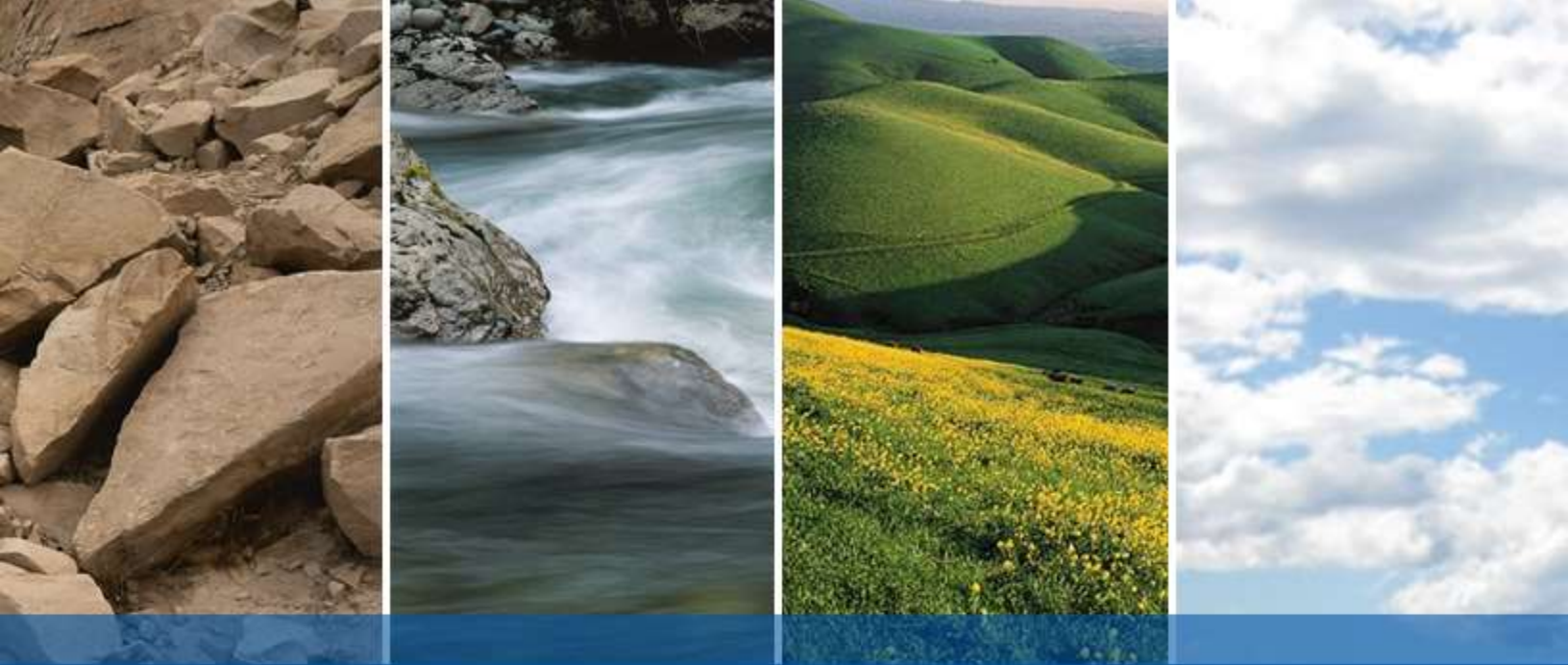


Lowes Hollister Hollister, California  
Primary Geotechnical Exploration

E  
APPENDIX





**LOWES HOLLISTER**  
HOLLISTER, CALIFORNIA

**PRELIMINARY GEOTECHNICAL EXPLORATION**

**SUBMITTED TO**  
Mr. Paul Manyisha  
MLC Holdings, LLC  
2603 Camino Ramon, Suite 140  
San Ramon, CA 94583

**PREPARED BY**  
ENGEO Incorporated

June 3, 2021

**PROJECT NO.**  
18247.000.001

Project No.  
**18247.000.001**

June 3, 2021

Mr. Paul Manyisha  
MLC Holdings, LLC  
2603 Camino Ramon, Suite 140  
San Ramon, CA 94583

Subject: Lowes Hollister  
Hollister, California

## PRELIMINARY GEOTECHNICAL EXPLORATION

Dear Mr. Manyisha:

We are pleased to present this preliminary geotechnical exploration for your proposed residential project in Hollister, California. The accompanying report presents our findings and preliminary conclusions and recommendations regarding the proposed development.

It is our opinion from a geotechnical viewpoint that the site is suitable for the proposed development provided the preliminary conclusions and recommendations presented in this report are included in project planning, design and construction. A design-level geotechnical exploration will be required to refine the geotechnical hazards identified in this report and to develop geotechnical parameters for grading plan preparation and foundation design.

We are pleased to have been of service on this project and are prepared to consult further with you and your design team as the project progresses. If you have any questions or comments regarding this preliminary report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated



Stephen M. Brard



Steve Harris, GE



Jonas F. Bauer, PE  
smb/jb/sh/dt

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## 1.0 INTRODUCTION

### 1.1 PURPOSE AND SCOPE

We prepared this preliminary geotechnical report for the proposed residential development in Hollister, California. As outlined in our executed agreement dated January 19, 2021, MLC Holdings LLC authorized us to perform the following scope of services.

- Reviewing relevant background information, including available literature, published geologic maps, and available geotechnical reports pertinent to the site.
- Conducting five cone penetration test (CPT) probes at the site.
- Performing preliminary analysis of collected subsurface data
- Preparing this report summarizing our preliminary conclusions and recommendations for planning purposes.

At this time, the five cone penetration tests have not been performed. We prepared this report for the exclusive use of MLC Holdings, LLC and its consultants for the project. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

### 1.2 SITE LOCATION

The site incorporates approximately 12¾ acres within a currently undeveloped lot that is located southwest of the intersections at Meridian Avenue and Airport Highway in Hollister California.

As shown in Exhibit 1.2-1, the overall site incorporates four adjacent parcels; however, we prepared this report to address proposed development at assessor parcel number 0546000050. The site is bounded by residential development to the west, and undeveloped parcels on the north, east, and south perimeter. The site area is further bounded by Meridian Street to the north and Pinnacle national Park Highway to the west. The site includes a private right-of-way easement near the north perimeter. This easement extends to Meridian Street and is designated for ingress and egress drainage and utilities.

**EXHIBIT 1.2-1: Site Boundary**



### 1.3 PROPOSED DEVELOPMENT

We were provided a conceptual-level Site Plan prepared by MH Engineering, dated September 11, 2020. Based on our review of plans, we understand the proposed residential development will include construction of approximately 83 single-family dwellings and four multi-family units. We anticipate that the proposed buildings will be supported at-grade. Proposed

development also includes the construction of site improvements consisting of asphalt-paved parking areas and underground utilities.

## **2.0 FINDINGS**

### **2.1 AERIAL PHOTOGRAPH REVIEW**

We reviewed historical aerial photographs for information regarding the site conditions. We reviewed available aerial photographs for the years 1953, 1971, 1981, 1998, 2005, 2009, 2010, 2012, 2014, and 2016.

The 1953 through 1981 photographs show that the area encompassing the site was primarily used for agricultural purposes, with orchards visible within the future site boundary. The 1998 photograph shows that most of the orchards within the site area were removed and a portion of the future site area has been graded. Residential development is visible to the west and north of the site, in addition to Meridian Street. The 2005 photograph shows that the majority of the site area had been cleared of previous orchards, and a temporary storage area is visible near the east-central portion of the future site area. The 2009 photograph shows the remainder of the orchards at the overall lot, and the temporary storage area had been removed. Between the 2005 and 2016 photographs, the site conditions appear relatively unchanged. During our site visit on May 13, 2021, we observed that the site conditions have remained relatively unchanged compared to the conditions shown in the 2016 aerial photograph.

### **2.2 PREVIOUS GEOTECHNICAL STUDIES AND AVAILABLE DOCUMENTS**

We briefly summarize the documents provided to us and subsurface explorations conducted in the published geotechnical reports.

#### **2.2.1 Kleinfelder (2007)**

Kleinfelder conducted a geotechnical study at the subject site and published their findings in the report titled “Geotechnical Services Report – Proposed Lowe’s of Hollister”, dated April 16, 2007. The purpose of the study was to provide geotechnical conclusions and recommendations for a proposed warehouse at the site. The study included seven cone penetrometer tests (CPT), 21 soil borings, one profile hole, and four percolation tests. The approximate location of the subsurface exploration and percolation tests are shown in Figure 2, Site Plan; the exploration logs are included in Appendix A.

#### **2.2.2 Kelley Engineering & Surveying (2017)**

Kelley Engineering & Surveying (Kelley) performed a land title survey at the site in 2007, and published a land parcel map showing existing topography, identified utilities, and legal property limits in the plan set titled “A.L.T.A./N.S.P.S. Land Title Survey, Survey for Lowe’s HIW Inc.”, with an issue date of July 7, 2007.

## **2.3 SURFACE CONDITIONS**

As previously discussed, the site has remained undeveloped and primarily consisted of historic agricultural land usage. At this time, the surface conditions generally consisted of undeveloped agricultural land consisting of dry desiccated surface soil and light vegetation. Based on our

review of the 2007 site survey (Kelley), the topography of the site can generally be characterized as relatively level to gently sloping and ranges from Elevation 287 to 290 feet (NGVD29). Based on our observations during the site visit, the site topography has remained relatively unchanged since 2007.

## 2.4 GEOLOGY

### 2.4.1 Regional Geologic Setting

The site is located within the Hollister Valley, which is situated between the Diablo Range to the east, and the Gabilian Range and Santa Cruz mountains to the west. According to published maps by Dibblee (2006) the site is underlain by Holocene-age surficial alluvium (Qa) deposits, consisting of alluvial gravel, sand, and clay of valley areas. Similar published maps by Graymer et al (2006) indicate that the site is underlain by Pleistocene-age alluvium (Qpa) deposits.

## 2.5 FAULTING AND SEISMICITY

The Hollister area is situated within a region that is characterized by numerous splays of active fault traces, and relatively high seismicity. The Special Studies Zone map for the Hollister Quadrangle (1982, Department of Conservation) indicates the site is not mapped within a designated Alquist-Priolo Earthquake Fault Zone, as shown in Figure 6, Earthquake Fault Zone Map. The California Geological Survey (CGS) defines an active fault as one that has experienced surface displacement within Holocene time (about the last 11,000 years) (SP42 CGS, 2018). The Hayward fault displays evidence of fault creep (offset curbs, in echelon cracks within pavements, etc.) along various segments.

Numerous small earthquakes occur every year in the region, and large (greater than Moment Magnitude 7) earthquakes have been recorded and can be expected to occur in the future. Figure 4 shows the approximate location of active and potentially active faults and significant historic earthquake epicenters mapped within the San Francisco Bay Region. Based on the 2014 update of the national seismic hazards maps, the table below shows nearby known active faults capable of producing significant ground shaking at the site.

**TABLE 2.5-1: Known Active Faults Capable of Producing Significant Ground Shaking at the Site**

FAULT NAME	DISTANCE FROM SITE (MILES)	MAXIMUM MOMENT MAGNITUDE (ELLSWORTH)
Calaveras	0.78	7.1
Quien Sabe	4.27	6.6
Zayante-Vergeles	5.65	7.0
North San Andreas	5.87	7.9

The Uniform California Earthquake Rupture Forecast (UCERF3, 2014) evaluated the 30-year probability of a Moment Magnitude 6.7 or greater earthquake occurring on the known active fault systems in the Bay Area, including the Hayward and Calaveras faults. The UCERF generated an overall probability of 72 percent for the Bay Area as a whole, a probability of 18 percent for the Hayward fault, 7.4 percent for the Calaveras fault, 6.4 for the Northern San Andreas fault, and 3.5 percent for the Concord-Green Valley fault.

## 2.6 SUBSURFACE CONDITIONS

Based on the results of the previous subsurface explorations, the subsurface conditions consist of stiff to hard clay and sandy clay to depths up to 35 feet bgs, with discontinuous soft layers encountered in the upper 5 feet. Beneath this fine-grained soil, the explorations encountered loose to dense clayey and silty sand, and medium stiff to very stiff sandy and silty clay to depths up to 40 feet bgs. The explorations encountered this fine- and coarse-grained soil to depths of approximately 40 feet bgs, where well-graded gravel with silt was encountered to the maximum depths explored of 51½ feet bgs. Beneath this layer, the explorations encountered well-graded gravel with silt and sand that extended to the maximum depth explored of 51½ feet bgs.

## 2.7 GROUNDWATER CONDITIONS

Groundwater was not encountered within the upper 25 feet in the previous geotechnical explorations. Our review of groundwater data also included publically available resources, including well data compiled by the California State Resources Control Board – Geotracker, and the San Benito County Water District Annual Ground Water published by Todd Groundwater in 2018. The Geotracker GIS portal records water level measurements. The findings from the publically available resources indicated that groundwater generally ranges between 45 feet to 80 feet below ground surface.

Fluctuations in groundwater levels should be expected during seasonal changes or over a period of years because of precipitation changes, perched zones, and changes in irrigation and drainage patterns.

## 3.0 PRELIMINARY CONCLUSIONS

It is our opinion from a geotechnical viewpoint that the site is suitable for the proposed development provided the preliminary conclusions and recommendations presented in this report are included in project planning, design and construction. The primary geological and geotechnical concerns at the site include presence of potentially expansive soil and site seismicity. We summarize our preliminary conclusions below.

### 3.1 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting and liquefaction. Common secondary seismic hazards include ground shaking, liquefaction, and lateral spreading. The following sections present a discussion of these and other hazards as they apply to the site. Based on topographic and lithologic data, the risk of regional subsidence or uplift, lurching, or landslides, is considered low to negligible at the site.

#### 3.1.1 Ground Rupture

Since there are no known active faults that transverse the site, and the site is not located within an Alquist-Priolo Earthquake Fault Study Zone, it is our opinion that the risk of ground rupture is low.

### 3.1.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the Bay Region could cause considerable ground shaking at the site, similar to that which has occurred in the past. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead and live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the actual forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996). California Building Code (CBC, 2019) seismic design parameters are presented later in this report.

### 3.1.3 Liquefaction

For liquefaction-induced ground failure to occur, the pore water pressure generated within the liquefied strata must exert a force sufficient to break through the overlying soil and vent to the surface, resulting in sand boils or fissures. Based on the preliminary findings including the depth of potentially liquefiable layers, and thickness of overlying “capping” material, it is our opinion that the risk of surface venting during a seismic event to be low to negligible. Due to the depth to groundwater, it is also our opinion that liquefaction induced settlement at the site should be considered negligible.

### 3.1.4 Lateral Spreading

Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction) that causes the overlying soil mass to move toward a free face or down a gentle slope. Generally, the effects of lateral spreading are most significant at the free face or the crest of a slope and diminish with distance from the slope. Based on the depth to groundwater, relatively flat topography, and distance to an open face, it is our opinion that the potential for lateral spreading is negligible.

## 3.2 LOOSE AND COMPRESSIBLE SOIL

As discussed, the site has been primarily used for agricultural purposes. Due to this past usage, the upper 1 foot of site soil may be disturbed and loose from seasonal tilling during agricultural operations. As a result, this upper disturbed soil layer may be subject to settlement that is not easily characterized, if the area is to receive additional fill or improvements. The most common method of mitigating the potential impacts of loose soil is to rework the upper soil to a competent firm base, as determined by a representative of our firm, and reconstruct with engineered fill. We provide preliminary grading recommendations in Section 4.1

## 3.3 EXPANSIVE SOIL

To evaluate the potential for expansive soil behavior, we reviewed available laboratory data from previous studies. The laboratory results from the 2007 study show PIs range from 28 to 39, indicating the near-surface soil may exhibit high expansive behavior.

Expansive soil changes in volume with changes in moisture, and may shrink or swell, causing heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Potential damage caused by volume changes associated with expansive soil may be reduced by incorporating a rigid foundation that can tolerate differential settlement beneath the foundation or by constructing a building pad with non- to low-expansive soil to reduce volume change beneath interior slab-on-grade elements. We present preliminary foundation recommendations in Section 4.3.

## 4.0 PRELIMINARY RECOMMENDATIONS

We present the following recommendations based on the current site conditions and our experience at similar projects nearby.

### 4.1 EARTHWORK

Site development should commence with the removal and reworking of loose and disturbed soil from previous agricultural activities. As previously discussed, near-surface soil has likely been seasonably tilled and we recommend processing the upper 12 inches in agricultural areas. The base of the excavations should be processed, moisture conditioned, and as needed, compacted in accordance with the fill placement recommendations in Table 4.1-1.

Once a suitable base is achieved, the exposed non-yielding native surface should be scarified to a depth of 10 inches, moisture conditioned, and recompact to provide adequate bonding with the initial lift of fill. All fill should be placed in thin lifts, with the lift thickness not exceeding 10 inches or the depth of penetration of the compaction equipment used, whichever is less.

**TABLE 4.1-1: Preliminary Fill Placement Requirements**

MATERIALS		FILL LOCATION	MINIMUM RELATIVE COMPACTION (%)	MINIMUM MOISTURE CONTENT (PERCENTAGE POINTS ABOVE OPTIMUM)
Expansive	PI $\geq$ 15	General Fill	90	3
		General Fill	90	0
Low-Expansive	PI < 15	Upper 6 inches in Pavement Areas	95	1

Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material.

### 4.2 BIORETENTION IMPROVEMENTS CONSIDERATIONS

During the 2007 study, four percolation tests were performed at locations west of the site boundary. The test results indicated that relatively high infiltration rates may be expected; however, as the near surface-surface soil are highly expansive, we recommend greatly restricting the amount of surface water infiltration near structures, pavements, flatwork, and slabs-on-grade. If bioretention area are incorporated in design, the infiltration features should be planned a minimum 5 feet away from the above-mentioned surface improvements. When this setback distance is not practical, at a minimum the designer of infiltration improvements may consider the following:

1. Incorporate structural side walls capable of withstanding the loads from the adjacent improvements, or
2. Incorporate filter material compacted to between 85 and 90 percent relative compaction (ASTM D1557, latest edition) and a waterproofing system designed to reduce the potential for moisture transmission into the subgrade soil beneath the adjacent improvement.

We recommend that bioretention design incorporate a waterproofing system lining the bioswale excavation and a subdrain, or other storm drain system, to collect and convey water to an approved outlet. The waterproofing system should cover the bioretention area excavation in such a manner as to reduce the potential for moisture transmission beneath adjacent improvements.

### 4.3 PRELIMINARY FOUNDATION CONSIDERATIONS

For planning purposes, the main geotechnical consideration for foundations is (1) potentially expansive soil that may exhibit shrink and swell behavior with fluctuations in moisture change, and (2) site seismicity. The foundations should be designed for total static settlement of ½ inch. We provide foundation alternatives below.

#### Post-Tensioned Mat Foundations

Post-tensioned (PT) mat foundations may be considered suitable to support the proposed residential buildings. Typically, PT mats are capable of supporting maximum dead-plus-live load bearing pressure on the order of 1,000 psf. This value can generally be increased by one-third for the short-term effects of wind and seismic loading.

As discussed in Section 3.3, additional soil samples should be obtained during the design-level study to determine the expansion potential of near-surface soil to develop PT foundation design criteria. The design-level study should also further refine the allowable bearing capacity for the PT mat system. Due to the expansiveness of the site soils, we anticipate that the PT mats will be on the order of 10" thick with a 2" thickened edge.

If vapor migration through the slab from below is not desired, a plastic, vapor retarder should be installed beneath the concrete. The vapor retarder under slabs should meet ASTM E 1745 – 97 Class A requirements for water vapor permeance, tensile strength, and puncture resistance. A 4-inch-thick layer of moderately compacted crushed rock (capillary break) should be placed below the slab on prepared subgrade. Frequent control joints should be provided to control cracking as recommended by the American Concrete Institute.

### 5.0 FUTURE STUDIES

This report presents our preliminary geotechnical findings, conclusions and recommendations intended for planning purposes only. To support future proposed development, a design-level geotechnical exploration and assessment should be performed when development plans are available. The design-level geotechnical report should further discuss topics presented in this report and update the recommendations and recommendations presented in this report.

## 6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents our preliminary geotechnical exploration for the site discussed in Section 1.2. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted principles and practices currently employed in the area; there is no warranty, either express or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

Our services did not include excavation sloping or shoring, soil volume change factors, or flood potential. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, the proper regulatory officials should be notified immediately.

