Appendix E

Geotechnical Investigation

CORNERSTONE
EARTH GROUP

TYPE OF SERVICES Geotechnical Investigation
PROJECT NAME 2905 S. King Road Warehouse
LOCATION 2905 S. King Road
San Jose, California
CLIENT Xebec Realty
PROJECT NUMBER 1084-2-1
DATE February 22, 2021

CORNERSTONE
EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**2905 S. King Road Warehouse**
Location	**2905 S. King Road** **San Jose, California**
Client	**Xebec Realty**
Client Address	**2100 Ross Avenue, Suite 895** **Dallas, Texas**
Project Number	**1084-2-1**
Date	**February 22, 2021**

Renee S Morales

REGISTERED PROFESSIONAL ENGINEER
RENEE S. MORALES
GE3170
GEOTECHNICAL
STATE OF CALIFORNIA

Prepared by **Renee S. Morales, P.E., G.E.**
Senior Project Engineer
Geotechnical Project Manager

Matthew Schaffer

Matthew J. Schaffer, P.E., G.E.
Principal Engineer
Quality Assurance Reviewer

TABLE OF CONTENTS

Type of Services	**Geotechnical Investigation**
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SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of Xebec Realty for the 2905 S. King Road Warehouse project in San Jose, California. The location of the site is shown on the Vicinity Map, Figure 1. For our use, we were provided with the following documents:

- A site plan titled, "Scheme: 2, Conceptual Site Plan, 2905 South King Road, San Jose, CA 95121, Sheet 1" prepared by Ware Malcomb, dated December 29, 2020.

1.1 PROJECT DESCRIPTION

The project will consist of redeveloping the approximately 4.8-acre site for a new Class A warehouse. The new warehouse will be approximately 105,040 square feet. We anticipate the building will be single-story with interior clear height of 36 to 38 feet and consist of concrete tilt-up construction. At-grade auto and trailer parking and drive aisles surrounding the warehouse are also planned. Appurtenant utilities, landscaping, storm water management areas, and other improvements necessary for overall site development will also be constructed.

Structural loads are not available at this time; however, structural loads are expected to be typical of this type of structure. Cuts and fills up to about 2 to 5 feet are expected for site grading.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated December 30, 2021 and consisted of field and laboratory programs to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare recommendations for site work and grading, building foundations, flatwork, retaining walls, and pavements, and preparation of this report. Brief descriptions of our exploration and laboratory programs are presented below.

1.3 EXPLORATION PROGRAM

Field exploration consisted of three borings drilled on January 29, 2021 with truck-mounted, hollow-stem auger drilling equipment and four Cone Penetration Tests (CPTs) advanced on January 27, 2021. The borings were drilled to depths of approximately 26½ to 45 feet; the CPTs were advanced to depths of approximately 50 to 131 feet. Refusal was encountered in CPT-2 at about 131 feet. Seismic shear wave velocity measurements were collected from CPT-2. Borings EB-1, EB-2, and EB-3 were advanced adjacent to CPT-1, CPT-2, and CPT-4, respectively, for direct evaluation of physical samples to correlated soil behavior.

The borings and CPTs were backfilled with cement grout in accordance with local requirements; exploration permits were obtained as required by local jurisdictions.

The approximate locations of our exploratory borings and CPTs are shown on the Site Plan, Figure 2. Details regarding our field program are included in Appendix A.

1.4 LABORATORY TESTING PROGRAM

In addition to visual classification of samples, the laboratory program focused on obtaining data for foundation design and seismic ground deformation estimates. Testing included moisture contents, dry densities, washed sieve analyses, a Plasticity Index test, and a unconsolidated-undrained triaxial test. Details regarding our laboratory program are included in Appendix B.

1.5 CORROSION EVALUATION

Three samples from our borings at depths ranging from approximately 2 to 6 feet were tested for saturated resistivity, pH, and soluble sulfates and chlorides. In general, the on-site soils can be characterized as severely to very severely corrosive to buried metal, and non-corrosive to buried concrete.

1.6 ENVIRONMENTAL SERVICES

Environmental services were not requested for this project. If environmental concerns are determined to be present during future evaluations, the project environmental consultant should review our geotechnical recommendations for compatibility with the environmental concerns.

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located within the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range. More locally, the Silver Creek Block represents a further subdivision of the San Francisco Bay block and underlies Yerba Buena Ridge and the hills along Silver Creek in the southeastern part of the San Jose East quadrangle. The eastern edge of the valley is bounded by active and potentially active faults, such as the Hayward and Calaveras faults. According to the U.S.G.S. Fault and Fold database, the Silver Creek Fault is located 200 feet northeast of the northeast property corner (U.S.G.S., 2006).

The broad alluvial plain of the Santa Clara Valley consists of Holocene and Pleistocene alluvial deposits (Helley and Wesling, 1990) that consist of a deep section of unconsolidated and semi-consolidated stream and basin deposits that were deposited largely by ancestral Coyote Creek and Guadalupe River on top of the Franciscan Complex rocks that form the bottom of the basin. Alluvial soil thicknesses in the Santa Clara Valley range from 300 feet to over 6,500 feet (>2 km) (Rogers & Williams, 1974; and Jachens et al., 1997).

Surficial mapping by Knudsen et al. (2000), and Witter et al. (2006) indicate that the site and adjacent areas are underlain by Holocene alluvial fan levee deposits or alluvial fan deposits fine facies (Qhl and Qhff; respectively). Alluvial fan deposits are described by Knudsen et al. (2000) as “Sediment deposited by streams emanating from canyons onto alluvial valley floors or alluvial plains. Alluvial fan sediment includes sand, gravel, silt, clay, and is moderately to poorly sorted, and moderately to poorly bedded.”

2.2 REGIONAL SEISMICITY

The San Francisco Bay area region is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, geologists from the U.S. Geological Survey have recently updated earlier estimates from their 2015 Uniform California Earthquake Rupture Forecast (Version 3) publication. The estimated probability of one or more magnitude 6.7 earthquakes (the size of the destructive 1994 Northridge earthquake) expected to occur somewhere in the San Francisco Bay Area has been revised (increased) to 72 percent for the period 2014 to 2043 (Aagaard et al., 2016). The faults in the region with the highest estimated probability of generating damaging earthquakes between 2014 and 2043 are the Hayward (33%), Rodgers Creek (33%), Calaveras (26%), and San Andreas Faults (22%). In this 30-year period, the probability of an earthquake of magnitude 6.7 or larger occurring is 22 percent along the San Andreas Fault and 33 percent for the Hayward or Rodgers Creek Faults.

The faults considered capable of generating significant earthquakes are generally associated with the well-defined areas of crustal movement, which trend northwesterly. The table below presents the State-considered active faults within 25 kilometers of the site.

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Hayward (Southeast Extension)	3.1	5.0
Calaveras	6.0	9.6
Monte Vista-Shannon	7.0	11.2
Hayward (Total Length)	9.2	14.8
Sargent	13.5	21.7
San Andreas (1906)	13.7	22.0

A regional fault map is presented as Figure 3, illustrating the relative distances of the site to significant fault zones.

SECTION 3: SITE CONDITIONS

3.1 SITE BACKGROUND

We reviewed historical aerial imagery provided online by Historical Aerials (http://www.historicaerials.com) and Google Earth Pro (2021). A summary of pertinent surface changes at and in the near vicinity of the site is as follows:

- 1960: The site was undeveloped except for a single residential structure along the north-eastern margin of the site along S King Road.
- 1980: The previous residential structure appears to have been removed. Another residential home is built in the northern corner of the site. Three large radio towers are observed onsite.
- 2016: The site appears to remain relatively unchanged.
- 2020: Radio towers and single-family home have been demolished. A mini-storage facility has been built adjacent to the site towards the northwest and southwest boundary. The site appears to be an empty field with no observed improvements.

3.2 SURFACE DESCRIPTION

The site is currently undeveloped. Previous minor grading appears to have occurred during construction of the mini-storage facility that borders the northwest and southwest boundary of the site. The minor grading consists of areas of surface aggregate base observed on the northeastern corner of the site. At Boring EB-2, the aggregate base was approximately 4 inches thick. The remainder of the site is generally covered in tall shrubs and weeds.

Site grades are generally higher on the northeast portion of the site adjacent to S. King Road and gently slopes down towards the southwest. The site elevations range from approximately 148 to 149 feet in the northeast portion of site to 145 feet in the southwest portion of site (Google Earth, WGS84).

3.3 SUBSURFACE CONDITIONS

Below the surface, Boring EB-1 encountered about ½ foot of undocumented fill consisting of soft highly expansive fat clay. Boring EB-2 encountered about 4 inches of poorly graded gravel with sand (aggregate base) fill. Beneath the fill at Borings EB-1 and EB-2 and the surface at EB-3, our borings encountered very stiff to hard highly expansive fat clay and fat clay with sand to depths ranging from 3½ to 6 feet below existing site grades. Below the highly expansive fat clays, generally medium stiff to hard lean clays with variable amounts of sand with some interbedded layers of stiff silts with variable amounts of sand and medium dense clayey sands were encountered to a depth of 45 feet. Below the maximum depth explored of 45 feet in our borings, our CPTs indicate soil behaviors corresponding to lean clay, silty clay, and clayey silt to a depth of approximately 108 feet with thin interbedded layers of sand to silty sand. Below approximately 108 feet, coarse grained soils consisting of silty sand and sand were encountered to a depth of 118 feet followed by silty clay, lean clay, and clayey silt to a depth of 131 feet, the maximum depth explored.

3.3.1 Plasticity/Expansion Potential

We performed one Plasticity Index (PI) test on a representative sample. Test results were used to evaluate expansion potential of surficial soils. The test resulted in a PI of 36, indicating high expansion potential to wetting and drying cycles.

3.3.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 13 to 22 percent moisture. In our opinion, we estimated this corresponds to about 4 percent below to 7 percent above the estimated laboratory optimum moisture content.

3.4 GROUNDWATER

Groundwater was encountered in some of our explorations. Pore pressure measurements from CPT-2 and CPT-4 inferred groundwater at depths ranging from 20½ to 23¼ feet below current grades. Groundwater was encountered in Borings EB-1 to EB-3 at depths ranging from 26½ to 28 feet below current grades. All measurements were taken at the time of drilling and may not represent the stabilized levels that can be higher than the initial levels encountered.

Published data (CGS, San Jose East 7.5-minute Quadrangle, 2000) indicated that seasonal and/or historical high groundwater levels in the vicinity of the site are on the order of 20 to 25 feet below the ground surface. From the California Department of Water Resources Water Data Library, a water well located approximately 1 mile east of the site recorded groundwater depths of 15½ to 21¼ feet between December 2012 to December 2020.

Based on the above information, we recommend a design groundwater depth of 15 feet. Fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

3.5 PRELIMINARY CORROSION SCREENING

We tested three samples collected at depths ranging from approximately 1½ to 5½ feet for resistivity, pH, soluble sulfates, and chlorides. The laboratory test results are summarized in Table 2.

Table 2: Summary of Corrosion Test Results

Sample/Test Location Number	Depth (feet)	Soil pH(1)	Minimum Resistivity(2) (ohm-cm)	Chloride(3) (mg/kg)	Sulfate(3)(4) (mg/kg)
EB-1	1½	7.9	575	185	619
EB-2	3½	7.1	2,058	9	41
EB-3	5½	7.4	1,260	91	47

Notes: (1) ASTM G51
(2) ASTM G57 - 100% saturation
(3) ASTM D4327
(4) 1 mg/kg = 0.0001 % by dry weight

Many factors can affect the corrosion potential of soil including moisture content, resistivity, permeability, and pH, as well as chloride and sulfate concentration. Typically, soil resistivity, which is a measurement of how easily electrical current flows through a medium (soil and/or water), is the most influential factor. In addition to soil resistivity, chloride and sulfate ion concentrations, and pH also contribute in affecting corrosion potential.

3.5.1 Preliminary Soil Corrosion Screening

Based on the laboratory test results summarized in Table 2 and published correlations between resistivity and corrosion potential, the soils may be considered severely to very severely corrosive to buried metallic improvements (Chaker and Palmer, 1989).

In accordance with the 2019 CBC Section 1904.1, alternative cementitious materials for different exposure categories and classes shall be determined in accordance with ACI 318-19 Table 19.3.1.1, Table R19.3.1, and Table 19.3.2.1. Based on the laboratory sulfate test results, no cement type restriction is required, although, in our opinion, it is generally a good idea to include some sulfate resistance and to maintain a relatively low water-cement ratio. We have summarized applicable exposure categories and classes from ACI 318-19, Table 19.3.1.1 below in Table 3A.

Table 3A: ACI 318-19 Table 19.3.1.1 Exposure Categories and Classes

Freezing and Thawing (F)	Sulfate (S, soil)	In Contact with Water (W)	Corrosion Protection of Reinforcement (C)
F0[1]	S0[2]	W1[3]	C1[4]

1 (F0) “Concrete not exposed to freezing-and-thawing cycles” (ACI 318-19)
2 (S0) “Water soluble sulfate in soil, percent by mass” is less than 0.10 (ACI 318-19)
3 (W1) “Concrete in contact with water and low permeability is not required” (ACI 318-19)
4 (C1) “Concrete exposed to moisture but not to an external source of chlorides” (ACI 318-19)

In addition, ACI 318-19, Table 19.3.2.1 provides requirements for concrete by exposure class. Table 3B below indicates different requirements that we recommend be followed for the concrete design.

Table 3B: ACI 318-19 Table 19.3.2.1 Requirements for Concrete by Exposure Class

Exposure Class	Maximum water:cement ratio	Minimum Compressive Strength (psi)	Maximum Water-Soluble Chloride Ion Content (% wt)
F0	N/A	2,500	N/A
S0 (soil)	N/A	2,500	N/A
W1[1]	N/A	2,500	None
C1	N/A	2,500	0.30 (0.06)[2]

[1] Per section 26.4.2.2(d), For concrete identified as being exposed to water in service, evidence shall be submitted that the concrete mixture complies with (1) and (2):

(1) Aggregates are not alkali-silica reactive or measures to mitigate alkali-silica reactivity have been established.
(2) Aggregates are not alkali-carbonate reactive

[2] Maximum water-soluble chloride ion content for non-prestressed concrete (value for prestressed concrete).

We recommend the structural engineer and a corrosion engineer be retained to confirm the information provided and for additional recommendations, as required.

3.6 IN-SITU GROUNDWATER INFILTRATION

As discussed, bioretention treatment basins are being proposed as part of the site development. To estimate the infiltration rate of the in-situ soils we performed two in-situ field infiltration tests using a Guelph permeameter by SoilMoisture Equipment Corp., Model #2800, in general accordance with ASTM D5126. Generally, the Guelph permeameter is a constant head device, which uses two water-filled chambers to measure infiltration rate in a shallow borehole. A constant head level is established in the borehole and the rate of water outflow into the surrounding soil is noted. The rate of flow when it reaches a steady state, or constant rate, is used to determine an approximate infiltration rate for that location and depth.

The approximate locations of the field infiltration tests (P-1 and P-2) are shown on the Site Plan, Figure 2. Infiltration Test P-1 was performed at the northern margin of the site at a depth of about 5 feet beneath existing site grades. Infiltration Test P-2 was performed at the southern margin of the site at a depth of about 4 feet beneath existing site grades. The test results are summarized in the table below.

Table 4: In-Situ Field Guelph Permeameter Test Results

Location	Ground Surface Elevation (ft, WGS84)	Depth Below Existing Grade (ft)	Infiltration Rate (in/hr)
P-1	147½	5	0.32
P-2	145	4	0.28

3.6.1 Reliability of Field Test Data

Test results may not be truly indicative of the long-term, in-situ infiltration. Other factors including stratifications, heterogeneous deposits, overburden stress, disturbance, organic content, depth to groundwater, and other factors can influence test results. In addition, for stratified soils such as those encountered at the site, the average horizontal infiltration is typically greater than the average vertical infiltration.

3.6.2 Findings and Recommendations

Based on our findings, the soil at the locations tested and at depths of about 4 and 5 feet below existing grade have infiltration rates of about 0.28 to 0.32 inches per hour. Based on our test results, the in-situ field tests indicate generally low infiltration rates at the depths and locations tested and may be classified as Hydrological Soil Group D (United States Department of Agriculture National Engineering Handbook).

We recommend the above estimate be confirmed in the field at the time of construction, as required. In addition, the project civil engineer should review the above information and provide additional recommendations as deemed necessary.

3.6.3 General Comments and Design Considerations

As discussed, the tests were performed at discrete locations and depths. In addition, some disturbance in preparing the tests also can occur. Therefore, the above results can vary significantly and may not be representative over the entire site. Localized areas/depths with higher or lower permeable materials can increase or decrease the actual infiltration rates. Therefore, we recommend the potential for variations be considered when evaluating the soil infiltration capacity or performance.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT SURFACE RUPTURE

As discussed above, several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone, a Santa Clara County Fault Hazard Zone, or a City of San Jose Geologic Hazard Zone (City of San Jose, 1983; California Geological Survey 2000; SCCO, 2003).

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A peak ground acceleration (PGA_M) was estimated following the ground motion hazard analysis procedure presented in Chapter 16 and 18 and Appendix J of the 2019 California Building Code (CBC) and Chapter 21, Section 21.2 of ASCE 7-16 and Supplement No. 1. For our analysis we used a PGA_M of 0.78g, which was determined in accordance with Section 21.5 of ASCE 7-16.

4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, San Jose East Quadrangle, 2001) as well as a Santa Clara County Liquefaction Hazard Zone (Santa Clara County, 2012). Our field and laboratory programs addressed this issue by testing and sampling potentially liquefiable layers to depths of at least 50 feet, performing visual classification on sampled materials, evaluating CPT data, and performing various tests to further classify soil properties.

4.3.1 Background

During strong seismic shaking, cyclically induced stresses can cause increased pore pressures within the soil matrix that can result in liquefaction triggering, soil softening due to shear stress loss, potentially significant ground deformation due to settlement within sandy liquefiable layers as pore pressures dissipate, and/or flow failures in sloping ground or where open faces are present (lateral spreading) (NCEER 1998). Limited field and laboratory data is available regarding ground deformation due to settlement; however, in clean sand layers settlement on the order of 2 to 4 percent of the liquefied layer thickness can occur. Soils most susceptible to liquefaction are loose, non-cohesive soils that are saturated and are bedded with poor drainage, such as sand and silt layers bedded with a cohesive cap.

4.3.2 Analysis

As discussed in the “Subsurface” section above, several sand layers were encountered below the design groundwater depth of 15 feet. Following the liquefaction analysis framework in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008), incorporating updates in *CPT and SPT Based Liquefaction Triggering Procedures* (Boulanger and Idriss, 2014), and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic shaking (Cyclic Stress Ratio - CSR) to the soil’s estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation (i.e. settlement).

The CSR for each layer quantifies the stresses anticipated to be generated due to a design-level seismic event, is based on the peak horizontal acceleration generated at the ground surface discussed in the “Estimated Ground Shaking” section above, and is corrected for overburden and stress reduction factors as discussed in the procedure developed by Seed and Idriss (1971) and updated in the 2008 Idriss and Boulanger monograph.

The soil’s CRR is estimated from the in-situ measurements from CPTs and laboratory testing on samples retrieved from our borings. SPT “N” values obtained from hollow-stem auger borings were not used in our analyses, as the “N” values obtained are less reliable in sands below groundwater. The tip pressures are corrected for effective overburden stresses, taking into consideration both the groundwater level at the time of exploration and the design groundwater level, and stress reduction versus depth factors. The CPT method utilizes the soil behavior type index (I_C) to estimate the plasticity of the layers. Selected soil samples collected from advancing Borings EB-1, EB-2, and EB-3 adjacent to CPT-1, CPT-2, and CPT-4, respectively, were tested to evaluate grain size, as well as visually observed for confirmation of CPT soil behavior types.

The results of our CPT analyses (CPT-1 to CPT-4) are presented on Figures 4A to 4D of this report. Calculations for these CPTs are attached as Appendix C.

4.3.3 Summary

Our analyses indicate that several layers could potentially experience liquefaction triggering that could result in post-liquefaction total settlement at the ground surface up to ¾-inches based on the Yoshimine (2006) method. As discussed in SP 117A, differential movement for level ground sites over deep soil sites will be up to about two-thirds of the total settlement between independent foundation elements. In our opinion, differential settlements are anticipated to be on the order of ½-inch between independent foundation elements.

4.3.4 Ground Rupture Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground rupture or sand boils. For ground rupture to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) indicates that the 15-foot thick layer of non-liquefiable cap is sufficient to prevent ground rupture; therefore the above total settlement estimates are reasonable.

4.4 LATERAL SPREADING

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As failure tends to propagate as block failures, it is difficult to analyze and estimate where the first tension crack will form.

There are no open faces within a distance considered susceptible to lateral spreading; therefore, in our opinion, the potential for lateral spreading to affect the site is low.

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. As the soils encountered at the site above the design groundwater depth were predominantly stiff to very stiff clays, in our opinion, the potential for significant differential seismic settlement affecting the proposed improvements is low.

4.6 TSUNAMI/SEICHE

The terms tsunami or seiche are described as ocean waves or similar waves usually created by undersea fault movement or by a coastal or submerged landslide. Tsunamis may be generated at great distance from shore (far field events) or nearby (near field events). Waves are formed, as the displaced water moves to regain equilibrium, and radiates across the open water, similar to ripples from a rock being thrown into a pond. When the waveform reaches the coastline, it quickly raises the water level, with water velocities as high as 15 to 20 knots. The water mass, as well as vessels, vehicles, or other objects in its path create tremendous forces as they impact coastal structures.

Tsunamis have affected the coastline along the Pacific Northwest during historic times. The Fort Point tide gauge in San Francisco recorded approximately 21 tsunamis between 1854 and 1964. The 1964 Alaska earthquake generated a recorded wave height of 7.4 feet and drowned eleven people in Crescent City, California. For the case of a far-field event, the Bay area would have hours of warning; for a near field event, there may be only a few minutes of warning, if any.

A tsunami or seiche originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Based on the study of tsunami inundation potential for the San Francisco Bay Area (Ritter and Dupre, 1972), areas most likely to be inundated are marshlands, tidal flats, and former bay margin lands that are now artificially filled, but are still at or below sea level, and are generally within 1½ miles of the shoreline. The site is approximately 14 miles inland from the San Francisco Bay shoreline, and is approximately 145 to 149 feet above mean sea level. Therefore, the potential for inundation due to tsunami or seiche is considered low.

4.7 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone D, an area of undetermined, but possible flood hazard. We recommend the project civil engineer be retained to confirm this information.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

From a geotechnical viewpoint, the project is feasible provided the concerns listed below are addressed in the project design. Descriptions of each concern with brief outlines of our recommendations follow the listed concerns.

- Potential for liquefaction-induced settlements
- Presence of highly expansive soils
- Soil corrosion potential
- Redevelopment considerations

5.1.1 Potential for Liquefaction-Induced Settlements

As discussed, our liquefaction analysis indicates that there is a potential for liquefaction of localized sand layers during a significant seismic event. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is low, our analysis indicates that liquefaction-induced settlement on the order of ¾-inch or less could occur, resulting in differential settlement up to ½-inch between independent foundation elements. Foundations should be designed to tolerate the anticipated total and differential settlements. Detailed foundation recommendations are presented in the “Foundations” section.

5.1.2 Presence of Highly Expansive Soils

Highly expansive surficial soils generally blanket the site. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. To reduce the potential for damage to the planned structures, slabs-on-grade should have sufficient reinforcement and be supported on a layer of non-expansive fill; footings should extend below the zone of seasonal moisture fluctuation. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering. Detailed grading and foundation recommendations addressing this concern are presented in the following sections.

5.1.3 Soil Corrosion Potential

A preliminary soil corrosion screening was performed based on the results of analytical tests on samples of the near-surface soil. Testing on the samples indicate sulfate exposure is low and therefore sulfate resistant concrete is not required per published ACI guidelines. However, the corrosion potential for buried metallic structures, such as metal pipes, is considered very severely corrosive based on comparisons to published standards. We recommend that special requirements for corrosion control be made to protect metal pipes. We recommend that a corrosion engineer be retained to review this information, provide additional recommendations as needed, and perform additional testing as deemed necessary for the proposed site development.

5.1.4 Re-Development Considerations

As discussed, the site is currently undeveloped but had previous development at the site. Potential issues that are often associated with redeveloping sites include demolition of existing improvements, abandonment of existing utilities, and undocumented fills. Please refer to the “Earthwork” section below for further recommendations.

5.2 PLANS AND SPECIFICATIONS REVIEW

We recommend that we be retained to review the geotechnical aspects of the project structural, civil, and landscape plans and specifications, allowing sufficient time to provide the design team with any comments prior to issuing the plans for construction.

5.3 CONSTRUCTION OBSERVATION AND TESTING

As site conditions may vary significantly between the small-diameter borings performed during this investigation, we also recommend that a Cornerstone representative be present to provide geotechnical observation and testing during earthwork and foundation construction. This will allow us to form an opinion and prepare a letter at the end of construction regarding contractor compliance with project plans and specifications, and with the recommendations in our report. We will also be allowed to evaluate any conditions differing from those encountered during our investigation, and provide supplemental recommendations as necessary. For these reasons, the recommendations in this report are contingent of Cornerstone providing observation and testing during construction. Contractors should provide at least a 48-hour notice when scheduling our field personnel.

SECTION 6: EARTHWORK

6.1 SITE DEMOLITION

All existing improvements not to be reused for the current development, including all foundations, flatwork, pavements, utilities, and other improvements should be demolished and removed from the site. Recommendations in this section apply to the removal of these improvements, which may be present on the site, prior to the start of mass grading or the construction of new improvements for the project.

Cornerstone should be notified prior to the start of demolition, and should be present on at least a part-time basis during all backfill and mass grading as a result of demolition. Occasionally, other types of buried structures (wells, cisterns, debris pits, etc.) can be found on sites with prior use or development. If encountered, Cornerstone should be contacted to address these types of structures on a case-by-case basis.

6.1.1 Demolition of Existing Slabs, Foundations and Pavements

All slabs, foundations, and pavements should be completely removed from within planned building areas.

Special care should be taken during the demolition and removal of existing improvements to minimize disturbance of the subgrade. Excessive disturbance of the subgrade, which includes either native or previously placed engineered fill, resulting from demolition activities can have serious detrimental effects on planned foundation and paving elements.

Existing foundations are typically mat-slabs, shallow footings, or piers/piles. If slab or shallow footings are encountered, they should be completely removed. If drilled piers are encountered, they should be cut off at an elevation at least 60-inches below proposed footings or the final subgrade elevation, whichever is deeper. The remainder of the drilled pier could remain in place. Foundation elements to remain in place should be surveyed and superimposed on the proposed development plans to determine the potential for conflicts or detrimental impacts to the planned construction. Following review, additional mitigation or planned foundation elements may need to be modified.

6.1.2 Abandonment of Existing Utilities

All utilities should be completely removed from within planned building areas. For any utility line to be considered acceptable to remain within building areas, the utility line must be completely backfilled with grout or sand-cement slurry (sand slurry is not acceptable), the ends outside the building area capped with concrete, and the trench fills either removed and replaced as engineered fill with the trench side slopes flattened to at least 1:1, or the trench fills are determined not to be a risk to the structure. The assessment of the level of risk posed by the particular utility line will determine whether the utility may be abandoned in place or needs to be completely removed. The contractor should assume that all utilities will be removed from within building areas unless provided written confirmation from both the owner and the geotechnical engineer.

Utilities extending beyond the building area may be abandoned in place provided the ends are plugged with concrete, they do not conflict with planned improvements, and that the trench fills do not pose significant risk to the planned surface improvements.

