É	0	9€,				TION, REMARKS, AND L		
CORE DEP	TH	RANGE	NUME	BER	ૢૺૢૢૢૢૢૢૢૢૢ	Rab	GRAPHIC LOG		Soil Description applies onl differ at other locations and				
(Feet)		(Feet)			RECOVERY %		5		itions encountered. Transi			, , , , , , , , , , , , , , , , , , , ,	
— 241 4 - - -	-	45-50	Run Box		3.8	76		sai @4 we @4 bas	45' to 45.5': Gravelly ist, gleyed, moderand and clay laminatid 45.5' to 48.8': Grave t, fine grained 45.8' to 46': Become salt gravels at basa	tely develo ions elly SAND (es fine to co I contact	ped blocky structur SP), reddish brown	re, faint thinly to olive gray,	very moist to
-		50-55	Run Box		5	100		gra gra gra Sili de	50' to 50.8': Clayey dish brown to medi ained sand, fine sub avels, sharp contact 50.8': Pleistocene C ty CLAY (CL), dark veloped oxide stainininated, oxidized, gl	um brown to rounded to below heviot Hill olive gray, ng and noo	to light yellow brow subangular slate, l s Deposits (CHD): moist, well develop dules, MnO develop	n, moist, fine basalt, and sile — — — — oed blocky structured by the company of t	to coarse stone
- - - 226 6		55-60	Run Box		5	100		olivinos de de de vai	55.4' to 55.5': Thin Size gray, fine grained 55.5' to 65.3': Sandy ist, varved, fine grained thin lamination 56' to 56.8' dark oliveloped blocky structure of 56.8': Sandy CLAY rived, fine grained safined thin lamination	d sand y CLAY (CL ined sand, ns, oxidation e gray verticture, clay of (CL), reddisand, scatter	.), reddish orange be scattered fine slate n-reduction banded ical gleying, oxide sedeveloped pedoger sh orange brown to red fine slate and s	orown to dark e and siltstoned staining preva nic on faces, r dark olive gra iltstone gravel	olive gray, gravels, well ent, well ninor MnO
FIF	LD HΔI	RDNESS	' 		BEDI	DING	<u> </u>	ДТ	TITUDE AND ANGLE	.IOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE (CAN'T SCRATI CHES DIFFICU CHES EASILY		V. TH THII MEDII THIC V. THI	HIN N UM CK	<2"-1: 2"-1: 12"-3 36"-1: >120	2" 66" 20"	SHALL	HTODE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre><2" 2"-12" 12".36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				(CO	RE	BO	RI	NG LOG			BORING NO. PAGE 5 OF	CB-15
PROJECT:	El Ro	deo Geoha	azard l	Investi	gation	1						TAGE 5 GI	ı
CLIENT: B						t						JOB NO.:	10274.006
CONTRACTO EQUIPMENT		Martini Dr CME-7:		Corpor	ation							PAGE NO.: ELEVATION:	5 of 7 285.5 Feet
GROUND				EPTH TO	O (Feet	t):			ORIENTATION	С	ORE BARREL	DATE START:	7/15/2014
DATE	HRS	AFT	TER	вот.		BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/16/2014
	COI	MP		CASI	NG	HOI	.E		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	AT	D	8.7						INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY:	
		<u> </u>						0	ANG. FROM VERT.	Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blv
ELEVATIO	NI P	CORE			≿		ပ		1	. ,	TION, REMARKS, AND LI		
CORE DEF		DEPTH RANGE (Feet)	SAM NUM	PLE BER	RECOVERY %	RQD	GRAPHIC LOG	may	Soil Description applies only differ at other locations and ditions encountered. Transi	d may change v	vith time. The description i		
— 226 €221	▼ 65-70 Run 1 Box 7 5 100					@ va de @ we @ grstil @ su @ da	64.1': heavy gleyed 64.4' to 65' increase 65': Sandy CLAY (Orved, fine grained safined thin lamination 65.3' to 65.5': Silty Set, fine grained, oxid 65.5' to 66.2': Sandy ay, gleyed, oxide staructure 66.2' to 66.3': Sandy brounded slaty grav rk olive gray, moist, brounded fine slaty	CL), reddish and, scatter ins, oxidation SAND (SM) ized heavily y Silty CLA' aining preva y GRAVEL el	red fine slate and sin-reduction banded lens, dark brown to at contact below Y (CL-ML), reddishilent, poorly to mod (GW) lens, fine to cCL-ML), and sand, rO staining prevaler	Itstone gravels oreddish orange orange brown erately develo coarse grained eddish orange at, fine grained	ge brown, to dark olive ped blocky sand, brown to sand, trace		
						• ¥0	face and see a see	cies, MnO developm 67.1' to 67.5': Sandy ind, subrounded to solow 67.5' to 68.8': Silty Sown to olive gray, m 68.8' to 70': Sandy Coderately developed	ent y Clayey Gl subangular Sandy CLA oderately to CLAY (CL), blocky stru	RAVEL (GW-GC) lessate and siltstone of the siltstone of t	ens, fine to coa gravels, abrupt e gravels, redd ocky structure, own to olive gra	arse grained t contact with ish orange very moist, ay, moist,	
-	_	70-75	Rui Bo		2.5	50		@grade grade	arse sand grains be 70' to 70.2': Thin Clained sand, with sub 70.2' to 71.7': Sandy ay, moist, well develoes 71.7' to 71.9': Sandy 71.9' to 72.5': Silty Say, very moist, well avel lens 72.5': No Rec	ayey SAND pangular sla y Gravelly C oped block y Clayey Gl Sandy CLA' developed I	with Gravel (SW-S aty gravels CLAY (CL), with silt, y structure, oxide si RAVEL (GW-GC) le Y (CL-ML), with gra	reddish brown taining, waxy f ens, wet vel, reddish br	n to olive rinish on
—211 ▽ 7	75—		-	-+									
FIF	LD HAI	RDNESS			BEDI	l DING		٦ Δ٦	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD - HARD - MOD. HARD - SOFT -	RD - KNIFE CAN'T SCRATCH D - SCRATCHES DIFFICULT THIN HARD - SCRATCHES EASILY MEDIUM - GROVES THICK				HIN IN IUM CK	<2"-1. 2"-1. 12"-3 36"-1. >12	2" 66" 20"	SHALI	HORIZONTAL (0-5°) .OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB-15
PROJECT:			eohazard										
CLIENT: <u>I</u>			Unified S i Drilling									JOB NO.: PAGE NO.:	10274.006 6 of 7
QUIPMENT	_			Corpe	oi ation							ELEVATION:	285.5 Feet
GROUNE	WATER	₹:	[TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/15/2014
DATE	HRS		WATER	1	T. OF	BOT	- 1	Х	VERTICAL	TYPE		DATE FINISH:	7/16/2014
07/15/14	CON	-		CAS	SING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini
07/15/14	All	_	<u>¥</u> 36.1 ¥	1					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		_	Ā					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
ELEVATIO	N &	COF			RY		ဍ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE	РТН	RAN (Fee	GE NUI	MPLE MBER	RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and litions encountered. Trans	d may change v	vith time. The description	is a simplification o	
—211 -	75—								75' to 76.1': Silty SA arsens downward, s			et, fine to medi	ium grained,
							Δ . Δ	co	76.1' to 77': Become arse grained sand, bangular fine grave	primarily su			
-		75-8		ın 1 ox 8	5	100		@ me	77' to 80.7': Becomedium brown, wet, g	es Clayey S radational d	andy GRAVEL (G contact below	W-GC), black	and white to
-206 80									80' to 82': Silty SAN			grained, @81	.3' to 82'
	_								edium grained, abur 82' to 82.3': Sandy (Ü		et, primarily cc	parse grained
	_	80-8		un 2 ox 8	5	100		@ @ ba lar tra	nd, subrounded to r 82.3': 1-inch glayed 82.3' to 83.1': Silty (nds, well developed 83.1' to 89.8': Sand ninations, moist, ma ce fine subangular ucture, oxide stainir	CLAY (CL-N I blocky stru y CLAY (CL assive unit, slate and si	ML), dark olive gray acture, waxy finish), dark red brown oxidation-reduction ltstone gravels, we	y, massive, mo on faces, oxid with dark olive n banded, fine ell developed b	e staining gray grained sand locky
-201	85	85-9		un 1 ox 9	5	100		fac	es				
— 196	90							@	89': Dark red clayey	paleosol			
													_
	ELD HAF					DING	I	AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT /. SOFT	RD - SCRATCHES DIFFICU ID. HARD - SCRATCHES EASILY FT - GROVES				THIN THIN EDIUM HICK THICK	<2 2"-1 12"- 36"-1 >12	2" 36" 20"	MOD	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

PROJECT JET Better Jet lib Laffed School District USB NO. 10274A08 JOB NO. 17 of 1				C	ORE	BC	RII	NG LOG			BORING NO. PAGE 7 OF	CB-15
Comprehent Legar Comprehent Comprehe												
COURTMENT USED: CMLE-78 RORLOWANTER DATE POSSIBLE SECURITY MATER CASING	_										1	
GROLAPMATER DEPTH OF PROTOF OCH 1 AT WATER COUNTY WATER				Corporatio	n							
DATE RNSS APT WATER BOT, OF BOT, OF MOLE STAND S				EDTH TO (F	oot):			ORIENTATION		ORE BARREI		
DOTIS COMP WATER CASING HOLE HORIZONTAL SIZE DIFFERENCE PROPERTY OF THE PROPER						. OF	X			ONE DANNEL		
SEARING Barrel (Feet) Bover-Hills Call Barrel (Feet)	DATE	l	WATER	1							1	
ELEVATION 8 CORE DEPTH (Feet) NUMBER SAMPLE (Feet) PRID CASSIFICATION REMARKS, AND LIMITATIONS NUMBER SAMPLE (Feet) NUMBER SAMPLE SAMPLE (Feet) NUMBER SAMPLE (Feet) NUMBER SAMPLE SAMPLE SAMPLE (Feet) NUMBER SAMPLE SAMPL	07/15/14	ATD	<u></u> 38.7					INCLINED	Bit (Feet)		PREPARED BY	JWJ
ELEVATION & CORE DEPTH RANGE (reet) 196 90 - 90-95 Run 2 5 100 99-95 Rox 9 9-95 Rox	-										-	605 Whittier Blv
### 105 #### 105 #### 105 #### 105 #### 105 #### 105 #### 105 ##### 105 ##########		<u> </u>			1		0	1	· · ·	<u></u>		
### 105 #### 105 #### 105 #### 105 #### 105 #### 105 #### 105 ##### 105 ##########		N& D		MPIF X		≌ູ						
@90.9': MnO bands @92.9': MnO bands @92.9': MnO bands @92.9': MnO bands @93.9': MnO bands Total depth of boring: 95' bgs Perched groundwater encountered @ 39.4'-40.4', 45.5'-48.8', 65.3'-65.5', 77.70.2', 71.7'-71', and 75'-82.3' bgs Boring backfilled with bertionate and soil cuttings upon completion of drilling boring capped with approximately 6-inches of Rapid Set Concrete and black of the concrete		TH R	ANGE NUM	IBER S	g g	GRAP	may	differ at other locations and	d may change v	vith time. The description	ne of drilling. Subsi is a simplification o	rface conditions the actual
Total depth of boring: 95' bgs Perched groundwater encountered @ 39.4'-40.4', 45.5'-48.8', 65.3'-65.5', 70'-70.2', 71.7'-71.9', and 75'-82.3' bgs Boring backfilled with bentonite and soil cuttings upon completion of drilling Boring capped with approximately 6-inches of Rapid Set Concrete and black dye. Excess cuttings disposed of in D.O.T. approved drums and disposed offsite 100— 186 100— 181 105—	196 -	-			100		@ @	92.3': MnO bands 92.9': MnO bands				
	Total depth of boring: 95' bgs Perched groundwater encountered @ 39.4'-4 70'-70.2', 71.7'-71.9', and 75'-82.3' bgs Boring backfilled with bentonite and soil cuttir Boring capped with approximately 6-inches of dye. Excess cuttings disposed of in D.O.T. approv								8' bgs nd soil cuttings upo / 6-inches of Rapid	on completion Set Concrete	of drilling. and black	
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING . HARD - KNIFE CAN'T SCRATCH	FIE	ELD HARDN - KNIFE CAN'T - SCRATCHES - SCRATCHES	SCRATCH DIFFICULT	V. THIN THIN MEDIUM	2"- 12"	12" -36"	SHALL	OW OR LOW ANGLÉ (5-35°) ERATELY DIPPING (35-55°)	V. CLOSE CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	

					СО	RE	BC	RII	NG LOG			BORING NO.	CB-16		
PROJECT: CLIENT: B	everly		ified Sc	hool l	Distric	t						JOB NO.:	10274.006		
CONTRACTO	_	Martini D		Corpo	ration							PAGE NO.: ELEVATION:	1 of 7 285 Feet		
EQUIPMENT GROUND				PTH	ΓΟ (Feet	t)·			ORIENTATION	C	ORE BARREL	DATE START:	285 Feet 7/16/2014		
	HRS	AFT			OF	BOT.	. OF	Х	VERTICAL	TYPE		DATE FINISH:	7/17/2014		
DATE	COI	MP W	ATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini		
07/16/14	AT		35						INCLINED	Bit (Feet)		PREPARED BY	: EBP		
		<u> </u>							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd		
		Z.					T	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1		
ELEVATIO		CORE DEPTH	SAM	PLE	Ę.	_	€ 5				TION, REMARKS, AND L				
CORE DEF (Feet)	тн	RANGE (Feet)	NUM	BER	RECOVERY	Rap	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	is a simplification of	f the actual		
 285	0-							@:	Surface: 8-inches A	sphalt Con	crete				
-	_						р Ь 1	@(0.67': 7-inches Port	land Cemer	nt Concrete				
- - - 280							@1.25': Artificial Fill, Undocumented (Afu): @1.25 to 5': Hand auger @5': Holocene and Pleistocene Alluvium of Benedict Canyon Was Sandy SILT with Clay (ML), dark brown, moist, fine to medium grain								
	_	5-10	Rui Bo:		5	100		©5": Holocene and Pleistocene Alluvium of Benedict Canyon Wash: (Qal Sandy SILT with Clay (ML), dark brown, moist, fine to medium grained san trace gravel ©5.5' to 6.5': Silty SAND (SM), dark yellowish brown, moist, fine grained, to clay, few fine to coarse subrounded to subangular gravels ©6.5' to 7.7': Silty CLAY (CL), with sand, dark brown, moist, fine to coarse grained sand, trace fine gravel ©7.7' to 8.1': Clayey SAND (SC), dark yellowish brown, moist, fine grained sand, few coarse sand and gravel, gradational contact ©8.1' to 10.2': Silty SAND (SM), dark yellowish brown, moist, fine grained, coarse grained sand, fine to coarse gravel, trace clay							
- 275 10 - 275															
—270	15														
							L.,						_		
								AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING			
HARD MOD. HARD SOFT	FIELD HARDNESS BEDDING						2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE			
										1e - 11011 OXI	de Mn = Manganese Oxide				

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF 7	CB-16
PROJECT:		leo Geoh										JOB NO.:	10274.006
CLIENT: B		artini Di											10274.006 2 of 7
QUIPMENT				corpo	71 11 11 10 11								285 Feet
GROUNE	WATER:		D	EPTH :	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START: 7	7/16/2014
DATE	HRS A	I W	ATER	l	Γ. OF	BOT.		Х	VERTICAL	TYPE			7/17/2014
07/10/11	COM	Р		CAS	SING	НО	LE		HORIZONTAL	SIZE		 	Martini
07/16/14	ATD	<u> </u>	35						INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY: I	E BP 605 Whittier Bl
		<u> </u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	DOS WITHURET DI
EL ELVATIO		CORE			┌╧		ြပ		1	. ,	TION, REMARKS, AND		
CORE DEF (Feet)		DEPTH RANGE (Feet)	SAN	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	nly to a location of	of the exploration at the to vith time. The description	ime of drilling. Subsurfa	ace conditions ne actual
-	15—	15-20	Ru Bo	n 1 x 2	5	100		mea	15.3' to 17.7': SANE e grained sand, trace fine grave ty gravels 18.4' to 19.9': Clayedium grained, few ty gravels	y CLAY (CL I, few coars ey SAND (S fine to coars	.), , dark yellow br e gravel, mainly s C), dark yellowish se gravel, mainly s	own, moist, fine gubrounded to sub brown, moist, fin subrounded to su	grained bangular ee to bangular
	_	20-25	Ru Bo	n 2 x 2	5	100		find sul @2 gra	e to medium graine bangular slaty grave 20.9' to 23.6': Sand sined sand, trace co	d sand, fewel y CLAY (CL parse graine	r fine to coarse gra -), dark yellowish bed sand	orown to brown, r	noist, fine
-260	25						<i>[]</i>		25' to 25.2': Sandy	CLAY (OL)	dod brever'	t modi	
	-	25-30	Ru Bo	n 1 x 3	3.9	78		sai @2 find @2 no bas gra	nd, few fine gravels 25.2' to 26.2': Silty 3 to medium graine 25.7': Becomes Silt clay 26.2' to 26.4': Sandarse grained sand, salt, and granitic graphs are grained sand, salt, and granitic graphs and granitic graphs are grained, trace fine graphs are graphs and granitic graphs and granitic graphs are granitic graphs and granitic graphs are granitic graphs and granitic graphs are granitic graniti	SAND with of sand, trace y SAND (SI y GRAVEL fine to coar avels, oxide SAND (SM) ivel GRAVEL (of Benedic SAND (CR) in the same in the sam	Clay (SM-SC), dange fine gravel, fining M), yellow brown, (GW), dark yellow se subrouned to se stained, dark yellowish brown, siltstone to the carry of the carry	rk yellowish browng upwards from a fine to coarse gradish brown, moist ubangular slate, sown, moist, fine the and slate clasts 3CW ₂):	n, moist, 26.4' ained sand , fine to siltstone, to coarse
—255	30							fev	27.7': Sandy CLAY v slaty gravels 28.9' to 30': No Rec		on-Diown, moist, th	ace coarse grain	eu sanu,
FIE	ELD HARI	DNESS			BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
FIELD HARDNESS BED					<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE		

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF 7	CB-16
ROJECT:			eohazard		-								
LIENT: I													74.006
CONTRACTO	_			Corp	oration								f 7 Feet
GROUNE				DEPTH	TO (Fee	t)·			ORIENTATION	T 0	ORE BARREL		6/2014
	HRS	_			T. OF	BOT.	OF	Х	VERTICAL	TYPE			7/2014
DATE	CON	MP	WATER	CA	SING	НО	LE		HORIZONTAL	SIZE		DRILLER: Ma	rtini
07/16/14	AT	D .	<u></u> 35						INCLINED	Bit (Feet)		PREPARED BY: EBI	P
			Ţ						BEARING	Barrel (Feet)		LOCATION: 605	Whittier Blv
	<u> </u>		Ā		,			0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	ON &	COF	1	MDI E	Ϋ́		₽		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
(Feet)		RAN (Fee	GE NUI	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may		d may change v	vith time. The description	time of drilling. Subsurface on is a simplification of the a al.	
—255	30							fin	e gravel	. , , ,		noist, fine grained sa	and, trace
	-						6	_	30.6' to 31.3': SANE				
	_	30-3		un 2 ox 3	5	100			31.3' to 33.6': Sand	y CLAY (CL	.), dark yellow bro	own, moist, trace coa	arse
	_							gra	ained, trace fine gra	vel	, ·	brown, moist, fine	
–250 ∑	35—							to	medium grained sa	nd, trace fir	ne gravel	yellowish brown, m	
		35-4	40	un 1 ox 4	5	100		CO @	arse grained sand, 1 35.6': Fine grained s 36.9' to 37.1': Few f	trace clay sand	·	momon brown, wet,	
	-								·	. ,		grained, yellowish br	
−245 ∑	40							↓ sta	39.5' to 42.1': CLAY aining along laminat 41.5': rounded 1+1/	ions	•	st, gleying and oxida	ition
-						@in	40' to 42.1': SAND v e to medium graine	with Clay (S d, trace fine	C), dark yellowisl gravel	n brown to olive bro			
	-	40-4		un 2 ox 4	4.8	96		sa	nd, few fine to coars	se subangu	lar slaty gravels,	orown, moist, fine gr slight oxide staining	
							111	4\gra	ained, sharp contact	t below, at I	pasal siltstone roc		
-								gra	ained sand	,		brown, moist, trace	
-240	45						<i>V////</i>		ce fine gravel	4D (OIVI), (acit yellowish blo	wii, moist, iilie gidli	iou saiiu
	ELD HAI	RDNES	SS		BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT /. SOFT		CHES D CHES E S	CRATCH DIFFICULT ASILY	ME T	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MOD	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 4 OF	
ROJECT:			hazard									105	1005 - 55 -
LIENT: <u>E</u> ONTRACTO												JOB NO.: PAGE NO.:	10274.006 4 of 7
QUIPMENT				Cor pt	or ativil							ELEVATION:	285 Feet
GROUNE				EPTH :	TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	7/16/2014
DATE	HRS A	l V	VATER		T. OF	BOT.		Х	VERTICAL	TYPE		DATE FINISH:	7/17/2014
07/16/14	COM		35	CAS	SING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini
07/10/14	_ ^IL	<u> </u>	- 55						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
		<u>Ā</u>						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
ELEVATIO	ON &	CORE			<u>₩</u>		₽		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEI (Feet)		DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	Rad	GRAPHIC	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	
—240 —	45—							sa	44' to 44.8': Sandy ond, trace fine grave	l at base of		wn, moist, fine	e grained
	4						144	<u>ب</u> الا	44.8 to 45 : No Red 45' to 45.7': Sandy \$		dark vellowish brow	vn moist fina	grained sand
								1	45.7' to 46': CLAY v				3. aloa 3all
								110	46' to 46.5': Silty SA				grained
		45-50		n 1 x 5	4.1	82			46.5': SILT with Sar ained sand	nd (ML), yel	lowish brown, very	moist, fine to	coarse
	_						\bigcup	1 —	48.9': GRAVEL (GP	·	II cemented gravel	S	
								@	49.1' to 50': No Rec	overy			
–235 ∑	50		+				НП	H_	eistocene Cheviot H		its (CHD):		
								╁@:	50' to 50.5': Sandy	SILT (ML),		vn, wet, fine gi	rained sand,
									ckets of gleyed clay		orango somo ho	ndina	
	7							/	50': 1-inch Clay, gle 50.5' to 51.6': Claye	,			along
							PH4		ninations	y Oı∟ı (IVIL	-ocj, biowii, veiy i	noisi, gieying	aiony
	4								51.6' to 53.6': Grade			sh brown, mois	st, gleying
		50-55		n 2	5			an	d oxidation staining	along lamii	nations		-
		JU-55	Во	x 5	3	100							
	7												
$\bar{\nabla}$								_		01.454.55			
] @:	53.6' to 54.4': Sand	y CLAY (CL	.), brown, wet, fine	grained sand	
								1					
								54	.4' to 55.3': Grades	to Clayey S	SILT (ML), with fine	grained sand	, very moist
-230	55 —						$\{ \mid \mid \mid \mid$						
								@:	55.3' to 55.9': Silty (CLAY (CL),	with sand, olive br	own, very moi	st, fine
									ained sand	oond , ,,		•	
									55.6': Trace coarse 55.9' to 56.4': Sand) fine to medium (nrained sand	trace fine
								∖gra	ivel	,	,		
	4							@	56.4' to 62.8': Sand	y CLAY (CL), olive brown, mo	ist, vertical gle	ying, fine to
		55-60		n 1	5	100		me	edium grained sand	, trace fine	gravel		
$\bar{\Delta}$			Во	x 6		100							
	7												
	4												
								1					
225													
-225	60						,,,,,,	1					
FIE	ELD HAR	RDNESS			BED	DING		AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
. HARD ARD		AN'T SCRA			THIN THIN	<2 2"-1		SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
IOD. HARD OFT		CHES EASI		ME	EDIUM HICK	12"-: 36"-1	36"	MODI	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	- CARVES				THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	
				1						i company			

					CO	RE	BO	RII	NG LOG			BORING NO. PAGE 5 OF	7 CB-16
PROJECT: CLIENT: <u>B</u> CONTRACTO		lls Unifi	ed Scl	hool I	District							JOB NO.: PAGE NO.:	10274.006 5 of 7
QUIPMENT		CME-75										ELEVATION:	285 Feet
GROUND			DE		O (Feet		05		ORIENTATION		ORE BARREL	DATE START:	7/16/2014
DATE	HRS AFT	WAT	TER	BOT		BOT. HOI	- 1	Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: DRILLER:	7/17/2014 Martini
07/16/14	ATD	<u> </u>	5	OAO	1110	1101	-		INCLINED	Bit (Feet)		PREPARED BY	
		¥ 3.							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		Ā						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	ı
ELEVATIO CORE DEF	N& D	ORE EPTH ANGE	SAMI		RECOVERY	RQD	GRAPHIC LOG	The S	FIEL Soil Description applies on differ at other locations and	ly to a location	TION, REMARKS, AND L of the exploration at the tin	ne of drilling. Subsi	urface conditions
(Feet) 225	60-	Feet)			Ä		<u>ত</u>	condi	tions encountered. Trans	itions between	soil types may be gradual.	·	
-	-	0-65	Rur Box		5	100	• • •	\sut @6 sar @6 sar 63.	52.8' to 62.9': Claye cangular slaty grave 52.9' to 63.7': Sandy nd, trace fine grave 63.5' to 63.8': Grave nd, fine subangular 8' to 64.6': Sandy (els y CLAY (CL elly SAND b slaty grave CLAY (CL),	ed (SP), olive browl lolive brown, wet, tr	lium to coarse vn, wet, coarse ace fine grave	grained e grained el, gleying
	-	5-70	Rur Box		5	100		@6 sta @6 sar	64.6': Sandy GRAV ined sand 64.9': Fine slate and ining 65' to 69': Clayey G	d basalt gra RAVEL (Go GRAVEL (in the second control of the seco	vels, trace coarse (C), fine to coarse grade (C), brown, wet, midded to subangular (C)	gravels, minor ravels, poor re edium to coars gravels, well ce	oxide covery se grained emented
—215 - -	70 - 7	0-75	Rur Box		4.3	86		@7 gra	69.5' to 70': Sandy of dium grained sand, 70' to 74.2': SAND (ined sand, trace sile sand, trace sile sand).	trace fine SP), yellow t	gravels 'newn, wet, me	dium grained,	trace coarse
—210	75							Lila	se coarse granied s	oariu			
FIE	LD HARDN	IESS			BEDI	DING		AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT	KNIFE CAN' SCRATCHE SCRATCHE GROVES CARVES	T SCRATCI S DIFFICUL		TH MEI TH	THIN HIN DIUM HICK HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) :RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre></pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CO	RE	ВО	RING LOG	BORING NO. CB-16
PROJECT:	El R	odeo Geoha	azard Inves	stigation	1			PAGE 6 OF 7
		y Hills Unit					_	JOB NO.: 10274.006
CONTRACT	OR:]	Martini Dr	illing Corp	oration				PAGE NO.: 6 of 7
		: CME-7						ELEVATION: 285 Feet
GROUN				TO (Fee	,	0.5	ORIENTATION CORE BARREL	DATE START: 7/16/2014
DATE	- 1	AFT WA	TFR I	T. OF SING	BOT. HOI		X VERTICAL TYPE HORIZONTAL SIZE	DATE FINISH: 7/17/2014
07/16/14		TD ∑ :		SING	пО	LE	INCLINED Bit (Feet)	DRILLER: Martini PREPARED BY: EBP
07/10/14		<u>¥</u> .	55				BEARING Barrel (Feet)	LOCATION: 605 Whittier Blvd
		<u>A</u>					0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
		CORE		T ≻		U	FIELD CLASSIFICATION, REMARKS, AND L	
CORE DE		DEPTH	SAMPLE	¥	2g	Ξg	The Soil Description applies only to a location of the exploration at the tir	
(Feet		RANGE	NUMBER	RECOVERY	×	GRAPHIC LOG	may differ at other locations and may change with time. The description	
		(Feet)		_ ₹		_	conditions encountered. Transitions between soil types may be gradual.	
 210	75—						\@74.3' to 75': No Recovery	
						· . · .	@75' to 76.5': SAND (SP), yellowish brown, wet, me	edium grained, trace coarse
							grained sand, trace silt	-
_	_							
							070 514- 771 0 to 0DAV(51 (0)AV) IIib-b	
							@76.5' to 77': Sandy GRAVEL (GW), yellowish brov sand, fine subrounded gravel	vii, wet, coarse grained
=	_]					@77' to 77.8': Gravelly CLAY to Clayey GRAVEL (G	C) dark vellowich brown to
		75-80	Run 1	2.8	56	\$\\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	olive brown, moist, fine to coarse slaty gravels, mod	erate oxide staining
			Box 8		96	<i>46/18/</i>		
-	_	1					@77.8' to 80': No Recovery	
-								
-205	80							
-203	80						@80' to 80.7': Silty CLAY (CL-ML), olive gray, moist	
							sand, oxidation staining, gleyed zone, top of thick so	oil development
_							@80.7' to 85': CLAY (CL), reddish brown, moist, trad	ce coarse grained sand,
							trace fine gravel, slight gleying, faint lamination, 1-fo	ot thick gleyed clay over
							oxidation-reduction banded clay unit	
_								
			Run 2					
		80-85	Box 8	5	100			
_	_							
-	_							
200	85			1			00514 07 41 0 4 01 01 01 01	H - 1 1 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1
							@85' to 87.1': Sandy CLAY with Gravel (CL), dark y	ellowish brown, moist, trace
							coarse grained sand, trace fine to coarse gravel	
_	_							
							@00.7% ODAN/EL (OM) L	and the state of t
_							@86.7': GRAVEL (GW) beds within yellowish brown ⊂coarse subangular to angular siltstone and slaty gra	
	_		Run 1	5			@87.1' to 87.3': GRAVEL (GW) beds within yellowis	
		85.00	I Kuii i	1 3	100		fine to coarse subangular to subrounded silty and sl	ni biowii sailuy Ulay IIIalliX,
	_	85-90	Box 9			V/////	@87.3' to 90': Sandy CLAY (CL), dark yellowish bro	aty gravels
_	_	85-90	I .					· ·
-	_	85-90	1				grained sand, fine slaty gravel	· ·
-	_	85-90	1					· ·
-	-	85-90	1					· ·
-	_	85-90	1					· ·
-	_	85-90	1					· ·
- - - 195	90-	85-90	1					· ·
- - 195	90-	85-90	1					· ·
FI	IELD HA	ARDNESS	Box 9		DING		grained sand, fine slaty gravel ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE	wn, moist, fine to coarse WEATHERING
FI V. HARD HARD	IELD HA - KNIFE - SCRA	ARDNESS CAN'T SCRATT	Box 9	'. THIN THIN	<2 2"-1	2"	grained sand, fine slaty gravel ATTITUDE AND ANGLE HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) CLOSE 2"-12"	wn, moist, fine to coarse WEATHERING FRESH V. SLIGHT
FI V. HARD HARD MOD. HARD SOFT	- KNIFE - SCRA - SCRA - SCRA	ARDNESS CAN'T SCRATT TCHES DIFFICE TCHES EASILY ES	Box 9	THIN THIN EDIUM THICK	<2 2"-1 12"-3 36"-1	2" 36" 20"	Grained sand, fine slaty gravel ATTITUDE AND ANGLE HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) MODERATELY DIPPING (35-55°) MOD. CLOSE 12"-36" WIDE 36"-120"	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE
FI /. HARD HARD MOD. HARD	IELD HA - KNIFE - SCRAT	ARDNESS CAN'T SCRATT TCHES DIFFICE TCHES EASILY ES	Box 9	'. THIN THIN EDIUM	<2 2"-1 12"-3	2" 36" 20"	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE HORIZONTAL (0-5") SHALLOW OR LOW ANGLE (5-35") MODERATELY DIPPING (35-55") MOD. CLOSE 2"-12" MOD. CLOSE 12"-36"	wn, moist, fine to coarse WEATHERING FRESH V. SLIGHT SLIGHT

			C	ORE	BC	RII	NG LOG			BORING NO. PAGE 7 OF	CB-16
ROJECT:	El Rodeo	Geohazard	Investigat	on							
_		lls Unified S								JOB NO.:	10274.006
ONTRACTO		tini Drilling	Corporati	on						PAGE NO.:	7 of 7
GROUNE GROUNE	USED: (EPTH TO (F	a a t \ .			ORIENTATION		ORE BARREL	DATE START:	285 Feet 7/16/2014
	HRS AFT		BOT. OF		Г. OF	Х	VERTICAL	TYPE	DANNEL	DATE FINISH:	7/17/2014
DATE	COMP	WATER	CASING		DLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/16/14	ATD	<u>⊽</u> 35					INCLINED	Bit (Feet)		PREPARED BY	: EBP
		¥					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		ODE Ā	<u> </u>		T	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	N& D	ORE EPTH SAM	MPLE SAM		GRAPHIC	Th			TION, REMARKS, AND L		
CORE DEI (Feet)	PTH RA		/BER ලි	* Rab	\rangle 3	may	Soil Description applies on differ at other locations and	d may change v	vith time. The description		
(1 661)	(F	eet)	#		9	cond	litions encountered. Trans	itions between s	soil types may be gradual.		
- - - - -	90		in 2 5	100		fin Control of the Co	tal depth of boring: rched groundwater.8'-65', 69'-69-5', 70 ring backfilled with ring capsed utility and capsed utility.	ular to angu CLAY with 0 fine gravels eddish brow ing 95' bgs encountere '-74.2', and bentonite a proximately	alar siltstone and sla Gravel (CL), reddisl , gleyed, developed n, moist, fine to co. ded @ 35'-38.2', 40'-4 76.5'-77' bgs nd soil cuttings upon y 6-inches of Rapid	aty gravels in brown, mois paleosol arse grained sarse gra	t, trace sand, trace sand, trace , 53.6'-54.4', of drilling, and black
	٦										
-	\dashv										
-	7										
_											
	٦										
—180 1	05—										
1											
FIF	 ELD HARDN	ESS	R	 EDDING		ДТ	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD	- KNIFE CAN'T	T SCRATCH	V. THIN	<	:2"		HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
MOD. HARD SOFT	 SCRATCHES SCRATCHES GROVES CARVES 		THIN MEDIUM THICK V. THICK	12' 36"	-12" '-36" -120" 20"	MOD	OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

						CO	RE	BO	RII	NG LOG			BORING NO. PAGE 1 OF	CB-17
ROJECT:		odeo S		od C-1	he al 1	Dio4							JOB NO.:	10274.006
CLIENT: <u>I</u>													PAGE NO.:	10274.006 1 of 5
QUIPMENT	_			iiig (501 po	1441011							ELEVATION:	290.5 Feet
GROUNI	DWATE	R:		DE		ΓΟ (Feet				ORIENTATION	-	ORE BARREL	DATE START:	8/24/2015
DATE	1	AFT	WAT	ER		. OF	BOT.		Х	VERTICAL	TYPE		DATE FINISH:	8/25/2015
	CO	MP			CAS	SING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
	1					+				INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY: LOCATION:	605 Whittier Blv
									0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CO						ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE (Feet)	PTH	DEP RAN (Fee	GE	NUMI		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	is a simplification of	rface conditions the actual
291	0-									Surface: 4 inches a	sphalt cond	rete		
	_			Rur	า 1					0.3': No recovery iificial Fill, undocur 1.5': Sandy CLAY (i e gravel, few aspha	CL), dark bi	rown, moist, soft, fi	ne to medium s	sand, few
—286	_ _ 5—	0-	5	Box		3.5	70							
	_	5-1	0	Rur Box		1.4	28		@	6.4': No recovery (ri	g chatter fro	om 6-10'; continue	d rubble)	
-281	10	10-1	2.5	Rur Box		0	0							
—276		12.5	-15	Rur Box		1	40	5- 5- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6- 6-	@	14': Concrete rubble	e 			
	.5													
FI	FID H^	RDNE	L			BEDI	DING	\vdash	<u></u>	TITUDE AND ANGLE	.IOINIT9	SHEAR / FRACTURE	WEATHERING	_
/. HARD HARD	FIELD HARDNESS HARD - KNIFE CAN'T SCRATCH ARD - SCRATCHES DIFFICULT DD. HARD - SCRATCHES EASILY OFT - GROVES SOFT - CARVES					THIN HIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre><2" 2"-12" 12"-36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					СО	RE	BC	RII	NG LOG			BORING NO.	CB-17
PROJECT:	El Ro	deo Schoo	1									TABLE 2 OF	
CLIENT: B						t						JOB NO.:	10274.006
CONTRACTO EQUIPMENT		Martini Dr CMF-7		Corpo	oration							PAGE NO.: ELEVATION:	2 of 5 290.5 Feet
GROUND				EPTH	TO (Feet	t):			ORIENTATION	С	ORE BARREL	DATE START:	8/24/2015
DATE	HRS	AFT WA	TER		r. OF	вот.	OF	Х	VERTICAL	TYPE		DATE FINISH:	8/25/2015
DAIL	COI	MP W		CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	: ARR 605 Whittier Blvd.
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE			ֹ≿		ပ		1	· , ,	TION, REMARKS, AND L		
CORE DEF	I	DEPTH	SAM		% SEE	gg.	GRAPHIC LOG		Soil Description applies on				
(Feet)		RANGE (Feet)	NUM	BEK	RECOVERY	E	GR.		differ at other locations and litions encountered. Trans				f the actual
-		15-17.5 17.5-20	Rui Bo	x 2	5	200		e str	eistocene Alluvium 15': Sandy CLAY (Cucture with rounded 16.2': Sandy GRAV athered gravel 16.6': Clayey GRAV oble @ 17' 17.1': GRAVEL (GP 17.3': SILT (ML), rearse slaty sand 17.5': Sandy GRAV d gravel 19.4': Clayey SAND avel 19.8': Gravelly CLA' avel and siltstone 20'-20.6': Clayey SA od, slaty gravel	CL), reddish I slaty grave EL (GP), br (EL (GC), reddish brown EL (GP), reddish brown EL (GP), redd Y (CL), redd	brown, moist, fine ell rown, moist, fine to rown, moist, fine to eddish brown, very moist, fine to coarse in, slightly moist, lar eddish brown, very modish brown, very modish brown, very moravel (SC), reddish	coarse sand, moist, fine sand, sand,slaty graminated with comoist, fine to coasist, fine to coasist, fine sand	few slaty nd, basal avel lay and trace coarse sand arse sand and , few flat slaty
- - - 266		20-25	Rui Bo		5	100		Das bas bas bas bas bas bas bas bas bas b	20.6': grades to Sar 21.1'-21.3': Gravel be sal contact 21.3': becomes fine 21.5'-22.8': become elistocene Alluvium 22.8': grades to fine 23.3'-25.8': Uneven h fine weathered, a veloped blocky stru	grained Sil s Sandy Gl of Benedic grained Si erosive con ngular silts	ty SAND (SM), oxic RAVEL (GP), round t Canyon Wash (B Ity SAND (SM), with tract, well oxidized	dized ded, fine slaty CW2 h clay. Sandy CLAY	gravel(CL), oxidized
_	-							\sim	25.8': Rock line, coa				
-	_	25-30	Rui Bo		5	100		@: rec	26.0-27.4': Sandy C 27.4': color change, duction banding, we ses, gleyed, MnO st	Sandy CL/	AY (CL), dark brow	n with heavy o	xidation
	30												
FIE	I D HA	RDNESS			 REDI	DING		ΔΤ	TITUDE AND ANGLE	JOINTS	SHEAR / FRACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT	- SCRATCHES DIFFICULT THIN 2"-12" ARD - SCRATCHES EASILY MEDIUM 12"-36" - GROVES THICK 36"-120								HTODE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre><2" 2"-12" 12".36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

PROJECT: El Rodeo School CLIENT: Beverly Hills Unified School District CONTRACTOR: Martini Drilling Corporation EQUIPMENT USED: CME-75 GROUNDWATER: DEPTH TO (Feet): ORIENTATION CORE BARREL DATE FINIS- DATE HRS AFT COMP WATER CASING HOLE HORIZONTAL SIZE DRILLER COMP WATER CASING HOLE HORIZONTAL SIZE DRILLER ELEVATION & CORE BARREL DATE FINIS- DATE HRS AFT WATER CASING HOLE HORIZONTAL SIZE DRILLER ELEVATION & CORE BARREL DATE FINIS- DATE HRS AFT WATER BOT OF A NAME BEARING BE	10274.006 3 of 5 290.5 Feet 8/24/2015 8/25/2015 Martini SY: ARR 605 Whittier Bh
GROUNDWATER: DATE HRS AFT WATER BOT. OF BOT. OF HOLE WERTICAL TYPE DATE FINISH PREPARED INCLINES FINISH BATE FINISH PREPARED INCLINES FINISH BATE FINISH PREPARED INCLINES FINISH F	E 8/24/2015 E 8/25/2015 Martini BY: ARR 605 Whittier BN Ca Desurface conditions of the actual The brown, els, eloped blocky
DATE HRS AFT COMP WATER BOT. OF HOLE HORIZONTAL SIZE DATE FINISH DAT	I: 8/25/2015 Martini BY: ARR 605 Whittier Bh Ca Dosurface conditions of the actual h brown, els, eloped blocky
DATE COMP WATER CASING HOLE INCLINED BIT (Feet) NUMBER CASING HOLE HORIZONTAL SIZE DRILLER: PREPARED INCLINED BIT (Feet) DEPTH RANGE (FEET)	Martini 3Y: ARR 605 Whittier Bh Ca Dosurface conditions of the actual h brown, els, eloped blocky
INCLINED Bit (Feet) PREPARED LOCATION: BEARING Barrel (Feet) PREPARED LOCATION: LOCATION: Beaverly Hills. PREPARED LOCATION: P	ay: ARR 605 Whittier Bl Ca consurface conditions of the actual h brown, els, eloped blocky
BEARING Barrel (Feet) LOCATION: Beverly Hills. CORE DEPTH (Feet) SAMPLE (Feet) NUMBER (Feet) 30-35 Run 1 Box 4 5 100 BEARING Barrel (Feet) 0 ANG. FROM VERT. Total (Feet) Total (Feet) Total (Feet) Total (Feet) FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Suray differ at other locations and may change with time. The description is a simplification conditions encountered. Transitions between but plues may be gradual. 2030-31.2': CLAY with Gravel (CL), dark orange brown to reddis dominantly angular slaty, siltstone and crystalline (feldspar) gravels (@31.2'-31.3': rounded slaty gravels (@31.3': Well oxidized orange brown Sandy CLAY (CL), well devistructure (@32.3': color change, Sandy CLAY (CL), gray, fine grained (@33.6': Sandy CLAY (CL), olive gray, fine grained sand (@34.4': white siltstone chips in gray Sandy CLAY (CL) (@35'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt	605 Whittier Bh
ELEVATION & CORE DEPTH CREATER NUMBER CORE DEPTH RANGE (Feet)	ca conditions of the actual h brown, els, eloped blocky
ELEVATION & CORE DEPTH (Feet) RANGE (Feet) SAMPLE RANGE (Feet) The Soil Description applies only to a location of the exploration at the time of drilling. Survey differ at other locations and many differ at other locations	osurface conditions of the actual h brown, els,
@30'-31.2': CLAY with Gravel (CL), dark orange brown to reddis dominantly angular slaty, siltstone and crystalline (feldspar) gravels (@31.2'-31.3': rounded slaty gravels (@31.3': Well oxidized orange brown Sandy CLAY (CL), well devistructure (@32.3': color change, Sandy CLAY (CL), gray, fine grained (@33.6': Sandy CLAY (CL), olive gray, fine grained sand (@34.4': white silstone chips in gray Sandy CLAY (CL) (@35'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GPAVEL (GP), gray brown, basal cobble at 2 weathered (%25'-38.5': Sandy GPAVEL (GP), gray brown, basal cobble at 2 weathered (%25'-38.5': Sandy GPAVEL (GP), gray brown, basal cobble at 2 weathered (%25'-38.5': Sandy GPAVEL (GP), gray brown, basal cobble at 2 wea	h brown, els,
@30'-31.2': CLAY with Gravel (CL), dark orange brown to reddis dominantly angular slaty, siltstone and crystalline (feldspar) gravels (@31.2'-31.3': rounded slaty gravels (@31.3': Well oxidized orange brown Sandy CLAY (CL), well devistructure (@32.3': color change, Sandy CLAY (CL), gray, fine grained (@33.6': Sandy CLAY (CL), olive gray, fine grained sand (@34.4': white silstone chips in gray Sandy CLAY (CL) (@35'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%) (%) (%) (%) (%) (%) (%) (%	h brown, els,
@30'-31.2': CLAY with Gravel (CL), dark orange brown to reddis dominantly angular slaty, siltstone and crystalline (feldspar) gravels (@31.2'-31.3': rounded slaty gravels (@31.3': Well oxidized orange brown Sandy CLAY (CL), well devistructure (@32.3': color change, Sandy CLAY (CL), gray, fine grained (@33.6': Sandy CLAY (CL), olive gray, fine grained sand (@34.4': white silstone chips in gray Sandy CLAY (CL) (@35'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt (%25'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels.	els,
@30'-31.2': CLAY with Gravel (CL), dark orange brown to reddis dominantly angular slaty, siltstone and crystalline (feldspar) grav @31.2'-31.3': rounded slaty gravels @31.3': Well oxidized orange brown Sandy CLAY (CL), well dev structure @32.3': color change, Sandy CLAY (CL), gray, fine grained @33.3'-33.6': Gravel bed, weathered basalt, slate and white silts @33.6': Sandy CLAY (CL), olive gray, fine grained sand @34.4': white silstone chips in gray Sandy CLAY (CL) @35'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt	els,
@35'-38.5': Sandy GRAVEL (GP), gray brown, basal cobble at 2 weathered and rounded slaty gravels, erosive contact, abrupt	
weathered and rounded slaty gravels, erosive contact, abrupt Run 2 Box 4 5 100 00 00 00 00 00 00 00 00	9 E' ovidizad
@38.5': Sandy CLAY (CL), reddish brown and gray, oxidation-re banding, well developed blocky structure	duction
251 45 - 40-45 Run 1 Box 5 5 100 - 40-45 Box 5 100 -	
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	
7. HARD - KNIFE CAN'T SCRATCH 14RRD V. THIN <2" THIN + CONTROL 12" THIN	

						CO	RE	BC	RII	NG LOG			BORING NO. C	B-17
ROJECT:	El Ro			10.		Diat-							IOP NO : 400T	1000
CLIENT: <u>I</u>													JOB NO.: 10274 PAGE NO.: 4 of	
QUIPMENT				ing C	or po	1441011							ELEVATION: 290.5	
GROUNE				DE		ΓΟ (Feet				ORIENTATION		ORE BARREL	DATE START: 8/24/2	2015
DATE	HRS	- 1	WATE	R		OF	BOT.	- 1	Х	VERTICAL	TYPE		DATE FINISH: 8/25/2	
	COI	MP			CAS	SING	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: Martin	ni
				\dashv		+				BEARING	Barrel (Feet)			/hittier Blv
									0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	ON &	COF				:RY		₽		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
(Feet)	- 1	RAN (Fee	GE	SAMF		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	time of drilling. Subsurface c on is a simplification of the act aal.	onditions ual
246	45 —	45-	50	Run Box		3.9	78		gra @4 gra gra	ivel, rounded white 45.4'-45.7': thin bed iined 45.7': sandy GRAVI ivels, silstsone and	siltstone gr of Silty SA EL (GP), fin weathered	avels ND with Clay (SN e to coarse sand	oarse sand, fine and com-SC), orange brown, I, fine to coarse roundersal cobble	fine
								L), dark reddish bd gravel	veathered, rounded slavidized, decomposed sometimes of the second	ate, silstron				
	_	55-	60	Run Box		4.7	94		@s sm	56.4': Sandy GRAV all cobble at 57.5',	EL (GP), re channel gra	ddish brown to o avels below to 58	range brown, nested c	channel
—231	60-								sat	curated, fine to med	ium sand, f		S. Stown, vory molecu	
FI	ELD HA	RDNES	SS			BEDI	DING	'	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT		CHES D CHES E	CRATCH DIFFICULT ASILY		MEI TH	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre></pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

PROJECT:	El Ro	dea S	choel		CU		DU	PAGE 5 OF 5	
ROJECT: CLIENT: <u>I</u>				chool l	Distric	t		JOB NO.: 102	274.006
			i Drilling	Corpo	ration				of 5).5 Feet
QUIPMENT GROUND				FPTH 1	TO (Feet	t)·			7.5 Feet 4/2015
DATE	HRS		WATER		г. OF	BOT.	OF		5/2015
DAIL	COI	MP	WAILK	CAS	SING	НО	LE		rtini
								INCLINED	R 5 Whittier Bl
								0 ANG. FROM VERT. Total (Feet) Beverly Hills, Ca	William Di
ELEVATIO	3 NC	COR			`		ပ	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS	
CORE DE	PTH	RANG (Fee	GE NUM	IPLE IBER	RECOVERY	RQD	GRAPHIC	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface may differ at other locations and may change with time. The description is a simplification of the conditions encountered. Transitions between soil types may be gradual.	e conditions actual
—231	60							@60': Silty SAND (SM), fine sand with coarse sandstone and slaty sa grades below to sandy gravel (GP), basal contact at 60.9', coarse rour gravels	
•								@60.9': Gravely SAND (SP), reddish brown, saturated, fine sand	
	-	60-6	יי רי	n <u>1</u>	4		30°	61.7': Gravelly SAND (GP), dark reddish brown, saturated, fine to coa and gravel, slate and weathered siltstone, basal siltstone cobble at 62 @62.4': Gravelly SAND (SP), reddish brown	rse sand .2
-		55 (Bo	x 7		80		الله الله الله الله الله الله الله الله	
							77	@63.7': Basal rounded granitic cobbles	
	\dashv						et II	@64': No recovery	
-226	65—						٥٠ر	@CELOCI: Condit Craval (CD) annual resulted alabit arrayal at CE 414a	
								@65'-66': Sandy Gravel (GP), coarse rounded, slaty gravel at 65.4 ' to graded sands with fine rounded slaty and siltstone gravels at 66' to 67	
							20		
-	-						900		
								V	
_							70		
			Ru	n 2			1777	Pleistocene Cheviot Hills Deposit (CHD)	
		65-7	/0 Bo	x 7	4.6	92		@67.2': Sandy CLAY (CL), thin bed, becomes sandy SILT (ML), oxidiz	zed,
-	\dashv							blocky structure, oxide and MnO on pedogenic faces, abrupt contact a sand below	it top of
								Sand Bolow	
							<i>/////</i>	@68.8': SAND (SP), fine to coarse sand, fine rounded gravels	
	٦						·.·	Sec. 5. Oracle (or), and to coalse saird, alle rounded graves	
							ļ	@69.6': No recovery	
-221	70							(Second : NO lectorely	
•	╛							Total depth of boring: 70 feet bgs	
								Perched groundwater encountered at approximately 50-53.8', 55-59.7' 61.7-63.7'	,
	_							Boring backfilled with soil cuttings and patched with cold patch asphal	t
	╛								
-	_								
0									
—216	75								
CII	ELD HAI	RDNES	is.		RED	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	_
'. HARD	- KNIFE (CAN'T SO	CRATCH		THIN	<2		HORIZONTAL (0-5°) V. CLOSE <2" FRESH	
IARD IOD. HARD	- SCRAT	CHES EA	IFFICULT ASILY	ME	HIN	2"-1 12"-3	36"	SHALLOW OR LOW ANGLÉ (5-35°) CLOSE 2"-12" V. SLIGHT MODERATELY DIPPING (35-55°) MOD. CLOSE 12"-35" SLIGHT	
	 GROVE 				HICK	36"-1		STEEP OR HIGH ANGLE (55-85°) WIDE 36"-120" MODERATE VERTICAL (85-90°) V. WIDE >120" MOD. SEVERE	
	- CARVE	S		V. I	THICK	>12	0	VERTICAL (85-90°) V. WIDE >120" MOD. SEVERE V. SEVERE	