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## **FIGURES**

**FIGURE 1: Vicinity Map**

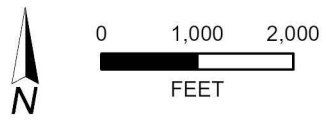
**FIGURE 2: Site Plan**

**FIGURE 3: Regional Geologic Map (Dibblee, 2006)**

**FIGURE 4: Regional Faulting and Seismicity**

**FIGURE 5: Liquefaction Potential Map**

**FIGURE 6: Seismic Hazards Zone Map**



BASEMAP SOURCE: ESRI MAPPING SERVICE 8/29/2020



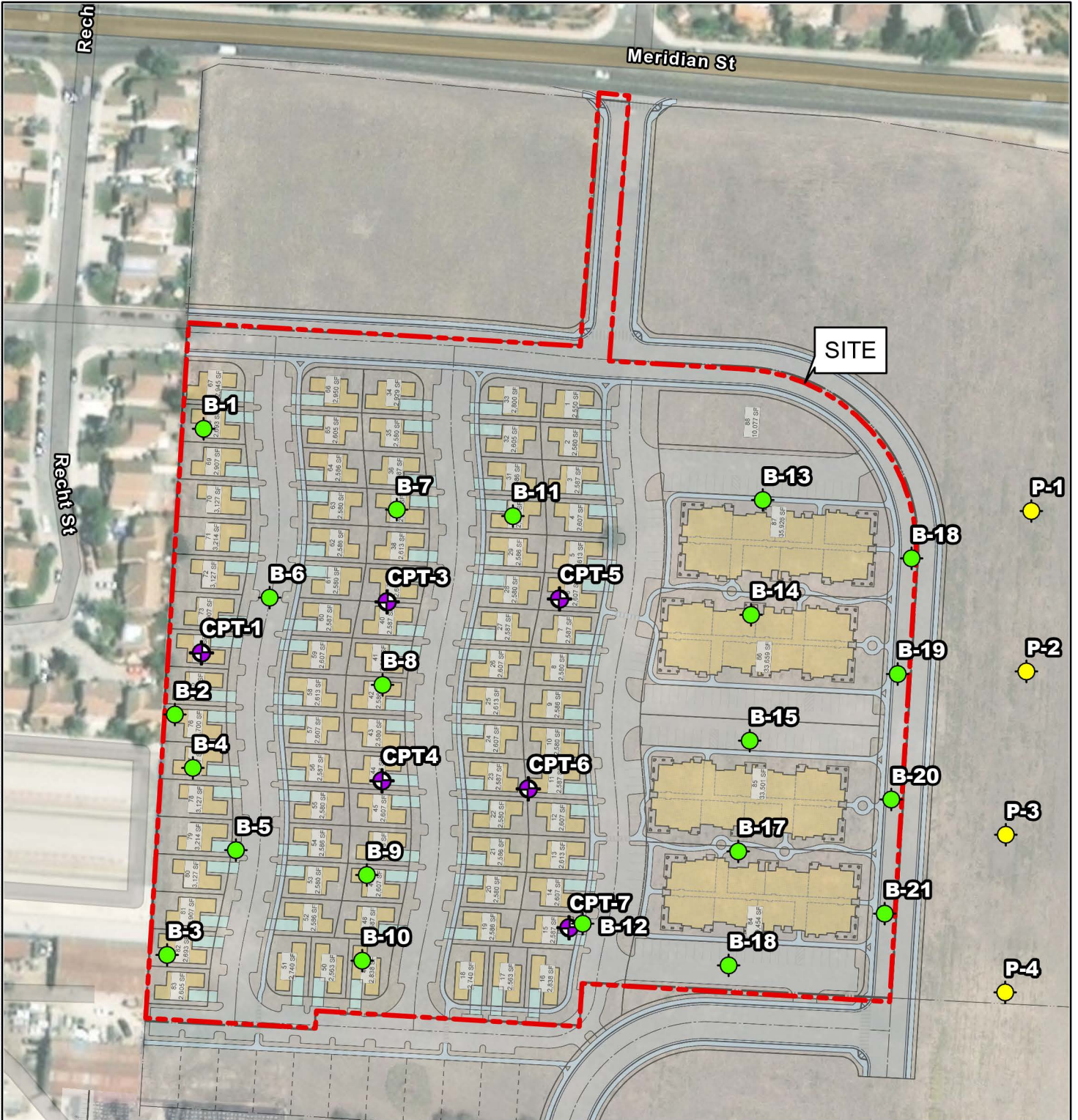
VICINITY MAP  
LOWES HOLLISTER  
HOLLISTER, CALIFORNIA

PROJECT NO. :	18247.000.001
SCALE:	AS SHOWN
DRAWN BY: JV	CHECKED BY: SDH

FIGURE NO.  
**1**




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### EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

-  CONE PENETRATION TEST (KLEINFELDER, 2007)
-  PERCOLATION TEST (KLEINFELDER, 2007)
-  SOIL BORING (KLEINFELDER, 2007)

BASEMAP SOURCE: ESRI MAPPING SERVICE 8/29/2020 AND MH ENGINEERING CO, 2020



**SITE PLAN**  
 LOWES HOLLISTER  
 HOLLISTER, CALIFORNIA

PROJECT NO. : 18247.000.001

SCALE: AS SHOWN

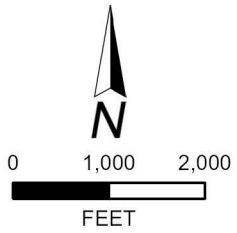
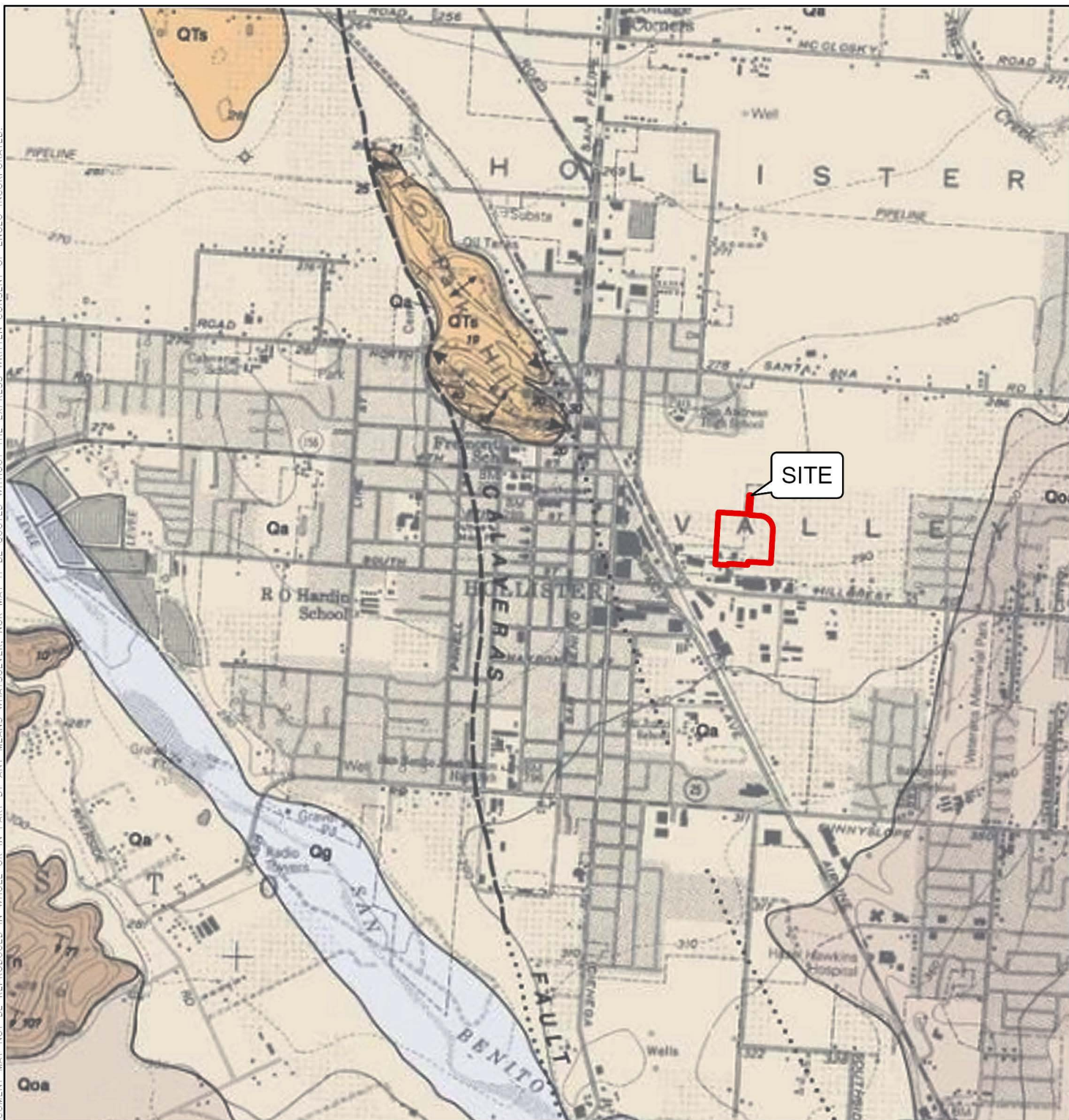
DRAWN BY: JV

CHECKED BY: SDH

FIGURE NO.

2

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**EXPLANATION**

- ALL LOCATIONS ARE APPROXIMATE
- Qa** ALLUVIAL PEBBLE GRAVEL, SAND AND CLAY OF VALLEY AREAS
  - Qg** ALLUVIAL GRAVEL AND SAND OF STREAM CHANNELS
  - Qoa** OLDER ALLUVIAL TERRACE GRAVEL AND SAND
  - Qts** PEBBLE GRAVEL/CONGLOMERATE, SANDSTONE AND CLAY

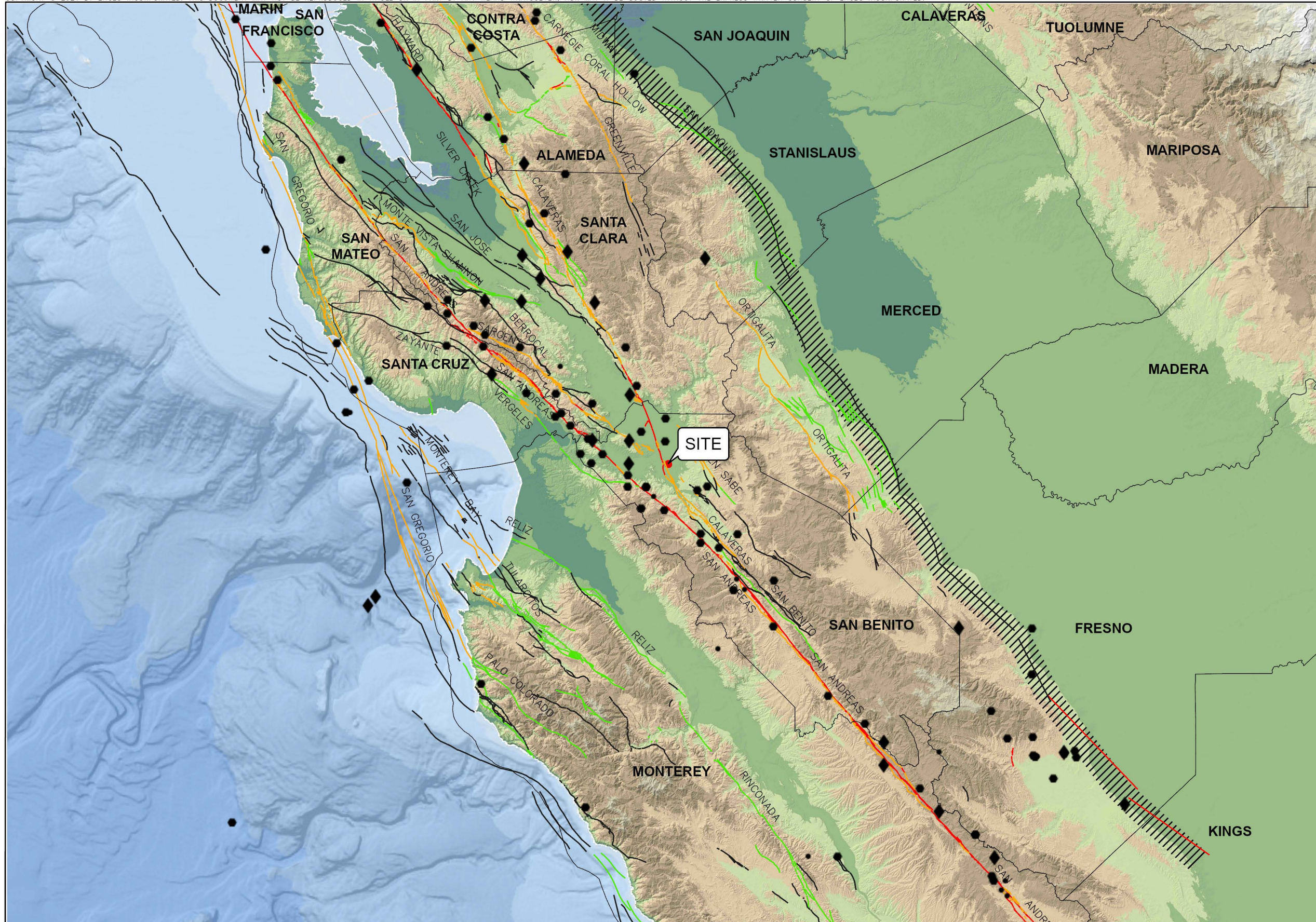
BASEMAP SOURCE: DIBBLEE, 2006



REGIONAL GEOLOGIC MAP  
LOWES HOLLISTER  
HOLLISTER, CALIFORNIA

PROJECT NO. :	18247.000.001
SCALE:	AS SHOWN
DRAWN BY: JV	CHECKED BY: SDH

FIGURE NO.  
**3**



**EXPLANATION**

ALL LOCATIONS ARE APPROXIMATE

- EARTHQUAKE**
- ◆ MAGNITUDE 7+
  - MAGNITUDE 6-7
  - MAGNITUDE 5-6

- USGS QUATERNARY FAULTS**
- HISTORICAL (<150 YEARS)
  - LATEST QUATERNARY (<15,000 YEARS)
  - LATE QUATERNARY (<130,000 YEARS)
  - UNDIFFERENTIATED QUATERNARY (<1.6 MILLION YEARS)
  - ▨ HISTORIC BLIND THRUST FAULT ZONE

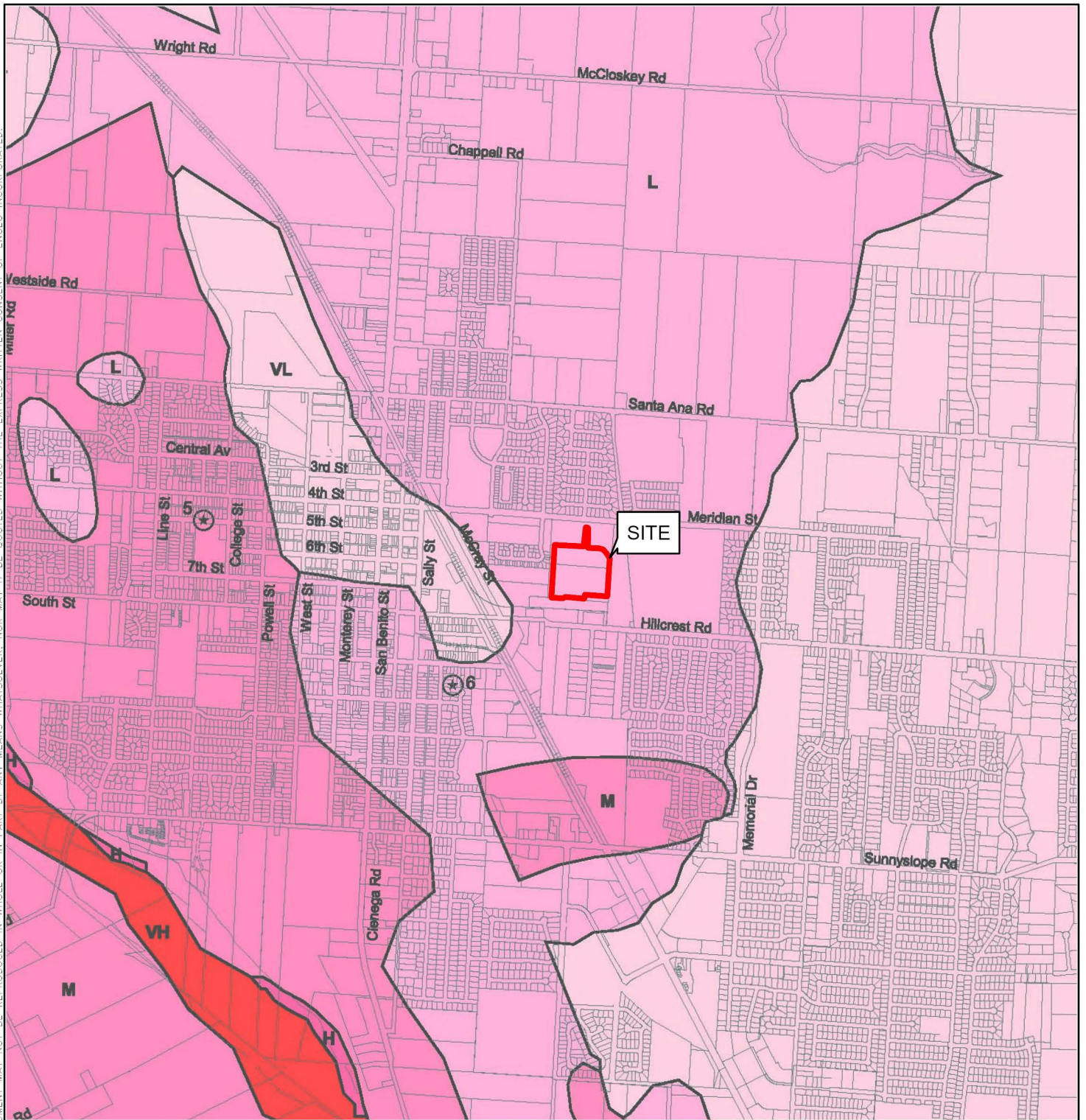
BASE MAP SOURCE  
 ESRI, GEBCO, DELORME, NATURALVUE  
 COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION  
 U.S.G.S. QUATERNARY FAULT DATABASE, 2018  
 U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800-PRESENT)



**REGIONAL FAULTING AND SEISMICITY**  
 LOWES HOLLISTER  
 HOLLISTER, CALIFORNIA

PROJECT NO. : 18247.000.001	FIGURE NO.
SCALE: AS SHOWN	<b>4</b>
DRAWN BY:JV	

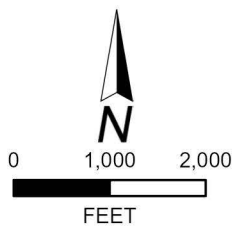
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### EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- VH** VERY HIGH
- H** HIGH
- M** MODERATE
- L** LOW
- VL** VERY LOW



BASEMAP SOURCE: CITY OF HOLLISTER, 2005



**LIQUEFACTION POTENTIAL MAP**  
 LOWES HOLLISTER  
 HOLLISTER, CALIFORNIA

PROJECT NO. : 18247.000.001

SCALE: AS SHOWN

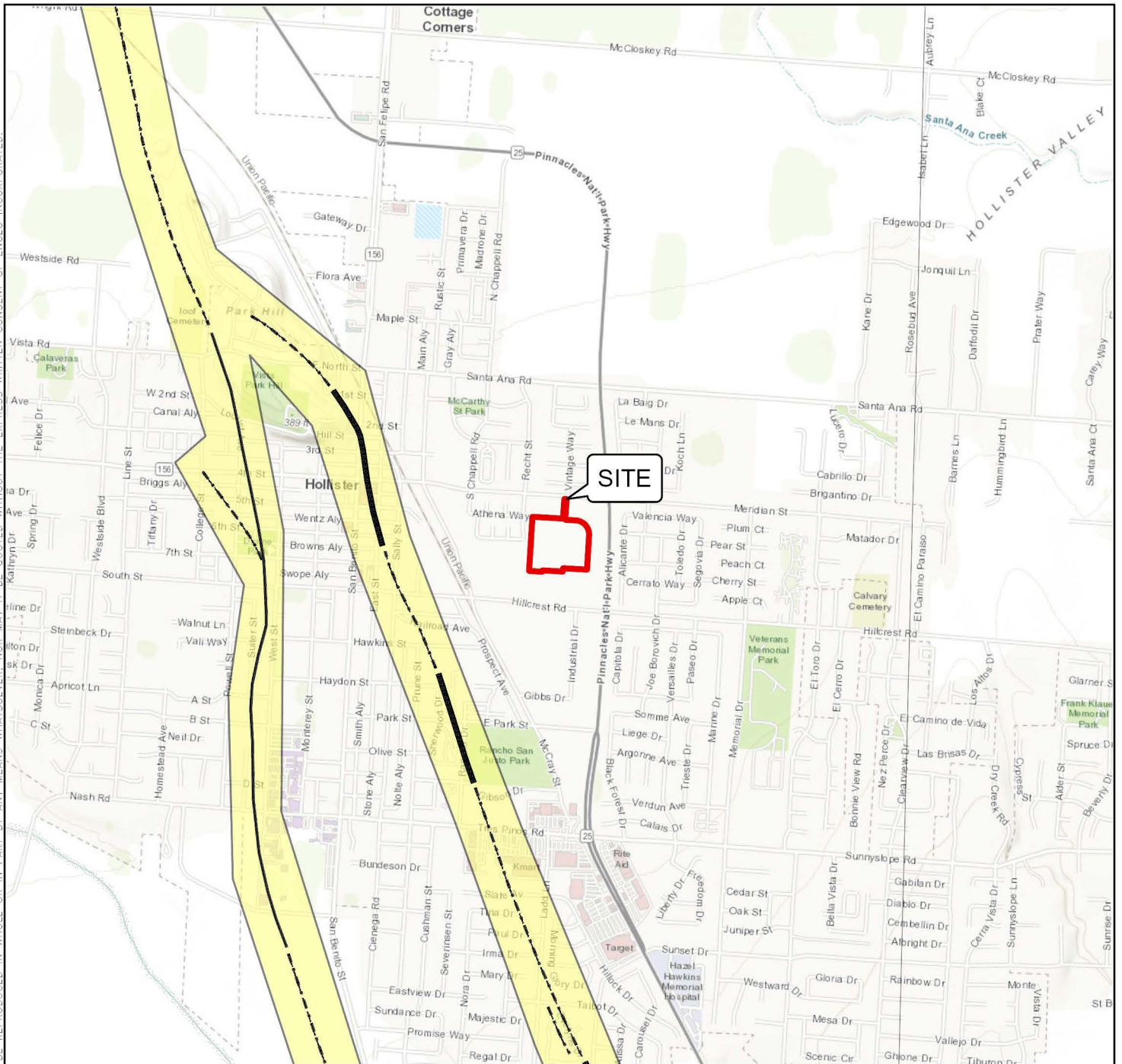
DRAWN BY: JV

CHECKED BY: SDH

FIGURE NO.