The risk for owners associated with abandoning utilities in place include the potential for future differential settlement of existing trench fills, and/or partial collapse and potential ground loss into utility lines that are not completely filled with grout.

6.2 SITE CLEARING AND PREPARATION

6.2.1 Site Stripping

The site should be stripped of all surface vegetation, and surface and subsurface improvements to be removed within the proposed development area. Surface vegetation and topsoil should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight. Based on our site observations, surficial stripping should extend about 4 to 6 inches below existing grade in vegetated areas.

6.2.2 Tree and Shrub Removal

Trees and shrubs designated for removal should have the root balls and any roots greater than ½-inch diameter removed completely. Mature trees are estimated to have root balls extending to depths of 2 to 4 feet, depending on the tree size. Significant root zones are anticipated to extend to the diameter of the tree canopy. Grade depressions resulting from root ball removal should be cleaned of loose material and backfilled in accordance with the recommendations in the “Compaction” section of this report.

6.3 REMOVAL OF EXISTING FILLS

As discussed, undocumented fills up to about ½ foot were encountered in Borings EB-1 and EB-2. There is a potential for additional undocumented fills to be present across the site. All fills should be completely removed from within building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater. Provided the fills meet the "Material for Fill" requirements below, the fills may be reused when backfilling the excavations. Based on review of the samples collected from our borings, it appears that the fill may be reused. If materials are encountered that do not meet the requirements, such as debris, wood, trash, those materials should be screened out of the remaining material and be removed from the site. Backfill of excavations should be placed in lifts and compacted in accordance with the "Compaction" section below.

Fills extending into planned pavement and flatwork areas may be left in place provided they are determined to be a low risk for future differential settlement and that the upper 12 to 18 inches of fill below pavement subgrade is re-worked and compacted as discussed in the "Compaction" section below.

6.4 TEMPORARY CUT AND FILL SLOPES

The contractor is responsible for maintaining all temporary slopes and providing temporary shoring where required. Temporary shoring, bracing, and cuts/fills should be performed in accordance with the strictest government safety standards. On a preliminary basis, the upper 10 feet at the site may be classified as OSHA Soil Type C materials. A Cornerstone representative should be retained to confirm the preliminary site classification.

Excavations performed during site demolition and fill removal should be sloped at 3:1 (horizontal:vertical) within the upper 5 feet below building subgrade. Excavations extending more than 5 feet below building subgrade and excavations in pavement and flatwork areas should be sloped at a 1:1 inclination unless the OSHA soil classification indicates that slope should not exceed 1.5:1.

6.5 SUBGRADE PREPARATION

After site clearing and demolition is complete, and prior to backfilling any excavations resulting from fill removal or demolition, the excavation subgrade and subgrade within areas to receive additional site fills, slabs-on-grade and/or pavements should be scarified to a depth of 6 inches, moisture conditioned, and compacted in accordance with the "Compaction" section below.

6.6 SUBGRADE STABILIZATION MEASURES

Soil subgrade and fill materials, especially soils with high fines contents such as clays and silty soils, can become unstable due to high moisture content, whether from high in-situ moisture contents or from winter rains. As the moisture content increases over the laboratory optimum, it becomes more likely the materials will be subject to softening and yielding (pumping) from construction loading or become unworkable during placement and compaction.

As discussed in the "Subsurface" section in this report, the in-situ moisture contents range from about 4 percent below to 7 percent over the estimated laboratory optimum in the upper 10 feet of the soil profile. The contractor should anticipate needing to moisture condition some soils and drying other soils prior to reusing them as fill. In addition, repetitive rubber-tire loading may de-stabilize the soils.

There are several methods to address potential unstable soil conditions and facilitate fill placement and trench backfill. Some of the methods are briefly discussed below. Implementation of the appropriate stabilization measures should be evaluated on a case-by-case basis according to the project construction goals and the particular site conditions.

6.6.1 Scarification and Drying

The subgrade may be scarified to a depth of 6 to 12 inches and allowed to dry to near optimum conditions, if sufficient dry weather is anticipated to allow sufficient drying. More than one round of scarification may be needed to break up the soil clods.

6.6.2 Removal and Replacement

As an alternative to scarification, the contractor may choose to over-excavate the unstable soils and replace them with dry on-site or import materials. A Cornerstone representative should be present to provide recommendations regarding the appropriate depth of over-excavation, whether a geosynthethic (stabilization fabric or geogrid) is recommended, and what materials are recommended for backfill.

6.6.3 Chemical Treatment

Where the unstable area exceeds about 5,000 to 10,000 square feet and/or site winterization is desired, chemical treatment with quicklime (CaO), kiln-dust, or cement may be more cost-effective than removal and replacement. Recommended chemical treatment depths will typically range from 12 to 18 inches depending on the magnitude of the instability.

6.7 MATERIAL FOR FILL

6.7.1 Re-Use of On-site Soils

On-site soils with an organic content less than 3 percent by weight may be reused as general fill. General fill should not have lumps, clods, or cobble pieces larger than 6 inches in diameter; 85 percent of the fill should be smaller than 2½ inches in diameter. Minor amounts of oversize material (smaller than 12 inches in diameter) may be allowed provided the oversized pieces are not allowed to nest together and the compaction method will allow for loosely placed lifts not exceeding 12 inches.

6.7.2 Potential Import Sources

Imported and non-expansive material should be inorganic with a Plasticity Index (PI) of 15 or less, and not contain recycled asphalt concrete where it will be used within the building areas. To prevent significant caving during trenching or foundation construction, imported material should have sufficient fines. Samples of potential import sources should be delivered to our office at least 10 days prior to the desired import start date. Information regarding the import source should be provided, such as any site geotechnical reports. If the material will be derived from an excavation rather than a stockpile, potholes will likely be required to collect samples from throughout the depth of the planned cut that will be imported. At a minimum, laboratory testing will include PI tests. Material data sheets for select fill materials (Class 2 aggregate base, ¾-inch crushed rock, quarry fines, etc.) listing current laboratory testing data (not older than 6 months from the import date) may be provided for our review without providing a sample. If current data is not available, specification testing will need to be completed prior to approval.

Environmental and soil corrosion characterization should also be considered by the project team prior to acceptance. Suitable environmental laboratory data to the planned import quantity should be provided to the project environmental consultant; additional laboratory testing may be required based on the project environmental consultant’s review. The potential import source should also not be more corrosive than the on-site soils, based on pH, saturated resistivity, and soluble sulfate and chloride testing.

6.7.3 Non-Expansive Fill Using Lime Treatment

As discussed above, non-expansive fill should have a Plasticity Index (PI) of 15 or less. Due to the high clay content and PI of the on-site soil materials, it is not likely that sufficient quantities of non-expansive fill would be generated from cut materials. As an alternative to importing non-expansive fill, chemical treatment can be considered to create non-expansive fill. If this option is considered, additional laboratory tests should be performed during initial site grading to provide supplemental recommendations.

6.8 COMPACTION REQUIREMENTS

All fills, and subgrade areas where fill, slabs-on-grade, and pavements are planned, should be placed in loose lifts 8 inches thick or less and compacted in accordance with ASTM D1557 (latest version) requirements as shown in the table below. In general, clayey soils should be compacted with sheepsfoot equipment and sandy/gravelly soils with vibratory equipment; open-graded materials such as crushed rock should be placed in lifts no thicker than 18 inches and consolidated in place with vibratory equipment. Each lift of fill and all subgrade should be firm and unyielding under construction equipment loading in addition to meeting the compaction requirements to be approved. The contractor (with input from a Cornerstone representative) should evaluate the in-situ moisture conditions, as the use of vibratory equipment on soils with high moistures can cause unstable conditions. General recommendations for soil stabilization are provided in the “Subgrade Stabilization Measures” section of this report. Where the soil’s PI is 20 or greater, the expansive soil criteria should be used.

Table 5: Compaction Requirements

Description	Material Description	Minimum Relative[1] Compaction (percent)	Moisture[2] Content (percent)
General Fill (within upper 5 feet)	On-Site Expansive Soils	87 – 92	>3
	Low Expansion Soils	90	>1
General Fill (below a depth of 5 feet)	On-Site Expansive Soils	95	>3
	Low Expansion Soils	95	>1
Trench Backfill	On-Site Expansive Soils	87 – 92	>3
Trench Backfill	Low Expansion Soils	90	>1
Trench Backfill (upper 6 inches of subgrade)	On-Site Low Expansion Soils	95	>1
Crushed Rock Fill	¾-inch Clean Crushed Rock	Consolidate In-Place	NA
Non-Expansive Fill	Imported Non-Expansive Fill	90	Optimum
Flatwork Subgrade	On-Site Expansive Soils	87 - 92	>3
Flatwork Subgrade	Low Expansion Soils	90	>1
Flatwork Aggregate Base	Class 2 Aggregate Base[3]	90	Optimum
Pavement Subgrade	On-Site Expansive Soils	87 - 92	>3
Pavement Subgrade	Low Expansion Soils	95	>1
Pavement Aggregate Base	Class 2 Aggregate Base[3]	95	Optimum
Asphalt Concrete	Asphalt Concrete	95 (Marshall)	NA

1 – Relative compaction based on maximum density determined by ASTM D1557 (latest version)
2 – Moisture content based on optimum moisture content determined by ASTM D1557 (latest version)
3 – Class 2 aggregate base shall conform to Caltrans Standard Specifications, latest edition, except that the relative compaction should be determined by ASTM D1557 (latest version)

6.8.1 Construction Moisture Conditioning

Expansive soils can undergo significant volume change when dried then wetted. The contractor should keep all exposed expansive soil subgrade (and also trench excavation side walls) moist until protected by overlying improvements (or trenches are backfilled). If expansive soils are allowed to dry out significantly, re-moisture conditioning may require several days of re-wetting (flooding is not recommended), or deep scarification, moisture conditioning, and re-compaction.

6.9 TRENCH BACKFILL

Utility lines constructed within public right-of-way should be trenched, bedded and shaded, and backfilled in accordance with the local or governing jurisdictional requirements. Utility lines in private improvement areas should be constructed in accordance with the following requirements unless superseded by other governing requirements.

All utility lines should be bedded and shaded to at least 6 inches over the top of the lines with crushed rock (⅜-inch-diameter or greater) or well-graded sand and gravel materials conforming to the pipe manufacturer's requirements. Open-graded shading materials should be consolidated in place with vibratory equipment and well-graded materials should be compacted to at least 90 percent relative compaction with vibratory equipment prior to placing subsequent backfill materials.

General backfill over shading materials may consist of on-site native materials provided they meet the requirements in the "Material for Fill" section, and are moisture conditioned and compacted in accordance with the requirements in the "Compaction" section.

Where utility lines will cross perpendicular to strip footings, the footing should be deepened to encase the utility line, providing sleeves or flexible cushions to protect the pipes from anticipated foundation settlement, or the utility lines should be backfilled to the bottom of footing with sand-cement slurry or lean concrete. Where utility lines will parallel footings and will extend below the "foundation plane of influence," an imaginary 1:1 plane projected down from the bottom edge of the footing, either the footing will need to be deepened so that the pipe is above the foundation plane of influence or the utility trench will need to be backfilled with sand-cement slurry or lean concrete within the influence zone. Sand-cement slurry used within foundation influence zones should have a minimum compressive strength of 75 psi.

On expansive soils sites it is desirable to reduce the potential for water migration into building and pavement areas through the granular shading materials. We recommend that a plug of low-permeability clay soil, sand-cement slurry, or lean concrete be placed within trenches just outside where the trenches pass into building and pavement areas.

6.10 SITE DRAINAGE

Ponding should not be allowed adjacent to building foundations, slabs-on-grade, or pavements. Hardscape surfaces should slope at least 2 percent towards suitable discharge facilities; landscape areas should slope at least 3 percent towards suitable discharge facilities. Roof runoff should be directed away from building areas in closed conduits, to approved infiltration facilities, or on to hardscaped surfaces that drain to suitable facilities. Retention, detention, or infiltration facilities should be spaced at least 10 feet from buildings, and preferably at least 5 feet from slabs-on-grade or pavements. However, if retention, detention, or infiltration facilities are located within these zones, we recommend that these treatment facilities meet the requirements in the Storm Water Treatment Design Considerations section of this report.

6.11 LOW-IMPACT DEVELOPMENT (LID) IMPROVEMENTS

The Municipal Regional Permit (MRP) requires regulated projects to treat 100 percent of the amount of runoff identified in Provision C.3.d from a regulated project's drainage area with low impact development (LID) treatment measures onsite or at a joint stormwater treatment facility. LID treatment measures are defined as rainwater harvesting and use, infiltration, evapotranspiration, or biotreatment. A biotreatment system may only be used if it is infeasible to implement harvesting and use, infiltration, or evapotranspiration at a project site.

Technical infeasibility of infiltration may result from site conditions that restrict the operability of infiltration measures and devices. Various factors affecting the feasibility of infiltration treatment may create an environmental risk, structural stability risk, or physically restrict infiltration. The presence of any of these limiting factors may render infiltration technically infeasible for a proposed project. To aid in determining if infiltration may be feasible at the site, we provide the following site information regarding factors that may aid in determining the feasibility of infiltration facilities at the site. We also performed infiltration testing in two locations at the site. Further information regarding this testing was provided in Section 3.6 of this report.

- The near-surface soils at the site are clayey, and categorized as Hydrologic Soil Group D, and is expected to have infiltration rates ranging from 0.28 to 0.32 inches per hour. In our opinion, these clayey soils will significantly limit the infiltration of stormwater.

- Locally, seasonal high groundwater is anticipated to be at depths between 15 and 20 feet, and therefore is expected to be at least 10 feet below the base of the infiltration measure.

- Infiltration devices should be located at least 100 feet away from septic tanks and underground storage tanks with hazardous materials, as well as any other potential underground sources of pollution.

- Infiltration measures, devices, or facilities may conflict with the location of existing or proposed underground utilities or easements. Infiltration measures, devices, or facilities should not be placed on top of or very near to underground utilities such that they discharge to the utility trench, restrict access, or cause stability concerns.

6.11.1 Storm Water Treatment Design Considerations

If storm water treatment improvements, such as shallow bio-retention swales, basins, or pervious pavements, are required as part of the site improvements to satisfy Storm Water Quality (C.3) requirements, we recommend the following items be considered for design and construction.

6.11.1.1 General Bioswale Design Guidelines

- If possible, avoid placing bioswales or basins within 10 feet of the building perimeter or within 5 feet of exterior flatwork or pavements. If bioswales must be constructed within these setbacks, the side(s) and bottom of the trench excavation should be lined with 10-mil visqueen to reduce water infiltration into the surrounding expansive clay.

- Bioswales constructed within 3 feet of proposed buildings may be within the foundation zone of influence for perimeter wall loads. Therefore, where bioswales will parallel foundations and will extend below the “foundation plane of influence,” an imaginary 1:1 plane projected down from the bottom edge of the foundation, the foundation will need to be deepened so that the bottom edge of the bioswale filter material is above the foundation plane of influence.

- The bottom of bioswale or detention areas should include a perforated drain placed at a low point, such as a shallow trench or sloped bottom, to reduce water infiltration into the surrounding soils near structural improvements, and to address the low infiltration capacity of the on-site clay soils.

6.11.1.2 Bioswale Infiltration Material

- Gradation specifications for bioswale filter material, if required, should be specified on the grading and improvement plans.

- Compaction requirements for bioswale filter material in non-landscaped areas or in pervious pavement areas, if any, should be indicated on the plans and specifications to satisfy the anticipated use of the infiltration area.
- If required, infiltration (percolation) testing should be performed on representative samples of potential bioswale materials prior to construction to check for general conformance with the specified infiltration rates.

- It should be noted that multiple laboratory tests may be required to evaluate the properties of the bioswale materials, including percolation, landscape suitability and possibly environmental analytical testing depending on the source of the material. We recommend that the landscape architect provide input on the required landscape suitability tests if bioswales are to be planted.

- If bioswales are to be vegetated, the landscape architect should select planting materials that do not reduce or inhibit the water infiltration rate, such as covering the bioswale with grass sod containing a clayey soil base.

- If required by governing agencies, field infiltration testing should be specified on the grading and improvement plans. The appropriate infiltration test method, duration and frequency of testing should be specified in accordance with local requirements.

- Due to the relatively loose consistency and/or high organic content of many bioswale filter materials, long-term settlement of the bioswale medium should be anticipated. To reduce initial volume loss, bioswale filter material should be wetted in 12 inch lifts during placement to pre-consolidate the material. Mechanical compaction should not be allowed, unless specified on the grading and improvement plans, since this could significantly decrease the infiltration rate of the bioswale materials.

- It should be noted that the volume of bioswale filter material may decrease over time depending on the organic content of the material. Additional filter material may need to be added to bioswales after the initial exposure to winter rains and periodically over the life of the bioswale areas, as needed.

6.11.1.3 Bioswale Construction Adjacent to Pavements

If bio-infiltration swales or basins are considered adjacent to proposed parking lots or exterior flatwork, we recommend that mitigative measures be considered in the design and construction of these facilities to reduce potential impacts to flatwork or pavements. Exterior flatwork, concrete curbs, and pavements located directly adjacent to bio-swales may be susceptible to settlement or lateral movement, depending on the configuration of the bioswale and the setback between the improvements and edge of the swale. To reduce the potential for distress to these improvements due to vertical or lateral movement, the following options should be considered by the project civil engineer:

- Improvements should be setback from the edge of a bioswale (assuming a sloping bioswale) such that there is at least 1 foot of horizontal distance between the edge of improvements and the top edge of the bioswale excavation for every 1 foot of vertical bioswale depth, or

- Concrete curbs for pavements, or lateral restraint for exterior flatwork, located directly adjacent to a bioswale, or not meeting the above setback, should be designed to resist lateral earth pressures in accordance with the recommendations in the “Retaining Walls” section of this report, or concrete curbs or edge restraint should be adequately keyed into the native soil or engineered to reduce the potential for rotation or lateral movement of the curbs.

6.12 LANDSCAPE CONSIDERATIONS

Since the near-surface soils are highly expansive, we recommend greatly reducing the amount of surface water infiltrating these soils near foundations and exterior slabs-on-grade. This can typically be achieved by:

- Using drip irrigation

- Avoiding open planting within 3 feet of the building perimeter or near the top of existing slopes

- Regulating the amount of water distributed to lawns or planter areas by using irrigation timers

- Selecting landscaping that requires little or no watering, especially near foundations.

We recommend that the landscape architect consider these items when developing landscaping plans.

SECTION 7: 2019 CBC SEISMIC DESIGN CRITERIA

We developed site-specific seismic design parameters in accordance with Chapter 16, Chapter 18, and Appendix J of the 2019 California Building Code (CBC) and Chapters 11, 12, 20, and 21 and Supplement No. 1 of ASCE 7-16.

7.1 SITE LOCATION AND PROVIDED DATA FOR 2019 CBC SEISMIC DESIGN

The project is located at latitude 37.312129° and longitude -121.816573°, which is based on Google Earth (WGS84) coordinates at the approximate center of the site at 2905 South King Road in San Jose, California. We have assumed that a Seismic Importance Factor (I_e) of 1.00 has been assigned to the structure in accordance with Table 1.5-2 of ASCE 7-16 for structures classified as Risk Category II. The building period has not been provided by the project structural engineer.

7.2 SITE CLASSIFICATION – CHAPTER 20 OF ASCE 7-16

Code-based site classification and ground motion attenuation relationships are based on the time-weighted average shear wave velocity of the top approximately 100 feet (30 meters) of the soil profile (V_{S30}).

Our explorations generally encountered stiff to hard clay and medium dense poorly graded sand with clay to a depth of 131 feet, the maximum depth explored. Shear wave velocity (V_S) measurements were performed while advancing CPT-2, resulting in a time-averaged shear wave velocity for the top 30 meters (V_{S30}) of 258 meters per second. In accordance with Table 20.3-1 of ASCE 7-16, we recommend the site be classified as Soil Classification D, which is described as a “stiff soil” profile. Because we used site specific data from our explorations and laboratory testing, the site class should be considered as “determined” for the purposes of estimating the seismic design parameters from the code outlined below. Our site-specific ground motion hazard analysis considered a V_{S30} of 258 m/s (847 ft/s).

7.3 CODE-BASED SEISMIC DESIGN PARAMETERS

Code-based spectral acceleration parameters were determined based on mapped acceleration response parameters adjusted for the specific site conditions. Mapped Risk-Adjusted Maximum Considered Earthquake (MCE_R) spectral acceleration parameters (S_S and S_1) were determined using the ATC Hazards by Location website (https://hazards.atcouncil.org).

The mapped acceleration parameters were adjusted for local site conditions based on the average soil conditions for the upper 100 feet (30 meters) of the soil profile. Code-based MCE_R spectral response acceleration parameters adjusted for site effects (S_{MS} and S_{M1}) and design spectral response acceleration parameters (S_{DS} and S_{D1}) are presented in Table 6.

In accordance with Section 11.4.8 of ASCE 7-16, structures on Site Class D sites with mapped 1-second period spectral acceleration (S_1) values greater than or equal to 0.2 require a site-specific ground motion hazard analysis be performed in accordance with Section 21.2 of ASCE

7-16. ***Design seismic parameters determined by performing a Ground Motion Hazard Analysis per Section 21.2 of ASCE 7-16 are presented in Table 9. Values in Table 6 should not be used for design unless in the judgement of the structural engineer an exception can be taken in accordance with Section 11.4.8 of ASCE 7-16.*** Values summarized in Table 6 are only used to determine Seismic Design Category and comparison with minimum code requirements for further use in our ground motion hazard analysis (GMHA).

Table 6: 2019 CBC Site Categorization and Site Coefficients

Classification/Coefficient	Design Value
Site Class	D
Site Latitude	37.312129°
Site Longitude	-121.816573°
Risk Category	II**
Short Period Mapped Spectral Acceleration – S_S	1.613g
1-second Period Mapped Spectral Acceleration – S_1	0.609g
Short-Period Site Coefficient – F_a	1.000
Long-Period Site Coefficient – F_v	*null
Short Period MCE Spectral Response Acceleration Adjusted for Site Effects – S_{MS}	1.613g
1-second Period MCE Spectral Response Acceleration Adjusted for Site Effects – S_{M1}	*null
Short Period, Design Earthquake Spectral Response Acceleration – S_{DS}	1.075g
1-second Period, Design Earthquake Spectral Response Acceleration – S_{D1}	*null
Long-Period Transition – T_L	12 seconds
Mapped MCEG Peak Ground Acceleration – PGA	0.679g
Site Coefficient – F_{PGA}	1.1
Site Modified Peak Ground Acceleration – PGA_M	0.747g

*null – per section 11.4.8 of ASCE 7-16
**Assumed, to be confirmed by Structural Engineer

7.4 SITE-SPECIFIC GROUND MOTION HAZARD ANALYSIS

Following Section 11.4.8 of ASCE 7-16, we performed a ground motion hazards analysis (GMHA) in accordance with Chapter 21, Section 21.2 of ASCE 7. We evaluated both Probabilistic MCE_R Ground Motions in accordance with Method 1 and Deterministic MCE_R Ground Motions to generate our recommended design response spectrum for the project.

Our analyses were performed using the USGS interface Unified Hazard Tool (UHT) based on the UCERF 3 Data Set, Building Seismic Safety Council (BSSC) Scenario Catalog 2014 event set (BSSC 2014), and the 2014 National Seismic Hazard Maps – Source Parameters (NSHMP deterministic event set). Additionally, we utilized the USGS program Response Spectra Plotter with combined models (Combined: WUS 2014 (4.1)).

Our analysis utilized the mean ground motions predicted by four of the Next Generation Attenuation West 2 (NGA-West 2) relationships: Boore-Atkinson (2013), Campbell-Bozorgnia (2013), Chiou-Youngs (2013), and Abrahamson-Silva (2013). Rotation factors (scale factors) were determined as specified in ASCE 7-16 Chapter 21, Section 21.2, to calculate the maximum rotated component of ground motions (ASCE, 2016).

7.4.1 Probabilistic MCE_R

We performed a probabilistic seismic hazard analysis (PSHA) in accordance with ASCE 7-16 Section 21.2.1. The probabilistic MCE acceleration response spectrum is defined as the 5 percent damped acceleration response spectrum having a 2 percent probability of exceedance in a 50-year period (2,475-year return period). The probabilistic MCE spectrum was multiplied by Risk Coefficients (C_R) to determine the probabilistic MCE_R. We used Risk Coefficients (C_{RS} and C_{R1}) of 0.952 and 0.927, respectively, based on ASCE 7-16 Section 21.2.1.1 - Method 1 and the ATC website. Risk coefficients for the various periods are presented in Table 7, Column 3.

The resulting probabilistic MCE_R are presented on Figure 5 (red line). Spectral ordinates are tabulated in Table 7, Column 6.

7.4.2 Deterministic MCE_R

We performed deterministic seismic hazard analyses in accordance with ASCE 7-16 Section 21.2.2 and ASCE 7-16 Supplement No. 1. The deterministic MCE_R acceleration response spectrum is calculated as the largest 84th percentile ground motion in the direction of maximum horizontal response for each period for characteristic earthquakes on all known active faults within the region. The largest deterministic ground motion for periods 3 seconds or less resulted from a M_w 7.08 earthquake on the Hayward Fault (HS+HE segments), located at a distance of approximately 7.25 km from the site. The largest deterministic ground motion for periods greater than 3 seconds resulted from a M_w 8 earthquake on the Calaveras (CN+CC+CS segments), located at a distance of approximately 8.97 km from the site.

In accordance with Supplement No.1 of ASCE 7-16, when the largest spectral response acceleration of the resulting deterministic ground motion response spectrum is less than $1.5F_a$ then the largest 84th percentile rotated response spectrum (Table 7, Column 4) shall be scaled by a single factor such that the maximum response spectral acceleration equals $1.5F_a$. For Site Classes A, B, C and D, F_a is determined using Table 11.4.1 with the value of S_s taken as 1.5; for Site Class E, F_a shall be taken as 1.0. When the largest spectral response acceleration of the probabilistic ground motion response of 21.2.1 is less than $1.2F_a$, the deterministic ground motion response spectrum does not need to be calculated.

As the largest probabilistic spectral response acceleration was determined to be 2.815 which is greater than $1.2F_a$, where F_a is taken as 1.000 from Table 11.4-1 in ASCE 7-16 Supplement No.1, the 84th percentile rotated response spectrum was calculated as part of the deterministic analyses. The maximum spectral acceleration from the 84th percentile rotated response spectrum was then compared to $1.5F_a$ to determine if a scale factor needed to be applied. The deterministic MCE spectrum are tabulated in Table 7, Column 5. The deterministic MCE_R is presented graphically on Figure 5 (blue line).

7.4.3 Site-Specific MCE_R

The site-specific MCE_R is defined by ASCE 7-16 Section 21.2.3 as the lesser of the deterministic and probabilistic MCE_R's at each period. Spectral ordinates for the site-specific MCE_R are tabulated in Table 7, Column 7 and shown graphically on Figure 5 (dashed black line).