					СО	RE	ВС	RING LOG		BORING NO. CB-18 PAGE 1 OF 5
PROJECT:	El Ro	odeo Schoo	l							PAGE 1 OF 5
CLIENT: E		·				t				JOB NO.: 10274.006
CONTRACTO	_			Corpo	ration					PAGE NO.: 1 of 5
EQUIPMENT GROUND				DTH 1	ΓΟ (Feet	H)-		ORIENTATION	CORE BARREL	ELEVATION: 305 Feet DATE START: 8/25/2015
	HRS	AFT			OF	BOT.	OF	X VERTICAL TYPE	OOKE BARKEE	DATE FINISH: 8/26/2015
DATE	СО	MP WA	TER	CAS	SING	НО	LE	HORIZONTAL SIZE		DRILLER: Martini
								INCLINED Bit (Fe	et)	PREPARED BY: ARR
								BEARING Barrel	, ,	LOCATION: 605 Whittier Blvd
		2005			<u>_</u>			0 ANG. FROM VERT. Total (· ·	Beverly Hills, Ca
ELEVATIO		CORE DEPTH	SAMI	PI F	ER		ີ ≅ູ		SSIFICATION, REMARKS, AND LI	
CORE DEI (Feet)		RANGE (Feet)	NUMI		RECOVERY	RQD	GRAPHIC LOG	The Soil Description applies only to a lo may differ at other locations and may c conditions encountered. Transitions be	hange with time. The description i	e of drilling. Subsurface conditions s a simplification of the actual
 305 	0-							@Surface: 4 inches asphalt Artificial Fill, undocumente @0.3': Sandy CLAY (CL), n sand, trace flat slaty gravel Pleistocene Alluvium of Be	nd (Afu) nottled reddish brown and	
-	_	0-5	Run 1 Box 1		5	100		@1.4': Sandy SILT (ML), da gleyed sand, oxidized fine s banding, base of unit at 3.5'	ark orange brown to reddi iltstone gravels, laminate	sh brown with pockets of
-	_							@3.5': Sandy SILT (ML), comoist, fine sand	olor change light brown wi	th oxide staining, slightly
300	5							@5': Gravelly SAND (SP), I	ight brown, fine sand, fine	e rounded slaty gravel
								@5.5': Silty SAND (SM), gra		
-	_	5-10	Rur Box		5	100		gleyed sand, MnO on pedog		umaint fine road
_	_							@8.2': SAND (SP), olive brown (SP), become		
							<u>. </u>		_	
295	10-						60°	@9.6': Becomes fine to coa clasts and white siltstone ch), with weathered slate
-	_	10-15	Run 1 Box 2		4.7					
-	_			-			000	@12.6': Sandy GRAVEL (G and cobbles, base of nested and cobbles at 14.7'		
_	_									
290	15							@14.7': No recovery		
			L				L			
		RDNESS			BED				DINTS / SHEAR / FRACTURE	WEATHERING
SOFT	- SCRAT			T ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALLOW OR LOW ANGLÉ (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (56-85°) VERTICAL (85-90°) V. V.	LOSE <2" OSE 2"-12" CLOSE 12"-36" IDE 36"-120" VIDE >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE
		****						Fe =	Firon Oxide Mn = Manganese Oxide	SOWI LETE

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB-18
PROJECT: CLIENT: I	El Ro Severly			ad Çal	hool 1	Distric	+						JOB NO.:	10274.006
CONTRACTO													PAGE NO.:	2 of 5
QUIPMENT			Æ-75										ELEVATION:	305 Feet
GROUNI	HRS			DE		O (Fee	t): BOT.	OE	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: DATE FINISH:	8/25/2015 8/26/2015
DATE	COI		WATI	ER		SING	HOI.		^	HORIZONTAL	SIZE		DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	
										BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
	<u> </u>	CO	DE				1	<u>_</u>	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
CORE DE (Feet)	PTH	DEP RAN (Fe	TH IGE	SAMI		RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	vith time. The description	time of drilling. Subs	
-	15 —	15-	20	Rur Box		5				15': Sandy GRAVEI arse sand and slaty 17.3': Sandy CLAY 17.6': Gravelly SAN e and coarse grave 18.6': basal GRAVE 18.8': becomes hea 19': SAND (SP), gra ow sand bed 19.6': Gravelly SAN	(CL), olive D (SP), red	orown, moist, stiff dish brown, moist stalline igneous of he sand, abundar dish to olive brow	f, fine sand t, fine sand, few coarse rounded at oxide stains a	coarse sand gravel bove and
		20-	25	Rur Box		4.6	92		@2 @2 gra we	21.6': SAND (SP), c 21.9': Sandy GRAV evel, nested channe athered slaty, basa	gray, very m EL (GP), ol	oist, fine sand, ar ive brown, moist, MnO stained sand	fine to coarse s	and and
280 -		25-	30	Rur		5			to	25': Sandy GRAVEI coarse sand, abund athering of rock cla	dant slaty gi	avel, few oxide st	tains, heavy Mn	
@27.6': Sandy CL									27.6': Sandy CLAY 28.7': Siltstone rock		tion reduction, find	e sand, gleyed,	spotty MnO	
213	30													
EII	ELD HA	RDNE				BED	DING	Ь Т	ΔΤ	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD	- KNIFE	CAN'T S CHES E CHES E	CRATCH DIFFICUL		T ME Th	THIN HIN DIUM HICK THICK	2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) POR HIGH ANGLE (55-85°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2" 12" 36" 36" 120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB-18
ROJECT:			chool	. ~ .									100.110	400=4
CLIENT: <u>I</u>													JOB NO.: PAGE NO.:	10274.006 3 of 5
ON FRACTO	_			ing (orpo	ration							ELEVATION:	305 Feet
GROUNI			IL-73	DE	PTH 1	ΓΟ (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	8/25/2015
	HRS)A/A TE			. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	8/26/2015
DATE	СО	MP	WATE	ER	CAS	SING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	ARR
	1									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
									0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	!
ELEVATION		CO		SAM	DIF	ERY		₹,				TION, REMARKS, AND		
CORE DE (Feet)		RAN (Fe	IGE	NUM		RECOVERY	Rap	GRAPHIC LOG	may	Soil Description applies on differ at other locations an litions encountered. Trans	d may change v	ith time. The descriptio	n is a simplification of	
—275 -	30 —								Sa	30': ndy CLAY (CL), da de, clay and MnO c			rown, blocky str	ructure, iron
	_			Rur	n 1	_			@:	31.6': rock line siltst	one chips			
		30-	35	Box		5	100			32.5': Gravelly CLA	Y (CL), hea	vily weathered sla	ate and siltstone	gravels,
	\dashv							7////	_	sal coarse	<u> </u>			
										33': SAND bed (SP)		ion roduction to	dina	
										33.1': Sandy CLAY Idish brown, gleyed				own to
	\neg								1	alon brown, gleyeu	, ontotorie g	iavoi at oo.+ and		
_ 270	3E -						L_		1_					
-270	35—							Ш		35': Sandy SILT (M .8', 36', and 36.3'	L), basal he	avily weathered s	iltstone rock fra	gments at
	_	35-	40	Rur		5	100	0	, <u> </u>	36.6': GRAVEL bed 36.8': Sandy CLAY	, ,,		, ,	ravel
	_			20,	` '		100		@: fin	38': Sandy Clayey 0 e sand matrix	GRAVEL (G	P), rounded coars	se slaty gravels	in oxidized
									@:	38.8': CLAY (CL), b	rown to red	brown, blocky str	ucture	
								• • • •		39.1': Gravelly SAN				gravels,
								XXXX	ab	undant clay in matr	ix			· ·
-265	40 —							(19X3)		39.6': basal Clayey				
	-			Rur	n 1				co	40': Sandy Gravelly arse gravel	,			
-	-	40-	45	Box		5	100		oxi	42.4': basal cobbles dized with minor cla	ayey gravel	from 43' to 43.6',	(GP), reddish erosive contact	brown, at 44'
—260	45								ČĽ	AY (CL), light reddi	sh brown, t	race fine and coal	rse angular gra	vel at 44.5'
				-		_					I		1	
. HARD	ELD HA		SS SCRATCH		٧, ٠	BED THIN	DING <2		AT	TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
ARD		TCHES E TCHES E ES	DIFFICULT		MEI TH	THIN HIN DIUM HICK THICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 4 OF	CB-18
ROJECT:	El Ro			. ~										
CLIENT: <u>I</u>							t						JOB NO.: PAGE NO.:	10274.006 4 of 5
QUIPMENT	_			ing C	or po	1 at10f1							ELEVATION:	305 Feet
GROUNE				DE	PTH T	O (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	8/25/2015
DATE	HRS	- 1	WATE	R	вот	- 1	вот.		Х	VERTICAL	TYPE		DATE FINISH:	8/26/2015
	COI	MP			CAS	SING	HOI	.E		HORIZONTAL	SIZE		DRILLER:	Martini
										INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY: LOCATION:	605 Whittier Blv
									0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	OCC WINNER DIV
ELEVATIO	3 NC	COF				~		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE	PTH	DEP RAN (Fee	GE	SAMF		RECOVERY %	RØD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	n is a simplification of	
	45							 		15': Gravelly SAND arse gravel	(SP), reddi	sh brown, saturate	ed, fine sand, fii	ne and
-	-							•	@4	16': Grades finer wit	th depth to	SAND (SP), satur	ated, fine sand	
-		45-	50	Run Box		4.6	92		sar	46.4': Sandy CLAY nd, oxidation reduct stone gravel	(CL), orang iion banding	e brown to reddis g, some clay lamir	h brown, very m nae at 47.5' ove	ioist, fine rlain by
									de	· · · · · · · · · · · · · · · · · · ·		RAVEL (GC), wea	athered slate gra	avel, clay
-255	50—		+					/////	\sim		NI V III II- I	dallah harran	4 mlayer d 1 th	
	- - -	@50': Sandy CLAY (CL), light reddish brown, moist, gleyed, oxidized @51': Siltstone rock line @51.4': coarse, rounded slaty gravel @52.1': CLAY with Silt (CL), chocolate brown, trace coarse sand size @52.1': CLAY with Silt (CL), chocolate brown, saturated, file							ized slate					
-250	55-								me	edium sand, fine and stone and yellow sa	d coarse gr	avel, sharp contac	ct with below, w	eathered
-				Run	2				@:	55.6': Sandy CLAY	(CL), dark r	eddish brown, ver	y moist, fine sa	nd
		55-	60	Box		5	100			57.4': CLAY (CL), d				
245	60									59.2': Clayey GRAV ty gravels and siltst			avel, severely w	eathered
								L.,			1		,	
	ELD HAI						DING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT		CHES D CHES E S	CRATCH DIFFICULT ASILY		TH MEI TH	THIN HIN DIUM HICK 'HICK	<2"-1. 12"-3 36"-1. >12'	2" 66" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT:	El Ro	deo Sa	hool				<u> </u>	RING LOG			PAGE 5 OF	5
CLIENT: B				hool	Distric	t					JOB NO.:	10274.006
ONTRACTO				Corpo	ration						PAGE NO.:	5 of 5
QUIPMENT GROUNE				EDTU :	TO (Foo	+ \-		ORIENTATION		ORE BARREL	DATE START:	305 Feet 8/25/2015
	HRS	_			TO (Fee	u). BOT.	OF	X VERTICAL	TYPE	DANNEL DANNEL	DATE FINISH:	8/26/2015
DATE	CON		WATER	l	SING	НО		HORIZONTAL	SIZE		DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY	: ARR
								BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
	L	200	-					0 ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
CORE DEF (Feet)	PTH	DEPT RANG (Feet	H SAN	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	The Soil Description applies may differ at other locations conditions encountered. Tra	only to a location and may change v	vith time. The description	ime of drilling. Subs	surface conditions of the actual
−245	60—							@60': Sandy GRAV rounded gravel, abr			l, fine to coarse	e sand and
	-							@60.8': Sandy CLA	Y (CL), reddi	sh brown, very mo	ist, fine sand	
							<u> </u>	@61.2': pebbly grav	el and fine sa	and bed (SP-GP) to	o 61.3', grades	to silty clay
								\ <u>@</u> 61.5'				
	60-6	S5 Ru Bo	n 1 x 7	5	100		@61.5': Silty CLAY 62.8'	(CL), yellow t	orown to reddish b	rown siltstone i	rock clast at	
							77777	@64.1': thin SAND	oed (SP), ver	y fine sand		
								@64.2': Silty CLAY			e fine sand	
-240	65—							1	. ,			
							<i>/////</i>	ORE ST. CAND WITH	Graval and C	lay (SD)		
							<u>. </u>	@65.3': SAND with	Graverand C	iay (3P)		
	4							@65.8': CLAY (CL)				
							600	@66.1': Silty SAND	· ,			ed
							111	@66.2': GRAVEL (0				
	\dashv						<u> </u>	@66.6': Silty SAND	(SM), fine sa	nd with coarse sar	nd size siltston	е
		65-7	(1)	n 2	5	100		@67.3': CLAY bed	CL), 3 inch th	nick		
		- •	l Ro	x 7		100	$ \cdot $	@67.6': Silty SAND				
							[-[-]-[-					
							 U (@68.5': Sandy GRA	VFL (GP) fir	ne to coarse sand	rounded fine t	o nehhly slat
							$[0,0)^2$	gravel, basal contact		io to coarse sailu,	Tourided line (o possiny siat
							60					
							11/1/	@69.5': CLAY bed	CL)			
-235	70						<i>[[]]</i>	311111111111111111111111111111111111111	,			
	-							Total depth of borin Perched groundwat 60-60.8' Boring backfilled wi	er encountere	ed at approximately		
	75—	RDNES	S		BED	DING		ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD	- KNIFE C	AN'T SC	RATCH		THIN	<2		HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
IOD. HARD OFT	- SCRATO - SCRATO - GROVES - CARVES	CHES EA S		ME Ti	HIN DIUM HICK THICK	2"-1 12"-; 36"-1 >12	36" 20"	SHALLOW OR LOW ANGLE (5-38 MODERATELY DIPPING (35-55° STEEP OR HIGH ANGLE (55-85° VERTICAL (85-90°)	MOD. CLOSE	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CO	RE	ВС	RII	NG LOG			BORING NO.	CB-19
PROJECT:	El Rodeo	School									PAGE 1 OF 1	12
CLIENT: E			School	District	t						JOB NO.:	10274.006
CONTRACTO	R: Mart	ini Drillin	ıg Corp	oration							PAGE NO.:	1 of 12
EQUIPMENT		ME-75									ELEVATION:	302.5 Feet
GROUNE				TO (Feet		. 05	· ·	ORIENTATION		ORE BARREL	DATE START:	8/26/2015
DATE	HRS AFT	WATER	? I	T. OF SING	BOT		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH:	8/28/2015
	COMP		CA	SING	НО	LE		INCLINED	Bit (Feet)		DRILLER: PREPARED BY:	Martini
								BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
							0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	ooo maaaa bira.,
ELEVATIO	, c	ORE		T≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEI	PTH DE		AMPLE	N KE	gg	1 E 8	The	Soil Description applies on	ly to a location of	of the exploration at the tir	ne of drilling. Subsu	rface conditions
(Feet)	RA	NGE N	UMBER	RECOVERY	ı e	GRAPHIC	may	differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	the actual
—- 303 —	0—					7 b 4	Ari	Surface: 6 inches as	 nented (Afr	- — — — — — - u)		
_	-							1.3': Gravelly SAND e and coarse gravel		led brown, slightly	moist, fine to n	nedium sand,
—- 298 	5—							eistocene Alluvium				
_	_						stri on @6	5.7': CLAY (CL), da ucture, oxidation an pedogenic faces 5.1': becomes Sand 5.3': Sandy GRAVE d basalt all heavily v	d clay lining y CLAY (C L with Clay	g of pedogenic face L) (GC), fine to coars	es, minor mang	janese oxide
_	_						stri de	6.7': Sandy CLAY (0 ucture with clay and velopment in Krotov	l iron oxide vina, MnO ii	on pedogenic face n matrix, gleyed	s, minor carbo	nate
						2000		9.3': pebbly GRAVE		, rounded State after	u graniilo ciasts	•
—- 293 —-	10—					2/16/2	$\overline{}$	9.7': Clayey GRAVE 10': No recovery	il (GC)			
_	_											
_						000	sar @	12.9': Sandy CLAY nd, MnO rimming of 13.2': Sandy GRAV	slate clast EL (GP), ha	s ard, fine sand, fine	to coarse slaty	gravel,
288	15						1	avily oxidized with re			•	. 14.2
						Ь.,		TITUDE AND		011545 / 55 - 55 - 5		
V. HARD HARD MOD. HARD SOFT	ELD HARDN - KNIFE CAN'I - SCRATCHES - SCRATCHES - GROVES - CARVES	SCRATCH DIFFICULT	M T	BEDI THIN THIN EDIUM THICK THICK	OING 2" 12"- 36" >12	12" :36" 120"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) PRATELY DIPPING (35-55°) P OR HIGH ANGLE (56-85°) VERTICAL (85-90°)	JOINTS / V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxid	SHEAR / FRACTURE	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB-19
PROJECT:		odeo S v Hills	chool Unified	School	District	t					_	JOB NO.:	10274.006
CONTRACTO			ni Drillin									PAGE NO.:	2 of 12
QUIPMENT	USED:	CN	/IE-75							1		ELEVATION:	302.5 Feet
GROUNE	HRS				TO (Feet	t): BOT.	OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: DATE FINISH:	8/26/2015 8/28/2015
DATE	CO		WATER		SING	HO!	- 1	^	HORIZONTAL	SIZE		DRILLER:	8/28/2015 Martini
									INCLINED	Bit (Feet)		PREPARED BY	
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
			-					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
CORE DE	PTH	DEP RAN (Fe	TH S	AMPLE JMBER	RECOVERY	Rab	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations and itions encountered. Trans	ly to a location of may change v	vith time. The description	me of drilling. Subsu	
288	15 —								15': Silty SAND (SM				
-	_							@	18.1': SAND (SP) w	ith Gravel,	weathered slaty gr	avels	
-	_						مِکْرَ 	@	19.2': Basal gravels	(GP) and s	small cobbles, oxid	ized gravels ar	nd sandy
—283	3 20						ma	ıtrix	. ,		-	•	
-	_	20-2	ソカー	Run 1 Box 3	1.1	44		oxi	20.4': Sandy CLAY dized at 21.1' 21.2': No recovery	(CL), gray t	orown, slightly moi:	st, with silt and	carbonate,
-	_					77							
-	_	22.5		Run 2 Box 3	2.5	100		we	22.5': Silty CLAY (C Il developed blocky dogenic faces	L), dark ora structure w	ange brown to redo vith oxide and MnC	lish brown, slig and carbonate	htly moist, e on
							ext.	@2	24.6': few slaty grav	els at base	of unit over clay		
—278 - -	25 	25-2		Run 3 Box 3	2.5	100		@2 sar str	25': Sandy CLAY (C nd, oxidized, gleyed ucture	CL), orange I with few sl	brown to reddish baty pebbles, spotty	y MnO in matri	x, blocky
-	_	27.5		Run 4	2.5	100	9 74.X	gra @2 oxi	27.2': becomes dark evels, abrupt erosive 27.5': Sandy CLAY de and clay develor	e contact be (CL), olive opment on p	elow gray to orange bro edogenic faces, glo	wn, hard, oxidi eyed, fine sand	zed, iron
- 273	30—			,O, O		100		and	28.7': grades to Silt d fine slaty gravels,	y SAND (Si white siltst	w), oxidized, gleye one chips and som	u, with fine to c ne clay	coarse sand,
					<u> </u>								
	ELD HA	RDNE	SS		BED	DING		АТ	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	RD - SCRATCHES DIFFICULT THIN 2"-12" D. HARD - SCRATCHES EASILY MEDIUM 12"-36" FT - GROVES THICK 36"-120"					2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE		

ROJECT:	El Ro Beverly			School				ORING LOG BORING NO. CI PAGE 3 OF 12 JOB NO.: 10274.	006
ONTRACT	OR: N	Aartin	i Drillin					PAGE NO.: 3 of 1	
QUIPMENT			1E-75					ELEVATION: 302.5 I	
GROUNI	HRS	$\overline{}$		DEPTH	TO (Fee	t): BOT.	OF	ORIENTATION CORE BARREL DATE START: 8/26/20 X VERTICAL TYPE DATE FINISH: 8/28/20	
DATE	CON		WATER	- 1	SING	НО		HORIZONTAL SIZE DRILLER: Martin	
								INCLINED Bit (Feet) PREPARED BY: ARR	
								BEARING Barrel (Feet) LOCATION: 605 WI	hittier Bl
					$\overline{}$			0 ANG. FROM VERT. Total (Feet) Beverly Hills, Ca	
CORE DE (Feet)	PTH	COR DEP RAN (Fee	TH S/	AMPLE JMBER	RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface command differ at other locations and may change with time. The description is a simplification of the actu- conditions encountered. Transitions between soil types may be gradual.	nditions ıal
	30—	30-3	35 I	Run 1 Box 4	5	100		@32.6': Sandy CLAY (CL), orange brown to olive gray, laminated to thinl bedded, oxidized with very fine gray sand, MnO and minor carbonate on pedogenic faces, gleyed	
-268	268 35—							@35': Sandy SILT with Clay (ML), dark reddish brown to orange brown, oxidized, clay lined pores, blocky structure	
	40	35-4	411	Run 2 Box 4	5	100		@35.7': rock line of coarse rounded slaty gravel over fine grained Sandy (ML) @37.5': Silty SAND (SM), dark orange brown to olive gray, thinly bedded fine sand, gleyed, poor blocky structure @39.4': weathered fine gravel sized siltstone chips @39.5': Silty SAND (SM), dark orange brown to olive gray, thinly bedded	l, very
200							600	\fine sand, gleyed, poor blocky structure	
	_	40-4	<u>4</u> 7	Run 1 Box 5	5	100		@40.9': Silty SAND (SM) with fine slaty Gravel, erosive contact with below and the same of the sa	sand
- 258	45							@42.9': Sandy SILT (ML), very fine sand, oxidized, gleyed, grades to silt below @43.5': Silty SAND (SM), orange brown to dark red brown, fine sand with occasional coarse slaty sand and thin clay laminations	-
F1	IEI D UAI	BDNEO	29		BED	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	_
. HARD IARD IOD. HARD IOFT . SOFT	RD - SCRATCHES DIFFICULT THIN 2"-12" D. HARD - SCRATCHES EASILY MEDIUM 12"-36" - GROVES THICK 36"-120"						2" 36" 20"	ATTITUDE AND ANGLE HORIZONTAL (0-5") V. CLOSE 2"-12" V. SLIGHT SLIGHT SLIGHT SUIGHT S	

ROJECT:	El Ro	doc Sa	hool		CO	יתב	DU	PAGE 4 OF 12
ROJECT: :LIENT: E				hool	District	:		JOB NO.: 10274.006
ONTRACTO								PAGE NO.: 4 of 12
QUIPMENT								ELEVATION: 302.5 Feet
GROUNE			D		TO (Feet		05	ORIENTATION CORE BARREL DATE START: 8/26/2015
DATE	HRS		WATER		T. OF SING	BOT.		X VERTICAL TYPE DATE FINISH: 8/28/2015 HORIZONTAL SIZE DRILLER: Martini
	CON	VII		CA	SING	110		INCLINED Bit (Feet) PREPARED BY: ARR
								BEARING Barrel (Feet) LOCATION: 605 Whittier Bh
								0 ANG. FROM VERT. Total (Feet) Beverly Hills, Ca
CORE DEI	РТН	DEPT RANG	H SAN	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual
(Feet) 258	45	(Feet	:)		2		9	conditions encountered. Transitions between soil types may be gradual.
	_							@46.1': Gravelly SAND (SP), dark brown, saturated, fine to coarse sand and
	_	45-5	()	n 2 x 5	4.6	92		gravel @46.5': Sandy GRAVEL (GP), dark reddish brown, fine to coarse sand, fine to coarse slaty and crystilline gravels, oxidized basal gravel at 48.6'
	_	_						@48.6': SAND bed (SP), light brown, saturated, fine sand @48.8': Sandy GRAVEL (GP), brown, saturated, fine to coarse sand and grave
								@49.6': No recovery
-253	53 50							@50': Gravelly SAND (SP), brown, saturated, fine to coarse sand and gravel
							,01	@50.4': basal coarse GRAVEL and COBBLES (GP), dark brown, saturated,
-	_	50-5		n 1 x 6	4.2	84		fine to coarse sand and gravel @51': Gravelly SAND bed (SP), fine to coarse oxidized sands, siltstone and slaty gravels @51.4': Sandy GRAVEL (GP), dark reddish brown to orange blackish brown, weathered slaty gravels
	_			. •				@54.2': No recovery
—248	55 —						· . · · · · · · · · · · · · · · · · · ·	@55': Gravelly SAND (SP), olive brown, saturated, coarse sand and slaty gravel with feldspar grains, rounded, well graded basal oxidized sand, erosive contact with below
								@56.3': Sandy CLAY (CL), reddish brown, saturated, fine sand, stiff
	4							@56.7': GRAVEL bed (GP), slaty, siltstone, weathered gravels with heavy Mno
		55-6	n Ru	n 2	4 7			@56.9': CLAY (CL), dark reddish brown, orange brown to olive gray, oxidized
		၁ ၁-6		x 6	4.7	94	7////	with heavy MnO, blocky structure
	4							@57.6': 1-inch coarse SAND bed (SP), erosive contact below
								@57.7': CLAY (CL), dark reddish brown to orange brown, oxidized, MnO pervasive
								@57.9': grades to Sandy CLAY (CL) to 59.2'
	-						11.1	@59.2': becomes Silty SAND (SM), fine sand and siltstone chips, siltstone
-243	60				_		-1.14	gravel from 59.4' to 59.5', silty clean sand below
Eit	ELD HAI	DUNES		1	BED	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING
. HARD	- KNIFE (V.	THIN	DING <2		HORIZONTAL (0-5°) V. CLOSE <2" FRESH
IARD IOD. HARD IOFT	- SCRATI - SCRATI - GROVE - CARVE	CHES DIF CHES EA :S	FICULT	ME TI	THIN THIN EDIUM HICK THICK	2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLOW OR LOW ANGLE (5-35") STEEP OR HIGH ANGLE (55-85") VERTICAL (85-90") VERTICAL (85-90") V. WIDE V. WIDE V. SEVERE V.

ROJECT:	El Ro	odeo S	chool						ORING LOG BORING NO. CB-19 PAGE 5 OF 12
LIENT:							t		JOB NO.: 10274.006
ONTRACT					corpo	ration			PAGE NO.: 5 of 12 ELEVATION: 302.5 Feet
QUIPMEN [*] GROUN			1E-/5		ртн т	ΓΟ (Feet	.).		ORIENTATION CORE BARREL DATE START: 8/26/2015
	HRS	$\overline{}$				OF	BOT.	OF	X VERTICAL TYPE DATE FINISH: 8/28/2015
DATE	cor	MP	WAT	ER	CAS	SING	HOI	LE	HORIZONTAL SIZE DRILLER: Martini
									INCLINED Bit (Feet) PREPARED BY: ARR
									BEARING Barrel (Feet) LOCATION: 605 Whittier BI
		COF	DE					<u>_</u>	0 ANG. FROM VERT. Total (Feet) Beverly Hills, Ca
CORE DE (Feet	PTH	DEP RAN (Fee	TH GE	SAMI		RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
-243 60 — - -238 65 — -		60-	65	Rur Box		5	100		@59.7': No recovery @60': Silty SAND (SM), very hard, oxidized, fine gravel @60.2': Sandy CLAY (CL), reddish brown to dark brown, moist, fine sand @61': Sandy CLAY (CL), abrupt color change to very dark reddish brown and orange brown, intensely weathered, abundant MnO, siltstone gravels at 61.2' and 62.2' @62.7': GRAVEL bed consisting of silstone and slaty gravels, abrupt contact @62.8': Sandy CLAY (CL) @64.7': CLAY (CL), reddish brown, very moist, intensely weathered, blocky structure, oxide and MnO on pedogenic faces, gleyed @66.8': Sandy CLAY (CL), orange brown to reddish brown, gleyed, MnO stains
- - - —233	70	65-	70	Run 2 Box 7 5	100		@68': Sandy CLAY (CL), orange brown to reddish brown, gleyed, MnO stains, siltstone and slaty gravels @68.5': Sandy CLAY (CL), with basal slaty gravels @69.5': decomposed siltstone clasts, erosive contact below		
	_								@70': Sandy CLAY (CL), orange brown, fine sand, few coarse slaty sand to pebbly gravel, heavily weathered
	_		_	Rur	า 1				@71.1': Coarse sand bed, orange brown to grey brown, oxidized
	_	70-	/5	Box		4.6	92		@72.3': Clayey GRAVEL (GC), predominantly severely weathered siltstone gravels, cobbles @73.1': Sandy CLAY (CL), with few siltstone gravels in matrix
									@74': Sandy SILT (ML)
-228	75								@74.6': No recovery
-									
FI	IFI D HA	RDNE	SS.			BEDI	DING	Ь Т	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING
HARD - SCRATCHES DIFFICULT MOD. HARD - SCRATCHES EASILY SOFT - GROVES					T ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5°)

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF	CB-19
ROJECT:		odeo Sc		ab a cl	Dic4::							JOB NO.:	10274.006
LIENT: <u>I</u>												PAGE NO.:	10274.006 6 of 12
QUIPMENT	_			oπ þα	, 1 at 1 U II	•						ELEVATION:	302.5 Feet
GROUNI				EPTH	TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START:	8/26/2015
DATE	HRS		WATER	ВОТ	T. OF	BOT.		Х	VERTICAL	TYPE		DATE FINISH:	8/28/2015
· · · -	CO	MP		CAS	SING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY	
		-		1				0	ANG. FROM VERT.	Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blv
ELEX	<u></u>	COR	E	1	<u> </u>		ပ	T -			I TION, REMARKS, AND I		•
CORE DE (Feet)	PTH	DEPT RANG (Feet	SE NUN	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the ti vith time. The description	me of drilling. Subs	urface conditions of the actual
-228	75—						\		75': Silty SAND (SM	1)			
									75.2': Gravel bed (C	,	red siltstone grave	els	
								1 <u> </u>	75.4': Sandy CLAY				, fine sand
								√ wit	h some coarse san	d to pebble			
								7 L	e at base of contact			r 6 :	
									76.1': Sandy CLAY nd beds at 76.4' and		tion reduction band	ging, fine to co	arse thin
			R	ın 2				_	77': becomes lamin		SILT (ML) with or	arhonate lamin	ations on
		75-8		x 8	5	100			dding	atou oanuy	CILI (IVIL), WILLI CO	and distribution	GUOTIO UIT
	4								-				
								\	70 41: 0 " 01 11	V (OL) ""	4 I	la lat 10	-41
									78.4': Gravelly CLA rupt contact at 79.3		tone and slaty gra	veis, nighly we	eatnered,
	\dashv							30	api ooniaoi ai 13.3				
								@	79.3': CLAY (CL), d	ark reddish	brown to brown, b	locky structure	e, clay and
000									O on pedogenic fa		, -		•
-223	80-												
								1					
								1					
								1					
	4							@	31.7': becomes Cla	yey GRAVE	L (GC)		
		80-8	. h	ın 1	5	100		@8	32.2': Sandy SILT (ML), grades	downward to Silty	SAND (SM)	
			BC	x 9		100	U	ക	32.8': Sandy GRAV	EL (GP) oli	ive brown saturate	ed, fine sand f	ew medium
							10°		coarse sand, fine a			,o oama, i	
							100]					
	\dashv						1°V°	4					
							20	9					
								@8	34.5': Clayey SILT ((ML), reddis	h brown, moist		
-218	85 —							@8	35': Gravelly SAND	(SP), olive	brown, saturated.	fine to coarse	sand and
								gra	avel, erosive contac	t with below	1		-
	_							@	35.6': CLAY (CL), y	ellowish bro	wn, moist		
								@8	36.1': Sandy CLAY	(CL) with S	ilt, orange brown to	o reddish brow	n, gleyed,
									me coarse sand, M				
	4								271. 0	(01)	-1	ala in a 11 t	
		05.0	n Ru	ın 2	_				37': Gravelly CLAY proximately 90'	(CL), color	cnange, slaty grav	eis in matrix to)
		85-9		x 9	5	100		ap	proximately 30				
	-												
	\dashv												
-213	90-							1					
210	55												
		RDNES				DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
. HARD ARD	- SCRAT	CAN'T SC CCHES DII	FFICULT	T	THIN	<2 2"-1	2"		HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
OFT	- GROVI		ASILY	TI	DIUM HICK	12"-3 36"-1	20"	MODE	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
					THICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE V. SEVERE	
				1									

ROJECT:	El Ro	odeo S	chool				- _		RING LOG	PAGE 7 OF 12
LIENT: 1	Beverly	Hills	Unifie				;			JOB NO.: 10274.006
ONTRACT	OR: N	Martin	i Drill	ling C	orpor	ation				PAGE NO.: 7 of 12 ELEVATION: 302.5 Feet
GROUN			112-73	DEI	PTH T	O (Feet):		ORIENTATION CORE BARREL	DATE START: 8/26/2015
DATE	HRS	AFT	WAT		вот.	OF	BOT.	OF	X VERTICAL TYPE	DATE FINISH: 8/28/2015
DATE	COI	MP	**/ (1		CASI	NG	НО	LE	HORIZONTAL SIZE	DRILLER: Martini
									INCLINED Bit (Feet)	PREPARED BY: ARR LOCATION: 605 Whittier BI
									0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATION CORE DE	PTH	DEP	тн	SAMP		RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AN The Soil Description applies only to a location of the exploration at th may differ at other locations and may change with time. The descrip conditions encountered. Transitions between soil types may be grad	e time of drilling. Subsurface conditions tion is a simplification of the actual
-213	90 —	90-9		Run Box		5	100		@90': Clayey GRAVEL (GC), reddish brown, satu gravel, basal gravel consisting of siltstone and compared to the same of the sam	urated, fine to coarse sand an arse slaty gravel at 92' d, few gravel rse gravel at 93' contact below , fine to coarse sand and
-208	95 —	95-1	00	Run Box		4.8	96		• 	d, fine to coarse gravels with .4'
	105	Run 1 Box 11 4.5 90 Run 1 Box 11 4.5 Run 1 Run 1 Box 11 4.5 Run 1 Box 11 4.5 Run 1 Box 11 4.5 Run 1 Run 1 Box 11 4.5 Run 1 Run					t, fine sand ped to 101.2' st, fine sand, coarse basal pelow sty gravels with weathered			
			_		_			L		
	ELD HA	RDNES	SS			BEDI	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE	WEATHERING
. HARD - KNIFE CAN'T SCRATCH IARD - SCRATCHES DIFFICULT THIN 2 10D. HARD - SCRATCHES EASILY MEDIUM 12 0FT - GROVES THICK 36						IIN IUM CK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5°)	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

ROJECT:	El Ro	deo S	chool				ВО		PAGE 8 OF 12
LIENT: <u>I</u>									JOB NO.: 10274.006
ONTRACTO QUIPMENT	DR: N	1artin	u Drilli IF-75	ng Corp	oration				PAGE NO.: 8 of 12 ELEVATION: 302.5 Feet
GROUNE				DEPTH	TO (Feet):		ORIENTATION CORE BARREL	DATE START: 8/26/2015
DATE	HRS		WATE	BO.	T. OF	вот.	OF	X VERTICAL TYPE	DATE FINISH: 8/28/2015
DATE	CON	MP	WAIL	CA	SING	НО	LE	HORIZONTAL SIZE	DRILLER: Martini
								INCLINED Bit (Feet)	PREPARED BY: ARR
								BEARING Barrel (Feet)	LOCATION: 605 Whittier BI Beverly Hills, Ca
		COR	RE		-		ပ	FIELD CLASSIFICATION, REMARKS, ANI	
CORE DEI	PTH	DEPT RANG (Fee	TH S	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	The Soil Description applies only to a location of the exploration at the may differ at other locations and may change with time. The descript conditions encountered. Transitions between soil types may be graded to the conditions are considered to the conditions are conditions.	e time of drilling. Subsurface conditions ion is a simplification of the actual
—198 1		105-1	11()	Run 2 Box 11	1.6	32		@104': Sandy SILT (ML), grading down to Silty Sagravel at 104.5' @104.5': No recovery @105': Gravelly SAND (SP), olive brown, wet, fine @106': Sandy GRAVEL (GP), slaty weathered silt abrupt basal contact below @106.4': CLAY, yellow brown, moist, stiff @106.6': No recovery	e to coarse sand and gravel
—193 1	10						7;	@110': basal GRAVELS and COBBLES	
								@110.4': Sandy CLAY (CL), reddish brown, moist	trace medium cond
								W 110.4. Salidy CLAT (CL), reduisit brown, moist	, trace medium Sand
	\dashv						ká((@111': Sandy GRAVEL (GP), reddish brown, wet	, fine to medium sand and
							$\c \c \$	slaty gravel with sandy matrix, coarse gravels and	cobbles to 112'
							00		
	_	110-		Run 1 Box 12	4.5	90			
—188 1	15						_	@114.5': No recovery (driller states that no recove	ery due to large rock)
	_	115-1		Run 2 Box 12	2.9	58		@116.5': SAND (SP), olive brown, saturated, fine	sand
	-							@117.9': Gravelly SAND (SP), olive brown, satura coarse gravel to 2 inch diameter	ated, fine to coarse sand,
							300	@118.7': Sandy GRAVEL (GP), mottled olive brownedium sand and basal cobbles, clay in matrix, soweathered clasts	wn and gray, moist, fine to everely oxidized and
- 183 1	20—		\perp					@119.4': No recovery	
FI	ELD HAI	RDNES	SS		BEDI	DING	<u>' </u>	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE	WEATHERING
FIELD HARDNESS V. HARD					THIN THIN EDIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°) VERTICAL (85-90°) VIOLOSE 2"-12" MOD. CLOSE 12"-36" WIDE 36"-120" V. WIDE >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE

					СО	RE	ВС	RIN	G LOG			BORING NO.	CB-19
PROJECT:	everly		fied Sc			t						JOB NO.:	10274.006
CONTRACTO EQUIPMENT	_	Martini Dr		Corpo	ration							PAGE NO.: ELEVATION:	9 of 12 302.5 Feet
GROUND				PTH 1	ΓΟ (Feet	t)·			ORIENTATION		ORE BARREL	DATE START:	8/26/2015
	HRS	AFT			OF	BOT.	OF		ERTICAL	TYPE		DATE FINISH:	8/28/2015
DATE	СО	MP WA	TER	CAS	SING	HOI	LE	Н	IORIZONTAL	SIZE		DRILLER:	Martini
								IN	NCLINED	Bit (Feet)		PREPARED BY	: ARR
								В	EARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd.
								0 A	NG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	N &	CORE			¥		≌		FIE	LD CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DEF	TH	DEPTH RANGE	SAM		% SVE	Rad	GRAPHIC LOG	The So	il Description applies o	nly to a location	of the exploration at the ti	me of drilling. Subs	urface conditions
(Feet)		(Feet)	NUM	DEK	RECOVERY	"	GR.				with time. The description soil types may be gradual		t the actual
_		120-125	Rur	: 13	3.6	72		@12 @12	er" appearance, 23.4': Sandy CLA 23.6': No recover	relatively cl Y (CL), olive	wet, fine sand, trace ean sand	et, hard	
		125-130	Rui Box		4.3	86		@12 cobb	el 28.3': Basal GRA' bles 29.3': No recovery	VEL (GP), w	k olive brown, wet, reathered slate, ba	salt and siltsto	ne gravel and
_	_	130-135	Rui Box		3.1	62		@13		/EL (GC), re	eddish brown, mois		
 168 1:	35—		-				-						
FIE	LD HA	RDNESS			BEDI	L DING	'	ATTII	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD HARD MOD. HARD SOFT	- KNIFE - SCRAT	CAN'T SCRATO ICHES DIFFICU ICHES EASILY ES	CH JLT	T ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLOW MODERA STEEP O	ORIZONTAL (0-5°) V OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) DR HIGH ANGLE (55-85°) ERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						CO	RE	BC	RII	NG LOG			BORING NO. PAGE 10 OF	CB-19
ROJECT: CLIENT: <u>I</u> CONTRACTO	Beverly	Martin	Unifi i Dril	ling (JOB NO.: PAGE NO.:	10274.006 10 of 12
QUIPMENT GROUND			1E-75		DTLIT	ΓΟ (Fee	+)-			ORIENTATION		ORE BARREL	DATE START:	302.5 Feet 8/26/2015
	HRS					OF.	ı). BOT.	OF	Х	VERTICAL	TYPE	ONE BAITTEE	DATE FINISH:	8/28/2015
DATE	СО	MP	WAT	ER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	: ARR
										BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
	1	COF)E					4.	0	ANG. FROM VERT.	Total (Feet)	TION DEMARKS AND	Beverly Hills, Ca	l
CORE DEI	PTH	DEP RAN (Fee	TH GE	SAMI		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	vith time. The description	ime of drilling. Subs	urface conditions f the actual
—168 1	35—							77777		135': SAND (SP), d		·		_
	_								gra	135.6': Sandy CLA\ vel, gleyed, oxidati bonate	(CL), yello on reductio	wish brown, mois n banding to 137',	t, coarse sand, pervasive MnC	fine slaty and
		135-	140	Rur Box		4.4	88			137': Gravelly CLA\ ivels	(CL), coar	se sand and fine a	angular slate ar	nd siltstone
										138.1': Grades finer	·			
-	+									138.8': Sandy CLA		moist, fine to coa	rse sand, few g	gravel
—163 1	40—							/////		139.4': No recovery 140': Sandy CLAY (orange brown to o	live brown fine	sand few
									fine ab	e angular gravels, r undant spotty MnO	ock line at f	140.8' consisting o	f coarse slaty (gravels,
	_	140-145	Rur	า 1	5			be	140.8': Sandy CLA\ ds) of coarse sand	at 141.7' ar	d 142-142.3'	·	·	
—158 1	45	140-	140	5 Run 1 Box 15		3	100		bro	142.5': Silty Gravell wn, moist, fine san avily weathered	y SAND wit d, basal gra	h Clay (SM-SC), y avels at 142.5-143	ellowish brown ', basal gravels	to olive at 147.2',
	-			Rur Box		5	100		@	147.2': CLAY (CL), 147.8': Gravelly CL/ ntact below				ravels, abru
-									tra	148': CLAY (CL), da ce slaty pebbles			eathered, abun	dant MnO,
—153 1	50-								@	149.2': Sandy CLA\	(CL), olive	brown, fine sand		
													· · · · · · · · · · · · · · · · · · ·	
							DING		AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
V. HARD V. HARD V. HARD V. HARD V. HARD V. SUPPLIES AN TO SCRATCHES DIFFICUM V. SOFT V. SOFT V. SOFT FIELD HARDNESS V. KNIFE CAN'T SCRATCH SCRATCHES EASILY GROVES CARVES					T ME Th	THIN HIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 11 OF	CB-19
PROJECT: CLIENT: I	Beverly OR: M	Iartini I	nified Sc Drilling (JOB NO.: PAGE NO.: ELEVATION:	10274.006 11 of 12
QUIPMENT GROUNI	TUSED: DWATER			EPTH :	TO (Fee	t):	1		ORIENTATION	С	ORE BARREL	DATE START:	302.5 Feet 8/26/2015
DATE	HRS A	AFT	VATER		r. OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	8/28/2015
DATE	COM	/IP V	VAICK	CAS	SING	HOL	E.		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	
		+						0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blv
E1 E1	- T	CORE			<u></u>		ပ	Т		. ,	I TION, REMARKS, AND I		
CORE DE (Feet)	PTH)	DEPTH RANGE (Feet)	SAM NUM	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the ti vith time. The description	me of drilling. Subsu	
−153 1	150 —						444		150 21: CLAV (CL)	mottled are	v with oxide stains	d hua maiat t	rana alatu
							• • •	_\@ \gra	150.2': CLAY (CL), avel	mottled gra	y with oxide staine	a nue, moist, t	race slaty
	4						111	<u> </u>	150.4': Cobbles and	SAND (SF), brown, very moi	ist, basal cobbl	es, abrupt
							<i>/////</i>	†/cor	ntact below	`	•		
									150.8': Silty SAND	(SM:), fine s	sand and basal gra	avel at 151.2, a	brupt erosiv
	4							1 1	ntact below	/ (CL) ====!	ioh brown	hnono cara-l l	aroval
		150-15	5 Ru		5				151.2': Sandy CLA\				
		.00 10	Box	(16		100		<u></u> @	151.3': CLAY (CL),	DIOMII (O OII	ve gray, gleyed Wi	ui wiio on ped	ogenic races
	\dashv							1					
								1					
								,	153.6': fine to coars		_ ` '		
	7								153.7': CLAY to Sai				
								pei	rvasive blocky struc	cure, MnO	and clay on well de	evelopea pedo(genic races
 148 1	155—						<i>\////</i>	1					
-	\dashv							1					
								1					
								1					
-	7							1					
		155-16	0 Ru		5	100		1					
			80)	(16		100							
-	7							1					
									158.3': Sandy CLA			n, slightly mois	t to moist,
-	4							ine	e sand, trace coars	e sand and	pennies		
							V///	1					
							644	<u></u>	159.6': rock line, we	eathered co	arse gravel size sil	tstone contact	
—143 1	160—						1)		160': Sandy CLAY (fine angular
									ivel, basal slaty gra			o coarse sario,	iiiie arigulal
							\ ////	1	,				
-	\dashv							1					
			- Ru	n 1				1					
		160-16	5 Box		5	100	/////	<u> </u>	162.6': Silty Gravell	v SAND be	d (SP/SM) erosive	contact helow	<u> </u>
							,,,,,,	_		-	, ,		
	-							(a)	163.1': CLAY (CL),	readish bro	wn, moist, trace fir	ie sand and an	ıyuıar gravel
-					l			@	163.7': CLAY (CL),	reddish bro	wn, moist, laminat	ed with brown	clay and
-							V////	oco	casional sand and f	ine gravels,	MnO and calcium	carbonate to	olay alla
-								a .					167.3'
	-												167.3'
—138 1	165												167.3'
		DDNESS.				DING			TITLIDE AND ANOLE	ION TO	CUEAD (FDACTURE		167.3'
FII	ELD HAF	RDNESS CAN'T SCRA	ATCH	V.	BED THIN	DING			TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS /	SHEAR / FRACTURE	WEATHERING	167.3'
FII '. HARD IARD	ELD HAF		CULT	T			2"	SHALL		-		WEATHERING FRESH V. SLIGHT	167.3'
FII . HARD ARD	ELD HAF	CAN'T SCRA CHES DIFFI CHES EASI S	CULT	ME TI	THIN HIN	<2" 2"-1:	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	WEATHERING FRESH	167.3'

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 12 OF	CB-19
PROJECT:	El Rod	leo School										PAGE 12 OF	12
CLIENT: B						t						JOB NO.:	10274.006
CONTRACTO				Corpo	ration							PAGE NO.: ELEVATION:	12 of 12 302.5 Feet
EQUIPMENT GROUND				рти т	O (Feet	٠١٠			ORIENTATION		ORE BARREL	DATE START:	302.5 Feet 8/26/2015
	HRS AI	FT		BOT		BOT.	OF	Х	VERTICAL	TYPE	DATE BATTLE	DATE FINISH:	8/28/2015
DATE	COME	P WA	TER	CAS	ING	HOI	.E		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	ARR
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	l
ELEVATIO		CORE DEPTH	SAMI	DIF	ERY		, ಕ				TION, REMARKS, AND L		
CORE DEF (Feet)	TH I	RANGE (Feet)	NUMI		RECOVERY	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description		
— 138 16 - - -	- - - 1	65-170	Rur Box		5	100		gra Qu @	167.3': Silty SAND (livel at 168.1' aternary San Pedro 168.1': Silty CLAY (dized fine sand incl	D Formation	1 (Qsp) rey to yellow green		
— 133 17 - -	70	70-175	Rur Box		5	100		wit @	170': Silty CLAY (CI h trace pebbly slate 170.5': Sandy Silty (undant carbonate a	and abund	lant carbonate strir to Silty SAND (SM	igers, trace sh	ell debris
- - - 128 17	75												
-	_							Pe 55- 11 Bo asp	tal depth of boring: rched groundwater 56.7', 82.8-84.5', 8 7.9-118.7, 120-123. ring backfilled with shalt il cuttings stored in	encountere 5-85.6', 90- 4', 125-128 bentonite-c	ed at approximately 91.8', 100-100.6', 1 3.3', 130-133', 135- ement grout and ca	05-106', 111- <i>°</i> 135.6'	112',
- 123 18	30 —												
FIE	LD HAPI	DNESS			BEDI	L DING	<u> </u>	ДТ	TITUDE AND ANGLE	.IOINTS /	SHEAR / FRACTURE	WEATHERING	
V. HARD - HARD - MOD. HARD - SOFT -	- SCRATCHES DIFFICULT THIN 2"-12"							SHALL	HIDDE AND ANGLE HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	≥" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROJECT:	El Ro	odeo Scho	ol					<u> </u>	NG LOG			PAGE 1 OF	5
		y Hills Un				:						JOB NO.:	10274.006
		Martini D CME-		orpora	ation							PAGE NO.: ELEVATION:	1 of 5 300.5 Feet
GROUN				PTH TO) (East	٠١٠			ORIENTATION		ORE BARREL	DATE START:	9/1/2015
	HRS	AFT		BOT. 0		BOT.	OF	Х	VERTICAL	TYPE	ONE BANKEE	DATE FINISH:	9/2/2015
DATE	СО	MP W	ATER	CASIN	- 1	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY:	ARR
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
CORE DE		CORE DEPTH RANGE	SAMF	LE	RECOVERY %	RQD	GRAPHIC LOG	The	Soil Description applies on	ly to a location of	TION, REMARKS, AND of the exploration at the	time of drilling. Subsu	rface conditions
(Feet		(Feet)	NONE		REC		R ₂	cond	differ at other locations and litions encountered. Trans	itions between	soil types may be gradua	on is a simplification of al.	tne actual
—301 -	0						2 b 4		Surface: 6 inches a	· 		es concrete	
	_							\Cla	ayey SILT (ML), dar edium sand, trace s	k reddish b laty gravel	rown, slightly moi		trace
		0-5	Run		5	100		Ple	eistocene Alluvium 1.4': Clayey SILT (N	of Benedic	t Canyon Wash (BCW ₂):	truoturo with
			Box	'		100	\mathbb{H}	\ im	n oxide developmer	nt on nedoa	o dark brown, mo enic faces, some	ouerale blocky St fine sand heco	nucture with mes sandv
	٦						2	}√cĭ	AY (CL) to 2.8'	podog		54114, 5000	oc oarray
] \@:	2.8'-3.2': coarse gra				ne, slate and
							EQ.	\ba	salt, with clayey ma	trix. Oxide	and clay on pedo	genic faces	
							10°		3.2'-3.7': CLAY (CL)				developed
							9///		ocky structure, iron				
-296	5								3.7'-4.5': Sandy Gra				
230	5							110	avels, heavily oxidiz				
							· · · ·	\@ʻ	4.5'-5': Sandy CLAY ite chips	' (CL), redd	ish brown, fine sa	and and coarse s	sand size
								,		(CD) dork	raddiah braum b	a a vilv vya ath a ra	d ciltatana
									5'-7': Gravely SAND d slaty gravels	(SP), dark	readish brown, n	eavily weathered	u siltstone
							· . ·	"	a siaty graveis				
							• • •						
			Run	2			60°		7'-7.8': Sandy GRA\				
		5-10	Box		5	100	50,		pist, abundant slaty			eavily weathered	d and
	_						9///		dized clasts, erosiv 7.8': becomes Sand			un alau	
) @	7.8 : becomes Sand	IY CLAY (C	L), iaminated brov	wn ciay	
									8.4'-8.6': Gravel (GF), weather	ed slate, siltstone	, and basalt grav	vels, abrupt
									ntact below				
								@	8.6'-10': Sandy CLA	Y (CL), fine	grained sand, la	minated, trace s	laty fine
								pe	bbles				
-291	10-						<i>Y////</i>	1_	401-0	I \ 1 !! 1 !			for a large
								@	10': Sandy SILT (MI	∟), reddish l	orown, moist, fine	sand, oxidized,	Triable
	_												
	٦		D	,									
		10-15	Run		5	100	 	h_m	12.5': Coarse slaty	nravel			
				-					12.6'-14.4': Sandy S		av (ML) laminate	ed very fine san	d with clay
								lan	ninations and oxide	cemented	dark brown sand	laminations	_ ······· olay
	4												
							ЩД						
							\Box		14.4': Coarse grave			k line	
-286	15		+	-			Ш	@	14.5': Sandy SILT (I	ML), oxidize	ed, laminated		
												T - T	
F		RDNESS CAN'T SCRA	TCH	V. TH	BEDI	DING <2		AT	TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING	
HVBD	- ryivih-h			V. IH		<2 2"-1		SHALL	OW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH	
. HARD ARD	- SCRAT											V. SLIGHT	
. HARD ARD IOD. HARD OFT . SOFT	- SCRAT	CHES EASIL ES		MEDIL THIC V. THI	UM CK	12"-3 36"-1 >12	36" 20"	MODI	ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	MOD. CLOSE WIDE V. WIDE	12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