5

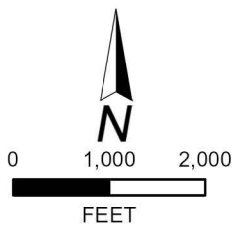
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### EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- ACCURATELY LOCATED
- APPROXIMATELY LOCATED
- CONCEALED



**EARTHQUAKE FAULT ZONE**  
 ZONE BOUNDARIES ARE DELINEATED BY STRAIGHT-LINE SEGMENTS;  
 THE BOUNDARIES DEFINE THE ZONE ENCOMPASSING ACTIVE FAULTS  
 THAT CONSTITUTE A POTENTIAL HAZARD TO STRUCTURES FROM  
 SURFACE FAULTING OR CREEP SUCH THAT AVOIDANCE AS DESCRIBED  
 IN PUBLIC RESOURCES CODE SECTION 2621.5(A) WOULD BE REQUIRED

BASEMAP SOURCE: ESRI MAPPING SERVICE  
 CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY



## SEISMIC HAZARDS ZONE MAP

LOWES HOLLISTER  
 HOLLISTER, CALIFORNIA

PROJECT NO. : 18247.000.001

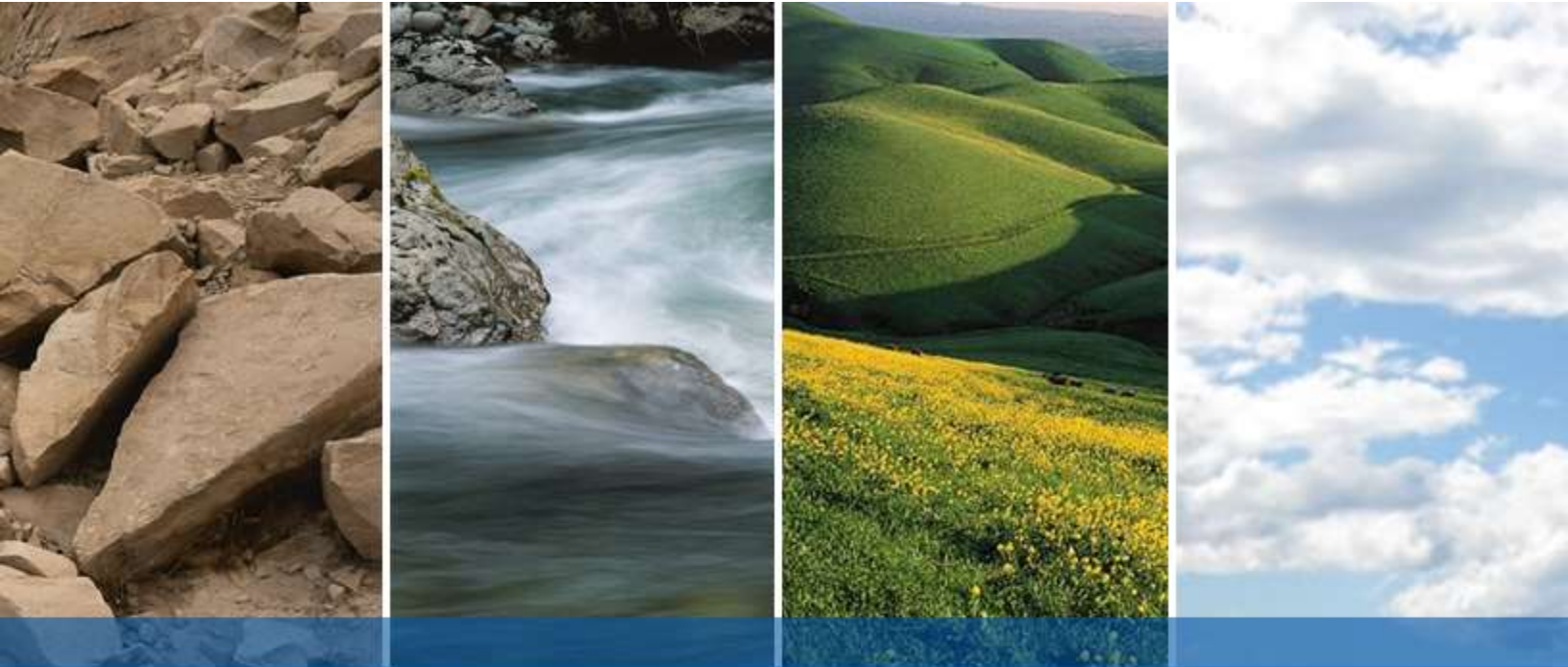
SCALE: AS SHOWN

DRAWN BY: JV

CHECKED BY: SDH

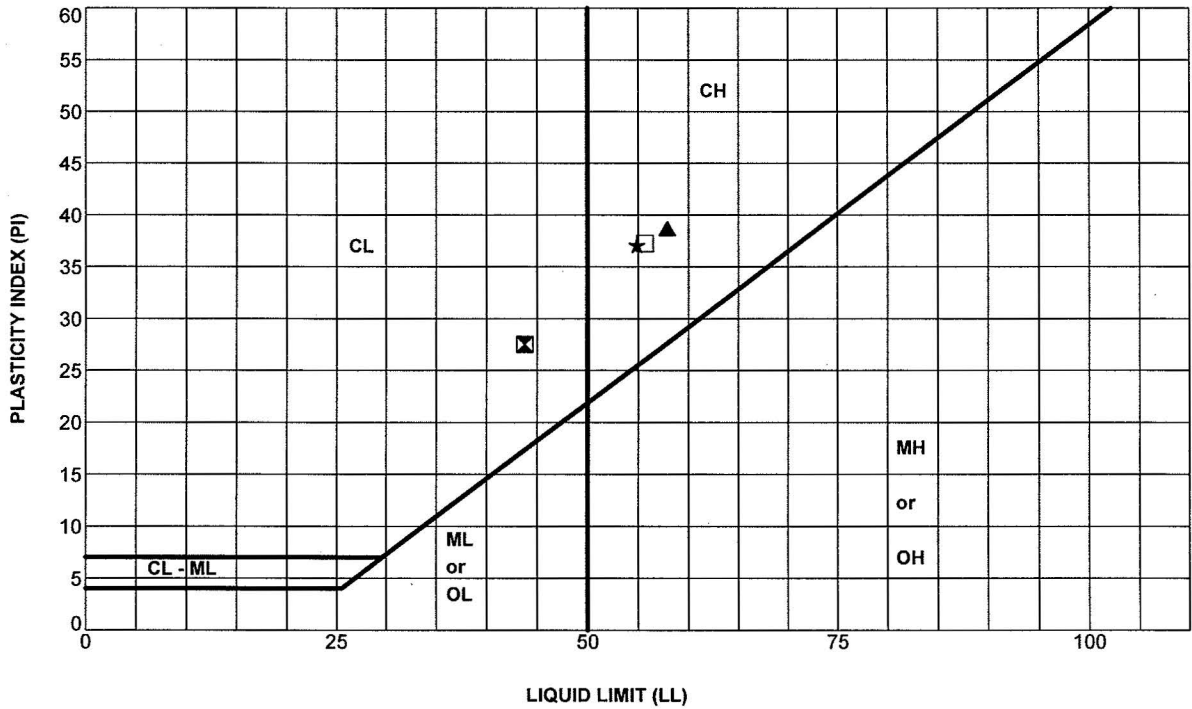
FIGURE NO.

# 6



## **APPENDIX A**

### **PREVIOUS SUBSURFACE LOGS AND LAB TESTS**



SYMBOL	BORING	DEPTH, ft	LL	PL	PI	SAMPLE DESCRIPTION
□	B- 5	1.5	56	18	38	Dark Olive-Brown Fat Clay (CH)
⊠	B- 6	5.5	44	16	28	Brown Clay (CL)
▲	B-11	1.5	58	19	39	Dark Brown Fat Clay (CH)
★	B-12	5.5	55	18	37	Brown Fat Clay (CH)

Unified Soil Classification

Fine Grained Soil Groups

Symbol	LL < 50	Symbol	LL > 50
ML	Inorganic clayey silts to very fine sands of slight plasticity	MH	Inorganic silts and clayey silts of high plasticity
CL	Inorganic clays of low to medium plasticity	CH	Inorganic clays of high plasticity
OL	Organic silts and organic silty clays of low plasticity	OH	Organic clays of medium to high plasticity, organic silts

\*PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318 (DRY PREP)

**KLEINFELDER**

PROJECT NO. 80944-GEO

**ATTERBERG LIMITS\***

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**C-1**

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Date Completed: 3/16/07  
 Logged By: W. Blackard  
 Total Depth: Approximately 10 ft

Drilling method: 8" Hollow Stem Auger  
 Hammer Wt: 140 lbs., 30" drop  
 Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
	10		94	25.2			4.3	<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff to hard
5	8						2.7	<b>CLAY (CL)</b> - olive-brown, moist, very stiff
	7						2.9	
10	10						1.7	
15								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
20								
25								
30								

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<h1 style="margin: 0;">KLEINFELDER</h1>	<b>LOG OF BORING NO. B-1</b>	PLATE
	LOWE'S - HOLLISTER MERIDIAN STREET AT VINTAGE WAY HOLLISTER, CALIFORNIA	<h2 style="margin: 0;">A-2</h2>
PROJECT NO. <u>80944-GEO</u>		

4/9/2007 10:06:43 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff to hard
							>4.5	
								<b>CLAY (CL)</b> - olive-brown, moist, very stiff
5		17					3.5	
		14						
		8					3.0	
10		10					2.4	
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-2**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-3**

4/9/2007 10:06:44 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pct	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
			94	22.0			>4.5	<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff to hard
5	14						3.7	<b>CLAY (CL)</b> - light olive-brown, moist, very stiff
	9						2.5	
10	9						2.5	
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-3**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-4**

4/9/2007 10:06:44 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 20 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen. tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff
	10		93	22.0	2.6 @ 9.0%		>4.5	
5	9						2.7	<b>CLAY (CL)</b> - olive-brown, moist, very stiff
	8						2.3	
10	9						1.1	- stiff
15	11						2.2	- very stiff
20	12						1.8	<b>SANDY CLAY (CL)</b> - brown, moist, stiff
								Boring terminated at 20 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-4**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-5**

4/9/2007 10:06:45 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 20 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
	10					LL=56; PI=37	>4.5	<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff to hard
5	11		68	31.6			3.4	<b>CLAY (CL)</b> - olive-brown, moist, very stiff
	6						3.6	
10	7		96	25.7			1.0	- medium stiff to stiff
15	10						2.4	- very stiff
20	10						2.2	<b>SANDY CLAY (CL)</b> - brown, moist, very stiff
								Boring terminated at 20 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
25								
30								

**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B- 5**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-6**

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4/9/2007 10:06:45 AM

Date Completed: 3/26/07

Drilling method: 8" Hollow Stem Auger

Logged By: R. Hasseler

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 52 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
5	3					LL=44; PI=28	<b>SANDY FAT CLAY (CH)</b> - gray-brown, moist, stiff, fine gained sand	
10	6		89	29.7			<b>CLAY (CL)</b> - brown, moist, soft  - medium stiff	
15	7						- stiff	
20	9					Passing #200=50%	<b>SILTY SAND (SM) to SANDY SILT (ML)</b> - brown, moist, loose to stiff, fine grained sand	
25	9						<b>SANDY SILT (ML)</b> - brown, moist, stiff, fine grained sand	
30								

**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B- 6**



LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-7**

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Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
35	6					Passing #200=79%	 <p><b>SANDY CLAY (CL)</b>- brown, moist, stiff, fine grained sand</p> <p>- very stiff</p>	
40	19							
45	31							
50	40					Passing #200=8%	 <p><b>WELL GRADED GRAVEL with SILT and SAND (GW-GM)</b> - mottled light to dark brown &amp; yellow-brown to red-brown &amp; green, dense, fine to coarse gravel</p>	
55	41							
60							<p>Boring terminated at 51.5 feet below ground surface.</p> <p>No groundwater encountered.</p> <p>Boring backfilled with grout.</p>	

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B- 6**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-7**  
 (cont'd)

4/9/2007 10:06:46 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: R. Hasseler & S. Sambasivan

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
	17		84	27.1				<b>FAT CLAY (CH)</b> - dark olive-green-brown, moist, very stiff
	15		90	30.4	2.1 @ 7.5%			- olive-brown
5	17							<b>CLAY (CL)</b> - olive-brown, moist, stiff
10	9		94	25.1				<b>FAT CLAY (CH)</b> - olive-brown, moist, medium stiff
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-7**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-8**

4/9/2007 10:06:46 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 22 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, stiff
	12		90	25.6	1.9 @ 5.7%	Passing #200=94%		
5	8		85	31.6				<b>CLAY (CL)</b> - olive-brown, moist, medium stiff
	5							- medium stiff
10	6							- stiff
15	16		97	24.9				
20	12							<b>CLAYEY SAND (SC)</b> - olive-brown, moist, medium dense
	10							Boring terminated at 21.5 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
25								
30								

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<h1 style="margin: 0;">KLEINFELDER</h1> <p style="margin: 0;">PROJECT NO. 80944-GEO</p>	<p><b>LOG OF BORING NO. B- 8</b></p> <p>LOWE'S - HOLLISTER MERIDIAN STREET AT VINTAGE WAY HOLLISTER, CALIFORNIA</p>	<p>PLATE</p> <h2 style="margin: 0;">A-9</h2>
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4/9/2007 10:06:47 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 20 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
10								<b>CLAY (CL)</b> - dark olive-gray, moist, stiff  - olive-brown  - medium stiff  - stiff
5								
15								
20								<b>SANDY CLAY (CL)</b> - olive-brown, moist, medium stiff, medium grained sand  Boring terminated at 20 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-9**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-10**

4/9/2007 10:06:48 AM

Date Completed: 3/15/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 20 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
5	18 11 6		96	21.9	2.4 @ 4.3%	Passing -#200=96%	2.8 2.9 1.8	CLAY (CL)- dark olive-brown, moist, very stiff, trace fine grained sand  - stiff
10	10						1.3	
15	16		94	24.1			1.4	
20	9		91	10.6			1.0	SANDY CLAY (CL)- olive-brown, moist, medium stiff to stiff, fine grained sand Boring terminated at 20 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
25								
30								

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<h1 style="margin: 0;">KLEINFELDER</h1> <p style="margin: 0;">PROJECT NO. 80944-GEO</p>	<p><b>LOG OF BORING NO. B-10</b></p> <p>LOWE'S - HOLLISTER MERIDIAN STREET AT VINTAGE WAY HOLLISTER, CALIFORNIA</p>	<p>PLATE</p> <h2 style="margin: 0;">A-11</h2>
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4/9/2007 10:06:48 AM

Date Completed: 3/16/07

Drilling method: 8" Hollow Stem Auger

Logged By: R. Hasseler & S. Sambasivan

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
	11					LL=58; PI=39		<b>FAT CLAY (CH)</b> - dark brown, moist, stiff
5	16		89	27.1	1.8 @ 7.1%		2.5	
	8		85	27.9			2.3	
10	9		92	24.6				<b>CLAY (CL)</b> - dark brown, moist, medium stiff
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-11**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-12**

Date Completed: 3/26/07

Drilling method: 8" Hollow Stem Auger

Logged By: R. Hasseler

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 50 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
								<b>SANDY FAT CLAY (CH)</b> - gray-brown, moist, stiff, fine grained sand
5	3					LL=55; PI=37		<b>FAT CLAY (CH)</b> - brown, moist, soft
10	4		88	30.3				- medium stiff
15	7							- stiff
20	8							<b>SILTY SAND (SM)</b> - brown, moist, loose, fine grained sand
25	13					Passing #200=13%		- gray-brown, medium dense
30								

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<h1 style="margin: 0;">KLEINFELDER</h1>	<b>LOG OF BORING NO. B-12</b>	PLATE
	LOWE'S - HOLLISTER MERIDIAN STREET AT VINTAGE WAY HOLLISTER, CALIFORNIA	<b>A-13</b>
PROJECT NO. <u>80944-GEO</u>		

4/9/2007 10:06:49 AM

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								(Continued from previous plate)
	7							- olive-brown, loose
35	24							- with gravel, medium dense
40	34							<b>WELL GRADED GRAVEL with SILT and SAND (GW-GM) - mottled brown-green-red, dense, medium to coarse gravel</b>
45								- Boring caved 5 feet, no sample recovered - coarse sand and gravel
50								Boring terminated at 50 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
55								
60								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-12**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-13**  
(cont'd)

4/9/2007 10:06:49 AM

Date Completed: 3/16/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff
		15					4.3	- olive-brown
5		12					3.8	
		6					2.1	<b>CLAY (CL)</b> - olive-brown, moist, very stiff
10		11					2.7	
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-13**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-14**

4/9/2007 10:06:50 AM

Date Completed: 3/16/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>	
5	15						1.9	<b>CLAY (CL)</b> - dark to medium olive -brown, moist, stiff  - olive-brown, very stiff to hard	
	17						4.5		
	12						4.2		
10	10						3.2	<b>CLAY with SAND (CL)</b> - brown, moist, very stiff, fine grained sand  Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.	
15									
20									
25									
30									

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-14**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-15**

4/9/2007 10:06:50 AM

Date Completed: 3/16/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pct	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
5	12		93	22.8			4.4	<b>CLAY (CL)</b> - dark olive-gray, moist, very stiff  - olive-brown
	9						4.5	
	14						3.8	
10	10						1.4	- stiff
15								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-15**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-16**

4/9/2007 10:06:51 AM

Date Completed: 3/16/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff to hard
		16					>4.5	
5								<b>CLAY (CL)</b> - olive-brown, moist, very stiff
		13					2.7	
		13					2.3	
10								
		16					1.1	
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-16**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-17**

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4/9/2007 10:06:51 AM

Date Completed: 3/16/07  
 Logged By: W. Blackard  
 Total Depth: Approximately 10 ft

Drilling method: 8" Hollow Stem Auger  
 Hammer Wt: 140 lbs., 30" drop  
 Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
12							3.2	<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff
9							1.7	- olive-brown, stiff
7							1.4	<b>CLAY (CL)</b> - olive-brown, moist, stiff
7							1.6	
10								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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<b>KLEINFELDER</b>	<b>LOG OF BORING NO. B-17</b>	<i>PLATE</i>
	LOWE'S - HOLLISTER MERIDIAN STREET AT VINTAGE WAY HOLLISTER, CALIFORNIA	<b>A-18</b>
PROJECT NO. 80944-GEO		

4/9/2007 10:06:52 AM

Date Completed: 3/16/07

Drilling method: 8" Hollow Stem Auger

Logged By: W. Blackard

Hammer Wt: 140 lbs., 30" drop

Total Depth: Approximately 10 ft

Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
	10		92	24.6			2.4	<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff
5	8						1.4	<b>CLAY (CL)</b> - olive-brown, moist, stiff
	10						1.5	
10	10						1.7	
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-18**

LOWE'S - HOLLISTER  
MERIDIAN STREET AT VINTAGE WAY  
HOLLISTER, CALIFORNIA

PLATE

**A-19**

4/9/2007 10:06:52 AM

Date Completed: 3/16/07  
 Logged By: W. Blackard  
 Total Depth: Approximately 10 ft

Drilling method: 8" Hollow Stem Auger  
 Hammer Wt: 140 lbs., 30" drop  
 Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>	
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff	
		10					3.6		
		10					3.6	<b>CLAY (CL)</b> - olive-brown, moist, very stiff	
5		8					1.3	<b>SANDY CLAY (CL)</b> - olive-brown, moist, stiff	
		8					2.4	- very stiff	
10								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.	
15									
20									
25									
30									

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-19**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-20**

4/9/2007 10:06:53 AM

Date Completed: 3/16/07  
 Logged By: W. Blackard  
 Total Depth: Approximately 10 ft

Drilling method: 8" Hollow Stem Auger  
 Hammer Wt: 140 lbs., 30" drop  
 Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY					Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests			
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>	
								<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff	
	8						2.1	<b>CLAY (CL)</b> - olive-brown, moist, very stiff	
5	8						2.7		
	13						4.5	<b>SANDY CLAY (CL)</b> - olive-brown, moist, very stiff to hard	
10	12						2.3	- very stiff	
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.	
15									
20									
25									
30									

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<b>KLEINFELDER</b>	<b>LOG OF BORING NO. B-20</b>	PLATE
	LOWE'S - HOLLISTER MERIDIAN STREET AT VINTAGE WAY HOLLISTER, CALIFORNIA	<b>A-21</b>
PROJECT NO. <u>80944-GEO</u>		

4/9/2007 10:06:53 AM

Date Completed: 3/16/07  
 Logged By: W. Blackard  
 Total Depth: Approximately 10 ft

Drilling method: 8" Hollow Stem Auger  
 Hammer Wt: 140 lbs., 30" drop  
 Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
	10		88	25.7			4.2	<b>FAT CLAY (CH)</b> - dark olive-brown, moist, very stiff
5	12						3.3	<b>CLAY (CL)</b> - olive-brown, moist, very stiff
	10						>4.5	- very stiff to hard
10	9						2.5	- very stiff
								Boring terminated at 10 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
15								
20								
25								
30								

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**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. B-21**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-22**

4/9/2007 10:06:54 AM

Date Completed: 3/15/07  
 Logged By: W. Blackard  
 Total Depth: Approximately 25 ft

Drilling method: 8" Hollow Stem Auger  
 Hammer Wt: 140 lbs., 30" drop  
 Notes: \_\_\_\_\_

Depth, ft	FIELD		LABORATORY				Pen, tsf	DESCRIPTION
	Sample	Blows/ft	Dry Density pcf	Moisture Content %	Compress. Strength tsf	Other Tests		
								Surface Elevation: <b>Estimated 292 feet (MSL)</b>
5								<b>CLAY (CL)</b> - dark brown, moist, medium stiff  - brown, soft  - stiff
10								
15								
20								
25								Boring terminated at 25 feet below ground surface. No groundwater encountered. Boring backfilled with grout.
30								

**KLEINFELDER**

PROJECT NO. 80944-GEO

**LOG OF BORING NO. PH-1**

LOWE'S - HOLLISTER  
 MERIDIAN STREET AT VINTAGE WAY  
 HOLLISTER, CALIFORNIA

PLATE

**A-23**

**APPENDIX B**  
**LOGS OF CONE PENETROMETER TESTS**

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**LIST OF ATTACHMENTS**

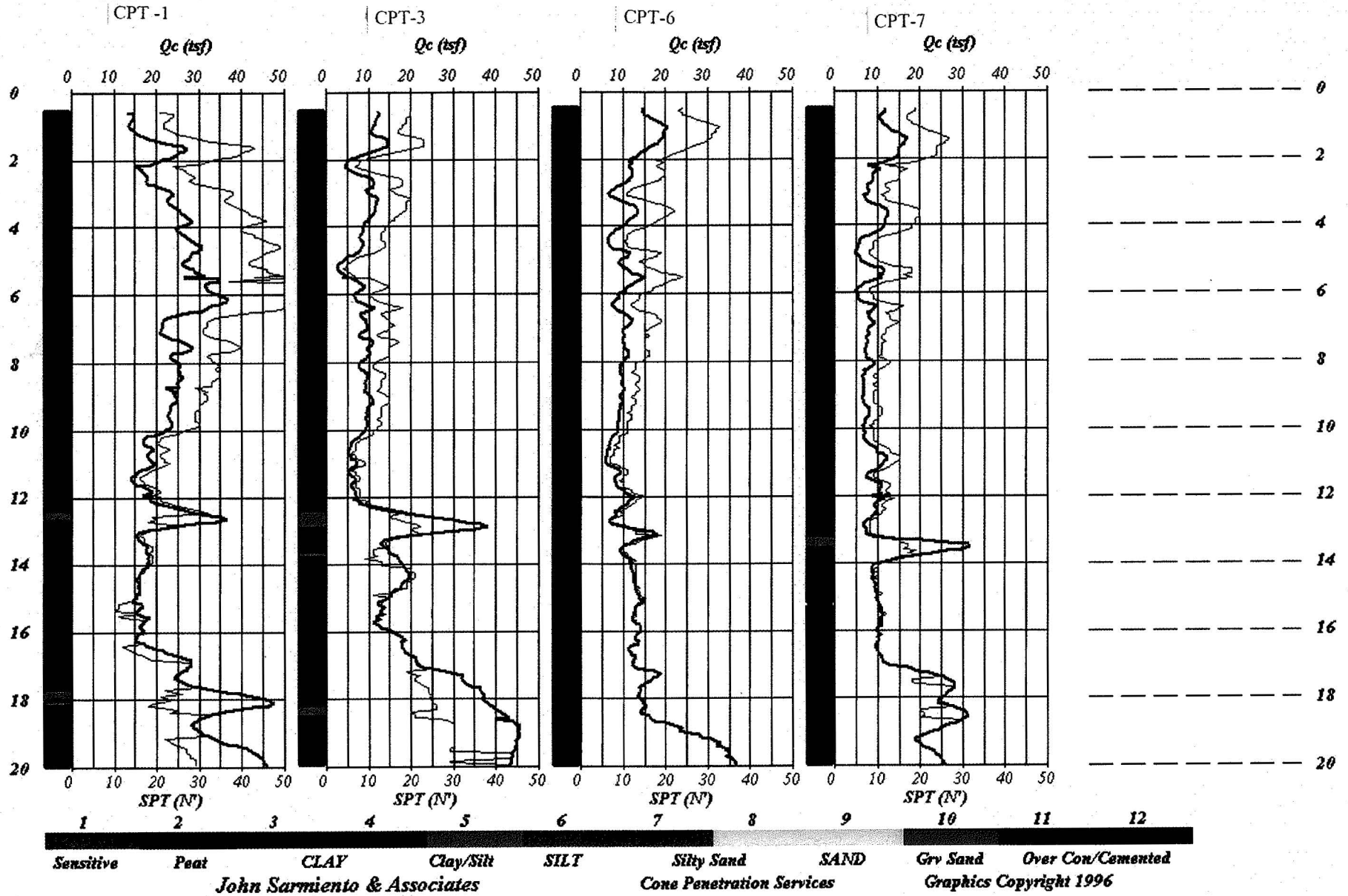
The following plates are attached and complete this appendix.