Table 7: Development of Site-Specific MCE_R Spectrum

Period (seconds)	CBC General Spectrum (g)	Risk Coefficient	Det. 84th Percentile Rotated	Deterministic MCE_R (g)	Probabilistic MCE_R (g)	Site-Specific MCE_R (g)
0.000	0.430	0.952	0.863	0.863	1.082	0.863
0.050	0.601	0.952	0.934	0.934	1.471	0.934
0.075	0.686	0.952	1.126	1.126	1.665	1.126
0.100	0.772	0.952	1.353	1.353	1.860	1.353
0.189	1.075	0.952	1.791	1.791	2.338	1.791
0.200	1.075	0.952	1.846	1.846	2.399	1.846
0.250	1.075	0.950	1.971	1.971	2.577	1.971
0.300	1.075	0.949	2.039	2.039	2.755	2.039
0.400	1.075	0.946	2.068	2.068	2.785	2.068
0.500	1.075	0.943	2.017	2.017	2.815	2.017
0.750	1.075	0.935	1.668	1.668	2.444	1.668
0.944	1.075	0.929	1.463	1.463	2.192	1.463
1.000	1.015	0.927	1.403	1.403	2.118	1.403
2.000	0.508	0.927	0.692	0.692	1.213	0.692
3.000	0.338	0.927	0.434	0.434	0.815	0.434
4.000	0.254	0.927	0.299	0.299	0.592	0.299
5.000	0.203	0.927	0.229	0.229	0.456	0.229

7.4.4 Design Response Spectrum

The Design Response Spectrum (DRS) is defined in ASCE 7-16 Section 21.3 as:

- two-thirds of the site-specific MCE_R, but
- not less than 80% of the general design response spectrum

Spectral accelerations corresponding to two-thirds of the MCE_R are tabulated in Table 8, Column 2. Ordinates corresponding to 80% of the general Site Class D response spectrum are tabulated below in Table 8, Column 3. Ordinates of the site-specific DRS are tabulated in Table 8, Column 4. Development of the site-specific DRS is presented graphically on Figure 6 (dashed black line).

Table 8: Development of Site-Specific Design Response Spectrum

Period (seconds)	2/3 Site-Specific MCE_R (g)	80% CBC Site Class C Spectrum (g)	Design Response Spectrum (g)
0.000	0.575	0.344	0.575
0.050	0.623	0.481	0.623
0.075	0.751	0.549	0.751
0.100	0.902	0.618	0.902
0.189	1.194	0.860	1.194
0.200	1.231	0.860	1.231
0.250	1.314	0.860	1.314
0.300	1.359	0.860	1.359
0.400	1.379	0.860	1.379
0.500	1.345	0.860	1.345
0.750	1.112	0.860	1.112
0.944	0.975	0.860	0.975
1.000	0.936	0.812	0.936
2.000	0.461	0.406	0.461
3.000	0.289	0.271	0.289
4.000	0.199	0.203	0.203
5.000	0.153	0.162	0.162

7.5 DESIGN ACCELERATION PARAMETERS

Design acceleration parameters (S_{DS} and S_{D1}) were determined in accordance with Section 21.4 of ASCE 7-16. S_{DS} is defined as the design spectral acceleration at 90% of the maximum spectral acceleration, S_a, obtained from the site-specific spectrum, at any period within the range from 0.2 to 5 seconds, inclusive. S_{D1} is defined as the maximum value of the product, TS_a, for periods from 1 to 2 seconds for sites with vs,30 > 1,200 ft/s ($v_{s,30}$ > 365.76 m/s) and for periods from 1 to 5 seconds for sites with vs,30 ≤ 1,200 ft/s ($v_{s,30}$ ≤365.76 m/s).

Site-specific MCE_R spectral response acceleration parameters (S_{MS} and S_{M1}) are calculated as:

- 1.5 times the S_{DS} and S_{D1} values, respectively, but

- not less than 80% of the code-based values presented in Table 6

Recommended design acceleration parameters are summarized in Table 9.

When using the Equivalent Lateral Force Procedure, ASCE 7-16 Section 21.4 allows using the spectral acceleration at any period (T) in lieu of S_{D1}/T in Eq. 12.8-3 and $S_{D1}T_L/T_2$ in Eq. 12.8-4. The site-specific spectral acceleration at any period may be calculated by interpolation of the spectral ordinates in Table 8, Column 4.

Table 9: Site-Specific Design Acceleration Parameters

Parameter	Value
S_{DS}	1.241
S_{D1}	0.936
S_{MS}	1.861
S_{M1}	1.403

7.6 SITE-SPECIFIC MCE$_G$ PEAK GROUND ACCELERATION

7.6.1 Site-Specific MCE$_G$ Peak Ground Acceleration

We calculated the Site-Specific MCE$_G$ Peak Ground Acceleration (PGA$_M$) in accordance with ASCE 7-16 Section 21.5. The Site-Specific PGA$_M$ is calculated as the lesser of probabilistic and deterministic geometric mean PGA. The 2% in 50-year probabilistic geometric mean PGA is 1.033g. The deterministic PGA is considered the greater of the largest 84th percentile deterministic geometric mean PGA (0.785) or one-half of the tabulated F_{PGA} value from ASCE 7-16 Table 11.8.1 with the value of PGA taken as 0.5g. For the site, F_{PGA} is 1.100 and one-half of the F_{PGA} is 0.55g; therefore, the deterministic PGA is 0.785g. Additionally, the Site-Specific PGA$_M$ may not be less than 80% of the mapped PGA$_M$ determined from ASCE 7-16 Equation 11.8-1. The mapped PGA$_M$ for the site is 0.747g; 80% of PGA$_M$ is 0.598g.

Based on the above, the recommended Site-Specific PGA$_M$ for the site is 0.785g.

SECTION 8: FOUNDATIONS

8.1 SUMMARY OF RECOMMENDATIONS

In our opinion, the proposed structures may be supported on shallow foundations provided the recommendations in the “Earthwork” section and the sections below are followed.

8.2 SHALLOW FOUNDATIONS

8.2.1 Spread Footings

Spread footings should bear on natural, undisturbed soil or engineered fill, be at least 15 inches wide, and extend at least 24 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscaping topsoil. The deeper footing embedment is due to the presence of highly expansive soils and is intended to embed the footing below the zone of significant seasonal moisture fluctuation, reducing the potential for differential movement.

Footings constructed to the above dimensions and in accordance with the “Earthwork” recommendations of this report are capable of supporting maximum allowable bearing pressures of 2,500 psf for dead loads, 3,750 psf for combined dead plus live loads, and 5,000 psf for all loads including wind and seismic. These pressures are based on factors of safety of 3.0, 2.0, and 1.5 applied to the ultimate bearing pressure for dead, dead plus live, and all loads, respectively. These pressures are net values; the weight of the footing may be neglected for the portion of the footing extending below grade (typically, the full footing depth). Top and bottom mats of reinforcing steel should be included in continuous footings to help span irregularities and differential settlement.

8.2.2 Footing Settlement

Structural loads were not provided to us at the time this report was prepared; therefore, we assumed the typical loading in the following table.

Table 10: Assumed Structural Loading

Foundation Area	Range of Assumed Loads
Interior Isolated Column Footing	100 to 150 kips
Exterior Isolated Column Footing	50 to 75 kips
Perimeter Strip Footing	5 to 10 kips per lineal foot

Based on the above loading and the allowable bearing pressures presented above, we estimate that the total static footing settlement will be on the order of ½ inch, with less than ½ inch of post-construction differential settlement between adjacent foundation elements. In addition, total seismic settlements are estimated to range up to about ¾ inch. We estimate total static and seismic footing settlement will be on the order of ½ to 1¼ inch, resulting in total estimated differential settlement up to ¾ inch between foundation elements, assumed to be on the order of 50 to 60 feet. As our footing loads were assumed, we recommend we be retained to review the final footing layout and loading, and verify the settlement estimates above.

8.2.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of footing and the supporting subgrade, and also by passive pressures generated against footing sidewalls. An ultimate frictional resistance of 0.40 applied to the footing dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 450 pcf may be used in design. The structural engineer should apply an appropriate factor of safety (such as 1.5) to the ultimate values above. Where footings are adjacent to landscape areas without hardscape, the upper 18 inches of soil should be neglected when determining passive pressure capacity.

8.2.4 Spread Footing Construction Considerations

Where utility lines will cross perpendicular to strip footings, the footing should be deepened to encase the utility line, providing sleeves or flexible cushions to protect the pipes from anticipated foundation settlement, or the utility lines should be backfilled to the bottom of footing with sand-cement slurry or lean concrete. Where utility lines will parallel footings and will extend below the “foundation plane of influence,” an imaginary 1:1 plane projected down from the bottom edge of the footing, either the footing will need to be deepened so that the pipe is above the foundation plane of influence or the utility trench will need to be backfilled with sand-cement slurry or lean concrete within the influence zone. Sand-cement slurry used within foundation influence zones should have a minimum compressive strength of 75 psi.

Footing excavations should be filled as soon as possible or be kept moist until concrete placement by regular sprinkling to prevent desiccation. A Cornerstone representative should observe all footing excavations prior to placing reinforcing steel and concrete. If there is a significant schedule delay between our initial observation and concrete placement, we may need to re-observe the excavations.

SECTION 9: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

9.1 OFFICE SLABS-ON-GRADE

As the Plasticity Index (PI) of the surficial soils ranges up to 36, the proposed slabs-on-grade should be supported on at least 24 inches of non-expansive fill (NEF) to reduce the potential for slab damage due to soil heave. The NEF layer should be constructed over subgrade prepared in accordance with the recommendations in the “Earthwork” section of this report. If moisture-sensitive floor coverings are planned, the recommendations in the “Interior Slabs Moisture Protection Considerations” section below may be incorporated in the project design if desired. If significant time elapses between initial subgrade preparation and NEF construction, the subgrade should be proof rolled to confirm subgrade stability, and if the soil has been allowed to dry out, the subgrade should be re-moisture conditioned in accordance with the “Compaction” section of this report.

The structural engineer should determine the appropriate slab reinforcement for the loading requirements and considering the expansion potential of the underlying soils. Consideration should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness.

9.2 WAREHOUSE SLABS-ON-GRADE

Warehouse slabs-on-grade should be at least 6 inches thick, should have a minimum compressive strength of 3,500 psi, and should be designed for the specific warehouse loading (ie. Forklifts, rack loads, etc.). At this time, rack loading information, etc. was not available. The slab should also be designed to accommodate potential slab settlement beneath heavily loaded slab areas. We recommend we be retained to review the final heavily loaded (i.e. rack loading) layout and loading, and provide estimated settlements.

The warehouse slab should be supported on at least 6 inches of non-expansive, crushed granular base having an R-value of at least 50 and no more than 10 percent passing the No. 200 sieve, such as Class 2 aggregate base. Due to the high plasticity of the surficial soils, an additional 18 inches of non-expansive fill (NEF) should underlie the upper granular base. At your option, the recommended crushed granular base material can also be increased for the full non-expansive fill depth of 24 inches. All base and sub-base materials should be placed and compacted in accordance with the “Compaction” section of this report. If there will be areas within the warehouse that are moisture sensitive, such as equipment and elevator rooms, a vapor barrier may be placed over the upper granular base prior to slab construction. Please refer to the recommendations in the “Interior Slabs Moisture Protection Considerations” section for vapor barrier construction. Consideration should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness.

9.3 INTERIOR SLABS MOISTURE PROTECTION CONSIDERATIONS

The following general guidelines for concrete slab-on-grade construction where floor coverings are planned are presented for the consideration by the developer, design team, and contractor. These guidelines are based on information obtained from a variety of sources, including the American Concrete Institute (ACI) and are intended to reduce the potential for moisture-related problems causing floor covering failures, and may be supplemented as necessary based on project-specific requirements. The application of these guidelines or not will not affect the geotechnical aspects of the slab-on-grade performance.

- Place a minimum 10-mil vapor retarder conforming to ASTM E 1745, Class C requirements or better directly below the concrete slab; the vapor retarder should extend to the slab edges and be sealed at all seams and penetrations in accordance with manufacturer’s recommendations and ASTM E 1643 requirements. A 4-inch-thick capillary break, consisting of crushed rock should be placed below the vapor retarder and consolidated in place with vibratory equipment. The mineral aggregate shall be of such size that the percentage composition by dry weight as determined by laboratory sieves will conform to the following gradation:

Sieve Size	Percentage Passing Sieve
1”	100
¾”	90 – 100
No. 4	0 - 10

The capillary break rock may be considered as the upper 4 inches of the non-expansive fill previously recommended.

- The concrete water:cement ratio should be 0.45 or less. Mid-range plasticizers may be used to increase concrete workability and facilitate pumping and placement.
- Water should not be added after initial batching unless the slump is less than specified and/or the resulting water:cement ratio will not exceed 0.45.
- Polishing the concrete surface with metal trowels is not recommended.
- Where floor coverings are planned, all concrete surfaces should be properly cured.
- Water vapor emission levels and concrete pH should be determined in accordance with ASTM F1869-98 and F710-98 requirements and evaluated against the floor covering manufacturer’s requirements prior to installation.

9.4 EXTERIOR FLATWORK

Exterior concrete flatwork subject to pedestrian loading only should be at least 4 inches thick and supported on at least 4 inches of Class 2 aggregate base overlying 8 inches of non-expansive fill overlying subgrade prepared in accordance with the “Earthwork” recommendations of this report. Flatwork that will be subject to heavier or frequent vehicular loading should be designed in accordance with the recommendations in the “Vehicular Pavements” section below. To help reduce the potential for uncontrolled shrinkage cracking, adequate expansion and control joints should be included. Consideration should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness. Flatwork should be isolated from adjacent foundations or retaining walls.

SECTION 10: VEHICULAR PAVEMENTS

10.1 ASPHALT CONCRETE

The following asphalt concrete pavement recommendations tabulated below are based on the Procedure 608 of the Caltrans Highway Design Manual, estimated traffic indices for various pavement-loading conditions, and a design R-value of 5. The design R-value was chosen based on engineering judgement considering the proposed pavement areas and potential variable surface conditions following site grading. We have also included pavement structural section alternatives for chemical-treated (lime/cement) subgrade soil with an estimated design R-value of 50 for your consideration. If it is desired to chemical treat, we recommend that the upper 12 inches of subgrade soil be treated. Additional testing will need to be performed to determine the appropriate lime/cement percentage to be mixed with the subgrade soil.

Table 11: Asphalt Concrete Pavement Recommendations (Untreated Subgrade)

Design Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base* (inches)	Total Pavement Section Thickness (inches)
4.0	2.5	7.5	10.0
4.5	2.5	9.5	12.0
5.0	3.0	10.0	13.0
5.5	3.0	12.0	15.0
6.0	3.5	13.0	16.5
6.5	4.0	14.0	18.0
7.0	4.0	16.0	20.0
7.5	4.5	17.0	21.5
8.0	5.0	18.0	23.0
8.5	5.0	20.0	25.0
9.0	5.5	21.0	26.5
9.5	6.0	22.0	28.0
10.0	6.5	23.0	29.5
10.5	6.5	25.0	31.5
11.0	7.0	26.0	33.0

*Caltrans Class 2 aggregate base; minimum R-value of 78.

Table 12: Asphalt Concrete Pavement Recommendations (Chemical-Treated Subgrade)

Design Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base* (inches)	Total Pavement Section Thickness (inches)
4.0/4.5	2.5	4.0	6.5
5.0/5.5	3.0	4.0	7.0
6.0	3.5	4.0	7.5
6.5	4.0	4.0	8.0
7.0	4.0	4.5	8.5
7.5	4.5	5.0	9.5
8.0	5.0	5.0	10.0
8.5	5.0	6.5	11.5
9.0	5.5	6.5	12.0
9.5	6.0	7.0	13.0
10.0	6.5	7.5	14.0
10.5	6.5	8.5	15.0
11.0	7.0	8.5	15.5

*Caltrans Class 2 aggregate base with minimum R-value of 78; minimum chemical-treated subgrade R-value assumed to be 5.

Frequently, the full asphalt concrete section is not constructed prior to construction traffic loading. This can result in significant loss of asphalt concrete layer life, rutting, or other pavement failures. To improve the pavement life and reduce the potential for pavement distress through construction, we recommend the full design asphalt concrete section be constructed prior to construction traffic loading. Alternatively, a higher traffic index may be chosen for the areas where construction traffic will be using the pavements.

Asphalt concrete pavements constructed on expansive subgrade where the adjacent areas will not be irrigated for several months after the pavements are constructed may experience longitudinal cracking parallel to the pavement edge. These cracks typically form within a few feet of the pavement edge and are due to seasonal wetting and drying of the adjacent soil. The cracking may also occur during construction where the adjacent grade is allowed to significantly dry during the summer, pulling moisture out of the pavement subgrade. Any cracks that form should be sealed with bituminous sealant prior to the start of winter rains. One alternative to reduce the potential for this type of cracking is to install a moisture barrier at least 24 inches deep behind the pavement curb.

10.2 PORTLAND CEMENT CONCRETE

The exterior Portland Cement Concrete (PCC) pavement recommendations tabulated below are based on methods presented in the Portland Cement Association (PCA) design manual (PCA, 1984). We have provided a few pavement alternatives as an anticipated Average Daily Truck

Traffic (ADTT) was not provided. An allowable ADTT should be chosen that is greater than what is expected for the development. PCC alternatives for chemical-treated (lime/cement) subgrade are also provided in the tables below.

Table 13: PCC Pavement Recommendations (Untreated Subgrade)

Allowable ADTT	Minimum PCC Thickness (inches)
13	5.5
130	6.0

Table 14: PCC Pavement Recommendations (Chemical-Treated Subgrade)

Allowable ADTT	Minimum PCC Thickness (inches)
13	5.0
150	5.5

The PCC thicknesses above are based on a concrete compressive strength of at least 3,500 psi, supporting the PCC on at least 6 inches of Class 2 aggregate base compacted as recommended in the "Earthwork" section, and laterally restraining the PCC with curbs or concrete shoulders. Adequate expansion and control joints should be included. Consideration should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness. Due to the expansive surficial soils present, we recommend that the construction and expansion joints be dowelled.

10.2.1 Stress Pads for Trash Enclosures

Pads where trash containers will be stored, and where garbage trucks will park while emptying trash containers, should be constructed on Portland Cement Concrete. We recommend that the trash enclosure pads and stress (landing) pads where garbage trucks will store, pick up, and empty trash be increased to a minimum PCC thickness of 7 inches. The compressive strength, underlayment, and construction details should be consistent with the above recommendations for PCC pavements.

10.3 PAVEMENT CUTOFF

Surface water penetration into the pavement section can significantly reduce the pavement life, due to the native expansive clays. While quantifying the life reduction is difficult, a normal 20-year pavement design could be reduced to less than 10 years; therefore, increased long-term maintenance may be required.

It would be beneficial to include a pavement cut-off, such as deepened curbs, redwood-headers, or “Deep-Root Moisture Barriers” that are keyed at least 4 inches into the pavement subgrade. This will help limit the additional long-term maintenance.

SECTION 11: RETAINING WALLS

11.1 STATIC LATERAL EARTH PRESSURES

The structural design of any site retaining wall should include resistance to lateral earth pressures that develop from the soil behind the wall, any undrained water pressure, and surcharge loads acting behind the wall. Provided a drainage system is constructed behind the wall to prevent the build-up of hydrostatic pressures as discussed in the section below, we recommend that the walls with level backfill be designed for the following pressures in the table below. Due to the presence of expansive soils, cantilever retaining walls backfilled with native soil should be designed as restrained. If granular backfill materials are used, then the unrestrained values in the table can be used.

Table 15: Recommended Lateral Earth Pressures

Wall Condition	Lateral Earth Pressure*	Additional Surcharge Loads
Unrestrained – Cantilever Wall	45 pcf	⅓ of vertical loads at top of wall
Restrained – Braced Wall	45 pcf + 8H** psf	½ of vertical loads at top of wall

* Lateral earth pressures are based on an equivalent fluid pressure for level backfill conditions
** H is the distance in feet between the bottom of footing and top of retained soil

If adequate drainage cannot be provided behind the wall, an additional equivalent fluid pressure of 40 pcf should be added to the values above for both restrained and unrestrained walls for the portion of the wall that will not have drainage. Damp proofing or waterproofing of the walls may be considered where moisture penetration and/or efflorescence are not desired.

11.2 SEISMIC LATERAL EARTH PRESSURES

The 2019 CBC states that lateral pressures from earthquakes should be considered in the design of basements and retaining walls. At this time, we are not aware of any retaining walls 6 feet or greater in height and have not provided seismic earth pressures with this report. If retaining walls greater than 6 feet in height are proposed, we should be retained to provide seismic earth pressures, if warranted. In our opinion, seismic earth pressures are not warranted for design of minor landscaping and loading dock walls (i.e. walls 6 feet or less in height).

11.3 WALL DRAINAGE

Adequate drainage should be provided by a subdrain system behind all walls. This system should consist of a 4-inch minimum diameter perforated pipe placed near the base of the wall (perforations placed downward). The pipe should be bedded and backfilled with Class 2 Permeable Material per Caltrans Standard Specifications, latest edition. The permeable backfill should extend at least 12 inches out from the wall and to within 2 feet of outside finished grade. Alternatively, ½-inch to ¾-inch crushed rock may be used in place of the Class 2 Permeable Material provided the crushed rock and pipe are enclosed in filter fabric, such as Mirafi 140N or approved equivalent. The upper 2 feet of wall backfill should consist of compacted on-site soil. The subdrain outlet should be connected to a free-draining outlet or sump.

Miradrain, Geotech Drainage Panels, or equivalent drainage matting can be used for wall drainage as an alternative to the Class 2 Permeable Material or drain rock backfill. Horizontal strip drains connecting to the vertical drainage matting may be used in lieu of the perforated pipe and crushed rock section. The vertical drainage panel should be connected to the perforated pipe or horizontal drainage strip at the base of the wall, or to some other closed or through-wall system such as the TotalDrain system from AmerDrain. Sections of horizontal drainage strips should be connected with either the manufacturer's connector pieces or by pulling back the filter fabric, overlapping the panel dimples, and replacing the filter fabric over the connection. At corners, a corner guard, corner connection insert, or a section of crushed rock covered with filter fabric must be used to maintain the drainage path.

Drainage panels should terminate 18 to 24 inches from final exterior grade. The Miradrain panel filter fabric should be extended over the top of and behind the panel to protect it from intrusion of the adjacent soil.

11.4 BACKFILL

Where surface improvements will be located over the retaining wall backfill, backfill placed behind the walls with a PI less than 20 should be compacted to at least 95 percent relative compaction using light compaction equipment. If the soil's PI is 20 or greater, expansive soil criteria should be used as discussed in the "Compaction" section of this report. Where no surface improvements are planned, backfill should be compacted to at least 90 percent for soils with a PI less than 20. Expansive soil criteria should be followed for soils with a PI of 20 or greater. If heavy compaction equipment is used, the walls should be temporarily braced.

11.5 FOUNDATIONS

Retaining walls may be supported on a continuous spread footing designed in accordance with the recommendations presented in the "Foundations" section of this report.

SECTION 12: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of Xebec Realty specifically to support the design of the 2905 S. King Road Warehouse project in San Jose, California. The opinions, conclusions, and recommendations presented in this report have been formulated in accordance with accepted geotechnical engineering practices that exist in Northern California at the time this report was prepared. No warranty, expressed or implied, is made or should be inferred.

Recommendations in this report are based upon the soil and groundwater conditions encountered during our subsurface exploration. If variations or unsuitable conditions are encountered during construction, Cornerstone must be contacted to provide supplemental recommendations, as needed.

Xebec Realty may have provided Cornerstone with plans, reports and other documents prepared by others. Xebec Realty understands that Cornerstone reviewed and relied on the information presented in these documents and cannot be responsible for their accuracy.

Cornerstone prepared this report with the understanding that it is the responsibility of the owner or his representatives to see that the recommendations contained in this report are presented to other members of the design team and incorporated into the project plans and specifications, and that appropriate actions are taken to implement the geotechnical recommendations during construction.

Conclusions and recommendations presented in this report are valid as of the present time for the development as currently planned. Changes in the condition of the property or adjacent properties may occur with the passage of time, whether by natural processes or the acts of other persons. In addition, changes in applicable or appropriate standards may occur through legislation or the broadening of knowledge. Therefore, the conclusions and recommendations presented in this report may be invalidated, wholly or in part, by changes beyond Cornerstone's control. This report should be reviewed by Cornerstone after a period of three (3) years has elapsed from the date of this report. In addition, if the current project design is changed, then Cornerstone must review the proposed changes and provide supplemental recommendations, as needed.

An electronic transmission of this report may also have been issued. While Cornerstone has taken precautions to produce a complete and secure electronic transmission, please check the electronic transmission against the hard copy version for conformity.

Recommendations provided in this report are based on the assumption that Cornerstone will be retained to provide observation and testing services during construction to confirm that conditions are similar to that assumed for design, and to form an opinion as to whether the work has been performed in accordance with the project plans and specifications. If we are not retained for these services, Cornerstone cannot assume any responsibility for any potential claims that may arise during or after construction as a result of misuse or misinterpretation of Cornerstone's report by others. Furthermore, Cornerstone will cease to be the Geotechnical-Engineer-of-Record if we are not retained for these services.