ROJECT:	Fl D^	den Sa	hoel		UU	יתב	DU	RING LOG	PAGE 2 OF 5
ROJECT: CLIENT: E				chool	Distric	t			JOB NO.: 10274.006
ONTRACTO	DR: N	Iartini	i Drilling						PAGE NO.: 2 of 5
QUIPMENT			E-75						ELEVATION: 300.5 Feet
GROUNE					TO (Fee			ORIENTATION CORE BARREL	DATE START: 9/1/2015
DATE	HRS		WATER	1	T. OF SING	BOT.		X VERTICAL TYPE HORIZONTAL SIZE	DATE FINISH: 9/2/2015
	CON	VIP		CAS	SING	НО	LE	INCLINED Bit (Feet)	DRILLER: Martini PREPARED BY: ARR
								BEARING Barrel (Feet)	LOCATION: 605 Whittier Bl
								0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATIO		COR DEPT RANG	TH SAI	MPLE MBER	RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AN The Soil Description applies only to a location of the exploration at th	ne time of drilling. Subsurface conditions
(Feet)		(Feet		VIDER	REC		8 1	may differ at other locations and may change with time. The descrip conditions encountered. Transitions between soil types may be grad	tion is a simplification of the actual Jual.
—286	15—							@15': Silty SAND (SM), brown, moist, fine sand, gravel	
	_	15-2	/() ·	ın 2 ox 2	4.6	92		@15.8': SAND (SP), reddish brown to olive brown few fine gravel, friable, heavily oxidized	i, moist, line to medium sand
	-			JX Z		92		@17.7': SAND (SP), brown, moist, fine to coarse few basal cobbles, loose and friable, sharp conta	
-								@18.2'-19.6': Silty SAND (SM) to Sandy SILT (M gray, moist, fine sand, loose	
							900	@19.4'-19.6': Basal cobbles with pockets of oxidi	zed sand
-281	20—							@19.6': No recovery	
	-						95	@20'-20.2': Basal cobbles	
							(° 0°)	@20': Sandy GRAVEL (GP), brown with heavy or	xidation, moist, fine to coarse
	+						000	sand and gravel	
							• • • •	@21.6': SAND (SP), brown, moist, fine sand, few	fine gravel
		20-2		ın 1 ox 3	4.8	96			
•									
							ļ		
	\dashv								
							·		
070	ا م							@24.81: No recovery	
−276	25—						فكز	@24.8': No recovery	and basal gravals, fine to
							10°	@25'-26.2': Sandy GRAVEL (GP), siltstone, slate coarse sand matrix, erosive contact below	; and basal gravers, title to
							000	and the same many states and same same same same same same same same	
	\neg						17777	@26.2'-26.6': CLAY (CL), reddish brown, moist, s	etiff
							/////	, ,	7011
	\dashv			_			//////	@26.6': Sand Bed @26.7': Sandy CLAY (CL), heavily oxidized and I	aminated, with weathered
		25-3	(()	ın 2 ox 3	5	100	· ··	siltstone clasts	
	4			,, J		100		@26.9'-29.3': SAND with Gravel (SP), oxidized, fi gravels, nested channels	ne to coarse sand and fine
							· · ·		
-	+						10°	@28.7-30.5': Basal Gravels, small cobbles, overl	ies sand bed to 30.5'
							000		
—271	30						\'V.O.		
	ELD HAF					DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE	E WEATHERING
'. HARD IARD	- KNIFE (THIN THIN	<2 2"-1		HORIZONTAL (0-5°) V. CLOSE <2" SHALLOW OR LOW ANGLE (5-35°) CLOSE 2"-12"	FRESH V. SLIGHT
IOD. HARD OFT	RD - SCRATCHES DIFFICULT D. HARD - SCRATCHES EASILY FT - GROVES					12"-3 36"-1 >12	36" 20"	MODERATELY DIPPING (35-55') MOD. CLOSE 12"-36" MIDE 36"-120" VERTICAL (85-90') V. WIDE >120" Fe = Iron Oxide Mn = Manganese Ox	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

ROJECT:	El Ro	deo S	chool					שט	/1 \	NG LOG			PAGE 3 OF 5
LIENT:	Beverly	Hills	Unifie				t						JOB NO.: 10274.006
ONTRACT				ing C	orpor	ration							PAGE NO.: 3 of 5
QUIPMEN GROUN			1E-75	DEI)TU T	O (Foot	٠١٠			ORIENTATION	С	ORE BARREL	ELEVATION: 300.5 Feet DATE START: 9/1/2015
	HRS				BOT.	O (Feet OF	.). BOT.	OF	Х	VERTICAL	TYPE	ONE BANNEL	DATE START: 9/1/2015
DATE	COI	MP	WATE	R	CASI	ING	HOI	LE		HORIZONTAL	SIZE		DRILLER: Martini
										INCLINED	Bit (Feet)		PREPARED BY: ARR
										BEARING	Barrel (Feet)		LOCATION: 605 Whittier Bl
									0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca
CORE DE (Feet	PTH	DEP RAN (Fee	TH GE	SAMP NUMB		RECOVERY %	RQD	GRAPHIC LOG	may	Soil Description applies onl	y to a location of	ith time. The description	time of drilling. Subsurface conditions on is a simplification of the actual
—271	30	•						000					
	_	30-	35	Run Box		5	100		@: fra	30.5'-31.8': Gravelly 31.8'-35': Sandy GR gments at 34.5'	,	,	everely weathered basalt
	35												
	-	35-	40	Run Box		5	100		to to	few fine and coarse 35.7'-38.1': Sandy G	gravel GRAVEL (G	P), light reddish t	orown, moist, loose, fine to ct, erosive contact below
									@:	38.1'-38.5': SAND B	ed (SP), re	ddish brown, fine	sand
- 261	40								1	38.5'-40.2': Sandy G	RAVEL (G	P), basal slaty gr	avels and cobbles
	_	40-	45	Run Box		5	100		@4	eistocene Cheviot H 40.2'-42.7': Sandy C dized, blocky struct	LAY (CL),	medium brown to	o orange brown, very moist, rix
									COI	ntact at 43.7', heavy	riron oxidat	tion and MnO alo	
-								////		13.7'-44.7': Sandy S			
-256	45				\dashv			/////	1 @4	+4.7 -40.5" Silty CL/	AT (CL), re	uuisii prown, very	/ moist, oxide stained,
													T
	IELD HA			_	\/ T		DING	.	AT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
/. HARD HARD MOD. HARD SOFT /. SOFT		CHES E	CRATCH DIFFICULT ASILY		V. T TH MED THI V. Th	IIN DIUM ICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

ROJECT:	El Ro	odeo S	chool				1 1 1		RING LOG	PAGE 4 OF 5
LIENT: I	Beverly	Hills	Unifie							JOB NO.: 10274.006
ONTRACT	OR: N	Martir	ni Drill	ing Co	orpoi	ration				PAGE NO.: 4 of 5
QUIPMENT			1E-75						ODIENTATION CORE BARRET	ELEVATION: 300.5 Feet
GROUNI	DWATE	_		DEF	PTH T BOT.	O (Feet): BOT.	05	ORIENTATION CORE BARREL X VERTICAL TYPE	DATE START: 9/1/2015
DATE	CO		WATE	₽R	CASI		HOI.		HORIZONTAL SIZE	DATE FINISH: 9/2/2015 DRILLER: Martini
	00			-	0, 10		1101	_	INCLINED Bit (Feet)	PREPARED BY: ARR
									BEARING Barrel (Feet)	LOCATION: 605 Whittier Blv
-									0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATION CORE DE	- 1	CO		SAMP	LE	VERY	Rab	PHC SG	FIELD CLASSIFICATION, REMARKS, A The Soil Description applies only to a location of the exploration at t	
(Feet)	1	RAN (Fee		NUMB	ER	RECOVERY	<u>~</u>	GRAPHIC LOG	may differ at other locations and may change with time. The descri conditions encountered. Transitions between soil types may be gra	ption is a simplification of the actual
—256 - -	45 —			Dura					gleyed, laminated with fine sand and brown clay gravel, oxidized, heavily weathered clasts @46.5'-48.5': SAND (SP), brown, wet, fine to co gravels, coarse gravel at 47.7' consisting of wea weathered siltstone	arse sand, and fine pebbly
	_	45-	50	Run Box		5	100		@48.5'-50': Basal Cobbles	
-251	50-							وں،	@50': SAND (SP), brown, saturated, fine sand,	
	-	50-	55	Run Box		2.8	56		@51.2': Becomes fine to coarse sand with siltstom @51.9': Pebbly gravels @52.5': Clayey Gravelly SAND (GP), brown, sate of the same of th	urated, fine to coarse sand
246	55							ZX/VV.		
	_	55-5	7.5	Run Box		3.9	156		 @55'-55.3': Basal Clayey Gravel (GC) @55.3'-55.9': Sandy CLAY (CL), reddish brown, MnO development @55.9'-58.6': Sandy SILT (ML), dark reddish brown, internal laminations of clay and MnO, weathered siltstone gravel, basal gravels at 58.6' 	own, oxidized, gleyed with
	-	57.5	-60	Run Box		1.9	76		@58.6'-59': Sandy CLAY (CL), yellowish brown, and fine sand	•
									@59'-59.3': Gravelly SAND Bed, heavily weathe	
044	00								@59.3'-60': Sandy CLAY (CL), oxidized, fine gra	ined with MnO on pedogenic
-241	60							Y / / / /	_	
]					
FI	ELD HA	RDNES	SS			BEDI	DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTUR	RE WEATHERING
/. HARD HARD MOD. HARD GOFT /. SOFT	ARD - KNIFE CAN'T SCRATCH V. THIN D - SCRATCHES DIFFICULT THIN D. HARD - SCRATCHES EASILY MEDIUM T - GROVES THICK 3					HIN DIUM IICK	<2"-1 2"-1 12"-3 36"-1 >12	2" 66" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (6-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (65-85°) VERTICAL (85-90°) VERTICAL (85-90°) V. CLOSE CLOSE 2"-12" MOD. CLOSE 12"-36" WIDE 36"-120" V. WIDE >120" Fe = Iron Oxide Mn = Manganese C	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-20
ROJECT:		deo Scho		.h.a1.3	Diat	4						JOB NO.:	10274.006
CLIENT: <u>I</u>												PAGE NO.:	10274.006 5 of 5
QUIPMENT	_			corpo	71 44 41011							ELEVATION:	300.5 Feet
GROUNI	DWATER	₹:	D	EPTH :	TO (Fee	t):			ORIENTATION	С	ORE BARREL	DATE START:	9/1/2015
DATE	HRS /	I W	/ATER	1	Γ. OF	BOT.	- 1	X	VERTICAL	TYPE		DATE FINISH:	9/2/2015
	CON	NP		CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
				-					INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	605 Whittier Blv
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	DN P	CORE			ֹ≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND L		
CORE DE (Feet)	РТН	DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	RaD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	urface conditions f the actual
241	60 —	60-65		n 1 x 7	5	100		oxi ab	ses 50': CLAY (CL), dar dation reduction ba undant Manganese 52.6'-62.8': Basal G 52.8': Sandy CLAY gular siltstone chips	nding, well Oxide on p ravel (Rock (CL), oxidat	developed blocky edogenic faces Line)	structure, oxidi	zed with
-236 65 - -		65-70		ın 2 ıx 7	5	100		de oxi	55': Sandy CLAY (C veloped blocky stru dation reduction ba 68.1': Slaty gravels h depth	cture, Mang Inding	janese Oxide, gen	eral lack of gra	ivels,
								Pe 52 Bo as	tal depth of boring: rched groundwater 5-52.6' ring backfilled with ohalt il cuttings stored in	encountere	d at approximately ement grout and p	,	,
'. HARD IARD	FIELD HARDNESS BEL D - KNIFE CAN'T SCRATCH - SCRATCHES DIFFICULT THIN		DING <2 2"-1 12"-3 36"-1	2" 36"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (6-35°) FRATELY DIPPING (35-55°) OR HIGH ANGLE (65-85°)	JOINTS / V. CLOSE CLOSE MOD. CLOSE WIDE	SHEAR / FRACTURE 2" 2"-12" 12":36" 36"-120"	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE				

ROJECT:	FI D.	deo S	chool				ЪС	RING LOG	PAGE 1 OF 12
ROJECT: :LIENT:]				d Schoo	ol Distric	et			JOB NO.: 10274.006
ONTRACT	OR: N	Aartin	ni Drilli						PAGE NO.: 1 of 12
QUIPMENT			1E-75						ELEVATION: 304 Feet
GROUNI					H TO (Fee		0.5	ORIENTATION CORE BARREL	DATE START: 9/2/2015
DATE	HRS		WATE	RI	OT. OF CASING	BOT HO	- 1	X VERTICAL TYPE HORIZONTAL SIZE	DATE FINISH: 9/5/2015 DRILLER: Martini
	001	VII		+	DAGING	110	LL	INCLINED Bit (Feet)	PREPARED BY: ARR
								BEARING Barrel (Feet)	LOCATION: 605 Whittier Blv
								0 ANG. FROM VERT. Total (Feet)	Beverly Hills, Ca
ELEVATION CORE DE	PTH	DEP RAN	тн (SAMPLE	- ≥ ∞	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, The Soil Description applies only to a location of the exploration at may differ at other locations and may change with time. The desc	the time of drilling. Subsurface conditions ription is a simplification of the actual
-304	0-	(Fee	et)		ž –		\$. b. 4	conditions encountered. Transitions between soil types may be graduated as a condition of the concrete concrete.	aduai.
	5	0-4	ว	Run 1 Box 1	ו ה	100		Artificial Fill, undocumented (Afu) Hand Auger 0-5' @0.5': Clayey Gravelly SAND (SP-SC), dark re moist, fine to medium sand, fine gravel	ddish brown, dry to slightly
	_	5-1	1()	Run 2 Box 1	١ 5	100		Pleistocene Alluvium of Benedict Canyon Was @5.4': Sandy Gravelly CLAY (CL), hard, brown sand, fine and coarse weathered siltstone and second of the second	to orange brown, fine to coarse slaty gravel brange brown, oxidized with iron AND, oxide stained with clay, cavels, abrupt contact below to orange brown, dry, hard,
. 234	10							@10.2': Silty fine pebbly SAND (SM), light yello unconsolidated with rounded slaty pebbles, bec with coarse rounded flattened slaty gravels	
							\prod	@10.9': Basal gravels and pebbles, abrupt conf	tact below
							 	@11.1': Silty SAND (SM), light yellow brown to	gray brown, dry, hard, coarse
	_	10-	ו מו	Run 1 Box 2	ויי	100		\sand sized slaty fragments @11.6': Silty SAND with Gravel (SM), reddish became sand with weathered slate and siltstone clasts, voids, becomes heavily oxidized at 13' to 13.3'	
-	-							@13.5': Sandy GRAVEL (GP), reddish brown, s medium sand, fine and coarse gravel, severely gravel and basalt chips, unit consists of three n	weathered slate, siliceous
289	15						000	basal contacts, heavily oxidized unit	-
	ELD HA			_		DDING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTU	
/. HARD /. HARD /. HARD /. KNIFE CAN'T SCRATCH SCRATCHES DIFFICULT MOD. HARD /. SOFT /. SOFT /. SOFT GROVES /. SOFT CARVES					V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"- 36"-1 >12	12" 36" 120"	HORIZONTAL (0-5') SHALLOW OR LOW ANGLE (6-35') MODERATELY DIPPING (35-55') STEEP OR HIGH ANGLE (55-85') VERTICAL (85-90') V. VIDE V. VIOSE 2"-12" V. CLOSE CLOSE 2"-12" V. CLOSE 12"-36" WIDE 36"-120" V. WIDE >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE V. SEVERE OMPLETE

PROJECT: El Rodes School CORTRE Proving Hills fluiding Comparation CONTRACTOR: Martial Drilling Comparation ELEVATION & CORE DATE 100 CM 100						CO	RE	BC	RII	NG LOG			BORING NO.	CB-21
CONTRACTOR Martini Drilling Corporation EQUIPMENT LISS CMT75 GROUNDWATER DATE THIS ATT DATE HIS ATT WATER DOTH TO JEST COSNO HOLE HOLE LENATION 1 CORE BAMPLE DEPTH COSNO HOLE LENATION 2 DATE START: MAZZISH PRED LARGEROUS AND LUMTATOORS DATE START: MAZZISH DATE START: MAZZISH DATE START: MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH DATE START: MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH DATE START: MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH DATE START: MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH DATE START: MAZZISH PRED MAZZISH DATE START: MAZZISH DATE START: MAZZISH DATE START MAZZISH DATE START: MAZZISH DATE START MAZZISH MAZZISH MAZZISH DATE START M	PROJECT:	El Ro	odeo Schoo	ol .									TAGE 2 OF	12
ELIVATION A CORE BANGEL DATE STATE DEPTH TO (Feet) ORIENTATION CORE BANGEL DATE FINATE. SEZONS DATE STATE STA														10274.006
GROUNDWATER DATE HES AFT WATER CASING HOLE NOLINE SERVING SERVING HOLE SERVING SERVING HOLE SERVING SERVING HOLE NOLINE SERVING SERVING HOLE NOLINE SERVING SERVING HOLE SERVING SERVING HOLE NOLINE SERVING SERVING HOLE NOLINE SERVING SERVING HOLE SERVING SERVING HOLE NOLINE SERVING SERVING HOLE NOLINE SERVING SERVING HOLE SERVING SERVING SERVING HOLE SERVING SERVING SERVING SERVING HOLE SERVING SERV		_			Corpo	oration								
DATE NOTE CASING HOLE MATERIAL CASING HOLE BOT. OF X WATER CASING HOLE WATER CASING HOLE HOUSENIAL SIZE SILE Martini MILLINED REPARTS Martini REPARTS Martini REPARTS REPARTS					EDTU .	TO (Foot	6 \-			ORIENTATION		ORE BARREI	-	
COMP WATER CASING HOLE HOLE HORDONTAL SIZE STEELING Marting Martin			AFT				,	OF	Х			JOINE BANKEE	_	
ELEXATION A CORE CEPTH RANGE INJURIES SUBJECT TO A NAME IN THE SAMPLE SA	DATE	CO	MP WA	ATER	CAS	SING	НО	LE		HORIZONTAL	SIZE			
ELEVATION 8 CORE DEPTH (New) RANGE (Peet) SAMPLE BETH RANGE (Peet) SAMPLE BETH RANGE (Peet) Range										INCLINED	Bit (Feet)		PREPARED BY	ARR
ELEVATION & CORE DEPTH (Pred) SAMPLE NUMBER (Pred) The Sol Description spice of the color position and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the actual conditions and may change with time. The description is a simplification of the ac											, ,		LOCATION:	605 Whittier Blvo
DEPTH (Name) (Peth) RANDE (Peth		L		1				$\overline{}$	0	1	. ,			
289 15 25 26 26 27 28 27 28 28 28 28 28	ELEVATIO	N &		SAN	IDI F	E A		9€						
### 20 ##		PTH				86	g.	Lo &	may	differ at other locations and	d may change v	with time. The description	is a simplification of	
### Comment of the property of	(1 661)		(Feet)			쀭		9	cond	litions encountered. Trans	tions between	soil types may be gradual.	•	
20-25 Run 1 20-26 Run 1 20-27 Run 1 20-27 Run 1 20-27 Run 1 20-28 Run 1 20-28 Run 1 20-29 Run 1 20-27 Run 1 20-27 Run 1 20-28 Run 1 20-28 Run 1 20-29 Run 1 20-29 Run 1 20-27 Run 1 20-27 Run 1 20-28 Run 1 20-28 Run 1 20-29 Run 1 20-29 Run 1 20-29 Run 1 20-20 Run 2 20-20 Run 3 20-20 Run 4 20-20	-	_	15-20			5	100		me gra bas	edium sand, fine and evel and basalt chip	d coarse gr s, unit cons	avel, severely wear sists of three nester	thered slate, s	liceous
25-30 Run 2 Box 3 5 100 Run 2	— 284 : - -		20-25			5	100		wit rim @2 and @2 fine we @2 sta bed	h fine heavily weath is around slaty peble 20.2': oxidation zone distillation siltstone chips 21.4': Sandy GRAV et to coarse gravel, se athered silicious co 22.2': Sandy CLAY lined, oxidation reductiones gray clay @:	ered grave oles e, becomes EL (GP), da slaty weath bble (CL), orang action band 23.6'	els, severely oxidizes yellow brown, fine ark reddish brown, ered fragments, batter brown, moist, halling of clayey sand,	ed laminations e sand and fine slightly moist, usal cobble at 2 ard, very fine sa fine to coarse	and oxide e slaty gravel fine sand, 22.2', severely and, oxide sand,
EIELD HARDNESS BEDDING ATTITUDE AND ANGLE V. HARD SCRATCHES DIFFICULT MOD. HARD SOFT GROVES ATTITUDE AND ANGLE V. THIN THIN TELD HARDNESS BEDDING ATTITUDE AND ANGLE HORIZONTAL (0-5') SHALLOW OR LOW ANGLE (5-35') MOD CLOSE THICK SOFT THICK 120' V. THICK 120' VERTICAL (88-90') V. WIDE 36'-120' V. WIDE 36'-120' V. WIDE 36'-120' WIDE 3	- 279 :	25-							@2 fine	25': Clayey SILT (M e sand, trace fine gi	avel, dark			
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	-	_	25-30			5	100		@2 92 sai	26': Siltstone gravel 27.3': Gravelly Clayend, fine and coarse 27.8': CLAY (CL), o	ey SAND (S gravel, abr live brown i	SC-SP), dark browi upt contact below moist, oxidation rec	duction banding	g, orange
V. HARD - KNIFE CAN'T SCRATCH HARD V. THIN <2" THIN HORIZONTAL (0-5") SHALLOW OR LOW ANGLE (5-35") V. CLOSE CLOSE Q" 2"-12" FRESH V. SLIGHT MOD. HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55") MOD. CLOSE 12"-36" SLIGHT SLIGHT SOFT - GROVES THICK 36"-120" STEEP OR HIGH ANGLE (55-85") V. WIDE 36"-120" MODERATE MOD. SEVERE V. SOFT - CARVES V. THICK >120" VERTICAL (85-90") V. WIDE >120" MOD. SEVERE			RDNESS			RED	DING		ΔΤ	TITUDE AND ANGLE	, PTINIOI,	SHEAR / EPACTI IDE	WEATHEDING	
HARD - SCRATCHES DIFFICULT THIN 2"-12" SHALLOW OR LOW ANGLÉ (5-35°) CLOSE 2"-12" V. SLIGHT MOD. HARD - SCRATCHES EASILY MEDIUM 12"-36" MODERATELY DIPPINIG (35-55") MOD. CLOSE 12"-36" SLIGHT SOFT - GROVES THICK 36"-120" STEEP OR THIGH ANGLE (55-85") WIDE 36"-120" MODERATE V. SOFT - CARVES V. THICK >120" VERTICAL (85-90") V. WIDE >120" MOD. SEVERE				CH	V									
V. SEVERE Fe = Iron Oxide Mn = Manganese Oxide COMPLETE	HARD MOD. HARD SOFT	- SCRAT - SCRAT - GROVE	CHES DIFFICU CHES EASILY ES	JLT	ME TI	HIN DIUM HICK	2"-1 12"-: 36"-1	2" 36" 20"	SHALL	OW OR LOW ANGLÉ (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°)	CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

DO IECT.	FI D.	rdee E	cheel		CU	יתב	DU	PAGE 3 OF 12
ROJECT: LIENT:	El Ro Beverly			School	Distric	t		JOB NO.: 10274.006
ONTRACT	OR: N	Martir	ni Drillin					PAGE NO.: 3 of 12
QUIPMEN						_		ELEVATION: 304 Feet
GROUN	DWATE	$\overline{}$		DEPTH	TO (Fee T. OF	t): BOT.	OE	ORIENTATION CORE BARREL DATE START: 9/2/2015 X VERTICAL TYPE DATE FINISH: 9/5/2015
DATE	COI	- 1	WATER		SING	HOI.		HORIZONTAL SIZE DRILLER: Martini
	1			-				INCLINED Bit (Feet) PREPARED BY: ARR
								BEARING Barrel (Feet) LOCATION: 605 Whittier BI
	<u> </u>							0 ANG. FROM VERT. Total (Feet) Beverly Hills, Ca
ELEVATION CORE DE	PTH	DEP RAN	TH SA	MPLE IMBER	RECOVERY	RQD	GRAPHIC LOG	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
—274	30-	(Fee			E E			@30': Sandy CLAY (CL), orange brown, moist, fine sand, gleyed, blocky structure, heaveily oxidized with MnO staining
	_	30-	35 I	un 1 ox 4	5	100		@30.5': Sandy CLAY (CL), mottled dark blackish to reddish brown, orange brown and gleyed, blocky structure, fine sand, severely weathered sandstone clasts and fine slaty gravel
							<i>6777</i>	@34.1': Clayey basal GRAVEL (GC), siltstone and slate and weathered basalt
							<i>\////</i>	@34.3': Sandy CLAY (CL), orange brown to red brown, oxidized, gleyed, with
-269	35—						<u> </u>	coarse sand sized slaty fragments, MnO development in matrix
<u>-</u>								@35': Sandy SILT (ML), very moist, very fine sand, orange brown to gray brown, severely weathered white siltstone fragments
	_	35	71 I	un 2 ox 4	5	100		@36.1': Sandy SILT (ML), gradational contact below, orange brown, oxidized, clay and MnO on pedogenic faces, trace gravel in mass @37.9': Sandy CLAY (CL), dark orange brown, to reddish brown and grayish
—264	40-							black, blocky structure with clay and MnO on pedogenic faces, minor gravels heavily weathered, minor carbonate in voids
	_			un 1				@41.3': coarse, rounded slaty gravel
	_	40-	45 I	ox 5	5	100		
— 250	15-							Social day graves, windblown dit
—259	45							
	IELD HA					DING		ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING
/. HARD HARD MOD. HARD GOFT /. SOFT	DD. HARD - SCRATCHES EASILY MEDIUM OFT - GROVES THICK					<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5") SHALLOW OR LOW ANGLE (6-35") MODERATELY DIPPING (35-55") STEP OR HIGH ANGLE (55-85") VERTICAL (85-90") VERTICAL (85-90") V. CLOSE V. 2" CLOSE V="12" V. SLIGHT SLIGHT SLIGHT MODERATE MOD. SEVERE V. WIDE 120" MOD. SEVERE V. SEVERE En _ Iron Oxide Min = Manganese Oxide COMPLETE

				C	ORE	BC	RING LOG			BORING NO. PAGE 4 OF	CB-21
PROJECT:	El Re	odeo Schoo	l							PAGE 4 OF	12
CLIENT: I										JOB NO.:	10274.006
CONTRACTO		Martini Dr		orporatio	n					PAGE NO.:	4 of 12
EQUIPMENT				PTH TO (Fe	- 4\-		ORIENTATION		ORE BARREL	DATE START:	304 Feet 9/2/2015
GROUNI		AFT		BOT. OF		T. OF	X VERTICAL	TYPE	ONE BANNEL	DATE START.	9/5/2015
DATE	СО	I WA	TER	CASING		OLE	HORIZONTAL	SIZE		DRILLER:	Martini
							INCLINED	Bit (Feet)		PREPARED BY	: ARR
							BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
					<u> </u>		0 ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	ON &	CORE DEPTH	SAMP			\ € "			TION, REMARKS, AND L		
CORE DE		RANGE	NUMB		g ag	GRAPHIC LOG	The Soil Description applies onl may differ at other locations and				
(Feet))	(Feet)		쀭		20	conditions encountered. Transi				
—- 259 —	45—						@45.8': CLAY (CL), di weathered basalt fragi			, trace silt and	fine sand,
-	_	45-50	Run Box	ר ו	100		@46.9': Sandy CLAY, siltstone fragment at 4	with coarse	e sand sized rock f	ragments in m low @49.7'	atrix, white
254	50						@49.7': Silty Sandy C				
-	_						size rock fragments, g severly weathered rou			with white silt o	chips and
_	_		Dun	,		• •	@52': Coarse SAND b	ed, slate, s	siltstone and basalt	fragments, sa	andy clay
_	_	50-55	Run Box	, h	100		@52.6': CLAY (CL), or on vertical faces	range brow	n to reddish brown	, becomes oxi	dized, gleyed
_	_						@52.8': becomes oxid	ized gleyed	d Sandy CLAY (CL)	
							@54.5': Gravelly SAN			brown, saturat	ed, fine to
 249	55 —					1	coarse sand, fine and @55': SAND (SP), dar				
_	_						@55.9': fine to coarse	,	aturateu, iirie sanu		
-	_	55-60 Run 2 Box 6		68							
_	_						@58.4': No recovery				
244	60 —										
		DDN=2-							OUEAD (ED. CE)		
V. HARD		RDNESS CAN'T SCRATO	CH	V. THIN	DDING	<2"	ATTITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING	
HARD	- SCRAT	TCHES DIFFICU TCHES EASILY ES		V. THIN THIN MEDIUM THICK V. THICK	2' 12 36'	<2" -12" "-36" -120" 120"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					СО	RE	ВС	RING LOG			BORING NO. PAGE 5 OF	CB-21
PROJECT:	El Ro	odeo Schoo	l								PAGE 5 OF	12
CLIENT: I						t					JOB NO.:	10274.006
CONTRACTO	_	Martini Dr		orpoi	ration						PAGE NO.:	5 of 12
EQUIPMENT				DTUT	·O (Feet	١١.		ORIENTATION		ORE BARREL	DATE START:	304 Feet 9/2/2015
GROUNI		ΔFT		BOT.	O (Feet	BOT.	OF	X VERTICAL	TYPE	DANNEL	DATE FINISH:	9/5/2015
DATE	СО	I WA	TER	CAS		НО		HORIZONTAL	SIZE		DRILLER:	Martini
								INCLINED	Bit (Feet)		PREPARED BY:	ARR
								BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
								0 ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	ON &	CORE DEPTH	SAMF		≅RY		€			TION, REMARKS, AND L		
CORE DE (Feet)		RANGE (Feet)	NUME		RECOVERY	RQD	GRAPHIC LOG	The Soil Description applies onl may differ at other locations and conditions encountered. Transi	d may change v	vith time. The description	is a simplification of	
 244 	60 —							and coarse gravel, we	athered sla	ty clasts, abrupt er	osive contact t	pelow
-	_	60-65	Run Box		5	100		@62.7': Sandy SILT (I	ML), dark b	rown, with trace ba	salt fragments	
_	_							wery fine sands with the @64.2': Silty CLAY (C bedded to laminated s	L) light yell	owish brown, mode	erate blocky sti	ructure, thinly
239 -	65 —	65-70	Run	12	5			@66.8': thin bed of co siltstone, basalt and sl	ate	and weathered fin	e gravels cons	isting of
-	_	03-70	Box	7	3	100	000	@67.3': yellow CLAY (,	orupt basal contact	below	
_	_						000	@69.3': Gravelly Clayding sand, fine and coarse				ne to coarse
—234	70							@70': SILT (ML), redd		•		
-	-	70.75	Run	. 1	_			@70.7': Gravelly SAN and coarse gravel, trad	ce clay, abi	rupt contact at 72.4		e sand, fine
		70-75	Box	8	5	100	Ш	@72.4': Sandy SILT (I	,.	· •	<u> </u>	
-	_		Box 8			· 0.		EL (GP), da	ark brown, saturate	d, fine to coars	se sand, fine	
—229	75											
	EL D	DDNESS	<u> </u>		D==			ATTITUDE AND ANOLE	IONITO	OLIEAD / FDA OT LIDE	\4/5 A T. ==	
V. HARD HARD	- KNIFE - SCRAT			MEC TH	BEDI THIN HIN DIUM HICK HICK	<pre>200 < 2</pre>	2" 36" 20"	ATTITUDE AND ANGLE HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	
									Fe = Iron Oxi	de Mn = Manganese Oxide	JOINI LLIE	

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF 12	CB-21
ROJECT:	El Ro												
			Unified S									1	74.006
ONTRACTO QUIPMENT			i Drilling	Corp	oration								f 12 Feet
GROUNE				DEPTH	TO (Feet	t):			ORIENTATION	C	ORE BARREL		2015
	HRS	_			T. OF	BOT.	. OF	Х	VERTICAL	TYPE			2015
DATE	CO	MP	WATER	CA	SING	НО	LE		HORIZONTAL	SIZE		DRILLER: Mar	tini
									INCLINED	Bit (Feet)		PREPARED BY: ARE	
				1					BEARING	Barrel (Feet)			Whittier Blv
	<u> </u>	COF	9E	1	\vdash	Ι	T 45	0	ANG. FROM VERT.	Total (Feet)	TION DEMARKS ASSE	Beverly Hills, Ca	
ELEVATIO		DEP		MPLE	RECOVERY	۵	GRAPHIC LOG	The			TION, REMARKS, AND		aanditiona
CORE DEI (Feet)		RAN	GE NUI	MBER	00%	Rab	\(\frac{1}{2} \)	may	differ at other locations and	d may change v	vith time. The description	ime of drilling. Subsurface n is a simplification of the a	ectual
(1 001)		(Fee	et)		2		9	cond	itions encountered. Trans	itions between	soil types may be gradua	l.	
- 229	75—	75-∔		un 2 ox 8	4.2	84	0	@ @	77.6': gradationally 78.9': basal contact bist, fine to medium 79.1': No recovery	becomes fil	ne to coarse sand	lay lamination at 79	o', very
	80	80-1		un 1 ox 9	4.1	82							
—214	90	85-		un 2 ox 9	1.2	24		gra	38.8': Clayey GRAV Initic crystalline bas 39.2': Sandy SILT (l	al cobble, i	ntense clay develo	ne to medium sand opment in pedogeni e sand	l, large c faces
-17	-												
Eir	ELD HAI	BDNIE		1	DED!	DING			TITLINE AND ANOLE	IOINITE /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD MOD. HARD SOFT	- KNIFE (CAN'T S CHES D CHES E	CRATCH	ME T	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-: 36"-1 >12	12" 36" 120"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	No.

				(CO	RE	ВС	RING LOG			BORING NO.	CB-21				
_	Beverl	odeo Schoo y Hills Unif	ied Sch			:					JOB NO.:	10274.006				
CONTRACTO		Martini Dri : CME-7		orpor	ation						PAGE NO.: ELEVATION:	7 of 12 304 Feet				
GROUNE				PTH TO	O (Feet):		ORIENTATION	C	ORE BARREL	DATE START:	9/2/2015				
DATE	HRS	AFT	TER	BOT.		BOT.	OF	X VERTICAL	TYPE		DATE FINISH:	9/5/2015				
DAIL	CO	MP WA	IILIX	CASII	NG	HOI	.E	HORIZONTAL	SIZE		DRILLER:	Martini				
								INCLINED	Bit (Feet)		PREPARED BY					
								BEARING 0 ANG. FROM VERT.	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blvd				
		CORE			<u> </u>					│ .TION, REMARKS, AND L		!				
CORE DE		DEPTH	SAMP	PLE	, ER	Rab	ξg	The Soil Description applies on				urface conditions				
(Feet)		RANGE	NUME	BER	RECOVERY %	8	GRAPHIC LOG	may differ at other locations and	d may change v	vith time. The description	is a simplification o					
		(Feet)			2			conditions encountered. Trans	tions between	soil types may be gradual.						
-	90 —	90-95	Run Box		3.8	76		@90': Sandy CLAY (C pebbles and white silts on slaty gravels and ro 93.8'	stone chips	, spotty MnO in ma	trix and heavil	y developed				
	95—	95-100	Run Box		5	100			th MnO dev	elopment in matrix	reddish brown, slighlty moist, natrix, pulses of siltstone, slate 4', gleyed					
—204 1 –	100 							@100': trace subround	_							
							•	@101.6': SAND (SP),	olive gray,	slightly moist, fine	to medium sa	nd, fine and				
-			D	,				coarse gravel	/EL (OD)	douls browns 4	ad lassa si	roo ocaal fi				
		100-105	Run Box		5	100	1111	@102.2': Sandy GRA\ and coarse gravel, ab			eu, ioose, coa	rse sand, fine				
-	_							@102.5': CLAY (CL),	•		ce coarse san	d trace fine				
							<i>\////</i>	gravel, blocky structur								
							<i>\////</i>	matrix,		•	- ·	-				
-	_						<i>\////</i>									
							<i>\////</i>									
 199 1	105		-	_			/////									
FI	ELD HA	ARDNESS			BEDI	DING		ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING					
SOFT	- SCRA			V. TH THI MEDI THIC V. TH	IN IUM CK	<2' 2"-1 12"-3 36"-1 >12	2" 66" 20"	HORIZONTAL (0-5°) SHALLOW OR LOW ANGLE (5-35°) MODERATELY DIPPING (35-55°) STEEP OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	⊘" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE					
									Fe = Iron Oxi	de Mn = Manganese Oxide	GOIVII LETE	4				

					CC	RE	BC	PRII	NG LOG			BORING NO. PAGE 8 OF	CB-21
PROJECT: CLIENT: E	El Rod			heel	Dict:::							JOB NO.:	10274.006
CONTRACTO												PAGE NO.:	8 of 12
QUIPMENT												ELEVATION:	304 Feet
GROUNE			D		TO (Fee	,			ORIENTATION	-	ORE BARREL	DATE START:	9/2/2015
DATE	HRS A	1 V	VATER	1	T. OF SING	BOT.		Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH:	9/5/2015 Martini
	COIVII	P		CAS	SING	пО	LE		INCLINED	Bit (Feet)		DRILLER: PREPARED BY	Martini
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	a
ELEVATIO	N &	CORE			Σ		≌		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEI		DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	Rab	GRAPHIC	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	n is a simplification o	urface conditions f the actual
— 199 1	05— — — — 1	05-11	() -	n 2 x 11	5	100		str	106.2': color change ucture with very fine eying of soil faces o	e sand and	clay on pedogenic	c faces, gleyed,	e blocky vertical
—194 1	10								110': Sandy CLAY (nd, trace fine grave				
	1	10-11		ın 1 x 12	5	100		sai	112': 2-foot zone, or nd, gleyed	Ū		ŕ	`
							$ \cdot \cdot $		114': Silty SAND (S ty gravel	ıvı), reddish	prown, very mois	ει, τιne sand, tev	v angular
								_	114.6': SILT (ML), b	rown mois	t. stiff. verv fine s	and. MnO in ma	atrix and on
—189 1 - -	15 1	115-12		ın 2 x 12	5	100		Qu @can	aternary San Pedro 116.6': color change bonate stringers ar	o Formation e, becomes nd lining of	n (Qsp) dark gray brown krotovina	. — — — — — Sandy CLAY (0	 CL) with
								∖ab	undant carbonate s 118.2': SILT (ML), c	tringers			
-									, ,			•	
—184 1	20—							@	119.5': Sandy CLA\	Y (CL), mois	st, stiff, very fine s	and, shell fragr	ments and
	10.114.5	DNECC			D==	DINC			TITLIDE AND ANOLE	IOINTE	OUEAD / EDA OT USE	NA/E A TI IEE	
	LD HARI - KNIFE CA		ATCH	V	BED THIN	DING <2			TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING	
IARD IOD. HARD IOFT	- KNIFE CA - SCRATCI - SCRATCI - GROVES - CARVES	HES DIFF HES EASI	ICULT	ME Th	THIN THIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO)KE	BC	KIN —	G LOG			BORING NO. PAGE 9 OF	CB-21
ROJECT: LIENT: B		deo Sch		phoch 1	Dietria	+			•			JOB NO.:	10274.006
ONTRACTO												PAGE NO.:	9 of 12
QUIPMENT	_			- F							_	ELEVATION:	304 Feet
GROUND			D		TO (Fee				PRIENTATION	-	ORE BARREL	DATE START:	9/2/2015
DATE	HRS	1 1	WATER	1	T. OF SING	BOT. HO			ERTICAL ORIZONTAL	TYPE SIZE		DATE FINISH: DRILLER:	9/5/2015 Martini
	CON	VII		CAS	DING	пО	LL		URIZUNTAL ICLINED	Bit (Feet)		PREPARED BY	
									EARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
	L.							0 A	NG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	<u> </u>
ELEVATIO	N &	CORE DEPTH		IPLE	ER		₩.				TION, REMARKS, AND		
CORE DEF (Feet)		RANGE (Feet)		IBER	RECOVERY	Rab	GRAPHIC LOG	may dif	er at other locations an	d may change v	of the exploration at the vith time. The description soil types may be graduated to the control of the contr	on is a simplification o	urface conditions of the actual
184	20-						/////	\carb	onate stringers				
										ly CLAY (CI	L), gray, moist, fe	w fine sand	
								1		•	•		
								1					
								@12	1.4': Clayey SAN	D (SC), gra	y moist, fine sand	t	<u> </u>
	4							@12	1.9': CLAY (CL),	moist, trace	sand		
		120-12	Ru		3.9		• • •		2.2': SAND (SP),				
		120-12	Box	x 13	3.9	78			2.5': CLAY (CL),				
	\dashv								. ,				
								1					
							• • •		3.6': SAND (SP),		t, fine sand		
	٦							@12	3.9': No recovery	,			
-179 1:	25—						ļ	@10	E' CAND (CD) ~	rov octurat	od fino cond		
								@12	5': SAND (SP), g	ıay, saturat	eu, iirie sand		
	\dashv						Шi	@12	6': SILT (ML), gra	ay, verv moi	st		
									(–), 910	,, <u></u> ,o			
								@12	6.7': SAND (SP),	gray, satur	ated, fine sand		
	7		R	n 1					6.9': SILT (ML), g				
		125-13		11 1 K 14	5	100							
-	4							240	Oli O inab fine a	ad lawar			
								w 12	8': 2 inch fine sar	iu iayei			
							Ш						
	\dashv							@12	8.9': CLAY (CL),	gray, moist	<u></u>		
— 174 1:	30—					_	<i>\\\\\</i>	1					
	-							@13	0': Sandy SILT (I	ИL), gray, m	noist		
	\dashv												
	٦		ъ.,	n 2									
		130-13		11 Z K 14	5	100							
	4							640	21. CLAV (CL)	ov maiat t	rana aark t-		
								<u>w</u> 13	3': CLAY (CL), gi	ay, moist, t	iace carbonate		
	\dashv							1					
169 1:	35—							1					
										T			_
		RDNESS CAN'T SCR	ATCH	1/	BED THIN	DING <2	,		TUDE AND ANGLE ORIZONTAL (0-5°)	JOINTS /	SHEAR / FRACTURE	WEATHERING	
IARD	- SCRATO	CHES DIFF CHES EAS	ICULT	T	THIN HIN DIUM	<2 2"-1 12"-	2"	SHALLOV	OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	FRESH V. SLIGHT	
			ı_ I		HICK	12"-1 36"-1			R HIGH ANGLE (55-85°)	WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
OFT	GROVECARVE				THICK	>12		3.71	ERTICAL (85-90°)	V. WIDE	>120"	MOD. SEVERE	

					СО	RE	ВС	RII	NG LOG			BORING NO.	CB-21
PROJECT:	El Ro	odeo Schoo	1									PAGE 10 OF	14
CLIENT: B	everly	y Hills Unit	fied Scl									JOB NO.:	10274.006
CONTRACTO	_	Martini Dr		Corpo	ration							PAGE NO.:	10 of 12
EQUIPMENT				DTU	FO (F4	١.			ORIENTATION		ORE BARREL	DATE START:	304 Feet 9/2/2015
GROUND		AFT			O (Feet	BOT.	OF	Х	VERTICAL	TYPE	ONE BANNEL	DATE START.	9/5/2015
DATE	СО	Ι \Λ/Δ	TER		SING	HOI			HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY:	ARR
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE DEPTH	CAMI		≅RY		≌"				TION, REMARKS, AND L		
CORE DEP (Feet)	TH	RANGE (Feet)	NUME		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description		
— 169 13 — — 164 14 — —		135-140	Rur Box Rur Box	15	5	100		@	135': CLAY (CL), da	CL), dark g	ray, moist, very find	e sand	
— — 159 14	- 45							an	143.9': Clayey Grav d coarse gravel 144.9': Clayey SAN				e sand, fine
_	_							@	145': No recovery			io sand	
							$ \cdot \cdot $	@	146.3': Silty SAND (SM), gray,	moist, fine sand		
_	-	145-150	Rur Box		3.7	74		CO	146.9': SAND with (arsening, shell fragr	ments			
15445	50-								148.8': Silty CLAY (obles	CL), olive g	ray, moderately pla	astic, few grave	el and
— 154 15	JU —												
			L ,				L ,	1					
V. HARD - HARD - MOD. HARD - SOFT -	KNIFE SCRAT		JLT	MEI TH	BEDI THIN HIN DIUM HICK THICK	2"-1: 12"-3: 36"-1: >12'	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5') OW OR LOW ANGLE (5-35') PRATELY DIPPING (35-55') P OR HIGH ANGLE (55-85') VERTICAL (85-90'')	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO.	CB-21
DDO IEOT:	FID	odeo Schoo	J									PAGE 11 OF	12
PROJECT: CLIENT: B				hool	Dietrio	4						JOB NO.:	10274.006
CONTRACTO												PAGE NO.:	11 of 12
EQUIPMENT	_			Corp	JI ation							ELEVATION:	304 Feet
GROUNE				FPTH	TO (Fee	t)·			ORIENTATION	С	ORE BARREL	DATE START:	9/2/2015
	HRS	AFT			T. OF	BOT.	. OF	Х	VERTICAL	TYPE		DATE FINISH:	9/5/2015
DATE	СО	MP WA	ATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	: ARR
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	NI S	CORE			≿		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE		DEPTH		IPLE	, EE	Rab	F 8	The	Soil Description applies on	ly to a location of	of the exploration at the t	ime of drilling. Subs	urface conditions
(Feet)		RANGE	NUM	IBER	RECOVERY	ř	GRAPHIC LOG	may	differ at other locations an itions encountered. Trans	d may change v	vith time. The description	n is a simplification of	f the actual
— 154 1	50-	(Feet)			<u>~</u>		 	Conu	lions encountered. Trans	illoris between s	Soil types may be gradua		
-		150-155		ın 2 x 16	5	100		@ con	150': No gravel and 152.4': trace fine sa 153.6': Silty SAND of tact	nd		ne gravel, grad	ational
—149 1	55						<u> </u>	W	154.0 . Iface clay				
							[].].[
								<u></u>	55.5': Clayey SAN	D (SC) ara	v fine sand		
_												parhanata ara	dational
_									itact	(CL), gray	, line sand, trace	carbonate, grad	lational
								COI	ilaci				
-	_							4					
		155-160	Ru	n 1	2.1			@	57.1': No recovery				
		155-160	Box	x 17	2.1	42							
-	_												
	_												
-144 1	60						1						
	_												
	_												
			Ru	n 2									
		160-165		ıı ∠ x 17	0	0							
	_		50/	. 17									
	_												
—139 1	65—		1					-					
FIE	ELD HA	ARDNESS			BED	DING		AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD		CAN'T SCRAT			THIN	<2 2"-1	" 2"	CHVII	HORIZONTAL (0-5°)	V. CLOSE	<2" 2"-12"	FRESH	X
MOD. HARD SOFT		TCHES DIFFICI TCHES EASILY ES ES		ME T	THIN EDIUM HICK THICK	2"-1 12"-; 36"-1 >12	36" 20"	MODE	OW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD. CLOSE WIDE V. WIDE	12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	
				1						Fe = Iron Oxid	de Mn = Manganese Oxide	COMPLETE	4

