

MEMORANDUM

SUBJECT: Summary of Fault Trench Study at 10131 Constellation Boulevard – Century City, California

BY: Geoffrey D. Stokes, CEG and Glenn D. Tofani, GE

DATE: December 5, 2013

Background

GeoKinetics has been retained to screen for the existence of geologically recent faulting at the above referenced site (the "Property"). GeoKinetics performed an extensive geotechnical and geologic investigation at the Property in 2004 and 2011, and found no evidence of geologically recent faulting. GeoKinetics' Geotechnical Site Investigation Report for the Property, dated December 6, 2011, is included as Appendix L to the Draft Subsequent Environmental Impact Report for the proposed Century City Center project.

In approximately 2012, Dr. Miles Kenney (Kenney GeoScience) was retained by the City of Beverly Hills to prepare a fault location map for the Century City area as a part of his third-party evaluation of geologic and seismic conditions with respect to the proposed Los Angeles County Metropolitan Transportation Authority (Metro) project. The Property is included within the limits of that fault map. Based upon his interpretation of subsurface data gathered by others for various properties in the area of Century City (including nearby locations in the City of Beverly Hills), Dr. Kenney illustrated three postulated east-west aligned fault segments trending towards, or onto, the northern portion of the Property. Three additional fault segments are shown to extend across the site containing the office complex

of 2000 Avenue of the Stars and the two twin towers at 2029 and 2049 Century Park East, to the south of the Property. The fault map is intended to illustrate only possible fault traces. Dr. Kenney does not suggest that these fault traces are active (i.e. exhibit offsets within the last 11,700 years). However, based on Dr. Kenney's fault map, a supplemental investigation was recently performed by GeoKinetics at the Property to screen for evidence of the fault traces that have been postulated by Dr. Kenney. As confirmed below, and as consistent with the conclusions in GeoKinetics' 2011 Geotechnical Site Investigation Report for the Property, there is no evidence of geologically recent faulting on the Property.

Assessment of Kenney GeoScience Fault Map

The fault traces identified in the Kenney GeoScience fault map are shown in Figure 1, attached. The following three types of data were reportedly utilized to identify these fault traces:

- Apparent vertical offsets in stratigraphic marker beds between borings;
- Apparent offsets in stratigraphic layers indicated by seismic reflection lines; and
- Offset stratigraphic units observed in exploratory trenches.

It should be noted that the excavation and logging of one or more trenches across an area of suspected faulting generally provides the most direct, and therefore the best, means of identifying the presence or absence of faulting - as well as the recency of fault activity, should faulting be present. The use of apparent vertical offsets in stratigraphic layers between borings is often the least reliable analytical method. This is because many other processes, including the deposition of marker beds in non-horizontal (or even non-planer) layers can result in elevation differentials between borings unrelated to faulting. Inclinations and/or vertical offsets in soil layers were recently found to be unrelated to faulting by the California Geological Survey at the Beverly Hills High School site.

Seismic reflection data and interpreted stratigraphic offsets between borings appear to have been relied upon predominately in the Kenney GeoScience map, if not exclusively, to identify the postulated fault traces that are interpreted to exist in the central portion of the study area in the vicinity of the Property. No fault trenches are shown on this portion of the map. A ¼-mile long trench is shown along Century Park West drive in the western study area, along with several trenches in the eastern study area in the vicinity of Beverly Hills High School. The specific data that has been relied upon to map inferred fault traces on, or near, the Property is not identified in the memorandum that accompanies the Kenney GeoScience fault map.

Since the Kenney GeoScience fault map does not include evidence of excavation and logging of trenches across the three postulated fault traces trending towards, or onto, the northern portion of the Property, this analysis was conducted by GeoKinetics as described below.

Field Exploration

Three (3) exploratory trenches (T-1, T-2, and T-3) were delineated at the subject property on November 20, 2013 at the locations shown in Figure 2. Underground Service Alert was notified of the trench locations four days in advance of their proposed excavation (Ticket no. A33240673). As shown in Figure 2, a trench was located across each of the postulated fault traces projected to extend across the Property. The trenches were excavated on November 23, 2013 and subsequently backfilled. The backfilled soils were compacted by means of wheel-rolling with a backhoe. Backfill operations were observed and evaluated on a full-time basis by a senior technician from GeoKinetics.