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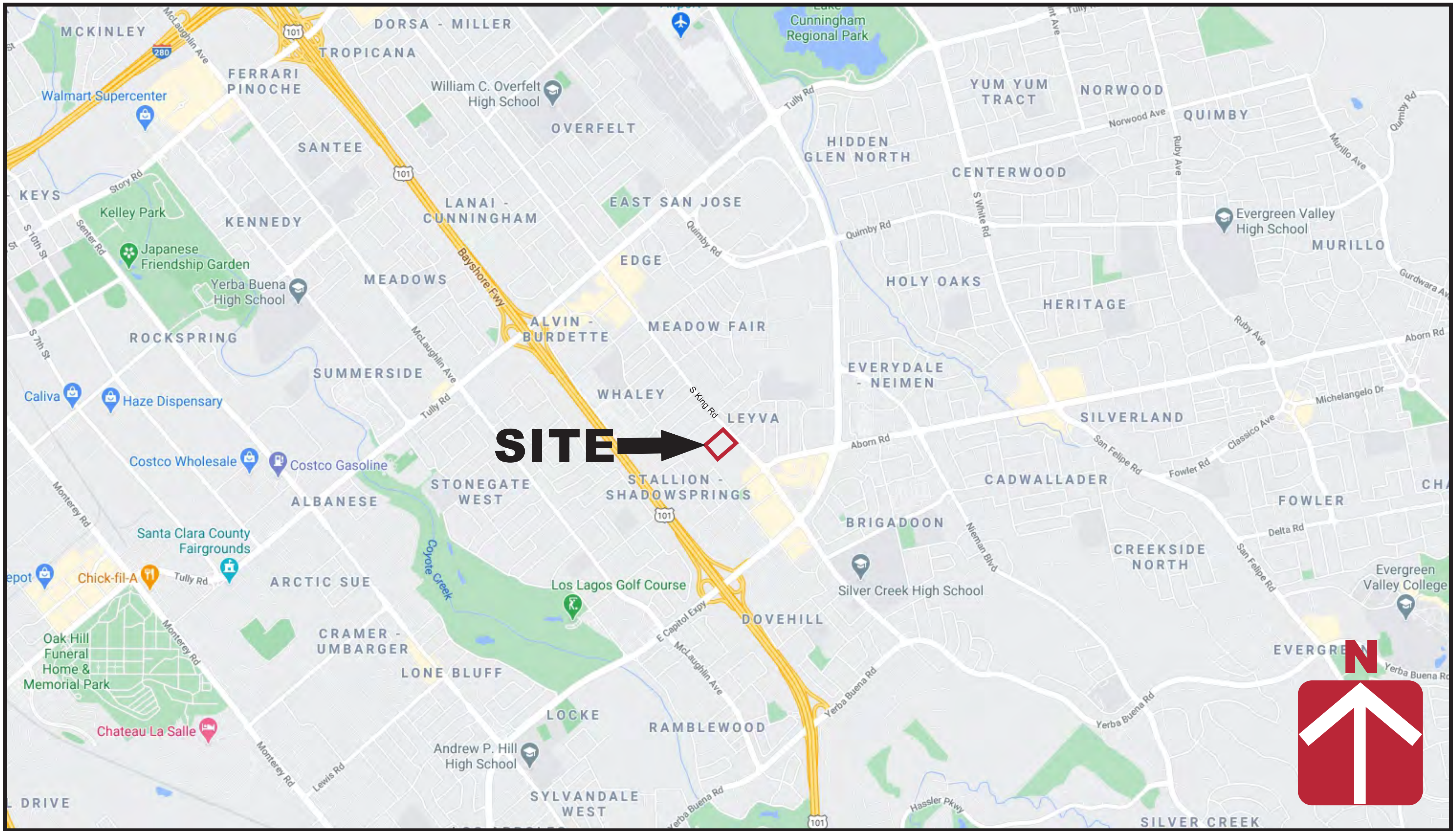

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Vicinity Map

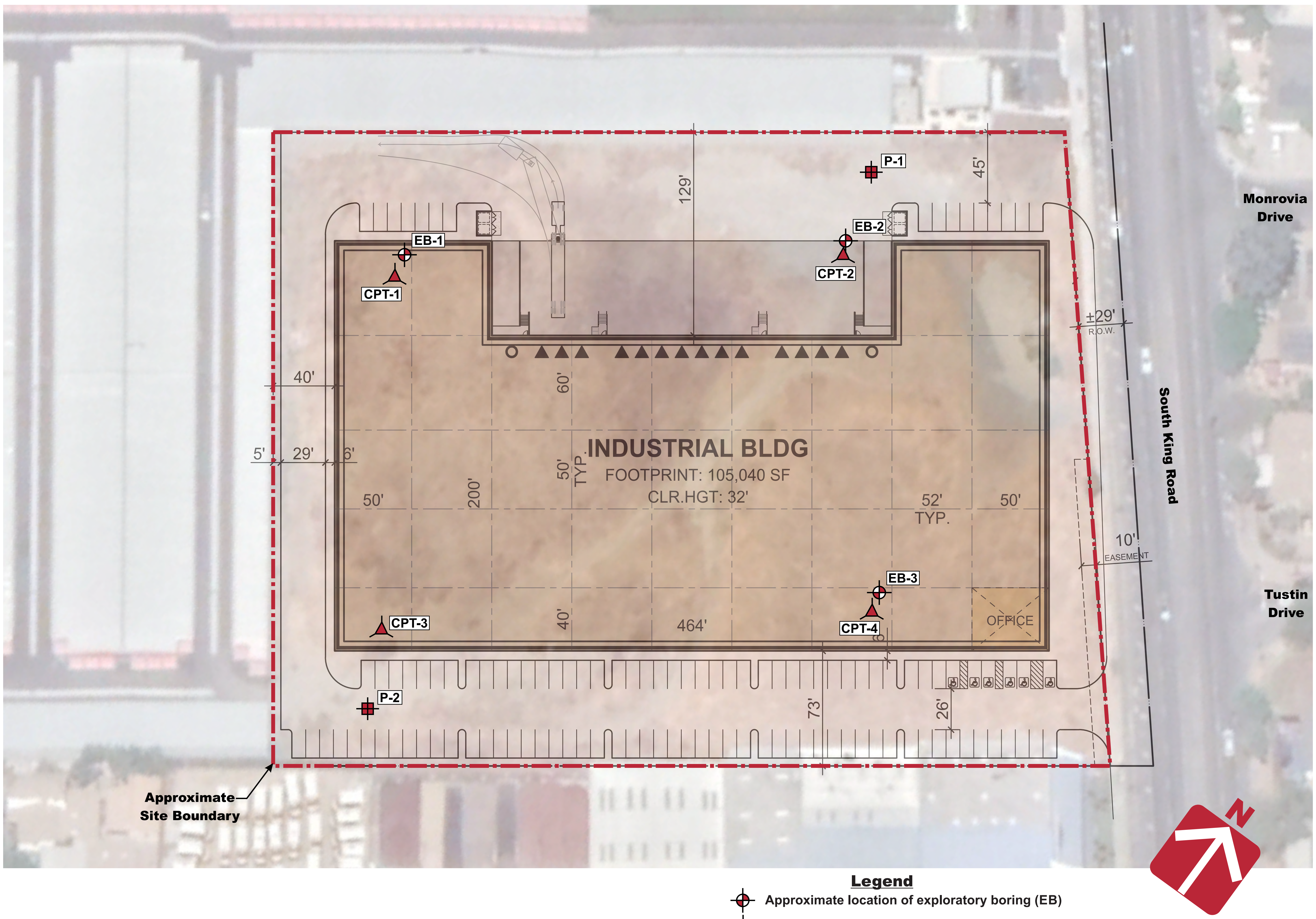
2905 South King Road Warehouse
San Jose, CA

Project Number
1084-2-1

Figure Number
Figure 1

Date
February 2021

Drawn By
RRN



Legend

⊕ Approximate location of exploratory boring (EB)

▲ Approximate location of cone penetration test (CPT)

⊞ Approximate location of infiltration test (P)

0 60 120

APPROXIMATE SCALE (FEET)

Base by Google Earth, dated 08/24/2020
Overlay by Ware Malcomb, Scheme: 2, Conceptual Site Plan - Sheet 1, dated 12/29/2020

Project Number 1084-2-1

Figure Number Figure 2

Drawn By RRN

Date February 2021

Site Plan

2905 South King Road Warehouse
San Jose, CA

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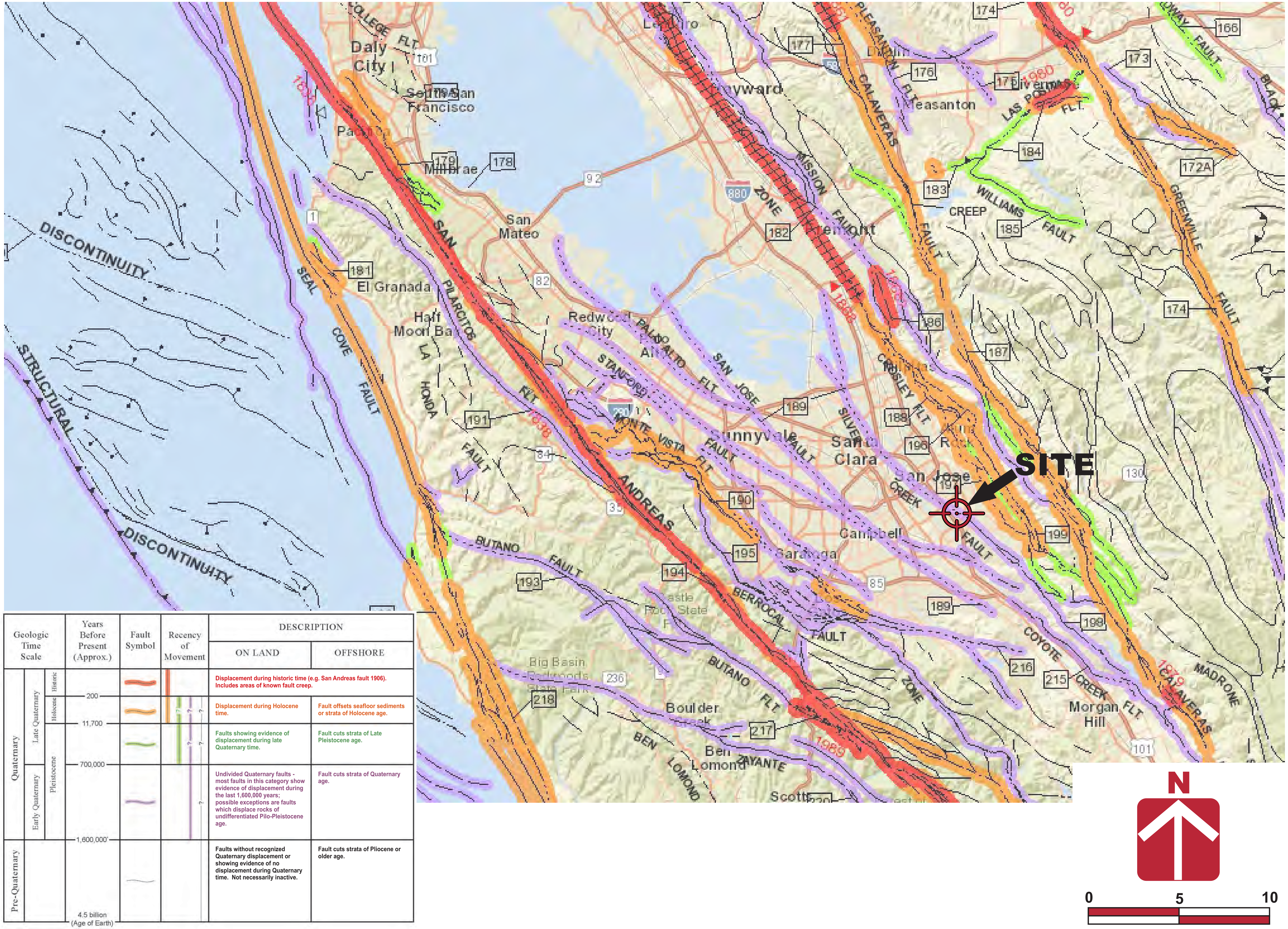

Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
						ON LAND	OFFSHORE
Quaternary	Late Quaternary	Historic	200	🟥		Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	11,700	🟧	?	Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
		Pleistocene	700,000	🟩	?	Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary		1,600,000	🟪	?	Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Pilo-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			4.5 billion (Age of Earth)	~		Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.

APPROXIMATE SCALE (MILES)

Base by California Geological Survey - 2010 Fault Activity Map of California (Jennings and Bryant, 2010)

Project Number
1084-2-1

Figure Number
Figure 3

Drawn By
RRN

Date
February 2021

Regional Fault Map

2905 South King Road Warehouse
San Jose, CA

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FIGURE **4A**

CPT NO. **1**

PROJECT/CPT DATA

Project Title **2905 S King Rd Warehouse GI**

Project No. **1084-2-1**

Project Manager **RSM**

SEISMIC PARAMETERS

Controlling Fault **Hayward**

Earthquake Magnitude (Mw) **7.6**

PGA (Amax) **0.78** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	**28**
Design Water Depth (feet)	**15**
Ave. Unit Weight Above GW (pcf)	**120**
Ave. Unit Weight Below GW (pcf)	**125**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 15 **FEET**

0.07 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.13 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.2 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI^2 0.00 **L/H** 78.6

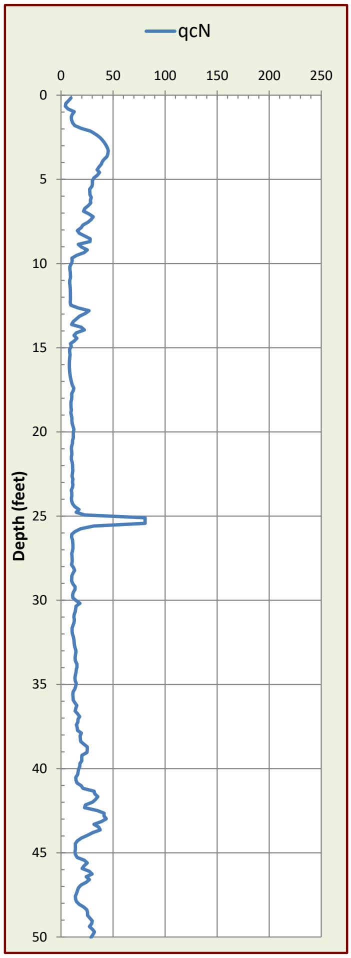
LDI^1$_{\text{Corrected for Distance}}$ 0.00 (4 < L/H < 40)

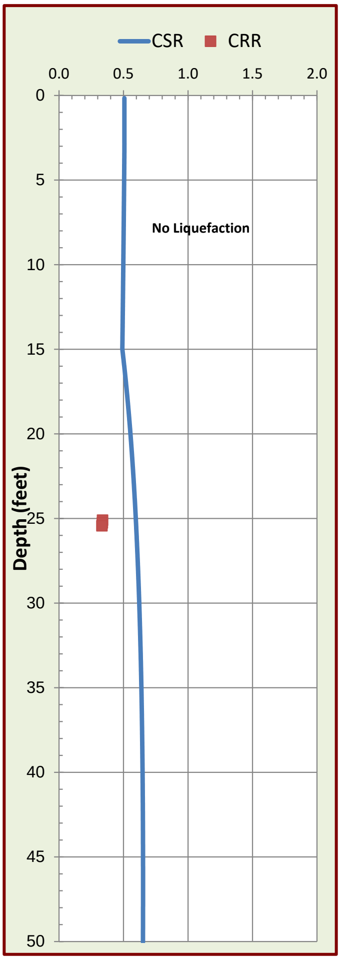
EXPECTED RANGE OF DISPLACEMENT

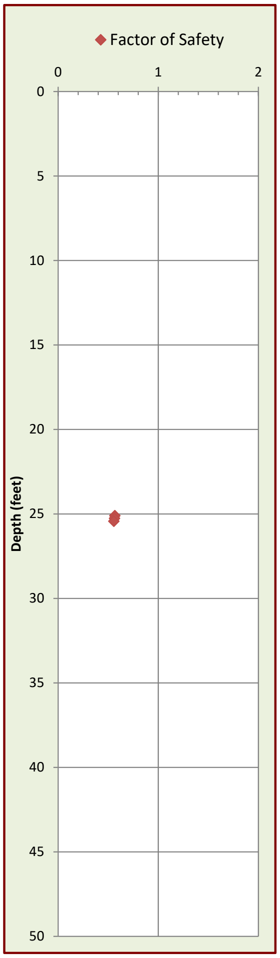
0.0 **to** **0.0** **feet**

[1] Not Valid for L/H Values < 4 and > 40.

[2] LDI Values Only Summed to 2H Below Grade.







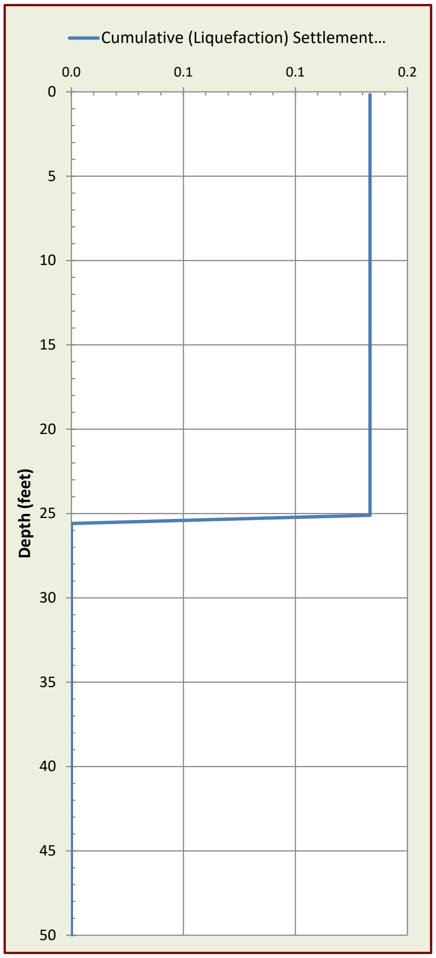


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FIGURE **4B**

CPT NO. **2**

PROJECT/CPT DATA

Project Title	**2905 S King Rd Warehouse GI**
Project No.	**1084-2-1**
Project Manager	**RSM**

SEISMIC PARAMETERS

Controlling Fault	**Hayward**	
Earthquake Magnitude (Mw)	**7.6**	
PGA (Amax)	**0.78**	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	**23.2**
Design Water Depth (feet)	**15**
Ave. Unit Weight Above GW (pcf)	**120**
Ave. Unit Weight Below GW (pcf)	**125**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 15 **FEET**

0.00 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.73 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.7 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 100.0

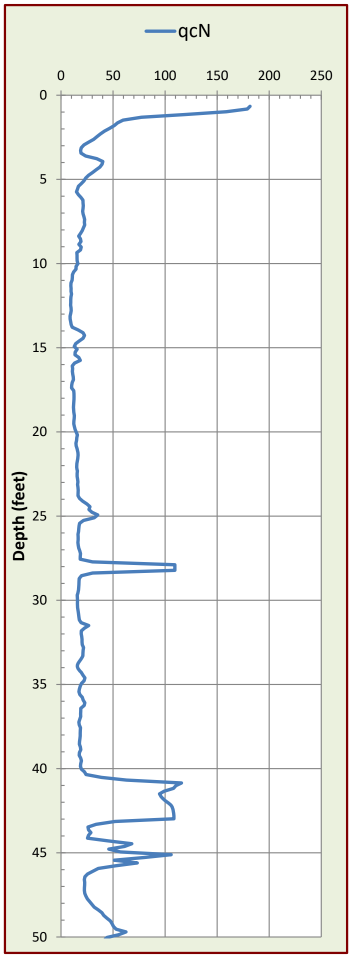
LDI[1]**Corrected for Distance** 0.00 (4 < L/H < 40)

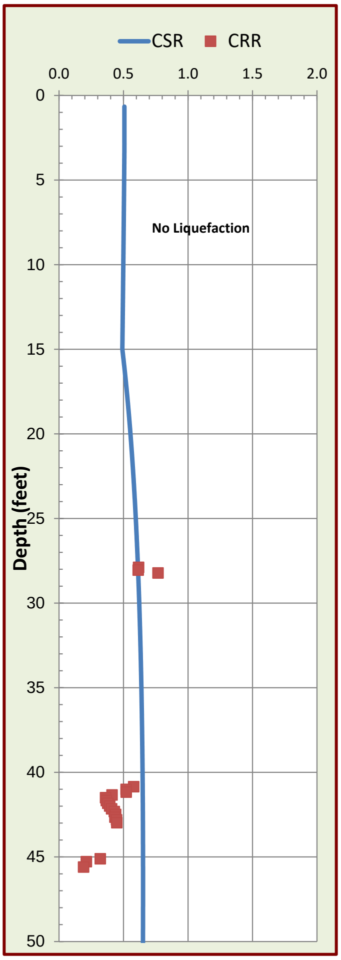
EXPECTED RANGE OF DISPLACEMENT

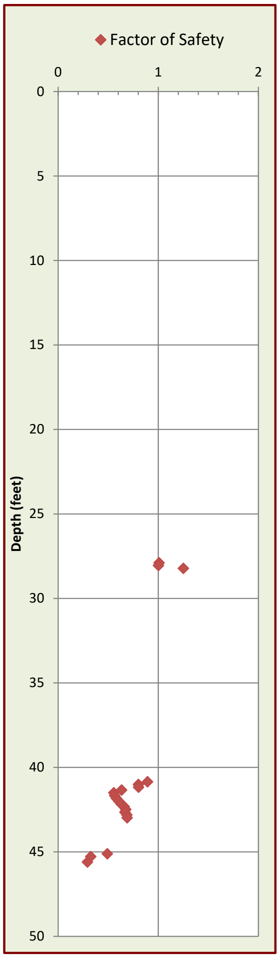
0.0 **to** **0.0** **feet**

[1] Not Valid for L/H Values < 4 and > 40.

[2] LDI Values Only Summed to 2H Below Grade.







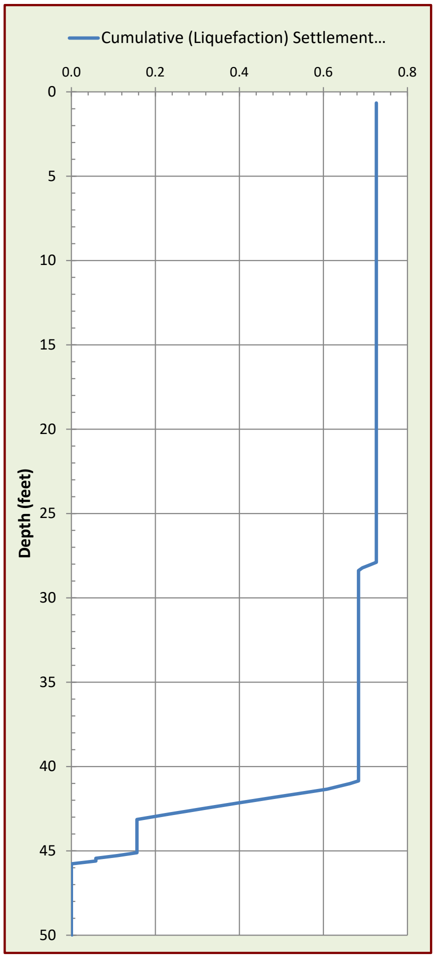


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FIGURE 4C

CPT NO. 3

PROJECT/CPT DATA

Project Title **2905 S King Rd Warehouse GI**

Project No. **1084-2-1**

Project Manager **RSM**

SEISMIC PARAMETERS

Controlling Fault **Hayward**

Earthquake Magnitude (Mw) **7.6**

PGA (Amax) **0.78** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet) **26.5**

Design Water Depth (feet) **15**

Ave. Unit Weight Above GW (pcf) **120**

Ave. Unit Weight Below GW (pcf) **125**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 15 **FEET**

0.05 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.00 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.1 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 107.1

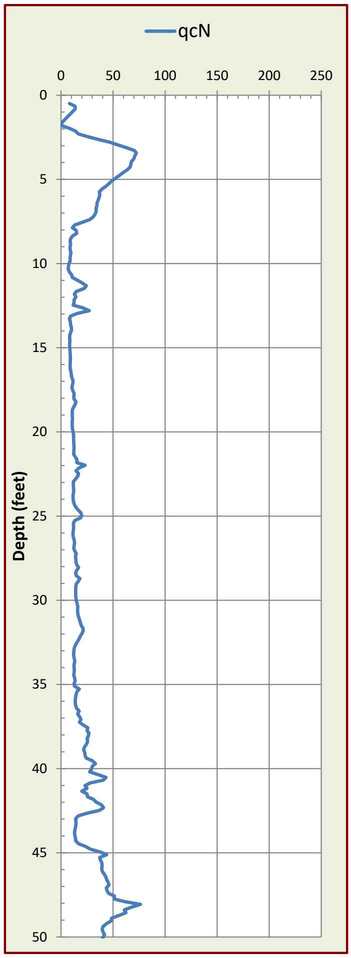
LDI[1] **Corrected for Distance** 0.00 (4 < L/H < 40)

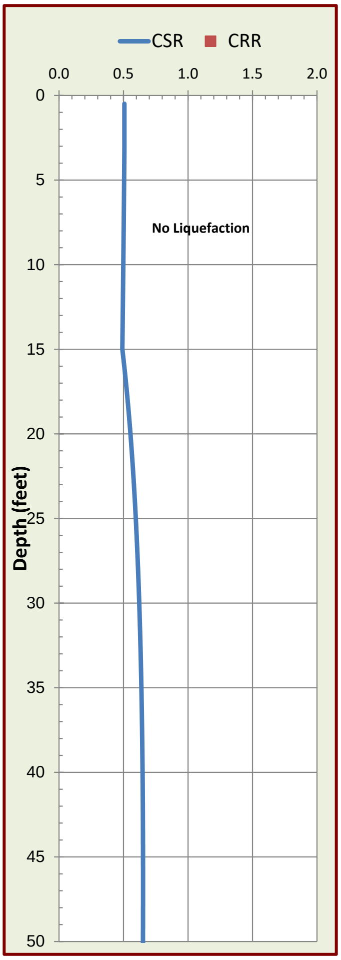
EXPECTED RANGE OF DISPLACEMENT

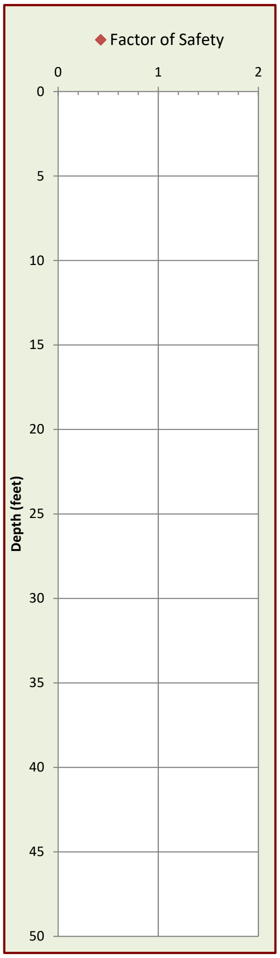
0.0 **to** **0.0** **feet**

[1] Not Valid for L/H Values < 4 and > 40.

[2] LDI Values Only Summed to 2H Below Grade.







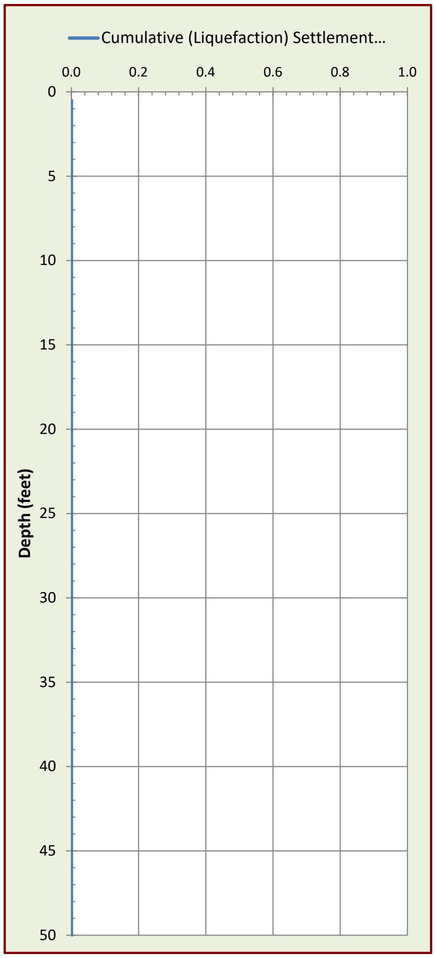


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FIGURE 4D

CPT NO. 4

PROJECT/CPT DATA

Project Title: **2905 S King Rd Warehouse GI**

Project No.: **1084-2-1**

Project Manager: **RSM**

SEISMIC PARAMETERS

Controlling Fault: **Hayward**

Earthquake Magnitude (Mw): **7.6**

PGA (Amax): **0.78** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet): **20.5**

Design Water Depth (feet): **15**

Ave. Unit Weight Above GW (pcf): **120**

Ave. Unit Weight Below GW (pcf): **125**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 15 **FEET**

0.05 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.02 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.1 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 107.1

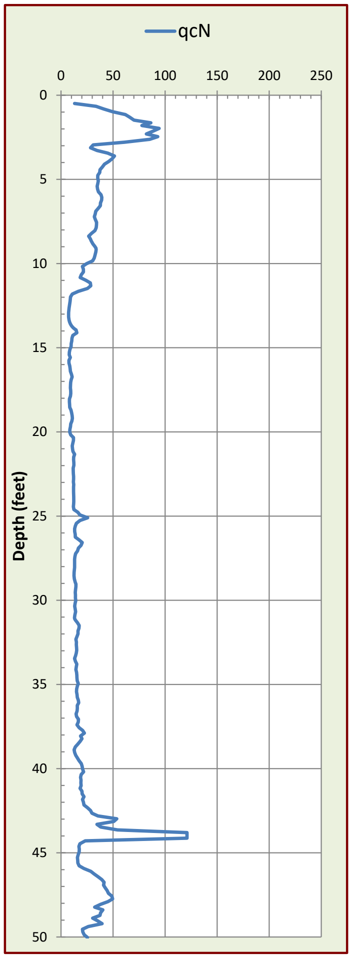
LDI[1]**Corrected for Distance** 0.00 (4 < L/H < 40)

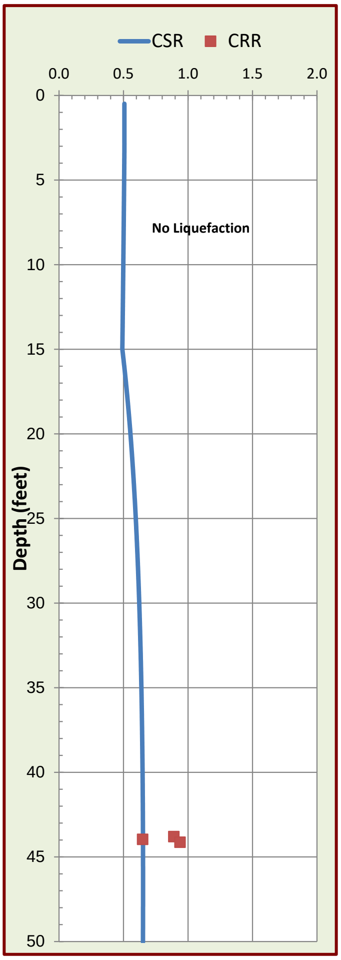
EXPECTED RANGE OF DISPLACEMENT

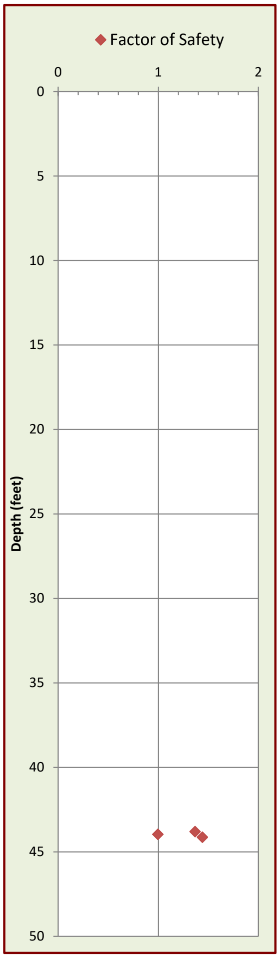
0.0 **to** 0.0 **feet**

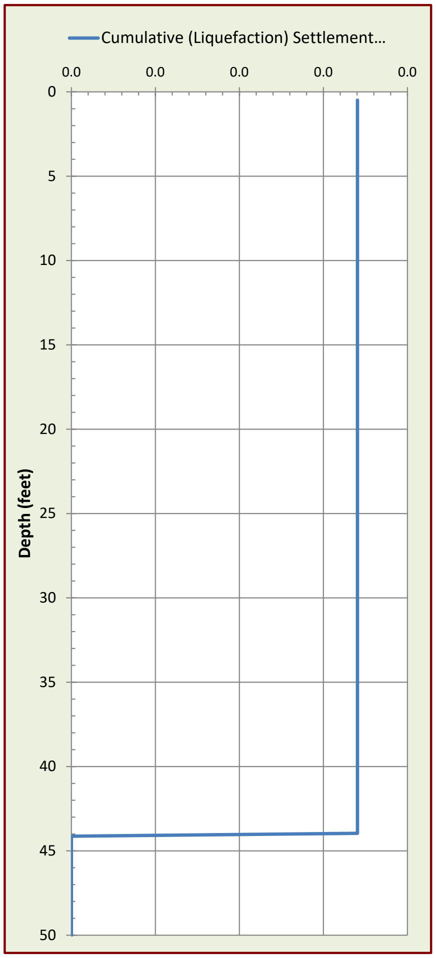
[1] Not Valid for L/H Values < 4 and > 40.