					CO	RE	BC	RII	NG LOG			BORING NO. PAGE 12 OF	CB-21
PROJECT:	El Ro	deo Schoo	ol									152 12 01	
CLIENT: B	everly	Hills Uni	fied So			t						JOB NO.:	10274.006
CONTRACTO				Corpo	ration							PAGE NO.:	12 of 12
EQUIPMENT					TO 15	1.			ODIENTATION		ODE BARDEI	ELEVATION:	304 Feet
GROUND	WATE		D		TO (Feet	t): BOT.	OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: DATE FINISH:	9/2/2015 9/5/2015
DATE	COI	1 W/	ATER		SING	HO!		^	HORIZONTAL	SIZE		DRILLER:	9/5/2015 Martini
				1			-		INCLINED	Bit (Feet)		PREPARED BY	
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
					\Box		\Box	0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	l
ELEVATIO	N&	CORE DEPTH	CAR	IPLE	RECOVERY		을				TION, REMARKS, AND L		
CORE DEF	тн	RANGE		IPLE IBER	Š Š	RQD	GRAPHIC LOG	The	Soil Description applies on differ at other locations and	ly to a location of	of the exploration at the tir	ne of drilling. Subsi	urface conditions
(Feet)		(Feet)			REC		9	cond	itions encountered. Trans	itions between	soil types may be gradual.	a oipiinoation oi	
-	_	165-170		n 1 < 18	2.2	44		sul	165': Silty SAND (S pangular gravel and	cobbles, tr	ace clay	, 600166 5	uar rud,
- 134 - 13 - -	70 —							Pe 72 Bo dri Ex	tal depth of boring: rched groundwater 8-74.2', 75-78.9', 8 ring backfilled with ling. cess soil cuttings di site.	encountere 8.8-89.2', 1 soil cuttings	ed at approximately 02.2-102.5', 125-12 and patched with	26', 143.9-144. asphalt upon o	9' completion o
-	75												
FIE	LD HA	RDNESS			BED	DING	·	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- SCRAT		ULT	ME Th	THIN THIN DIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	MODI	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxi	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					СО	RE	BC	RII	NG LOG			BORING NO.	CB-22					
PROJECT:	El Ro	odeo Schoo	1_									FAGE I UF	<u> </u>					
CLIENT: <u>I</u>												JOB NO.:	10274.006					
CONTRACTO	_	Martini Dr		Corpo	ration							PAGE NO.:	1 of 5					
QUIPMENT GROUNI		CME-7		PTH	ΓΟ (Feet	t):			ORIENTATION		ORE BARREL	DATE START:	290.2 Feet 9/3/2015					
	HRS	AFT			OF	BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	9/3/2015					
DATE	со	MP WA	TER	CAS	SING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini					
									INCLINED	Bit (Feet)		PREPARED BY	: ARR					
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd					
		CORE				_		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	<u> </u>					
ELEVATIO		DEPTH	SAM	PLE	<u> </u>	ے ا	≌ ຶ	The			TION, REMARKS, AND L		urface conditions					
CORE DE		RANGE (Feet)	NUM		RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of						
—290	0-							@()': No recovery									
_ _ _ 285	5	0-5	Rui Bo:		5	100		Ho G San de	ificial Fill, undocur 0.2': CLAY (CL), broarse sand, trace find 10cene and Pleisto 10.5': CLAY (CL), broad, trace fine gravel 10.6': Sandy CLAY (CL), broad, trace fine gravel 10.6': Sandy CLAY (CL)	cene Alluvioum, moist, l, siltstone, faces	ium of Benedict Ca hard, few fine to m rounded slaty grav	anyon Wash (t ledium sand, t el, oxidized blo loist, fine to m	⊋al) race coarse ebs on poorly					
		5-10	Rui Bo:		4.4	88		@8 Mo	nterey siltstone gra	flow, fine t	o coarse sand, occ	rted , occasional fine angular						
	10 —	10-15	@9.5': No recovery Pleistocene Alluvium of Benedict Canyon Wash (BCW ₄) @10': Sandy CLAY (CL), medium brown to faint reddish brown, slightly mo fine to medium sand, massive, poorly developed, minor blocky structure Run 1 5 100 @12.5': increase in fine slate and siltstone gravel															
- - 275	_ _ 15 																	
FII	ELD HA	RDNESS	Ь		LBEDI	L DING		L AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	_					
V. HARD HARD MOD. HARD	- KNIFE - SCRAT	CAN'T SCRATO TCHES DIFFICU TCHES EASILY ES		T ME Th	THIN HIN DIUM HICK THICK	<2' 2"-1. 12"-3 36"-1. >12'	2" 36" 20"	SHALL	HTDDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre>2" 2"-12" 12".36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE						

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB-22
ROJECT:	El Ro												
_			Unified S									JOB NO.: PAGE NO.:	10274.006 2 of 5
CONTRACTO EQUIPMENT	_		ii Drilling 1E-75	; corp	บา สเปปก							ELEVATION:	2 01 5 290.2 Feet
GROUNI				DEPTH	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START:	9/3/2015
DATE	HRS		WATER	- 1	T. OF	BOT.		Χ	VERTICAL	TYPE		DATE FINISH:	9/3/2015
	COI	MP		CA	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
	-								INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	: ARR 605 Whittier Blv
	1	-						0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATION	N 0	COF	RE		T≿		ပ		1	D CLASSIFICA	TION, REMARKS, AND I		
CORE DE	PTH	DEP RAN (Fee	GE NU	MPLE	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the ti	ime of drilling. Subs	urface conditions f the actual
	15—	15-2		un 2 ox 2	5	100		@ an @ @	15': increase in fine 16.8': fine to mediur d siltstone gravels 17.1': thin lamination 18': thin lamination	m sand, occ n of siltston of siltstone	casional coarse sa le fragments		c fine slate
		20-2		un 1 ox 3	5	100		CO	20': fine to medium arser, very occasion	nal gravel n	ear base, slightly (gradational con	tact below
								gul (@); vei col	orounded gravel sco 23.4': Sandy CLAY ry moist, high sand nsist of siltstone an 24.6': becomes san	our surface with Gravel content, fin d slate, cha	below, little clay ir (CL), medium bro e to coarse sand, lotic assemblage	n matrix own to faint red mostly massive	dish brown,
265	25 —							@:	25.5': Sandy CLAY h depth				des coarser
	_	25-		un 2 ox 3	5	100		oxi @: we	26.7'-27.1: Sand be dized, fine 27.1': Gravelly CLA' Il developed blocky dogenic faces, som	Y (CL), orai	nge brown, reddish	n brown to blaced manganese of	kish brown,
—260	30												
FI	ELD HAI	RDNES	L SS	1	BED	DING	' 	L AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/. HARD HARD	- KNIFE (CAN'T SO CHES D CHES E	CRATCH IFFICULT	ME	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-; 36"-1 >12	2" 36" 20"	SHALL	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

PROJECT:	El Ro	deo S	chool						'1 XII	NG LOG			PAGE 3 OF	5
LIENT: 1													JOB NO.:	10274.006
CONTRACTO				ling C	Corpo	ration							PAGE NO.: ELEVATION:	3 of 5 290.2 Feet
GROUNI			/IE-/5	DE	РТН Т	O (Feet	t)·			ORIENTATION	С	ORE BARREL	DATE START:	9/3/2015
	HRS		10/07		ВОТ		BOT.	OF	Х	VERTICAL	TYPE		DATE FINISH:	9/3/2015
DATE	COI	MP	WAT	EK	CAS	ING	HOI	LE		HORIZONTAL	SIZE		DRILLER:	Martini
										INCLINED	Bit (Feet)		PREPARED BY	
									0	BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
		COI	PF						T	ANG. FROM VERT.	Total (Feet)	TION DEMARKS AND	Beverly Hills, Ca	1
CORE DE	PTH	DEP RAN (Fe	TH IGE	SAMI		RECOVERY	RØD	GRAPHIC LOG	may	Soil Description applies onl differ at other locations and itions encountered. Transi	y to a location of	ith time. The description	time of drilling. Subs	urface conditions f the actual
260 	30 —	30-	35	Rur Box		5	100		find bell place of the place of	30': Basal SANDS are subangular to sub low 21.3': Sandy CLAY addium sand with occupate soil welopment on ped factors and subangular to subang	of Benedic (CL), reddis assional coa developme aces, paleo	t Canyon Wash (sh brown with verarse sand and finert, minor blocky sol	(BCW ₂) y faint gleying, fe gravel structure with country t slate gravels we	al contact ine to lay
250		35-40 Run 2 Box 4 8							, abundant weat , secondary clay natrix, erosional c, siltstone and aded with slight of l	contact below heavily coarsening				
-250	40								fine	e gravel grådes coa	rser with de	epth		
-	_	40-	45	Rur Box		5	100		fine silt	40.3': Gravelly SAN eto coarse sand, fir stones, erosional coarse sand, fir stones, erosional coarse sand, fir stones, erosional coarse sand, fir stones, clasts constitution of the sandy CLAY, inches, clasts constitution	ne gravels u ontact below reddish bro	up to 1.5-inches,	clasts consist of	f slates and
- 245	45									43.7': sandy laminat				
	EI D LIV	BDVIE		П		DED	DING			TITLIDE AND ANOLE	IOINTS /	SHEAD / EDACTION	WEATHERING	_
/. HARD HARD	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CAN'T S CHES D CHES E	CRATCH DIFFICUL		TH MEI TH	HICK	OING <2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	\$\frac{\text{SHEAR / FRACTURE}}{2"\text{-12"}}\\ 12"\text{-36"}\\ 36"\text{-120"}\\ >\text{120"}	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

PROJECT:	Fl D.	ndeo Sal	hool		CO	'KE	DU	יוואי	IG LOG			PAGE 4 OF	5
ROJECT: CLIENT:				chool 1	District	t						JOB NO.:	10274.006
ONTRACT	OR: N	Martini	Drilling									PAGE NO.:	4 of 5
QUIPMEN										_		ELEVATION:	290.2 Feet
GROUN			D		TO (Feet		05		ORIENTATION		ORE BARREL	DATE START:	9/3/2015
DATE	HRS		WATER		T. OF SING	BOT. HOI	- 1	Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: DRILLER:	9/3/2015 Martini
	- 001	IVII		CA	SING	1101			INCLINED	Bit (Feet)		PREPARED BY	
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	ı
ELEVATION	ON &	CORE	1		Y		ဋ		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE DE	PTH	RANG (Feet	E NUN	MPLE MBER	RECOVERY	Rab	GRAPHIC LOG	may o	Soil Description applies on differ at other locations and tions encountered. Trans	d may change v	vith time. The description	is a simplification of	urface conditions f the actual
—245	45								4.8': sandy lamina				
									5': poor recovery,		- b fine cond	ala	
	-							$\overline{}$	5.6': sandy lamina				
								(0)4	6': Sandy CLAY (C	ı∟), brown t	o orange prown, fil	ie sariu, ciaye	у
								1					
	-							1					
		45-5		ın 2	4.4	00		@4	7.3': Clayey SAND	(SC), very	moist, stiff, fine to	coarse sand,	oxidized
			Bo	x 5	'	88		1				ŕ	
	\neg								8': poorly develope			n, poor to mod	derately
								∖blo	cky structure, high	clay conten	ıť	•	
								@4	8.4': channel depo	sits: Clayey	SAND with Grave	l, oxidized, gle	yed, faint
								lam	inations, fine to co	arse sand,	tine slate gravels,	cnaotic assem	blage
-240	50-						77777		istocene Cheviot I 9.4': No recovery	Hills Depos	it (CHD)		
240	30								0': Clayey SAND (mostly fine sar	nd, few
								$\overline{}$	dium sand, trace c				
							000	@5	0.6'-51.2': Sandy 0	SRAVEL be	d (GP), over fine g	rained Silty SA	AND (SM),
								1 ~	oxide laminations		-:		
									51.5': zone of well d relopment on pedo				ay
								uev	elopinent on pedo	geriic races	, abrupt contact be	SIOW	
		F0 F	- Ru	ın 1	4.0			@5	2.2': Silty SAND (S	SM), light re	ddish brown, mois	t, mostly fine to	o medium
		50-5		x 6	4.3	86		sar	d, normally graded	l, erosional	contact below		
-	-							@5	2.7': Sandy CLAY	(CL), olive I	prown, very moist,	fine sand with	occasional
									dium to coarse sar nination at 54.1'	id and fine (gravel, mostly mas	ssive, thin oxidi	zed sandy
								iaii	imation at 54. I				
-	\dashv							@5	i4': color change to	dark orang	e brown. heavilv o	xidized	
									4.3': No recovery			-	
225													
-235	55 —								55': Sandy CLAY (C				
									id and fine gravel, i				ut, normally
_								gra	ded becoming clay	ey sand ne	ar base, erosional	contact below	
							<i>\////</i>]					
	4						<i>\\\\\\</i>						
		^	, Ru	ın 2			<i>\////</i>						
		55-6		x 6	5	100	<i>\////</i>						
	4							<u></u>	68': Sandy CLAY, o	livo brown t	o roddiob brown =	noist mostly fi	no cond with
									medium to coarse				
								4	emblage		J : ::,		
-	\dashv							1					
							<i>\////</i>	1					
-230	60												
/. HARD		RDNESS		V.	BED THIN	DING <2	.		TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS / V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
HARD MOD. HARD	- SCRAT	CHES DIF	FICULT	T	HIN DIUM	2"-1 12"-3	2"	SHALLO	DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
OFT	- GROVE	ES .		TI	HICK THICK	36"-1 >12	20"		OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD. SEVERE	
. SOFT						- 12							

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 5 OF	CB-22
ROJECT:		leo Sch			D								
CLIENT: I			nified So Drilling (JOB NO.: PAGE NO.:	10274.006 5 of 5
ONTRACTO				Corpo	ภ สนเปก							ELEVATION:	290.2 Feet
GROUNE				EPTH	TO (Fee	t):			ORIENTATION	C	ORE BARREL	DATE START:	9/3/2015
DATE	HRS A	I V	VATER	вот	Γ. OF	BOT.	- 1	Х	VERTICAL	TYPE		DATE FINISH:	9/3/2015
	COM	۲ .		CAS	SING	HOI	LE .		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini
									BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
								0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVATIO	N &	CORE			<u>≽</u>		₽		FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
(Feet)		DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies on differ at other locations and itions encountered. Trans	d may change v	vith time. The description	is a simplification of	urface conditions f the actual
—230	60 —							sar	60': Sandy CLAY, b nd and gravel, mino ndy laminate at bas	or MnO spot	t, mostly fine to me ting, less compete	edium sand, tra ent than overlyi	ace coarse ng soils,
	-	60-65		n 1 x 7	5	100		to	51.1': Sandy CLAY medium sand with on ntact below, well de	occasional o	coarse sand and fi	ne gravel, grad	dational
—225	65								55': grades sandier semblage of slate g				
		65-70		n 2 x 7	5	100		@6 fine	67': Sandy CLAY, re e gravel, minor gley	eddish brow ring, very m	n, mostly fine to n inor sandy laminat	nedium sand w ions, finer with	vith occasiona depth
	70							@6	69': CLAY, reddish	brown, trac	e fine to medium s	and, minor Mn	O spotting
								Pe	al depth of boring: rched groundwater ring backfilled with	encountere	d at approximately	⁄ 25.5-26.7', 40).3-42.1'
—215	75—												
FI	ELD HAR	DNESS			BED	DING		AT	ΓITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD MOD. HARD SOFT	- KNIFE CA - SCRATC - SCRATC - GROVES - CARVES	HES DIFFI HES EASI	ICULT	ME TH	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALL(HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120" de Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

CB-1 5'-35'





CB-1 35'-65'





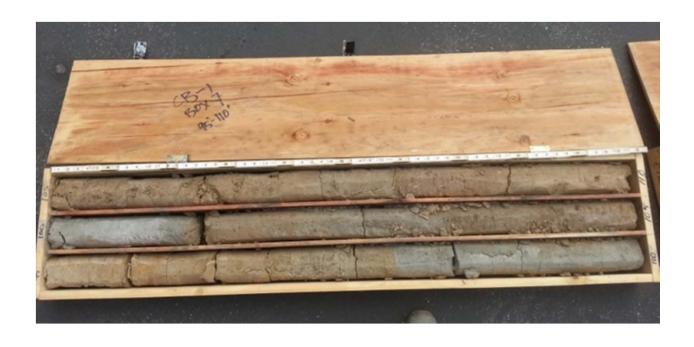
Updated Fault Hazard Assessment and Response to CGS Seismology Review

CB-1 65'-95'





CB-1 95'-125'





Updated Fault Hazard Assessment and Response to CGS Seismology Review

CB-2 5'-25'





CB-2 25'-45'





CB-2 50'-80'





CB-2 80'-110'





Updated Fault Hazard Assessment and Response to CGS Seismology Review

CB-2 110'-125'



CB-3 5'-35'





CB-3 35'-65'





CB-3 65'-95'





CB-3 95'-125'





CB-4 5'-35'





CB-4 35'-65'





CB-4 65'-95'





CB-4 95'-125'





CB-5 5'-35'





CB-5 35'-65'





CB-5 65'-95'





CB-5 95'-125'





CB-5 125'-155'





CB-5 170'-185'

(155'-170' Missing)



CB-6 5'-35'





CB-6 35'-65'





CB-6 65'-95'





CB-6 95'-125'





CB-6 125'-155'





CB-6 155'-170'



CB-7 1'-20'





CB-7 20'-40'





CB-7 40'-60'



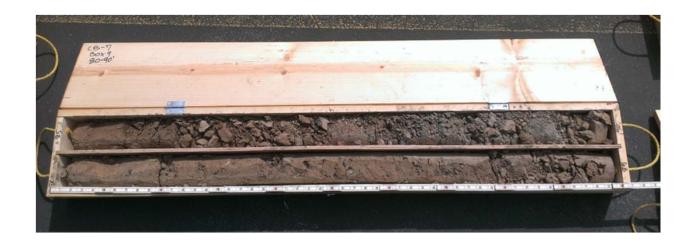


CB-7 60'-80'





CB-7 80'-100'





CB-7 100'-120'





CB-7 120'-140'





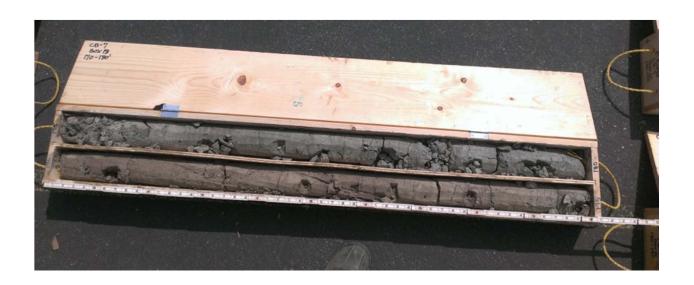
CB-7 140'-160'





CB-7 160'-180'





CB-7 180'-195'





CB-8 5'-25'





CB-8 25'-45'





CB-8 45'-65'





CB-8 65'-85'





CB-8 85'-105'





CB-8 105'-125'





CB-8 125'-145'





CB-8A 0'-30'







CB-8A 30'-60'







CB-9 5'-25'





CB-9 25'-45'





CB-9 45'-65'





CB-9 65'-75'



CB-10 5'-25'





CB-10 25'-45'





CB-10 45'-65'





CB-10 65'-75'



CB-11 5'-25'





CB-11 25'-45'





CB-11 45'-65'





CB-11 65'-75'



CB-12 5'-25'





CB-12 25'-45'





CB-12 45'-65'





CB-12 65'-75'



CB-13 5'-25'





CB-13 25'-45'





CB-13 45'-65'





CB-13 65'-75'



CB-14 5'-35'







CB-14 35'-65'







CB-14 65'-75'



CB-15 5'-25'





CB-15 25'-45'





CB-15 45'-75'







Updated Fault Hazard Assessment and Response to CGS Seismology Review

CB-15 75'-95'





CB-16 5'-25'





CB-16 25'-45'





CB-16 45'-65'





CB-16 65'-85'





CB-16 85'-95'



CB-17 0'-30'







CB-17 30'-60'







CB-17 60'- 70'



CB-18 0'-30'







CB-18 30'-60'







CB-18 60'- 70'



CB-19 0'-30'







CB-19 30'-60'







CB-19 60'- 90'







CB-19 90'- 120'







CB-19 120'- 150'







CB-19 150'- 175'







CB-20 0'-30'







Updated Fault Hazard Assessment and Response to CGS Seismology Review

CB-20 30'-60'







CB-20 60'- 70'



CB-21 0'-30'







CB-21 30'-60'







CB-21 60'- 90'







CB-21 90'- 120'







CB-21 120'- 145'







CB-21 145'- 170'

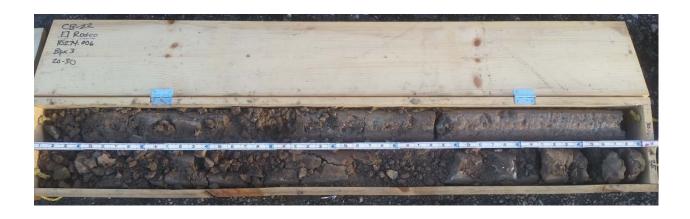




CB-22 0'-30'







CB-22 30'-60'







CB-22 60'- 70'



APPENDIX C FT-3 AND FT-4 TRENCH PHOTOGRAPHS





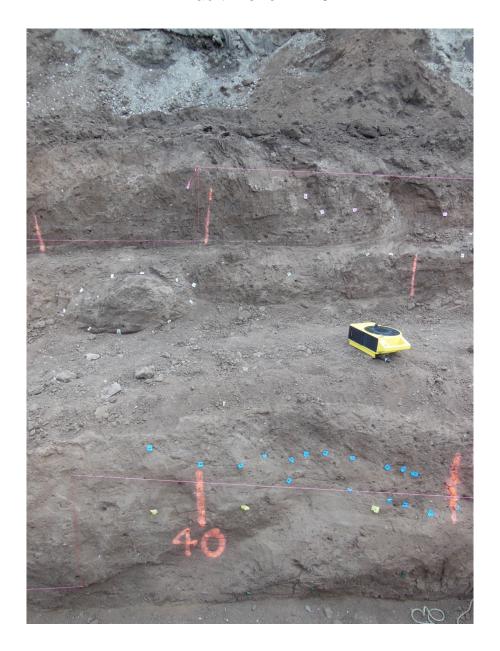
FT-3: Southern trench wall, Station 0 + 10'



FT-3: Southern trench wall, Station 0 + 20'



FT-3: Southern trench wall, Station 0 + 30'



FT-3: Southern trench wall, Station 0 + 40'



FT-3: Southern trench wall, Station 0 + 50'



FT-3: Southern trench wall, Station 0 + 60'



FT-3: Southern trench wall, Station 0 + 70'



FT-3: Southern trench wall, Station 0 + 80'



FT-3: Southern trench wall, Station 0 + 90'



FT-3: Southern trench wall, Station 0 + 100'



FT-3: Southern trench wall, Station 0 + 110'



FT-3: Southern trench wall, Station 0 + 120'



FT-3: Southern trench wall, Station 0 + 130'



FT-3: Southern trench wall, Station 0 + 140'



FT-3: Southern trench wall, Station 0 + 150'



FT-3 Southern trench wall, Station 0 + 160'



FT-3: Southern trench wall, Station 0 + 170'



FT-4 Southern trench wall, Station 0 + 05'



FT-4: Southern trench wall, Station 0 + 10'

Fault Trench FT-4



FT-4 Southern trench wall, Station 0 + 15'



FT-4: Southern trench wall, Station 0 + 20'

Fault Trench FT-4



FT-4 Southern trench wall, Station 0 + 25'



FT-4: Southern trench wall, Station 0 + 30'

Fault Trench FT-4



FT-4 Southern trench wall, Station 0 + 35'



FT-4: Southern trench wall, Station 0 + 45'

APPENDIX D

EARTH CONSULTANTS INTERNATIONAL, INC. SOIL AGE ESTIMATIONS





TO: LEIGHTON CONSULTING, INC.

17781 Cowan

Irvine, California 92614

Attention: Mr. Joe Roe

TO: PRIMESOURCE PROJECT MANAGEMENT

One Civic Plaza Drive, Suite 500

Carson, California 90745

Attention: Mr. Timothy Buresh

SUBJECT: ADDITIONAL SOIL STRATIGRAPHIC AGE ESTIMATIONS IN

SUPPORT OF THE FAULT STUDY CONDUCTED FOR THE EL RODEO K-8 SCHOOL, 605 WHITTIER DRIVE, BEVERLY HILLS, CALIFORNIA

Dear Sirs,

Leighton Consulting, Inc. (Leighton) has conducted additional fault studies for the El Rodeo K-8 School in Beverly Hills in response to comments from the California Geological Survey (CGS, 2015). These additional studies included the excavation and logging of an approximately 180foot long trench placed in the southern portion of the school (FT-3), and another trench across the school's entrance off Wilshire Boulevard (FT-4). At your request, Earth Consultants International (ECI) provided assistance with the cleaning, logging and photographing of these trenches, and estimated the age of the deposits exposed therein using soil-stratigraphic techniques. Together with Leighton personnel we also logged a short utility trench excavated by others next to the sidewalk on the north side of Wilshire Boulevard. Finally, we provided assistance with the correlation of units observed in several small-diameter, continuously sampled hollow-stem soil borings that were emplaced in areas where CGS had expressed issues with the original interpretations summarized in our February 25, 2015 report (included as an appendix to Leighton's Fault Hazard Assessment report dated February 27, 2015). This report summarizes our findings regarding the age of the units exposed in the new trenches, including FT-3, FT-4 and the utility trench. Our logs of these trenches are presented in Leighton's report.

SCOPE of WORK and METHODOLOGY USED

The tasks that ECI completed for this study are listed below.

1. We assisted Leighton personnel in the cleaning, logging and photographing of trench FT-3, which was excavated in the athletic field near the school's southeastern corner.

The trench was approximately 180 feet long and between 7.5 and 20 feet deep. Details regarding this effort are summarized in Leighton's report. We then conducted a soil-stratigraphic analysis of the deposits exposed near the western and central sections of the trench. Specifically, we described the soils exposed in trench FT-3 at two locations, near station 0+15, and near station 1+05. Combined, the soil profiles described provide a nearly complete record of the pedogenically altered sedimentary package that was exposed in the trench.

- 2. We assisted Leighton personnel in logging and photographing a trench excavated in the school's southwestern corner, across its entrance off Wilshire Boulevard. This excavation was approximately 45 feet long, and between 2.9 and 5.2 feet deep. In this trench we also described two soil profiles, one at station 10, and the other at station 26, to estimate the age of the sediments exposed in that part of the school campus.
- 3. Together with a Leighton geologist, we quickly logged and photographed a short trench excavated by a utility contractor (AT&T) immediately outside the school property, on the grass-covered strip between the sidewalk and Wilshire Boulevard, next to the school's entrance off Wilshire Boulevard. This excavation was about 13 feet long and 3.4 feet deep. We described several soil samples we collected from the trench to add to our database of soil profiles in the immediate vicinity of the school, and estimated the age of the deposits that these soils formed on.

The soil-age estimates that we present in this report help to better characterize the geomorphic surfaces upon which the school is located, adding to the geological story that we have been developing for the Beverly Hills area since we first began our studies at the Beverly Hills High School. Characterization and age estimation of these sediments also provides additional information regarding the deposits encountered in the continuously sampled borings drilled as part of the fault studies. Additional information on the methodology we used for the soil descriptions and age estimations is provided in the following section.

- 4. We collaborated with Leighton's personnel on the review of and correlation of soils and primary stratigraphic units identified in the cores of the continuously sampled borings that have been drilled for this study, including the new borings drilled to respond to CGS' review sheet. The correlations made are shown on the cross-sections presented in Leighton's report.
- 5. We prepared this report summarizing the work completed and discussing our findings.

SOIL-STRATIGRAPHIC ANALYSES - BACKGROUND

To estimate the age of the deposits underlying the El Rodeo school site we have, to date, described six soil profiles exposed in trenches excavated to evaluate the potential for surface fault rupture at the school. The first of these soil profiles was described in Leighton's trench FT-1, and our analysis of it was presented in our February 2015 report (ECI, 2015). The other five soil profiles were described for this study, and include two profiles in Leighton's trench FT-3, two profiles in trench FT-4, and one profile in the AT&T utility trench. Our analysis of the minimum ages of the soils sampled from these excavations is presented herein.

As with the first soil profile (ECI, 2015), we described these soils using a combination of the characteristics and nomenclature established by the Soil Survey Staff (1975, 1992), the National Soil Survey Center (2012) and Birkeland (1984, 1999). Colors of the soil horizons were recorded by comparing the color of the matrix and clay films both in the dry (or slightly damp) and wet states to color chips in a Munsell Soil Color Chart. Characteristics that we recorded include: 1) texture (grain size distribution), 2) structure (whether the soil mass breaks into distinctive peds, or is single-grained), 3) the amount, distribution and thickness of translocated clay forming films or stains on the soil ped faces and clasts, in clast pockets, and in between sand grains (called bridges), 4) the looseness or induration of the soil peds, and 5) the stickiness and plasticity of the wet soil. The sharpness and relief characteristics of the contact (or boundary) between horizons were also noted. Finally, we also described the type, shape and typical size of the rock clasts observed in each horizon. Summarized descriptions of the soil profiles are provided in Table 1 (FT-3, Profile 0+15), Table 2 (FT-3, Profile 1+05), Tables 4A and 4B (FT-4, Profiles at Stations 10 and 26, respectively), and Table 6 (Profile from the AT&T trench). The complete soil profile descriptions are included in the Appendix.

The profiles described include a surface soil (or the truncated remains of one) and the remains of several buried soils. Each of the buried soils developed when that specific sedimentary package was at or near the ground surface and thus exposed to soil-forming processes. Soil-formation ceased when that surface was buried by a sufficiently thick mudflow or alluvial deposit, with a new soil eventually forming on the younger sediments if exposed at the surface for a sufficiently long period of time, typically in the order of hundreds to thousands of years. To estimate the age of geologic deposits using soil-stratigraphic techniques we rely on a comparison of the characteristics of the soils in question with those of other soils in the region developed in similar parent materials that have been dated using both absolute and relative dating methods.

In these quantitative assessments, the characteristics of the soil being assessed are "subtracted" from the characteristics of the presumed parent material to develop a realistic estimate of the length of time that a geologic deposit has been subjected to the effects of weathering and soil formation. For this study we assumed a parent material consisting of either sandy loam or sandy clay loam with 10YR 4/3 dry color, 10YR 3/3 moist color, single-grained, loose when dry and moist, non-sticky and non-plastic when wet, with no clay films.

The soil characteristics are assigned numerical values that are then used to calculate the soils' degree of development. We used two of these quantitative methods for this study: Harden's (1982) Soil Development Index (SDI), and Ponti's (1985) Maximum Horizon Index. The SDIs include a non-normalized value representative of the thickness of the soil being assessed as measured in the profile, and a normalized value that extends (or truncates) the thickness of the soil to 200 cm, typically to account for erosion. Normalized SDI values to 200 cm are typically found in the literature, allowing a direct comparison between the soils being assessed and the dated soils used in the soil age regressions. Both SDI and MHI values have been shown to be useful relative indicators of soil age, with older, better developed soils having higher SDI and MHI values (Harden, 1982; Harden and Taylor, 1983; Rockwell et al., 1984; Rockwell et al., 1990; Bornyasz and Rockwell, 1997).

To obtain minimum age estimates for the soils described, we compared the soils' SDI and MHI values with the soil age regressions presented in Dolan et al. (1997), which are based on the chronosequences by Rockwell (1983), Rockwell et al. (1985), Harden (1982), and McFadden and Weldon (1987). These regressions include an envelope that captures 95% of the data used to develop the curves, with the bottom and top of this zone referred to as the minimum and maximum values. For the purposes of this study, and to be consistent with the previous studies that we have conducted for the El Rodeo and Beverly Hills High School, the age estimates that we highlight represent only the lower half of the envelope, that is, the minimum and preferred ages.

FINDINGS FAULT TRENCH FT-3

Trench FT-3 exposed a series of generally laterally continuous and relatively level mudflow deposits locally channelized and capped by fluvial sediments. The mudflow packages tend to be massive to weakly bedded. The fluvial sediments are typically bedded and characterized by fining-upward sequences.

At its western end, the trench exposed approximately 19 feet of artificial fill and historical sediments. The upper 17 feet consist primarily of rubble, with large pieces of concrete that may have been part of the abandoned-in-place Moreno Creek storm drain, in addition to bricks and other construction debris. The lowermost approximately 2 feet consist of water-lain, imbricated gravel and cobbles mixed with pieces of China ceramics and vintage glass bottles from the first quarter of the 20th century. The matrix and the coatings on the clasts are reddish to orange brown in color; our interpretation is that a significant amount of metallic objects that were originally part of the fill have since rusted, with the rust coating the clasts. This lower historical deposit may be associated with the 1938 floods that impacted a significant portion of southern California. The presumed 1938-channel deposits incise into and overlie sediments of significant age, as described in more detail below. Thus, Holocene-aged sediments of Moreno Creek proper were not encountered in the trench.

The trench was emplaced in the school's athletic field, to the south and east of trenches FT-1 and FT-2 (Leighton, 2015). This previous work had demonstrated that this portion of the school site was graded flat, and in the process the uppermost soil horizons were removed. The amount of cutting required to level the site likely increases to the north and west, as the original topography rose in those directions. Thus, in the area of trench FT-3, we anticipate that only the uppermost soil horizons have been removed. As described further below, the surface soils in trench FT-3 appear to be missing only the uppermost A soil horizon (profile at 0+15) and possibly part of the underlying B horizon (profile at 1+05). Although a complete surface soil profile was not available, these soils are far more complete than those previously described at the site, and the age estimates presented below are possibly closer to the true ages of the sediments at and near the ground surface in this area. Nevertheless, alluvial incision and removal of soils has clearly occurred in the historical and geological past, so our age estimates are still minimum values.

Station 0+15: The soil profile described at station 0+15 includes a surface soil and seven buried soils. The surface soil is capped by a horizon that has characteristics of both an A and

Bt horizon, with dark, organic-rich colors, moderate soil structure and few thin clay films. This horizon is underlain by two argillic (Bt) horizons consisting of silty clay and silty clay loam, respectively, with moderate to strong angular blocky structure and few to many, thin to moderately thick clay films. The colors in this surface soil are predominantly in the 10YR hue, with 7.5YR clay films observed only in the Bt2 horizon (see Table 1). These characteristics, including its 130-cm thickness, suggest that this surface soil has been exposed to soil-forming processes for between about 10,600 (minimum) and 30,500 (median) years (these age estimates represent the average of the ages obtained using the MHI and normalized SDI methods – see Table 3A).

The first buried soil (2Bt4/2BC1) was partly eroded (truncated) before the overlying soil was deposited, so our age estimates for this soil are minimum values. The argillic soil horizon has sandy clay texture, 10YR hues in the matrix with 7.5YR clay films, moderate angular blocky structure, and few to common thin to moderately thick clay films. The underlying BC horizon has sandy clay loam to sandy clay texture, 10YR colors, weak to moderate angular blocky structure, and few thin clay films. Intense bioturbation in the form of rodent burrows has weakened or destroyed the soil structure of this horizon near its top. This, combined with the missing upper horizons, yields lower-than-expected non-normalized SDI and MHI values that in turn result in lower age estimates. Even the normalized SDI value likely yields too young an age, but it is the best value we have, so we use it here. The normalized SDI value indicates a minimum soil-development age for this buried soil of between 7,400 (minimum) and 23,000 (median) years. Since this is the estimated amount of time it took for this soil to develop, to estimate its age we need to add to it the age of the overlying surface soil. Thus, this buried soil is between about 18,000 and 53,500 years old, using the minimum and median age estimates provided by the soil regressions. The soil-age regressions permit older ages (Table 3A), but, to be conservative, we present here only the minimum and median values.

The second buried soil observed and described in this profile was also eroded (truncated), leaving only a relatively thin argillic (Bt) horizon and a BC horizon (3Bt5/3BC2). The argillic horizon consists of sandy clay loam with 10YR hues, strong angular blocky structure, and few to common thin clay films. The underlying BC horizon consists of loamy sand, also with 10YR colors, moderate angular blocky structure, and few thin clay films. These characteristics suggest it was exposed to pedogenic processes for between about 5,200 (minimum) and 16,000 (median) years. The age of this buried soil is thus between about 23,000 and 70,000 years (rounded values).

The next (third) buried soil is relatively complete, as it includes an AB horizon with loamy sand to sandy loam texture, 10YR colors, moderate to strong fine subangular blocky structure and very few thin clay films. The clay films are probably overprinted from the soil above. The underlying juvenile argillic (Btj) horizon is thin (20 cm), and consists of sandy clay loam with 10 to 7.5YR colors, weak angular blocky structure, and few thin clay films on ped faces and lining clast pockets. These characteristics indicate a relatively short exposure to soil-forming properties. The MHI value is controlled by the characteristics of the Btj horizon, which does not appear to be overprinted by the soil above. For this reason, we prefer the soil development age estimates suggested by the MHI value. Our soil-development estimates for this buried soil range from 3,600 (minimum) to 11,200 (median) years. Combined with the age estimates for the soils above, this soil is thought to be between about 27,000 and 81,000 years old.

Table 1: Abbreviated Soil Descriptions for Soil Profile at Station 0+15 in Trench FT-3

Horizon	Thickness	Texture	(Color	Structure		Co	nsistency		Clay Films
110112011	(cm)		Moist	Dry		Dry	Moist	Wet	Wet	
Surface So	oil									
A/Bt1	24	SiC	10YR 2/2	10YR 2/2 (d)	2m-cabk		fi	VS	vp	1ncl, 1nbr
D.o.	0.4	010	10YR 3/2 w/	10YR 4/3 w/						
Bt2	31	SiC	7.5YR 3/2 cf	7.5YR 3/2 cf (d)	2-3mabk		vfi	VS	vp	2n&1mkpf, 2mkcl, 2nbr
Bt3	19	SiCL	10YR 3/2	10YR 4/3	3vcabk	h	fi	S	р	2npf, 2npo, 3mkclpo, 3nbr, 2ncl
First Burie	ed Soil									
				10YR 4/3 w/						
2Bt4	30	SC	10YR 3/2	7.5YR 4/2 (d)	2mabk		fi	SS	р	2npf, 1ncl, 2mkclpo
					m – 1-2mabk					
2BC	68	SCL-SC	10YR 3/2	10YR 3/3 (d)	– 2mabk		fi	SS-S	р	1npf, 1ncl, 1nclpo
Second Bu	uried Soil									
3Bt5	40	SCL	10YR 3/2	10YR 4/3	3m-cabk	h	fr	S	р	1npf, 1nbr, 2nclpo
3BC2	31	LS	10YR 3/3	10YR 5/3	2f-mabk	h	fr	so	vsp	1npf
Third Buri	ied Soil									
4AB	19	LS-SL	10YR 4/3	10YR 5/3	2-3fabk	sh-h	fr-fi	S	sp	v1npo, v1ncl
			10-7.5YR	10-7.5YR 3/3						-
4Btj	20	SCL	3/3	(d)	1fabk-sg		fi	SS-S	sp	1npf, 1nclpo
Fourth Bu	ried Soil									
				10YR 5/3 w/						
5Bt6	93	SiCL	7.5YR 3/3	7.5YR 5/3 cf	3m-cabk		fi	S-VS	sp-p	2npo, 2ncl, 2n&1mkclpo
5Bt7	27	SCL	7.5YR 4/3	10-7.5YR 5/3	1-3m-cabk	sh	fi	S	р	2npo, 1ncl, 2n&1mkclpo
Fifth Burio	ed Soil									
6Bt8	54	SiC	7.5YR 3/2.5	7.5YR 4/3	3m-cabk	h	fr-fi	VS	vp	1npf, 1nbr, 2ncl, 2n- mkclpo
טועט	J T	310	7.51K 3/2.3	7.5YR 5/3 w/	JIII-Cabk	- 11	11-11	v 3	<u>vp</u>	шкеро
6BC3	36	SCL	7.5YR 4/3	7.5YR 4/3 cf	2-3m-cabk	h	fi	S	sp	v1npf, 2nclpo

Soil-Stratigraphic Age Estimations as Part of the Fault Studies El Rodeo K-8 School, Beverly Hills

Horizon	Thickness	Texture	Color		Structure		Co	nsistency		Clay Films
	(cm)		Moist	Dry		Dry	Moist	Wet	Wet	
Sixth Buri	ied Soil									
7Bt9	19	SCL	7.5YR 3/3	7.5YR 4/3	2f-mabk	sh	fi	VS	р	v1ncl, 2nclpo
Seventh B	Buried Soil									
8Btj2	26+	SiC	7.5YR 3/3	7.5YR 4/3	2-3mabk	h	fi	SS	р	v1ncl

ABBREVIATIONS:

TEXTURE: S = sand; LS = loamy sand; SL = sandy loam; L = loam; SCL = sandy clay loam; SC = sandy clay; CL = clay loam; Si = silt; SiL = silt loam; SiCL = silty clay loam; SiC = silty clay; C = clay. **STRUCTURE: Grade:** 1 = weak; 2 = moderate, 3 = strong. **Class:** 1f = very fine, f = fine, m = medium, c = coarse; vc = very coarse. **Type:** m = massive; sg = single-grained; gr = granular, cr = crumb, abk = angular blocky, sbk = subangular blocky, pr = prismatic. **CONSISTENCY: Dry:** lo = loose, so = soft, sh = slightly hard, h = hard, vh = very hard, eh = extremely hard. **Moist:** lo = loose, vfr = very friable, fr = friable, fi = firm, vfi = very firm, efi = extremely firm. **Wet:** ns = non-sticky, ss = slightly sticky, s= sticky, vs = very sticky; np = non-plastic, sp = slightly plastic, p = plastic, vp = very plastic. **CLAY FILMS (cf): Abundance:** v1 = very few, 1 = few, 2 = common, 3 = many, 4 = continuous. **Thickness:** vn = very thin, n = thin, mk = moderately thick, k = thick. **Location:** st = stains, cl = on clasts; clpo = on clast pockets, po = in pores, br = forming bridges between grains, pf = on ped faces.

Table 2: Abbreviated Soil Descriptions for Soil Profile at Station 1+05 in Trench FT-3

Haviman	Thickness	Texture		Color	Structure		Consi	istency		Clay Films
Horizon	(cm)		Moist	Dry		Dry	Moist	Wet	Wet	•
Near-Surf	face Soil									
				10YR 3.5/2						
				w/ 2.5/2 cf &						
Bt	31	C-SiC	10YR 2.5/2	2/1 mottles	3cabk	h	fi	S	vp	3mkpf, 3mkbr, 2kpf, 3npo
		CL w/ C		10YR 4/3 w/						1-2npf, 3nbr, 3npo,
BC_{lam}	20	lam	10YR 3/2	10YR 3/2 cf	3m-cabk	SO	fr	S	p-vp	in lam: 3n&2mkpf, 3npo
First Buri	ed Soil									
				10-7.5YR 4/3						
			7.5YR 3/2 w/	w/ 7.5YR 4/4		so-				
2Bt2	32	SC	5YR 3/2 mo	cf	3c-vcabk	sh	fr	VS	vp	2mk&3nbr, 4npo
				10-7.5YR 4/3					•	
			7.5YR 3/2 w/	w 7.5YR 4/3.5						1-2npf, 2-3n&1mkbr,
2Bt3	42	SC	7.5YR 3/3 cf	cf	2m-cabk	sh-h	sfi-fi	VS	р	2ncl
			7.5YR 3/2 w/	10-7.5YR 4/3					•	3n&2mkpf, 2nbr, 2npo,
3Bt4	13	SCL	7.5YR 3/3 cf	w 7.5YR 3/2 cf	2fabk	sh-h	fr-sfi	SS	ps-p	3nclpo
Second B	uried Soil									
				10YR 4/3 &						
4Btj	41	SCL-SL	7.5YR 3/2	4/4	2m-cabk	so	vfr	SS	vps-ps	2-3npf, 2nbr, 3npo, 3ncl
					1msbk – sg +	SO-		SO-	-	2n-mkbr, 1npf, 1-2ncl,
$4BC_{lam}$	22	SL	7.5YR 3/2.5	10YR 4/3	2msbk in lam	lo	vfr	VSS	ро	3nclpo
Third Bur	ied Soil									
			10-7.5YR					so +		
		SL w/ SL	3/3, 7.5YR	10YR 4/3, 10-	sg + 2f-msbk	lo+	lo+	SO-		3n&2mkbr, 1npf,
$5BC_{lam}$	36	lam	3/3 lam	7.5YR 4/3 lam	in lam	sh	vfr	VSS	po + po	

Horizon	Thickness	Texture	C	olor	Structure		C	onsisten	су	Clay Films
110112011	(cm)		Moist	Dry		Dry	Moist	Wet	Wet	
Fourth Bu	ried Soil									
			10-7.5YR	10YR 4/3 &						
			3/3 w/ 7.5YR	4/4 w/ 7.5YR						
6Bt5	11	SL-SCL	3/3 cf	4/3 cf	2fabk	h	fr	SS-S	ps-p	2n&1mkpf, 2npo, 3nbr
				10YR 4.5/3 w/						3n&1mkpf, 3n-mkbr,
6Bt6	36	SCL-SC	7.5YR 3/2	7.5YR 4/3 cf	1-2mabk	sh-h	fr-sfi	SS-S	р	2npo
Fifth Burio	ed soil									
			7.5YR 3/3 +	10YR 4/3 +						
		S w/SL	7.5YR 3/3	10-7.5YR 4/3		lo+	lo+	so +		
$7C_{lam}$	24	lam	lam	lam	sg + 1f-msbk	SO	vfr	VSS	po + po-vps	n.o.
Sixth Buri	ed Soil									
				10-7.5YR 4/4						3n&1mkpf, 2nbr, 3npo,
8Bt7	10+	C	7.5YR 3/2.5	& 7.5YR 3/3	3f-msbk	eh	fi	VS	vp	3mkcl

ABBREVIATIONS:

TEXTURE: S = sand; LS = loamy sand; SL = sandy loam; L = loam; SCL = sandy clay loam; SC = sandy clay; CL = clay loam; Si = silt; SiL = silt loam; SiCL = silty clay loam; SiC = silty clay; C = clay. **STRUCTURE: Grade:** 1 = weak; 2 = moderate, 3 = strong. **Class:** 1f = very fine, f = fine, m = medium, c = coarse; vc = very coarse. **Type:** m = massive; sg = single-grained; gr = granular, cr = crumb, abk = angular blocky, sbk = subangular blocky, pr = prismatic. **CONSISTENCY: Dry:** lo = loose, so = soft, sh = slightly hard, h = hard, vh = very hard, eh = extremely hard. **Moist:** lo = loose, vfr = very friable, fr = friable, fi = firm, vfi = very firm, efi = extremely firm. **Wet:** ns = non-sticky, ss = slightly sticky, s= sticky, vs = very sticky; np = non-plastic, sp = slightly plastic, p = plastic, vp = very plastic. **CLAY FILMS (cf): Abundance:** v1 = very few, 1 = few, 2 = common, 3 = many, 4 = continuous. **Thickness:** vn = very thin, n = thin, mk = moderately thick, k = thicK. **Location:** st = stains, cl = on clasts; clpo = on clast pockets, po = in pores, br = forming bridges between grains, pf = on ped faces; n.o. = not observed.

The fourth buried soil is moderately well developed, with a thick argillic section (5Bt6/5Bt7), although its topsoil (A horizon) is missing. The upper argillic horizon consists of silty clay loam, 10YR to 7.5YR colors, strong medium to coarse angular blocky structure, and common thin to few moderately thick clay films. The underlying argillic horizon is slightly coarser grained, with a sandy clay loam texture, 7.5YR to 10YR colors, medium to coarse angular blocky structure, few to common thin and few moderately thick clay films (Table 1). These characteristics suggest this soil was exposed at the surface for between about 9,100 (minimum) and 27,200 (median) years. These estimates are derived from the soil's MHI value, which we consider most appropriate to estimate the soil's age, as it reflects the characteristics of the argillic horizon. Combined with the age of the overlying soils, this deposit is between about 36,000 (minimum) and 108,000 (median) years old.

The log of trench FT-3 shows that in the area of this soil profile there is an unconformity between the fourth and fifth buried soils. Specifically, geologic units 7, 8 and 9 (see the trench log in Leighton's report) are not preserved in the western portion of the trench. To the east, where these geologic units can be observed, each of them has a soil developed in it, indicating that there is a substantial amount of time missing in this profile including: 1) the deposition of unit 9 and development of the soil in unit 9 (buried soil 5 in Profile 1+05), 2) deposition of unit 8 and the development of the soil therein (buried soil 4), 3) a predominantly erosive period when these sedimentary packages were locally removed, and 4) the deposition of unit 7 and the development of its soil (buried soil 3). The soil developed in unit 7 is well preserved in the profile at 1+05, but only thin, deeper, and thus less well-developed sections of the soils developed in units 8 and 9 were present in that profile. As a result, the age estimates obtained for the soils that formed in geologic units 8 and 9 underrepresent the true age of the deposits. Furthermore, it is not possible to know how long the predominantly erosive period between deposition of units 7 and 8 lasted. For these reasons the estimated age of this entire sequence, determined by summing the estimated soil-development ages for the soils in units 7, 8 and 9 (buried soils 3, 4 and 5 in Profile 1+05), is considered an absolute minimum. From Tables 3A and 3B, and discussions further below, the combined length of time in this missing section is estimated at between 9,000 (minimum) and 28,400 (median years). These estimates are added to the age of buried soil 4 above to calculate the length of time represented by the entire section above the fifth buried soil. These age estimates are 45,000 (minimum) to 136,400 (median) years.

The fifth buried soil consists of a Bt/BC profile (6Bt8/6BC3). The argillic horizon consists of silty clay with 7.5YR colors, strong medium to coarse angular blocky structure, and few to common thin to moderately thick clay films. The underlying BC horizon has sandy clay loam texture, 7.5YR colors, moderate to strong medium to coarse angular blocky structure, and very few to common thin clay films. These characteristics suggest that this soil, which is not complete, was exposed at the surface for a minimum of about 11,200 years, and more likely nearly 33,000 years (because the soil is truncated, we prefer to use the age estimates provided by the MHI method, which is based on the development strength of the argillic soil horizon). The age of this section is estimated at between 56,200 (minimum) and 169,400 (median) years.

Only a small section of the underlying sixth buried soil was preserved in the trench. The argillic soil horizon (7Bt9) is 19 cm (7.5 inches) thick, and consists of sandy clay loam with 7.5YR hues, moderate angular blocky soil structure, and few thin clay films coating clasts.

Clean sand was observed in vertical, randomly oriented fractures that are interpreted to have been caused by wetting and drying. This observation indicates that this remnant horizon was overlain by a more clay-rich expansive section that was in turn overlain by an alluvial deposit consisting primarily of clean, well-sorted sand. A sandy deposit was not observed in this section of trench indicating that such a deposit was either eroded prior to deposition of the overlying sediments or it was modified by pedogenic development into a more clay-rich unit. Given that only a thin section of probably the deepest part of the soil is preserved in this area, the age estimates obtained are minimum values. We chose to average the estimates obtained from the MHI and normalized SDI methods to estimate that this sediment was exposed to soil-forming processes for a minimum of 5,500 years, and more likely about 17,000 years. Combined with the age estimates presented in the paragraph above, the sediments at this depth in the trench are thought to be between about 61,700 (minimum) and 186,400 (median) years old.

The deepest buried soil observed in the trench was exposed only at its western end, where a weakly developed (juvenile - Btj) argillic soil horizon was described. This horizon consists of silty clay, 7.5YR colors, moderate to strong angular blocky structure, and very few thin clay films. Its characteristics suggest that this sediment was exposed to soil-forming processes for at least 4,900 years (minimum), and possibly 15,200 years (median). Combined with the age estimates presented above, the entire depositional package exposed in trench FT-3 is estimated to be at a minimum 66,500 years old, and possibly more than 201,400 years old (using the preferred age estimates, see Table 3A).