Each trench measured approximately 30 feet long by 3 feet wide, and varied in depth from approximately 5 to 8 feet below the ground surface. Detailed geologic logging of each trench was performed by a California State Certified Engineering Geologist on November 23 and 24, 2013. The trench logs are presented as Figures 3 through 5. Detailed photographic and video records of each excavation were also made.

Subsurface Conditions:

Fault trench T-1 was excavated along the most southerly postulated fault alignment. The trend of this potential fault segment is approximately N61°E. As shown in Figure 3, the earth materials encountered in trench T-1 included approximately 1 to 3 feet of fill over older alluvium. Three (3) distinct layers were observed in the older alluvium. These included (top to bottom) an upper silty sand layer ranging from 0 to 3.5 feet in thickness, an 18-inch thick silty clay layer, and a lower silty sand layer that extended below the bottom of the trench. No deformation or vertical offsets were observed within or between the layers. A vertically-orientated crack was observed within the upper silty sand layer at approximately the midpoint of the trench. The crack extended from the base of the overlying fill and terminated within the upper portion of the underlying silty clay layer. The crack was observed to be tight and closed with dark discoloration and small rootlets along its length. The crack was not present in the opposite (eastern) wall of the trench or along the floor of the trench. The trend of the crack is N80°W, which is approximately 40 degrees oblique to that of the postulated fault segment. The crack is located near the toe of the slope of the 25 foot deep basin. The most likely source of the crack is low level ground deformation associated with the excavation of that basin. Indications of faulting were not observed in trench T-1.

Fault trench T-2 was excavated along the projection of the middle postulated fault alignment. The trend of this postulated fault segment is approximately N70°E. As shown in Figure 4, the earth materials encountered in trench T-2 included approximately 2 feet of fill over older alluvium. Seven (7) distinct layers were observed in the older alluvium. No deformation or vertical offsets were observed within, or between, these layers. Some minor desiccation cracks were observed within the clayey portions of the older alluvium. The cracks were not vertically continuous across layers, and had variable orientations with no offsets or infilling. Indications of faulting were not observed in trench T-2.

Fault trench T-3 was excavated along the projection of the most northerly postulated fault segment. The trend of this fault segment is approximately N71°E. As shown in Figure 5, the earth materials encountered in trench T-3 included an isolated wedge of fill and topsoil over older alluvium. Three (3)

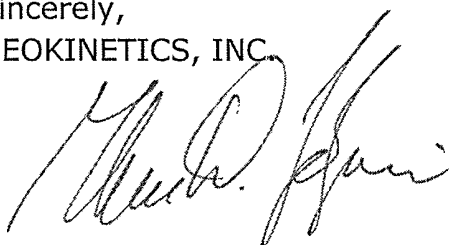
distinct layers were observed in the older alluvium. No deformation or vertical offsets were observed within or between the layers. Indications of faulting were not observed in trench T-3.

Findings:

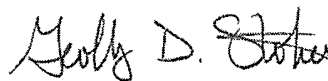
All three test trenches were excavated through near-surface fill soils and topsoil deposits, and into older alluvium. Based upon regional geologic mapping by Dibblee (1991, map symbol Qoa) and compiled geologic mapping by the USGS (2005, map symbol Qof), the older alluvium below the site is believed to be Pleistocene age (older than 11,700 years). Regional geologic conditions are illustrated in Figure 6, based upon published mapping by the USGS. No deformation, shearing, vertical offsets, horizontal offsets, or other potential indications of fault activity were observed in any of the trenches. Based upon the results of this investigation, we conclude geologically recent faulting is not present along the postulated fault traces. Therefore, consistent with the 2011 Geotechnical Site Investigation Report for the Property, there is no evidence of geologically recent faulting on the Property.

We hope this information is helpful to you. Please do not hesitate to contact either of the undersigned if you have questions or require additional information.

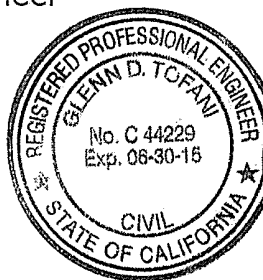
Sincerely,
GEOKINETICS, INC.