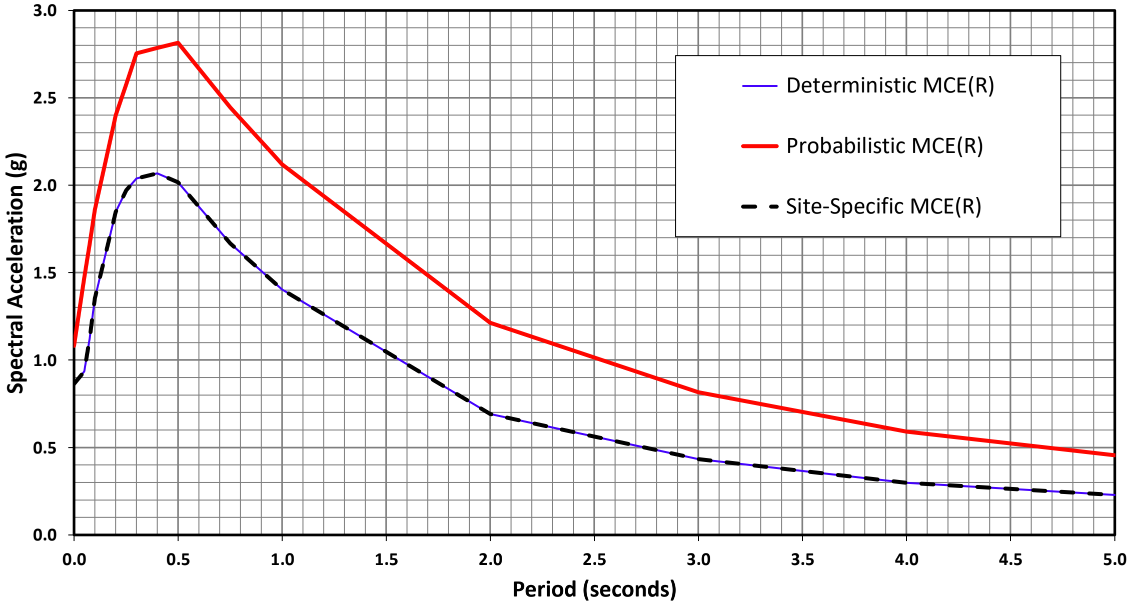
[2] LDI Values Only Summed to 2H Below Grade.











The Site-Specific Maximum Considered Earthquake (MCE_R) is defined as the lesser of the following at all periods:

- Deterministic MCE_R – maximum 84th percentile deterministic, or
- Probabilistic MCE_R – defined as the 2,475–year ground motion.

Site-Specific MCE_R	
Period (Seconds)	Spectral Acceleration (g)
0.00	0.863
0.05	0.934
0.08	1.126
0.10	1.353
0.19	1.791
0.20	1.846
0.25	1.971
0.30	2.039
0.40	2.068
0.50	2.017
0.75	1.668
0.94	1.463
1.00	1.403
2.00	0.692
3.00	0.434
4.00	0.299
5.00	0.229

References:

ASCE/SEI 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other Strutures with Supplement No. 1.
2019 California Building Code, Title 24, Part 2, Volume 2

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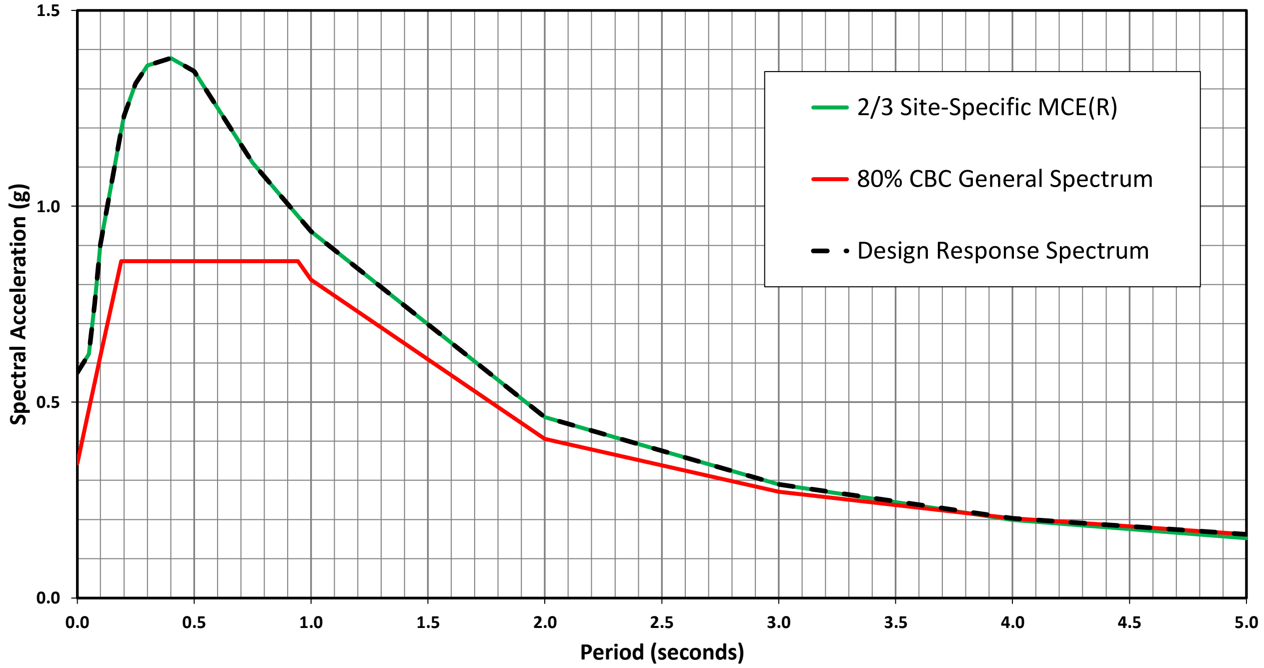
MCE_R RESPONSE SPECTRA

FIGURE 5

2905 S King Rd Warehouse GI
2905 S King Rd
San Jose, CA

PROJECT NO. 1084-2-1

February 19, 2021 | RSM



The Site-Specific Design Response Spectrum per Section 21.2, 21.3 and 21.4 of ASCE 7-16 is defined as the greater of the following at all periods:

- 2/3 of the Site-Specific MCE_R, or
- 80% of the CBC General Spectrum.

Design Response Spectra	
Period (Seconds)	Spectral Acceleration (g)
0.00	0.575
0.05	0.623
0.08	0.751
0.10	0.902
0.19	1.194
0.20	1.231
0.25	1.314
0.30	1.359
0.40	1.379
0.50	1.345
0.75	1.112
0.94	0.975
1.00	0.936
2.00	0.461
3.00	0.289
4.00	0.203
5.00	0.162

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	258
Site Latitude (degrees)	37.312129
Site Longitude (degrees)	-121.816573
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	0.78

[1] Lower of Deterministic and Probabilistic, but not less than 80% of mapped value of FM x PGA, determined in accordance with Section 21.5 of ASCE 7-16.

Design Acceleration Parameters[1]	
S_{DS}	1.241
S_{D1}	0.936
S_{MS}	1.861
S_{M1}	1.403

References:

ASCE/SEI 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other Strutures with Supplement No. 1.
2019 California Building Code, Title 24, Part 2, Volume 2

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DESIGN RESPONSE SPECTRA

2905 S King Rd Warehouse GI
2905 S King Rd
San Jose, CA

FIGURE 6

PROJECT NO. 1084-2-1

February 19, 2021 | RSM

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using truck-mounted, hollow-stem auger drilling equipment and 20-ton truck-mounted Cone Penetration Test equipment. Three 8-inch-diameter exploratory borings were drilled on January 29, 2021 to depths of approximately 26½ to 45 feet. Three CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on January 27, 2021, to depths ranging from approximately 50 to 131 feet. The approximate locations of exploratory borings and CPTs are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). Boring logs, as well as a key to the classification of the soil are included as part of this appendix.

Boring and CPT locations were approximated using existing site boundaries and other site features as references. Boring and CPT elevations were not determined. The locations of the borings and CPTs should be considered accurate only to the degree implied by the method used.

Representative soil samples were obtained from the borings at selected depths. All samples were returned to our laboratory for evaluation and appropriate testing. The standard penetration resistance blow counts were obtained by dropping a 140-pound hammer through a 30-inch free fall. The 2-inch O.D. split-spoon sampler was driven 18 inches and the number of blows was recorded for each 6 inches of penetration (ASTM D1586). 2.5-inch I.D. samples were obtained using a Modified California Sampler driven into the soil with the 140-pound hammer previously described. Relatively undisturbed samples were also obtained with 2.875-inch I.D. Shelby Tube sampler which were hydraulically pushed. Unless otherwise indicated, the blows per foot recorded on the boring log represent the accumulated number of blows required to drive the last 12 inches. The various samplers are denoted at the appropriate depth on the boring logs.

The CPT involved advancing an instrumented cone-tipped probe into the ground while simultaneously recording the resistance at the cone tip (q_c) and along the friction sleeve (f_s) at approximately 5-centimeter intervals. Based on the tip resistance and tip to sleeve ratio (R_f), the CPT classified the soil behavior type and estimated engineering properties of the soil, such as equivalent Standard Penetration Test (SPT) blow count, internal friction angle within sand layers, and undrained shear strength in silts and clays. A pressure transducer behind the tip of the CPT cone measured pore water pressure (u_2). Graphical logs of the CPT data is included as part of this appendix.

Field tests included an evaluation of the unconfined compressive strength of the soil samples using a pocket penetrometer device. The results of these tests are presented on the individual boring logs at the appropriate sample depths.

Attached boring and CPT logs and related information depict subsurface conditions at the locations indicated and on the date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring and CPT locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-10)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND	
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	Cu>4 AND 1<Cc<3	GW	WELL-GRADED GRAVEL	●
			Cu>4 AND 1>Cc>3	GP	POORLY-GRADED GRAVEL	○
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL	▥
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL	▨
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	Cu>6 AND 1<Cc<3	SW	WELL-GRADED SAND	⁘
			Cu>6 AND 1>Cc>3	SP	POORLY-GRADED SAND	░
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR CL	SM	SILTY SAND	▥
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND	▨
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT<50	INORGANIC	PI>7 AND PLOTS>"A" LINE	CL	LEAN CLAY	▨
			PI>4 AND PLOTS<"A" LINE	ML	SILT	▥
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OL	ORGANIC CLAY OR SILT	☰
	SILTS AND CLAYS LIQUID LIMIT>50	INORGANIC	PI PLOTS >"A" LINE	CH	FAT CLAY	▨
			PI PLOTS <"A" LINE	MH	ELASTIC SILT	▥
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OH	ORGANIC CLAY OR SILT	≋
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR		PT	PEAT	⩡

OTHER MATERIAL SYMBOLS

- Poorly-Graded Sand with Clay
- Clayey Sand
- Sandy Silt
- Artificial/Undocumented Fill
- Poorly-Graded Gravelly Sand
- Topsoil
- Well-Graded Gravel with Clay
- Well-Graded Gravel with Silt
- Sand
- Silt
- Well Graded Gravelly Sand
- Gravelly Silt
- Asphalt
- Boulders and Cobble

SAMPLER TYPES

☒ SPT

⧗ Modified California (2.5" I.D.)

▯ Rock Core

■ Shelby Tube

○ No Recovery

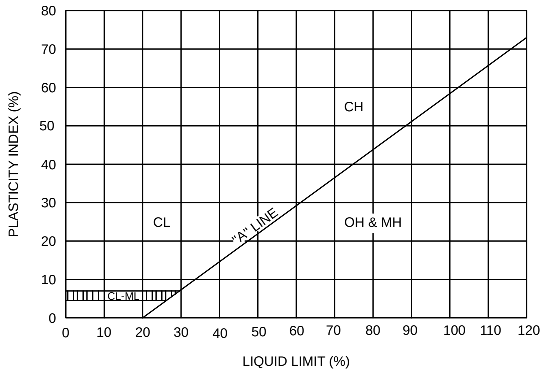
✋ Grab Sample

ADDITIONAL TESTS

CA - CHEMICAL ANALYSIS (CORROSIVITY)
CD - CONSOLIDATED DRAINED TRIAXIAL
CN - CONSOLIDATION
CU - CONSOLIDATED UNDRAINED TRIAXIAL
DS - DIRECT SHEAR
PP - POCKET PENETROMETER (TSF)
(3.0) - (WITH SHEAR STRENGTH IN KSF)
RV - R-VALUE
SA - SIEVE ANALYSIS: % PASSING #200 SIEVE
▼ - WATER LEVEL

PI - PLASTICITY INDEX
SW SWELL TEST
TC - CYCLIC TRIAXIAL
TV - TORVANE SHEAR
UC - UNCONFINED COMPRESSION
(1.5) - (WITH SHEAR STRENGTH IN KSF)
UU - UNCONSOLIDATED UNDRAINED TRIAXIAL

PLASTICITY CHART



PENETRATION RESISTANCE (RECORDED AS BLOWS / FOOT)				
SAND & GRAVEL		SILT & CLAY		
RELATIVE DENSITY	BLOWS/FOOT*	CONSISTENCY	BLOWS/FOOT*	STRENGTH** (KSF)
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 4	0.25 - 0.5
MEDIUM DENSE	10 - 30	MEDIUM STIFF	4 - 8	0.5-1.0
DENSE	30 - 50	STIFF	8 - 15	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	15 - 30	2.0 - 4.0
		HARD	OVER 30	OVER 4.0

* NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST).

** UNDRAINED SHEAR STRENGTH IN KIPS/SQ. FT. AS DETERMINED BY LABORATORY TESTING OR APPROXIMATED BY THE STANDARD PENETRATION TEST, POCKET PENETROMETER, TORVANE, OR VISUAL OBSERVATION.

CORNERSTONE
EARTH GROUP

LEGEND TO SOIL DESCRIPTIONS

Figure Number
A-1

BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME 2905 South King Road Warehouse
PROJECT NUMBER 1084-2-1
PROJECT LOCATION San Jose, CA
DATE STARTED 1/29/21 **DATE COMPLETED** 1/29/21
GROUND ELEVATION **BORING DEPTH** 30 ft.
DRILLING CONTRACTOR Exploration Geoservices, Inc.
LATITUDE 37.311631° **LONGITUDE** -121.817519°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY EA
∇ **AT TIME OF DRILLING** 28 ft.
NOTES
▼ **AT END OF DRILLING** 28 ft.

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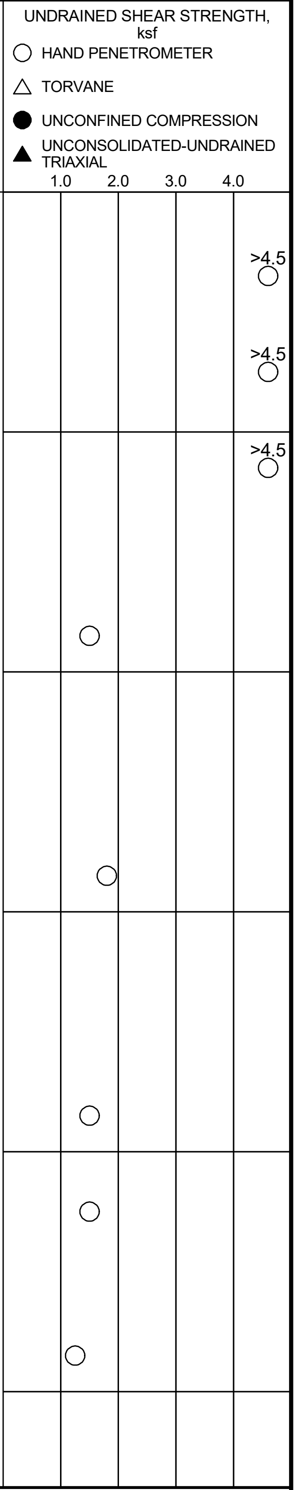
ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf
	0	**Fat Clay with Gravel (CH) [Fill]** soft, moist, dark brown, some organics, fine to coarse gravel, high plasticity							
		Fat Clay with Sand (CH) hard, moist, dark brown to brown, fine sand, high plasticity	30	MC-1B	115	13			>4.5
		Sandy Lean Clay (CL) hard, moist, brown to light brown, fine sand, low to moderate plasticity	28	MC-2B	102	13			>4.5
	5		24	MC-3B	111	13			>4.5
		Lean Clay with Sand (CL) stiff, moist, brown, fine sand, low plasticity	11	MC-4B	100	22			
	10								
			15	5B MC 5C	102 101	22 23		53	
	15	**Sandy Silt (ML)** stiff, moist, brown, fine sand, nonplastic							
		Lean Clay (CL) stiff, moist, brown with gray mottles, some fine sand, moderate plasticity	18	MC-6B	101	24			
	20			ST					
			25	MC-8B	98	25			
	25								



Continued Next Page

BORING NUMBER EB-1

PROJECT NAME 2905 South King Road Warehouse

PROJECT NUMBER 1084-2-1

PROJECT LOCATION San Jose, CA

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf 1.0 2.0 3.0 4.0
	▼	▨	**Lean Clay (CL)** stiff, moist, brown with gray mottles, some fine sand, moderate plasticity	23	MC-9B	103	25			○
	30		Bottom of Boring at 30.0 feet.							
	35									
	40									
	45									
	50									
	55									

CORNERSTONE EARTH GROUP

BORING NUMBER EB-2

PROJECT NAME 2905 South King Road Warehouse
PROJECT NUMBER 1084-2-1
PROJECT LOCATION San Jose, CA
DATE STARTED 1/29/21 **DATE COMPLETED** 1/29/21
GROUND ELEVATION **BORING DEPTH** 45 ft.
DRILLING CONTRACTOR Exploration Geoservices, Inc.
LATITUDE 37.312211° **LONGITUDE** -121.816887°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY EA
▽ **AT TIME OF DRILLING** 27 ft.
NOTES
▼ **AT END OF DRILLING** 27 ft.

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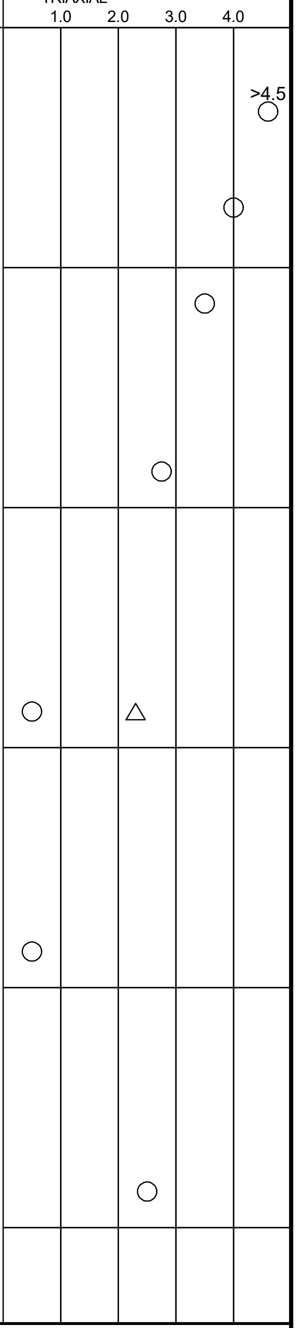
UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0	**Poorly Graded Gravel with Sand (GP) [Fill]**						
		Fat Clay with Sand (CH) hard, moist, dark brown to brown, fine sand, high plasticity	28	MC-1B	108	14		
			28	MC-2B	106	14		
	5		20	MC-3B	108	17		
		Lean Clay with Sand (CL) very stiff, moist, brown with reddish brown mottles, fine sand, moderate plasticity	15	MC-4B	104	19		
	10							
		Sandy Lean Clay (CL) medium stiff to stiff, moist, brown, fine sand, low plasticity	12	MC-5B	106	21		
	15							
			11	MC-6B	92	31		
	20	**Lean Clay (CL)** medium stiff, moist, brown with gray mottles, some fine sand, moderate plasticity						
			18	MC-7B	102	22		
	25	**Sandy Silt (ML)** very stiff, moist, brown, fine sand, nonplastic						



Continued Next Page

BORING NUMBER EB-2

PAGE 2 OF 2

PROJECT NAME 2905 South King Road Warehouse
PROJECT NUMBER 1084-2-1
PROJECT LOCATION San Jose, CA

DESCRIPTION

Sandy Silt (ML)
very stiff, moist, brown, fine sand, nonplastic

Lean Clay (CL)
stiff, moist, gray, trace fine sand, moderate plasticity

Clayey Sand (SC)
medium dense, moist, brown, fine to medium sand

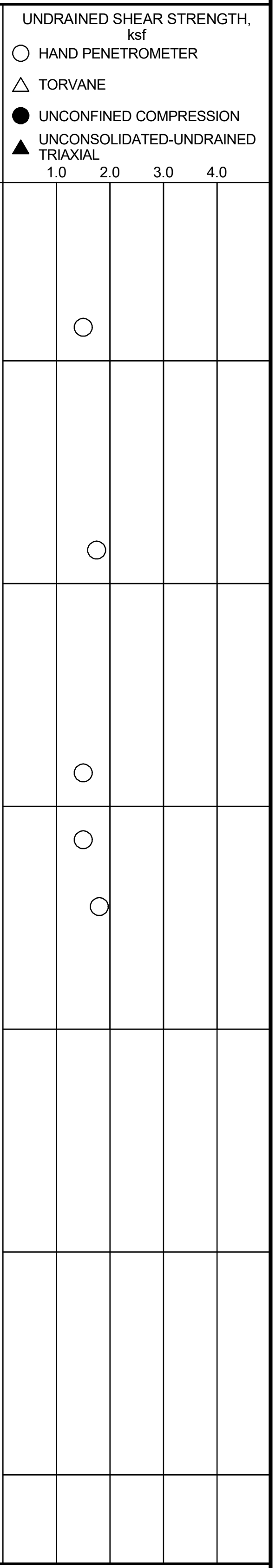
Lean Clay (CL)
stiff, moist, gray, trace sand, low to moderate plasticity

Silt (ML)
stiff, moist, brown, some fine sand, nonplastic

Clayey Sand (SC)
dense, moist, brown, fine to medium sand

Bottom of Boring at 45.0 feet.

ELEVATION (ft)	DEPTH (ft)	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	30	21	MC-8B	91	32		
	35	56	MC-9B	104	23		
	40	28	MC-10B	101	25		
		47	MC				
		20	SPT-12B		27		91
	45	72	MC-13B	111	19		
	50						
	55						



BORING NUMBER EB-3

PAGE 1 OF 1

CORNERSTONE EARTH GROUP

PROJECT NAME 2905 South King Road Warehouse

PROJECT NUMBER 1084-2-1

PROJECT LOCATION San Jose, CA

DATE STARTED 1/29/21 **DATE COMPLETED** 1/29/21

GROUND ELEVATION **BORING DEPTH** 26.5 ft.

DRILLING CONTRACTOR Exploration Geoservices, Inc.

LATITUDE 37.311756° **LONGITUDE** -121.816262°

DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger

GROUND WATER LEVELS:

LOGGED BY EA

▽ **AT TIME OF DRILLING** 26.5 ft.

NOTES

▼ **AT END OF DRILLING** 26.5 ft.