Cone Penetrometer Profiles

Logs of Cone Penetrometer Tests..... CPT-1 through CPT-7

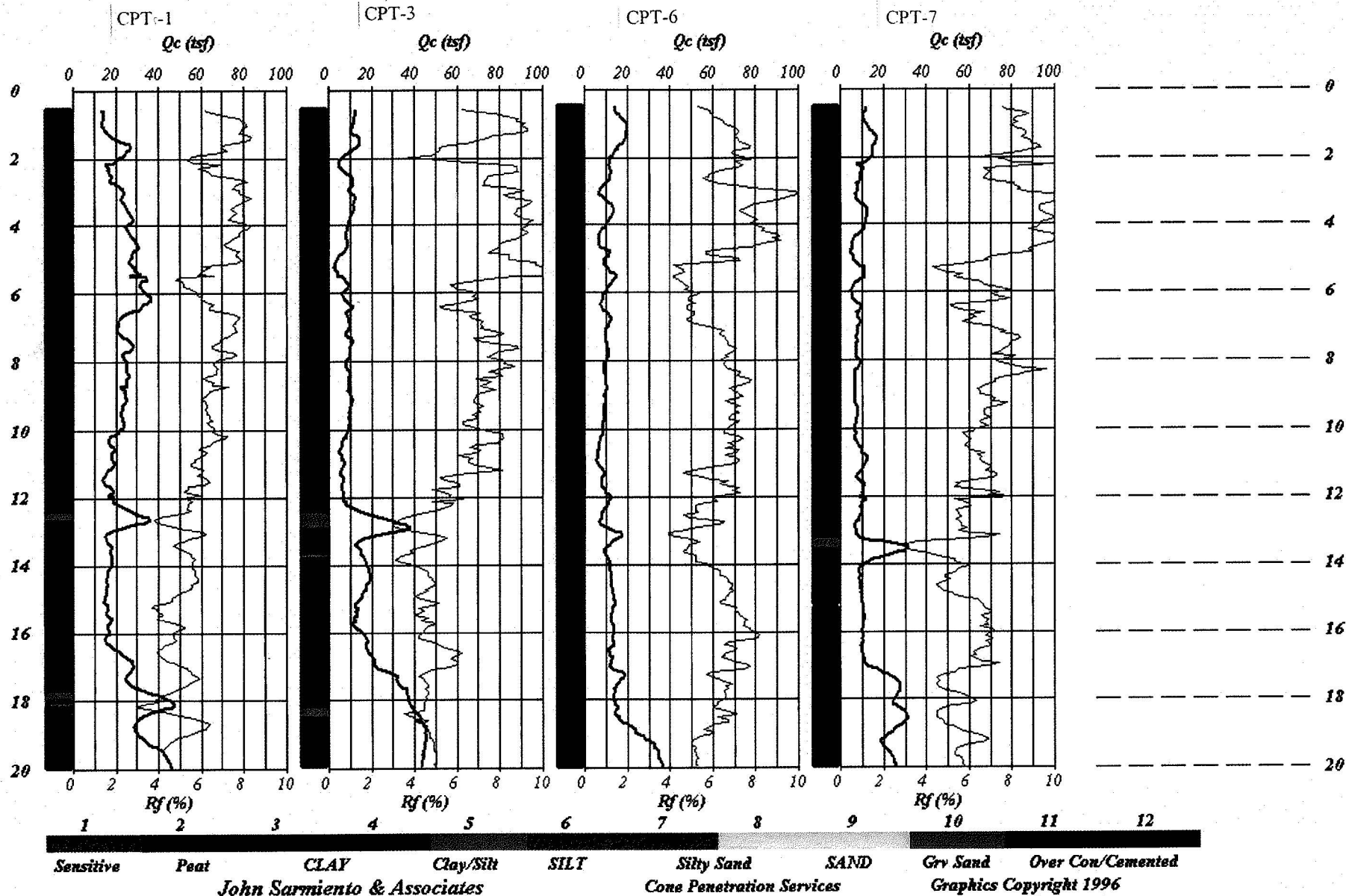
**PROJECT: LOWES HOLLISTER SITE**

**LOCATION: Hollister CA**



**PROJECT: LOWES HOLLISTER SITE**

**LOCATION: Hollister CA**



*John Sarmiento & Associates*

*Cone Penetration Services*

*Graphics Copyright 1996*

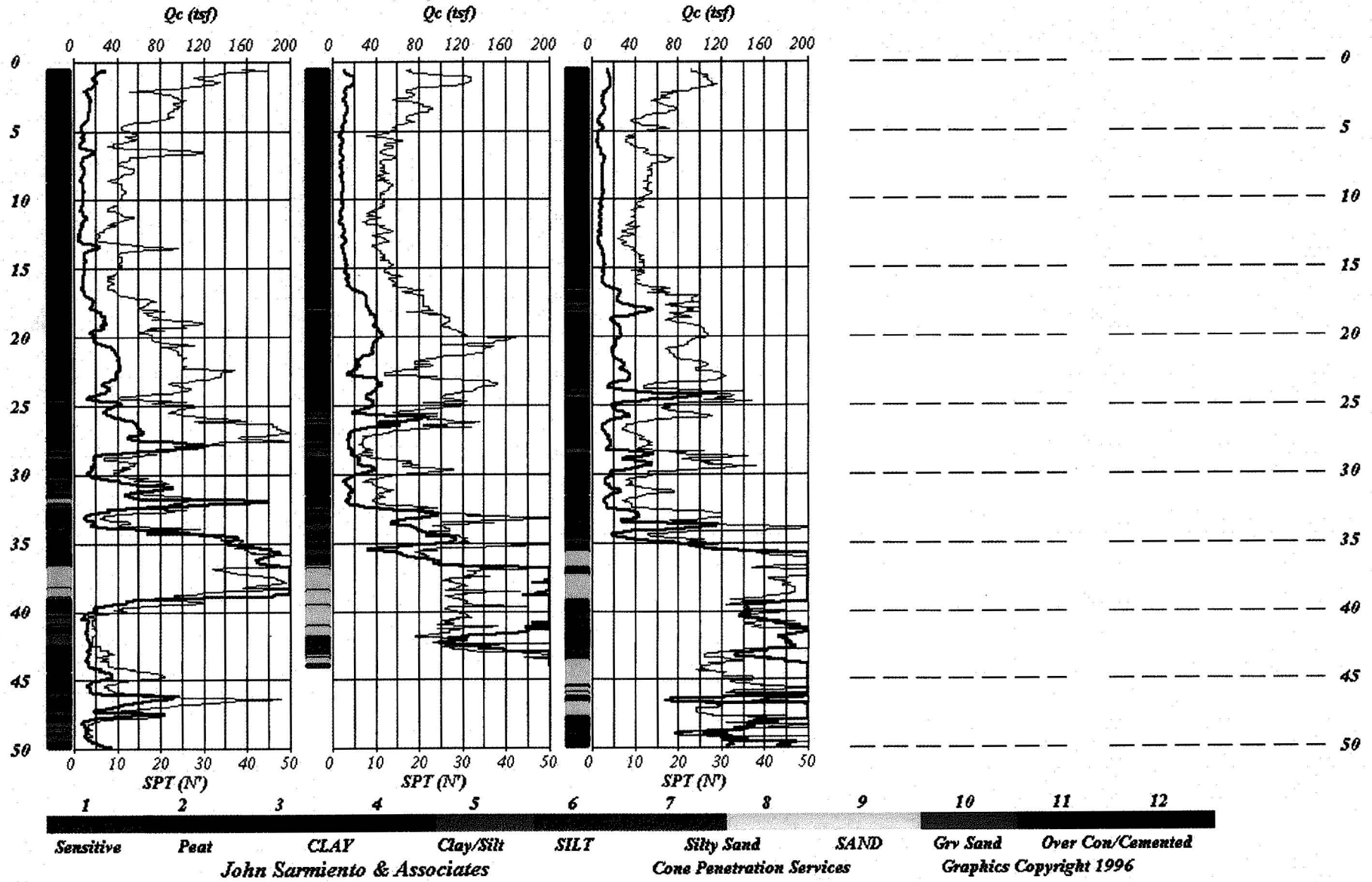
**PROJECT: LOWES HOLLISTER SITE**

**LOCATION: Hollister CA**

CPT-2

CPT-4

CPT-5



John Sarmiento & Associates

Cone Penetration Services

Graphics Copyright 1996

**PROJECT: LOWES HOLLISTER SITE**

**LOCATION: Hollister CA**

CPT-2

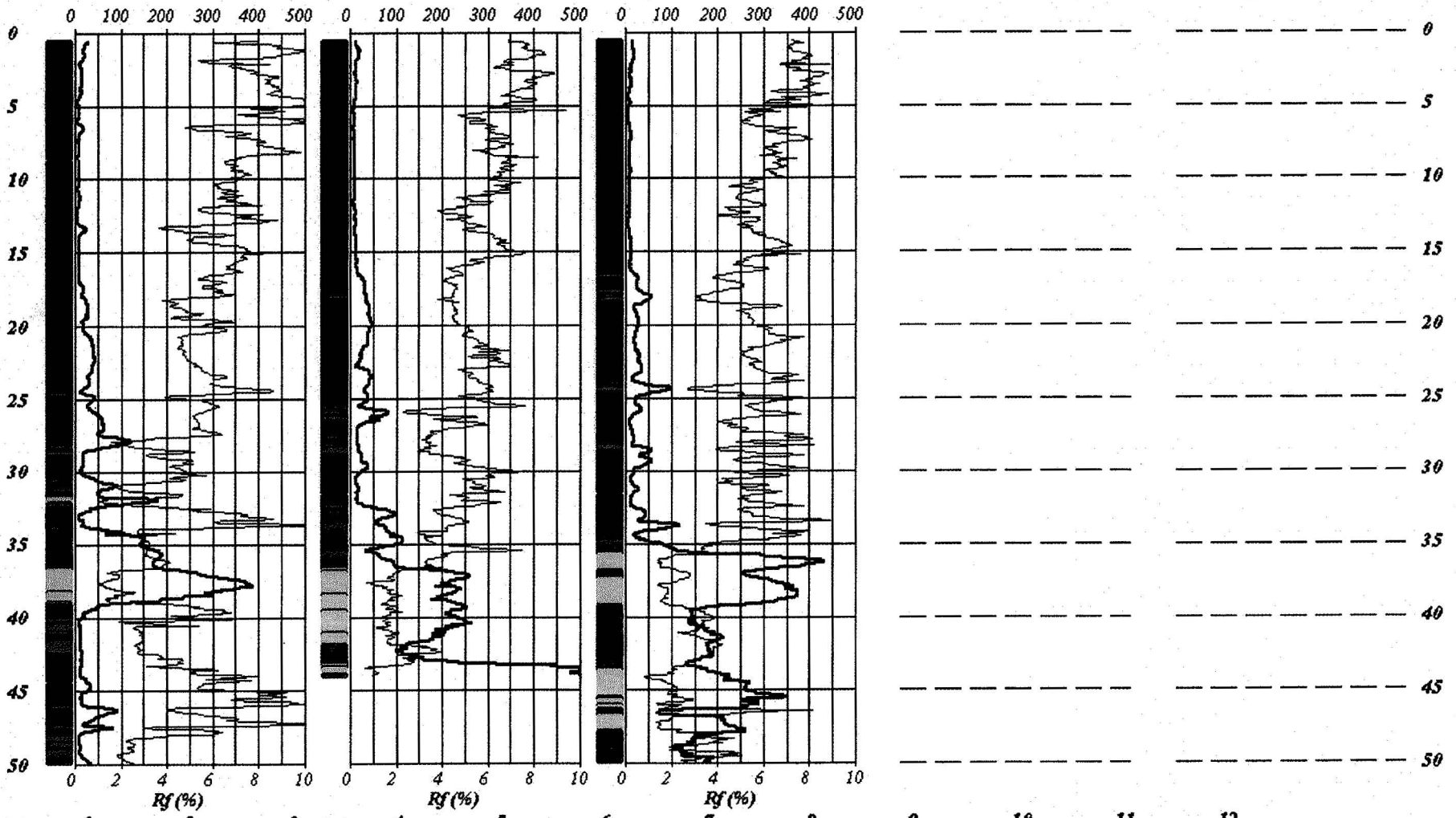
CPT-4

CPT-5

Qc (tsf)

Qc (tsf)

Qc (tsf)



Sensitive

Peat

CLAY

Clay/Silt

SILT

Silty Sand

SAND

Grv Sand

Over Con/Cemented

John Sarmiento & Associates

Cone Penetration Services

Graphics Copyright 1996

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-1  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 20.0 feet

Page 1 of 1

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.56	13.40	0.830	6.2	13	21	0.06	----	1.78	CLAY	120-130
1.04	13.80	1.130	8.2	14	22	0.12	----	1.83	"	"
1.52	23.90	1.850	7.7	24	38	0.19	----	3.17	"	130-140
2.06	20.20	1.100	5.4	20	32	0.26	----	2.68	"	"
2.55	18.00	1.260	7.0	18	29	0.33	----	2.38	"	"
3.02	24.00	1.870	7.8	24	38	0.39	----	3.17	"	"
3.51	25.60	1.900	7.4	26	41	0.46	----	3.38	"	"
4.04	24.80	2.070	8.3	25	40	0.53	----	3.27	"	"
4.51	29.70	2.140	7.2	30	48	0.59	----	3.92	"	"
5.04	26.30	2.080	7.9	26	42	0.67	----	3.46	"	"
5.52	34.40	1.720	5.0	34	55	0.73	----	4.54	"	"
6.06	36.10	2.140	5.9	36	58	0.80	----	4.76	"	"
6.52	27.70	1.880	6.8	28	43	0.87	----	3.64	"	"
7.06	21.00	1.610	7.7	21	31	0.94	----	2.74	"	"
7.53	28.40	1.860	6.5	28	40	1.00	----	3.72	"	"
8.00	25.20	1.670	6.6	25	34	1.06	----	3.29	"	"
8.54	25.10	1.610	6.4	25	33	1.14	----	3.27	"	"
9.02	24.90	1.510	6.1	25	32	1.20	----	3.24	"	"
9.50	22.70	1.440	6.3	23	29	1.27	----	2.94	"	"
10.04	21.50	1.390	6.5	22	26	1.34	----	2.78	"	"
10.51	18.80	1.140	6.1	19	22	1.40	----	2.41	"	"
11.05	19.10	1.060	5.5	19	22	1.48	----	2.45	"	"
11.53	14.60	0.930	6.4	15	17	1.54	----	1.84	"	120-130
12.04	18.70	1.010	5.4	19	21	1.61	----	2.39	"	130-140
12.52	32.50	1.440	4.4	22	24	1.67	----	4.22	Silty CLAY to CLAY	"
13.06	15.90	0.980	6.2	16	17	1.74	----	2.00	CLAY	120-130
13.54	17.80	0.910	5.1	18	19	1.80	----	2.25	"	"
14.02	17.80	0.990	5.6	18	18	1.86	----	2.25	"	130-140
14.56	16.10	0.890	5.5	16	16	1.93	----	2.02	"	120-130
15.05	14.50	0.670	4.6	15	15	1.99	----	1.80	"	"
15.52	16.80	0.680	4.0	11	11	2.05	----	2.10	Silty CLAY to CLAY	"
16.00	16.90	0.780	4.6	17	17	2.11	----	2.11	CLAY	"
16.55	21.40	0.840	3.9	14	14	2.18	----	2.71	Silty CLAY to CLAY	130-140
17.03	27.60	1.470	5.3	28	27	2.25	----	3.53	CLAY	"
17.51	26.50	1.430	5.4	27	26	2.31	----	3.38	"	"
18.05	46.50	1.800	3.9	23	23	2.39	----	6.04	Clayey SILT to Silty CLAY	"
18.55	30.50	1.780	5.8	31	30	2.45	----	3.90	CLAY	"
19.03	31.00	1.640	5.3	31	30	2.52	----	3.97	"	"
19.56	42.50	1.840	4.3	28	27	2.59	----	5.49	Silty CLAY to CLAY	"
20.04	46.00	2.100	4.6	31	29	2.65	----	5.96	"	"

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

References: \* Robertson and Campanella, 1988

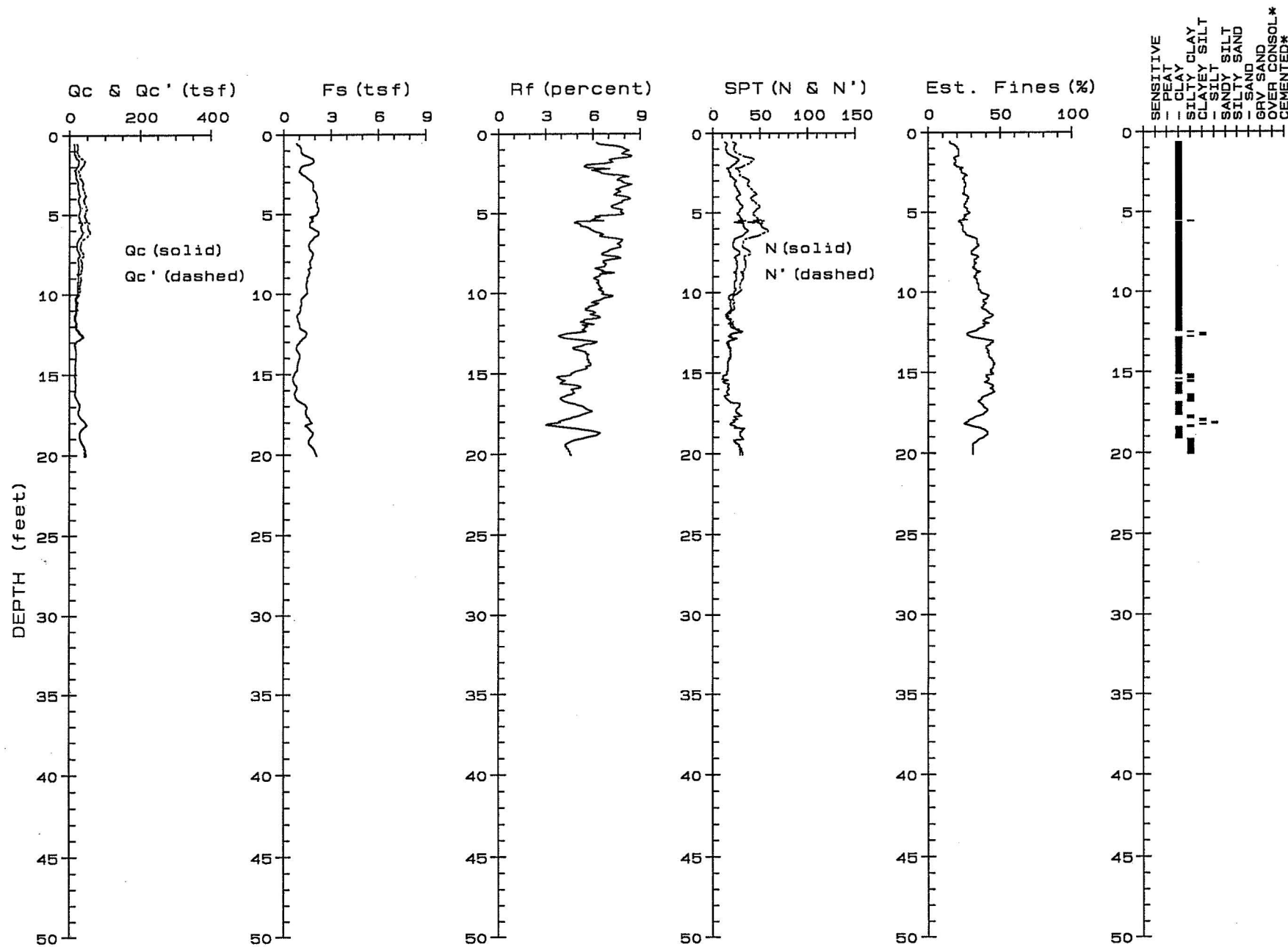
TotStr = Total Stress using est. density\*\*

Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc 9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc=12 tsf)