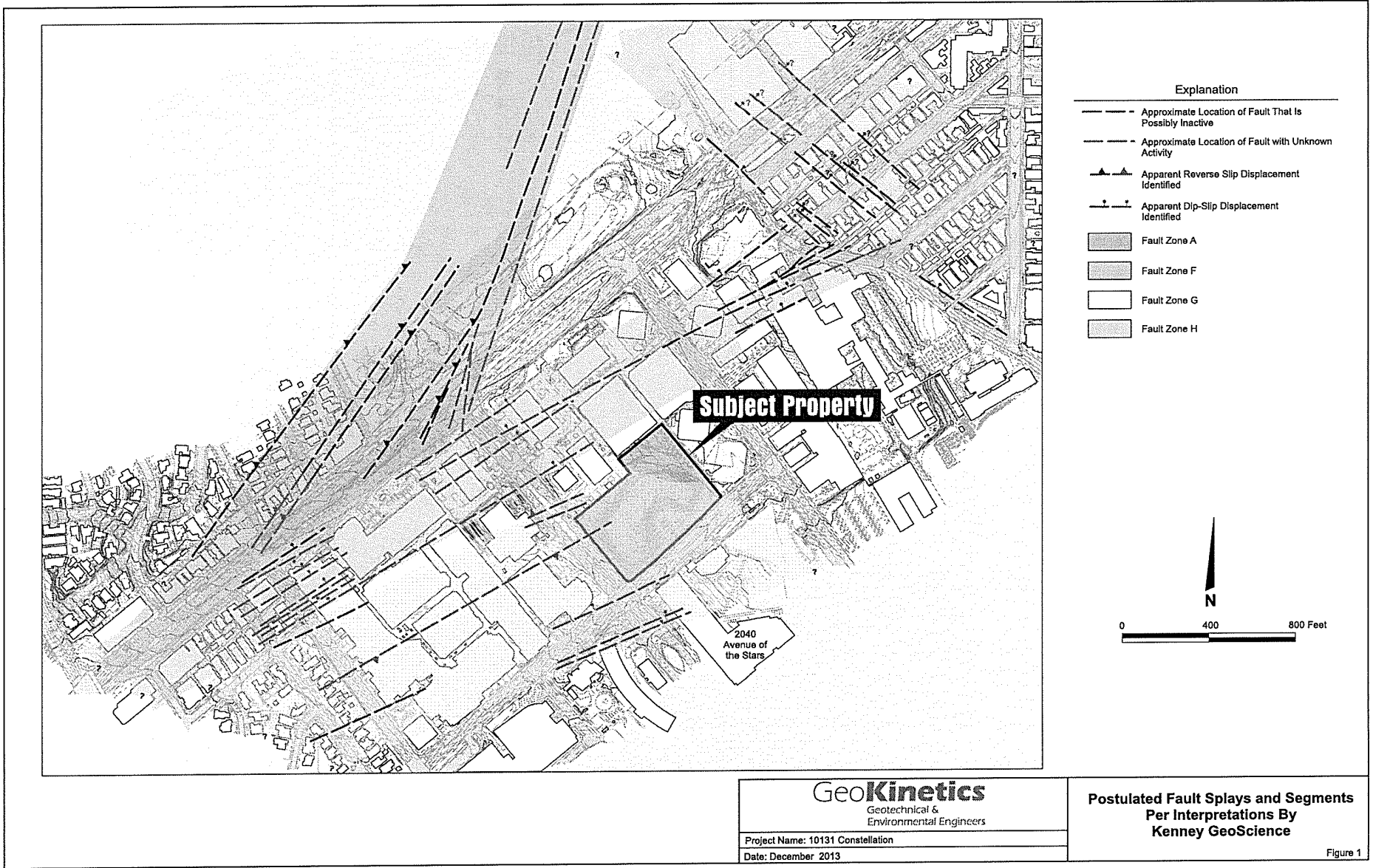


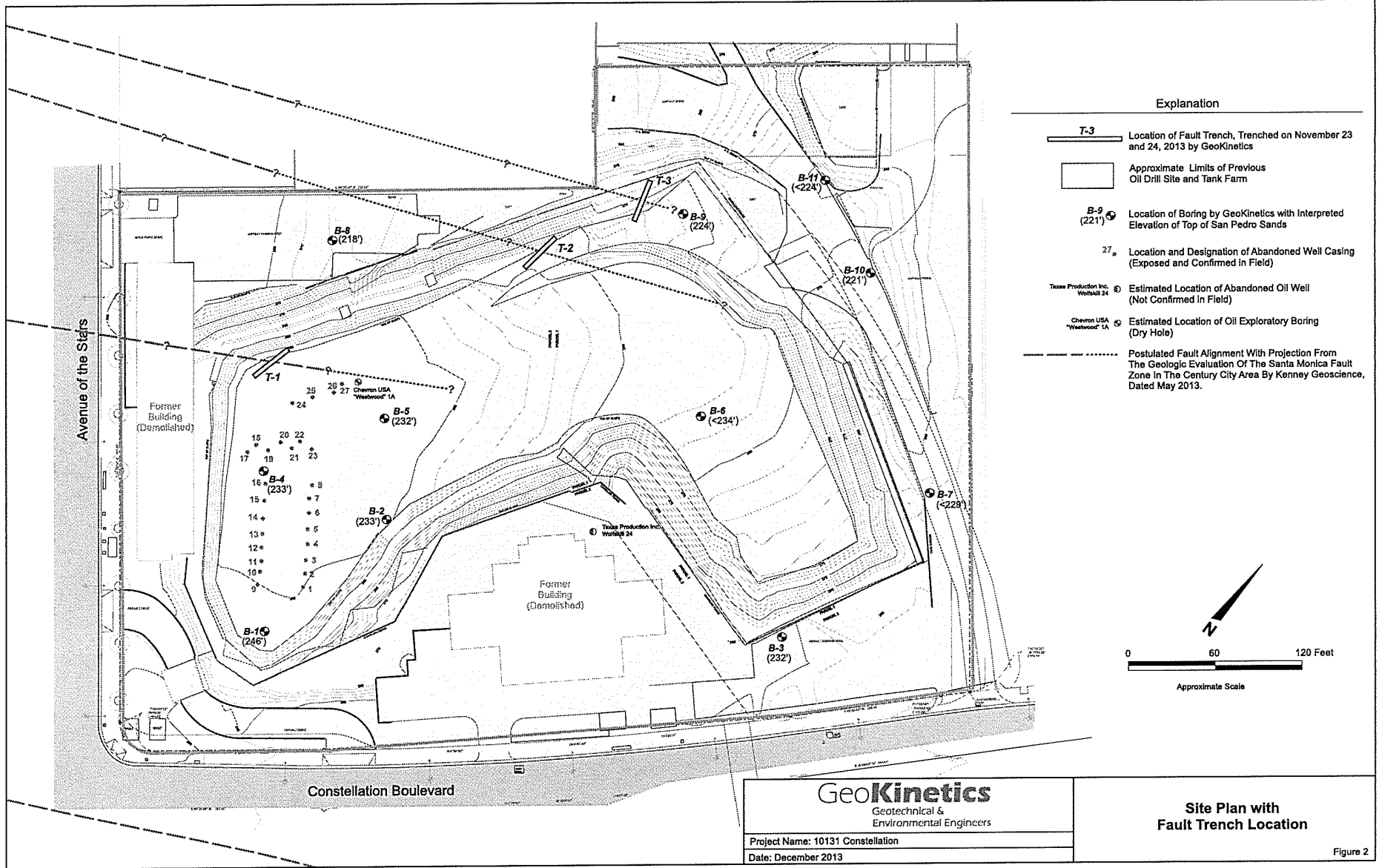
Glenn D. Tofani, GE/RCE
Principal Engineer