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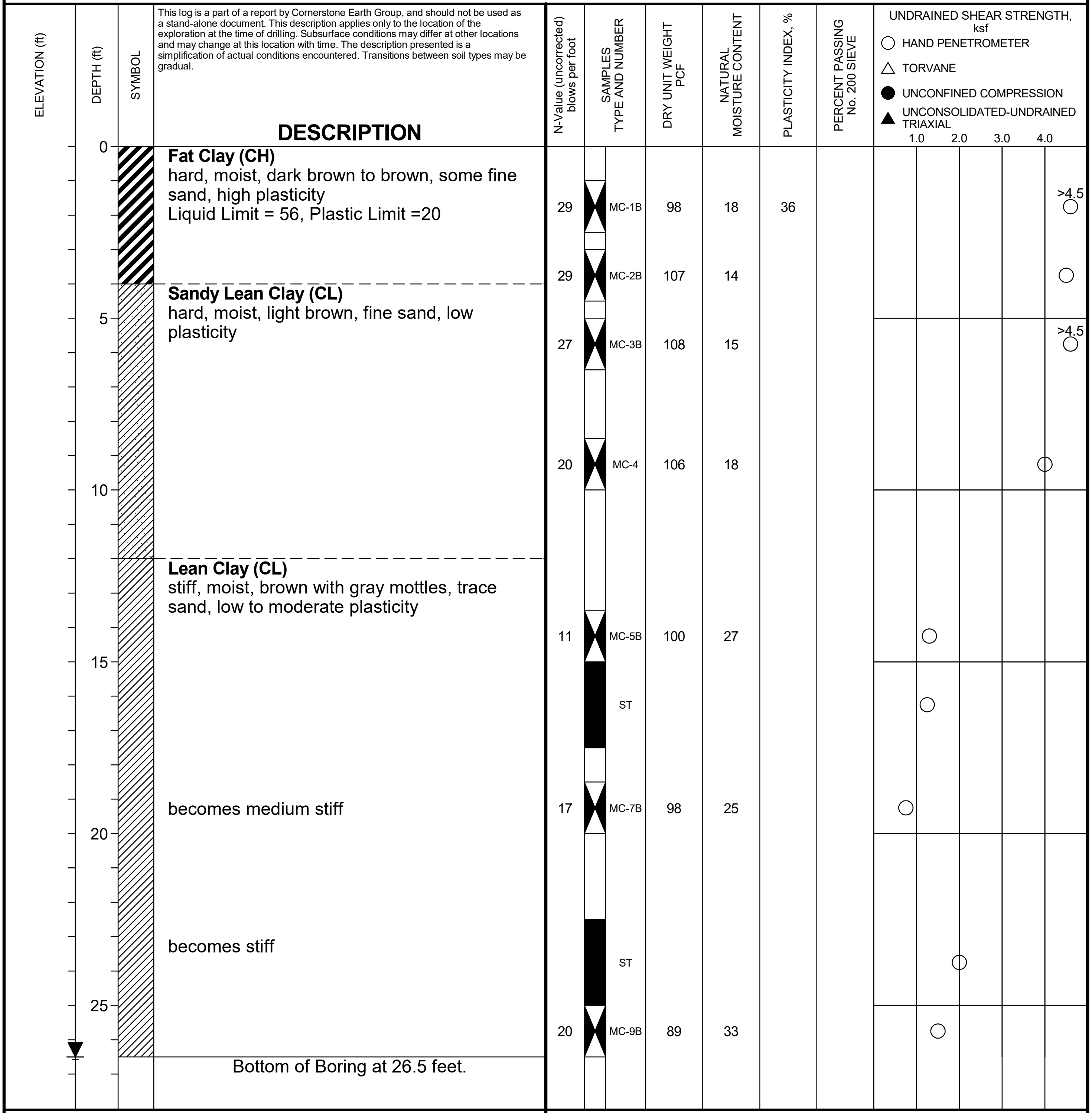


DESCRIPTION

Fat Clay (CH)
hard, moist, dark brown to brown, some fine sand, high plasticity
Liquid Limit = 56, Plastic Limit =20

Sandy Lean Clay (CL)
hard, moist, light brown, fine sand, low plasticity

Lean Clay (CL)
stiff, moist, brown with gray mottles, trace sand, low to moderate plasticity

becomes medium stiff

becomes stiff

Bottom of Boring at 26.5 feet.

N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
29	MC-1B	98	18	36	
29	MC-2B	107	14		
27	MC-3B	108	15		
20	MC-4	106	18		
11	MC-5B	100	27		
	ST				
17	MC-7B	98	25		
	ST				
20	MC-9B	89	33		

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 2/9/21 12:09 - P:\DRAFTING\GINT FILES\1084-1-2 S KING RD.GPJ

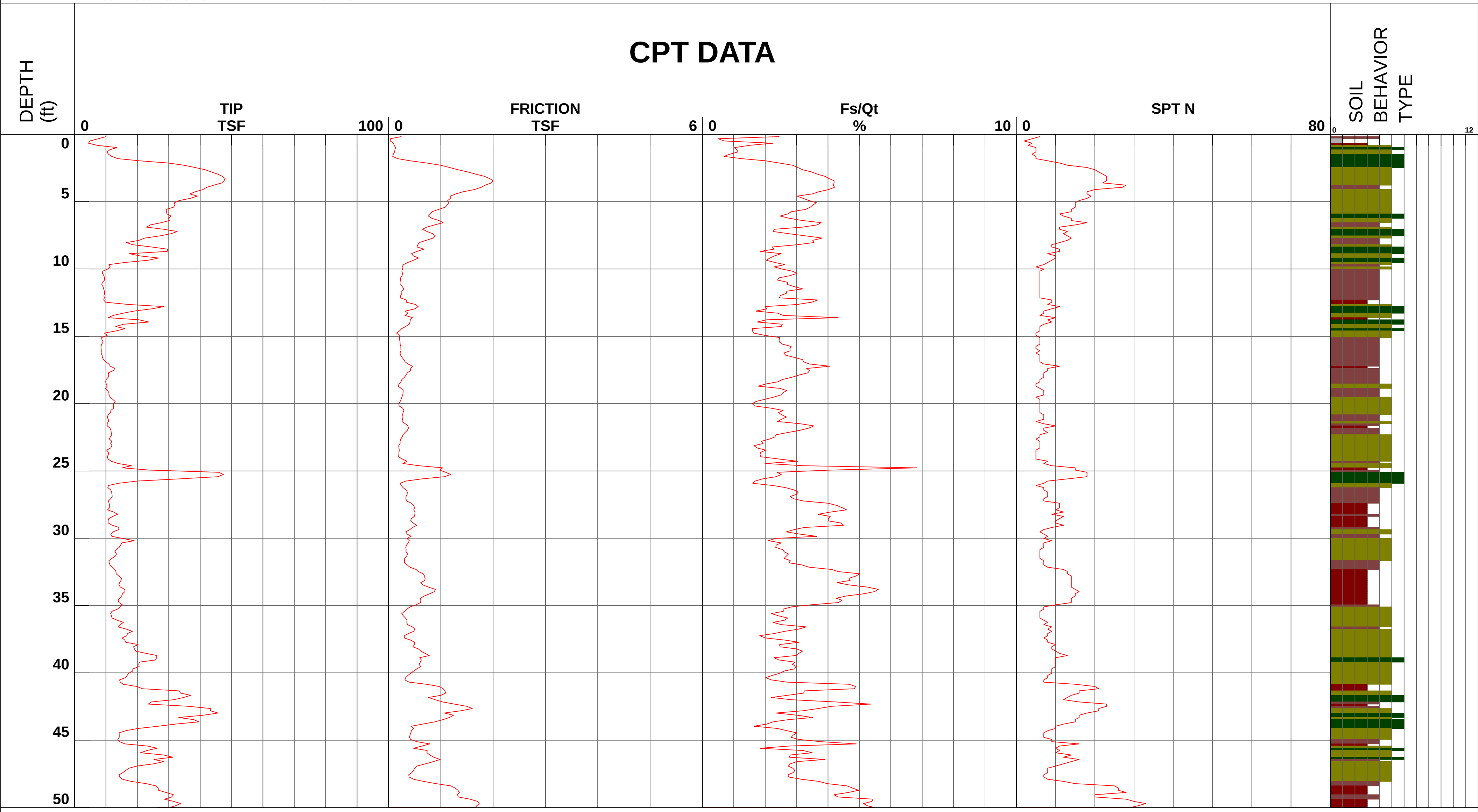
Middle Earth
Geo Testing Inc.

Cornerstone Earth Group

Project 2905 S King Rd
Job Number 1084-2-1
Hole Number CPT-01
EST GW Depth During Test 20.00 ft
Operator BH-ZG
Cone Number DDG1587
Date and Time 1/27/2021 12:32:57 PM
Filename SDF(217).cpt
GPS
Maximum Depth 50.52 ft

Net Area Ratio .8 Rd-ZG

CPT DATA



- ⬜ 1 - sensitive fine grained
- ⬛ 2 - organic material
- 🟥 3 - clay
- 🟫 4 - silty clay to clay
- 🟨 5 - clayey silt to silty clay
- 🟩 6 - sandy silt to clayey silt
- 🟦 7 - silty sand to sandy silt
- 🟪 8 - sand to silty sand
- 🟧 9 - sand
- 🟥 10 - gravelly sand to sand
- 🟪 11 - very stiff fine grained (*)
- 🟦 12 - sand to clayey sand (*)

Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

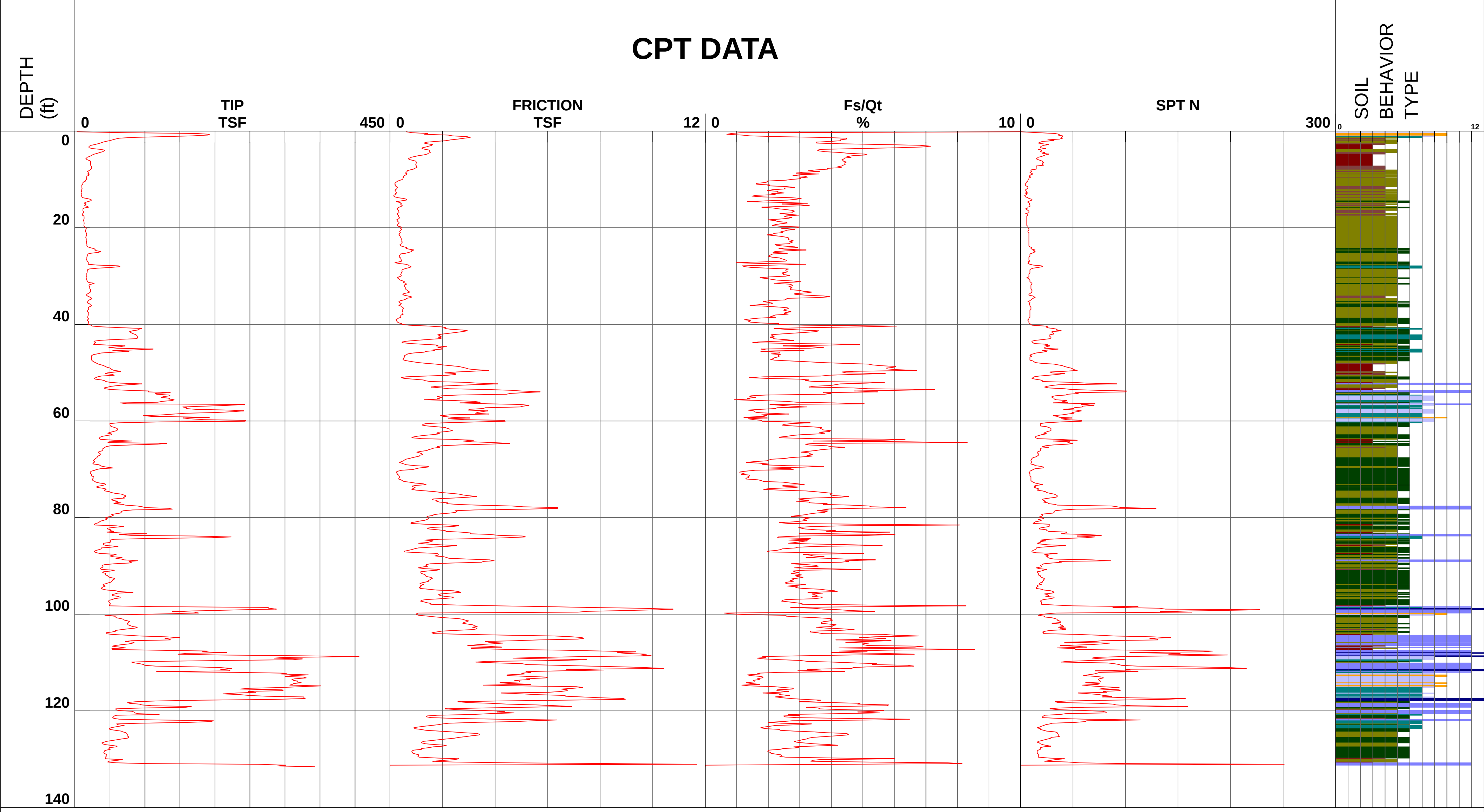
Cornerstone Earth Group

Middle Earth
GEO TESTING INC.

Project 2905 S King Rd
Job Number 1084-2-1
Hole Number CPT-02
EST GW Depth During Test 23.20 ft
Operator BH-ZG
Cone Number DDG1587
Date and Time 1/27/2021 7:53:30 AM
Filename SDF(215).cpt
GPS
Maximum Depth 131.56 ft

Net Area Ratio .8

CPT DATA



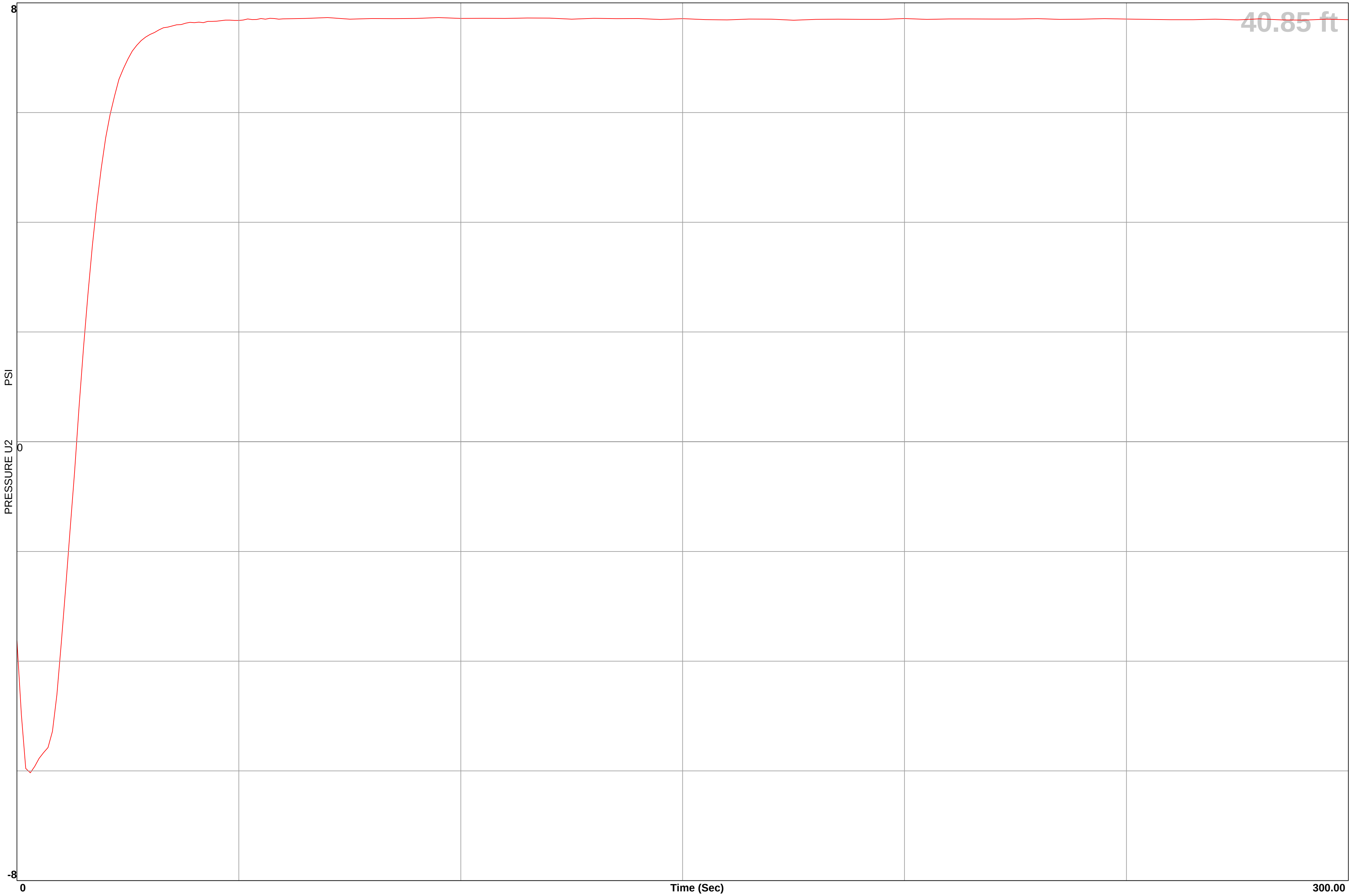
🟫 1 - sensitive fine grained
🟫 2 - organic material
🟥 3 - clay
🟫 4 - silty clay to clay
🟩 5 - clayey silt to silty clay
🟩 6 - sandy silt to clayey silt
🟦 7 - silty sand to sandy silt
🟪 8 - sand to silty sand
🟧 9 - sand
🟥 10 - gravelly sand to sand
🟦 11 - very stiff fine grained (*)
🟦 12 - sand to clayey sand (*)

Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

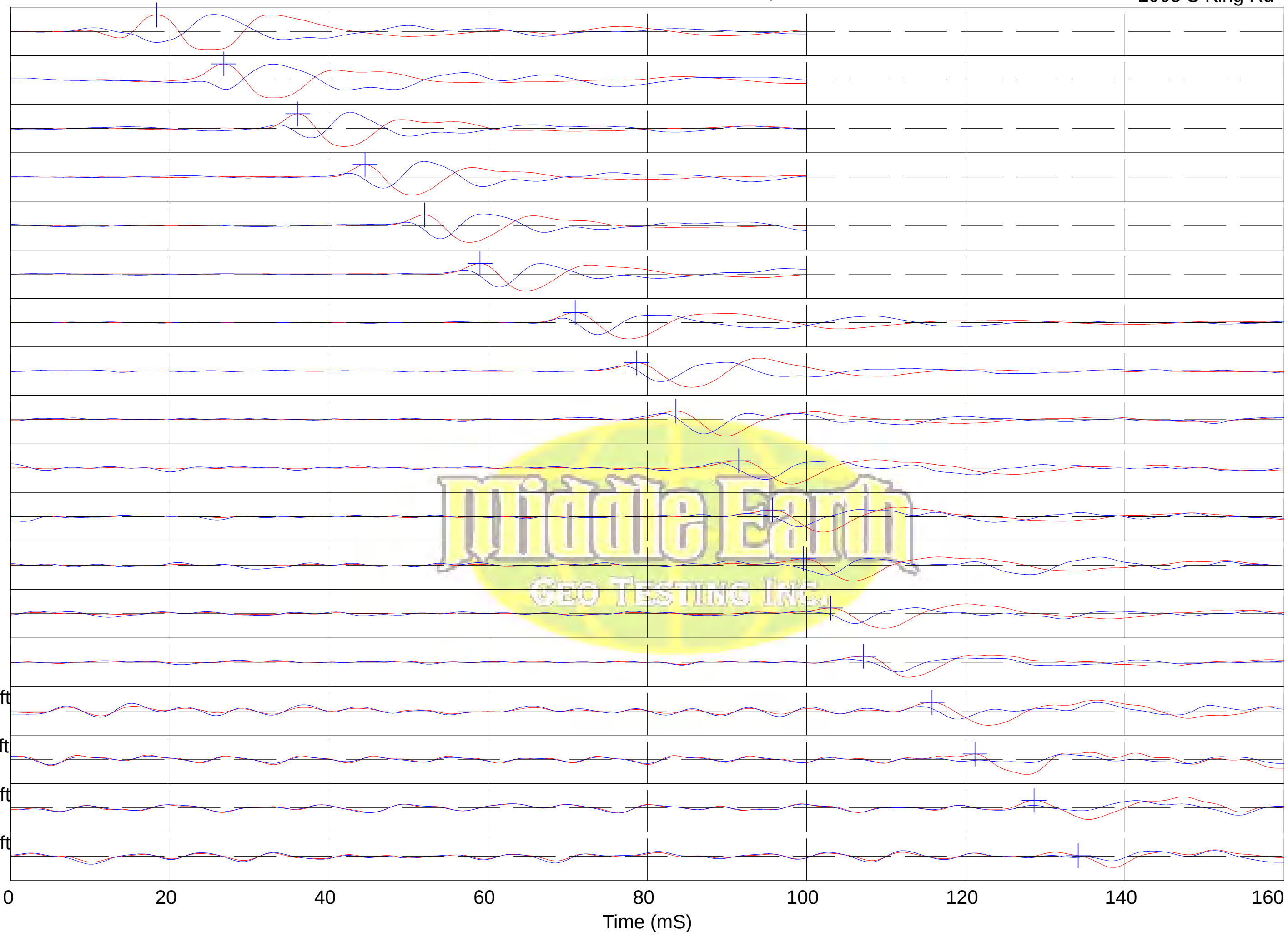
Location	2905 S King Rd	Operator	BH-ZG		
Job Number	1084-2-1	Cone Number	DDG1587	GPS	
Hole Number	CPT-02	Date and Time	1/27/2021 7:53:30 AM		
Equilized Pressure	7.6	EST GW Depth During Test	23.2		



CPT-02

Cornerstone Earth Group

2905 S King Rd



Depth 10.01ft	Ref*	Arrival 18.36mS	Velocity*
Depth 15.03ft	Ref 10.01ft	Arrival 26.80mS	Velocity 537.65ft/S
Depth 20.01ft	Ref 15.03ft	Arrival 36.09mS	Velocity 508.50ft/S
Depth 25.03ft	Ref 20.01ft	Arrival 44.53mS	Velocity 575.75ft/S
Depth 30.02ft	Ref 25.03ft	Arrival 52.03mS	Velocity 650.40ft/S
Depth 35.01ft	Ref 30.02ft	Arrival 58.98mS	Velocity 705.92ft/S
Depth 45.01ft	Ref 35.01ft	Arrival 70.93mS	Velocity 828.31ft/S
Depth 50.03ft	Ref 45.01ft	Arrival 78.67mS	Velocity 644.20ft/S
Depth 60.04ft	Ref 50.03ft	Arrival 83.59mS	Velocity 2021.79ft/S
Depth 70.05ft	Ref 60.04ft	Arrival 91.48mS	Velocity 1263.14ft/S
Depth 75.03ft	Ref 70.05ft	Arrival 95.70mS	Velocity 1178.34ft/S
Depth 80.05ft	Ref 75.03ft	Arrival 99.60mS	Velocity 1281.49ft/S
Depth 85.04ft	Ref 80.05ft	Arrival 103.04mS	Velocity 1447.21ft/S
Depth 90.12ft	Ref 85.04ft	Arrival 107.18mS	Velocity 1225.51ft/S
Depth 105.05ft	Ref 90.12ft	Arrival 115.77mS	Velocity 1734.05ft/S
Depth 110.07ft	Ref 105.05ft	Arrival 121.16mS	Velocity 929.88ft/S
Depth 125.00ft	Ref 110.07ft	Arrival 128.59mS	Velocity 2008.97ft/S
Depth 130.02ft	Ref 125.00ft	Arrival 134.13mS	Velocity 904.07ft/S

Hammer to Rod String Distance (ft): 5.83
* = Not Determined

COMMENT:

Cornerstone Earth Group

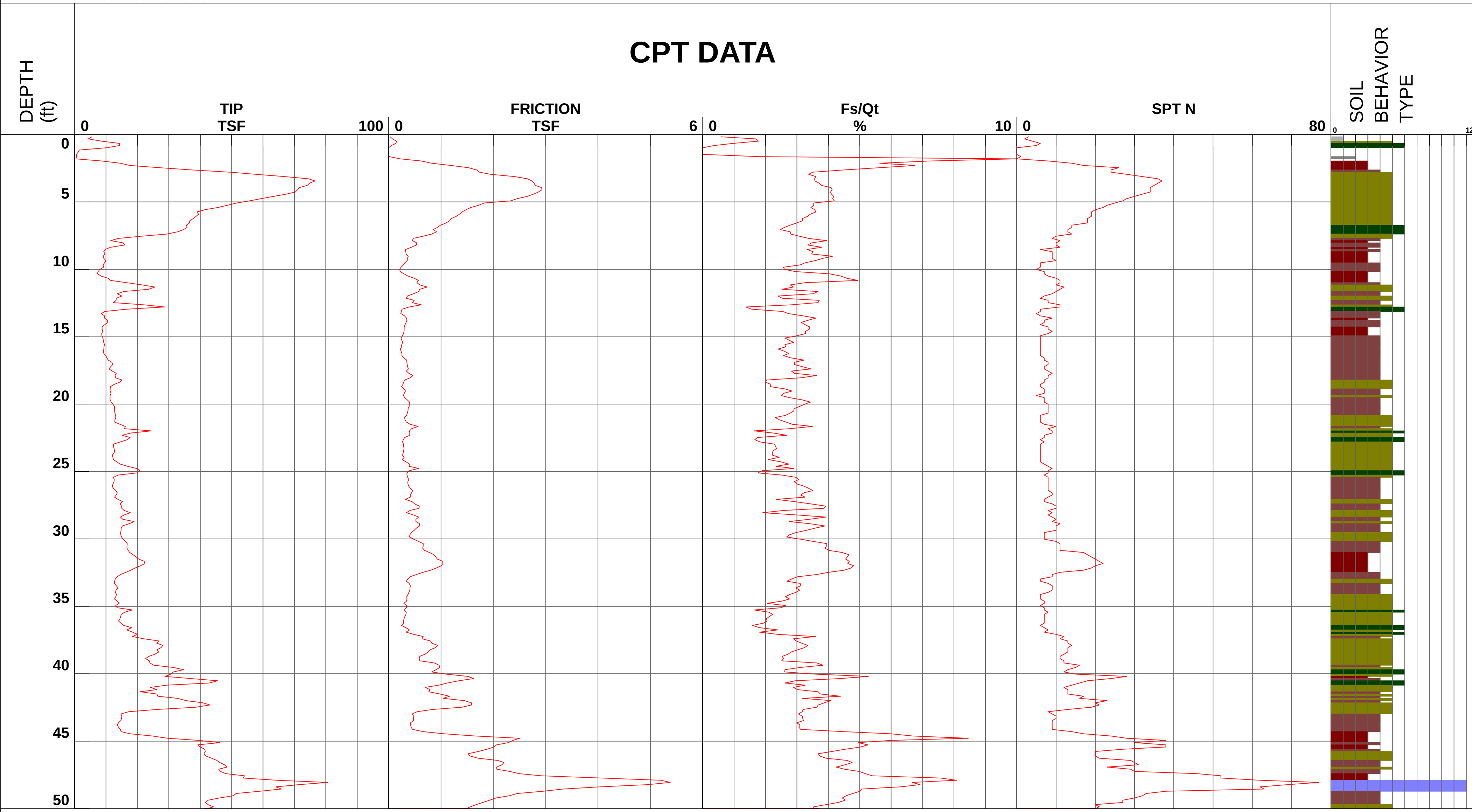
Project 2905 S King Rd
Job Number 1084-2-1
Hole Number CPT-03
EST GW Depth During Test 19.00 ft

Operator BH-ZG
Cone Number DDG1587
Date and Time 1/27/2021 1:10:17 PM

Filename SDF(218).cpt
GPS
Maximum Depth 50.69 ft

Net Area Ratio .8

CPT DATA



■ 1 - sensitive fine grained
■ 2 - organic material
■ 3 - clay

■ 4 - silty clay to clay
■ 5 - clayey silt to silty clay
■ 6 - sandy silt to clayey silt

■ 7 - silty sand to sandy silt
■ 8 - sand to silty sand
■ 9 - sand

■ 10 - gravelly sand to sand
■ 11 - very stiff fine grained (*)
■ 12 - sand to clayey sand (*)