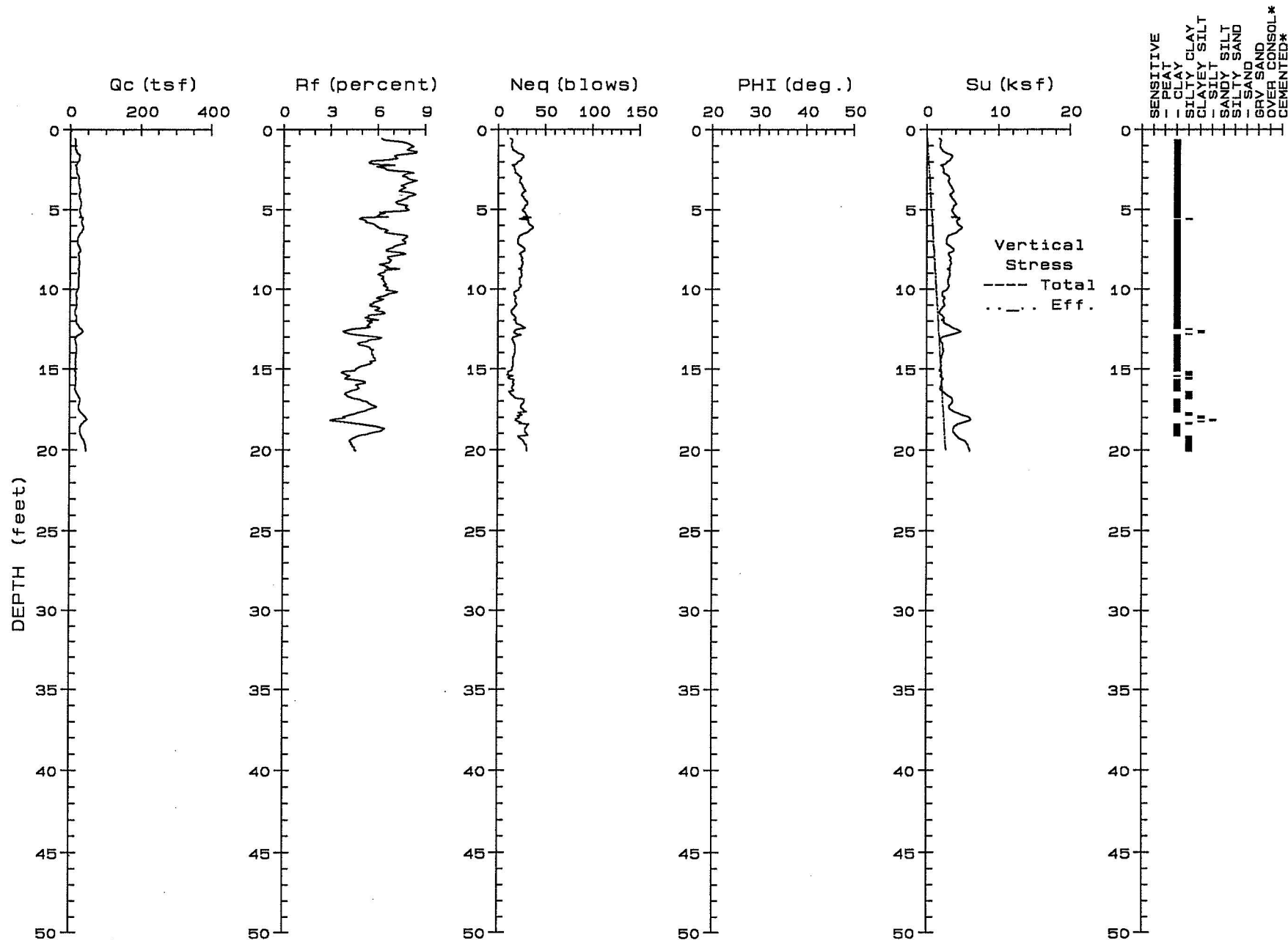
\*\* Olsen, 1989 \*\*\* Durgunoglu & Mitchell, 1975



Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE	CPT NO.: CPT-1	<b>John Sarmiento &amp; Associates</b>
LOCATION: Hollister CA	DATE : 03-06-2007	<i>Cone Penetration Testing Service</i>
PROJ. NO.: (KLF-150)		



Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-1  
 DATE : 03-06-2007

*John Sarmiento & Associates*  
 Cone Penetration Testing Service

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-2  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 50.0 feet

Page 1 of 2

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.54	24.60	1.950	7.9	25	39	0.06	----	3.28	CLAY	''
1.02	20.30	1.780	8.8	20	32	0.13	----	2.70	''	''
1.55	20.60	1.840	8.9	21	33	0.20	----	2.73	''	''
2.02	11.40	0.670	5.9	11	18	0.26	----	1.88	''	120-130
2.51	14.10	1.080	7.7	14	23	0.32	----	1.86	''	''
3.04	14.50	1.290	8.9	15	23	0.39	----	1.91	''	130-140
3.56	14.10	1.230	8.7	14	23	0.46	----	1.85	''	''
4.05	14.00	1.210	8.6	14	22	0.53	----	1.83	''	''
4.52	7.40	0.750	10.1	7	12	0.59	----	1.42	Organic Material	120-130
5.05	8.30	0.780	9.4	8	13	0.65	----	1.59	CLAY	''
5.53	8.80	0.680	7.7	9	14	0.71	----	1.69	''	''
6.07	5.30	0.580	10.9	5	8	0.77	----	0.98	Organic Material	110-120
6.54	19.00	0.980	5.2	19	30	0.84	----	2.48	CLAY	130-140
7.02	8.70	0.610	7.0	9	13	0.90	----	1.65	''	120-130
7.55	8.40	0.670	8.0	8	12	0.96	----	1.58	''	''
8.03	9.40	0.860	9.1	9	13	1.02	----	1.48	''	''
8.56	6.10	0.430	7.0	6	8	1.09	----	1.11	''	110-120
9.04	8.30	0.570	6.9	8	11	1.14	----	1.55	''	''
9.51	9.10	0.650	7.1	9	12	1.20	----	1.42	''	120-130
10.01	8.20	0.590	7.2	8	10	1.26	----	1.51	''	''
10.56	6.80	0.430	6.3	7	8	1.32	----	1.23	''	110-120
11.03	9.00	0.600	6.7	9	11	1.38	----	1.38	''	120-130
11.50	9.30	0.610	6.6	9	11	1.44	----	1.43	''	''
12.01	7.00	0.380	5.4	7	8	1.50	----	1.25	''	110-120
12.56	4.90	0.370	7.6	5	6	1.56	----	0.82	''	100-110
13.03	5.80	0.440	7.6	6	6	1.61	----	1.00	''	110-120
13.51	22.10	0.990	4.5	22	24	1.68	----	2.83	''	130-140
14.05	9.40	0.480	5.1	9	10	1.74	----	1.42	''	110-120
14.53	10.20	0.700	6.9	10	11	1.80	----	1.55	''	120-130
15.00	10.00	0.780	7.8	10	10	1.86	----	1.51	''	''
15.54	8.20	0.590	7.2	8	8	1.93	----	1.45	''	''
16.06	8.90	0.590	6.6	9	9	1.99	----	1.58	''	''
16.54	8.70	0.510	5.9	9	9	2.05	----	1.54	''	110-120
17.02	11.90	0.780	6.6	12	12	2.11	----	1.81	''	120-130
17.55	16.70	1.070	6.4	17	17	2.18	----	2.08	''	130-140
18.03	18.30	0.980	5.4	18	18	2.24	----	2.29	''	''
18.52	29.10	1.210	4.2	19	19	2.31	----	3.73	Silty CLAY to CLAY	''
19.00	29.80	1.440	4.8	30	30	2.37	----	3.82	CLAY	''
19.53	18.10	1.040	5.7	18	18	2.45	----	2.25	''	''
20.01	18.40	1.100	6.0	18	18	2.51	----	2.29	''	''
20.54	25.50	1.290	5.1	26	25	2.58	----	3.23	''	''
21.00	37.90	1.750	4.6	25	24	2.64	----	4.88	Silty CLAY to CLAY	''
21.54	41.70	1.900	4.6	28	26	2.72	----	5.38	''	''
22.00	41.80	2.000	4.8	28	25	2.78	----	5.39	''	''
22.53	39.70	2.070	5.2	40	35	2.85	----	5.10	CLAY	''
23.05	35.90	2.040	5.7	36	31	2.92	----	4.59	''	''
23.53	27.70	1.840	6.6	28	23	2.98	----	3.49	''	''
24.06	26.70	1.700	6.4	27	22	3.06	----	3.36	''	''
24.52	16.30	1.230	7.5	16	13	3.12	----	1.97	''	''
25.03	36.20	1.970	5.4	36	29	3.19	----	4.61	''	''
25.50	28.20	1.770	6.3	28	22	3.25	----	3.54	''	''
26.03	46.80	2.500	5.3	47	37	3.32	----	6.02	''	''
26.50	59.40	3.130	5.3	59	46	3.39	----	7.69	Very Stiff Fine Grained *	''
27.03	64.70	3.330	5.1	65	50	3.46	----	8.40	''	''
27.55	61.00	3.440	5.6	61	47	3.53	----	7.90	''	''
28.06	114.20	2.080	1.8	38	29	3.60	37	----	Silty SAND to Sandy SILT	''
28.51	33.60	1.420	4.2	22	17	3.66	----	4.24	Silty CLAY to CLAY	''
29.04	20.40	0.750	3.7	14	10	3.72	----	2.47	''	120-130
29.56	17.20	0.760	4.4	17	13	3.79	----	2.04	CLAY	''
30.02	12.60	0.580	4.6	13	9	3.85	----	1.42	''	''
30.56	43.00	2.050	4.8	29	21	3.92	----	5.47	Silty CLAY to CLAY	130-140
31.02	91.40	1.570	1.7	30	22	3.98	36	----	Silty SAND to Sandy SILT	''
31.58	50.70	2.360	4.7	34	24	4.06	----	6.49	Silty CLAY to CLAY	''

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-2  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 50.0 feet

Page 2 of 2

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
32.06	162.60	1.860	1.1	33	23	4.12	39	----	SAND	120-130
32.52	37.50	1.860	5.0	38	26	4.18	----	4.72	CLAY	130-140
33.05	9.70	0.700	7.2	10	7	4.24	----	1.26	"	120-130
33.51	19.60	1.230	6.3	20	13	4.31	----	2.33	"	130-140
34.04	72.10	1.980	2.7	29	20	4.38	----	9.32	Sandy SILT to Clayey SILT	"
34.53	147.20	4.120	2.8	49	33	4.44	38	----	Silty SAND to Sandy SILT	"
35.04	141.50	4.520	3.2	57	38	4.51	----	18.57	Sandy SILT to Clayey SILT	"
35.54	183.20	5.710	3.1	61	40	4.58	39	----	Silty SAND to Sandy SILT	"
36.03	176.70	6.400	3.6	88	58	4.65	39	----	SAND to Clayey SAND *	140
36.50	173.30	6.560	3.8	87	56	4.72	39	----	"	"
37.01	271.50	4.560	1.7	54	35	4.78	41	----	SAND	130-140
37.09	273.20	5.150	1.9	55	35	4.79	41	----	"	"
37.55	371.40	4.830	1.3	74	47	4.86	43	----	"	"
38.01	359.50	5.270	1.5	72	45	4.92	43	----	"	"
38.51	248.20	4.410	1.8	50	31	4.99	41	----	"	"
39.02	98.70	3.000	3.0	39	25	5.06	----	12.82	Sandy SILT to Clayey SILT	"
39.54	27.20	1.770	6.5	27	17	5.13	----	3.28	CLAY	"
40.01	15.60	0.880	5.6	16	10	5.18	----	1.73	"	120-130
40.50	7.50	0.320	4.3	8	5	5.24	----	0.98	"	110-120
40.58	12.30	0.340	2.8	6	4	5.25	----	1.29	Clayey SILT to Silty CLAY	"
41.05	12.40	0.370	3.0	8	5	5.30	----	1.30	Silty CLAY to CLAY	"
41.53	11.80	0.350	3.0	8	5	5.36	----	1.52	"	"
42.01	13.50	0.360	2.7	7	4	5.41	----	1.44	Clayey SILT to Silty CLAY	"
42.56	15.10	0.560	3.7	10	6	5.48	----	1.65	Silty CLAY to CLAY	120-130
43.05	15.00	0.670	4.5	15	9	5.54	----	1.63	CLAY	"
43.53	11.60	0.660	5.7	12	7	5.60	----	1.47	"	"
44.02	13.70	1.080	7.9	14	8	5.67	----	1.45	"	"
44.56	33.90	1.900	5.6	34	20	5.74	----	4.14	"	130-140
45.00	23.80	1.680	7.1	24	14	5.80	----	2.79	"	"
45.53	13.60	0.990	7.3	14	8	5.86	----	1.42	"	120-130
46.06	41.20	2.520	6.1	41	23	5.94	----	5.10	"	130-140
46.51	70.70	3.620	5.1	71	40	6.00	----	9.03	Very Stiff Fine Grained *	"
47.04	35.00	2.310	6.6	35	19	6.07	----	4.26	CLAY	"
47.55	74.50	2.750	3.7	37	21	6.14	----	9.52	Clayey SILT to Silty CLAY	"
48.02	8.70	0.390	4.5	9	5	6.19	----	1.12	CLAY	110-120
48.55	10.40	0.270	2.6	7	4	6.25	----	1.21	Silty CLAY to CLAY	"
49.07	10.00	0.250	2.5	7	4	6.31	----	1.14	"	100-110
49.55	18.50	0.390	2.1	9	5	6.37	----	2.04	Clayey SILT to Silty CLAY	120-130
50.02	38.30	1.070	2.8	15	8	6.43	----	4.68	Sandy SILT to Clayey SILT	130-140

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

References: \* Robertson and Campanella, 1988

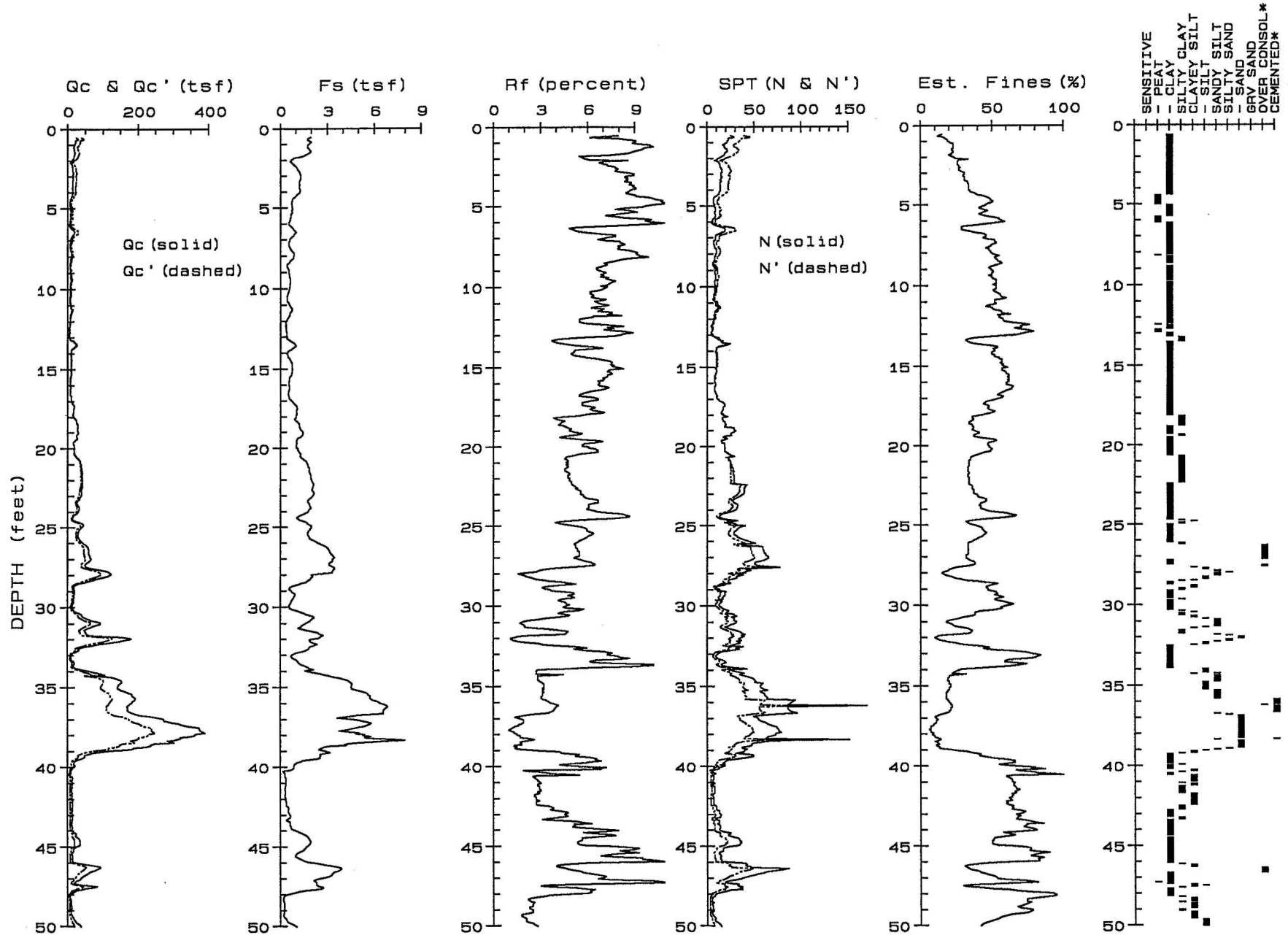
TotStr = Total Stress using est. density\*\*

Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc<9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc≥12 tsf)

\*\* Olsen, 1989 \*\*\* Durgunoglu & Mitchell, 1975



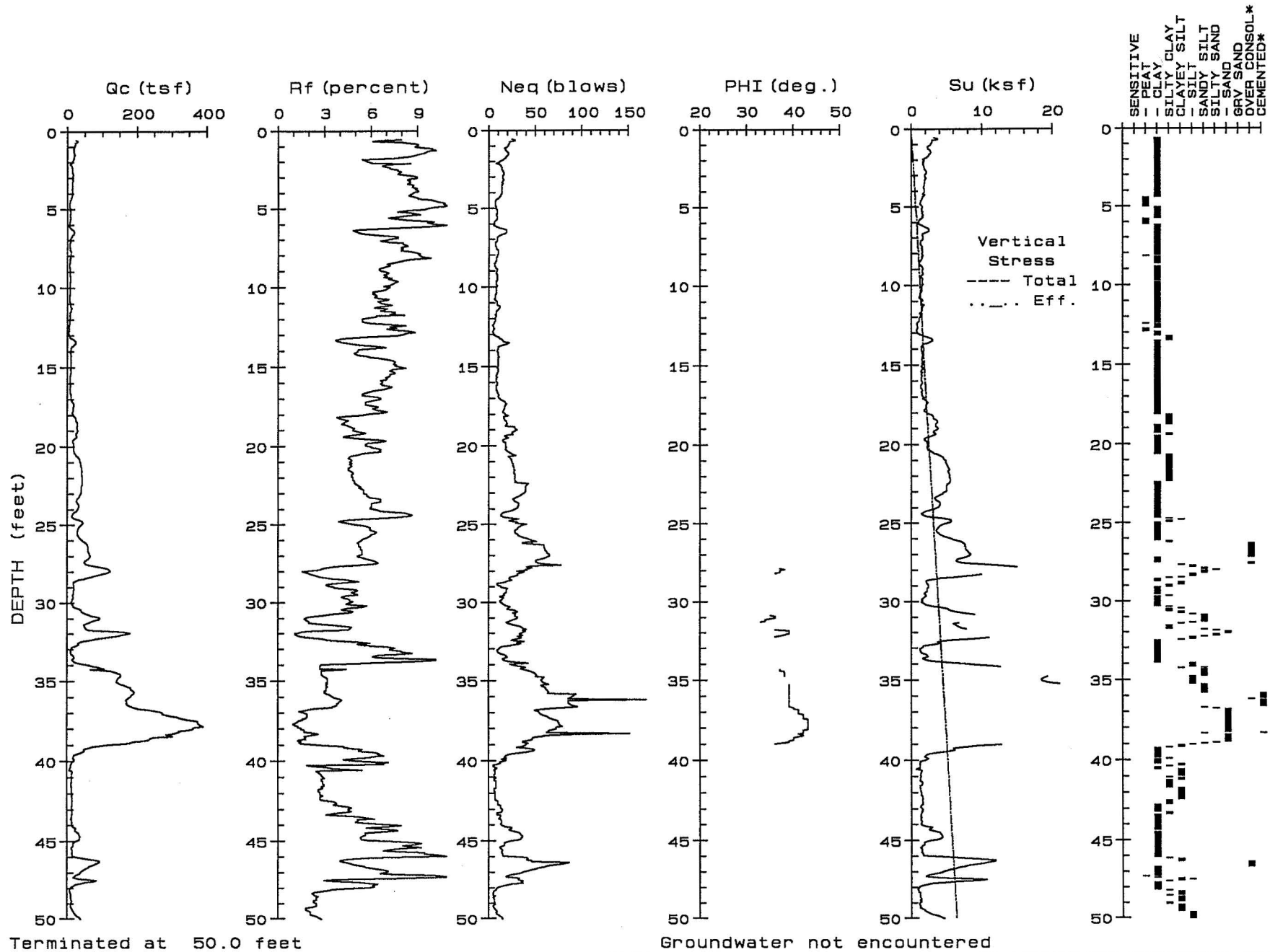
Terminated at 50.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-2  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service



PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-2  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-3  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 20.0 feet