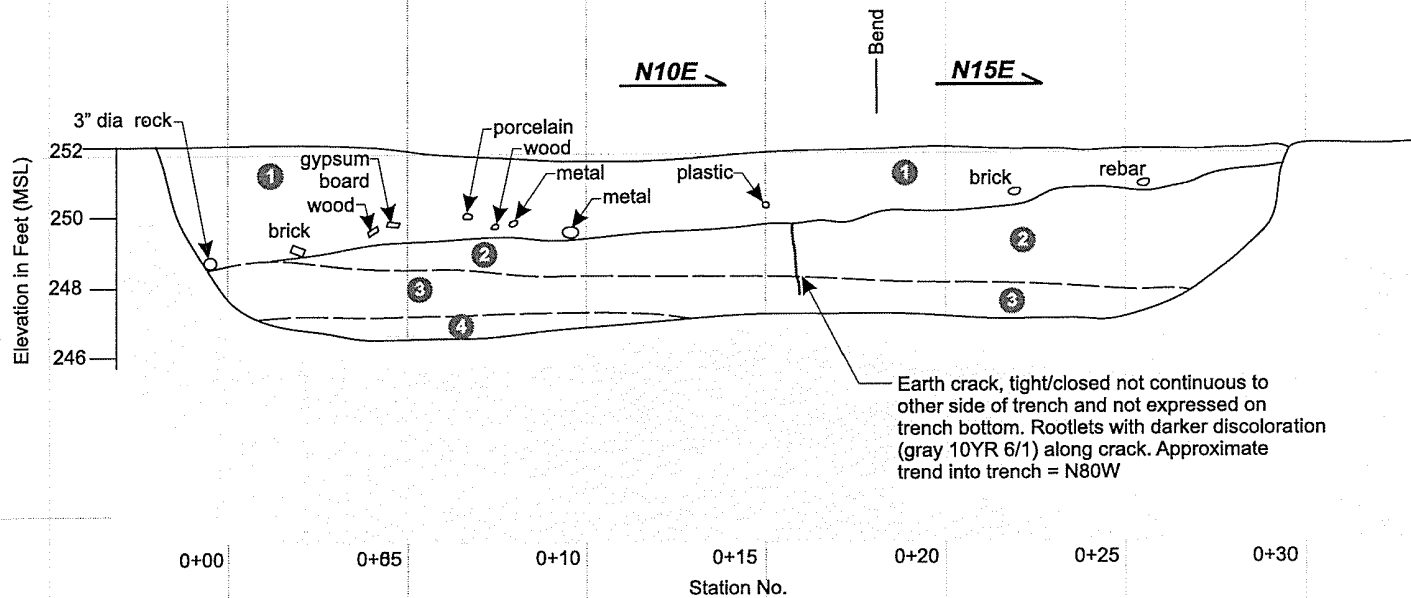
Geoffrey D. Stokes, CEG/PG
Senior Project Geologist







Unit	Description	Unit	Description
①	FILL: Clayey SAND (SC), fine to medium grained, damp to slightly moist, loose to dense, dark grayish brown (10YR 4/2), contains wood and metal debris.	③	Silty CLAY (CL), trace fine-grained sand, moist, stiff, grayish brown (10YR 5/2) with specs less than 1mm diameter, dark brown (10YR 3/3), less than 3%, moderately developed soil texture, rootlets along texture partings.
②	Older Alluvium: Silty SAND (SM), trace clay, fine grained, moist, dense, mottled with gray (10YR 6/1) yellowish brown, (10YR 5/6), moderately developed soil texture, rootlets along texture partings.	④	Silty SAND (SM), fine grained, trace clay, moist, dense, yellowish brown (10YR 5/6)