Station 1+05: The soil profile observed and described at station 1+05 includes a surface soil and six buried soils. The surface soil in this area of the trench is missing its A (topsoil) horizon and possibly part of the argillic horizon. The section of the argillic (Bt) horizon that remains has clay to silty clay texture, very dark organic-rich 10YR colors, strong coarse angular blocky structure, and common to many thin to thick clay films. The matrix of the underlying BC_{lam} horizon is a clay loam, whereas the lamellae consist of clay. Colors of this horizon have 10YR hues and low chromas characteristic of organic-rich soils. The matrix has strong medium to coarse angular blocky structure, few to common thin clay films on ped faces, ad many thin clay films bridging grains and in pores. The lamellae have many thin clay films on ped faces and in pores, and common moderately thick clay films on ped faces. The abundance and thickness of the clay films in the argillic horizon suggests a moderately well developed soil that has been exposed to soil-forming processes for several thousands of years. An average of the soil's MHI- and normalized SDI-derived ages indicate that this soil is between 9,800 (minimum) and 29,200 (median) years old. These age estimates are very similar to those calculated for the surface soil described in profile 0+15.

The first buried soil consists of three argillic horizons (2Bt2/2Bt3/3Bt4). The uppermost of these horizons has sandy clay texture, 10 to 7.5YR colors in the matrix with 5YR mottles, strong coarse to very coarse angular blocky structure, few to common thin to moderately thick clay films on ped faces and bridging grains. The second argillic horizon also has sandy clay texture and 10 to 7.5YR colors, moderate medium to coarse angular blocky structure, and few to many thin and few moderately thick clay films. The deeper argillic horizon (3Bt4) is assigned a different prefix to denote that it formed in a coarser-grained parent material. This 13-cm thick layer consists of sandy clay loam, predominantly 7.5YR colors, moderate fine angular blocky

structure, and many thin and common moderately thick clay films. Scattered clasts of Santa Monica slate and common to many large pores indicate that these horizons were deposited as mudflows. An average of the normalized SDI- and MHI-derived age estimates for this soil indicates that it was exposed to pedogenic development prior to burial for a minimum of about 9,600 years, and more likely about 28,000 years. The age of this buried soil is thus between about 19,000 and 58,000 years (rounded values).

The second buried soil described in this profile formed in a fining-upward alluvial deposit (geologic unit 6 - see log) and consists of a juvenile (Btj) horizon underlain by a BC horizon with lamellae. The juvenile argillic horizon is a sandy clay loam that grades down to sandy loam, with 10YR colors when dry, 7.5YR colors when moist, moderate medium to coarse angular blocky structure, and common to many thin clay films on ped faces, bridging grains, in pores, and on clasts. The underlying BC horizon is a gravelly sandy loam with sandy loam lamellae, 10YR colors when dry and 7.5YR colors when moist, weak medium subangular blocky structure breaking to single-grained, and few to common predominantly thin clay films on ped faces, in pores and on clasts. The clast pockets were coated with many thin clay films. Given that the remnants of this buried soil include a BC_{lam} horizon, the average of the MHI-and normalized SDI-derived ages best estimate how long it took for this soil to form after the alluvium was deposited. The soil-age regressions suggest between 3,750 (minimum) and 11,900 (median) years to form. The minimum age of this alluvial package is thus between about 22,750 and 70,000 years.

An erosional contact between geologic units 6 and 7 is indicated by the wavy to irregular boundary between them, and the fact that only a thin section of the soil (buried soil 3) developed in unit 7 remains. The gravelly loamy sand horizon has sandy loam lamellae about ½- to 1-inch thick. These lamellae are more common towards the top where they are spaced 1/4- to 1/2 inch; near the bottom of the horizon they are 1- to 2-inches apart. The matrix has 10-7.5YR colors, is single-grained, and has no observable clay films. The lamellae have moderate fine to medium subangular blocky structure, many thin and common moderately thick clay films bridging grains, few thin clay films on ped faces, and common thin clay films in clast pockets. Primary stratification indicates that this part of the geologic deposit was not modified significantly by soil development. Two interpretations for this soil are possible: 1) a betterdeveloped soil capped this unit but has since been removed, and the remaining section was near the bottom of the effective depth of soil-formation, or 2) only a small section of this geologic deposit was removed by erosion, and the degree of soil development observed is typical of the entire unit. To be conservative, we have assumed option 2, and use the MHIderived soil-age estimates because the ages provided by this method are consistent with the observation that it generally takes about 5,000 years for soil lamellae to form. Thus, this soil is thought to have been modified by pedogenesis at a minimum 1,700 years, and most likely about 5,600 years. The minimum age of the alluvial sediments is 24,500 to 75,600 years, recognizing that if option 1 is correct, these estimates do not capture the time it took for a better-developed soil to form and its upper part to be eroded.

As discussed in the section on the profile at 0+15, there is an unconformity between geologic units 6 and 10 in the western end of the trench. Some of that time period is captured in profile 1+05, where geologic units 7, 8 and 9 are preserved. The log shows that unit 7 fills in a channel that was incised into unit 8. In the area of the trench where we described this soil

profile, only the lower portion of the soil developed in unit 8 (buried soil 4) remained. Unfortunately, we did not describe this unit elsewhere in the trench, where it was better preserved, so the ages presented here for this unit are likely to significantly underestimate the true age of the unit.

Table 3A: Soil Development Age Estimates for Soils Exposed in Trench FT-3, Profile 0+15

			Years Exposed		licted Age
Soil	Profile Index	Profile Index	to Soil	Confidence	ce Interval
3011	Trome macx	Value	Forming	Minimum	Maximum
			Processes	(years)	(years)
Soil Profile at	Station 0+15				
	MHI	0.50	36,400	12,400	105,400
Surface Soil	SDI (NN)	33.36	12,500	4,000	39,800
	SDI (N-200)	82.75	24,600	8,900	84,900
	MHI	0.37	17,800	5,800	54,300
1 st Buried Soil	SDI (NN)	33.73	12,600	4,000	40,100
	SDI (N-200)	71.36	23,000	7,400	71,300
	MHI	0.36	16,700	5,400	51,100
2 nd Buried Soil	SDI (NN)	20.44	10,200	3,200	32,700
	SDI (N-200)	45.96	15,300	4,900	48,300
	MHI	0.29	11,200	3,600	35,300
3 rd Buried Soil	SDI (NN)	11.04	8,800	2,800	28,300
	SDI (N-200)	57.18	18,400	5,900	57,400
	MHI	0.44	27,200	9,100	80,500
4 th Buried Soil	SDI (NN)	49.57	16,200	5,200	51,100
	SDI (N-200)	73.94	24,000	7,700	74,200
		MHI	26,100	8,400	82,200
Unconformity a		SDI (NN)	25,100	7,800	80,900
Section (Buried : profile 1+05; see		SDI (N-200)	42,500	13,500	133,700
profile 1103, see	c (CXI)	Preferred Ages	28,400	9,000	89,500
	MHI	0.48	32,900	11,200	95,900
5 th Buried Soil	SDI (NN)	36.62	13,200	4,200	41,900
	SDI (N-200)	69.66	22,400	7,200	69,500
	MHI	0.32	13,500	4,300	42,000
6 th Buried Soil	SDI (NN)	6.07	8,100	2,500	26,200
	SDI (N-200)	63.93	20,500	6,600	63,600
	MHI	0.29	11,600	3,700	36,400
7 th Buried Soil	SDI (NN)	7.59	8,300	2,600	26,800
	SDI (N-200)	58.42	18,700	6,000	58,500
	MHI	•	193,400	63,900	583,100
Estimated Age	SDI (NN)		127,600	40,300	407,900
Entire Section	SDI (N-200)		209,400	68,100	661,400
	Preferred Ages		201,400	66,500	734,500

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Table 3B: Soil Development Age Estimates for Soils Exposed in Trench FT-3, Profile 1+05

		Profile Index	Years Exposed		licted Age ce Interval
Soil	Profile Index	Value	to Soil Forming Processes	Minimum (years)	Maximum (years)
Soil Profile at S	Station 1+05				
	MHI	0.51	40,100	13,800	115,300
Surface Soil	SDI (NN)	21.37	10,300	3,300	33,100
	SDI (N-200)	56.58	18,200	5,800	56,900
	MHI	0.48	32,400	11,000	94,400
1 st Buried Soil	SDI (NN)	36.67	13,200	4,200	41,900
	SDI (N-200)	76.65	25,100	8,100	77,300
	MHI	0.25	9,400	2,900	29,900
2 nd Buried Soil	SDI (NN)	14.79	9,300	2,900	30,000
	SDI (N-200)	41.92	14,400	4,600	45,400
	MHI	0.16	5,600	1,700	18,600
3 rd Buried Soil	SDI (NN)	5.87	8,100	2,500	26,100
	SDI (N-200)	32.63	12,400	3,900	39,400
	MHI	0.37	18,200	6,000	55,500
4 th Buried Soil	SDI (NN)	16.73	9,600	3,000	30,900
	SDI (N-200)	70.37	22,700	7,300	70,200
	MHI	0.003	2,300	700	8,100
5 th Buried Soil	SDI (NN)	0.08	7,400	2,300	23,900
	SDI (N-200)	0.62	7,400	2,300	24,100
	MHI	0.56	52,800	18,400	148,700
6th Buried Soil	SDI (NN)	5.62	8,000	2,500	26,000
	SDI (N-200)	112.46	44,500	14,500	134,000
	MHI		160,800	54,500	470,500
Estimated Age	SDI (NN)		65,900	20,700	211,900
Entire Section	SDI (N-200)		144,700	46,500	447,300
	Preferred Ages		147,000	48,000	440,000

The fourth buried soil includes two argillic (6Bt5/6Bt6) horizons. The upper argillic has sandy loam to sandy clay loam texture, 10 to 7.5YR colors in the matrix and 7.5YR colors in the clay films, moderate fine angular blocky structure, and common to many thin and few moderately thick clay films. The underlying argillic horizon is finer-grained, with a sandy clay loam to sandy clay texture, 10 to 7.5YR colors in the matrix and 7.5YR colors in the clay films, weak to moderate medium angular blocky structure, and common to many thin and few moderately thick clay films. The coarsening-upward sequence with clasts of Santa Monica slate and Monterey siltstone, in addition to randomly oriented pores, indicate that these sediments were deposited by a mudflow. We use the average of the MHI- and normalized SDI-derived ages to estimate that this soil was exposed at the surface for a minimum of 6,600 years, and more likely about 20,500 years. By adding the soil-development ages of all of the overlying soils we

derive an age for this mudflow deposit of between 31,000 (minimum) and 96,000 (median) years.

The underlying unit 9 (and fifth buried soil) has very little soil development. The stratified, fining-upwards fluvial deposit consists of gravelly sand with sandy loam lamellae ($7C_{lam}$). Characteristics of this buried soil suggest that it was exposed to soil-forming processes for only between about 700 (minimum)) and 2,300 (median) years (the MHI-derived soil age estimates are preferred for this horizon).

The deepest buried soil exposed in this section of the trench consists of only about 10 cm (4 inches) of an argillic soil horizon developed in geologic unit 10. A thicker section of this unit (and soil) was observed and described in the profile at 0+15, where it is referred to as buried soil 5. Although thin, the section exposed consists of clay with predominantly 7.5YR colors, strong fine to medium subangular blocky structure, and common to many thin to moderately thick clay films. These characteristics yield relatively high MHI and normalized SDI values that in turn suggest a moderately long period of soil development. Taking the average of the soil development ages provided by these regressions indicates that this soil was exposed at the surface between 16,500 (minimum) and 48,700 (median) years prior to burial. These age estimates are similar to the age estimates calculated for the soil that developed in unit 10 as described in profile 0+15, showing that MHI-derived age estimates can yield satisfactory results even when only a thin section of soil is preserved. The entire sedimentary sequence exposed in trench FT-3 at station 1+05 is at a minimum 48,000 years old, and preferably about 147,000 years old.

FAULT TRENCH FT-4

This trench was emplaced across the school's entryway and staff parking lot off Wilshire Boulevard, in the southwestern portion of the school campus that Hoots (1931) mapped as underlain by Upper Pleistocene alluvial plain, stream, and marine terrace deposits. Trench FT-4 was only between 2.9 and 5.2 feet deep, substantially shallower than trench FT-3, but, as discussed further below, the excavation was deep enough to confirm Hoots' age interpretation for the deposits. Please note that we estimate that the uppermost 5 feet of the original ground surface, and its original native soil, were removed before the parking lot was paved.

The trench exposed layered sediments of both colluvial (debris flow) and alluvial (channel and overbank) origin, with a debris flow deposit capping the alluvial sequence (see trench log). The primary sedimentary deposits have been modified by soil-forming processes. At the top, immediately below a layer of artificial fill approximately 1 foot thick, are the remains of a relict soil developed in the debris flow sediments. The clay-enriched argillic (Bt) soil horizon is sandy clay loam to sandy clay in texture, with 10-7.5YR colors in the matrix, strong to moderate medium to fine angular to subangular blocky structure, common thin to moderately thick clay films on ped faces and common moderately thick clay films lining clast pockets. The clay films have 7.5YR hues. These characteristics are consistent with a soil that has been exposed to pedogenic processes for at a minimum, between about 5,500 and 8,200 years, using the MHI values calculated for this soil horizon at stations 26 and 10, respectively. The median age estimates for this soil, using the MHI values calculated for the two soil profiles described in this trench, indicate a preferred age of between about 17,700 and 24,700 years.

These estimates are considered minimum values given that only the bottom part of the original relict soil were preserved in the trench.

Station 10: In addition to the surface soil described above, the trench exposed three buried soils. In the soil profile described at Station 10, the first buried soil consists of a very thin argillic soil horizon consisting of sandy clay loam with 10YR colors in the matrix and 7.5YR colors in the clay films, and strong fine to medium angular blocky soil structure. This soil, which developed on Unit 2, a westward-thickening fluvial deposit exposed only in the western portion of the trench, has common thin clay films bridging grains, and many thin to common moderately thick clay films on ped faces. The MHI value calculated for this horizon suggests the alluvial sediments were exposed to soil-forming processes at the surface for at least 5,600 years, and more likely at least 17,300 years. Given the thinness of this horizon at Station 10, these age estimates are considered minimum values. The age of the alluvial package is calculated by adding together the soil-development estimates for the surface soil and this buried soil. Thus, at Station 10, these sediments are at a minimum about 13,800 years old, with a preferred median age of at least 42,000 years. Given that this alluvial package is not preserved in the area of Station 26 as a result of incision prior to the deposition of the overlying debris flow deposit, the age of this unit needs to be considered when estimating the age of the deeper soils observed and described at Station 26.

The second buried soil exposed at Station 10 consists of an argillic soil horizon with silty clay texture, 10YR colors in the matrix with 7.5YR clay films, strong coarse angular blocky structure, many thin to common moderately thick clay films on ped faces, and common thin clay films bridging grains. Strong brown iron oxide staining was also noted in this unit. These characteristics suggest that this sediment was exposed to soil-forming factors between about 8,500 (minimum) and 25,400 (median) years before being buried by the overlying deposits. Combined with the estimated age of the overlying soils, the sediments exposed at the bottom of the trench at Station 10 are thought to be between about 22,000 (minimum) and 68,000 (median) years old.

Station 26: The trench was deeper in the vicinity of Station 26, and the soil profile there includes two buried soils that are stratigraphically below (and thus older) than the first buried soil described at Station 10. The first of these buried soils includes three argillic soil horizons that consist of silty clay grading down to sandy clay loam, with 7.5YR colors when moist, and 7.5YR clay films. All three argillic soil horizons contain clay films on ped faces, with the abundance and thickness of these decreasing downward from common thin to moderately thick in the upper two horizons, to very few to few thin at the bottom. Clay films were also observed bridging grains and lining clast pockets. These characteristics suggest that this soil was exposed at the surface, prior to burial for, at a minimum 8,900 years, and more likely about 26,750 (median) years, using the average of the age estimates provided by the MHI and normalized SDI methods. The MHI value for this soil suggests even higher soil-development age estimates, so these values are minimums. The age of these deposits is estimated by adding the soil-age estimate from the near-surface soil, and the first buried soil described at Station 10, as discussed above. Thus, the sediments that this now-buried soil developed in are estimated to be between about 20,000 (minimum) and 68,750 (median) years old. These age estimates are similar to the age estimates calculated for the sediments described at the bottom of the soil profile in Station 10.

Table 4A: Abbreviated Soil Descriptions for Soil Profile at Station 10 in Trench FT-4

Horizon	Thickness	Texture		Color	Structure		Consi	stency		Clay Films
Horizon	(cm)		Moist	Dry		Dry	Moist	Wet	Wet	
Near-Surf	face Soil									
				7.5-10YR 5/4 w/						
				7.5YR 4/2.5 cf &						
Bt	49	SC	7.5YR 3/3	10YR 5/2 mo	3f-msbk	h-vh	fi-vfi	S	р	2npf, 2mkclpo, 1nbr
First Buri	ed Soil									
				10YR 4/3 w/						
			7.5YR 4/3 w/	7.5YR 5/3 cf &						
2Bt2	15	SCL	7.5YR 3/2 cf	10YR 5/2 mo	3f-mabk	h	fi	S	ps	2nbr, 3n&2mkpf
				10YR 5/3 w						
				7.5YR 4/2 cf &						
				10YR 3/2 &						
2Bt3	27	SiC	10YR 4/2	6/2 mo	3cabk	h	fi-vfi	S	Ps	3n&2mkpf, 2nbr

Table 4B: Abbreviated Soil Descriptions for Soil Profile at Station 26 in Trench FT-4

11	Thickness	Texture		Color	Structure		Consi	stency		Clay Films
Horizon	(cm)		Moist	Dry		Dry	Moist	Wet	Wet	
Near-Surf	face Soil			<u> </u>		-				
				10-7.5YR 5/4						
				w 7.5YR 3/2 cf						
				& 10YR 5/2						2mkpf, 1ncl,
Bt	27	SCL	7.5YR 3/3	mo	2f-mabk	vh	fr-fi	S	р	2n&1mkclpo
First Buri	ed Soil									
				7.5YR 5/4 w/						
				7.5YR 4/4 cf &						
2Bt2	15	SiC	7.5YR 3/3	10YR 6/3 mo	3f-mabk	vh	fi	S	р	2npf, 2mkclpo, 1nbr
				10YR 5/3 w/					•	
				7.5YR 5/4 cf &						
2Bt3	24	SCL	7.5YR 3/3	10YR 5/3 mo	2f0mabk	vh	fr	SS	ps	2n-mkpf, 1nbr

11	Thicknes	Texture		Color	Structure		Consi		Clay Films	
Horizon	s (cm)		Moist	Dry		Dry	Moist	Wet	Wet	
				10YR 5/3 w/						
				7.5-10YR 5/4						
				cf & 10YR 5/3						
2Bt4	21	SCL	7.5YR 4/3	mo	2f-msbk	vh	fr-fi	so	ps	v1-1npf, 1nclpo
Second Bu	uried Soil									
				10YR 5/4 w/						
				10YR 4/4 cf &						
				10YR 6/2 &						
3Bt5	9	SiC	7.5YR 4/3	3/1 mo	3m-csbk	Sh-h	Fi	S	Р	3mkpf, 1npo, 3nbr
				10YR 5.5/3 w/						
3BC	31	L-SCL	10YR 4/3	10YR 6/2 mo	2msbk	Н	Fi	So	Ps	1npf

ABBREVIATIONS:

TEXTURE: S = sand; LS = loamy sand; SL = sandy loam; L = loam; SCL = sandy clay loam; SC = sandy clay; CL = clay loam; Si = silt; SiL = silt loam; SiCL = silty clay loam; SiC = silty clay loam; SiCL =

Table 5: Soil Development Age Estimates for Soils Exposed in El Rodeo Trench FT-4

Soil	Profile Index	Profile Index	Years Exposed to Soil		dicted Age ce Interval
5011	Profile Index	Value	Forming Processes	Minimum (years)	Maximum (years)
Soil Profile at S	Station 10				
	MHI	0.43	24,700	8,200	73,500
Surface Soil	SDI (NN)	20.84	10,300	3,200	32,900
	SDI (N-200)	85.4	28,800	9,300	88,400
	MHI	0.36	17,300	5,600	52,800
1 st Buried Soil	SDI (NN)	5.52	8,000	2,500	26,000
	SDI (N-200)	72.71	23,500	7,600	72,800
	MHI	0.43	25,400	8,500	75,500
2 nd Buried Soil	SDI (NN)	11.85	8,900	2,800	28,600
	SDI (N-200)	86.46	29,300	9,500	89,900
	MHI		67,400	22,300	201,800
Estimated Age	SDI (NN)		27,200	8,500	87,500
Entire Section	SDI (N-200)		81,600	26,400	251,100
	Preferred Ages		68,000	22,000	202,000
Soil Profile at S	Station 26				•
	MHI	0.37	17,700	5,800	54,000
Surface Soil	SDI (NN)	10.09	8,600	2,700	27,900
	SDI (N-200)	73.62	23,900	7,700	73,800
	MHI	0.36	17,300	5,600	52,800
1 st Buried Soil @ Station 10	SDI (NN)	5.52	8,000	2,500	26,000
@ Station 10	SDI (N-200)	72.71	23,500	7,600	72,800
	MHI	0.48	33,000	11,200	96,300
1 st Buried Soil	SDI (NN)	21.96	10,400	3,300	33,400
	SDI (N-200)	64.22	20,500	6,600	63,900
	MHI	0.41	22,200	7,400	66,600
2 nd Buried Soil	SDI (NN)	10.96	8,800	2,800	28,300
	SDI (N-200)	49.07	16,100	5,100	50,700
	MHI		90,200	30,000	269,700
Estimated Age	SDI (NN)	•	35,800	11,300	115,600
Entire Section	SDI (N-200)		84,000	27,000	261,200
	Preferred Ages		88,000	27,000	268,000

The second buried soil observed in this portion of the trench includes the very thin (9 cm; 0.3 ft) remains of an argillic (Bt) horizon and a BC horizon. The argillic horizon consists of silty clay with 10YR and 7.5YR hues, strong medium to coarse subangular blocky structure, many moderately thick clay films on ped faces, many thin clay films bridging grains, and few thin clay films lining pores. The underlying BC horizon has a loam to sandy clay loam texture, with 10YR hues, moderate medium subangular blocky structure, and few thin clay films on ped

faces. The lack of reddening of this soil indicates that it was exposed at the ground surface prior to burial for a shorter period of time than the soil above it. Using an average of its MHI and normalized-SDI values suggests these sediments were exposed to soil-forming processes for between about 6,300 (minimum) and 19,150 (median) years. Adding these soil-age estimates to those for the overlying soil resolves in an age for the sediments at the bottom of the deepest part of this trench of between about 27,000 (minimum) and 88,000 (median) years.

AT&T TRENCH

This was a short trench (about 13 feet long) excavated by AT&T contractors immediately outside the school grounds in the green strip between the sidewalk and Wilshire Boulevard. We took advantage of the exposure and requested permission to log it quickly, during the contractors' break. The excavation was only about 3.5 feet deep, with artificial fill in the upper 1.5 feet. The native sediments exposed in the bottom 2 feet included the truncated remains of a relict soil with an argillic horizon, and thin portions of two buried soils. The argillic (Bt) soil horizon immediately below the fill consists of sandy clay loam with 10YR hues, strong fine angular blocky soil structure, and common thin clay films coating clasts. This is most likely the bottom portion of a once much thicker soil profile developed in a mudflow deposit, as indicated by the scattered few to common pebbles. Using an average of the MHI- and normalized SDI-derived ages suggests that these sediments were exposed to soil-forming processes for between about 6,800 (minimum) and nearly 21,000 (median) years. Given that only the deepest portion of the relict soil is preserved, the soil-age estimates that we calculated from the remnant horizon are minimum values.

The first buried soil observed and described in this exposure includes two argillic soil horizons (2Bt2/2Bt3), each only about 0.2 feet (6 cm) thick, that coarsen downward from a silty clay to a sandy clay. The colors of this buried soil are in the 7.5YR hue, and their structure grades from a strong coarse angular blocky in the top horizon to a moderate medium subangular blocky structure at the bottom. The upper argillic horizon has many moderately thick clay films on ped faces, many thin clay films bridging grains, common moderately thick clay films coating clasts, and common moderately thick to thick clay films lining clast pockets. The translocated clay in the deeper horizon is less, but still significant, with few moderately thick clay films on ped faces, common moderately thick clay films bridging grains, common thin to moderately thick clay films coating clasts, and common moderately thick clay films lining clast pockets. These are all characteristics of a moderately well developed soil that has been exposed to soil-forming processes prior to burial for a significant period of time. Comparison with other soils that have been dated suggests that this soil was exposed at the surface for between about 13,000 (minimum) and 38,750 (median) years, using the average of the MHIand normalized SDI-derived age estimates. The age of the sediments that this soil formed into is calculated by adding this soil development estimate to the age of the overlying near-surface soil, resulting in a minimum of about 20,000 years, and more likely about 60,000 years.

Table 6: Abbreviated Soil Descriptions for Soil Profile in AT&T Trench

11	Thickness	Texture		Color	Structure		Consi	stency		Clay Films
Horizon	(cm)		Moist	Dry		Dry	Dry Moist Wet We	Wet	•	
Near-Surf	ace Soil below	Artificial	Fill							
Bt	15	SCL	10YR 3/3	10YR 4/2	3fabk	h	fi	s	р	2ncl
First Burie	ed Soil									
				7.5YR 4/3 w/						3nbr, 2mkcl, 2mk-
2Bt2	6	SiC	7.5YR 4/3	7.5YR 4/1 cf	3cabk	eh	efi	VS	vp	kclpo
				7.5YR 4/3 w/						1mkpf, 2mkbr, 2n-mkcl,
2Bt3	6	SC	7.5YR 4/3	7.5YR 3/2 cf	2msbk	vh	ffi	VS	р	2mkclpo
Second Bu	uried Soil									
										1npf, 1mk&2ncl,
3Bt4	20	SiCL	7.5YR 3/3	7.5YR 4/3	2msbk	h	fi	S	р	2mkclpo
				10YR 4/3 &						-
				3/2 w/ 7.5YR						1mkpf, 2mkbr,
3Bt5	15	SCL	7.5YR 4/3	4/4 cf	2msbk	vh	fr	VS	vp	1mkclpo

ABBREVIATIONS:

TEXTURE: S = sand; LS = loamy sand; SL = sandy loam; L = loam; SCL = sandy clay loam; SC = sandy clay; CL = clay loam; Si = silt; SiL = silt loam; SiCL = silty clay loam; SiC = silty clay; C = clay. **STRUCTURE:** Grade: 1 = weak; 2 = moderate, 3 = strong. Class: 1f = very fine, f = fine, m = medium, c = coarse; vc = very coarse. **Type:** m = massive; sg = single-grained; gr = granular, cr = crumb, abk = angular blocky, sbk = subangular blocky, pr = prismatic. **CONSISTENCY: Dry:** lo = loose, so = soft, sh = slightly hard, h = hard, vh = very hard, eh = extremely hard. **Moist:** lo = loose, vfr = very friable, fr = friable, fi = firm, vfi = very firm, efi = extremely firm. **Wet:** ns = non-sticky, ss = slightly sticky, s = sticky, vs = very sticky; np = non-plastic, sp = slightly plastic, p = plastic, vp = very plastic. **CLAY FILMS (cf): Abundance:** v1 = very few, 1 = few, 2 = common, 3 = many, 4 = continuous. **Thickness:** vn = very thin, n = thin, mk = moderately thick, k = thick. **Location:** st = stains, cl = on clasts; clpo = on clast pockets, po = in pores, br = forming bridges between grains, pf = on ped faces; n.o. = not observed. Mo = mottles; cl = clay films.

The second buried soil described in this trench consists of two relatively thin argillic soil horizons (3Bt4/3Bt5). The upper horizon is silty clay loam in texture, with 7.5YR hues, and moderate medium subangular blocky structure. The soil has few thin clay films on ped faces, few moderately thick and common thin clay films coating clats, and common moderately thick clay films coating clasts. The underlying argillic horizon has sandy clay loam texture, also 7.5YR colors of the matrix and clay films, and moderate medium subangular blocky structure. Clay films are few moderately thick on ped faces, common moderately thick bridging grains, and few moderately thick lining clast pockets. The coarser texture and reduced amount and thinner clay films indicate that this soil was exposed to pedogenesis for a shorter time period than the overlying first buried soil. Our soil-development age estimates for this buried soil range from about 8,000 (minimum) to about 25,000 (median) years. Thus, the minimum age of these soil-modified sediments is between about 28,000 (minimum) and 85,000 (median) years. These age estimates are consistent with the age estimates developed for the deeper soils in trench FT-4 (at Station 26), which exposed similar deposits.

Table 7: Soil Development Age Estimates for Soils Exposed in AT&T Trench

Soil	Profile Index	Profile Index	Years Exposed to Soil	95% Predicted Age Confidence Interval			
3011	rrome maex	Value	Forming Processes	Minimum (years)	Maximum (years)		
Soil Profile			<u> </u>				
	MHI	0.37	17,900	5,900	54,600		
Surface Soil	SDI (NN)	5.55	8,000	2,500	26,000		
	SDI (N-200) 73.99		24,000	7,700	74,200		
	MHI	0.54	47,300	16,400	134,400		
1 st Buried Soil	SDI (NN)	5.89	8,100	2,500	26,100		
	SDI (N-200)	88.29	30,200	9,800	92,400		
	MHI	0.42	23,200	7,700	69,300		
2 nd Buried Soil	SDI (NN)	13.61	9,100	2,900	29,400		
	SDI (N-200)	82,21	27,400	8,900	84,200		
	MHI		88,400	30,000	258,300		
Estimated Age	SDI (NN)		25,200	7,900	81,500		
Entire Section	SDI (N-200)		81,600	26,400	250,800		
	Preferred Ages		85,000	28,000	255,000		

CONCLUSIONS

At the request of Leighton Consulting, Inc. (Leighton) and PrimeSource Management we completed additional soil-stratigraphic and geologic analyses for the El Rodeo K-8 school. The main objective of our analyses was to assist Leighton in determining whether or not the school campus is impacted by active faults. To that end, we have estimated the age of the sediments exposed in the three new trenches excavated for this study (FT-3, FT-4, and AT&T utility trench), none of which exposed any faults.

The findings presented in the section above demonstrate that trenches FT-3, FT-4, and the AT&T trench were deep enough to expose Pleistocene sediments significantly older than 11,700 years, even when only the minimum age estimates are considered. Trenches FT-4 and the AT&T excavation were emplaced in an area underlain by older alluvial and colluvial sediments; these trenches did not expose Holocene-age alluvium. The near-surface soils exposed in those excavations were truncated remains of relict soils that have been exposed at or near the ground surface for many thousands of years. The age estimates obtained for these sediments are absolutely minimum values, and although in the sections above we present the minimum and median age estimates for these soils, the maximum age estimates provided by the soil regressions, of more than 200,000 years, may be more appropriate (see Tables 5 and 7). These sediments are more likely part of the Benedict Canyon Wash 2 (BCW2) alluvium as defined by Kenney (Kenney Geosciences, 2012, and summarized in ECI, 2015).

Trench FT-3 was deepest at its western end, where a historical channel approximately 19 feet deep was exposed. The native sediments below the bottom of the historical channel are the oldest deposits exposed in this trench. By adding the soil-development ages of the surface soil and the seven buried soils observed in this portion of trench FT-3, and the soil-development ages of the soils developed in geologic units 7, 8 and 9, we estimate that the sediments below the channel are at a minimum 65,000 years old, and most likely about 200,000 years old. The sediments at the shallow, eastern end of the trench, at a depth of approximately 7 feet, are estimated to be at a minimum 31,000 years old, and more likely about 95,000 years old. Young, Holocene-aged alluvium associated with the channel of Moreno Creek was not encountered in this trench, except for the historical flood deposits found at a depth of between 17 and 19 feet in the west end of the trench.

There are two significant erosional episodes represented in the stratigraphic relations observed in trench FT-3. The youngest of these occurred between geologic units 4 and 5, as unit 5 is not preserved in the eastern portion of the trench. The next significant channel-cutting episode occurred before geologic unit 7 was deposited. This event appears to correlate with the erosional contact (and unconformity) separating the younger alluvium of Benedict Canyon Wash (Qal) from the older, upper Pleistocene alluvium of Benedict Canyon Wash (BCW1). Although the younger alluvium of Benedict Canyon Wash was considered to be Holocene in age by previous studies, the soil-stratigraphic analyses that we have conducted in this area (ECI, 2015) suggest that this unit is late Pleistocene, and ranging in age between about 12,000 and 80,000 years old. The age estimates that we obtained for this section in FT-3 suggest ages of between about 22,750 and 70,000 years old, and include the surface soil and the uppermost two buried soils at Station 1+05. The contact between these two units is shown at about 5 feet below the current ground surface in Leighton's cross-section C-C', approximately consistent with the 6-foot depth for the bottom of the second buried soil described in FT-3 at Station 1+05.

Given the areal coverage of the trenches reported herein, the age estimates obtained from these exposures also confirm that the continuously sampled borings drilled and logged by Leighton at the El Rodeo K-8 school extend into Pleistocene-aged sediments that are many hundreds of thousands years old.

We appreciate the continued opportunity to assist Leighton and PrimeSource on this project. If you have any questions or comments regarding the information presented above, please contact the undersigned at your earliest convenience.

Respectfully submitted for

EARTH CONSULTANTS INTERNATIONAL, INC.

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APPENDIX - SOIL PROFILE DESCRIPTIONS

El Rodeo FT-3, Profile at Station 0+15

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
0 – 1.83	0 - 56		Fill	Not described. Mixture of different soils, with brick and asphalt fragments.
1.83 – 2.62	56 - 80	-	A/Bt1	SILTY CLAY; very dark brown (10YR 2/2) when damp and moist; moderate medium to coarse angular blocky soil structure; firm when moist, very sticky and very plastic when wet; few thin clay films bridging grains, few thin clay films on clasts; scattered fine gravel consisting predominantly of Santa Monica slate; with organics; abrupt wavy boundary.
2.62 – 3.64	80 - 111	Section of the second	Bt2	SILTY CLAY; brown (10YR 4/3) with dark brown (7.5YR 3/2) clay films when damp, very dark grayish brown (10YR 3/2) with dark brown (7.5YR 3/2) clay films when moist; moderate to strong medium angular blocky soil structure; very friable when moist, very sticky and very plastic when wet; common thin and few moderately thick clay films on ped faces, common moderately thick clay films on clasts, common thin clay films bridging grains; dark organics and/or clay coatings on ped faces; boundary not observed, at bench.
3.64 – 4.26	111 - 130	No. of the second	Bt3	SILTY CLAY LOAM; brown (10YR 4/3) when damp, very dark grayish brown (10YR 3/2) when moist; strong very coarse angular blocky soil structure; firm when moist, sticky and plastic when wet; common thin clay films on ped faces, many thin clay films bridging grains, common thin clay films in pores, common thin clay films on clasts, many moderately thick clay films coating clast pockets; many root casts around clast pockets; abrupt wavy boundary.
4.26 - 5.25	130 - 160		2Bt4b	Fine SANDY CLAY; brown (10YR 4/3) with brown (7.5YR 4/2) clay films when damp, very dark grayish brown (10YR 3/2) when moist; moderate medium angular blocky soil structure; firm when moist, slightly sticky and plastic when wet; common thin clay films on ped faces, few thin clay films on clasts, common moderately thick clay films coating clast pockets; abrupt to clear wavy boundary.

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
5.25 - 7.48	160 - 228	Searcy	2BC1b	SANDY CLAY LOAM to fine SANDY CLAY; dark brown (10YR 3/3) when damp, very dark grayish brown (10YR 3/2) when moist; massive breaking to weak to moderate medium angular blocky soil structure grading downward to moderate medium angular blocky soil structure; firm when moist, slightly sticky to sticky and plastic when wet; few thin clay films on ped faces, few thin clay films on clasts, few thin clay films coating clast pockets; scattered gravel; many pores; extensively bioturbated at top; clear wavy boundary.
7.48 - 8.79	228 - 268		3Bt5b	SANDY CLAY LOAM; brown (10YR 4/3) when dry, dark brown (10YR 3/3) when moist; strong medium to coarse angular blocky soil structure; hard when dry, friable when moist, sticky and plastic when wet; few thin clay films on ped faces and bridging grains, common thin clay films coating clast pockets; abrupt to clear wavy boundary.
8.79 – 9.81	268 - 299		3BC2b	LOAMY SAND; brown (10YR 5/3) when dry, dark brown (10YR 3/3) when moist; moderate fine to medium angular blocky soil structure; hard and fragic when dry, friable when moist, non-sticky and very slightly plastic when wet; few thin clay films on ped faces; many rounded to subangular gravel and pebbles of Santa Monica slate and Monterey siltstone; abrupt to clear wavy boundary.
9.81- 10.43	299 - 318		4ABb	LOAMY SAND to fine SANDY LOAM; brown (10YR 5/3) when dry, brown (10YR 4/3) when moist; moderate to strong fine angular blocky soil structure; slightly hard to very hard and fragic when dry, friable to firm when moist, sticky and slightly plastic when wet; very few thin clay films in pores and on clasts; with gravel and pebbles; clay concentrated in zones; clear wavy boundary.
10.43 – 11.09	318 - 338		4Btjb	SANDY CLAY LOAM; dark brown (10YR-7.5YR 3/3) when damp and moist; weak fine angular blocky soil structure breaking to single-grained; firm when moist, slightly sticky to sticky and slightly plastic when wet; few thin clay films on ped faces, few thin clay films lining clast pockets; common scattered fine gravel of Santa Monica slate; with clay-rich zones locally; abrupt wavy boundary.

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
11.09 – 14.14	338 - 431		5Bt6b	SILTY CLAY LOAM; brown (10YR 5/3) with brown (7.5YR 5/3) clay films when dry, dark brown (7.5YR 3/3) when moist; strong medium to coarse angular blocky soil structure; firm when moist, sticky to very sticky and slightly plastic to plastic when wet, common thin clay films in pores and on clasts, common thin and few moderately thick clay films lining clast pockets; common subangular gravel up to ½-inches in diameter; many pores; gradual boundary.
14.14 – 15.03	431 - 458		5Bt7b	SANDY CLAY LOAM; brown (7.5-10YR 5/3) when dry, brown (7.5YR 4/3) when moist; weak to strong medium to coarse angular blocky soil structure; slightly hard and fragic when dry, firm when moist, sticky and plastic when wet; common thin clay films in pores, few thin clay films on clasts, common thin and few moderately thick clay films coating clast pockets; many pores; abrupt wavy boundary.
15.03 – 16.80	458 - 512		6Bt8b	SILTY CLAY; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/2.5) when moist; strong medium to coarse angular blocky soil structure; hard when dry, friable to firm when moist, very sticky and very plastic when wet; few thin clay films on ped faces and bridging grains, common thin clay films on clasts, common thin to moderately thick clay films lining clast pockets; clasts consist of approximately equal amounts of Santa Monica slate and Monterey siltstone; clear to gradual wavy boundary.
16.80 – 17.98	512 - 548		6BC3b	Fine SANDY CLAY LOAM; brown (7.5YR 5/3) with brown (7.5YR 4/3) clay films when dry, brown (7.5YR 4/3) when moist; moderate to strong medium to coarse angular blocky soil structure; hard when dry, firm when moist, sticky and slightly plastic when wet; very few thin clay films on ped faces, common thin clay films coating clast pockets; many pinhole-sized pores; many weathered clasts of Monterey siltstone, few clasts of Santa Monica slate; sand in root casts; abrupt wavy boundary.
17.98 – 18.60	548 - 567		7Bt9b	Fine SANDY CLAY LOAM; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate fine to medium angular blocky soil structure; slightly hard and fragic when dry, firm when moist, slightly sticky and plastic when wet; few thin clay films coating clasts; sand in vertical fractures associated with wetting/drying and roots; clear smooth to wavy boundary.

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
18.60 – 19.46+	567 – 593+		8Btj2b	Fine SILTY CLAY; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate to strong medium angular blocky soil structure; hard when dry, firm when moist, slightly sticky and plastic when wet; very few thin clay films coating clasts; many pinhole-sized pores and roots; common root holes; root holes filled with sand; many weathered clasts of Monterey siltstone; more fine gravel than above; lower boundary not observed.

El Rodeo FT-3, Profile at Station 1+05

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
0 – 1.97	0 - 60	Secret	Fill	Not described. Mixture of imported gravel, imported light yellowish brown to reddish brown clayey soil, with bricks, asphalt fragments, and other debris.
1.97 – 2.99	60 - 91		Bt	CLAY to SILTY CLAY; very dark grayish brown to dark grayish brown (10YR 3.5/2) with very dark brown to very dark grayish brown (10YR 2.5/2) clay films and few scattered black (10YR 2/1) mottles when dry, very dark brown to very dark grayish brown (10YR 2.5/2) when moist; strong coarse angular blocky soil structure; hard when dry, firm when moist, sticky and very plastic when wet; many moderately thick clay films on ped faces and bridging grains, common thick clay films on ped faces, many thin clay films in pores; many pores, roots and root casts; organic-rich; few scattered gravel-sized chips of Monterey siltstone; locally looks mixed, possibly reworked; abrupt to clear wavy boundary.
2.99 – 3.64	91 - 111		BC _{lam}	CLAY LOAM with CLAY lamellae; brown (10YR 4/3) with very dark grayish brown (10YR 3/2) clay films when dry, very dark grayish brown (10YR 3/2) when moist; strong medium to coarse angular blocky soil structure; soft when dry, friable when moist, sticky and plastic to very plastic when wet; few to common thin clay films on ped faces, many thin clay films bridging grains and in pores; in the lamellae, many thin and common moderately thick clay films on ped faces and many thin clay films in pores; common pinhole-sized pores; clear wavy boundary.

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
3.64 – 4.66	111 - 142		2Bt2b	SANDY CLAY; brown (10-7.5YR 4/3) with brown (7.5YR 4/4) clay films locally when dry, dark brown (7.5YR 3/2) with dark reddish brown (5YR 3/2) mottles when moist; strong coarse to very coarse angular blocky soil structure; soft to slightly hard when dry, friable when moist, very sticky and very plastic when wet; common moderately thick and many thin clay films on ped faces, few to common thin clay films bridging grains, continuous thin clay films in pores; common to many large pores; scattered subangular gravel generally less than 1-inch in diameter consisting predominantly of Santa Monica slate; clear wavy boundary.
4.66 - 6.04	142 - 184		2Bt3b	SANDY CLAY; brown (10-7.5YR 4/3) with brown (7.5YR 4/3.5) clay films when dry, dark brown (7.5YR 3/2) with dark brown (7.5YR 3/3) clay films when moist; moderate medium to coarse angular blocky soil structure; slightly hard to hard when dry, slightly firm to firm when moist, very sticky and plastic when wet; few to common thin clay films on ped faces, common to many thin and few moderately thick clay films bridging grains, common thin clay films on clasts; more sand, coarser sand and more gravel than horizon above; fewer pores than above ranging in size from pinhole to 3mm in diameter; clear wavy boundary.
6.04 - 6.46	184 - 197		3Bt4b	SANDY CLAY LOAM; brown (10-7.5YR 4/3) with dark brown (7.5YR 3/2) clay films when dry, dark brown (7.5YR 3/2) with dark brown (7.5YR 3/3) clay films when moist; moderate fine angular blocky soil structure; slightly hard to hard and slightly fragic when dry, friable to slightly firm when moist, slightly sticky and slightly plastic to plastic when wet; many thin and common moderately thick clay films on ped faces, common thin clay films bridging grains and in pores, many thin clay films on clast pockets; many pores ranging in size from pinhole to >3mm in diameter; more sand and more gravel than horizon above; abrupt to clear wavy boundary.

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
6.46 - 7.81	197 - 238	300.13)	4Btjb	SANDY CLAY LOAM grading down to SANDY LOAM; brown and dark yellowish brown (10YR 4/3 and 4/4) when dry, dark brown (7.5YR 3/2) when moist; moderate medium to coarse angular blocky soil structure; soft and slightly fragic when dry, very friable when moist, slightly sticky and very slightly to slightly plastic when wet; common to many thin clay films on ped faces, common thin clay films bridging grains, many thin clay films in pores locally, many thin clay films coating clasts; fining upward with increasing gravel downward; more sand and fine gravel than horizon above; clear to gradual wavy boundary. (Alluvium)
7.81 – 8.53	238 - 260		4BC _{lam} 2b	Gravelly SANDY LOAM with SANDY LOAM lamellae; brown (10YR 4/3) when dry, dark brown (7.5YR 3/2.5) when moist; weak medium subangular blocky soil structure breaking to single-grained, moderate medium subangular blocky soil structure in lamellae; soft to loose when dry, very friable when moist, non-sticky to very slightly sticky and non-plastic when wet; common thin to moderately thick clay films bridging grains, few thin clay films on ped faces, few to common thin clay films on clasts, many thin clay films on clast pockets; fine to medium sand with common coarse sand and subrounded to rounded gravel consisting predominantly of Santa Monica slate; abrupt to clear wavy boundary. (Very fluid debris flow deposit or alluvium, generally massive, locally with lenses.)
8.53- 9.71	260 - 296		5BC _{lam} 3b	Gravelly LOAMY SAND with SANDY LOAM lamellae; brown (10YR 4/3) when dry, dark brown (10-7.5YR 3/3) when moist; single-grained; loose when dry and when moist, non-sticky and non-plastic when wet; few pores ranging in size from pinhole to 2 mm in diameter; abrupt wavy to irregular boundary (carves out underlying surface). Lamellae are brown (10-7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate fine to medium subangular blocky soil structure; slightly hard when dry, very friable when moist; non-sticky to very slightly sticky and non-plastic when wet; many thin and common moderately thick clay films bridging grains, few thin clay films on ped faces, common thin clay films in clast pockets; ½- to 1-inch thick, irregularly spaced from ¼- to ½-inch apart at top, to 1-2 inches at bottom. (Alluvium; strata visible.)

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
9.71 – 10.07	296 - 307	The state of the s	6Bt5b	SANDY LOAM to SANDY CLAY LOAM; brown and dark yellowish brown (10YR 4/3 and 4/4) with brown (7.5YR 4/3) clay films when dry, dark brown (10-7.5YR 3/3) with dark brown (7.5YR 3/3) clay films when moist; moderate fine angular blocky soil structure; hard and fragic when dry, friable when moist, slightly sticky to sticky and slightly plastic to plastic when wet; common thin and few moderately thick clay films on ped faces, common thin clay films in pores, many thin clay films bridging grains; many pores ranging in size from pinhole to 2 mm in diameter, loose fine sand in larger pores; few to common subangular to subrounded fine gravel to ½-inch in diameter, consisting predominantly of Santa Monica slate, few Monterey siltstone chips; clear wavy boundary.
10.07 – 11.25	307 - 343		6Bt6b	SANDY CLAY LOAM to SANDY CLAY; brown (10YR 4.5/3) with brown (7.5YR 4/3) clay films when dry, dark brown (7.5YR 3/2) when moist; weak to moderate medium angular blocky soil structure; slightly hard to hard and slightly fragic when dry, friable to slightly firm when moist, slightly sticky to sticky and plastic when wet; many thin and few moderately thick clay films on ped faces, many thin to moderately thick clay films bridging grains, common thin clay films in pores; coarser-grained than horizon above, fining-upward sequence with unit above; common pores; clear wavy boundary. (Debris flow deposit)
11.25 – 12.04	343 - 367		7C _{lam}	Gravelly SAND with SANDY LOAM lamellae; brown (10YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; single-grained; loose when dry and moist, non-sticky and non-plastic when wet; gravel consists predominately of Santa Monica slate, ¼- to 1-inch in diameter; abrupt wavy to irregular boundary that incises into underlying surface. Lamellae are brown (10-7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; weak fine to medium subangular blocky soil structure; soft when dry, very friable when moist, very slightly sticky and non-plastic to very slightly sticky when wet; ¼- to ½-inch thick, spaced 1 to 2 inches apart. (Fluvial deposit, stratified, with fining-upward sequences.)

Depth (ft)	Depth (cm)	Photo (not to scale)	Horizon Designation	Description
12.04 – 12.37+	367 – 377+		8Bt7b	CLAY; dark yellowish brown to brown (10-7.5YR 4/4) with dark brown (7.5YR 3/3) clay films when dry, dark brown (7.5YR 3/2.5) when moist; strong fine to medium subangular blocky soil structure; extremely hard when dry, firm when moist, very sticky and very plastic when wet; common thin and few moderately thick clay films on ped faces, common thin clay films bridging grains, many thin clay films in pores, many moderately thick clay films on clasts; many pinholesized pores; boundary not observed.

El Rodeo FT-4 at Station 10

Depth below surface (ft; cm)	Thickness (cm)	Horizon Designation	Description
0-0.4 (0-12.2)	12.2	Fill	Not described.
0.4-2.0 (12.2-61)	48.8	Bt	SANDY CLAY; dark yellowish brown (10YR 4/4) with brown (7.5YR 4/3) clay films and medium grayish brown (10YR 5/2) mottles when slightly damp, dark brown (7.5YR 3/3) when moist; strong fine subangular blocky soil structure; hard to very hard when dry, firm to very firm when moist, sticky and plastic when wet; common thin clay films on ped faces, common moderately thick clay films lining clast pockets, few thin clay films bridging grains; abundant fine subrounded gravel up to 1/4-inch in diameter; clear wavy lower boundary.
2.0-2.5 (61-76.2)	15.2	2Bt2	SANDY CLAY LOAM; brown (10YR 4/3) with brown (7.5YR 4/3 and 3/2) clay films and common dark grayish brown (10YR 4/2) mottles when damp, brown (7.5YR 4/3) with dark brown (7.5YR 3/2) clay films when moist; strong fine to medium angular blocky soil structure; slightly hard to hard when dry, firm when moist, sticky and slightly plastic when wet; common thin clay films bridging grains, many thin and common moderately thick clay on ped faces; fine-grained with few scattered fine gravel; common pores; clear wavy lower boundary.
2.5-3.4+ (76.2- 103.6)	27.4+	2Bt3	SILTY CLAY; brown (10YR 4/3) with brown (7.5YR 4/2) clay films and very dark grayish brown and grayish brown (10YR 3/2 and 10YR 5/2) mottles when damp, dark grayish brown (10YR 4/2) when moist; strong coarse angular blocky soil structure; hard and fragic when dry, firm to very firm when moist, sticky and slightly plastic when wet; many thin and common moderately thick clay films on ped faces, common thin clay films bridging grains; common strong brown (7.5YR 5/6) iron oxide stains; lower boundary not observed.