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.57	12.40	0.780	6.3	12	20	0.07	----	1.65	CLAY	120-130
1.06	11.10	1.000	9.0	11	18	0.13	----	1.84	"	"
1.56	14.40	0.920	6.4	14	23	0.19	----	1.91	"	"
2.06	5.00	0.260	5.2	5	8	0.24	----	0.98	"	100-110
2.55	10.50	0.790	7.5	11	17	0.30	----	1.72	"	120-130
3.04	10.70	0.920	8.6	11	17	0.36	----	1.75	"	"
3.53	11.80	1.050	8.9	12	19	0.43	----	1.93	"	"
4.03	8.80	0.820	9.3	9	14	0.49	----	1.71	"	"
4.53	8.90	0.720	8.1	9	14	0.55	----	1.72	"	"
5.03	3.70	0.310	8.4	4	6	0.60	----	0.68	Organic Material	100-110
5.53	6.10	0.530	8.7	6	10	0.66	----	1.15	"	110-120
6.04	6.50	0.450	6.9	7	10	0.72	----	1.23	CLAY	"
6.54	8.20	0.540	6.6	8	13	0.78	----	1.56	"	"
7.05	9.50	0.670	7.1	10	15	0.84	----	1.51	"	120-130
7.56	9.80	0.860	8.8	10	15	0.91	----	1.56	"	"
8.01	8.00	0.660	8.3	8	12	0.96	----	1.50	"	"
8.51	9.30	0.640	6.9	9	13	1.02	----	1.46	"	"
9.03	10.70	0.740	6.9	11	14	1.09	----	1.69	"	"
9.54	9.80	0.660	6.7	10	13	1.15	----	1.54	"	"
10.04	8.90	0.670	7.5	9	11	1.22	----	1.66	"	"
10.54	5.80	0.380	6.6	6	7	1.27	----	1.03	"	100-110
11.06	7.10	0.480	6.8	7	9	1.33	----	1.29	"	110-120
11.56	6.20	0.370	6.0	6	7	1.38	----	1.10	"	"
12.06	6.20	0.390	6.3	6	7	1.44	----	1.10	"	"
12.55	20.90	0.830	4.0	14	16	1.51	----	2.69	Silty CLAY to CLAY	130-140
13.06	28.00	1.240	4.4	19	21	1.58	----	3.63	"	"
13.51	13.70	0.570	4.2	14	15	1.63	----	1.72	CLAY	120-130
14.00	17.90	0.690	3.9	12	13	1.70	----	2.27	Silty CLAY to CLAY	"
14.50	18.90	0.920	4.9	19	20	1.76	----	2.40	CLAY	130-140
15.01	14.50	0.630	4.3	15	15	1.83	----	1.81	"	120-130
15.51	13.30	0.530	4.0	13	14	1.89	----	1.65	"	"
16.02	15.50	0.680	4.4	16	16	1.95	----	1.94	"	"
16.53	18.40	1.080	5.9	18	18	2.02	----	2.32	"	130-140
17.05	22.80	1.210	5.3	23	23	2.09	----	2.90	"	"
17.55	32.80	1.510	4.6	22	22	2.16	----	4.23	Silty CLAY to CLAY	"
18.04	37.00	1.670	4.5	25	25	2.23	----	4.78	"	"
18.54	43.20	1.750	4.1	22	21	2.29	----	5.61	Clayey SILT to Silty CLAY	"
19.02	45.60	2.150	4.7	30	30	2.36	----	5.92	Silty CLAY to CLAY	"
19.54	44.10	2.200	5.0	29	29	2.43	----	5.72	"	"
20.03	43.80	2.140	4.9	29	29	2.49	----	5.67	"	"

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

TotStr = Total Stress using est. density\*\*

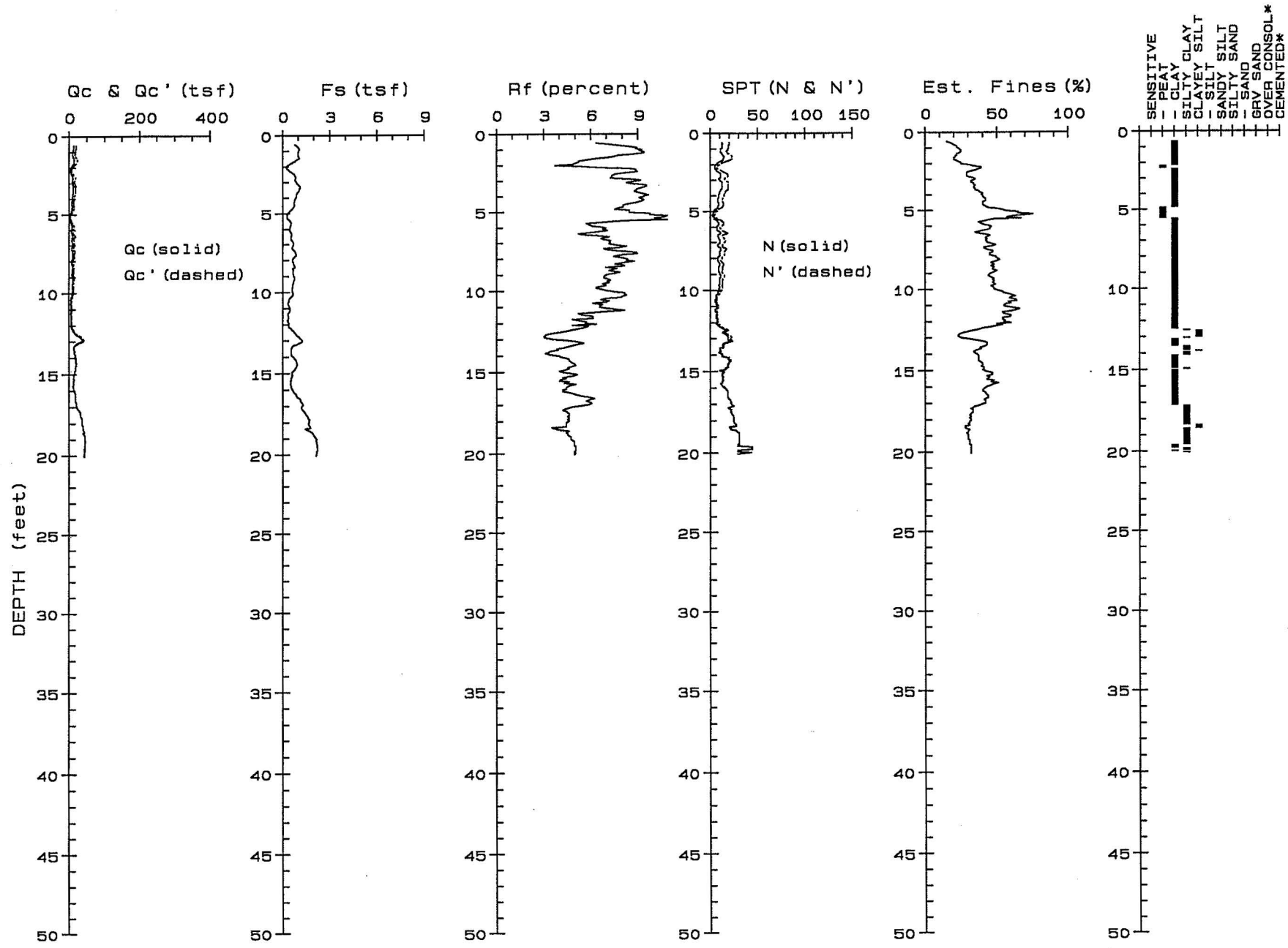
Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc 9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc=12 tsf)

References: \* Robertson and Campanella, 1988

\*\* Olsen, 1989 \*\*\* Durgunoglu & Mitchell, 1975



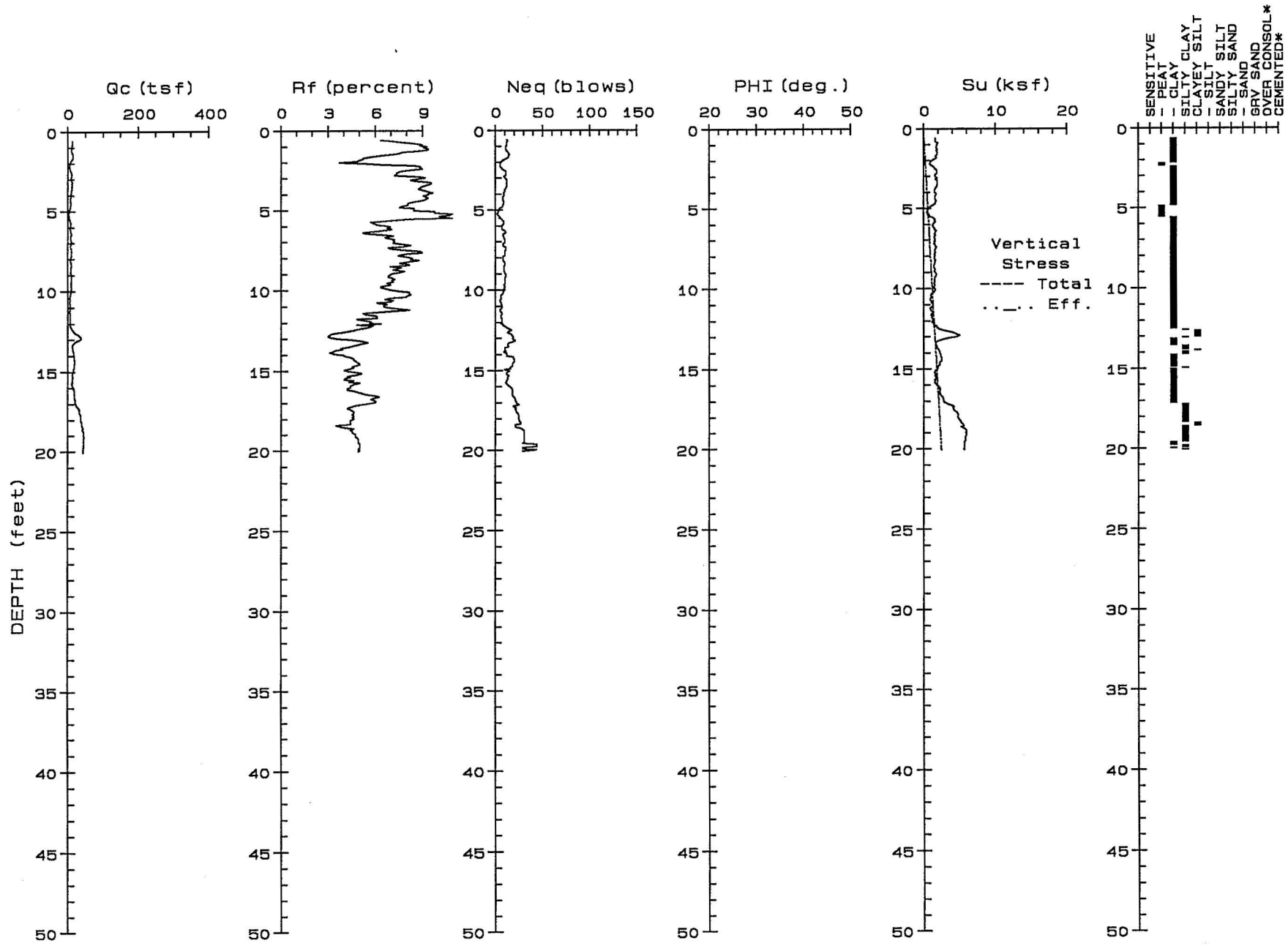
Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-3  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service



Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-3  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-4  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 44.0 feet

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.55	11.50	0.790	6.9	12	18	0.06	----	1.91	CLAY	120-130
1.02	16.80	1.300	7.7	17	27	0.13	----	2.23	"	130-140
1.56	19.40	1.600	8.2	19	31	0.20	----	2.57	"	"
2.03	11.20	0.750	6.7	11	18	0.26	----	1.85	"	120-130
2.56	11.00	0.760	6.9	11	18	0.32	----	1.81	"	"
3.02	13.00	1.050	8.1	13	21	0.38	----	1.71	"	"
3.56	13.80	1.120	8.1	14	22	0.45	----	1.81	"	"
4.03	10.90	0.770	7.1	11	17	0.51	----	1.77	"	"
4.56	9.50	0.760	8.0	10	15	0.58	----	1.54	"	"
5.04	7.90	0.510	6.5	8	13	0.63	----	1.52	"	110-120
5.54	8.10	0.440	5.4	8	13	0.69	----	1.55	"	"
6.02	7.80	0.450	5.8	8	12	0.74	----	1.49	"	"
6.58	7.00	0.410	5.9	7	11	0.81	----	1.32	"	"
7.00	8.70	0.600	6.9	9	13	0.86	----	1.65	"	120-130
7.54	7.90	0.530	6.7	8	12	0.92	----	1.49	"	110-120
8.02	9.40	0.520	5.5	9	13	0.98	----	1.49	"	"
8.55	7.20	0.590	8.2	7	10	1.04	----	1.34	"	"
9.04	10.20	0.690	6.8	10	14	1.10	----	1.61	"	120-130
9.51	8.50	0.600	7.1	9	11	1.16	----	1.58	"	"
10.07	9.00	0.550	6.1	9	12	1.23	----	1.40	"	"
10.54	9.80	0.620	6.3	10	12	1.29	----	1.53	"	"
11.01	6.70	0.460	6.9	7	8	1.34	----	1.21	"	110-120
11.56	6.50	0.340	5.2	7	8	1.40	----	1.16	"	100-110
12.02	9.50	0.460	4.8	10	11	1.45	----	1.46	"	110-120
12.50	9.40	0.450	4.8	9	11	1.51	----	1.44	"	"
13.05	11.80	0.600	5.1	12	13	1.58	----	1.84	"	120-130
13.54	9.30	0.460	4.9	9	10	1.63	----	1.41	"	110-120
14.02	11.30	0.700	6.2	11	12	1.69	----	1.74	"	120-130
14.56	11.90	0.800	6.7	12	13	1.76	----	1.84	"	"
15.04	12.40	0.910	7.3	12	13	1.82	----	1.53	"	"
15.53	14.90	0.790	5.3	15	15	1.88	----	1.86	"	"
16.01	13.90	0.650	4.7	14	14	1.94	----	1.72	"	"
16.57	19.50	0.950	4.9	20	19	2.02	----	2.47	"	130-140
17.04	30.80	1.270	4.1	21	21	2.08	----	3.97	Silty CLAY to CLAY	"
17.51	31.80	1.460	4.6	21	21	2.14	----	4.10	"	"
18.04	33.80	1.530	4.5	23	22	2.21	----	4.36	"	"
18.50	38.60	1.690	4.4	26	26	2.28	----	4.99	"	"
19.06	38.80	1.770	4.6	26	26	2.35	----	5.02	"	"
19.52	42.90	1.920	4.5	29	28	2.41	----	5.56	"	"
20.05	42.80	2.150	5.0	43	42	2.49	----	5.54	CLAY	"
20.51	37.70	1.900	5.0	38	37	2.55	----	4.86	"	"
21.04	36.70	2.070	5.6	37	35	2.62	----	4.72	"	"
21.57	25.10	1.500	6.0	25	23	2.69	----	3.17	"	"
22.02	23.80	1.300	5.5	24	22	2.75	----	2.99	"	"
22.55	15.20	1.030	6.8	15	13	2.82	----	1.84	"	120-130
23.02	38.90	1.850	4.8	26	22	2.88	----	4.99	Silty CLAY to CLAY	130-140
23.55	44.30	2.300	5.2	44	37	2.95	----	5.71	CLAY	"
24.02	36.80	2.190	6.0	37	30	3.02	----	4.71	"	"
24.54	32.90	2.000	6.1	33	27	3.09	----	4.18	"	"
25.07	36.00	2.060	5.7	36	29	3.16	----	4.59	"	"
25.57	17.70	1.350	7.6	18	14	3.23	----	2.14	"	"
26.01	82.40	2.050	2.5	27	22	3.29	36	----	Silty SAND to Sandy SILT	"
26.54	53.70	2.230	4.2	27	21	3.36	----	6.94	Clayey SILT to Silty CLAY	"
27.01	16.30	0.750	4.6	16	13	3.42	----	1.95	CLAY	120-130
27.54	14.20	0.480	3.4	9	7	3.48	----	1.66	Silty CLAY to CLAY	"
28.02	14.30	0.470	3.3	10	7	3.54	----	1.67	"	"
28.53	17.20	0.510	3.0	9	6	3.61	----	2.05	Clayey SILT to Silty CLAY	"
29.01	23.30	1.110	4.8	23	17	3.67	----	2.86	CLAY	130-140
29.57	37.90	1.820	4.8	25	19	3.75	----	4.80	Silty CLAY to CLAY	"
30.05	20.30	1.530	7.5	20	15	3.81	----	2.45	CLAY	"
30.52	10.30	0.610	5.9	10	7	3.87	----	1.39	"	120-130
31.06	16.40	0.960	5.9	16	12	3.94	----	1.92	"	"
32.00	14.20	0.680	4.8	14	10	4.06	----	1.62	"	"

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-4  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 44.0 feet

Page 2 of 2

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
32.55	55.40	2.270	4.1	28	19	4.13	----	7.11	Clayey SILT to Silty CLAY	130-140
33.01	95.70	3.760	3.9	48	33	4.19	----	12.48	"	"
33.53	53.70	2.760	5.1	54	37	4.26	----	6.88	CLAY	"
34.05	78.60	3.340	4.2	39	27	4.33	----	10.19	Clayey SILT to Silty CLAY	"
34.55	109.00	3.490	3.2	44	29	4.40	----	14.24	Sandy SILT to Clayey SILT	"
35.06	95.50	3.850	4.0	48	32	4.47	----	12.44	Clayey SILT to Silty CLAY	"
35.52	36.70	2.270	6.2	37	24	4.53	----	4.59	CLAY	"
36.03	76.10	2.620	3.4	30	20	4.60	----	9.84	Sandy SILT to Clayey SILT	"
36.54	97.50	3.100	3.2	39	25	4.67	----	12.69	"	"
37.03	239.30	4.500	1.9	48	31	4.73	41	----	SAND	"
37.52	221.40	3.910	1.8	44	28	4.80	40	----	"	"
38.01	234.80	3.400	1.4	47	30	4.87	40	----	"	"
38.56	197.10	4.220	2.1	66	41	4.94	39	----	Silty SAND to Sandy SILT	"
39.00	223.70	3.250	1.5	45	28	5.00	40	----	SAND	"
39.52	219.00	4.280	2.0	55	34	5.07	40	----	SAND to Silty SAND	"
40.02	233.00	3.410	1.5	47	29	5.14	40	----	SAND	"
40.50	219.20	3.660	1.7	44	27	5.20	40	----	"	"
41.02	204.60	3.960	1.9	51	31	5.27	39	----	SAND to Silty SAND	"
41.51	180.40	2.870	1.6	45	27	5.34	38	----	"	"
42.01	115.00	3.940	3.4	46	28	5.41	----	14.97	Sandy SILT to Clayey SILT	"
42.50	127.00	2.940	2.3	42	25	5.47	36	----	Silty SAND to Sandy SILT	"
43.04	209.00	5.310	2.5	70	41	5.54	39	----	"	"
43.53	501.20	4.330	0.9	84	49	5.61	44	----	Gravelly SAND to SAND	120-130
44.01	735.60	6.760	0.9	123	71	5.67	46	----	"	"

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

References: \* Robertson and Campanella, 1988

\*\* Olsen, 1989

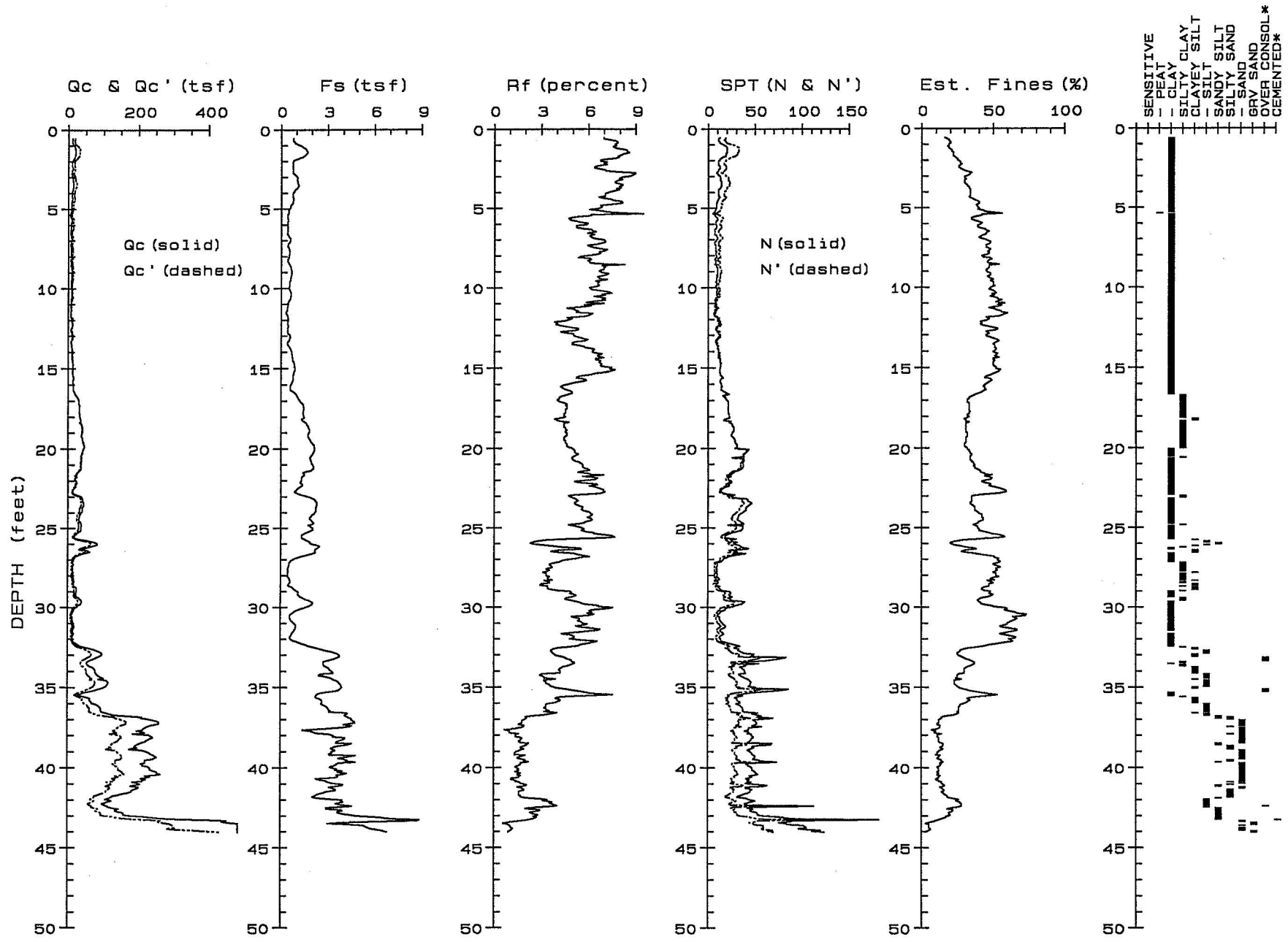
\*\*\* Durgunoglu & Mitchell, 1975

TotStr = Total Stress using est. density\*\*

Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc 9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc=12 tsf)