Preliminary
Subject to Revision

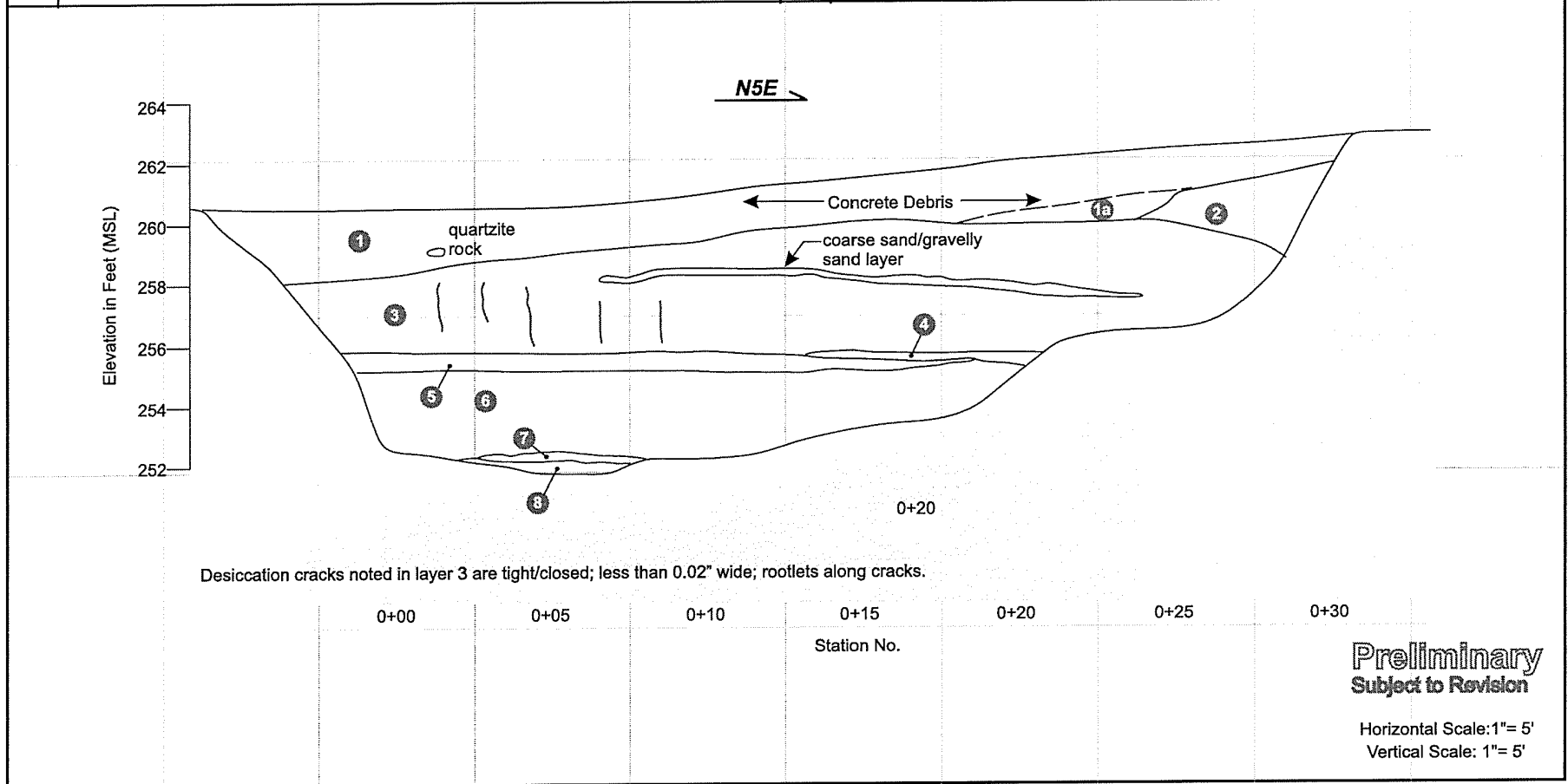
Horizontal Scale: 1" = 5'
Vertical Scale: 1" = 5'

Figure 3 - Log for Trench T-1

Confidential

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Unit	Description	Unit	Description
①	Fill: Silty SAND (SM), fine to medium grained, dry to damp, loose to locally dense, brown (10YR 5/3), abundant concrete debris, abundant roots.	⑤	Sandy GRAVEL (GW), medium to coarse grained sand; fine gravel, damp, dense, dark yellowish brown (10YR 3/6)
①a	Fill: Gravelly SAND (SW), fine to medium grained, dry to damp, dense, reddish brown (5YR 4/4) and brown (10YR 5/3).	⑥	Silty SAND (SM), fine grained, moist, dense, mottled gray (10YR 5/1) and yellowish brown (10YR 5/6)
②	Older Alluvium: Sandy GRAVEL (GW), medium to coarse grained sand, fine gravel, damp, dense, dark gray (5YR 4/1) and reddish brown (5YR 4/4), pseudo stratified with apparent 5 degree inclination to the north.	⑦	SAND (SW), fine to coarse grained, trace fine gravel, moist, dense, dark grayish brown (10YR 4/2)
③	Silty SAND (SM/SC) with clay binder, fine grained, damp, dense, very pale brown (10YR 7/3) on dry surface to dark grayish brown (10YR 4/2), moderately developed soil texture, rootlets along texture partings.	⑧	Silty CLAY (CL), moist, firm, mottled gray (10YR 5/1) and yellowish brown (10YR 5/6)
④	CLAY (CL), moist, firm, grayish brown (10YR 5/2).		