El Rodeo FT-4 at Station 26

Depth below surface (ft; cm)	Thickness (cm)	Horizon Designation	Description
0-1 (0-30.5)	30.5	Fill	Asphalt over artificial fill. Not described.
1-1.9 (30.5- 57.9)	27.4	Bt	SANDY CLAY LOAM; brown (7.5YR 4/4) with dark brown (7.5YR 3/2) clay films and medium grayish brown (10YR 5/2) mottles when damp, dark brown (7.5YR 3/3) when moist; moderate medium to fine angular blocky soil structure; slightly hard when dry, friable to firm when moist, sticky and plastic when wet; common moderately thick clay films on ped faces, few thin clay films on clasts, common thin and few moderately thick clay films lining clast pockets; abundant fine subrounded gravel up to ¼-inch in diameter; clear wavy lower boundary.
1.9-2.4 (57.9- 73.2)	15.3	2Bt2	SILTY CLAY; dark yellowish brown (10YR 4/4) with brown (7.5YR 4/3) clay films and medium grayish brown (10YR 5/2) mottles when damp, dark brown (7.5YR 3/3) when moist; strong fine to medium angular blocky soil structure; slightly hard when dry, firm when moist, sticky and plastic when wet; common thin clay films on ped faces, common moderately thick clay films lining clast pockets, many thin clay films bridging grains; scattered gravel; clear to gradual wavy lower boundary.
2.4-3.2 (73.2- 97.5)	24.3	2Bt3	SANDY CLAY LOAM; dark yellowish brown (10YR 4/4) with brown (7.5YR 4/3) clay films and few brown (10YR 5/3) mottles when damp, dark brown (7.5YR 3/3) when moist; moderate fine to medium angular blocky soil structure; slightly hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common thin to moderately thick clay films on ped faces, few thin clay films bridging grains; scattered few fine gravel; few; clear wavy lower boundary.
3.2-3.9 (97.5- 118.9)	21.4	2Bt4	SANDY CLAY LOAM; dark yellowish brown (10YR 4/4) with brown (7.5YR 4/3) clay films and brown (10YR 5/3) mottles when damp, brown (7.5YR 4/3) when moist; moderate fine to medium subangular blocky soil structure; slightly hard and fragic when dry, friable to firm when moist, non- sticky and slightly plastic when wet; very few to few thin clay films on ped faces, few thin clay films lining clast pockets; fine-grained sand with very few scattered fine gravel; clear wavy lower boundary.
3.9-4.2 (118.9- 128)	9.1	3Bt5	SILTY CLAY; brown (10YR 4/3) with brown (7.5YR 4/3) clay films and common light brownish gray (10YR 6/2) and very dark gray (10YR 3/1) mottles when damp, brown (7.5YR 4/3) when moist; strong medium to coarse subangular blocky soil structure; slightly hard to hard when dry, firm when moist, sticky and plastic when wet; many moderately thick clay films on ped faces, few thin clay films lining pores, many thin clay films bridging grains; clear wavy lower boundary.

Depth below surface (ft; cm)	Thickness (cm)	Horizon Designation	Description
4.2-5.2 (128- 158.5)	30.5	3ВС	LOAM to SANDY CLAY LOAM; yellowish brown (10YR 5/4) with light brownish gray (10YR 6/2) mottles when damp, brown (10YR 4/3) when moist; moderate medium subangular blocky soil structure; slightly hard and fragic when dry, firm when moist, non- sticky and slightly plastic when wet; few thin clay films on ped faces; fine to very fine sand grains; lower boundary not observed.

Utility Trench along Wilshire Boulevard

Depth below surface (ft; cm)	Thickness (cm)	Photo (not to scale)	Horizon Designation	Description
0.3-1.16 (9-35)	26		Fill	SILTY CLAY LOAM; brown (10YR 4/3) when dry, very dark grayish brown (10YR 3/2) when moist; moderate fine subangular blocky soil structure; hard when dry, slightly firm when moist, sticky and plastic when wet; many fine to medium roots; common gravel and pebbles, many pebbles broken; abrupt smooth lower boundary. [Topped by 0.3' (9 cm) of grass.]
1.16- 1.45 (35-44)	9		Fill	Fine to coarse SAND with gravel; gray (2.5Y 5.5/1) when dry, very dark gray (2.5Y 3/1) when moist; single-grained soil; loose when dry and moist, non-sticky and non-plastic when wet; broken white granitic gravel and cobbles; abrupt smooth lower boundary.
1.45- 1.95 (44-59)	15		Bt	SANDY CLAY LOAM; dark grayish brown (10YR 4/2) when dry, dark brown (10YR 3/3) when moist; strong fine angular blocky soil structure; hard when dry, firm when moist, sticky and plastic when wet; common thin clay films coating clasts; common to many gravel, few to common pebbles; abrupt to clear wavy lower boundary.
1.95- 2.15 (59-65)	6		2Bt2	SILTY CLAY; brown (7.5YR 4/3) with dark gray (7.5YR 4/1) clay films when dry, brown (7.5YR 4/3) when moist; strong coarse angular blocky soil structure; extremely hard when dry, extremely firm when moist, very sticky and very plastic when wet; many moderately thick clay films on ped faces, many thin clay films bridging grains, common moderately thick clay films coating clasts, common moderately thick to thick clay films lining clast pockets; common fine gravel; gradual wavy lower boundary.

Depth below surface (ft; cm)	Thickness (cm)	Photo (not to scale)	Horizon Designation	Description
2.15- 2.34 (65-71)	6		2Bt3	SANDY CLAY; brown (7.5YR 4/3) with dark brown (7.5YR 3/2) clay films when dry, brown (7.5YR 4/3) when moist; moderate medium subangular blocky soil structure; very hard when dry, very firm when moist, very sticky and plastic when wet; few moderately thick clay films on ped faces, common moderately thick clay films bridging grains, common thin to moderately thick clay films coating clasts, common moderately thick clay films lining clast pockets; many platy to subrounded gravel; abrupt to clear wavy lower boundary.
2.34-3.0 (71-91)	20		3Bt4	SILTY CLAY LOAM; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate medium subangular blocky soil structure; hard when dry, firm when moist, sticky and plastic when wet; few thin clay films on ped faces, few moderately thick and common thin clay films coating clasts, common moderately thick clay films lining clast pockets; with pebbles; fewer gravel than above; gradual lower boundary.
3.0-3.48 (91-106)	15		3Bt5	SANDY CLAY LOAM; brown and dark brown (7.5YR 4/3 and 3/2) with brown (7.5YR 4/4) clay films when dry, brown (7.5YR 4/3) when moist; moderate medium subangular blocky soil structure; very hard when dry, friable when moist, very sticky and very plastic when wet; few moderately thick clay films on ped faces, common moderately thick clay films bridging grains, few moderately thick clay films lining clast pockets; lower boundary not observed.

APPENDIX E ANALYTICAL LABORATORY TEST RESULTS







09 September 2015

Cindy Johnson
Belshire Environmental
25971 Towne Centre Dr
Foothill Ranch, CA 92610

RE: El Rodeo Elementary School

Enclosed are the results of analyses for samples received by the laboratory on 09/04/15 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Katherine RunningCrane

Katherine Running Crane

Project Manager



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number:258404Reported:Foothill Ranch CA, 92610Project Manager:Cindy Johnson09/09/15 16:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
COMP: DRUM 1, 2, 3	T152216-04	Soil	09/04/15 15:15	09/04/15 15:50

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kotherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

DETECTIONS SUMMARY

Sample ID: COMP: DRUM 1, 2, 3	Laborat	tory ID:	T152216-04		
		Reporting			
Analyte	Result	Limit	Units	Method	Notes
Barium	56	1.0	mg/kg	EPA 6010B	
Chromium	16	2.0	mg/kg	EPA 6010B	
Cobalt	8.2	2.0	mg/kg	EPA 6010B	
Copper	9.3	1.0	mg/kg	EPA 6010B	
Nickel	11	2.0	mg/kg	EPA 6010B	
Vanadium	27	5.0	mg/kg	EPA 6010B	
Zinc	28	1.0	mg/kg	EPA 6010B	

SunStar Laboratories, Inc.

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Katherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

COMP: DRUM 1, 2, 3 T152216-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar L	aboratori	es, Inc.					
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	5090822	09/08/15	09/08/15	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	56	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	16	2.0	"	"	"	"	"	"	
Cobalt	8.2	2.0	"	"	"	"	"	"	
Copper	9.3	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	11	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	27	5.0	"	"	"	"	"	"	
Zinc	28	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	5090826	09/08/15	09/08/15	EPA 7471A Soil	
Volatile Organic Compounds by EPA	Method 8260B								
Bromobenzene	ND	5.0	ug/kg	1	5090839	09/08/15	09/08/15	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Kotherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

COMP: DRUM 1, 2, 3 T152216-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar L	aboratori	es, Inc.					
Volatile Organic Compounds by EPA	Method 8260B								
Chloroform	ND	5.0	ug/kg	1	5090839	09/08/15	09/08/15	EPA 8260B	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kotherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

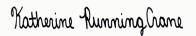
25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

COMP: DRUM 1, 2, 3 T152216-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar L	aboratori	ies, Inc.					
Volatile Organic Compounds by EPA	Method 8260B								
Tetrachloroethene	ND	5.0	ug/kg	1	5090839	09/08/15	09/08/15	EPA 8260B	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	10	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
C6-C12 (GRO)	ND	500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		142 %	81.2	-123	"	"	"	"	S-GC
Surrogate: Dibromofluoromethane		130 %	95.7	-135	"	"	"	"	
Surrogate: Toluene-d8		84.9 %	85.5	-116	"	"	"	"	S-GC

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

Metals by EPA 6010B - Quality Control

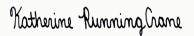
SunStar Laboratories, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5090822 - EPA 3051										

Blank (5090822-BLK1)				Prepared &	Analyzed:	09/08/15		
Antimony	ND	3.0	mg/kg	-	-			
Silver	ND	2.0	"					
Arsenic	ND	5.0	"					
Barium	ND	1.0	"					
Beryllium	ND	1.0	"					
Cadmium	ND	2.0	"					
Chromium	ND	2.0	"					
Cobalt	ND	2.0	"					
Copper	ND	1.0	"					
Lead	ND	3.0	"					
Molybdenum	ND	5.0	"					
Nickel	ND	2.0	"					
Selenium	ND	5.0	"					
Thallium	ND	2.0	"					
Vanadium	ND	5.0	"					
Zinc	ND	1.0	"					
LCS (5090822-BS1)				Prepared &	Analyzed:	09/08/15		
Arsenic	93.3	5.0	mg/kg	100		93.3	75-125	
Barium	94.5	1.0	"	100		94.5	75-125	
Cadmium	94.4	2.0	"	100		94.4	75-125	
Chromium	94.4	2.0	"	100		94.4	75-125	
Lead	95.7	3.0	"	100		95.7	75-125	
Matrix Spike (5090822-MS1)	Source:	T152219-	18	Prepared &	Analyzed:	09/08/15		
Arsenic	79.1	5.0	mg/kg	100	0.138	79.0	75-125	
Barium	173	1.0	"	100	74.6	98.3	75-125	
Cadmium	89.1	2.0	"	100	0.038	89.0	75-125	
Chromium	115	2.0	"	100	21.8	93.5	75-125	
Lead	108	3.0	"	100	9.08	98.6	75-125	

SunStar Laboratories, Inc.

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RPD

%REC

Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Spike

Source

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5090822 - EPA 3051										
Matrix Spike Dup (5090822-MSD1)	Sourc	e: T152219-	18	Prepared &	Analyzed:	09/08/15				
Arsenic	78.5	5.0	mg/kg	100	0.138	78.4	75-125	0.773	20	
Barium	163	1.0	"	100	74.6	88.0	75-125	6.14	20	
Cadmium	88.3	2.0	"	100	0.038	88.3	75-125	0.863	20	
Chromium	114	2.0	"	100	21.8	92.5	75-125	0.841	20	
Lead	102	3.0	"	100	9.08	92.9	75-125	5.38	20	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kotherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number:258404Reported:Foothill Ranch CA, 92610Project Manager:Cindy Johnson09/09/15 16:05

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5090826 - EPA 7471A Soil										
Blank (5090826-BLK1)				Prepared &	Analyzed	09/08/15				
Mercury	ND	0.10	mg/kg							
LCS (5090826-BS1)				Prepared &	Analyzed	09/08/15				
Mercury	0.420	0.10	mg/kg	0.417		101	80-120			
Matrix Spike (5090826-MS1)	Sour	rce: T152216-	04	Prepared &	Analyzed	09/08/15				
Mercury	0.403	0.10	mg/kg	0.417	ND	96.6	75-125			
Matrix Spike Dup (5090826-MSD1)	Sour	rce: T152216-	04	Prepared &	Analyzed	09/08/15				
Mercury	0.402	0.10	mg/kg	0.417	ND	96.4	75-125	0.169	20	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Katherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

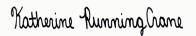
Analyte Result Limit Units Level Result %REC Limits RPD Limit Notes			Reporting		Spike	Source		%REC		RPD	
	Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Ratch	5000830	FDA	5030	CCMS

Blank (5090839-BLK1)				Prepared & Analyzed: 09/08/15
Bromobenzene	ND	5.0	ug/kg	
Bromochloromethane	ND	5.0	"	
Bromodichloromethane	ND	5.0	"	
Bromoform	ND	5.0	"	
Bromomethane	ND	5.0	"	
n-Butylbenzene	ND	5.0	"	
sec-Butylbenzene	ND	5.0	"	
tert-Butylbenzene	ND	5.0	"	
Carbon tetrachloride	ND	5.0	"	
Chlorobenzene	ND	5.0	"	
Chloroethane	ND	5.0	"	
Chloroform	ND	5.0	"	
Chloromethane	ND	5.0	"	
2-Chlorotoluene	ND	5.0	"	
4-Chlorotoluene	ND	5.0	"	
Dibromochloromethane	ND	5.0	"	
1,2-Dibromo-3-chloropropane	ND	10	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	
Dibromomethane	ND	5.0	"	
1,2-Dichlorobenzene	ND	5.0	"	
1,3-Dichlorobenzene	ND	5.0	"	
1,4-Dichlorobenzene	ND	5.0	"	
Dichlorodifluoromethane	ND	5.0	"	
1,1-Dichloroethane	ND	5.0	"	
1,2-Dichloroethane	ND	5.0	"	
1,1-Dichloroethene	ND	5.0	"	
cis-1,2-Dichloroethene	ND	5.0	"	
trans-1,2-Dichloroethene	ND	5.0	"	
1,2-Dichloropropane	ND	5.0	"	
1,3-Dichloropropane	ND	5.0	"	
2,2-Dichloropropane	ND	5.0	"	
1,1-Dichloropropene	ND	5.0	"	
cis-1,3-Dichloropropene	ND	5.0	"	
trans-1,3-Dichloropropene	ND	5.0	"	
Hexachlorobutadiene	ND	5.0	"	
Isopropylbenzene	ND	5.0	"	

SunStar Laboratories, Inc.

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Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number: 258404Reported:Foothill Ranch CA, 92610Project Manager: Cindy Johnson09/09/15 16:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Ratch	5090839	- EPA	5030	GCMS

Blank (5090839-BLK1)				Prepared & Analyzed: 09/08/15
p-Isopropyltoluene	ND	5.0	ug/kg	
Methylene chloride	ND	5.0	"	
Naphthalene	ND	5.0	"	
n-Propylbenzene	ND	5.0	"	
Styrene	ND	5.0	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	
Tetrachloroethene	ND	5.0	"	
1,2,3-Trichlorobenzene	ND	5.0	"	
1,2,4-Trichlorobenzene	ND	5.0	"	
1,1,2-Trichloroethane	ND	5.0	"	
1,1,1-Trichloroethane	ND	5.0	"	
Trichloroethene	ND	5.0	"	
Trichlorofluoromethane	ND	5.0	"	
1,2,3-Trichloropropane	ND	5.0	"	
1,3,5-Trimethylbenzene	ND	5.0	"	
1,2,4-Trimethylbenzene	ND	5.0	"	
Vinyl chloride	ND	5.0	"	
Benzene	ND	5.0	"	
Toluene	ND	5.0	"	
Ethylbenzene	ND	5.0	"	
m,p-Xylene	ND	10	"	
o-Xylene	ND	5.0	"	
C6-C12 (GRO)	ND	500	"	
Surrogate: 4-Bromofluorobenzene	54.6		"	40.0 137 81.2-123 S-GC
Surrogate: Dibromofluoromethane	52.6		"	40.0 132 95.7-135
Surrogate: Toluene-d8	33.6		"	40.0 84.1 85.5-116 S-GC

SunStar Laboratories, Inc.

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Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number:258404Reported:Foothill Ranch CA, 92610Project Manager:Cindy Johnson09/09/15 16:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Result	Liiiit	UIIIIS	Level	Kesuit	/0KEC	Lillits	KrD	DIIIII	inotes
Batch 5090839 - EPA 5030 GCMS										
LCS (5090839-BS1)				Prepared: (09/08/15 A	nalyzed: 0	9/09/15			
Chlorobenzene	110	5.0	ug/kg	105		105	75-125			
1,1-Dichloroethene	87.6	5.0	"	105		83.4	75-125			
Trichloroethene	88.6	5.0	"	105		84.4	75-125			
Benzene	101	5.0	"	105		96.6	75-125			
Toluene	51.0	5.0	"	105		48.6	75-125			S-GC
Surrogate: 4-Bromofluorobenzene	47.0		"	40.0		118	81.2-123			
Surrogate: Dibromofluoromethane	65.4		"	40.0		164	95.7-135			S-GC
Surrogate: Toluene-d8	37.8		"	40.0		94.6	85.5-116			
LCS Dup (5090839-BSD1)				Prepared: (09/08/15 A	nalyzed: 0	9/09/15			
Chlorobenzene	106	5.0	ug/kg	105		100	75-125	4.04	20	
1,1-Dichloroethene	81.5	5.0	"	105		77.6	75-125	7.16	20	
Trichloroethene	90.0	5.0	"	105		85.7	75-125	1.46	20	
Benzene	105	5.0	"	105		100	75-125	3.63	20	
Toluene	87.2	5.0	"	105		83.0	75-125	52.2	20	S-GC
Surrogate: 4-Bromofluorobenzene	47.5		"	40.0		119	81.2-123			
Surrogate: Dibromofluoromethane	57.6		"	40.0		144	95.7-135			S-GC
Surrogate: Toluene-d8	36.0		"	40.0		89.9	85.5-116			

SunStar Laboratories, Inc.

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Kotherine Running Crane



Belshire Environmental Project: El Rodeo Elementary School

25971 Towne Centre DrProject Number:258404Reported:Foothill Ranch CA, 92610Project Manager:Cindy Johnson09/09/15 16:05

Notes and Definitions

S-GC Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

SunStar Laboratories, Inc.

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Kotherine Running Crane

				^																	·
Sample disposal Instructions: [Relinquished by: (signature)		Relinquished by: (signature)	Jonal ()	Relinquished by: (signature)						A						Dicum 3	Drum 2	DRUM 1	Client: BELSHTRE ENVIRON MONTAL SERVICES, Address: 25971 TOWNE CENTRE DR., FOOTHILL Phone: 949-460-5200 Fax: 949-460-52 Project Manager: Lindy Johnson Curdy & bedship Sample ID Date Sampled Time Type Type Type Type Type Type Type Type Type Type Type
Disposal @ \$2.00 each		Date / Time		Date / Time		Mate / Time			7								<u> </u>	9-4-15	9-4-15	7-44-15	Je Centi 200 Johnson
ach		пе		пе		ne												15:15	15:15	15:15	Time
Return		Received by		Received by	See 2	Received by												SOL	2016	2016	RE DR-, FOOTHUL PLANTER - FOOTHUL PLANTE - FOOTHUL PLANTE - S210 Fax: 949-460-5210 Funding Welshire. Time Type Container Type Type
Return to client		Received by: (signature)		Received by: (signature)		Received by: (signature)												JARC	ر المهر	JAK.	1
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	ĺ		Received good condition/cold /.5	Seals intact? Y/N/NA	eals	Total # of containers		\dashv	\dashv	+	-	}	_	_			$\left - \right $	\mathcal{H}	Щ	\mathbb{H}	
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SAMPLE RECEIVING REVIEW SHEET

BATCH #	
Client Name: BELSHUEE	Project: EL RODEO ELEMENTARY SCHOOL
Received by: Supply	Date/Time Received: 9.4.15 / 15:50
Delivered by: Client SunStar Courier GS	SO FedEx Other
Total number of coolers receivedo Tem	p criteria = 6°C > 0°C (no <u>frozen</u> containers)
Temperature: cooler #1°C +/- the CF (- 0.2°C) =	= <u>1.5</u> °C corrected temperature
cooler #2°C +/- the CF (- 0.2°C) =	=°C corrected temperature
cooler #3°C +/- the CF (- 0.2°C) =	=°C corrected temperature
Samples outside temp. but received on ice, w/in 6 hours of	final sampling. Yes No* N/A
Custody Seals Intact on Cooler/Sample	□Yes □No* ⊗N/A
Sample Containers Intact	≥Yes
Sample labels match COC ID's	⊌Yes □No*
Total number of containers received match COC	☑Yes ☐No*
Proper containers received for analyses requested on COC	Yes No*
Proper preservative indicated on COC/containers for analyst	ses requested Yes No* N/A
Complete shipment received in good condition with correct preservatives and within method specified holding times.	The state of the s
* Complete Non-Conformance Receiving Sheet if checked	Cooler/Sample Review - Initials and date SL 9.4-15
Comments:	

Printed: 9/8/2015 11:52:32AM



WORK ORDER

T152216

Client: **Project Manager: Belshire Environmental** Katherine RunningCrane

Project: El Rodeo Elementary School **Project Number:** 258404

Report To:

Belshire Environmental

Cindy Johnson

25971 Towne Centre Dr Foothill Ranch, CA 92610

Date Due:

09/09/15 17:00 (2 day TAT)

Received By: Logged In By: Sunny Lounethone

Sunny Lounethone

Date Received:

09/04/15 15:50

Date Logged In:

09/04/15 16:46

Samples Received at: Custody Seals

1.5°C

No Received On Ice

Yes

Containers Intact Yes COC/Labels Agree Yes Preservation Confirme

TAT Analysis Due **Expires** Comments

T152216-01 DRUM 1 [Soil] Sampled 09/04/15 15:15 (GMT-08:00) Pacific Time

(US &

[NO ANALYSES]

T152216-02 DRUM 2 [Soil] Sampled 09/04/15 15:15 (GMT-08:00) Pacific Time

(US &

[NO ANALYSES]

T152216-03 DRUM 3 [Soil] Sampled 09/04/15 15:15 (GMT-08:00) Pacific Time

(US &

[NO ANALYSES]

T152216-04 COMP: DRUM 1, 2, 3 [Soil] Sampled 09/04/15 15:15 (GMT-08:00) **COMPOSITE 3:1**

Pacific Time (US &

6010 Title 22

09/09/15 15:00

2 03/02/16 15:15

2

8260 09/09/15 15:00 09/18/15 15:15

+ GRO

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

Reviewed By Date

Page 16 of 16

APPENDIX F GWI WEST INC., BORINGS



BORING B1-B



Project No.: A9009-06-01A Excavation Date: January 19, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC **Excavation Method:** H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:288.0 feetGeologist:AL/SFK

			Depth (feet)	USCS	
Box	Run #	% Rec	(/	Class.	Description
1	1	100	0 1 2 3 4	SM ML SM	Started sampling at 1.8' ALLUVIUM (Qal) Silty Sand, dark yellowish brown (10YR 4/4), very fine-grained, trace clay, massive. 2.4' - Silt with Sand, dark yellowish brown (10YR 4/2), very fine- to fine-grained, trace clay and caliche stringers, massive, porous. 3.9' - Silty Sand, dark yellowish brown (10YR 4/2), fine-grained, trace clay and gravel (to 1/4"), predominantly slate, massive.
1	2	66	5 6 7 8 9	SP-SM	5.0 to 6.7' - No Recovery 7.1' - Sand with Silt, dark yellowish brown (10YR 4/2), very fine- to fine-grained, trace gravel (to 1/2", few to 1-1/2").
2	3	86	10 11 12 13 14 15	ML/SM SM	10' - Silt with Sand to Silty Sand, dark yellowish brown (10YR 4/2), fine-grained, trace gravel (to 1/2"). OLDER ALLUVIUM (Qoal) 10.8' - Silty Sand, dark yellowish brown (10YR 4/4), minor clay and gravel (to 1").
2	4	100	16 17 18 19	SP-SM	15.5' - Sand with Silt, dark yellowish brown (10YR 4/6), trace to minor gravel (to 1/2"), subrounded to subangular, predominantly slate, few diatomaceous siltstone clasts. 17.0' - increase in sand, descrease in silt 18.9 - 19.1' - gravel bed, predominantly slate, few diatmomaceous siltstone clasts (to 1/2"). 19.1' - Silt with Sand, dark yellowish brown (10YR 3/4), fine- to coarse-grained, trace gravel (to 1/2").
			20		

BORING B1-B (continued)



Project No.: A9009-06-01A Excavation Date: January 19, 2014 Client: Beverly Hills Wilshire **Drilling Company:** Martini Drilling

Excavation Method: H.S.A. - Continuous Core

International, LLC **Boring Diameter:** 8 inches Location: 9900 Wilshire Blvd

Los Angeles, CA Surface Elevation: 288.0 feet Geologist: AL/SFK

			τ;	Depth	Ī	USCS	
Box	Run #	% Rec	RE	(feet)		Class.	Description
				20 · · · · · · · · · · · · · · · · · · ·	 - 		20'- Silty Sand to Silt with Sand, dark yellowish brown (10YR 3/4) to dark brown (7.5YR 3/4), very fine- to fine-grained, trace clay, massive.
3	5	80		23	- 		22.5' - grades to sand with silt
				24	-		23.1'- Silt with Sand, dark yellowish brown (10YR 3/4), fine-grained, trace clay, massive.
			_	25	- 	SP/SM	24.1' - Sand, mottled dark yellow brown (10YR 4/3, and 10YR 4/6) and gray (10YR 6/1), fine-grained, trace to minor gravel, (to 1/4"), trace silt and clay, massive.
				26			
3	6	100		27 · · · · · · · · · · · · · · · · · · ·	 		28' - increase in gravel
				29	- -∤	SC	29.7' - Clayey Sand, dark yellowish brown (10YR 4/4), very fine grained, trace to minor
				30	 -		gravel (to 1/4").
				31	 -	SM/SC	30.5- Silty Sand, dark yellowish brown (10YR 4/4 to 10YR 4/6), minor clay, fine-grained, trace to minor gravel (to 1/2"), predominantly slate, few diatomaceous siltstone clasts.
4	7	98		33	- 	ML/SM	32.5' - Silt to Silty Sand, dark yellowish brown (10YR 4/6), very fine-grained, generally massive to weakly bedded.
				34	 -		34.9' to 35.0' - No Recovery
				35 .	 -		·
				36 .		SM	35.7' - Silty Sand with Gravel, dark yellowish brown (10YR 4/6), fine-grained, gravel (to 1/2", few to 1"), subangular.
4	4 8	98		37 .			37.1' - Silt with Sand to Sandy Silt, dark yellowish brown (10YR 4/6), very
				39 -	-	SP	fine-grained, trace clay, massive. 38' - Sand and Gravel, dark yellowish brown (10YR 4/6), fine- to medium-grained, predominantly slate, few siltstone (to 1").
					-		38.9' - Silt with Sand to Silty Sand, dark yellowish brown (10YR 4/6), very fine-grained, minor clay, massive.
				40	 -	SP/SM	39.5' - Sand to Silty Sand with Gravel, dark yellowish brown (10YR 4/4), 40% gravel (to 2"). 39.5' to 40' - No Recovery

BORING B1-B (continued)



Project No.: A9009-06-01A Excavation Date: January 19, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC **Excavation Method:** H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd **Boring Diameter:** 8 inches

Los Angeles, CA Surface Elevation: 288.0 feet
Geologist: AL/SFK

	ъ "	0/ D	REC.	Depth	USCS	Power to the second sec
Box	Run #	% Rec	2	(feet)	Class.	Description Same as Previous
5	9	90		41 42 43 44	ML SP-SM	40.9' - Sandy Silt, dark yellowish brown (10YR 4/4), very fine-grained, minor gravel (to 1/4"). 44.1' - Sand with Silt, dark yellowish brown (10YR 4/6 to 10YR 5/4), fine- to medium-grained, trace coarse, minor gravel (to 1-1/2"), crude stratification, alternating Silty Sand and Sandy Silt beds.
5	10	92		45 46 47 48 49 50		44.5 to 45' - No recovery 49.6 to 50' - No Recovery
6	11	96		51 52 53 54	ML/SM SP ML	50.6'- grades to Silty Sand to Silt with Sand, very fine-grained, some oxidation stringers 51.6'- Silt with Sand to Silty Sand, dark yellowish brown (10YR 4/4), trace to minor clay, fine-grained, weakly laminated. 52.6'- Sand, dark yellowish brown (10YR 4/6), very fine-grained, trace silt and gravel (to 1/2"). LAKEWOOD FORMATION (Qlw) 53.6'- Clayey Silt, dark gray (10YR 4/1), massive to varved. 54.5'- increase in clay content
6	12	100		55 56 57 58 59	ML CL/SC	54.8 to 55' - No Recovery 55.9' - Silt with Sand, brown (7.5YR 4/3), very fine-grained, trace gravel (to 1/8"), massive. 57.6' - Clay with Sand to Clayey Sand, brown (7.5YR 4/3), very fine-grained, massive.
			ļ	60		60' - increase in clay content

BORING B1-B (continued)



Project No.: A9009-06-01A Excavation Date: January 19, 2014

Client: Beverly Hills Wilshire **Drilling Company:** Martini Drilling

Excavation Method: H.S.A. - Continuous Core International, LLC

Location: 9900 Wilshire Blvd **Boring Diameter:** 8 inches Surface Elevation: 288.0 feet Los Angeles, CA

-	D #	0/ P	REC.	Depth	USCS	5
Box	Run #	% Rec	R	(feet)	Class.	Description
7	13	100		61 · 62 · 63 · 64 · 65 · 65	- - - - - - - -	Same as Previous
7	14	90		66 - 67 - 68 - 69 - 70 - 69	- SP-SM	67.9' - Silty Sand, brown (10YR 4/3 to 7.5YR 4/3), trace to minor gravel (to 1"), subangular to subrounded, trace clay. 68.8' - Sand with Silt, brown (10YR 4/3 to 7.5YR 4/3) minor clay, fine- to medium-grained, massive.
						69.5' to 70' - No Recovery
				71 - 72 - 73	- - -	Total depth of boring: 70 feet. Depth of fill not determined. Groundwater encountered during drilling at 57 feet; static groundwater level at 54 feet (after 20 minutes).
				73	-	Backfilled with soil cuttings and tamped. Concrete patched.
				74	-	
				75 -	- -	
				76 ·	- - -	
				78	-	
				79 -	-	
				80 -	-	

BORING B2-B



Project No.: A9009-06-01A Excavation Date: January 20, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:288.6 feet

			ЗС.	Dep	th	USCS	
Box	Run #	% Rec	REC	(fee	t)	Class.	Description
1	1	100		0 1 2 3 4 5	-	ML SM	ALLUVIUM (Qal) Silt with Sand, dark yellowish brown (10YR 4/4), fine-grained, trace fine gravel (to 1/4"). 3.3' - Silty Sand, 10YR 4/4, fine-grained, trace gravel (to 1/2"), predominantly slate, few siltstone siltstone clasts. 4.8' - trace clay
1	2	88		6 7 8 9	-	SP	5' to 5.6' - No Recovery 5.6' - Sand with Silt, dark yellowish brown (10YR 3/4 to 10YR 4/4), fine-grained, trace gravel (to 1 1/2"), few roots. 7.3' - Sand, dark yellowish brown (10YR 5/6), very fine- to fine-grained, minor silt, trace gravel (to 1"). 9.7' - Silt with Sand to Silty Sand, brown (10YR 4/3), fine-grained, trace gravel (to 1/4").
2	3	78		11 12 13 14	-	SM	OLDER ALLUVIUM (Qoal) 11.5' - Silty Sand with gravel, brown (10YR 4/3), minor clay, gravel (to 1/2") disseminated throughout unit (10% to 15%), massive. 13.9' to 15' - No Recovery
2	4	100		15 16 17 18 19 20	-	SM	15.4' - Silty Sand with Gravel, dark yellowish brown, gravel (to 3/4") disseminated throughout unit, trace clay, massive. 17.0' - increase in sand content and decrease in silt content
				20	-		

BORING B2-B (continued)



Project No.: A9009-06-01A Excavation Date: January 20, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd

Los Angeles, CA

Boring Diameter: 8 inches

Surface Elevation: 288.6 feet

			ŜĊ.	Depth	USCS	
Box	Run#	% Rec	REC	(feet)	Class.	Description
3	5	100		20 21 22 23	SM	20.1' - Silty Sand, brown (7.5YR 4/3 to 7.5YR 4/4), trace to minor gravel (to 1/4"), massive.
				24 - 25	SM	23.9' - Silty Sand with Gravel, mottled brown (7.5YR 4/3) and light gray (7.5YR 7/1), oxidized.
3	6	100		26 - 27 - 28		
				29 30		29.3' - Silty Sand, brown (7.5YR 4/3 to 10YR 4/3), minor clay films, massive.
4	7	100		31 32 33	ML/SM	30.6' - Silt with Sand to Silty Sand, dark yellowish brown (10YR 4/4), very fine-to very fine-grained, faintly laminated.
				34 35		33.4' - Sand with Silt and Gravel, (10YR 4/4), fine- to medium-grained, trace coarse, gravel predominantly slate, some siltstone (to 1"), massive.
4	8	100		36 37 - 38	<u>-</u>	36.1' - Silt with Sand, brown (10YR 4/3), minor clay, trace gravel; (to 1/4"), massive.
				39	SP-SM	38.4' - Sand with Silt, brown (10YR 4/3), fine-grained, trace clay, massive. 39.2' - trace gravel (up to 1/2")

BORING B2-B (continued)



Project No.: A9009-06-01A Excavation Date: January 20, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

Severily Hills witshife Drining Company. Martini Drining

International, LLC **Excavation Method:** H.S.A. - Continuous Core **Location:** 9900 Wilshire Blvd **Boring Diameter:** 8 inches

Location: 9900 Wilshire Blvd
Boring Diameter: 8 inches

Los Angeles, CA
Surface Elevation: 288.6 feet
Geologist: AL/SFK

			Š.	Depth	USCS		
Box	Run#	% Rec	REC	(feet)	Class.	Description	
5	9	98		40 41 = 42 43	ML	Same as Previous 40.9' - Silt with Sand, (10YR 4/4), very fine-grained, trace clay, massive.	
				44	\$C	44.4' - Clayey Sand, dark yellowish brown (10YR 4/4), very fine-grained, thickly laminated. 44.9' - 45' - No Recovery	
				46	SM/ML	45' - Sand, dark yellowish brown (10YR 4/4), fine-grained, trace silt and gravel (to 1/8"). 45.3' - Silty Sand and Silt with Sand, dark yellowish brown (10YR 4/4), 'trace gravel (to 1/8"),	
5	10	84			47	SP-SM	thickly laminated. 46.1' - Sand with Silt, dark yellowish brown (10YR 4/6), minor gravel (to 1"), crudely stratified, to thickly laminated, gravel zones between 46.6' and 46.8' and 47.5' and 48.1'.
				48 49 50		48.1' - decrease in gravel content 49.1' to 50' - No Recovery	
6	11	100		50	 ML	51.4' - Clayey Silt, very dark brown (10YR 3/3), fine-grained, trace sand, massive. Increase in sand content below 52.5'.	
				53 54	CL/ML	LAKEWOOD FORMATION (Qlw) 53.0' - Silty Clay to Clayey Silt, gray (10YR 4/1), massive.	
				55 56 57		54.8' - Silty Sand to silt with Sand, brown (7.5YR 4/4), very fine-grained, minor clay, massive. 56.3' - Sand to Silty Sand, brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4), trace clay, massive.	
6	12	96		58	ML	57.5' - Clayey Silt, brown (7.5YR 4/3), trace gravel (to 1/4"), subangular to subrounded, weakly laminated.	
				60		59.4' to 60' - No Recovery	

BORING B2-B (continued)



Project No.: A9009-06-01A Excavation Date: January 20, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:288.6 feet

			Ċ.	Depth	USCS	
Box	Run #	% Rec	REC.	(feet)	Class.	Description
				60	SM	60.1' - Silty Sand, brown (7.5YR 4/4), minor clay, trace to minor gravel (to 1/2"), massive.
7	13	92		62	CL/ML	60.5' - Clayey Silt, dark brown (7.5YR 3/3), varved.
				63		
				65		64.6' to 65' - No Recovery
					66 - 67	
7	14	100		68	SM	67.9' - Gravelly Silty Sand, dark brown (7.5YR 3/3 to 10YR 3/3), trace to minor clay, massive.
			_	69 - 70	ML	68.2' - Silt with Clay, dark brown (10YR 3/3), trace gravel; with gravel below 69.5'.
				71 -		Total depth of boring: 70 feet. Depth of fill not determined. Groundwater encountered during drilling at 58 feet; static groundwater at 54.5 feet
				72 - 73		(after 20 minutes). Backfilled with soil cuttings and tamped. Concrete patched.
				- 74		
				75 -		
				76 - 77		
				78 -		
				79 - 80		
				-		

BORING B3-B



Project No.: A9009-06-01A Excavation Date: January 21, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd Boring Diameter: 8 inches

Los Angeles, CA Surface Elevation: 290.0 feet
Geologist: AL/SFK

			ن Depth	USCS	
Box	Run#	% Rec	☐ Depth ☐ (feet)	Class.	Description
1	1	100	0 1 2 3 4 5	SM	ALLUVIUM (Qal) Silty Sand, brown (10YR 4/3), minor gravel (to 1"), fine-grained, massive. 3.4' - Silt with Sand to Silty Sand, brown (10YR 4/3) to dark yellowish brown (10YR 4/4), fine-grained, trace clay and gravel (to 1/8"), some manganese staining, massive.
1	2	100	5 6 7 8 9 10	ML/SM SM	OLDER ALLVIUM (Qoal) 7.0' - Sandy Silt to Silty Sand, brown (10YR 4/3), trace gravel (to 1/4"), massive. 7.9' - Silty Sand, brown (10YR 4/3), minor gravel (to 1/2"), gravel predominantly slate, few siltstone, subrounded to subagular very fine-grained, massive. 9.1' - Silty Sand to Silt with Sand, dark yellowish brown (10YR 4/4), minor gravel (to 2"), massive.
2	3	100	11 12 13 14 15	sw	10' - Increase in gravel content, fine- to coarse-grained sand 13.4' - Sand and Gravel, dark grayish brown (10YR 4/2), 30% to 40% gravel (to 2"), fine-to coarse-grained, trace silt, crudely statified.
2	4	100	16 17 18 19 20	sc	15.8' - Clayey Sand to Sand with Clay, brown (7.5YR 4/2) to grayish brown (10YR 4/2), fine-grained, trace to minor gravel (to 1/8"), massive.

BORING B3-B (continued)



Project No.: A9009-06-01A Excavation Date: January 21, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd **Boring Diameter:** 8 inches

Los Angeles, CA Surface Elevation: 290.0 feet

Geologist: AL/SFK

			ပ္ပဲ Dept	h (JSCS	
Box	Run #	% Rec	☐ Dept		Class.	Description
3	5	100	20 21 22 23 24	- - - -		20.0' - Clayey Sand to Sand, minor clay, brown (7.5YR 4/4), fine-grained, porous, massive. 21.7' - Clayey Sand to Silty Sand, brown (7.5YR 4/4), very fine-grained, weakly laminated.
			25 26	- S -		23.9' - Clayey Sand, to Sand with Clay, brown (7.5YR 4/4), minor gravel (to 3/4"), predominantly few diatomaceous siltstone clasts, fine-grained, massive. 24.9' to 25.0' - No Recovery 25.0' to 27.9' - laminated
3	6	97	27 28	- -		27.9' - increase in gravel content, with light gray (7.5YR 7/1) mottles
			29 30	-		28.8' - Clay with Sand, brown (7.5YR 4/2 to 7.5YR 4/3), very fine-grained, massive. 30.0' - Silty Sand, dark yellowish brown (10YR 4/4), very fine-grained, massive.
4	7	100	31 32		L/SC	30.4' - Clay with Sand to Clayey Sand, dark yellowish brown (10YR 4/4), very fine-grained, faintly varved, trace manganese nodules. 32.5' to 32.6' - with gravel and fine sand
			33 34 35	 - - SC		33.7' - Clayey Sand with Gravel, dark yellowish brown (10YR 4/4), fine-grained, gravel to 1/2", crudely stratified.
4	8	100	36 37 38 39	- SP-SM - SP-SM 	P-SM	35.0' to 35.8' - grades to Silt with Sand to Silty Sand, very fine-grained, minor clay 35.9' - Sand with Silt, brown (10YR 4/3) to dark yellowish brown (10YR 4/4), minor clay, very fine-grained, crudely stratified. 37.8' - grades to Sand, fine-grained, trace to minor silt, minor gravel (to 1/2") 38.0' - grades to Silt with Sand, fine-grained 38.6' - trace gravel (to 1-1/2"), medium- to coarse-grained, massive to crudely stratified
			40	- 		

BORING B3-B (continued)



Project No.: A9009-06-01A Excavation Date: January 21, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

Excavation Method: H.S.A. - Continuous Core International, LLC

Location: 9900 Wilshire Blvd **Boring Diameter:** 8 inches Surface Elevation: 290.0 feet Los Angeles, CA Geologist: AL/SFK

			Ü.	Depth	USCS	
Box	Run #	% Rec	REC.	(feet)	Class.	Description
				40		
				-	MLSM	40.0' - Silt to Silty Sand, (10YR 4/3), brown very fine-grained, massive to crudely stratified.
	9	100		41		
				-		A1 01 - minor Class
				42		41.9' - minor Clay
5				43		
3					ML	43.1' - Silt with Sand, brown (10YR 4/3), very fine-grained, trace gravel (to 2"), weakly laminated.
				44		Increase in sand and gravel content with depth.
				-		
 			-	45	SP-SM	44.5' - Sand with Silt, brown (10YR 4/3), trace to minor gravel, very fine-grained, thickly
		100		-		laminated.
	10			46		
_				47		
5				- 48		
					SW	48.3' - Sand with Gravel, dark yellowish brown (10YR 4/6), fine- to medium-grained, trace coarse,
				49		coarse, gravel subangular to subrounded (to 1/2", few to 1 1/2"), trace silt, crudely statified.
						course, graver subungular to subrounded (to 1/2 , 10% to 1 1/2), trace ship eradery statisfied.
				50		
		100		-		
				51		LAKEWOOD FORMATION (Qlw)
6				-		51.0' - Clay with Sand, dark gray (10YR 4/1), very fine-grained. Increase in sand content with
	11			52		depth.
				-	SM/ML	52.4' - Silty Sand to Silt with Sand, brown (10YR 4/3), minor clay, very fine-grained,
				53		(to 1/4"), laminated.
				- 54		
				34		
			$\mid \mid$	55 -		
	12	100		55		
				-	CI /MI	55 91 Classick Coulds City in Could deal collection (10VD 4/4) to a could
6				56	CL/ML	55.8' -Clay with Sand to Silt with Sand, dark yellowish brown (10YR 4/4), trace gravel.
				57		
				<i>31</i>		57.5' - increase in sand content
				58		2.13 moreus in suite content
				_		
				59		
				-		
			$\mid \mid$	60		
				-		

BORING B3-B (continued)



Project No.: A9009-06-01A Excavation Date: January 21, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:290.0 feet

Box	Run#	% Rec	REC.	Depth		USCS	
				(feet))	Class.	Description
7	13	100		60 61			Same as Previous
				62	- / -	SM	60.9' - Silty Sand, dark yellowish brown (10YR 4/4 to 10YR 4/6), very fine-grained, trace to minor clay, trace gravel (to 1/4"), subrounded.
				63	- -	SC/CL	61.7' - Clayey Sand to Sandy Clay, dark yellowish brown (10YR 4/4), fine-grained, trace gravel (to 1/4").
				64 65		SM	63.6' - Silty Sand, dark yellowish brown (10YR 4/4), fine-grained.
7		97		66	-	<u>s</u>	65.8' - Clayey Sand, dark yellowish brown (10YR 4/4), fine-grained, massive.
				67	-	SP	66.9' - Sand and Gravel, dark yellowish brown (10YR 4/4), fine- to medium-grained, trace silt,
	14			68	 		gravel (to 1/2"), manganese staining, massive.
				69	-	SP	68.6' - Clayey Sand, dark yellowish brown (10YR 4/4), fine-grained, massive. 69.3' - Sand, dark yellowish brown (10YR 4/4), trace gravel (to 1/4"), fine-grained, massive.
				70 71	-		Total depth of boring: 70 feet. Fill to 2.3 feet.
				72	- 		Groundwater encountered during drilling at 59.4 feet; static groundwater level not determined. Backfilled with soil cuttings and tamped.
				73	- -		Concrete patched.
				74 75	 -		
				76	- 		
				77	- -		
				78	 -		
				79 80	 - 		
					-		

BORING B4-B



Project No.: A9009-06-01A Excavation Date: January 22, 2014 Client: Beverly Hills Wilshire **Drilling Company:** Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core Location: 9900 Wilshire Blvd

Boring Diameter: 8 inches Los Angeles, CA Surface Elevation: 291.7 feet

			ن Depth	USCS	
Box	Run#	% Rec	Depth (feet)	Class.	Description
1	1	0	0 1 2 3 4 5		Hand Augered to 5'
1	2	100	6 7 8 9	- -	ARTIFICIAL FILL (af) Silty Sand, gray (10YR 5/1), fine-grained. 5.7' - Silt with Sand, dark yellowish brown (10YR 3/6), minor clay. 7.5' - Silt with Sand to Silty Sand, dark gray (10YR 4/1), very fine-grained, minor roots and organics.
2	3	90	11 12 13 14	SM	ALLUVIUM (Qal) 13.9' - Silty Sand with gravel, yellowish brown (10YR 5/4) to dark yellowish brown (10YR 4/4),
2	4	100	15 16 17 18 19	ML	fine- to medium-grained, gravel subrounded (to 1"), massive. 14.5' to 15.0' - No Recovery 15.6' - Silt with Sand to Silty Sand, dark grayish brown (2.5Y 4/2), very fine-grained, massive. 17.0' - Silt with Sand, very dark grayish brown (10YR 3/2) to dark brown (7.5R 3/2), very fine-grained, massive. 18.4' - Sand with Silt to Sand, very dark grayish brown (10YR 3/2) to dark brown (7.5R 3/2), minor to with gravel (to 2"), subrounded, massive.
			20 -	_	

BORING B4-B (continued)



Project No.: A9009-06-01A Excavation Date: January 22, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd Boring Diameter: 8 inches

Los Angeles, CA Surface Elevation: 291.7 feet

			REC.	Depth	USCS																																											
Box	Run#	% Rec	R	(feet)	Class.	Description																																										
2		0.4	-	20		Same as Previous 21.0' - Sand, dark yellowish brown (10YR 4/4), minor disseminated gravel (to 1/4"), fine-grained, trace medium, massive.																																										
3	5	84		22		OLDER ALLUVIUM (Qoal) 21.8' - Silt with Sand, dark yellowish brown (10R 4/4), trace clay, distinctive oxidation striping.																																										
				23		21.6 - Sht with Sand, dark yenowish brown (10K 4/4), trace cray, distinctive oxidation striping.																																										
				24																																												
				-		24.2' to 25.0' - No Recovery																																										
				25																																												
				26																																												
				27																																												
3	6	100		-																																												
				28	•																																											
				29 -																																												
				30																																												
				31 -	CL	30.0' - Clay with Sand to Clayey Sand, grayish brown (2.5Y 5/2), very fine-grained, massive.																																										
4	7	100		32 -																																												
																																														33		
				34		33.7' - Clayey Sand with Gravel, grayish brown (2.5Y 5/2), gravel subrounded (to 1/4"), fine-to medium-grained.																																										
				35 - 36	SM	35' - Silty Sand with Gravel, grayish brown (2.5Y 5/2), gravel subrounded (to 1"), massive.																																										
				37		35.9' - Silty Sand, yellowish brown (10YR 5/6), minor clay, distinct oxidation striping.																																										
4	8 10	100		38 -	ML/SM	37.3' - Silt with Sand to Silty Sand, dark yellowish brown (10YR 4/4) to brown (7.5YR 4/4), very fine-grained, trace clay and gravel (to 1/4"), laminated.																																										
				39 -																																												
				40 -																																												
<u> </u>			<u> </u>		ı																																											

BORING B4-B (continued)



Project No.: A9009-06-01A Excavation Date: January 22, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:291.7 feet

			Ċ.	Depth	USCS	
Box	Run #	% Rec	REC.	(feet)	Class.	Description
5	9	100		40 41 42 43 44	sw	Same as Previous 42.2' - increase in clay content 43.7' - Sand and Gravel, yellowish brown (10YR 5/4), fine- to coarse-grained, gravel subangular to predominantly slate, few diatomaceous siltstone (to 3"), crudely stratified to massive, some
5	10	92		45 46 47 48 49 50		manganese staining. 49.6' to 50' - No Recovery
6	11	100		50 51 52 53 54 55	CL/SC	50.0' - Clay with Sand to Clayey Sand, mottled gray (10YR 5/1) and dark yellowish brown (10YR 4/6), trace gravel (to 1/4"), varved.
6	12	100		55 56 57 58 59 60	SP-SM	55.9' - Silty Sand (10YR 4/6), fine-grained, trace gravel (to 1"). 57.2' - Sand with Silt and Gravel, (10YR 4/4), fine-grained, gravel subrounded to subangular (to 1"), predominantly slate, some siltstone and sandstone clasts, trace manganese nodules and staining. 58.7' - Clay with Sand, dark yellowish brown (10YR 4/4), fine-grained. 59.4' - with gravel (to 3/4")
				-		

BORING B4-B (continued)



Project No.: A9048-06-01A Excavation Date: January 22, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC **Excavation Method:** H.S.A. - Continuous Core

Location:1818 N. Cherokee AvenueBoring Diameter:8 inchesLos Angeles, CASurface Elevation:291.7 feet

			رن	Depth	USCS	
Box	Run#	% Rec	REC.	(feet)	Class.	Description
7	13	100		60 61 62 63 64 65	CL/ML	60.0' - Clay with Sand to Silt with Sand, dark yellowish brown (10YR 4/6), fine grained, trace to minor manganese nodules, varved. 62.3" - Silty Sand, dark yellowish brown (10YR 4/6), fine- to medium-grained, trace silt and gravel (to 1/4"), thickly laminated. Increase in sand content with depth.
7	14	100		66 67 68 69 70		LAKEWOOD FORMATION (Qlw) 65.0' - Clay with Sand, dark yellowish brown (10YR 4/6), very fine-grained, distinct oxidation striping.
				70 71 72 73 74 75		Total depth of boring: 70 feet. Fill to 13.9 feet. Groundwater encountered during drilling at 43 feet; static groundwater level at 34.3 feet (after 20 mintes). Backfilled with soil cuttings and tamped. Concrete patched.
				76 77 78 79 80		

BORING B5-B



Project No.: A9009-06-01A Excavation Date: January 27, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC Excavation Method: H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd

Boring Diameter: 8 inches

Los Angeles, CA Surface Elevation: 293.4 feet
Geologist: AL/SFK

			Ċ.	Deptl	h	USCS	
Box	Run#	% Rec	REC	(feet)		Class.	Description
1	1	100		0 1 2 3			ALLUVIUM (Qal) Silt with Sand, light yellowish brown (10YR 6/4), fine-grained, minor roots and organics. 4.4' - Clayey Sand, brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4), minor gravel
1	2	84		5 6 7 8 9			(to 1/4"), massive to crudely stratified. 5.6' - grades to Silty Sand, minor Clay 7.0' - grades to Clayey Sand 8.3' to 8.5' - Gravel bed (up to 3") 9.2' to 10' - No Recovery
2	3	54		11 12 13 14 15			10' - Increase in clay content 11.1' - Silty Sand,dark yellowish brown (10YR 4/4) to brown (7.5YR 4/4), very fine- to fine-grained, minor clay and gravel (to 1/4"). 12.2' - trace clay 127' to 15' - No Recovery 15.3' - Sand, yellowish brown (10YR 5/6), fine-grained, trace medium and coarse, trace gravel
2	4	76		16 17 18 19	-	ML · SP-SM	(to 1/8"), massive. OLDER ALLUVIUM (Qoal) 15.8' - Silt with Sand, yellowish brown (10YR 5/4 to 10YR 5/6), very fine-grained, minor clay. 16.3' - Sand with Silt and Gravel, yellowish brown (10YR 5/6), fine- to coarse-grained, trace clay and gravel (to 1"), subrounded to subangular slate, siltstone and sandstone clasts, crudely stratified. 18.8' to 20' - No Recovery
				20	-		

BORING B5-B (continued)



Project No.: A9009-06-01A Excavation Date: January 27, 2014
Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC **Excavation Method:** H.S.A. - Continuous Core

Location: 9900 Wilshire Blvd

Los Angeles, CA

Boring Diameter: 8 inches

Surface Elevation: 293.4 feet

			C.	Dept	h	USCS				
Box	Run#	% Rec	REC.	(feet		Class.	Description			
				20			Same as Previous			
					-		20.8' - decrease in silt content			
				21						
					_					
				22						
				22						
3	5	100			-	ML/CL	22.0' - Silt with Sand to Clay with Sand, dark yellowish brown (10YR 4/4) to brown (7.5YR 4/4),			
				23			massive.			
					-		23.8' - increase in clay content, distinct oxidation striping.			
				24						
					_					
			4	25						
					-					
				26						
					_					
					27					
3	6	100			_					
	O	100		28						
				20						
				29	-	CL/SC	28.5' - Clayey Sand, mottled brown (7.5YR 4/2) and gray (7.5YR 5/1 and Gley 5/N), trace to			
				29		CL/SC	minor gravel (to 1/4"), caliche nodules concentrated in weakly developed beds.			
			1	30	-		minor graver (to 1/4), canche hodgies concentrated in weakly developed beds.			
				30		CD	30.0' - Sand and Gravel, gray (Gley 1 5/N), fine- to medium-grainied, trace coarse, gravel			
					-	SP				
				31			subangular to subrounded (to 1-1/2"), crudely stratified.			
		83	83			-				
							32			
4	7					-				
						33				
				33						
					-					
				34		SP-SM	33.7' - Sand with Silt, yellowish brown (10YR 5/6) to strong brown (7.5YR 5/6), fine-grained,			
					-		massive.			
-				35			34.2' to 35' - No recovery			
					-	ML/SM	35' - Silt with Sand to Silty Sand, yellowish brown (10YR 5/6) to strong brown (7.5YR 5/6),			
				36			very fine-grained, trace clay, weakly laminated.			
					_		, , , , , , , , , , , , , , , , , , ,			
	8 1			37			37' - increase in clay, decrease in sand			
4		100		٠,			or mercane in only, decrease in sain			
"	o l	100		38						
				50						
				20	-					
				39						
				40	_					
†			1	70	-					
			<u> </u>							

BORING B5-B (continued)



Project No.: A9009-06-01A Excavation Date: January 27, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC **Excavation Method:** H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:293.4 feet

			ij	Depth	USCS			
Box	Run#	% Rec	REC.	(feet)	Class.	Description		
5	9	100		40 41 42 43 44	SP/SM	Same as Previous 42.4' - Sand and Gravel, strong brown (7.5YR 5/6) to yellowish brown (10YR 5/6), gravel subangular to subrounded (to 2"). 43.5' to 44.0' - Silty Sand, dark yellowish brown (10YR 4/6), minor gravel (to 1"), trace clay. 44.0' - crudely stratified		
5	10	88	88		45 46 47 48	CL	47.2' - Clay with Sand, dark yellowish brown (10YR 4/6) to strong brown (7.5YR 4/6), finegrained, varved.	
				49 50	SW	49.4' to 50' - No Recovery 50.0' - Sand and Gravel, brown (7.5YR 4/4) to dark yellowish brown (10YR 4/4), gravel (to 3"),		
6	11	72		51 52 53	SM	crudely stratified. 52.3' - Silty Sand, strong brown (7.5YR 4/6) to dark yellowish brown (10YR 4/6), minor clay, few mangense nodules, masive to weakly laminated.		
				54 55		53.6' to 55' - No Recovery		
6	12	87		56 57 58	SP SM	55.0' - Sand, dark yellowish brown (10YR 4/6), medium-grained, trace gravel at base (to 1/4"), subrounded, crudely stratified. LAKEWOOD FORMATION (Qlw) 56.2' - Silty Sand, strong brown (7.5YR 4/6) to dark yellowish brown (10YR 4/6), minor clay, few manganese nodules, massive to crudely stratified.		
						58 59 60		58.3' - increase in Sand content, minor gravel 59.4' to 60.0' - No Recovery

BORING B5-B (continued)



Project No.: A9009-06-01A Excavation Date: January 27, 2014

Client: Beverly Hills Wilshire Drilling Company: Martini Drilling

International, LLC **Excavation Method:** H.S.A. - Continuous Core

Location:9900 Wilshire BlvdBoring Diameter:8 inchesLos Angeles, CASurface Elevation:293.4 feet

	D "	0/ P	REC.	Depth	USCS	5
Box	Run#	% Rec	2	(feet)	Class. ML	Description 60.0' - Silt, dark yellowish brown (10YR 4/4) to brown (7.5YR 4/4), massive.
7	13	96		61 62 63 64	 ML	60.9' - Silt with Sand, (7.5YR 4/4), fine-grained, massive. 62.0' - trace to minor clay. 62.7' - Sand with Silt, brown (10YR 5/3) to yellowish brown (10YR 5/4), fine-grained, trace clay, massive. 63.4' to 63.9' - sand bed, fine- to medium-grained. 63.9' - laminated
7	14	100		65 66 67 68 69		64.8' to 65.0' - No recovery 69.6' to 70' - No Recovery
				70 71 71 72 73 74 75 76 77 78 79 80		Total depth of boring: 70 feet. Depth of fill not determined. Groundwater encountered during drilling at 45 feet; static groundwater level at 40.5 feet (after 20 minutes). Backfilled with soil cuttings and tamped. Asphalt patched.