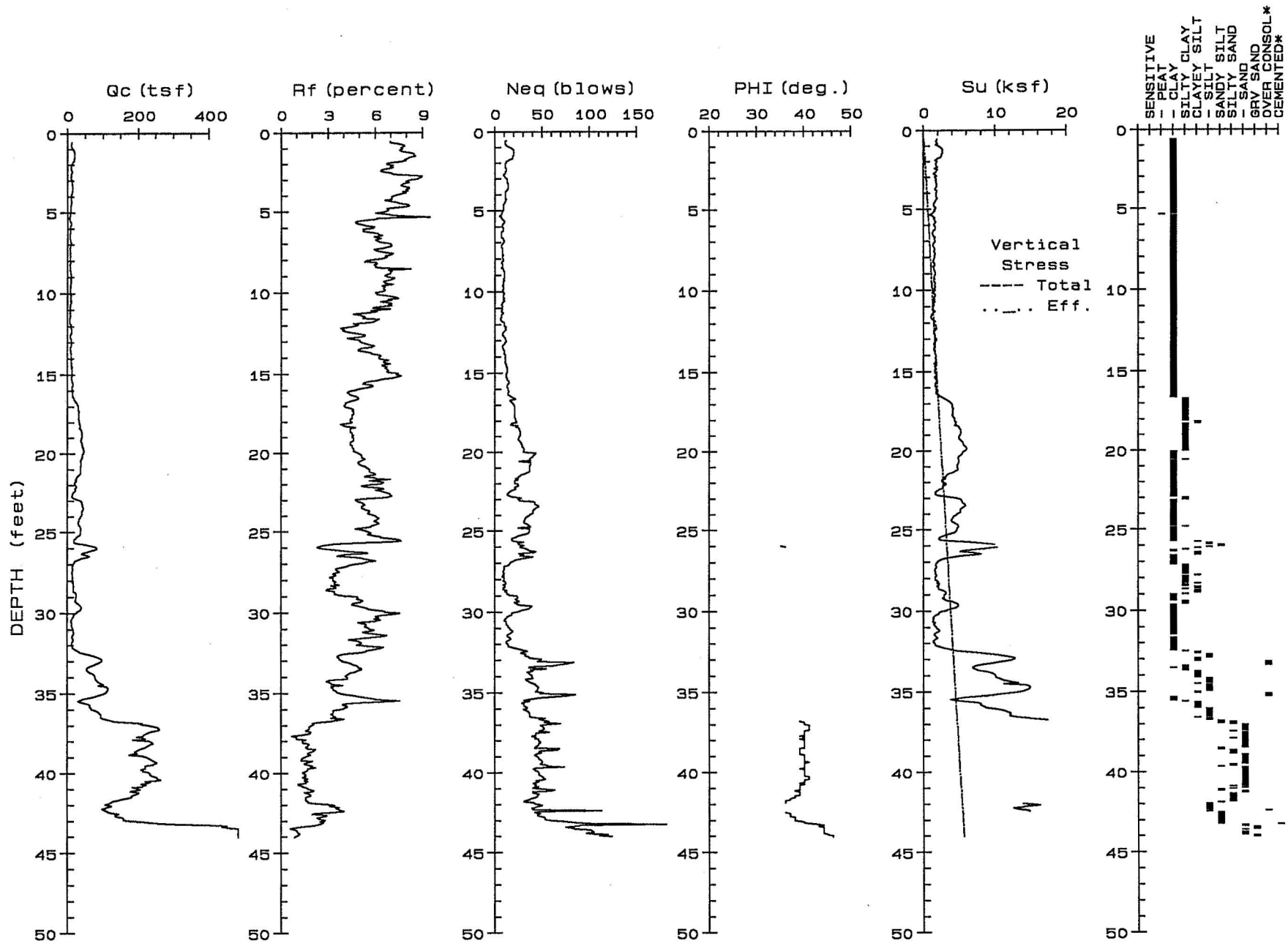
Terminated at 44.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-4  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service



Terminated at 44.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-4  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-5  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 50.0 feet

Page 1 of 2

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.56	14.60	1.050	7.2	15	23	0.07	----	1.94	CLAY	''
1.04	16.70	1.180	7.1	17	27	0.13	----	2.22	''	130-140
1.55	17.80	1.420	8.0	18	28	0.20	----	2.36	''	''
2.03	14.20	1.050	7.4	14	23	0.26	----	1.88	''	120-130
2.54	10.10	0.770	7.6	10	16	0.32	----	1.66	''	''
3.02	9.80	0.820	8.4	10	16	0.38	----	1.60	''	''
3.50	12.00	1.000	8.3	12	19	0.44	----	1.57	''	''
4.05	7.80	0.490	6.3	8	12	0.51	----	1.51	''	110-120
4.54	7.00	0.500	7.1	7	11	0.56	----	1.34	''	''
5.02	7.40	0.630	8.5	7	12	0.62	----	1.42	''	''
5.53	6.10	0.340	5.6	6	10	0.67	----	1.15	''	100-110
6.01	5.60	0.300	5.4	6	9	0.72	----	1.05	''	''
6.50	7.40	0.520	7.0	7	12	0.78	----	1.40	''	110-120
7.06	11.60	0.870	7.5	12	18	0.85	----	1.86	''	120-130
7.54	9.30	0.640	6.9	9	14	0.91	----	1.47	''	''
8.03	9.90	0.620	6.3	10	14	0.97	----	1.57	''	''
8.52	9.60	0.600	6.3	10	13	1.03	----	1.51	''	''
9.03	9.80	0.630	6.4	10	13	1.09	----	1.54	''	''
9.51	10.70	0.650	6.1	11	14	1.15	----	1.69	''	''
10.07	9.40	0.540	5.7	9	12	1.22	----	1.46	''	''
10.55	9.30	0.420	4.5	9	12	1.28	----	1.44	''	110-120
11.04	7.90	0.410	5.2	8	10	1.34	----	1.45	''	''
11.54	8.30	0.430	5.2	8	10	1.39	----	1.52	''	''
12.01	9.00	0.390	4.3	9	11	1.45	----	1.38	''	''
12.53	8.20	0.340	4.1	8	9	1.51	----	1.49	''	''
13.02	6.30	0.330	5.2	6	7	1.56	----	1.10	''	100-110
13.51	8.00	0.440	5.5	8	9	1.61	----	1.44	''	110-120
14.07	10.10	0.630	6.2	10	11	1.68	----	1.54	''	120-130
14.56	10.70	0.770	7.2	11	11	1.75	----	1.64	''	''
15.05	10.40	0.720	6.9	10	11	1.81	----	1.58	''	''
15.52	10.80	0.550	5.1	11	11	1.87	----	1.64	''	''
16.07	9.50	0.550	5.8	10	10	1.93	----	1.42	''	''
16.55	21.00	0.890	4.2	14	14	2.00	----	2.67	Silty CLAY to CLAY	130-140
17.04	25.40	1.160	4.6	25	25	2.07	----	3.25	CLAY	''
17.52	25.10	1.170	4.7	25	25	2.13	----	3.20	''	''
18.06	57.10	1.760	3.1	23	23	2.20	----	7.47	Sandy SILT to Clayey SILT	''
18.57	22.80	1.400	6.1	23	23	2.27	----	2.89	CLAY	''
19.04	21.60	1.050	4.9	22	21	2.34	----	2.72	''	''
19.52	26.50	1.430	5.4	27	26	2.40	----	3.37	''	''
20.07	26.00	1.480	5.7	26	26	2.47	----	3.30	''	''
20.56	22.90	1.420	6.2	23	22	2.54	----	2.88	''	''
21.04	19.10	1.280	6.7	19	18	2.61	----	2.37	''	''
21.52	20.60	1.090	5.3	21	19	2.67	----	2.57	''	''
22.04	29.80	1.490	5.0	30	27	2.74	----	3.79	''	''
22.52	30.10	1.710	5.7	30	27	2.81	----	3.83	''	''
23.07	33.90	2.030	6.0	34	29	2.88	----	4.33	''	''
23.55	14.80	0.970	6.6	15	13	2.94	----	1.78	''	120-130
24.02	42.00	2.200	5.2	42	35	3.00	----	5.40	''	130-140
24.56	62.80	2.700	4.3	31	26	3.08	----	8.17	Clayey SILT to Silty CLAY	''
25.05	22.30	1.430	6.4	22	18	3.14	----	2.76	CLAY	''
25.52	27.50	1.420	5.2	28	22	3.21	----	3.45	''	''
26.06	20.80	1.470	7.1	21	16	3.28	----	2.55	''	''
26.54	9.70	0.430	4.4	10	8	3.33	----	1.34	''	110-120
27.01	11.80	0.540	4.6	12	9	3.39	----	1.68	''	120-130
27.50	13.60	1.050	7.7	14	11	3.45	----	1.58	''	''
28.06	15.30	0.740	4.8	15	12	3.52	----	1.81	''	''
28.52	56.40	2.180	3.9	28	21	3.59	----	7.28	Clayey SILT to Silty CLAY	130-140
29.00	33.80	2.190	6.5	34	25	3.65	----	4.26	CLAY	''
29.54	43.00	2.620	6.1	43	32	3.72	----	5.49	''	''
30.02	17.40	0.910	5.2	17	13	3.78	----	2.07	''	120-130
30.57	12.90	0.540	4.2	13	9	3.85	----	1.46	''	''
31.04	17.30	1.070	6.2	17	12	3.92	----	2.05	''	130-140
32.05	11.60	0.600	5.2	12	8	4.04	----	1.60	''	120-130

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-5  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 50.0 feet

Page 2 of 2

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
32.54	22.30	1.200	5.4	22	16	4.11	----	2.70	''	130-140
33.02	43.60	2.380	5.5	44	30	4.17	----	5.54	''	''
33.51	42.70	2.770	6.5	43	29	4.24	----	5.41	''	''
34.03	68.50	4.220	6.2	69	47	4.31	----	8.85	Very Stiff Fine Grained *	''
34.51	20.20	1.450	7.2	20	14	4.37	----	2.40	CLAY	''
35.06	81.50	2.970	3.6	41	27	4.45	----	10.57	Clayey SILT to Silty CLAY	''
35.51	119.80	3.780	3.2	48	32	4.51	----	15.67	Sandy SILT to Clayey SILT	''
36.01	363.50	6.380	1.8	73	48	4.58	43	----	SAND	''
36.54	381.10	5.770	1.5	76	50	4.65	43	----	''	''
37.01	255.80	7.040	2.8	85	55	4.71	41	----	Silty SAND to Sandy SILT	''
37.54	317.80	7.160	2.3	64	41	4.78	42	----	SAND	''
38.03	351.40	5.840	1.7	70	45	4.85	43	----	''	''
38.55	374.80	6.310	1.7	75	47	4.92	43	----	''	''
39.05	294.00	5.130	1.7	59	37	4.99	42	----	''	''
39.52	148.60	4.410	3.0	50	31	5.05	38	----	Silty SAND to Sandy SILT	''
40.06	141.90	5.380	3.8	71	44	5.13	37	----	SAND to Clayey SAND *	¢140
40.51	143.80	4.880	3.4	58	35	5.19	----	18.83	Sandy SILT to Clayey SILT	130-140
41.02	191.10	4.930	2.6	64	39	5.26	39	----	Silty SAND to Sandy SILT	''
41.52	199.70	7.040	3.5	100	60	5.33	39	----	SAND to Clayey SAND *	¢140
42.01	179.50	7.040	3.9	90	54	5.39	38	----	''	''
42.53	188.00	6.880	3.7	94	56	5.47	39	----	''	''
43.02	147.40	4.220	2.9	49	29	5.53	37	----	Silty SAND to Sandy SILT	130-140
43.51	165.50	3.390	2.0	55	32	5.60	38	----	''	''
44.04	225.70	2.560	1.1	45	26	5.67	40	----	SAND	120-130
44.54	267.80	4.590	1.7	54	31	5.73	41	----	''	130-140
45.02	260.00	5.770	2.2	65	37	5.80	40	----	SAND to Silty SAND	''
45.53	343.50	7.400	2.2	69	39	5.87	42	----	SAND	''
46.03	264.70	6.240	2.4	88	50	5.93	40	----	Silty SAND to Sandy SILT	''
46.55	66.40	3.450	5.2	66	37	6.00	----	8.45	Very Stiff Fine Grained *	''
47.00	206.70	4.080	2.0	52	29	6.07	39	----	SAND to Silty SAND	''
47.53	237.00	3.220	1.4	47	26	6.14	40	----	SAND	''
48.06	150.10	5.800	3.9	75	41	6.21	37	----	SAND to Clayey SAND *	¢140
48.56	131.50	5.500	4.2	132	72	6.28	----	17.11	Very Stiff Fine Grained *	''
49.05	113.50	2.160	1.9	38	21	6.35	35	----	Silty SAND to Sandy SILT	130-140
49.53	126.00	5.700	4.5	126	68	6.41	----	16.37	Very Stiff Fine Grained *	¢140
50.06	170.30	4.830	2.8	57	30	6.49	37	----	Silty SAND to Sandy SILT	130-140

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

References: \* Robertson and Campanella, 1988

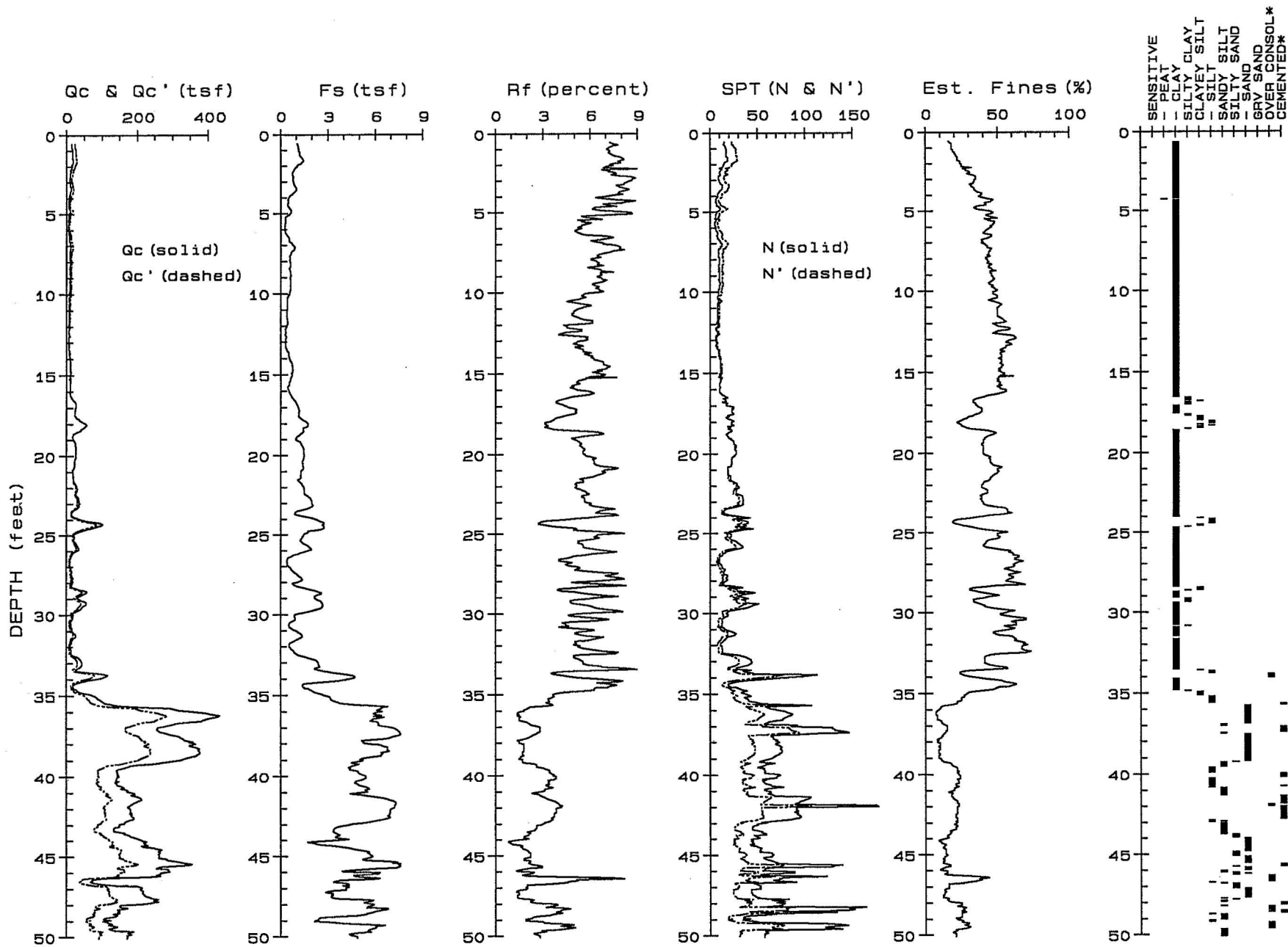
TotStr = Total Stress using est. density\*\*

Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc 9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc=12 tsf)

\*\* Olsen, 1989 \*\*\* Durgunoglu & Mitchell, 1975

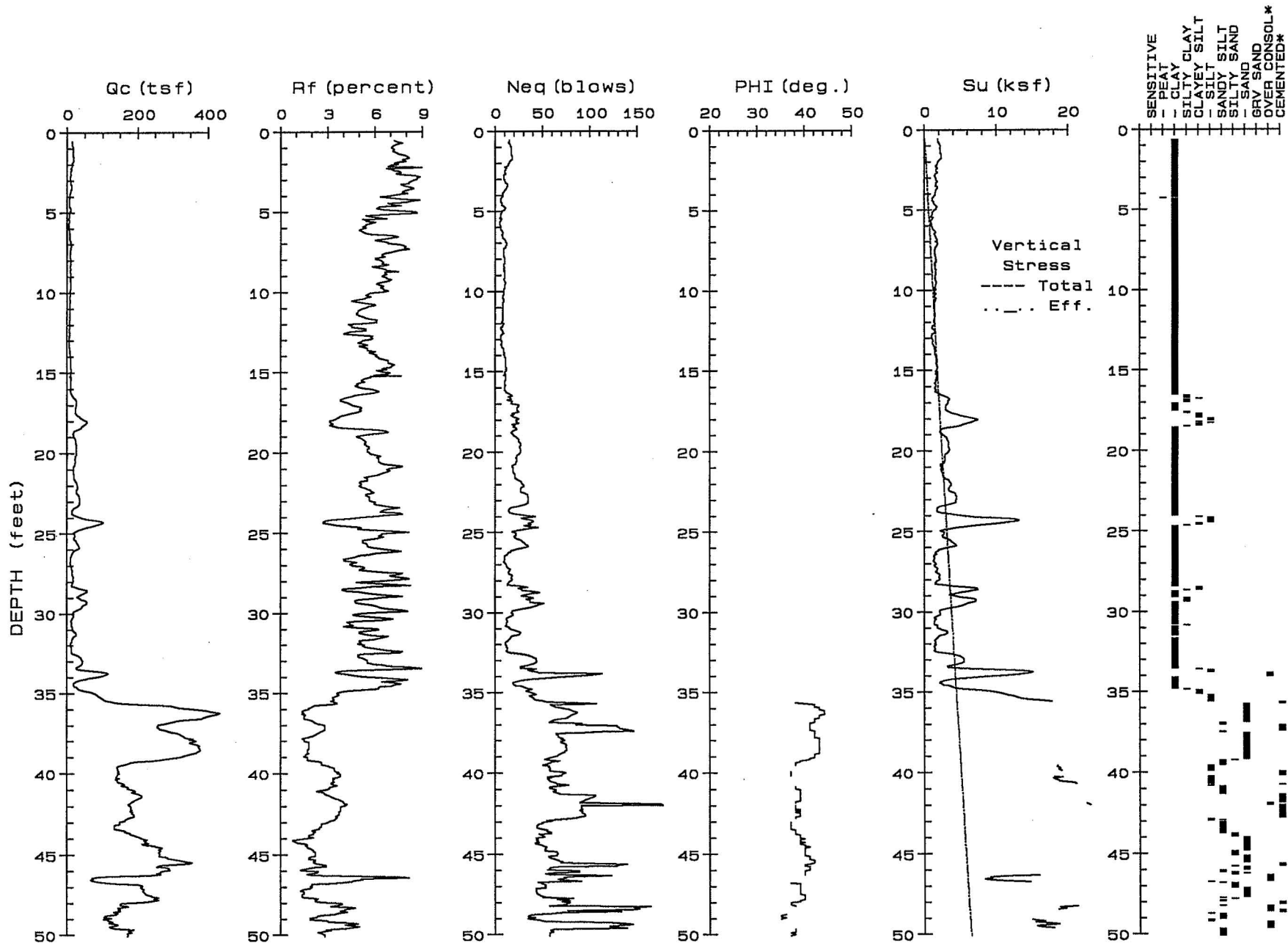


- SENSITIVE
- PEAT
- CLAY
- SILTY CLAY
- CLAYEY SILT
- SILT
- SANDY SILT
- SILTY SAND
- SAND
- GRV SAND
- OVER CONSOL\*
- CEMENTED\*

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-5  
 DATE : 03-06-2007

*John Sarmiento & Associates*  
 Cone Penetration Testing Service



Terminated at 50.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-5  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT- 6  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 20.0 feet