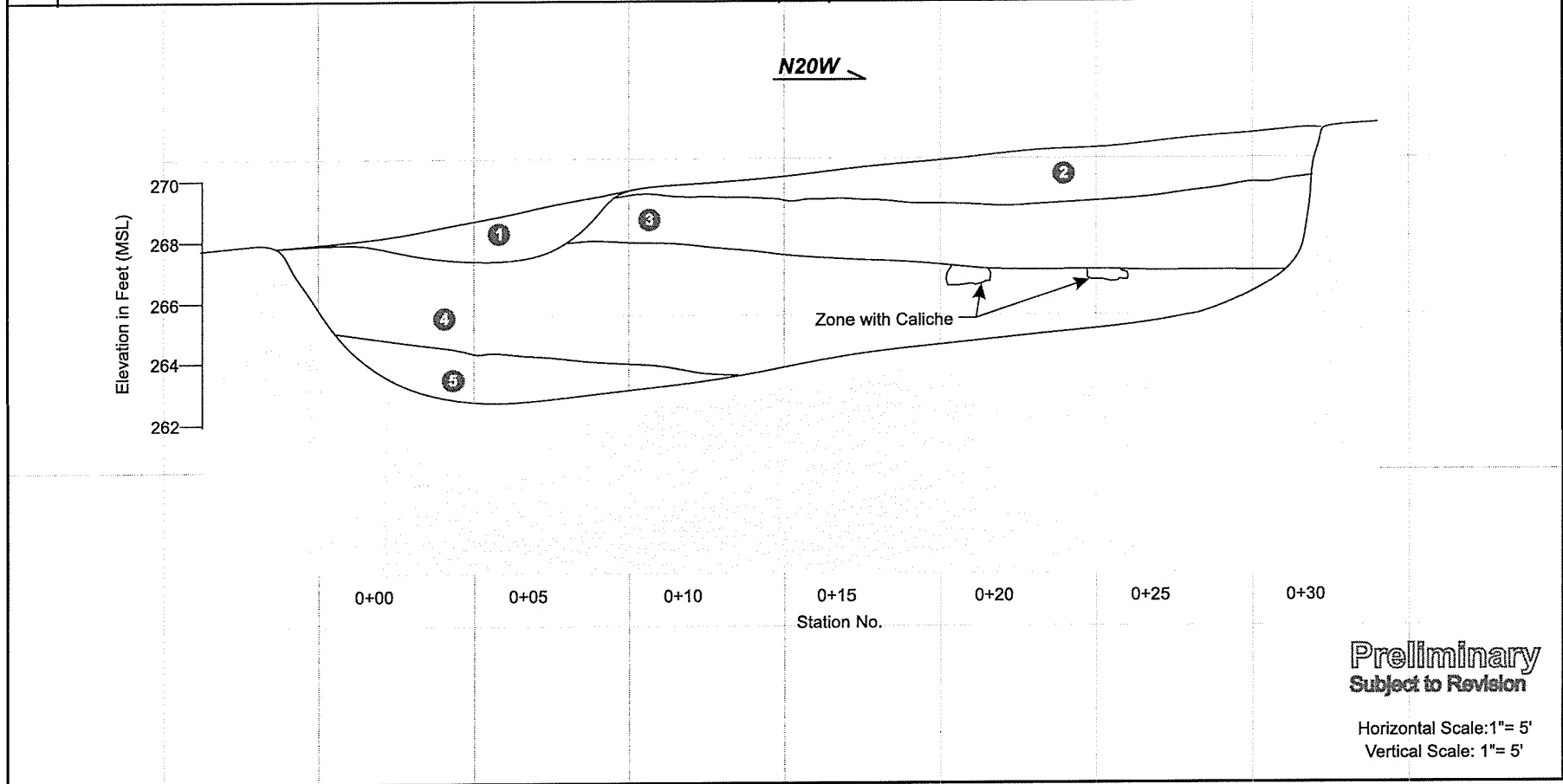


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Figure 4 - Log for Trench T-2

Unit	Description	Unit	Description
①	FILL: Silty SAND (SM), fine to medium grained, some rounded gravel, dry, loose, brown (10YR 5/3), contains, abundant roots.	④	Clayey SAND (SC) with gravel; fine to medium grained sand; medium to coarse angular gravel (dark gray slate rock fragments predominate), damp, dense, reddish brown (5YR 4/4).
②	Topsoil: Silty SAND (SM), fine grained, trace clay, dry, dense; light brownish gray (10YR 6/2), porous, some rootlets.	⑤	Silty SAND (SM) with clay binder, fine grained, damp, dense, dark yellowish brown (10YR 4/4), trace gravel, slightly porous.
③	Older Alluvium: Clayey SAND (SC) to Sandy CLAY (CL), fine grained sand, moist, dense/stiff, dark brown (7.5YR 3/2), some dessication cracks, some rootlets, pinhole porosity.		