Kehoe Testing and Engineering 714-901-7270

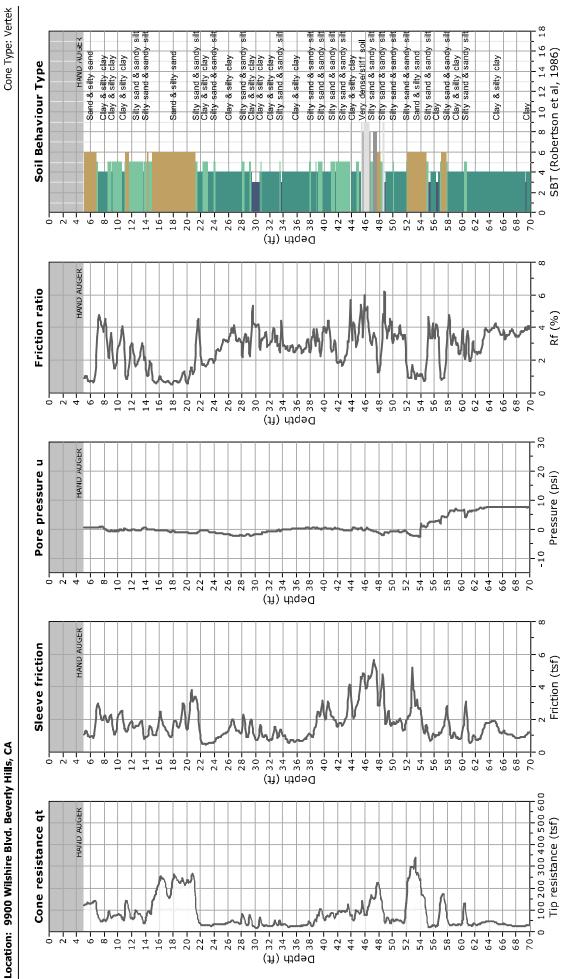
rich@kehoetesting.com

www.kehoetesting.com

Geocon Consultants

Project:

Total depth: 70,46 ft, Date: 10/31/2013



CPeT-IT v.1.7.6.33 - CPTU data presentation & interpretation software - Report created on: 11/1/2013, 12:30:20 PM Project file: C:\GeoconBeverlyHills10-13\CPeT Data\Plot Data\Plots w-ha.cpt



Kehoe Testing and Engineering 714-901-7270

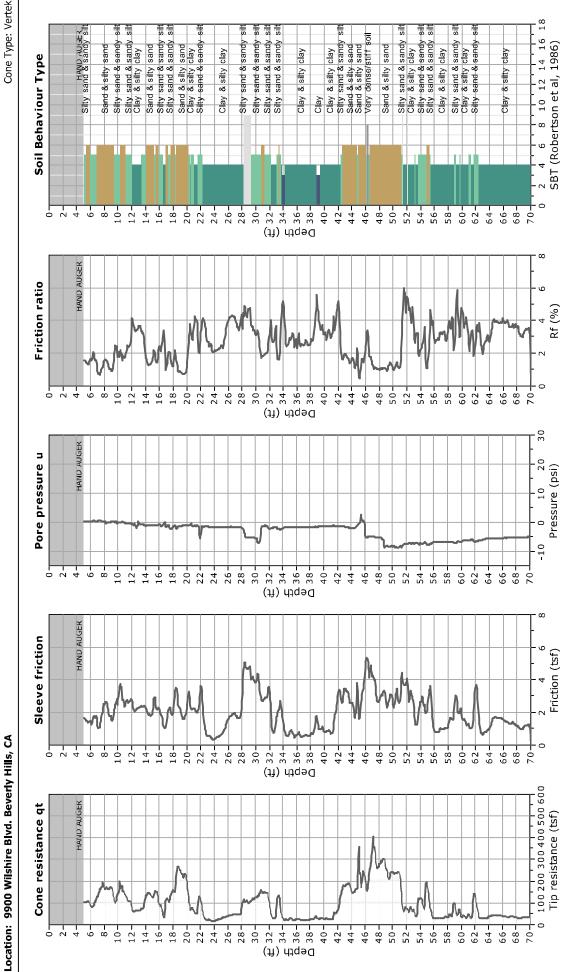
rich@kehoetesting.com

www.kehoetesting.com

Geocon Consultants

Project:

Total depth: 70,31 ft, Date: 10/31/2013



CPeT-IT v.1.7.6.33 - CPTU data presentation & interpretation software - Report created on: 11/1/2013, 12:32:25 PM Project file: C:\GeoconBeverlyHills10-13\CPeT Data\Plot Data\Plots w-ha.cpt

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rich@kehoetesting.com

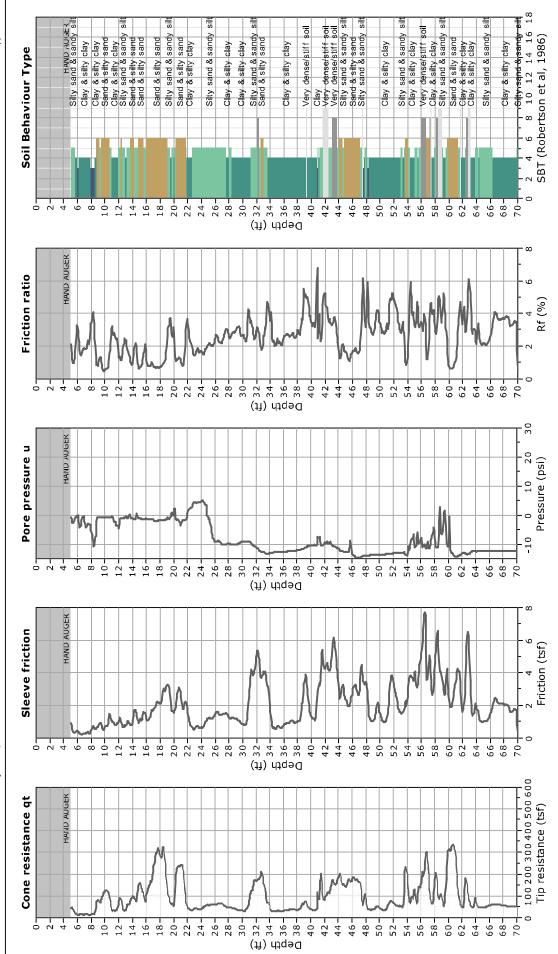
www.kehoetesting.com

Location: 9900 Wilshire Blvd. Beverly Hills, CA

Geocon Consultants

Project:

Total depth: 70,26 ft, Date: 10/30/2013 Cone Type: Vertek



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Kehoe Testing and Engineering 714-901-7270

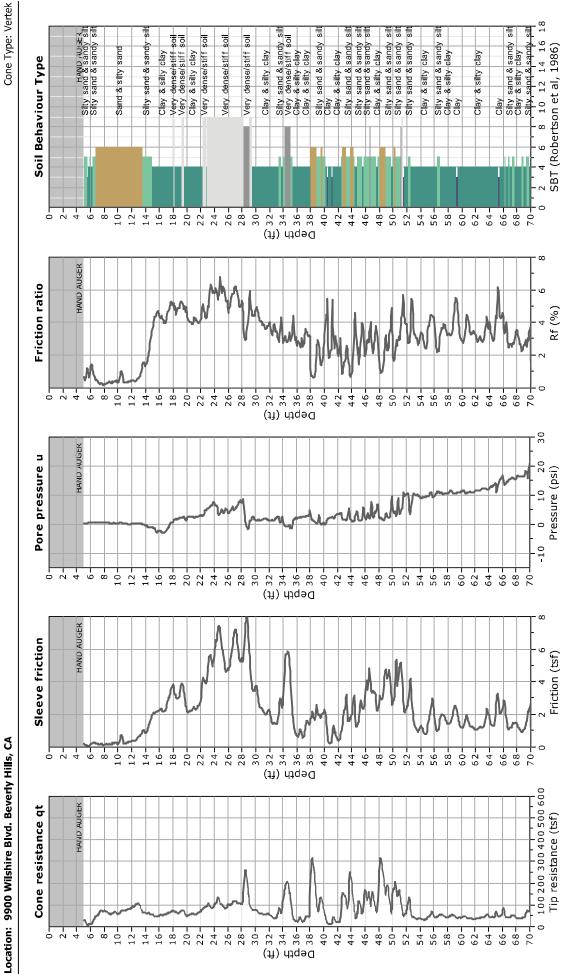
rich@kehoetesting.com

www.kehoetesting.com

Geocon Consultants

Project:

Total depth: 70,33 ft, Date: 10/30/2013



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714-901-7270

Kehoe Testing and Engineering

rich@kehoetesting.com

www.kehoetesting.com

Geocon Consultants

Project:

Total depth: 70,39 ft, Date: 10/30/2013

Cone Type: Vertek Clay & silty clay Silty sand & sandy silt Clay & silty clay Silty sand & sandy si Silty sand & sandy si Very dense/stiff soil Clay & silty clay
Silty sand & sandy s
Silty sand & sandy s
Clay & silty clay Silty sand & sandy Silty sand & sandy Siltý sand & sandý Sand & silty sand Silty sand & sandy Silty sand & sandy Silty sand & sandy Sand Sand & sifty sand Clay & sifty clay SBT (Robertson et al, 1986) Clay & silty clay Sand & silty sand Clay Sand & silty sand Clay Clay & silty clay Sand & silty sand Sand & silty sand Sand & silty sand Clay & silty clay Soil Behaviour Type 2-4-6-8-10-12-14-16-20-24-28-30-Depth (ft) 40-42-44 54-56-58--99 -89 70-18-46-22 26. 48. 50. 62. 52 09 49 HAND AUGER Friction ratio Rf (%) 8 10-12-16-18-20-24--97 28-14-30-40-44 46-48-50-54-56-58--99 70-22-42-52--09 62-64-HAND AUGER Pore pressure u Pressure (psi) -10 9 8 10-24-(ft) (ft) (epth (ft) 32. 44-12-40-14. 16. 18 20 -22 -26 28-42. 46 48 50. 54. 56. 58 . 99 52 09 62 HAND AUGER Sleeve friction Friction (tsf) Location: 9900 Wilshire Blvd. Beverly Hills, CA 707 24-22-26-30-18-Depth (ft) 14-16-40-42-44 46-48-50-52-54-56-58-70--09 -99 -89 64. 100 200 300 400 500 600 HAIND AUGER Cone resistance qt Tip resistance (tsf) 0 10--99 Depth (ft) 40-42-44--9 8 14-16-20-54--09 62-64-70-24-58-52-28--95 -89 26-46-48-50 30.

CPeT-IT v.1.7.6.33 - CPTU data presentation & interpretation software - Report created on: 11/1/2013, 12:34:46 PM Project file: C:\GeoconBeverlyHills10-13\CPeT Data\Plot Data\Plots w-ha.cpt

Total depth: 70,44 ft, Date: 10/30/2013

rich@kehoetesting.com www.kehoetesting.com

Geocon Consultants

Project:

Cone Type: Vertek Silty sand & sandy silt Clay & Silty clay Sand & silty clay Sand & silty sand Silty sand & sandy silt Silty sand & sandy silt Clay & silty clay Clay & silty clay Clay & silty clay Silty sand & sandy silt Silty sand & sandy silt Clay & silty clay Very, dense/stiff soil— Very dense/stiff soil Clay Clay & silty clay Silty sand & sandy sil-Silty sand & sandy sil: HAND AUGES Very dense/stiff soil 8 10 12 14 16 Silty sand & sandy Silty sand & sandy SBT (Robertson et al, 1986) Sand & silty sand Sand & silty sand Sand & silty sand Clay & silty clay Clay & silty clay Sand & silty sand Clay & silty clay Clay & silty clay Soil Behaviour Type Sand & silty sand & silty s 16-20-22-24-26-28-30-Depth (ft) 54-56-14-18-40-42-4 46-70-48. 50. 58. 62. 64 . 68 52 9 HAND AUGER Friction ratio Rf (%) 9 8 10-20-12-18-22-24-26-28-30-54-56-58-14-16-4 46-48-50-62--99 70-40-42-52--09 64--89 HAND AUGER Pore pressure u Pressure (psi) -10 10-9 8 20-22-24-(ft) (ft) 7 4 8 8 8 8 8 44-12-14-16-18-26. 28-40. 42. 48 · 52. 54. 56. 58 . 99 46 09 62 64 HAND AUGER Sleeve friction Friction (tsf) Location: 9900 Wilshire Blvd. Beverly Hills, CA 18-20-70-12-24-10-14-16-22-26-28-30-Depth (ft) 40-42-44 46-48-50-52-54-56-58--09 62--99 -89 64. 100 200 300 400 500 600 HAIND AUGER 4 Tip resistance (tsf) Cone resistance 0 8-10-Depth (ft) 40-42-44-46--05 -99 -9 14-16-54-62-70-58--09 64--89 52-48--95

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Kehoe Testing and Engineering 714-901-7270

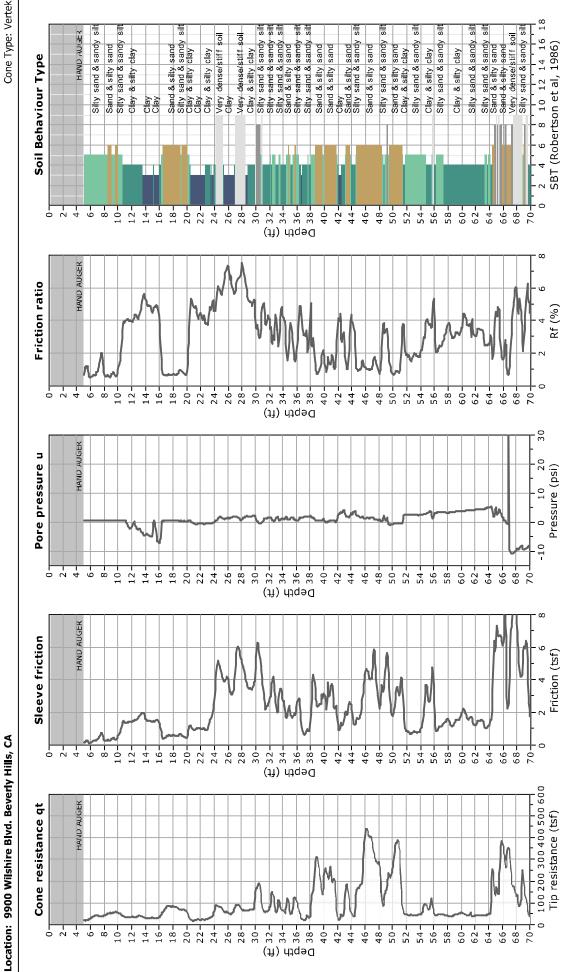
rich@kehoetesting.com

www.kehoetesting.com

Geocon Consultants

Project:

Total depth: 70,48 ft, Date: 10/30/2013



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rich@kehoetesting.com www.kehoetesting.com

Location: 9900 Wilshire Blvd. Beverly Hills, CA

Geocon Consultants

Project:

Cone resistance qt

Total depth: 70,29 ft, Date: 10/31/2013 Cone Type: Vertek Sand & silty sand Silty sand & sandy silt Clay & silty clay Silty sand & sandy silt Clay & silty clay Silty sand & sandy silt Silty sand & sandy silt S Silty sand & sandy sil-Silty sand & sandy sand & sand & silty sand Clay Clay & silty clay Soil Behaviour Type 12-14-16-18-20-24-28-30-22 26. HAND AUGER Friction ratio 10-20-24--97 28-8 12-14-16-18-22-30-HAND AUGER Pore pressure u

HAND AUGER

HAIND AUGER

8-10-12-

14-

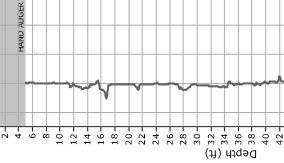
16-18-20-22-

24-

-97

-9

Sleeve friction

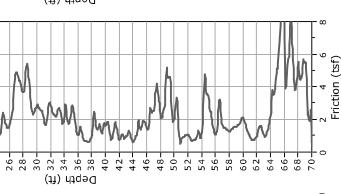


707

24-

18-

16-14-



Sand & silty sand Sand & silty sand Silty sand & sandy silt Clay & silty clay

50-

50-

54--95 58-

54. 56. 58

52

52-

52.

46. 48.

44

44-

46 48 50.

40-42-46-48Silty sand & sandy silt Clay & silty clay

54-56-58Silty sand & sandy sil-

62-64--99 -89 70-

62-64--99 70-

-89

-09

09 62

9

Clay & silty clay

Clay & silty clay Very dense/stiff

Silty sand & sandy silt Silty sand & sandy silt

Clay & silty clay
Silty sand & sandy s
Silty sand & sandy s
Clay & silty clay

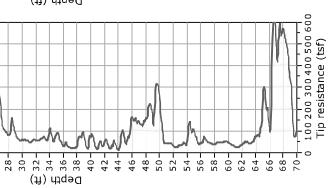
40-42-44

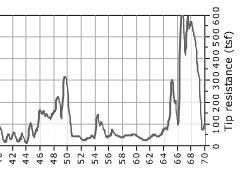
Silty sand & sandy

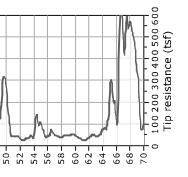
Depth (ft)

Clay & silty clay

Clay & silty clay







CPeT-IT v.1.7.6.33 - CPTU data presentation & interpretation software - Report created on: 11/1/2013, 12:36:52 PM

Project file: C:\GeoconBeverlyHills10-13\CPeT Data\Plot Data\Plots w-ha.cpt

SBT (Robertson et al, 1986)

(%) R

Pressure (psi)

-10

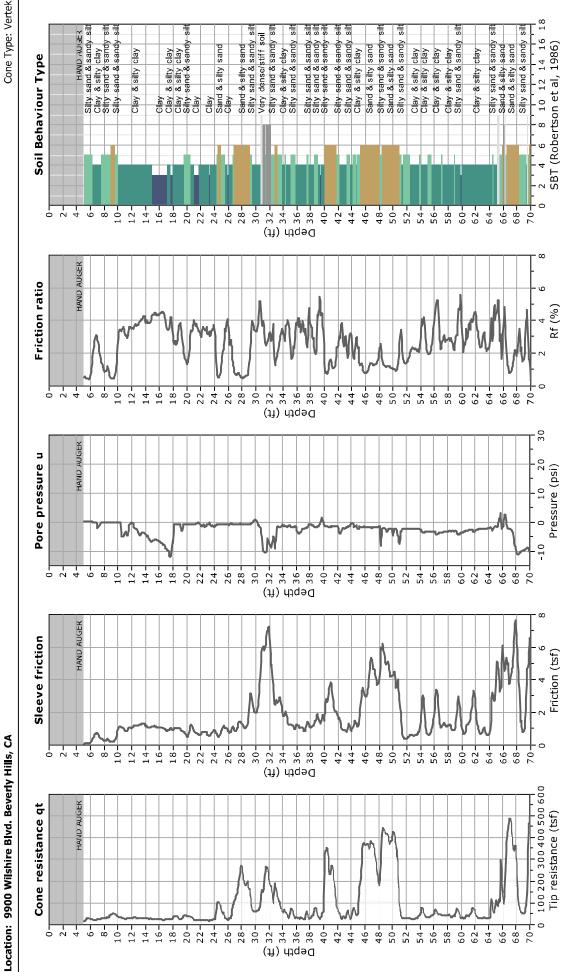


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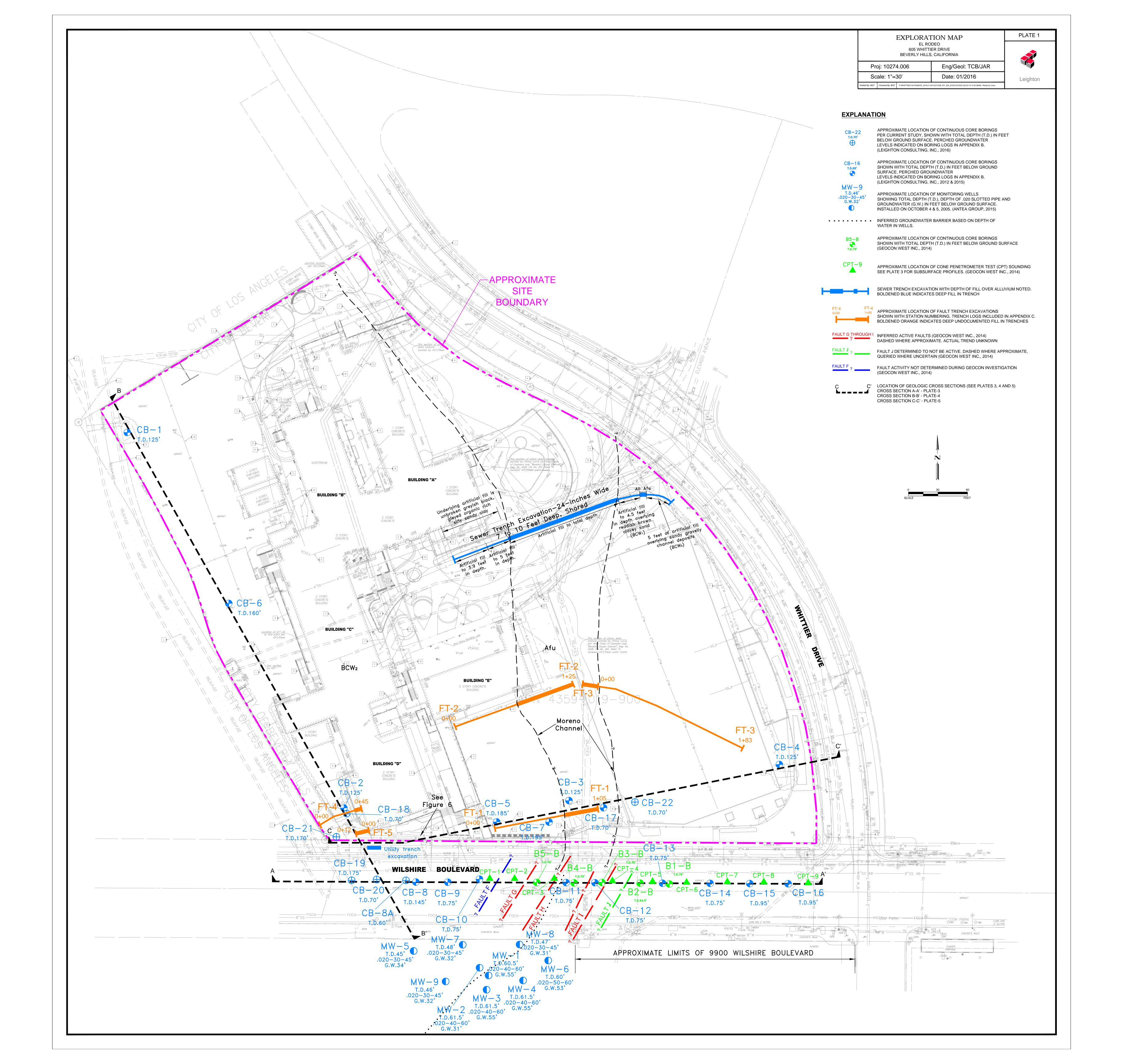
Geocon Consultants

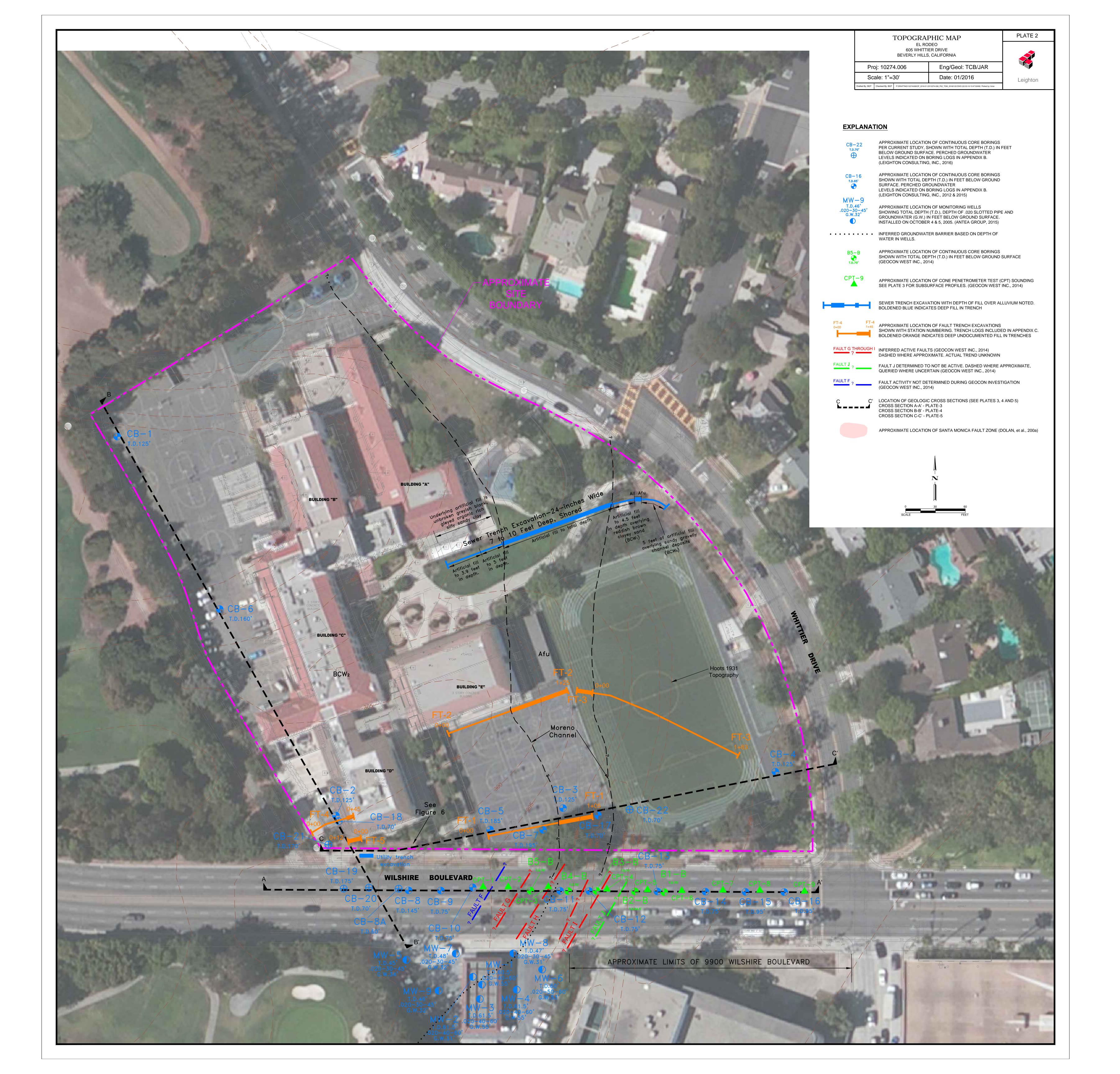
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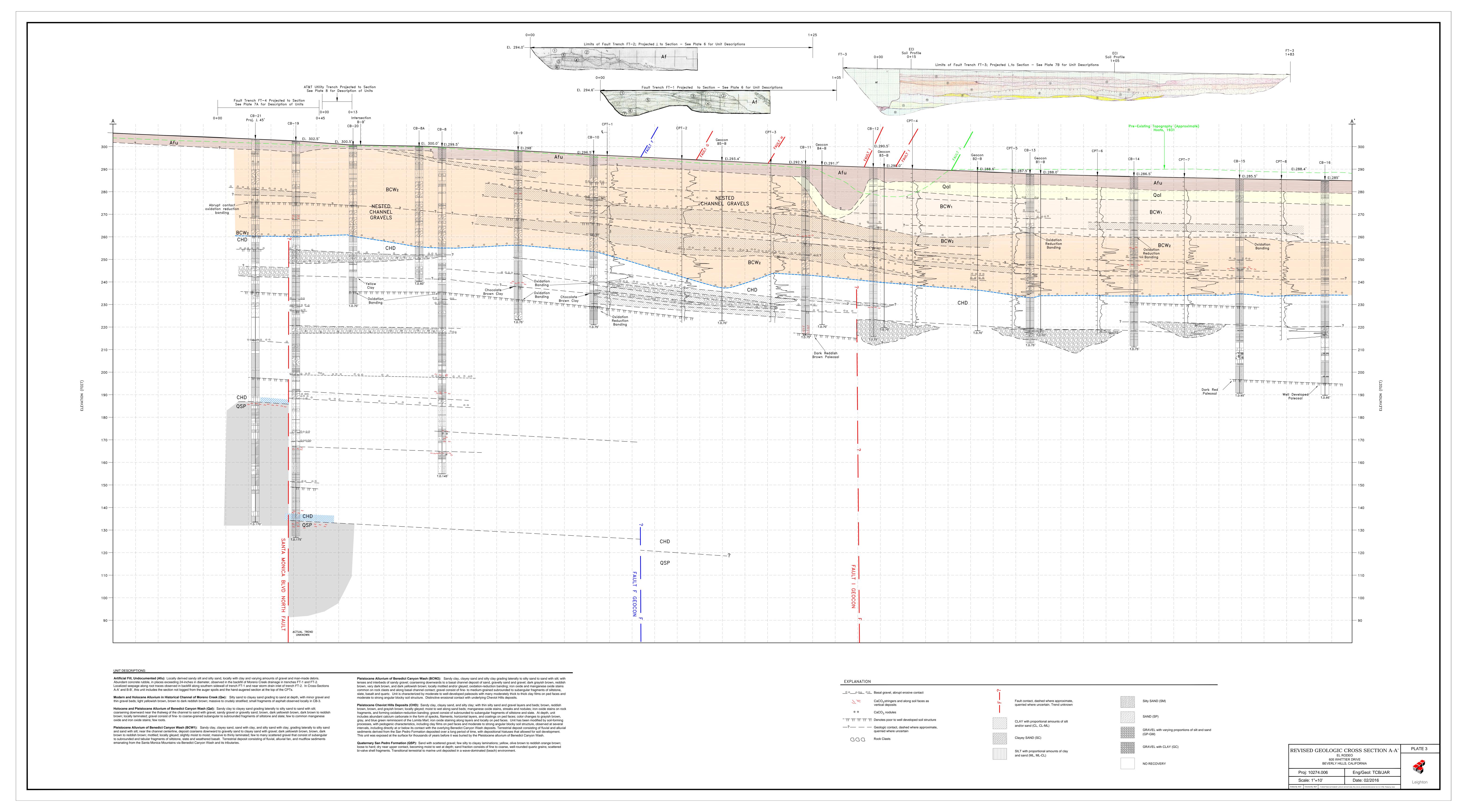
Total depth: 70,31 ft, Date: 10/31/2013

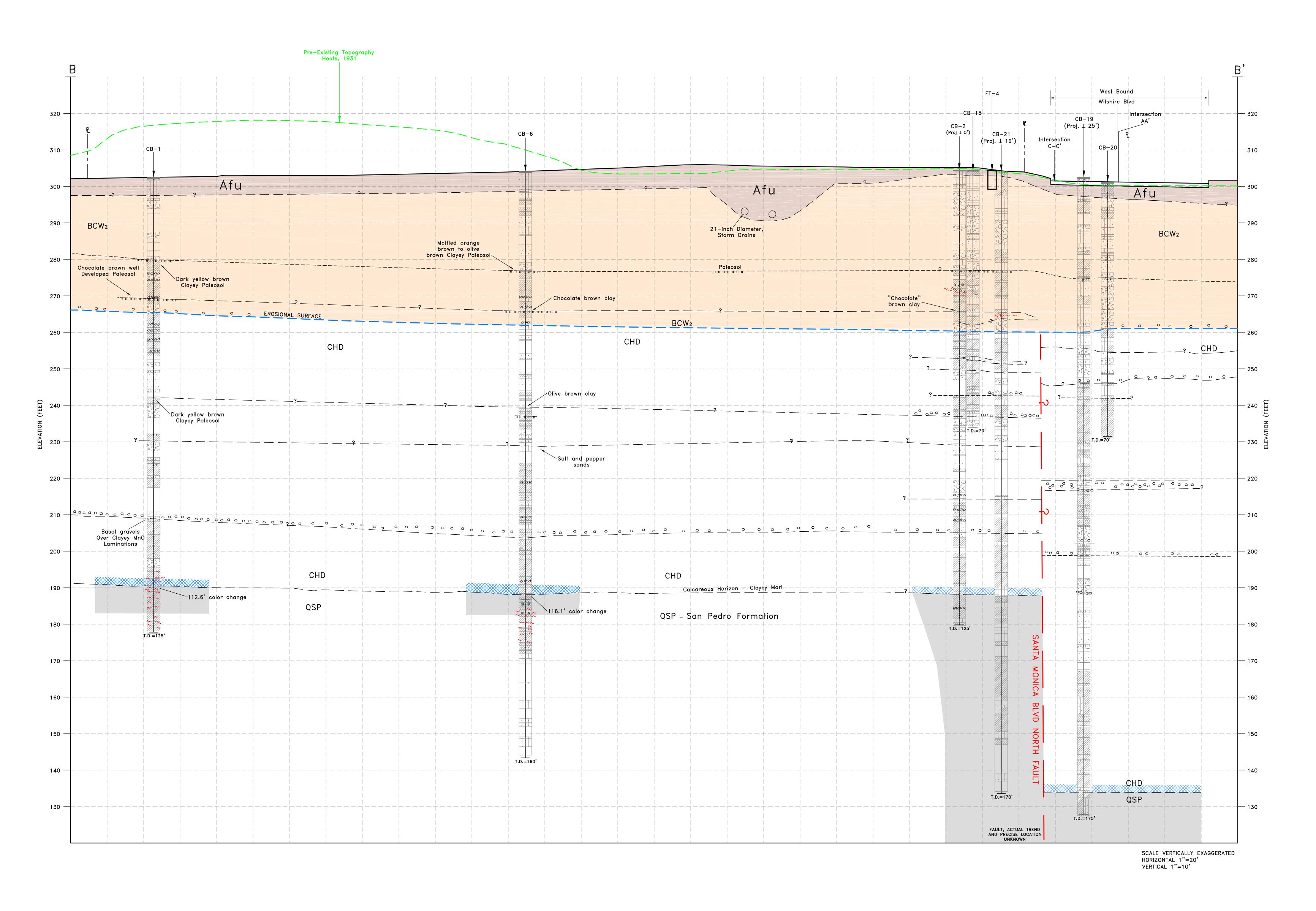


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EXPLANATION

<u>೨೦</u> <u>೦೦</u> Basal gravel, abrupt erosive contact

CaCO₃ stringers and along soil faces as vertical deposits

— т т т т — Denotes poor to well developed soil structure
—?— — Geologic contact, dashed where approximate, querried where uncertain

Rock Clasts

Fault contact, dashed where approximate, querried where uncertain. Trend unknown

CLAY with proportional amounts of silt and/or sand (CL, CL-ML)

CLAYEY SAND (SC)

SILT with proportional amounts of clay and sand (ML, ML-CL)

Silty SAND (S

SAND (SF

GRAVEL with varying proportions of silt and sand

(GP-GM)

GRAVEL with CLAY (GC)

No Recovery (N/R)

UNIT DESCRIPTIONS:

Artificial Fill, Undocumented (Afu): Locally derived sandy silt and silty sand, locally with clay and varying amounts of gravel and man-made debris. Abundant concrete rubble, in places exceeding 24-inches in diameter, observed in the backfill of Moreno Creek drainage in trenches FT-1 and FT-2. Localized seepage along root traces observed in backfill along southern sidewall of trench FT-1 and near storm drain inlet of trench FT-2. In Cross-Sections A-A' and B-B', this unit includes the section not logged from the auger spoils and the hand-augered section at the top of the CPTs.

Modern and Holocene Alluvium in Historical Channel of Moreno Creek (Qw): Silty sand to clayey sand grading to sand at depth, with minor gravel and thin gravel beds; light yellowish brown, brown to dark reddish brown; massive to crudely stratified; small fragments of asphalt observed locally in CB-3

Holocene and Pleistocene Alluvium of Benedict Canyon Wash (Qal): Sandy clay to clayey sand grading laterally to silty sand to sand with silt; coarsening downward near the thalweg of the channel to sand with gravel, sandy gravel or gravelly sand; brown, dark yellowish brown, dark brown to reddish brown; locally laminated; gravel consist of fine- to coarse-grained subangular to subrounded fragments of siltstone and slate; few to common

manganese oxide and iron oxide stains; few roots.

Pleistocene Alluvium of Benedict Canyon Wash (BCW1): Sandy clay, clayey sand, sand with clay, and silty sand with clay, grading laterally to silty sand and sand with silt; near the channel centerline, deposit coarsens downward to gravelly sand to clayey sand with gravel; dark yellowish brown, brown, dark brown to reddish brown; mottled; locally gleyed; slightly moist to moist; massive to thinly laminated; few to many scattered gravel that

consist of subangular to subrounded and tabular fragments of siltstone, slate and weathered basalt. Terrestrial deposit consisting of fluvial, alluvial fan,

and mudflow sediments emanating from the Santa Monica Mountains via Benedict Canyon Wash and its tributaries.

moderate to strong angular blocky soil structure. Distinctive erosional contact with underlying Cheviot Hills deposits.

Pleistocene Alluvium of Benedict Canyon Wash (BCW2): Sandy clay, clayey sand and silty clay grading laterally to silty sand to sand with silt; with lenses and interbeds of sandy gravel; coarsening downwards to a basal channel deposit of sand, gravelly sand and gravel; dark grayish brown, reddish brown, very dark brown, and dark yellowish brown; locally mottled and/or gleyed; oxidation-reduction banding; iron oxide and manganese oxide stains common on rock clasts and along basal channel contact; gravel consist of fine- to medium-grained subrounded to subangular fragments of siltstone,

slate, basalt and quartz. Unit is characterized by moderate to well-developed paleosols with many moderately thick to thick clay films on ped faces and

Pleistocene Cheviot Hills Deposits (CHD): Sandy clay, clayey sand, and silty clay; with thin silty sand and gravel layers and beds; brown, reddish brown, brown, and grayish brown; locally gleyed; moist to wet along sand beds; manganese oxide stains, streaks and nodules; iron oxide stains on rock fragments, and forming oxidation-reduction banding; gravel consist of subrounded to subangular fragments of siltstone and slate. At depth, unit includes abundant calcium carbonate in the form of specks, filaments, horizontal layers, and coatings on ped faces; color changes to grayish brown, gray, and blue green reminiscent of the Lomita Marl; iron oxide staining along layers and locally on ped faces. Unit has been modified by soil-forming processes, with pedogenic characteristics, including clay films on ped faces and moderate to strong angular blocky soil structure, observed at several intervals, including directly at or below its contact with the overlying Benedict Canyon Wash deposits. Terrestrial deposit consisting of fluvial and alluvial

sediments derived from the San Pedro Formation deposited over a long period of time, with depositional hiatuses that allowed for soil development.

Quaternary San Pedro Formation (Qsp): Sand with scattered gravel; few silty to clayey laminations; yellow, olive brown to reddish orange brown; loose to hard; dry near upper contact, becoming moist to wet at depth; sand fraction consists of fine to coarse, well-rounded quartz grains; scattered bi-valve shell fragments. Transitional terrestrial to marine unit deposited in a wave-dominated (beach) environment.

This unit was exposed at the surface for thousands of years before it was buried by the Pleistocene alluvium of Benedict Canyon Wash.

0 20 4 SCALE FE

PLATE 4

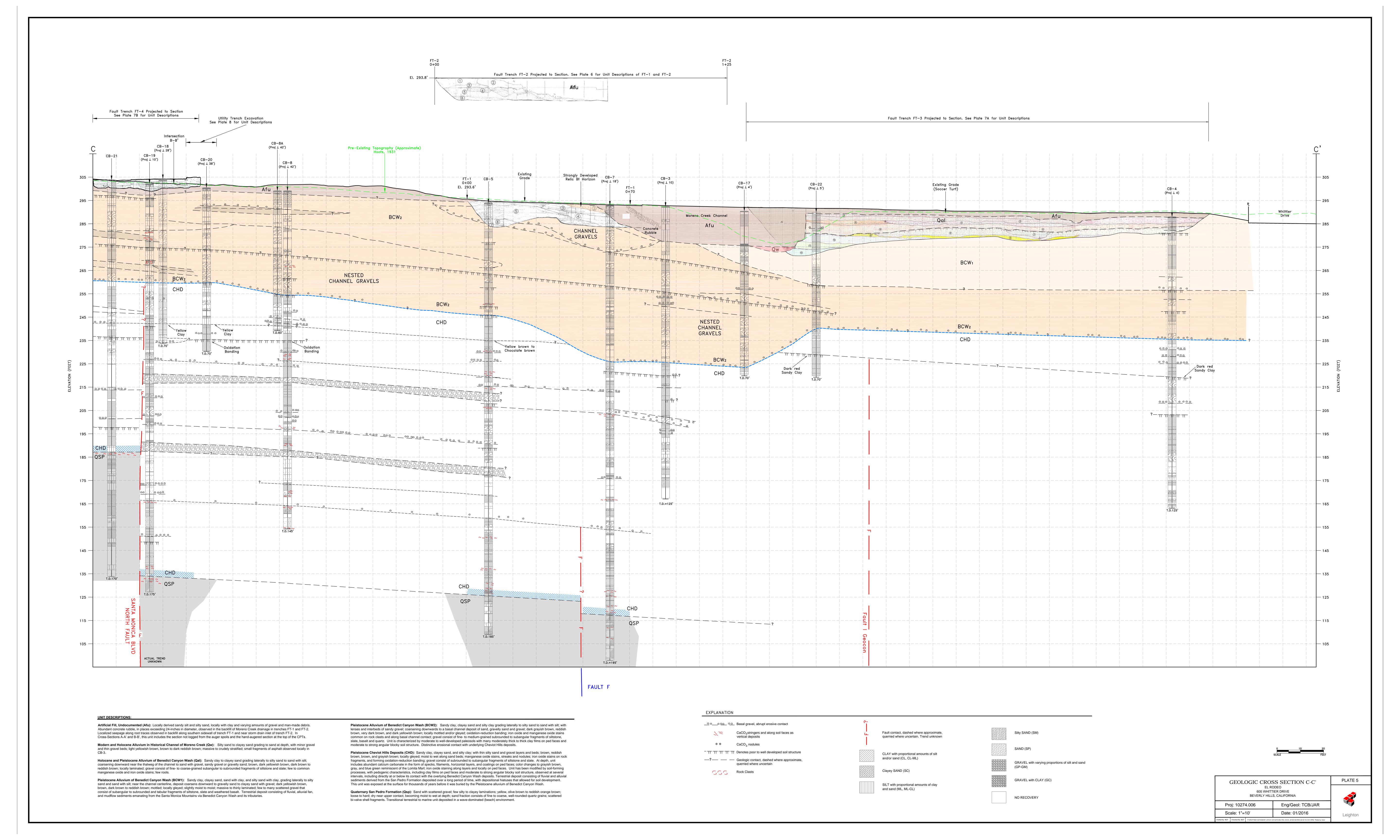
REVISED GEOLOGIC CROSS-SECTION B-B'
EL RODEO
605 WHITTIER DRIVE
BEVERLY HILLS, CALIFORNIA

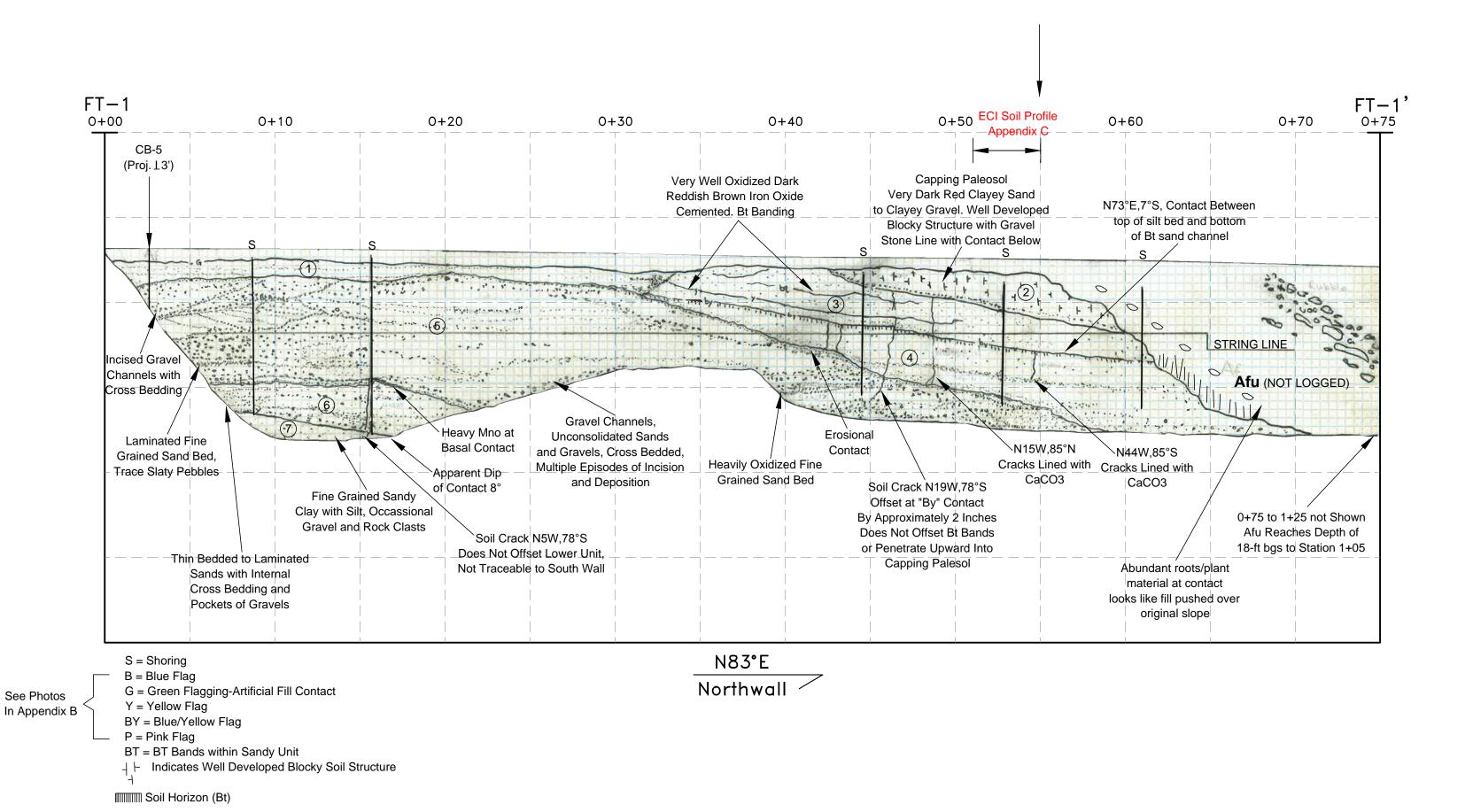
Proj: 10274.006

Eng/Geol: TCB/JAR

Scale: Vertical: 1"=10'
Horizontal: 1"=20'

Drafted By: MAM Checked By: P.DRAFTING/10274006/OF. 2016-01-201010274-006. PO4_CS-BB_, 20160120. DWG (02-02-16 3:27:55PM) Plotted by: btran





Earth Units-FT-1: Pleistocene Alluvium of Benedict Canyon Wash (BCW 1)

<u>Unit 1</u>-Silty SAND (SM) with clay, 10YR 4/4, dark yellowish brown, thinly bedded fine gravel to massive sandy matrix, predominately fine grained subangular frosted quartz sand grains, slaty fine pebbly gravel with oxidation rimming of flattened, tabular slate fragments.