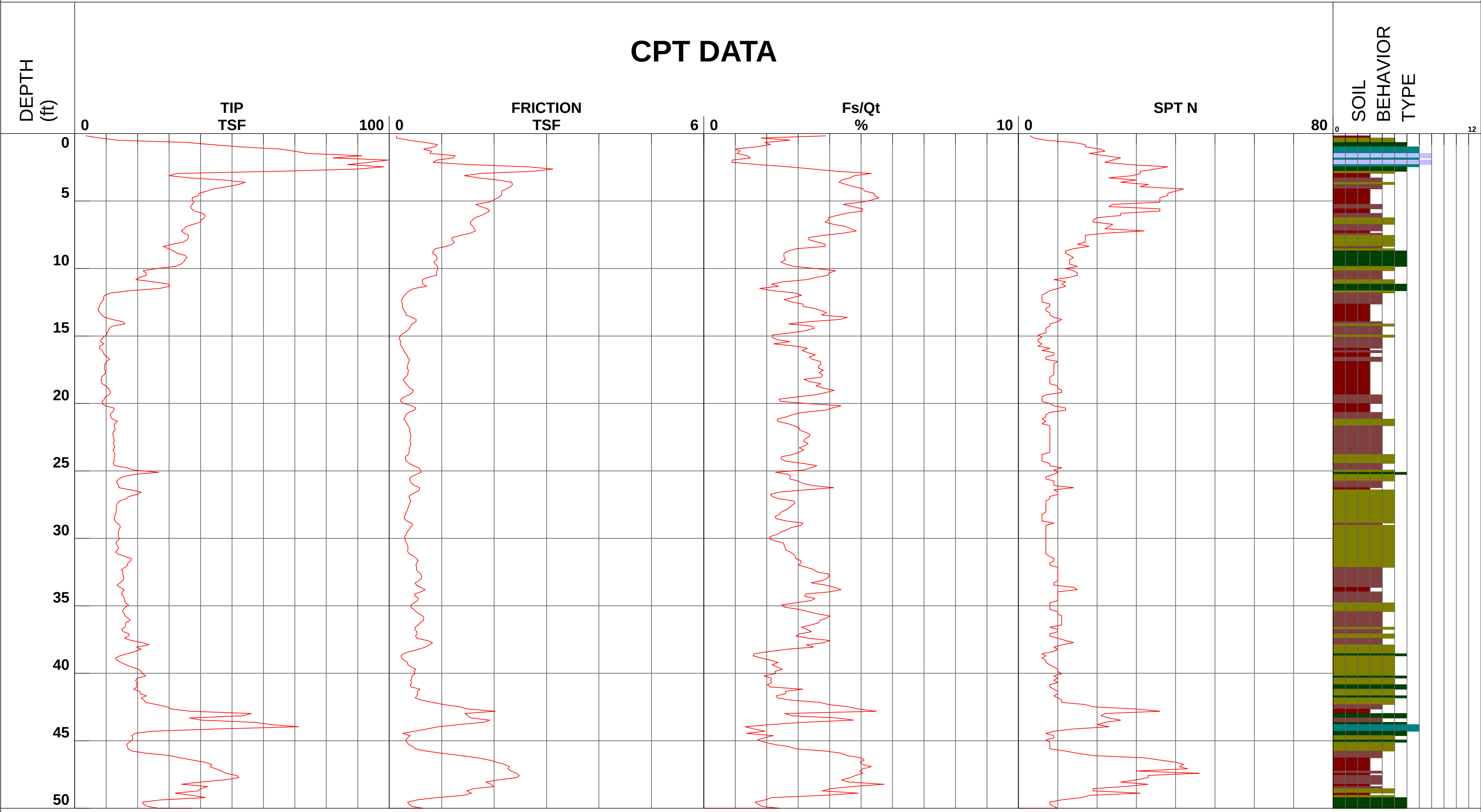
Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project 2905 S King Rd
Job Number 1084-2-1
Hole Number CPT-04
EST GW Depth During Test 20.50 ft
Operator BH-ZG
Cone Number DDG1587
Date and Time 1/27/2021 11:26:46 AM
Filename SDF(216).cpt
GPS
Maximum Depth 50.52 ft

Net Area Ratio .8



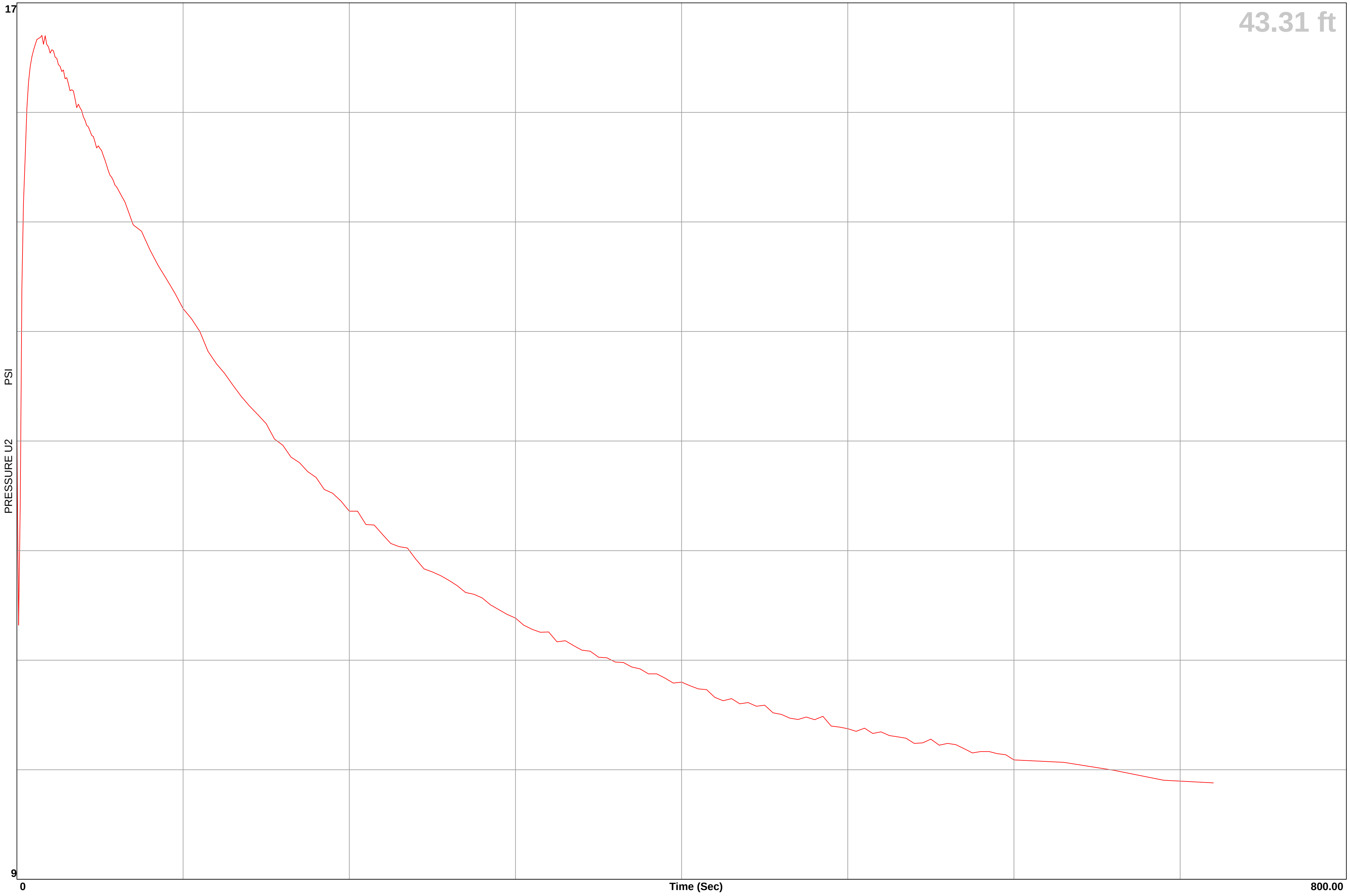
■ 1 - sensitive fine grained
■ 2 - organic material
■ 3 - clay
■ 4 - silty clay to clay
■ 5 - clayey silt to silty clay
■ 6 - sandy silt to clayey silt
■ 7 - silty sand to sandy silt
■ 8 - sand to silty sand
■ 9 - sand
■ 10 - gravelly sand to sand
■ 11 - very stiff fine grained (*)
■ 12 - sand to clayey sand (*)

Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Location	2905 S King Rd	**Operator**	BH-ZG		
Job Number	1084-2-1	**Cone Number**	DDG1587	**GPS**	
Hole Number	CPT-04	**Date and Time**	1/27/2021 11:26:46 AM		
Equilized Pressure	9.8	**EST GW Depth During Test**	20.5		



APPENDIX B: LABORATORY TEST PROGRAM

The laboratory testing program was performed to evaluate the physical and mechanical properties of the soils retrieved from the site to aid in verifying soil classification.

Moisture Content: The natural water content was determined (ASTM D2216) on 28 samples of the materials recovered from the borings. These water contents are recorded on the boring logs at the appropriate sample depths.

Dry Densities: In place dry density determinations (ASTM D2937) were performed on 27 samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

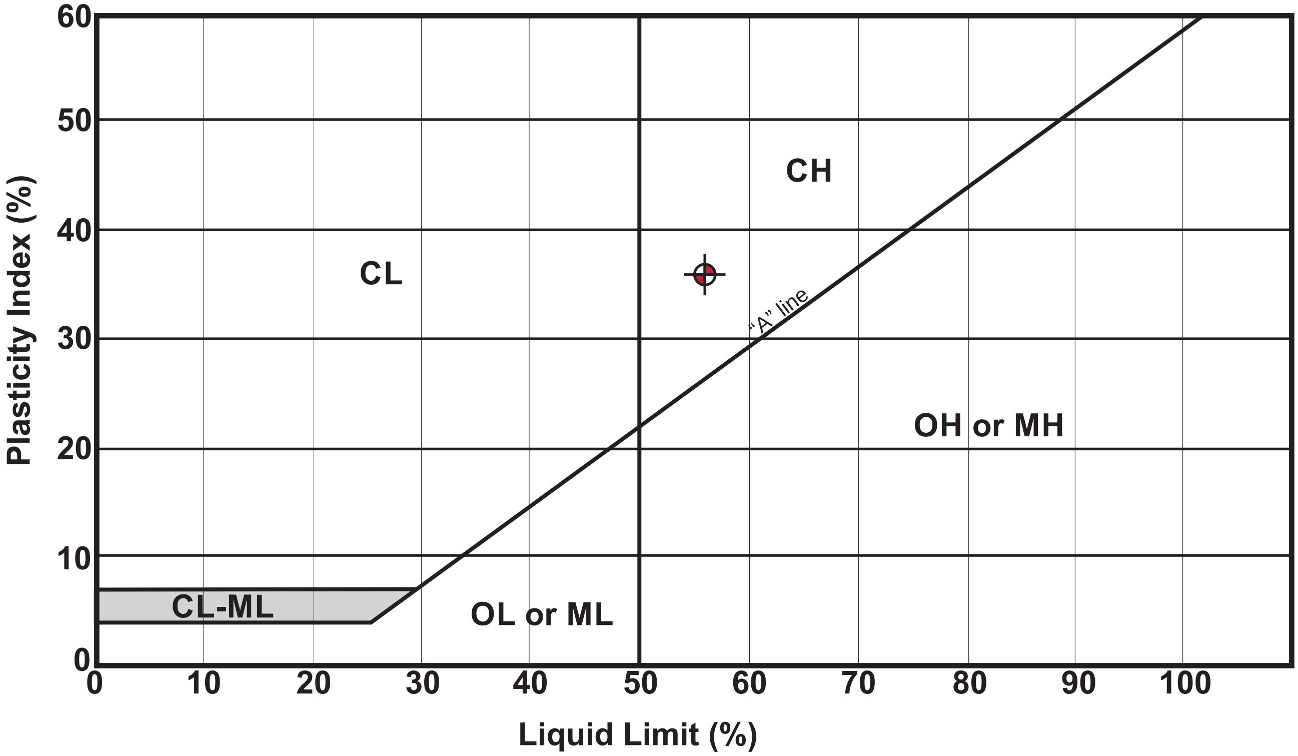
Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on two samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Plasticity Index: One Plasticity Index determination (ASTM D4318) was performed on a sample of the subsurface soil to measure the range of water contents over which this material exhibits plasticity. The Plasticity Index was used to classify the soil in accordance with the Unified Soil Classification System and to evaluate the soil expansion potential. Results of this test are shown on the boring log at the appropriate sample depth.

Undrained-Unconsolidated Triaxial Shear Strength: The undrained shear strength was determined on one relatively undisturbed sample by unconsolidated-undrained triaxial shear strength testing (ASTM D2850). The results of this test are included as part of this appendix.

Corrosivity Testing: Three samples of the subsurface soils were tested for water soluble sulfate content (ASTM D4327), chloride content (ASTM D4327), pH (ASTM G51), and saturated resistivity (ASTM G57). Results of these tests are attached in this appendix.

Plasticity Index (ASTM D4318) Testing Summary



Symbol	Boring No.	Depth (ft)	Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Passing No. 200 (%)	Group Name (USCS - ASTM D2487)
⊕	EB-3	2.0	18	56	20	36	—	Fat Clay (CH)

CORNERSTONE
EARTH GROUP

Plasticity Index Testing Summary

2905 South King Road Warehouse
San Jose, CA

Project Number
1084-2-1

Figure Number
Figure B1

Date
February 2021

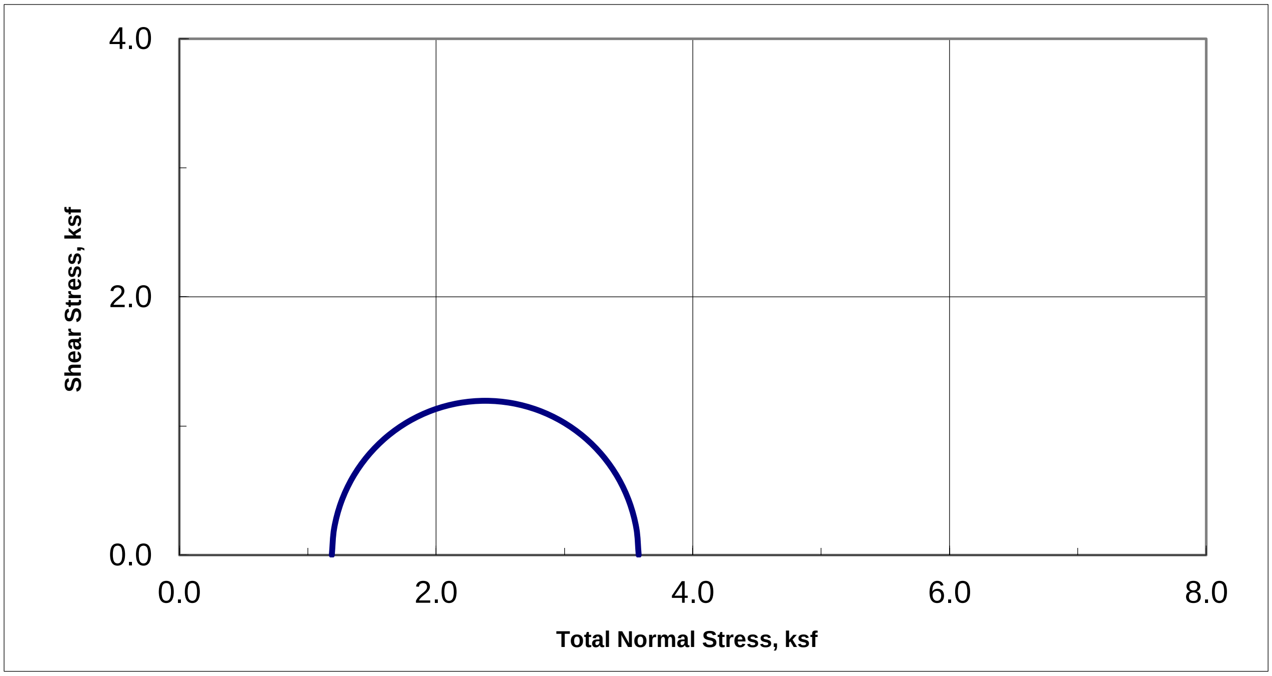
Drawn By
FLL

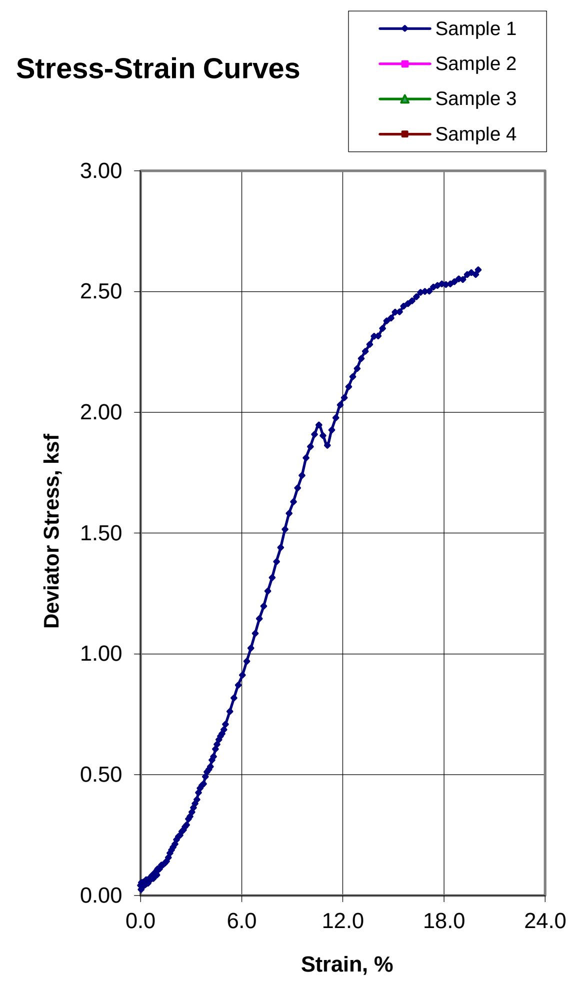
Cooper Testing Labs, Inc.
937 Commercial Street
Palo Alto, CA 94303

COOPER
TESTING LABORATORY

Unconsolidated-Undrained Triaxial Test

ASTM D2850





Sample Data				
	1	2	3	4
Moisture %	21.2			
Dry Den,pcf	106.2			
Void Ratio	0.587			
Saturation %	97.4			
Height in	5.01			
Diameter in	2.41			
Cell psi	8.2			
Strain %	15.00			
Deviator, ksf	2.391			
Rate %/min	1.00			
in/min	0.050			
Job No.:	**640-1451**			
Client:	**Cornerstone Earth Group**			
Project:	**1084-2-1**			
Boring:	EB-2			
Sample:	5B			
Depth ft:	14.5			

Visual Soil Description	
Sample #	
1	Brown Sandy Clay (CL)
2	
3	
4	

Remarks:

Note: Strengths are picked at the peak deviator stress or 15% strain which ever occurs first per ASTM D2850.

Corrosivity Tests Summary

CORNERSTONE EARTH GROUP

Job Number 1084-2-1

Job Name South King Road Warehouse

Location San Jose, CA

Date Tested 2/5/2021

Tested By FLL

Sample I.D.			Soil Visual Description	Moisture	pH	Temp.	Resistivity (Ohm-cm)		Chloride	Sulfate
Boring	Sample No.	Depth, ft.		Content		at Testing	Corrected to 15.5 C°		Dry Wt.	Dry Wt.
				%		C°	As Received	Saturated	mg/kg	mg/kg
				ASTM D2216	ASTM G51		G57	ASTM G57	ASTM D4327	ASTM D4327
EB-1	1A	1.5	Dark Brown Fat Clay with Sand (CH)	13.5	7.9	23.6	-	575	185	619
EB-2	2A	3.5	Dark Brown Fat Clay with Sand (CH)	14.1	7.1	24.8	-	2,058	9	41
EB-3	3A	5.5	Brown Sandy Lean Clay (CL)	15.0	7.4	24.9	-	1,260	91	47

APPENDIX C: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.78

Total Settlement: 0.13 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	10.060	0.245	19.2	19.2	99.725	2.438	2.18		Unsaturated	37.3			9.51	1.70	16.16	60.38	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	7.600	0.038	39.6	39.6	52.373	0.499	1.98		Unsaturated	21.1			7.18	1.70	12.21	39.20	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	4.850	0.034	58.8	58.8	27.333	0.699	2.30		Unsaturated	46.6			4.58	1.70	7.79	54.62	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	4.420	0.099	79.2	79.2	41.284	2.253	2.43		Unsaturated	57.5			4.18	1.70	7.10	57.20	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	7.240	0.109	98.4	98.4	31.518	1.516	2.42		Unsaturated	56.5			6.84	1.70	11.63	62.71	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	13.430	0.138	117.6	117.6	53.609	1.028	2.13		Unsaturated	33.6			12.69	1.70	21.58	64.40	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	11.220	0.123	138.0	138.0	41.271	1.099	2.24		Unsaturated	42.4			10.60	1.70	18.03	65.58	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	10.380	0.117	157.2	157.2	35.723	1.140	2.30		Unsaturated	47.3			9.81	1.70	16.68	66.07	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	10.800	0.094	177.6	177.6	34.945	0.879	2.25		Unsaturated	43.1			10.21	1.70	17.35	65.07	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	11.840	0.081	196.8	196.8	36.390	0.690	2.18		Unsaturated	37.6			11.19	1.70	19.02	64.12	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	13.800	0.173	216.0	216.0	40.505	1.261	2.28		Unsaturated	45.7			13.04	1.70	22.17	72.30	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	20.620	0.414	236.4	236.4	57.975	2.018	2.29		Unsaturated	46.1			19.49	1.70	33.13	86.27	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	29.860	0.732	255.6	255.6	80.857	2.460	2.24		Unsaturated	42.5			28.22	1.70	47.98	103.03	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	34.860	1.001	276.0	276.0	90.870	2.883	2.26		Unsaturated	43.8			32.95	1.70	56.01	113.79	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	38.340	1.166	295.2	295.2	96.648	3.053	2.26		Unsaturated	43.9			36.24	1.70	61.60	120.83	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	41.610	1.328	314.4	314.4	101.645	3.204	2.26		Unsaturated	44.0			39.33	1.70	66.86	127.48	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	43.580	1.517	334.8	334.8	103.156	3.493	2.29		Unsaturated	46.0			41.19	1.70	70.02	132.56	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	45.540	1.664	354.0	354.0	104.827	3.669	2.30		Unsaturated	46.9			43.04	1.70	73.17	137.04	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	47.070	1.835	374.4	374.4	105.346	3.914	2.32		Unsaturated	48.6			44.49	1.70	75.63	140.98	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	47.980	1.935	393.6	393.6	104.718	4.050	2.33		Unsaturated	49.6			45.35	1.70	77.09	143.34	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	47.650	1.998	412.8	412.8	101.527	4.212	2.35		Unsaturated	51.4			45.04	1.70	76.56	143.47	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	46.920	1.967	433.2	433.2	97.561	4.213	2.37		Unsaturated	52.2			44.35	1.70	75.39	142.36	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	44.390	1.851	452.4	452.4	90.277	4.190	2.38		Unsaturated	53.8			41.96	1.70	71.33	137.84	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	42.130	1.773	472.8	472.8	83.769	4.232	2.41		Unsaturated	55.7			39.82	1.70	67.69	133.95	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	40.930	1.646	492.0	492.0	79.747	4.046	2.41		Unsaturated	55.6			38.69	1.70	65.77	131.46	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	38.470	1.425	512.4	512.4	73.399	3.728	2.40		Unsaturated	55.4			36.36	1.70	61.81	126.34	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	36.710	1.287	531.6	531.6	68.724	3.531	2.41		Unsaturated	55.5			34.70	1.70	58.99	122.78	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	39.120	1.180	550.8	550.8	71.962	3.039	2.35		Unsaturated	50.6			36.98	1.70	62.86	125.79	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	36.810	1.183	571.2	571.2	66.445	3.238	2.39		Unsaturated	54.1			34.79	1.70	59.15	122.48	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	33.300	1.132	590.4	590.4	59.058	3.430	2.44		Unsaturated	58.4			31.47	1.70	53.51	116.75	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	31.810	1.156	610.8	610.8	55.424	3.670	2.48		Unsaturated	61.6			30.07	1.70	51.11	114.62	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	31.940	1.123	630.0	630.0	54.781	3.552	2.48		Unsaturated	61.1			30.19	1.70	51.32	114.74	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	31.530	1.083	649.2	649.2	53.249	3.472	2.48		Unsaturated	61.2			29.80	1.70	50.66	113.93	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	29.110	0.955	669.6	669.6	48.348	3.318	2.49		Unsaturated	62.5			27.51	1.70	46.77	109.28	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	29.280	0.830	688.8	688.8	47.936	2.869	2.45		Unsaturated	59.2			27.67	1.70	47.05	108.73	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	29.430	0.799	709.2	709.2	47.469	2.749	2.44		Unsaturated	58.5			27.82	1.69	47.01	108.45	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	30.810	0.763	728.4	728.4	49.047	2.507	2.41		Unsaturated	55.5			29.12	1.66	48.48	109.38	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	29.930	0.828	747.6	747.6	46.999	2.801	2.45		Unsaturated	59.2			28.29	1.65	46.64	108.19	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	30.220	0.965	768.0	768.0	46.809	3.236	2.50		Unsaturated	62.7			28.56	1.63	46.42	108.88	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	27.660	1.047	787.2	787.2	42.253	3.838	2.58		Unsaturated	69.4			26.14	1.62	42.31	105.13	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	24.150	0.883	807.6	807.6	44.049	3.717	2.56		Unsaturated	67.6			22.83	1.62	37.04	97.96	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	22.940	0.731	826.8	826.8	34.062	3.245	2.60		Unsaturated	70.9			21.68	1.61	34.93	95.89	0.99	0.502	1.097	n.a.	n.a.	n.a.	0.00	0.00
7.050	28.400	0.652	846.0	846.0	41.820	2.330	2.44		Unsaturated	57.9			26.84	1.57	42.20	102.15	0.99	0.502	1.099	n.a.	n.a.	n.a.	0.00	0.00
7.220	32.730	0.738	866.4	866.4	47.706	2.285	2.39		Unsaturated	54.0			30.94	1.54	47.56	107.71	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.380	30.680	0.847	885.6	885.6	44.177	2.802	2.47		Unsaturated	60.8			29.00	1.53	44.28	105.62	0.99	0.502	1.097	n.a.	n.a.	n.a.	0.00	0.00
7.550	27.260	0.895	906.0	906.0	38.722	3.339	2.57		Unsaturated	68.2			25.77	1.52	39.25	100.94	0.99	0.502	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.710	22.350	0.853	925.2	925.2	36.915	3.896	2.63		Unsaturated	73.1			21.12	1.53	32.33	92.93	0.99	0.501	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.870	20.510	0.721	944.4	944.4	33.313	3.599	2.64		Unsaturated	73.9			19.39	1.52	29.55	89.46	0.99	0.501	1.079	n.a.	n.a.	n.a.	0.00	0.00
8.040	16.580	0.588	964.8	964.8	33.370	3.655	2.64		Unsaturated	74.2			15.67	1.53	23.95	82.27	0.99	0.501	1.073	n.a.	n.a.	n.a.	0.00	0.00
8.200	18.540	0.561	984.0	984.0	29.155	3.110	2.64		Unsaturated	74.0			17.52	1.50	26.35	85.34	0.99	0.501	1.073	n.a.	n.a.	n.a.	0.00	0.00
8.370	24.460	0.545	1004.4	1004.4	32.867	2.274	2.51		Unsaturated	63.8			23.12	1.47	33.91	93.08	0.99	0.501	1.075	n.a.	n.a.	n.a.	0.00	0.00
8.530	29.710	0.677	1023.6	1023.6	39.679	2.320	2.45		Unsaturated	59.2			28.08	1.44	40.31	100.11	0.99	0.500	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.690	29.540	0.541	1042.8	1042.8	39.070	1.866	2.40		Unsaturated	54.8			27.92	1.43	39.84	98.16	0.99	0.500	1.074	n.a.	n.a.	n.a.	0.00	0.00
8.860	17.530	0.440	1063.2	1063.2	26.011	2.587	2.62		Unsaturated	73.0			16.57	1.45	24.04	82.18	0.99	0.500	1.064	n.a.	n.a.	n.a.	0.00	0.00
9.020	20.800	0.477	1082.4	1082.4	26.773	2.355	2.59		Unsaturated	70.2			19.66	1.43	28.03	86.83	0.99	0.500	1.064	n.a.	n.a.	n.a.	0.00	0.00
9.190	26.760	0.575	1102.8	1102.8	34.314	2.194	2.49		Unsaturated	61.9			25.29	1.40	35.28	94.38	0.99	0.499	1.066	n.a.	n.a.	n.a.	0.00	0.00
9.350	23.440	0.477	1122.0	1122.0	29.697	2.084	2.52		Unsaturated	64.7			22.16	1.39	30.87	89.38	0.98	0.499	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.510	15.990	0.370	1141.2	1141.2	22.454	2.396	2.65		Unsaturated	75.4			15.11	1.40	21.21	78.91	0.98	0.499	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.680	11.010	0.289	1161.6	1161.6	17.957	2.766	2.77		Unsaturated	84.6			10.41	1.41	14.64	71.61	0.98	0.499	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.840	11.390	0.260	1180.8	1180.8	18.292	2.405	2.73		Unsaturated	81.2			10.77	1.39	15.00	71.66	0.98	0.499	1.050	n.a.	n.a.	n.a.	0.00	0.00
10.010	10.500	0.267	1201.2	1201.2	16.483	2.698	2.79		Unsaturated	86.5			9.92	1.38	13.72	70.62	0.98	0.498	1.048	n.a.	n.a.	n.a.	0.00	0.00
10.170	9.010	0.257	1220.4	1220.4	13.766	3.063	2.89		Unsaturated	94.1			8.52	1.37	11.70	68.76	0.98	0.498	1.046	n.a.	n.a.	n.a.	0.00	0.00
10.330	8.930	0.268	1239.6	1239.6	13.408	3.230	2.91		Unsaturated	95.9			8.44	1.36	11.49	68.65	0.98	0.498	1.044	n.a.	n.a.	n.a.	0.00	0.00
10.500	9.360	0.260	1260.0	1260.0	13.857	2.974	2.88		Unsaturated	93.3			8.85	1.35	11.93	68.99	0.98	0.498	1.043	n.a.	n.a.	n.a.	0.00	0.00
10.660	9.540	0.232	1279.2	1279.2	13.916	2.608	2.84		Unsaturated	90.5			9.02	1.34	12.05	68.88	0.98	0.497	1.042	n.a.	n.a.	n.a.	0.00	0.00
10.830	9.610	0.229	1299.6	1299.6	13.789	2.552	2.84		Unsaturated	90.4			9.08	1.32	12.03	68.84	0.98	0.497	1.041	n.a.	n.a.	n.a.	0.00	0.00
10.990	8.880	0.241	1318.8	1318.8	12.467	2.926	2.91		Unsaturated	96.0			8.39	1.32	11.04	68.06	0.98	0.497	1.039	n.a.	n.a.	n.a.	0.00	0.00
11.150	8.730	0.235	1338.0	1338.0	12.049	2.918	2.92		Unsaturated	96.9			8.25	1.30	10.76	67.78	0.98	0.497	1.038	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.78