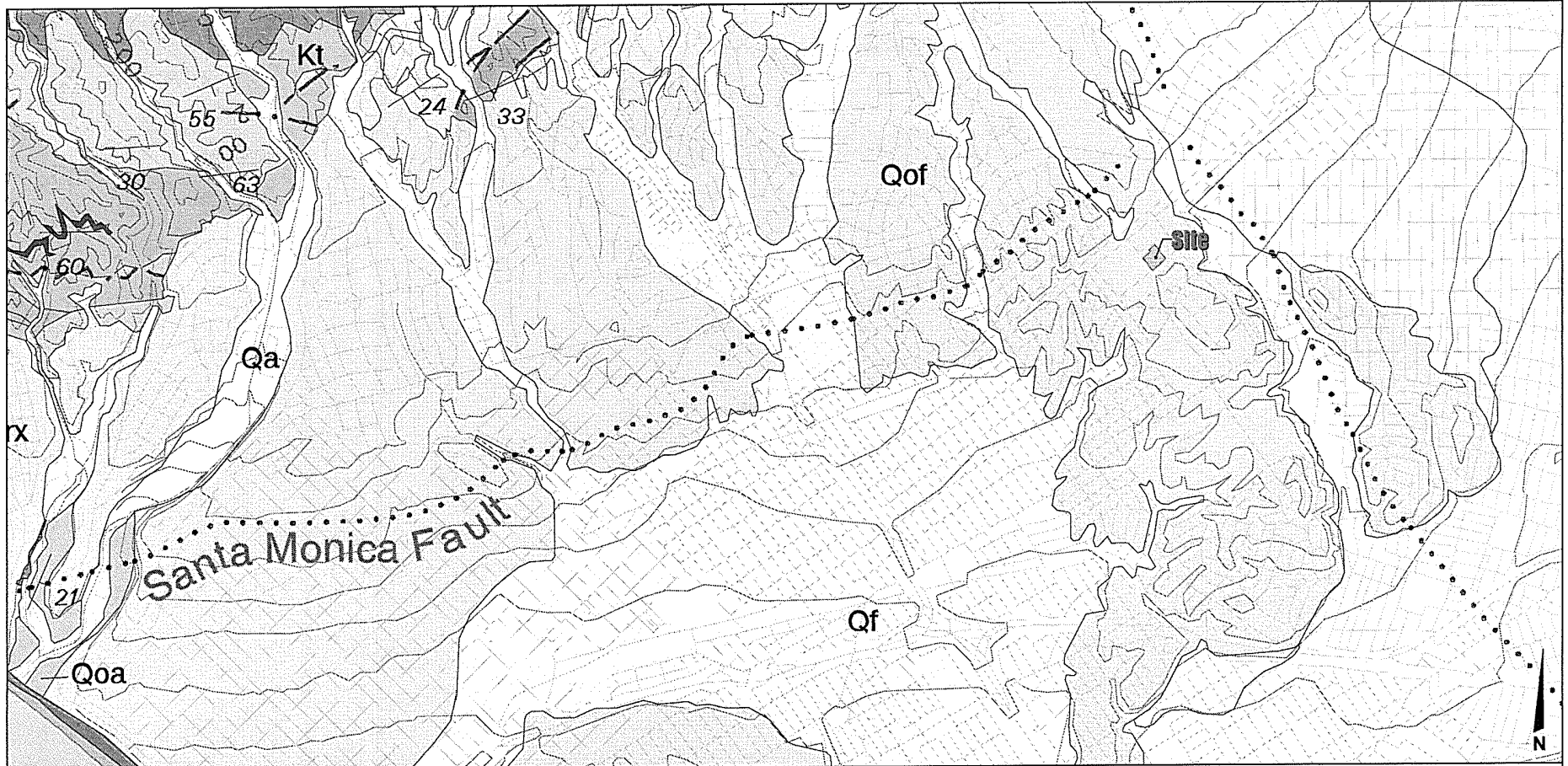
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Horizontal Scale: 1"= 5'
Vertical Scale: 1"= 5'

Figure 5 - Log for Trench T-3

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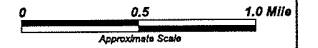
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Note: Base Map by USGS, Preliminary Geologic Map of Los Angeles 30'x60' Quadrangle, Southern California, Version 1.0, 2005

Legend

Qof Old alluvial-fan deposits, undivided (late to middle Pleistocene)—Slightly to moderately consolidated silt, sand and gravel deposits on alluvial fans; surfaces dissected in varying degrees; surfaces can show moderately to well-developed pedogenic soils



GeoKinetics
 Geotechnical &
 Environmental Engineers

Project Name: 10131 Constellation

Date: December 2013

Regional Geologic Map

Figure 6