Page 1 of 1

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.50	14.70	0.780	5.3	15	24	0.06	----	1.96	CLAY	120-130
1.00	19.90	1.320	6.6	20	32	0.13	----	2.64	"	130-140
1.53	18.20	1.330	7.3	18	29	0.20	----	2.41	"	"
2.05	11.20	0.870	7.8	11	18	0.26	----	1.84	"	120-130
2.56	11.80	0.680	5.8	12	19	0.33	----	1.94	"	"
3.02	6.70	0.660	9.9	7	11	0.38	----	1.30	Organic Material	110-120
3.54	13.60	1.010	7.4	14	22	0.44	----	1.78	CLAY	120-130
4.00	10.00	0.800	8.0	10	16	0.50	----	1.62	"	"
4.53	6.70	0.580	8.7	7	11	0.56	----	1.28	"	110-120
5.06	9.00	0.660	7.3	9	14	0.63	----	1.45	"	120-130
5.51	14.90	0.620	4.2	15	24	0.68	----	1.94	"	"
6.04	8.90	0.480	5.4	9	14	0.75	----	1.71	"	110-120
6.57	10.00	0.510	5.1	10	16	0.81	----	1.60	"	120-130
7.03	10.20	0.610	6.0	10	16	0.87	----	1.63	"	"
7.56	10.50	0.710	6.8	11	15	0.93	----	1.67	"	"
8.02	9.60	0.630	6.6	10	14	0.99	----	1.52	"	"
8.56	9.90	0.770	7.8	10	14	1.06	----	1.56	"	"
9.04	9.10	0.670	7.4	9	12	1.12	----	1.42	"	"
9.57	9.10	0.630	6.9	9	12	1.19	----	1.42	"	"
10.03	8.90	0.580	6.5	9	11	1.24	----	1.66	"	"
10.56	7.00	0.460	6.6	7	9	1.30	----	1.27	"	110-120
11.02	5.90	0.420	7.1	6	7	1.36	----	1.04	"	"
11.55	7.80	0.520	6.7	8	9	1.42	----	1.42	"	"
12.07	12.20	0.750	6.1	12	14	1.48	----	1.53	"	120-130
12.53	8.40	0.390	4.6	8	10	1.54	----	1.53	"	110-120
13.07	17.00	0.660	3.9	11	13	1.60	----	2.16	Silty CLAY to CLAY	120-130
13.53	9.60	0.460	4.8	10	10	1.66	----	1.46	CLAY	110-120
14.06	11.90	0.690	5.8	12	13	1.72	----	1.84	"	120-130
14.53	12.70	0.850	6.7	13	13	1.78	----	1.57	"	"
15.05	14.00	0.920	6.6	14	15	1.85	----	1.74	"	"
15.50	12.70	0.910	7.2	13	13	1.90	----	1.57	"	"
16.03	14.10	1.120	7.9	14	14	1.97	----	1.75	"	"
16.56	11.20	0.770	6.9	11	11	2.04	----	1.70	"	"
17.01	12.20	0.940	7.7	12	12	2.09	----	1.49	"	"
17.54	15.00	1.030	6.9	15	15	2.16	----	1.86	"	"
18.03	14.10	0.900	6.4	14	14	2.22	----	1.73	"	"
18.52	16.10	1.000	6.2	16	16	2.28	----	1.99	"	"
19.01	24.50	1.470	6.0	25	24	2.35	----	3.11	"	130-140
19.51	34.70	1.760	5.1	35	34	2.41	----	4.47	"	"
20.03	37.20	1.980	5.3	37	37	2.48	----	4.79	"	"

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

References: \* Robertson and Campanella, 1988

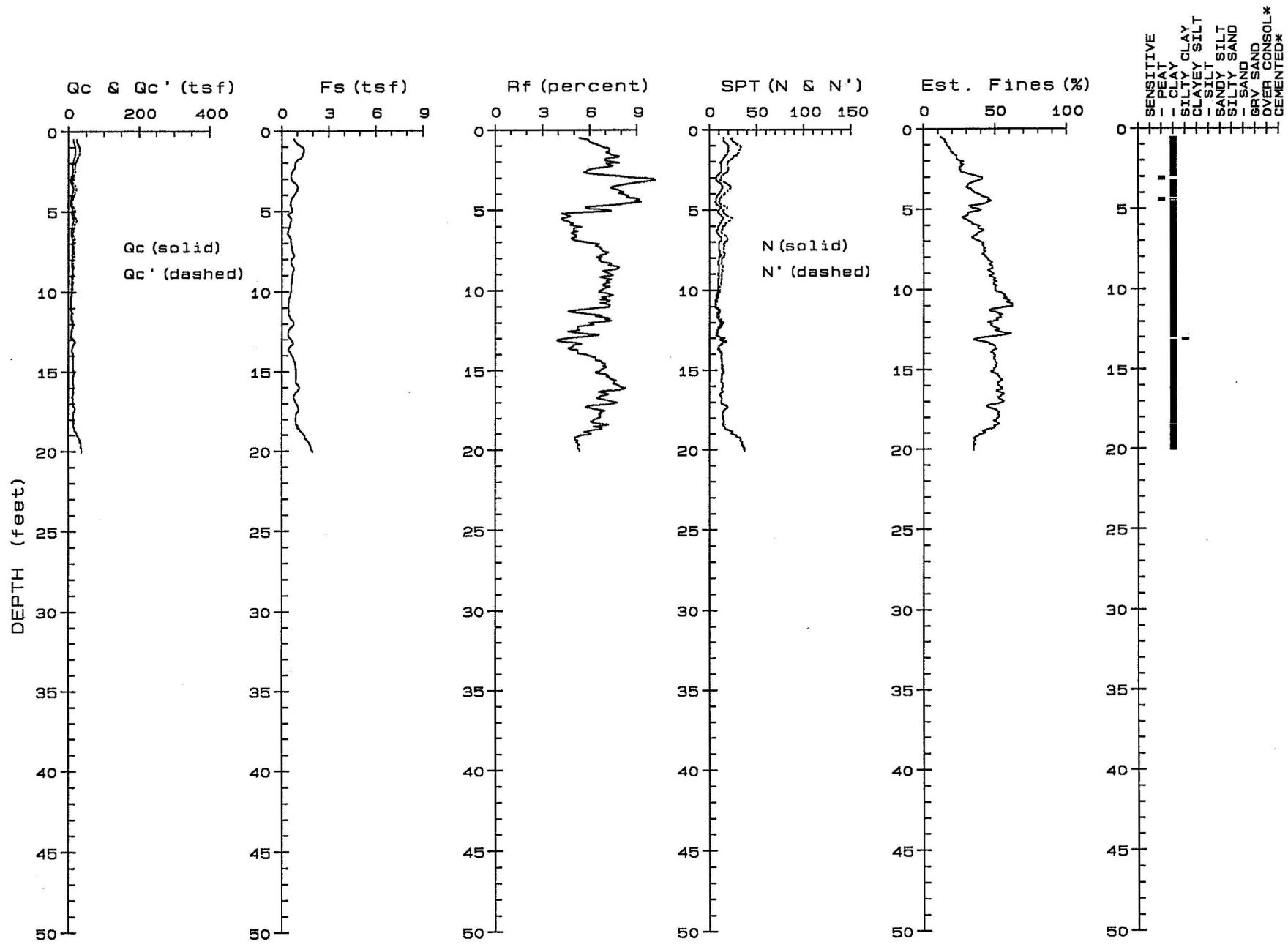
TotStr = Total Stress using est. density\*\*

Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc 9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc=12 tsf)

\*\* Olsen, 1989 \*\*\* Durgunoglu & Mitchell, 1975



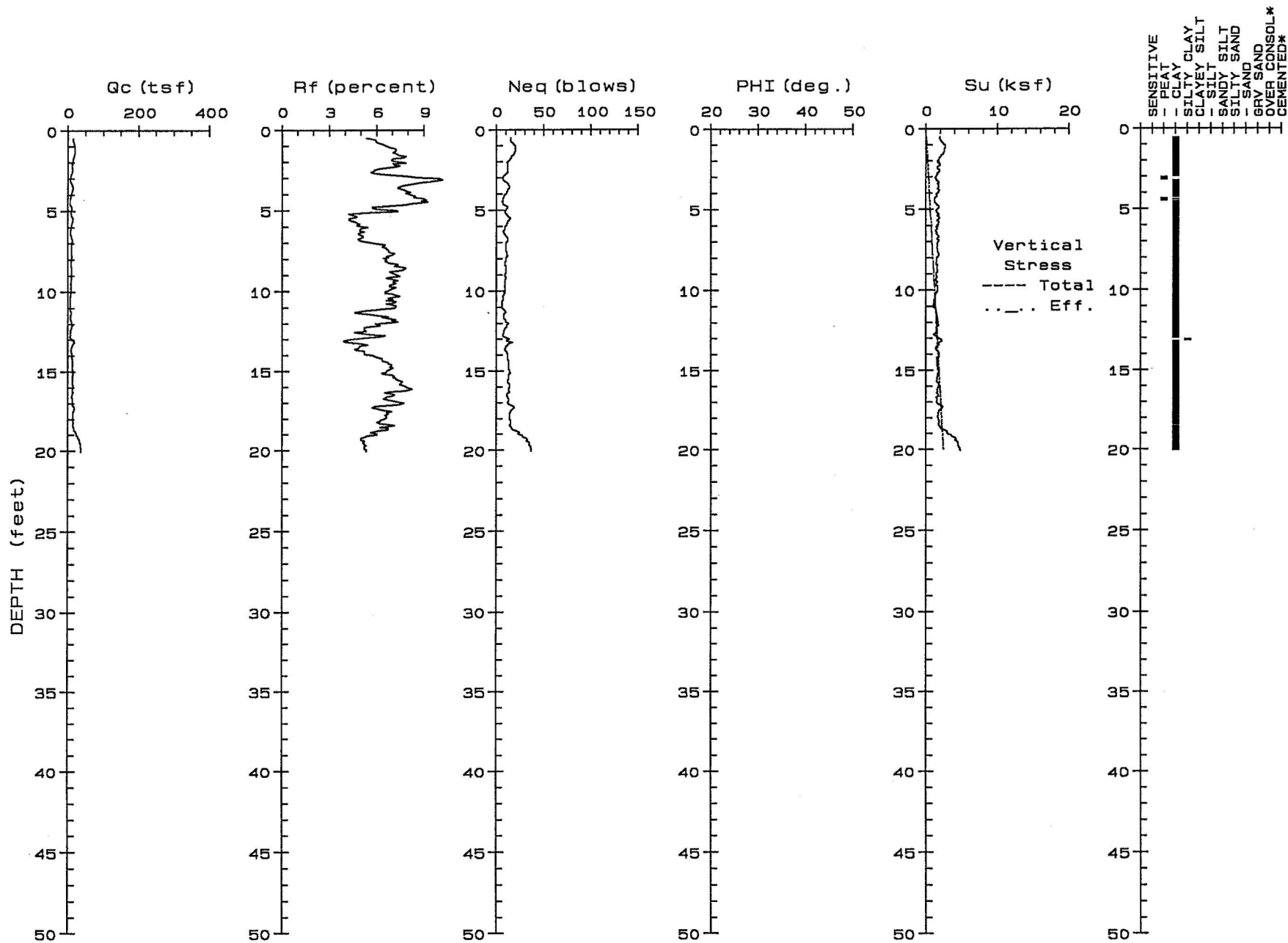
Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-6  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service



Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-6  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: 80944(KLF-150)

CPT NO.: CPT-7  
 DATE : 03-06-2007  
 Groundwater not encountered  
 Terminated at 20.0 feet

Page 1 of 1

DEPTH (feet)	Qc (tsf)	Fs (tsf)	Rf (%)	SPT (N)	SPT (N')	TotVtStr (ksf)	PHI (deg.)	SU (ksf)	SOIL BEHAVIOR TYPE	DENSITY RANGE (pcf)
0.53	12.00	0.910	7.6	12	19	0.06	----	1.60	''	120-130
1.06	12.20	0.970	8.0	12	20	0.13	----	1.62	''	''
1.53	16.30	1.460	9.0	16	26	0.19	----	2.16	''	130-140
2.05	13.30	1.010	7.6	13	21	0.26	----	1.76	''	120-130
2.51	9.10	0.630	6.9	9	15	0.31	----	1.49	''	''
3.04	7.70	0.680	8.8	8	12	0.38	----	1.50	''	''
3.50	11.70	1.090	9.3	12	19	0.44	----	1.91	''	''
4.03	11.50	1.070	9.3	12	18	0.50	----	1.87	''	''
4.56	5.60	0.550	9.8	6	9	0.56	----	1.06	Organic Material	110-120
5.03	6.30	0.430	6.8	6	10	0.62	----	1.20	CLAY	''
5.54	11.00	0.580	5.3	11	18	0.68	----	1.78	''	120-130
6.00	5.20	0.390	7.5	5	8	0.73	----	0.97	''	100-110
6.54	8.60	0.500	5.8	9	14	0.79	----	1.64	''	110-120
7.01	8.10	0.560	6.9	8	13	0.85	----	1.54	''	''
7.55	7.50	0.590	7.9	8	11	0.91	----	1.41	''	''
8.02	9.40	0.690	7.3	9	13	0.97	----	1.49	''	120-130
8.55	6.90	0.500	7.2	7	10	1.03	----	1.28	''	110-120
9.05	6.70	0.460	6.9	7	9	1.09	----	1.23	''	''
9.52	8.30	0.560	6.7	8	11	1.14	----	1.55	''	''
10.06	6.90	0.430	6.2	7	9	1.20	----	1.26	''	''
10.52	8.80	0.510	5.8	9	11	1.26	----	1.63	''	''
11.06	11.40	0.770	6.8	11	14	1.32	----	1.79	''	120-130
11.53	8.50	0.530	6.2	9	10	1.38	----	1.56	''	110-120
12.02	8.70	0.720	8.3	9	10	1.44	----	1.60	''	120-130
12.55	9.60	0.530	5.5	10	11	1.50	----	1.47	''	''
13.02	7.50	0.410	5.5	8	8	1.56	----	1.34	''	110-120
13.53	31.50	0.940	3.0	16	17	1.63	----	4.09	Clayey SILT to Silty CLAY	130-140
14.00	10.70	0.610	5.7	11	12	1.69	----	1.64	CLAY	120-130
14.54	9.20	0.440	4.8	9	10	1.75	----	1.39	''	110-120
15.01	10.00	0.590	5.9	10	10	1.81	----	1.52	''	120-130
15.54	11.20	0.740	6.6	11	12	1.87	----	1.71	''	''
16.01	9.80	0.710	7.2	10	10	1.93	----	1.47	''	''
16.55	9.80	0.630	6.4	10	10	2.00	----	1.47	''	''
17.01	12.60	0.870	6.9	13	13	2.06	----	1.54	''	''
17.54	27.80	1.250	4.5	19	18	2.13	----	3.56	Silty CLAY to CLAY	130-140
18.01	25.40	1.550	6.1	25	25	2.19	----	3.24	CLAY	''
18.54	31.40	1.420	4.5	21	21	2.26	----	4.04	Silty CLAY to CLAY	''
19.01	23.00	1.390	6.0	23	23	2.33	----	2.91	CLAY	''
19.53	22.00	1.180	5.4	22	22	2.40	----	2.77	''	''
20.06	26.30	1.520	5.8	26	26	2.47	----	3.34	''	''

DEPTH = Sampling interval (.1 feet)

Qc = Tip bearing resistance

Fs = Sleeve friction resistance

Rf = Tip/Sleeve ratio

SPT = Equivalent Standard Penetration Test\*

References: \* Robertson and Campanella, 1988

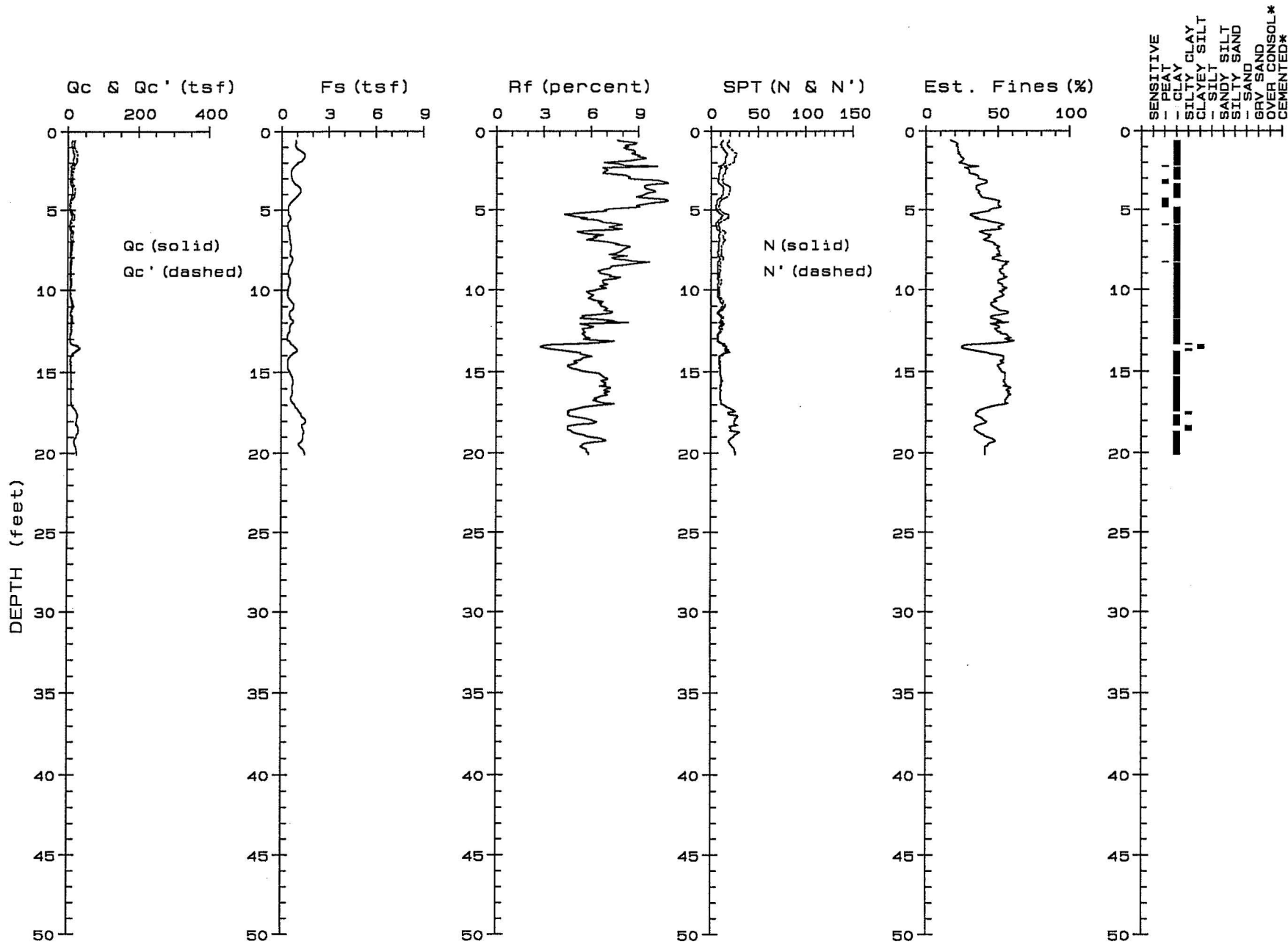
TotStr = Total Stress using est. density\*\*

Phi = Soil friction angle\*

Su = Undrained Soil Strength\* (Nk=10 for Qc 9 tsf)

(Nk=12 for Qc=9 to 12 tsf) (Nk=15 for Qc=12 tsf)

\*\* Olsen, 1989 \*\*\* Durgunoglu & Mitchell, 1975



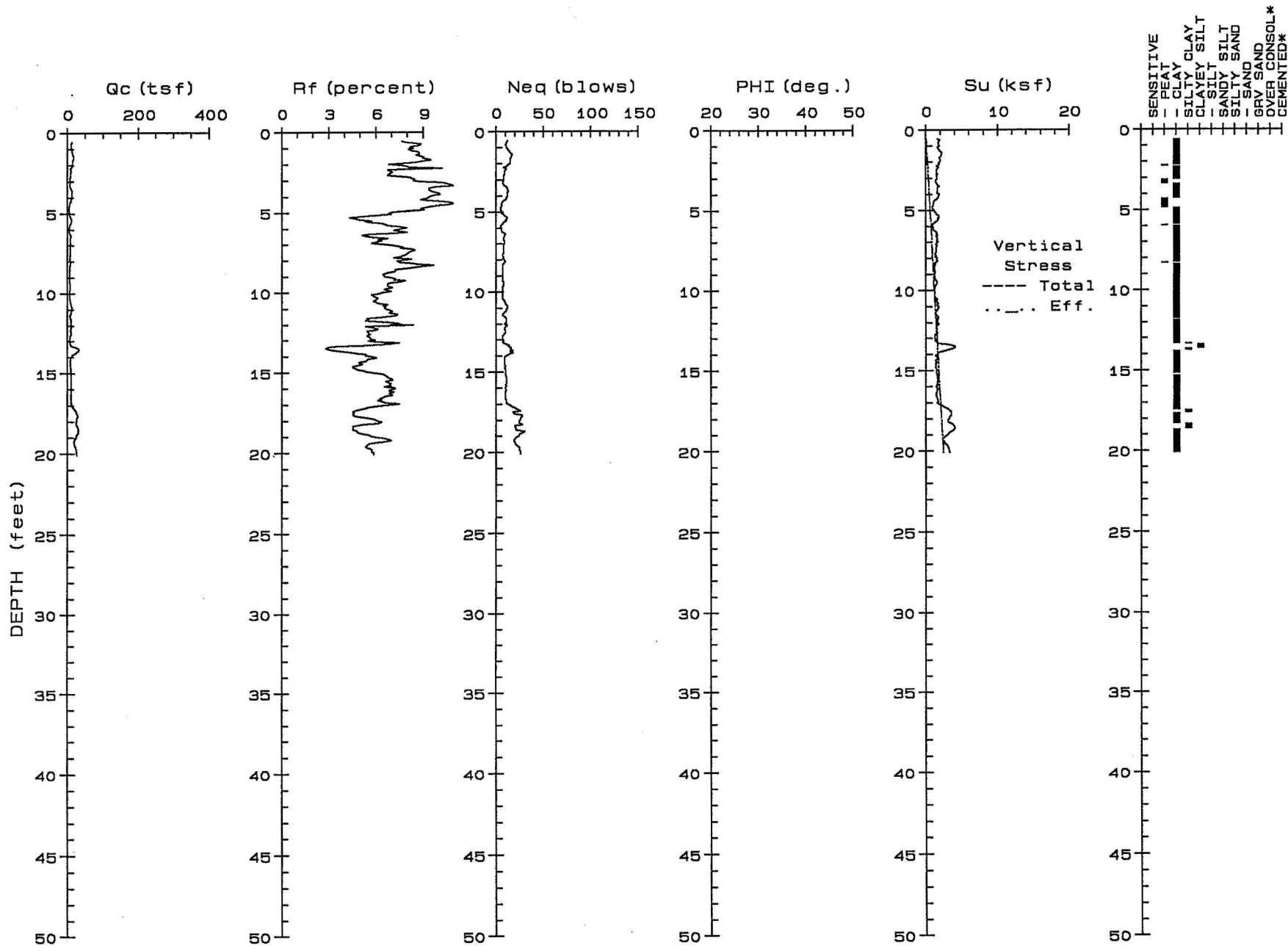
Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE  
 LOCATION: Hollister CA  
 PROJ. NO.: (KLF-150)

CPT NO.: CPT-7  
 DATE : 03-06-2007

**John Sarmiento & Associates**  
 Cone Penetration Testing Service



Terminated at 20.0 feet

Groundwater not encountered

PROJECT: LOWES HOLLISTER SITE	CPT NO.: CPT-7	<b>John Sarmiento &amp; Associates</b>
LOCATION: Hollister CA	DATE : 03-06-2007	<i>Cone Penetration Testing Service</i>
PROJ. NO.: (KLF-150)		