<u>Unit 2</u>-Sandy CLAY to Clayey SAND (CL-SC), 7.5YR 4/3 to 10YR 3/4, brown to dark brown, very fine grained sand with slaty rock fragments, well developed ped faces, blocky structure, oxidized quartz sand grains and clay development along ped faces and in pores. Basal fine gravel line in sandy clay matrix. Calculated minimum age of 34k (ECI Appendix C), but estimated to be >100ka.

<u>Unit 3</u>-Silty SAND to SAND (SM-SP), 10YR 4/6, dark yellowish brown, fine grained subangular to subrounded quartz and slaty sand grains.

<u>Unit 4</u>-Sandy SILT to Silty SAND with Clay (ML-SM),10YR 5/4, yellowish brown to brown, windblown silt in upper portion, very fine grained massive subangular sand with secondary clay to fine gravely interbeds, iron oxide coating of quartz and grains and pores, lower portion

becomes Gravelly SAND to Sandy GRAVEL (SP-GP), 10YR 3/4 to 10YR 5/4, dark yellowish brown to brown, fine to coarse grained, frosted to clear, subangular to subrounded quartz sand grains, fine to coarse weathered, flattened and tabular slaty gravels with highly weathered manganese oxide stained siltstone rock clasts.

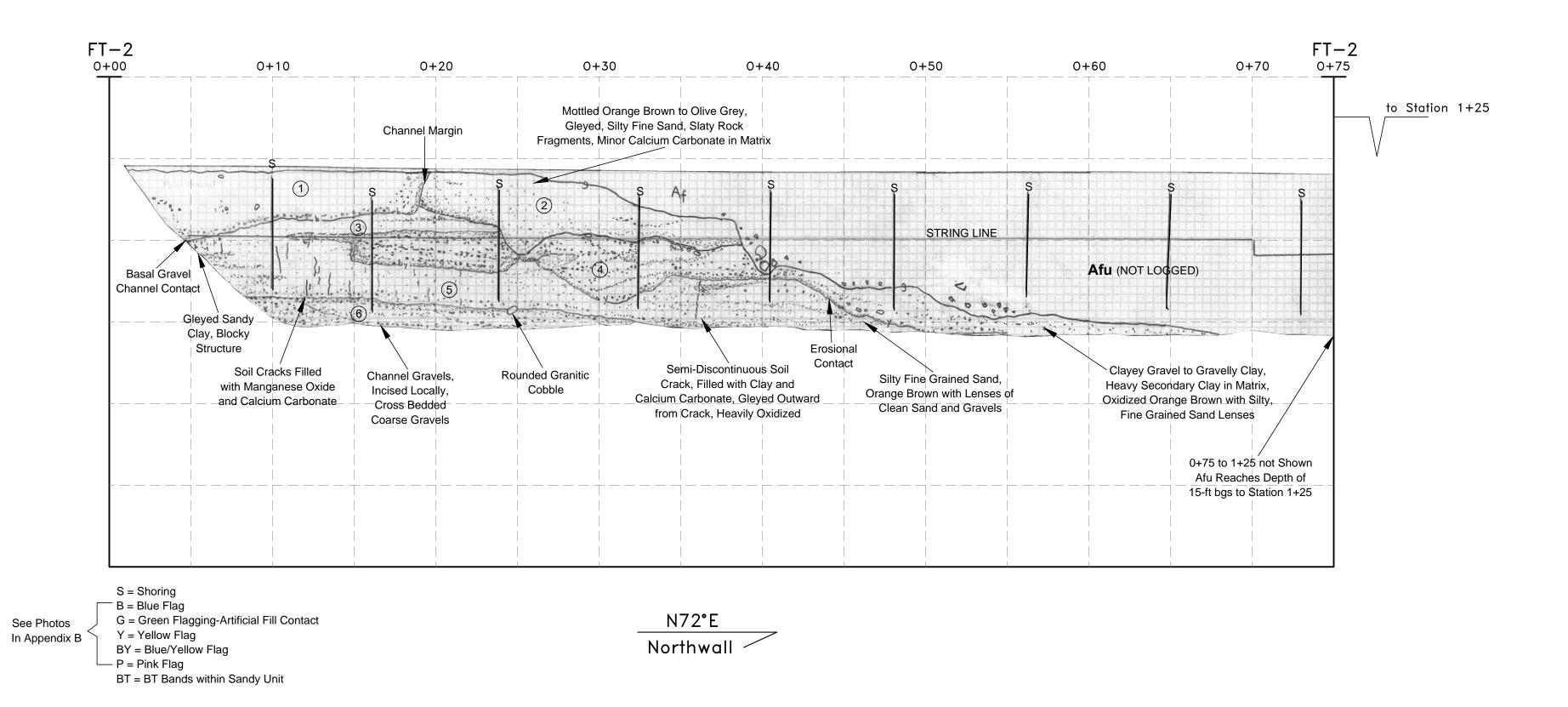
<u>Unit 5</u>-Silty GRAVEL to Sandy GRAVEL (GM-GP), 10YR 5/3 to 5/4, brown to yellowish brown, main channel deposit, interbedded gravel and sand, cross bedded to very fine laminations, fine to coarse grained clear to frosted quartz sand grains, fine to coarse flattened, tabular slaty and siltstone gravels,

severely weathered basalt fragments, patchy manganese oxide rimming of siltstone rock fragments. Heavy manganese oxide development at basal contact with lower unit No. 6.

<u>Unit 6-Silty SAND (SM)</u> with clay, 10YR 4/3 to 7.5YR 4/3, brown to dark brown, very fine grained subangular to subrounded quartz sand grains and occasional slaty gravel, gleyed.

Contains interbedded and oxidized sandy laminations cemented with iron oxide. Most quartz grains display frosted or oxidized surface, minor clear quartz sand size grains included.

<u>Unit 7</u>-Sandy CLAY with Silt (CL-ML), 10YR 5/2, dark greyish brown to brown, fine grained subrounded to subangular quartz sand grains, occasional gravel and severely weathered slaty and siltstone rock clasts.



Earth Units-FT-2: Pleistocene Alluvium of Benedict Canyon Wash (BCW 2)

<u>Unit 1</u>-Sandy Silty GRAVEL (GP-GM), 10YR 4/1 to 10YR 4/5, grey to dark grey, fine to coarse grained, subrounded to subangular, heavily oxidized quartz sand grains, weathered slaty rock fragments, dull grey on weathered surface to dark greyish black on fresh, severely weathered siltstone displaying oxidation along interior laminations with oxide rimming of outer clast surfaces. Abundant secondary clay, gleying in matrix.

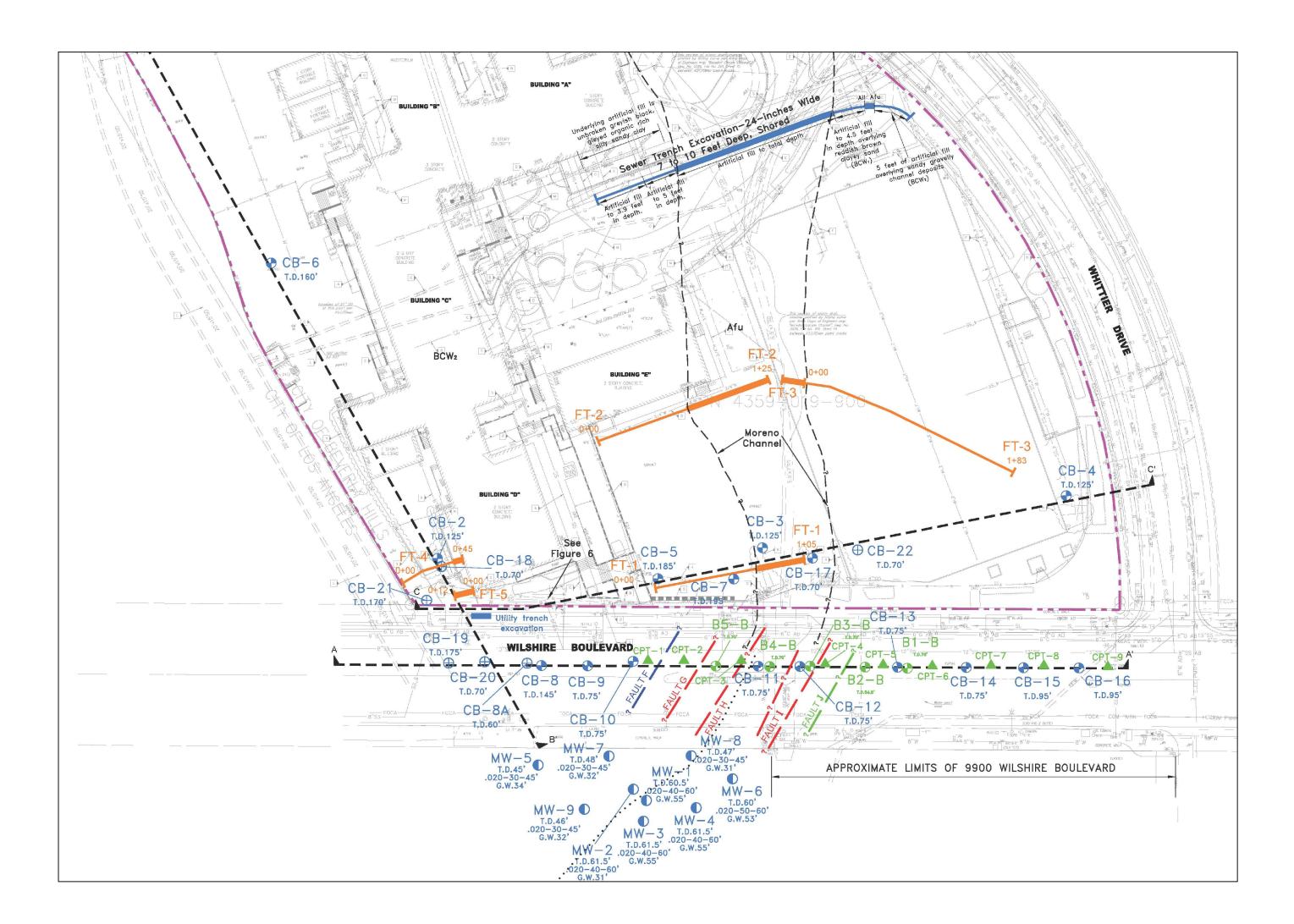
<u>Unit 2</u>-Sandy SILT with Clay (ML-CL), 2.5YR 5/3, olive brown, upper unit, very fine grained subangular to subrounded sand grains, gleying of matrix, lower unit becomes Silty SAND (SM), 10YR 5/6, dark yellowish brown, fine grained subrounded quartz sand, flattened and weathered siltstone and slaty sand grains, iron oxide coating of fine gravel sized siltstone clasts, trace of severely weathered and oxidized sand size basalt fragments.

<u>Unit 3</u>-Silty CLAY (CL), 10YR 5/3, brown, very fine grained sand, porous, 1-2mm voids with CaCO3 lined pores, gleyed along ped faces.

<u>Unit 4-</u> Sandy GRAVEL (GP-GM), 10YR 5/6 to 10YR 3/3, yellowish brown to dark brown, fine to coarse subrounded to subangular sandy matrix supporting subangular to subrounded fine to coarse gravels, severely weathered equigranular granitic clasts, oxidized and decomposing basalt fragments with silica veined slaty rock fragments in well defined channel. Contains small cobbles. Becomes clayey gravel to gravelly clay with increasing distance from main channel.

<u>Unit 5</u>-Sandy SILT with Clay (ML) to Sandy CLAY (CL), 10YR 3/3 to 5YR 3/4, dark brown sandy silt to dark reddish brown sandy clay, very fine grained, gleyed with subangular clear and oxidized quartz sand grains. Porous with manganese oxide lining of 1 to 3 mm pores and 80:1 Cracks.

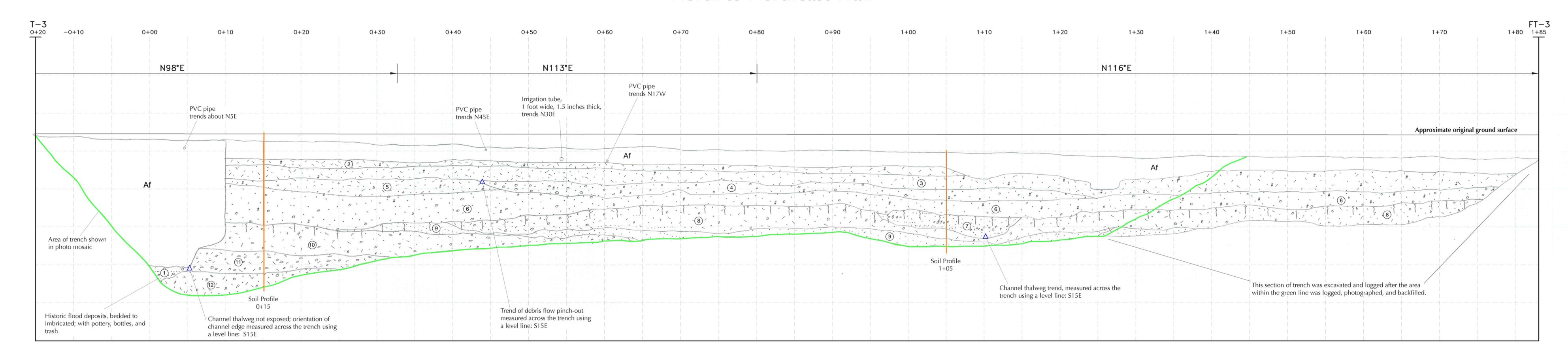
<u>Unit 6</u>-Sandy GRAVEL with Clay (GC), 10YR 4/4, dark brown to dark yellowish brown, fine to medium grained subrounded siltstone and oxidized quartz sand grains, fine to coarse slaty, tabular gravels. Locally incised with cross bedded coarse gravels

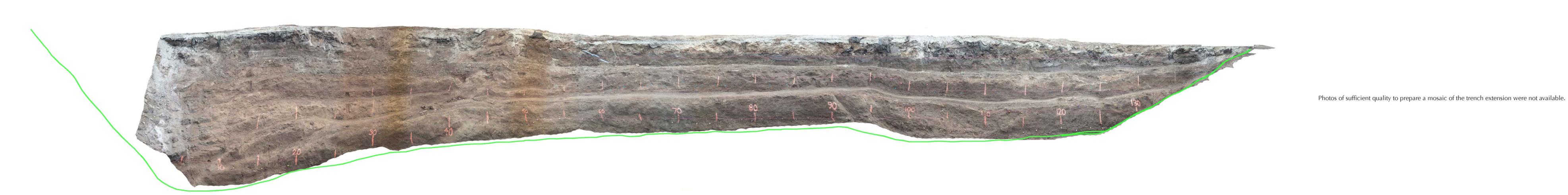


INDEX MAP

F	AULT	EI R 605 Whit	OG FT-1 AND FT2 odeo tier Drive s, California		
Pro	oj: 1027	4.006	Eng/Geol: TCB/JAR		
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North to Northeast Wall





Geologic Descriptions of Units

Unit 1: Orange brown to dark brown sand, gravelly sand and silty sand; bedded, with fining upward sequences, locally imbricated; scattered fragments of glass, pottery and metal indicate this is a historical deposit. (Historic Moreno Creek Flood Deposit)

Unit 2: Very dark brown to dark grayish brown silty clay; massive; few scattered gravel-sized chips of Monterey siltstone and Santa Monica slate. (Debris Flow Deposit)

Unit 3: Brown to very dark grayish brown sandy clay to silty clay; massive; scattered subangular gravel generally less than 1-inch in diameter consisting predominately of Santa Monica slate; scattered roots, rootlets, and root casts; erosional contact with unit below. (Debris Flow Deposit)

Unit 4: Brown to dark brown sandy clay to clayey sand; massive; with coarse sand and fine subangular, disc shaped gravel up to ¾-inch in diameter consisting of Santa Monica slate and Monterey siltstone; gravel scattered throughout the unit; present only on east side of trench, from about Station 0+44 onward; erosional contact with unit below. (Debris Flow Deposit)

Unit 5: Brown to orange brown clayey sand to sandy clay; massive; scattered fine gravel-sized clasts of Santa Monica slate and Monterey siltstone; abundant pinhole-sized pores, locally extensively bioturbated; incised into and removed to the east by Unit 4. (Debris Flow Deposit)

Unit 6: Brown to dark brown clayey sand to gravelly clayey sand; massive; many gravels to 1-inch in diameter and few gravels to pebbles to 3-inches in diameter consisting of Santa Monica slate and Monterey siltstone; base of unit locally contains pockets of indurated silt; unit thins eastward where it is incised into by Unit 4; erosional contact with units below. (Debris Flow Deposit)

Unit 7: Brown to dark brown grading down to yellowish brown to reddish brown, gravelly silty to clayey sand and sandy gravel; generally massive with pockets or lenses of gravel at the top, bedded at the bottom; gravels are subrounded to rounded and consist predominantly of Santa Monica slate; slightly pedogenically altered at the top; erosional contact with unit below. (Fluvial Deposit grading upward to possible very fluid Debris Flow Deposit)

Unit 8: Brown to dark brown sandy clay to gravelly sandy clay; massive; with localized pockets of angular to subrounded fine to medium gravel; many pores; pedogenically altered where not incised by Unit 7. (Debris Flow Deposit)

Unit 9: Brown to dark brown gravelly sand; bedded, with fining-upward sequences; gravel consists of 1/4- to 1-inch in diameter clasts predominantly of Santa Monica slate; erosional contact with Unit 10 below. (Fluvial Deposit)

Unit 10: Brown to dark yellowish brown sandy to silty clay grading eastward to clay, locally with many subangular gravel to 1/2-inch in diameter; many pores; gradual contact to Unit 11 below. (Debris Flow Deposit)

Unit 11: Brown to dark brown sandy clay grading down to silty clay; massive to locally weakly bedded; with gravel-sized clasts consisting of weathered Monterey siltstone and Santa Monica slate; significant pinhole-sized pores; clear to gradual contact to Unit 12 below. (Debris Flow Deposit)

Unit 12: Brown to dark yellowish brown sandy to silty clay, locally gravelly; massive; clasts consist

surfaces filled in with fine sand; fractures die up and down, suggesting wetting and drying; locally with

predominantly of weathered Monterey siltstone; with randomly oriented vertical fractures, root holes, and

Soil Descriptions, Profile at Station 0+15

15.03 – 16.80 6Bt8

Depth (ft)	Horizon	Description
0 - 1.83	Fill	Not described. Mixture of different soils, with brick and asphalt fragments.
1.83 - 2.62	A/Bt1	SILTY CLAY; very dark brown (10YR 2/2) when damp and moist; moderate medium to coarse angular blocky soil structure;
		firm when moist, very sticky and very plastic when wet; few thin clay films bridging grains, few thin clay films on clasts;
		scattered fine gravel consisting predominantly of Santa Monica slate; with organics; abrupt wavy boundary.
2.62 - 3.64	Bt2	SILTY CLAY; brown (10YR 4/3) with dark brown (7.5YR 3/2) clay films when damp, very dark grayish brown (10YR 3/2)
2.02 5.01	DCZ	with dark brown (7.5YR 3/2) clay films when moist; moderate to strong medium angular blocky soil structure; very friable
		when moist, very sticky and very plastic when wet; common thin and few moderately thick clay films on ped faces,
		common moderately thick clay films on clasts, common thin clay films bridging grains; dark organics and/or clay coatings
2.64 4.26	D+3	on ped faces; boundary not observed, at bench.
3.64 - 4.26	Bt3	SILTY CLAY LOAM; brown (10YR 4/3) when damp, very dark grayish brown (10YR 3/2) when moist; strong very coarse
		angular blocky soil structure; firm when moist, sticky and plastic when wet; common thin clay films on ped faces, many
		thin clay films bridging grains, common thin clay films in pores, common thin clay films on clasts, many moderately thick
		clay films coating clast pockets; many root casts around clast pockets; abrupt wavy boundary.
4.26 -5.25	2Bt4	Fine SANDY CLAY; brown (10YR 4/3) with brown (7.5YR 4/2) clay films when damp, very dark grayish brown (10YR 3/2)
		when moist; moderate medium angular blocky soil structure; firm when moist, slightly sticky and plastic when wet;
		common thin clay films on ped faces, few thin clay films on clasts, common moderately thick clay films coating clast
		pockets; abrupt to clear wavy boundary.
5.25 -7.48	2BC1	SANDY CLAY LOAM to fine SANDY CLAY; dark brown (10YR 3/3) when damp, very dark grayish brown (10YR 3/2) when
		moist; massive breaking to weak to moderate medium angular blocky soil structure grading downward to moderate
		medium angular blocky soil structure; firm when moist, slightly sticky to sticky and plastic when wet; few thin clay films on
		ped faces, few thin clay films on clasts, few thin clay films coating clast pockets; scattered gravel; many pores; extensively
		bioturbated at top; clear wavy boundary.
7.48 -8.79	3Bt5	SANDY CLAY LOAM; brown (10YR 4/3) when dry, dark brown (10YR 3/3) when moist; strong medium to coarse angular
		blocky soil structure; hard when dry, friable when moist, sticky and plastic when wet; few thin clay films on ped faces and
		bridging grains, common thin clay films coating clast pockets; abrupt to clear wavy boundary.
8.79 - 9.81	3BC2	LOAMY SAND; brown (10YR 5/3) when dry, dark brown (10YR 3/3) when moist; moderate fine to medium angular blocky
		soil structure; hard and fragic when dry, friable when moist, non-sticky and very slightly plastic when wet; few thin clay
		films on ped faces; many rounded to subangular gravel and pebbles of Santa Monica slate and Monterey siltstone; abrupt to
		clear wavy boundary.
9.81-10.43	4AB	LOAMY SAND to fine SANDY LOAM; brown (10YR 5/3) when dry, brown (10YR 4/3) when moist; moderate to strong fine
		angular blocky soil structure; slightly hard to very hard and fragic when dry, friable to firm when moist, sticky and slightly
		plastic when wet; very few thin clay films in pores and on clasts; with gravel and pebbles; clay concentrated in zones; clear
		wavy boundary.
10.43 - 11.09	4Btj	SANDY CLAY LOAM; dark brown (10YR-7.5YR 3/3) when damp and moist; weak fine angular blocky soil structure
		breaking to single-grained; firm when moist, slightly sticky to sticky and slightly plastic when wet; few thin clay films on
		ped faces, few thin clay films lining clast pockets; common scattered fine gravel of Santa Monica slate; with clay-rich zones
		locally; abrupt wavy boundary.
11.09 – 14.14	5Bt6	SILTY CLAY LOAM; brown (10YR 5/3) with brown (7.5YR 5/3) clay films when dry, dark brown (7.5YR 3/3) when moist;
		strong medium to coarse angular blocky soil structure; firm when moist, sticky to very sticky and slightly plastic to plastic
		when wet, common thin clay films in pores and on clasts, common thin and few moderately thick clay films lining clast
		pockets; common subangular gravel up to ½-inches in diameter; many pores; gradual boundary.
14.14 – 15.03	5Bt7	SANDY CLAY LOAM; brown (7.5-10YR 5/3) when dry, brown (7.5YR 4/3) when moist; weak to strong medium to coarse
1111 13103	000	angular blocky soil structure; slightly hard and fragic when dry, firm when moist, sticky and plastic when wet; common thin
		clay films in pores, few thin clay films on clasts, common thin and few moderately thick clay films coating clast pockets;
		many pores; abrupt wavy boundary.
		many porces, abrupt wavy boundary.

soil structure; hard when dry, friable to firm when moist, very sticky and very plastic when wet; few thin clay films on ped faces and bridging grains, common thin clay films on clasts, common thin to moderately thick clay films lining clast pockets; clasts consist of approximately equal amounts of Santa Monica slate and Monterey siltstone; clear to gradual wavy boundary.

Fine SANDY CLAY LOAM; brown (7.5YR 5/3) with brown (7.5YR 4/3) clay films when dry, brown (7.5YR 4/3) when moist; moderate to strong medium to coarse angular blocky soil structure; hard when dry, firm when moist, sticky and slightly plastic when wet; very few thin clay films on ped faces, common thin clay films coating clast pockets; many pinhole-sized pores; many weathered clasts of Monterey siltstone, few clasts of Santa Monica slate; sand in root casts; abrupt wavy boundary.

Fine SANDY CLAY LOAM; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate fine to medium angular blocky soil structure; slightly hard and fragic when dry, firm when moist, slightly sticky and plastic when wet; few thin clay films coating clasts; sand in vertical fractures associated with wetting/drying and roots; clear smooth to wavy boundary.

Fine SILTY CLAY; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate to strong medium angular blocky soil structure; hard when dry, firm when moist, slightly sticky and plastic when wet; very few thin clay films coating clasts; many pinhole-sized pores and roots; common root holes; root holes filled with sand; many weathered clasts of Monterey siltstone; more fine gravel than above; lower boundary not observed.

SILTY CLAY; brown (7.5YR 4/3) when dry, dark brown (7.5YR 3/2.5) when moist; strong medium to coarse angular blocky

Soil Descriptions, Profile at Station 1+05

12.04 – 12.37+ 8Bt7

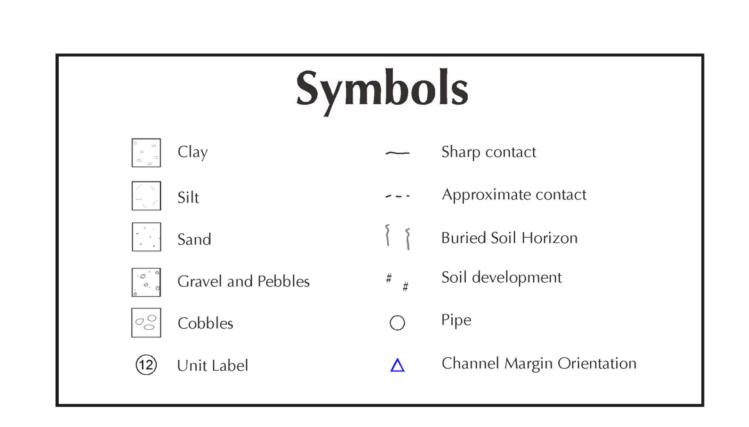
boundary not observed.

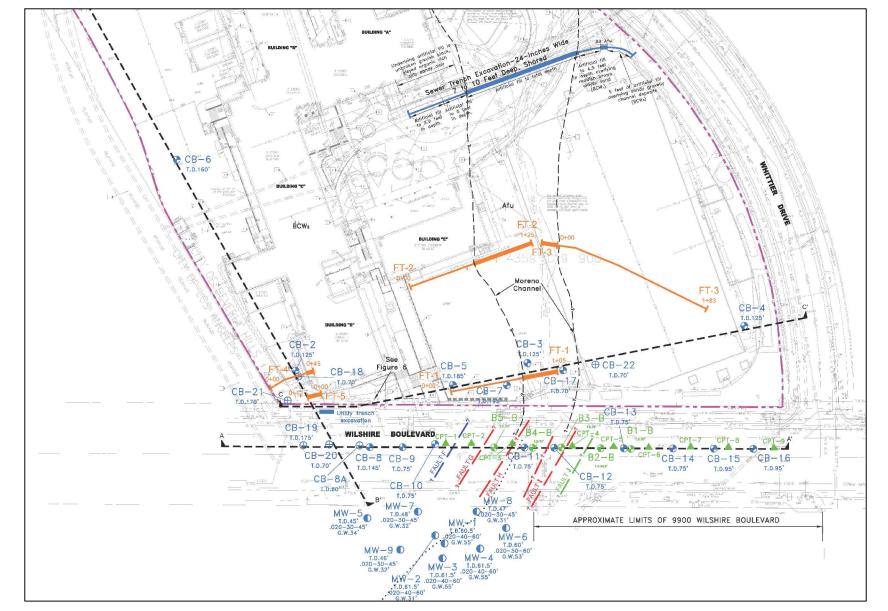
Depth (ft) 0 – 1.97	Horizon Fill	Not described. Mixture of imported gravel, imported light yellowish brown to reddish brown clayey soil, with bricks, asphalt
1.97 – 2.99	Bt1	fragments, and other debris. CLAY to SILTY CLAY; very dark grayish brown to dark grayish brown (10YR 3.5/2) with very dark brown to very dark grayish brown (10YR 2.5/2) clay films and few scattered black (10YR 2/1) mottles when dry, very dark brown to very dark grayish brown (10YR 2.5/2) when moist; strong coarse angular blocky soil structure; hard when dry, firm when moist, sticky and very plastic when wet; many moderately thick clay films on ped faces and bridging grains, common thick clay films on ped faces, many thin clay films in pores; many pores, roots and root casts; organic-rich; few scattered gravel-sized chips of Monterey
2.99 – 3.64	BC_{lam}	siltstone; locally looks mixed, possibly reworked; abrupt to clear wavy boundary. CLAY LOAM with CLAY lamellae; brown (10YR 4/3) with very dark grayish brown (10YR 3/2) clay films when dry, very dark
	idili	grayish brown (10YR 3/2) when moist; strong medium to coarse angular blocky soil structure; soft when dry, friable when moist, sticky and plastic to very plastic when wet; few to common thin clay films on ped faces, many thin clay films bridging grains and in pores; in the lamellae, many thin and common moderately thick clay films on ped faces and many thin clay
3.64 – 4.66	2Bt2	films in pores; common pinhole-sized pores; clear wavy boundary. SANDY CLAY; brown (10-7.5YR 4/3) with brown (7.5YR 4/4) clay films locally when dry, dark brown (7.5YR 3/2) with dark reddish brown (5YR 3/2) mottles when moist; strong coarse to very coarse angular blocky soil structure; soft to slightly hard when dry, friable when moist, very sticky and very plastic when wet; common moderately thick and many thin clay films on ped faces, few to common thin clay films bridging grains, continuous thin clay films in pores; common to many large pores; scattered subangular gravel generally less than 1-inch in diameter consisting predominantly of Santa Monica slate; clear wavy boundary.
4.66 -6.04	2Bt3	SANDY CLAY; brown (10-7.5YR 4/3) with brown (7.5YR 4/3.5) clay films when dry, dark brown (7.5YR 3/2) with dark brown (7.5YR 3/3) clay films when moist; moderate medium to coarse angular blocky soil structure; slightly hard to hard when dry, slightly firm to firm when moist, very sticky and plastic when wet; few to common thin clay films on ped faces, common to many thin and few moderately thick clay films bridging grains, common thin clay films on clasts; more sand, coarser sand and more gravel than horizon above; fewer pores than above ranging in size from pinhole to 3mm in diameter; clear wavy boundary.
6.04 -6.46	3Bt4	SANDY CLAY LOAM; brown (10-7.5YR 4/3) with dark brown (7.5YR 3/2) clay films when dry, dark brown (7.5YR 3/2) with dark brown (7.5YR 3/3) clay films when moist; moderate fine angular blocky soil structure; slightly hard to hard and slightly fragic when dry, friable to slightly firm when moist, slightly sticky and slightly plastic to plastic when wet; many thin and common moderately thick clay films on ped faces, common thin clay films bridging grains and in pores, many thin clay films on clast pockets; many pores ranging in size from pinhole to >3mm in diameter; more sand and more gravel than horizon
6.46 -7.81	4Btj	above; abrupt to clear wavy boundary. SANDY CLAY LOAM grading down to SANDY LOAM; brown and dark yellowish brown (10YR 4/3 and 4/4) when dry, dark brown (7.5YR 3/2) when moist; moderate medium to coarse angular blocky soil structure; soft and slightly fragic when dry, very friable when moist, slightly sticky and very slightly to slightly plastic when wet; common to many thin clay films on ped faces, common thin clay films bridging grains, many thin clay films in pores locally, many thin clay films coating clasts; fining upward with increasing gravel downward; more sand and fine gravel than horizon above; clear to gradual wavy boundary. (Alluvium)
7.81 – 8.53 4 8.53-9.71 5		Gravelly SANDY LOAM with SANDY LOAM lamellae; brown (10YR 4/3) when dry, dark brown (7.5YR 3/2.5) when moist; weak medium subangular blocky soil structure breaking to single-grained, moderate medium subangular blocky soil structure in lamellae; soft to loose when dry, very friable when moist, non-sticky to very slightly sticky and non-plastic when wet; common thin to moderately thick clay films bridging grains, few thin clay films on ped faces, few to common thin clay films on clasts, many thin clay films on clast pockets; fine to medium sand with common coarse sand and subrounded to rounded gravel consisting predominantly of Santa Monica slate; abrupt to clear wavy boundary. (Very fluid debris flow deposit or alluvium, generally massive, locally with lenses.) Gravelly LOAMY SAND with SANDY LOAM lamellae; brown (10YR 4/3) when dry, dark brown (10-7.5YR 3/3) when moist;
0.33-9.71	BC _{lam3}	single-grained; loose when dry and when moist, non-sticky and non-plastic when wet; few pores ranging in size from pinhole to 2 mm in diameter; abrupt wavy to irregular boundary (carves out underlying surface). Lamellae are brown (10-7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; moderate fine to medium subangular blocky soil structure; slightly hard when dry, very friable when moist; non-sticky to very slightly sticky and non-plastic when wet; many thin and common moderately thick clay films bridging grains, few thin clay films on ped faces, common thin clay films in clast pockets; ½- to 1-inch thick,
9.71 – 10.07	6Bt5	irregularly spaced from ¼- to ½-inch apart at top, to 1-2 inches at bottom. (Alluvium; strata visible.) SANDY LOAM to SANDY CLAY LOAM; brown and dark yellowish brown (10YR 4/3 and 4/4) with brown (7.5YR 4/3) clay films when dry, dark brown (10-7.5YR 3/3) with dark brown (7.5YR 3/3) clay films when moist; moderate fine angular blocky soil structure; hard and fragic when dry, friable when moist, slightly sticky to sticky and slightly plastic to plastic when wet; common thin and few moderately thick clay films on ped faces, common thin clay films in pores, many thin clay films bridging grains; many pores ranging in size from pinhole to 2 mm in diameter, loose fine sand in larger pores; few to common subangular to subrounded fine gravel to ½-inch in diameter, consisting predominantly of Santa Monica slate, few Monterey siltstone chips; clear wavy boundary.
10.07 – 11.25	6Bt6	SANDY CLAY LOAM to SANDY CLAY; brown (10YR 4.5/3) with brown (7.5YR 4/3) clay films when dry, dark brown (7.5YR 3/2) when moist; weak to moderate medium angular blocky soil structure; slightly hard to hard and slightly fragic when dry, friable to slightly firm when moist, slightly sticky to sticky and plastic when wet; many thin and few moderately thick clay films on ped faces, many thin to moderately thick clay films bridging grains, common thin clay films in pores; coarser-grained than horizon above, fining-upward sequence with unit above; common pores; clear wavy boundary. (Debris flow deposit)
11.25 – 12.04	7C _{Iam}	Gravelly SAND with SANDY LOAM lamellae; brown (10YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; single-grained; loose when dry and moist, non-sticky and non-plastic when wet; gravel consists predominately of Santa Monica slate, 1/4- to 1-inch in diameter; abrupt wavy to irregular boundary that incises into underlying surface. Lamellae are brown (10-7.5YR 4/3) when dry, dark brown (7.5YR 3/3) when moist; weak fine to medium subangular blocky soil structure; soft when dry, very friable when moist, very slightly sticky and non-plastic to very slightly sticky when wet; 1/4- to 1/2-inch thick, spaced 1 to 2 inches apart. (Fluvial deposit, stratified, with fining-upward sequences.)
12.04 - 12.37+	- 8Bt7	CLAY; dark yellowish brown to brown (10-7.5YR 4/4) with dark brown (7.5YR 3/3) clay films when dry, dark brown (7.5YR

CLAY; dark yellowish brown to brown (10-7.5YR 4/4) with dark brown (7.5YR 3/3) clay films when dry, dark brown (7.5YR 3/2.5) when moist; strong fine to medium subangular blocky soil structure; extremely hard when dry, firm when moist, very

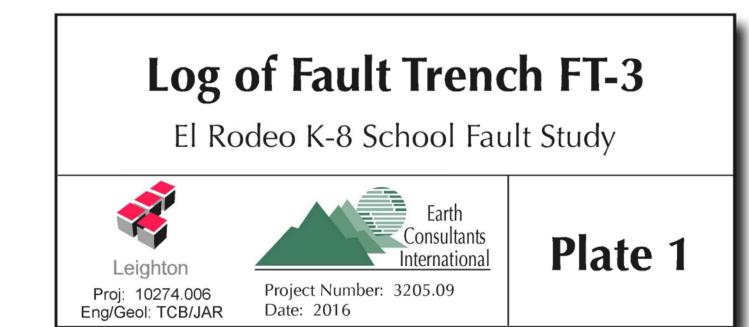
sticky and very plastic when wet; common thin and few moderately thick clay films on ped faces, common thin clay films

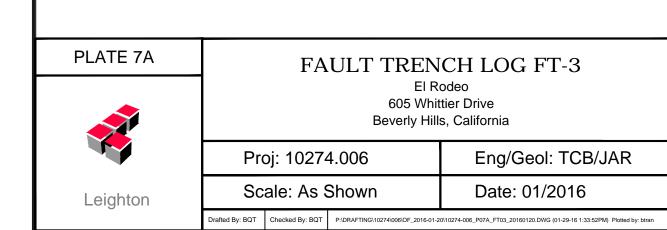
bridging grains, many thin clay films in pores, many moderately thick clay films on clasts; many pinhole-sized pores;



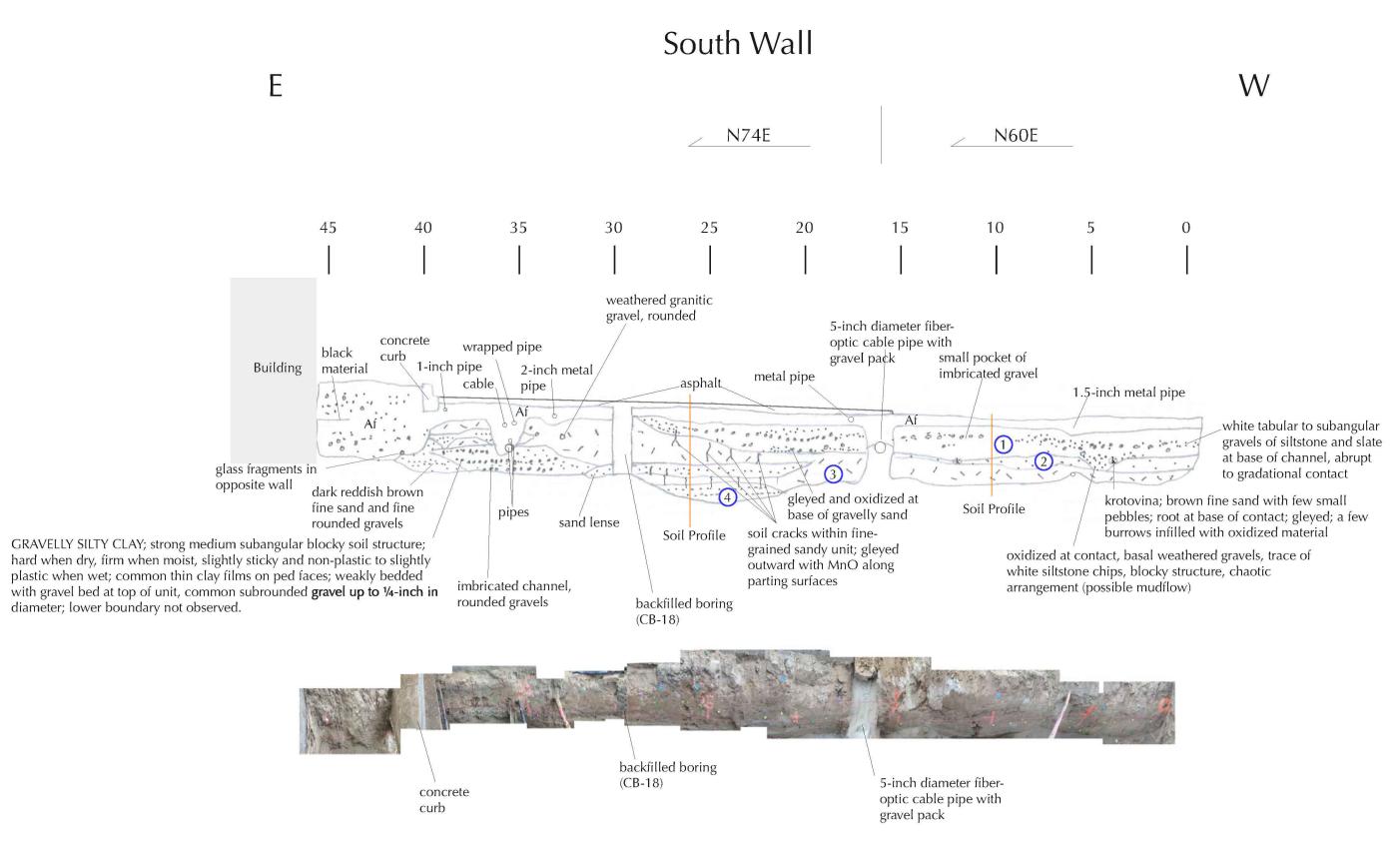


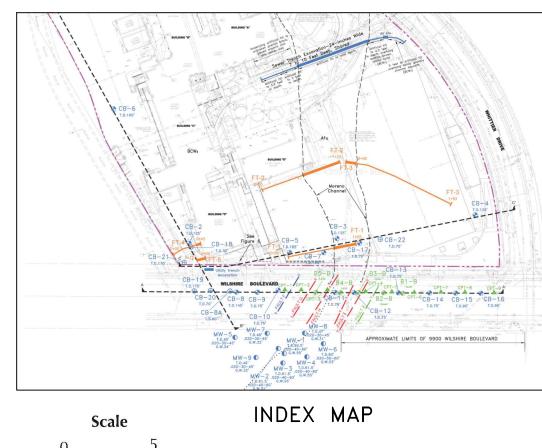
INDEX MAP





significant pinhole-sized pores. (Debris Flow Deposit)





1 inch = 5 feet
No vertical Exaggeration
Logged by EMH and MLH
11/25/2015

Symbols Clay Sharp contact Approximate contact Silt Soil development Unit Label Pipe Gravel and Pebbles Animal burrow (krotovina)

Unit Descriptions

Unit 1: Reddish brown; predominately a chaotic assemblage of sand, silt, and clay with a discrete gravel bed at approximately mid unit; clasts consist of fine tabular angular slate and white siltstone with no noticeable imbrication; matrix consists of reddish brown silty sand to sandy silt with fine to coarse subrounded sand grains; exhibits oxidation staining. Mid unit gravel bed appears to be locally continuous and extends throughout the unit until layer pinches out at approximately Station 29; abrupt and erosional contact with unit below. (Debris Flow Deposit)

Unit 2: Light reddish brown sandy silt to silty sand, predominately fine to medium sand with scattered coarse sand; unit contains oxidation staining, gleying, and MnO spotting along with MnO streaks and MnO infilled cracks; thin and non-continuous within the trench, gradational contact with unit below. (Possible Alluvial Deposit)

Unit 3: Laterally gradational deposits consisting of channel gravels, sand lenses, and finer-grained overbank sediments. Channel deposits predominately consist of fine, subrounded, tabular slate and white siltstone gravels with very few scattered subrounded to rounded granitic clasts; sand lenses consist of gray to light brown fine-grained silty sand with weak bedding, friable and soft; overbank deposits consist of fine-grained silty clay to sandy silt, fine sand with scattered medium to coarse sand and fine slaty and siltstone gravels, mostly massive, gleyed, oxidized. Unit as a whole fines to the west, with channel migration moving easterly; interior contacts are abrupt, contact with underlying unit is abrupt and erosional. (Fluvial and Overbank Deposits)

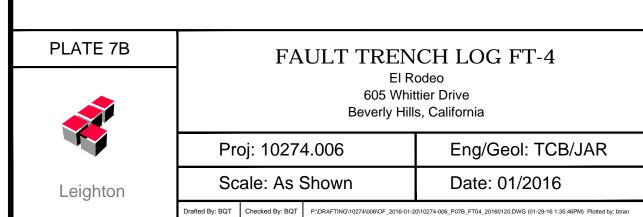
Unit 4: Light grayish brown to tan, silty fine sand; soft, friable; scattered clayey laminations with moderate blocky structure; minor oxidation staining; scattered pinhole pores. (Possible Fluvial Deposit)

El Rodeo FT-4, Profile at Station 26

Depth (ft)		
0-1	Fill	Asphalt over artificial fill. Not described.
1-1.9	Bt	SANDY CLAY LOAM; yellowish brown to brown (10YR to 7.5YR 5/4) with dark brown (7.5YR 3/2) clay films and medium grayish brown (10YR 5/2) mottles when dry, dark brown (7.5YR 3/3) when moist; moderate medium to fine angular blocky soil structure; very hard when dry, friable to firm when moist, sticky and plastic when wet; common moderately thick clay films on ped faces, few thin clay films on clasts, common thin and few moderately thick clay films lining clast pockets; abundant fine subrounded gravel up to ¼-inch in diameter; clear wavy lower boundary.
1.9-2.4	2Bt2	SILTY CLAY; brown (7.5YR 5/4) with brown (7.5YR 4/4) clay films and pale brown (10YR 6/3) mottles when dry, dark brown (7.5YR 3/3) when moist; strong fine to medium angular blocky soil structure; very hard when dry, firm when moist, sticky and plastic when wet; common thin clay films on ped faces, common moderately thick clay films lining clast pockets, many thin clay films bridging grains; scattered gravel; clear to gradual wavy lower boundary.
2.4-3.2	2Bt3	SANDY CLAY LOAM; brown (10YR 5/3) with brown (7.5YR 5/4) clay films and few brown (10YR 5/3) mottles when dry, dark brown (7.5YR 3/3) when moist; moderate fine to medium angular blocky soil structure; very hard when dry, friable when moist, slightly sticky and slightly plastic when wet; common thin to moderately thick clay films on ped faces, few thin clay films bridging grains; scattered few fine gravel; few; clear wavy lower boundary.
3.2-3.9	3Bt4	SANDY CLAY LOAM; brown (10YR 5/3) with brown to yellowish brown (7.5YR to 10 YR 5/4) clay films and brown (10YR 5/3) mottles when dry, brown (7.5YR 4/3) when moist; moderate fine to medium subangular blocky soil structure; very hard when dry, friable to firm when moist, non- sticky and slightly plastic when wet; very few to few thin clay films on ped faces, few thin clay films lining clast pockets; fine-grained sand with very few scattered fine gravel; clear wavy lower boundary.
3.9-4.2	4Bt5	SILTY CLAY; yellowish brown (10YR 5/4) with dark yellowish brown (10YR 4/4) clay films and common light brownish gray (10YR 6/2) and very dark gray (10YR 3/1) mottles when dry, brown (7.5YR 4/3) when moist; strong medium to coarse subangular blocky soil structure; slightly hard to hard when dry, firm when moist, sticky and plastic when wet; many moderately thick clay films on ped faces, few thin clay films lining pores, many thin clay films bridging grains; clear wavy lower boundary.
4.2-5.2	4BC	LOAM to SANDY CLAY LOAM; brown to pale brown (10YR 5.5/3) with light brownish gray (10YR 6/2) mottles when dry, brown (10YR 4/3) when moist; moderate medium subangular blocky soil structure; hard when dry, firm when moist, non- sticky and slightly plastic when wet; few thin clay films on ped faces; fine to very fine sand grains; lower boundary not observed.

El Rodeo FT-4, Profile at Station 10

Depth (ft)	Horiz	on Description
0-0.4	Fill	Artificial fill. Not described.
0.4-2.0	Bt	SANDY CLAY; brown to yellowish brown (7.5YR to 10YR 5/4) with brown (7.5YR 4/2.5) clay films and medium grayish brown (10YR 5/2) mottles when dry, dark brown (7.5YR 3/3) when moist; strong fine subangular blocky soil structure; hard to very hard when dry, firm to very firm when moist, sticky and plastic when wet; common thin clay films on ped faces, common moderately thick clay films lining clast pockets, few thin clay films bridging grains; abundant fine subrounded gravel up to 1/4-inch in diameter; clear wavy lower boundary.
2.0-2.5	2Bt2	SANDY CLAY LOAM; brown (10YR 4/3) with brown (7.5YR 5/3) clay films and common grayish brown (10YR 5/2) mottles when dry, brown (7.5YR 4/3) with dark brown (7.5YR 3/2) clay films when moist; strong fine to medium angular blocky soil structure; hard when dry, firm when moist, sticky and slightly plastic when wet; common thin clay films bridging grains, many thin and common moderately thick clay on ped faces; fine-grained with few scattered fine gravel; common pores; clear wavy lower boundary.
2.5-3.4+	2Bt3	SILTY CLAY; brown (10YR 5/3) with brown (7.5YR 4/2) clay films and very dark grayish brown and light grayish brown (10YR 3/2 and 10YR 6/2) mottles when dry, dark grayish brown (10YR 4/2) when moist; strong coarse angular blocky soil structure; hard and fragic when dry, firm to very firm when moist, sticky and slightly plastic when wet; many thin and common moderately thick clay films on ped faces, common thin clay films bridging grains; common strong brown (7.5YR 5/6) iron oxide stains; lower boundary not observed.







Log of Trench FT-4, South Wall for El Rodeo K-8 School Fault Studies

Plate