Total Settlement: 0.13 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.320	9.100	0.266	1358.4	1358.4	12.398	3.156	2.93		Unsaturated	97.7			8.60	1.29	11.12	68.31	0.98	0.496	1.037	n.a.	n.a.	n.a.	0.00	0.00
11.480	9.310	0.296	1377.6	1377.6	12.516	3.432	2.95		Unsaturated	99.1			8.80	1.28	11.28	68.64	0.98	0.496	1.036	n.a.	n.a.	n.a.	0.00	0.00
11.650	9.520	0.255	1398.0	1398.0	12.619	2.889	2.90		Unsaturated	95.4			9.00	1.27	11.43	68.52	0.98	0.496	1.034	n.a.	n.a.	n.a.	0.00	0.00
11.810	9.630	0.256	1417.2	1417.2	12.590	2.872	2.90		Unsaturated	95.3			9.10	1.26	11.47	68.57	0.98	0.496	1.033	n.a.	n.a.	n.a.	0.00	0.00
11.980	9.380	0.232	1437.6	1437.6	12.050	2.675	2.90		Unsaturated	95.2			8.87	1.25	11.09	68.06	0.98	0.496	1.032	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.530	0.233	1456.8	1456.8	12.083	2.644	2.90		Unsaturated	94.8			9.01	1.24	11.18	68.15	0.98	0.495	1.031	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.320	0.341	1476.0	1476.0	11.629	3.968	3.01		Unsaturated	100.0			8.81	1.23	10.85	68.15	0.98	0.495	1.030	n.a.	n.a.	n.a.	0.00	0.00
12.470	9.900	0.343	1496.4	1496.4	12.232	3.749	2.98		Unsaturated	100.0			9.36	1.22	11.43	68.91	0.98	0.495	1.029	n.a.	n.a.	n.a.	0.00	0.00
12.630	17.190	0.518	1515.6	1515.6	21.684	3.149	2.74		Unsaturated	82.2			16.25	1.20	19.54	77.69	0.98	0.495	1.030	n.a.	n.a.	n.a.	0.00	0.00
12.800	28.550	0.568	1536.0	1536.0	30.821	2.046	2.50		Unsaturated	63.3			26.98	1.18	31.88	90.36	0.97	0.494	1.032	n.a.	n.a.	n.a.	0.00	0.00
12.960	24.660	0.507	1555.2	1555.2	26.330	2.124	2.57		Unsaturated	68.4			23.31	1.18	27.45	85.77	0.97	0.494	1.029	n.a.	n.a.	n.a.	0.00	0.00
13.120	19.010	0.323	1574.4	1574.4	21.184	1.774	2.60		Unsaturated	70.9			17.97	1.18	21.15	78.09	0.97	0.494	1.026	n.a.	n.a.	n.a.	0.00	0.00
13.290	15.520	0.371	1594.8	1594.8	18.463	2.520	2.74		Unsaturated	81.9			14.67	1.17	17.19	74.60	0.97	0.494	1.025	n.a.	n.a.	n.a.	0.00	0.00
13.450	12.350	0.317	1614.0	1614.0	14.304	2.742	2.85		Unsaturated	90.8			11.67	1.17	13.62	70.96	0.97	0.493	1.023	n.a.	n.a.	n.a.	0.00	0.00
13.620	10.750	0.463	1634.4	1634.4	12.155	4.658	3.04		Unsaturated	100.0			10.16	1.16	11.79	69.38	0.97	0.493	1.022	n.a.	n.a.	n.a.	0.00	0.00
13.780	20.580	0.419	1653.6	1653.6	23.891	2.122	2.60		Unsaturated	71.1			19.45	1.14	22.26	79.56	0.97	0.493	1.022	n.a.	n.a.	n.a.	0.00	0.00
13.940	23.770	0.412	1672.8	1672.8	24.379	1.798	2.55		Unsaturated	67.2			22.47	1.13	25.50	83.00	0.97	0.493	1.022	n.a.	n.a.	n.a.	0.00	0.00
14.110	15.620	0.396	1693.2	1693.2	17.450	2.681	2.77		Unsaturated	84.7			14.76	1.13	16.73	74.35	0.97	0.492	1.019	n.a.	n.a.	n.a.	0.00	0.00
14.270	13.160	0.329	1712.4	1712.4	14.370	2.674	2.84		Unsaturated	90.1			12.44	1.13	14.03	71.42	0.97	0.492	1.018	n.a.	n.a.	n.a.	0.00	0.00
14.440	16.110	0.255	1732.8	1732.8	17.594	1.673	2.65		Unsaturated	75.2			15.23	1.12	17.04	73.47	0.97	0.492	1.017	n.a.	n.a.	n.a.	0.00	0.00
14.600	13.360	0.212	1752.0	1752.0	14.251	1.698	2.73		Unsaturated	81.6			12.63	1.11	14.07	70.50	0.97	0.492	1.016	n.a.	n.a.	n.a.	0.00	0.00
14.760	9.580	0.156	1771.2	1771.2	9.818	1.791	2.88		Unsaturated	93.6			9.05	1.11	10.05	66.55	0.97	0.491	1.015	n.a.	n.a.	n.a.	0.00	0.00
14.930	10.460	0.207	1791.6	1791.6	10.677	2.160	2.89		Unsaturated	94.6			9.89	1.10	10.89	67.74	0.97	0.491	1.014	n.a.	n.a.	n.a.	0.00	0.00
15.090	8.660	0.212	1810.8	1810.8	8.565	2.734	3.03		Clay	100.0			8.19	1.04	n.a.	n.a.	0.97	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	8.810	0.214	1831.2	1831.2	8.622	2.704	3.03		Clay	100.0			8.33	1.04	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	9.170	0.223	1850.4	1850.4	8.911	2.700	3.01		Clay	100.0			8.67	1.04	n.a.	n.a.	0.97	0.497	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	8.710	0.221	1869.6	1869.6	8.318	2.837	3.05		Clay	100.0			8.23	1.03	n.a.	n.a.	0.97	0.500	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	8.490	0.238	1890.0	1890.0	7.984	3.150	3.09		Clay	100.0			8.02	1.03	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	8.550	0.237	1909.2	1909.2	7.957	3.114	3.09		Clay	100.0			8.08	1.03	n.a.	n.a.	0.97	0.504	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	8.620	0.239	1929.6	1929.6	7.934	3.117	3.09		Clay	100.0			8.15	1.02	n.a.	n.a.	0.96	0.507	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	8.510	0.219	1948.8	1948.8	7.734	2.901	3.08		Clay	100.0			8.04	1.02	n.a.	n.a.	0.96	0.509	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	8.830	0.232	1968.0	1968.0	7.974	2.954	3.07		Clay	100.0			8.35	1.02	n.a.	n.a.	0.96	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	8.960	0.259	1988.4	1988.4	8.012	3.253	3.10		Clay	100.0			8.47	1.02	n.a.	n.a.	0.96	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	9.300	0.295	2007.6	2007.6	8.265	3.552	3.11		Clay	100.0			8.79	1.01	n.a.	n.a.	0.96	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	10.010	0.320	2028.0	2028.0	8.872	3.557	3.08		Clay	100.0			9.46	1.01	n.a.	n.a.	0.96	0.518	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	11.000	0.372	2047.2	2047.2	9.746	3.724	3.06		Clay	100.0			10.40	1.01	n.a.	n.a.	0.96	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	11.490	0.462	2066.4	2066.4	10.121	4.416	3.09		Clay	100.0			10.86	1.01	n.a.	n.a.	0.96	0.522	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	12.930	0.427	2086.8	2086.8	11.392	3.590	3.00		Clay	100.0			12.22	1.00	n.a.	n.a.	0.96	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	12.410	0.421	2106.0	2106.0	10.785	3.706	3.02		Clay	100.0			11.73	1.00	n.a.	n.a.	0.96	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	10.830	0.361	2126.4	2126.4	9.186	3.698	3.08		Clay	100.0			10.24	1.00	n.a.	n.a.	0.96	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	10.960	0.334	2145.6	2145.6	9.216	3.382	3.06		Clay	100.0			10.36	1.00	n.a.	n.a.	0.96	0.530	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	10.780	0.304	2164.8	2164.8	8.959	3.139	3.05		Clay	100.0			10.19	0.99	n.a.	n.a.	0.96	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	10.150	0.256	2185.2	2185.2	8.290	2.829	3.05		Clay	100.0			9.59	0.99	n.a.	n.a.	0.96	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	10.020	0.239	2204.4	2204.4	8.091	2.683	3.05		Clay	100.0			9.47	0.99	n.a.	n.a.	0.96	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	10.180	0.205	2224.8	2224.8	8.151	2.260	3.00		Clay	100.0			9.62	0.99	n.a.	n.a.	0.96	0.538	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	10.490	0.184	2244.0	2244.0	8.349	1.967	2.96		Clay	100.0			9.91	0.98	n.a.	n.a.	0.96	0.540	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	9.920	0.243	2263.2	2263.2	7.766	2.762	3.07		Clay	100.0			9.38	0.98	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	10.600	0.282	2283.6	2283.6	8.284	2.985	3.06		Clay	100.0			10.02	0.98	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	11.020	0.280	2302.8	2302.8	8.571	2.840	3.04		Clay	100.0			10.42	0.98	n.a.	n.a.	0.95	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	11.030	0.273	2323.2	2323.2	8.496	2.761	3.04		Clay	100.0			10.43	0.98	n.a.	n.a.	0.95	0.547	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.440	0.258	2342.4	2342.4	8.768	2.509	3.00		Clay	100.0			10.81	0.97	n.a.	n.a.	0.95	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	12.270	0.241	2362.8	2362.8	9.386	2.169	2.94		Clay	98.4			11.60	0.97	n.a.	n.a.	0.95	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	13.070	0.220	2382.0	2382.0	9.974	1.855	2.88		Clay	93.8			12.35	0.97	n.a.	n.a.	0.95	0.552	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	12.540	0.198	2401.2	2401.2	9.445	1.744	2.89		Clay	94.3			11.85	0.97	n.a.	n.a.	0.95	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	12.470	0.206	2421.6	2421.6	9.299	1.826	2.91		Clay	95.6			11.79	0.97	n.a.	n.a.	0.95	0.556	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	12.540	0.273	2440.8	2440.8	9.275	2.410	2.97		Clay	100.0			11.85	0.96	n.a.	n.a.	0.95	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	11.670	0.297	2461.2	2461.2	8.483	2.849	3.04		Clay	100.0			11.03	0.96	n.a.	n.a.	0.95	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	11.630	0.279	2480.4	2480.4	8.378	2.688	3.03		Clay	100.0			10.99	0.96	n.a.	n.a.	0.95	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	10.830	0.271	2499.6	2499.6	7.665	2.824	3.08		Clay	100.0			10.24	0.96	n.a.	n.a.	0.95	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.520	0.279	2520.0	2520.0	7.349	3.010	3.11		Clay	100.0			9.94	0.95	n.a.	n.a.	0.95	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	10.840	0.270	2539.2	2539.2	7.538	2.821	3.08		Clay	100.0			10.25	0.95	n.a.	n.a.	0.95	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	10.940	0.259	2559.6	2559.6	7.548	2.682	3.07		Clay	100.0			10.34	0.95	n.a.	n.a.	0.95	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	10.490	0.323	2578.8	2578.8	7.136	3.514	3.16		Clay	100.0			9.91	0.95	n.a.	n.a.	0.95	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	10.570	0.371	2598.0	2598.0	7.137	4.001	3.19		Clay	100.0			9.99	0.95	n.a.	n.a.	0.95	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	11.390	0.381	2618.4	2618.4	7.700	3.781	3.15		Clay	100.0			10.77	0.95	n.a.	n.a.	0.95	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	11.720	0.360	2637.6	2637.6	7.887	3.460	3.12		Clay	100.0			11.08	0.94	n.a.	n.a.	0.94	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	11.770	0.317	2658.0	2658.0	7.856	3.039	3.09		Clay	100.0			11.12	0.94	n.a.	n.a.	0.94	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.78

Total Settlement: 0.13 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.310	11.990	0.279	2677.2	2677.2	7.957	2.618	3.05		Clay	100.0			11.33	0.94	n.a.	n.a.	0.94	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	11.510	0.263	2696.4	2696.4	7.537	2.584	3.06		Clay	100.0			10.88	0.94	n.a.	n.a.	0.94	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	11.210	0.236	2716.8	2716.8	7.252	2.399	3.06		Clay	100.0			10.60	0.94	n.a.	n.a.	0.94	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	12.030	0.223	2736.0	2736.0	7.794	2.095	3.00		Clay	100.0			11.37	0.93	n.a.	n.a.	0.94	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	11.630	0.222	2756.4	2756.4	7.439	2.164	3.03		Clay	100.0			10.99	0.93	n.a.	n.a.	0.94	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.050	0.196	2775.6	2775.6	7.683	1.836	2.98		Clay	100.0			11.39	0.93	n.a.	n.a.	0.94	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	11.670	0.200	2794.8	2794.8	7.351	1.951	3.01		Clay	100.0			11.03	0.93	n.a.	n.a.	0.94	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	10.400	0.207	2815.2	2815.2	6.388	2.302	3.10		Clay	100.0			9.83	0.93	n.a.	n.a.	0.94	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	10.900	0.199	2834.4	2834.4	6.691	2.101	3.06		Clay	100.0			10.30	0.93	n.a.	n.a.	0.94	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	10.930	0.198	2854.8	2854.8	6.657	2.083	3.06		Clay	100.0			10.33	0.92	n.a.	n.a.	0.94	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	10.560	0.194	2874.0	2874.0	6.349	2.121	3.08		Clay	100.0			9.98	0.92	n.a.	n.a.	0.94	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	10.820	0.260	2893.2	2893.2	6.480	2.768	3.14		Clay	100.0			10.23	0.92	n.a.	n.a.	0.94	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	11.850	0.354	2913.6	2913.6	7.134	3.407	3.15		Clay	100.0			11.20	0.92	n.a.	n.a.	0.94	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	14.010	0.276	2932.8	2932.8	8.554	2.200	2.98		Clay	100.0			13.24	0.92	n.a.	n.a.	0.94	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	18.280	0.581	2953.2	2953.2	11.380	3.457	2.99		Clay	100.0			17.28	0.92	n.a.	n.a.	0.94	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	15.380	1.039	2972.4	2972.4	9.349	7.475	3.26		Clay	100.0			14.54	0.91	n.a.	n.a.	0.93	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	24.000	0.978	2991.6	2991.6	15.045	4.345	2.95		Clay	99.1			22.68	0.91	n.a.	n.a.	0.93	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	45.990	1.093	3012.0	3012.0	35.241	2.457	2.51		Sand	63.7	44.87	1.8	80.77	0.86	69.58	138.88	0.93	0.596	0.949	0.230	0.337	0.57	0.02	0.04
25.260	47.470	1.190	3031.2	3031.2	36.290	2.590	2.51		Sand	64.1		1.8	80.76	0.86	69.39	138.74	0.93	0.597	0.948	0.229	0.336	0.56	0.02	0.05
25.430	45.770	1.074	3051.6	3051.6	34.823	2.426	2.51		Sand	63.7	44.87	1.8	80.77	0.86	69.18	138.37	0.93	0.598	0.947	0.227	0.333	0.56	0.02	0.04
25.590	33.240	0.635	3070.8	3070.8	20.649	2.003	2.64		Clay	74.1			31.42	0.91	n.a.	n.a.	0.93	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	20.090	0.336	3090.0	3090.0	12.003	1.814	2.81		Clay	87.9			18.99	0.90	n.a.	n.a.	0.93	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	14.160	0.225	3110.4	3110.4	8.105	1.787	2.95		Clay	99.3			13.38	0.90	n.a.	n.a.	0.93	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	10.920	0.242	3129.6	3129.6	5.979	2.591	3.15		Clay	100.0			10.32	0.90	n.a.	n.a.	0.93	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	10.710	0.280	3150.0	3150.0	5.800	3.070	3.20		Clay	100.0			10.12	0.90	n.a.	n.a.	0.93	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	11.610	0.335	3169.2	3169.2	6.327	3.339	3.19		Clay	100.0			10.97	0.90	n.a.	n.a.	0.93	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	11.940	0.360	3188.4	3188.4	6.490	3.483	3.19		Clay	100.0			11.29	0.90	n.a.	n.a.	0.93	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	12.050	0.356	3208.8	3208.8	6.511	3.411	3.18		Clay	100.0			11.39	0.90	n.a.	n.a.	0.93	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	12.130	0.335	3228.0	3228.0	6.515	3.188	3.17		Clay	100.0			11.47	0.89	n.a.	n.a.	0.93	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	11.650	0.334	3248.4	3248.4	6.173	3.333	3.20		Clay	100.0			11.01	0.89	n.a.	n.a.	0.93	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	10.910	0.346	3267.6	3267.6	5.678	3.728	3.25		Clay	100.0			10.31	0.89	n.a.	n.a.	0.93	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	11.150	0.440	3288.0	3288.0	5.782	4.628	3.30		Clay	100.0			10.54	0.89	n.a.	n.a.	0.92	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	11.310	0.478	3307.2	3307.2	5.840	4.949	3.31		Clay	100.0			10.69	0.89	n.a.	n.a.	0.92	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	11.340	0.499	3326.4	3326.4	5.818	5.156	3.32		Clay	100.0			10.72	0.89	n.a.	n.a.	0.92	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	10.660	0.484	3346.8	3346.8	5.370	5.382	3.36		Clay	100.0			10.08	0.89	n.a.	n.a.	0.92	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	12.590	0.508	3366.3	3363.1	6.486	4.659	3.26		Clay	100.0			11.90	0.88	n.a.	n.a.	0.92	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	13.830	0.505	3387.5	3373.8	7.194	4.158	3.20		Clay	100.0			13.07	0.88	n.a.	n.a.	0.92	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	12.280	0.494	3407.5	3383.8	6.251	4.672	3.27		Clay	100.0			11.61	0.88	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	11.060	0.438	3427.5	3393.8	5.508	4.682	3.32		Clay	100.0			10.45	0.88	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	10.790	0.427	3448.8	3404.4	5.326	4.707	3.33		Clay	100.0			10.20	0.88	n.a.	n.a.	0.92	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	10.850	0.472	3468.8	3414.5	5.339	5.182	3.36		Clay	100.0			10.26	0.88	n.a.	n.a.	0.92	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	12.200	0.542	3490.0	3425.1	6.105	5.180	3.31		Clay	100.0			11.53	0.88	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	14.300	0.459	3510.0	3435.1	7.304	3.657	3.16		Clay	100.0			13.52	0.88	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	14.180	0.410	3530.0	3445.1	7.207	3.303	3.14		Clay	100.0			13.40	0.88	n.a.	n.a.	0.92	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	12.450	0.328	3551.3	3455.8	6.178	3.076	3.18		Clay	100.0			11.77	0.88	n.a.	n.a.	0.92	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	11.700	0.358	3571.3	3465.8	5.721	3.609	3.24		Clay	100.0			11.06	0.88	n.a.	n.a.	0.92	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	12.050	0.433	3592.5	3476.4	5.899	4.222	3.27		Clay	100.0			11.39	0.88	n.a.	n.a.	0.91	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	15.370	0.353	3612.5	3486.5	7.781	2.605	3.05		Clay	100.0			14.53	0.88	n.a.	n.a.	0.91	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	19.190	0.400	3632.5	3496.5	9.938	2.301	2.94		Clay	97.8			18.14	0.88	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	15.230	0.378	3653.8	3507.1	7.643	2.819	3.08		Clay	100.0			14.40	0.88	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	14.830	0.345	3673.8	3517.1	7.388	2.651	3.08		Clay	100.0			14.02	0.87	n.a.	n.a.	0.91	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	14.390	0.332	3695.0	3527.8	7.111	2.647	3.09		Clay	100.0			13.60	0.87	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	13.370	0.337	3715.0	3537.8	6.508	2.929	3.15		Clay	100.0			12.64	0.87	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	13.040	0.335	3735.0	3547.8	6.298	2.998	3.16		Clay	100.0			12.33	0.87	n.a.	n.a.	0.91	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	13.560	0.366	3756.3	3558.4	6.566	3.136	3.16		Clay	100.0			12.82	0.87	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	13.150	0.346	3776.3	3568.5	6.312	3.073	3.17		Clay	100.0			12.43	0.87	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	12.110	0.310	3797.5	3579.1	5.706	3.031	3.20		Clay	100.0			11.45	0.87	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	11.180	0.307	3817.5	3589.1	5.166	3.312	3.26		Clay	100.0			10.57	0.87	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	11.220	0.305	3837.5	3599.1	5.169	3.275	3.26		Clay	100.0			10.60	0.87	n.a.	n.a.	0.91	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	11.510	0.358	3858.8	3609.8	5.308	3.740	3.28		Clay	100.0			10.88	0.87	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	12.290	0.411	3878.8	3619.8	5.719	3.969	3.27		Clay	100.0			11.62	0.87	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	13.020	0.529	3900.0	3630.4	6.098	4.774	3.29		Clay	100.0			12.31	0.87	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	13.380	0.570	3920.0	3640.4	6.274	4.995	3.29		Clay	100.0			12.65	0.87	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	13.450	0.666	3940.0	3650.5	6.290	5.800	3.33		Clay	100.0			12.71	0.87	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	14.280	0.689	3961.3	3661.1	6.719	5.604	3.30		Clay	100.0			13.50	0.87	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	15.110	0.698	3981.3	3671.1	7.147	5.322	3.26		Clay	100.0			14.28	0.86	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	14.970	0.697	4002.5	3681.8	7.045	5.374	3.27		Clay	100.0			14.15	0.86	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.78

Total Settlement: 0.13 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.300	14.500	0.615	4022.5	3691.8	6.766	4.921	3.26		Clay	100.0			13.71	0.86	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	14.260	0.657	4042.5	3701.8	6.612	5.364	3.29		Clay	100.0			13.48	0.86	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	14.800	0.769	4063.8	3712.4	6.879	6.025	3.31		Clay	100.0			13.99	0.86	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	16.180	0.896	4083.8	3722.5	7.596	6.340	3.29		Clay	100.0			15.29	0.86	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	16.230	0.880	4105.0	3733.1	7.596	6.205	3.28		Clay	100.0			15.34	0.86	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	15.470	0.788	4125.0	3743.1	7.164	5.877	3.29		Clay	100.0			14.62	0.86	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	15.180	0.687	4145.0	3753.1	6.985	5.244	3.26		Clay	100.0			14.35	0.86	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	14.560	0.612	4166.3	3763.8	6.630	4.906	3.27		Clay	100.0			13.76	0.86	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	14.130	0.618	4186.3	3773.8	6.379	5.135	3.29		Clay	100.0			13.36	0.86	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	14.420	0.613	4207.5	3784.4	6.509	4.976	3.28		Clay	100.0			13.63	0.86	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	15.510	0.526	4227.5	3794.4	7.061	3.927	3.19		Clay	100.0			14.66	0.86	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	14.890	0.414	4247.5	3804.5	6.711	3.241	3.16		Clay	100.0			14.07	0.86	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	13.980	0.350	4268.8	3815.1	6.210	2.950	3.17		Clay	100.0			13.21	0.86	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	12.330	0.307	4288.8	3825.1	5.326	3.012	3.23		Clay	100.0			11.65	0.86	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	11.950	0.252	4310.0	3835.8	5.107	2.577	3.21		Clay	100.0			11.29	0.85	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	12.190	0.283	4330.0	3845.8	5.214	2.827	3.22		Clay	100.0			11.52	0.85	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.410	0.324	4351.3	3856.4	5.308	3.164	3.24		Clay	100.0			11.73	0.85	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	14.080	0.355	4371.3	3866.4	6.153	2.988	3.17		Clay	100.0			13.31	0.85	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	16.080	0.351	4391.3	3876.5	7.163	2.525	3.08		Clay	100.0			15.20	0.85	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	14.970	0.364	4412.5	3887.1	6.567	2.854	3.14		Clay	100.0			14.15	0.85	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	14.290	0.457	4432.5	3897.1	6.196	3.782	3.23		Clay	100.0			13.51	0.85	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	16.910	0.505	4453.8	3907.8	7.515	3.439	3.13		Clay	100.0			15.98	0.85	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	18.890	0.482	4473.8	3917.8	8.501	2.896	3.05		Clay	100.0			17.85	0.85	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	17.220	0.384	4493.8	3927.8	7.624	2.563	3.06		Clay	100.0			16.28	0.85	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	17.070	0.304	4515.0	3938.4	7.522	2.051	3.01		Clay	100.0			16.13	0.85	n.a.	n.a.	0.88	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	15.580	0.303	4535.0	3948.4	6.743	2.279	3.08		Clay	100.0			14.73	0.85	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	16.460	0.424	4556.3	3959.1	7.164	2.992	3.12		Clay	100.0			15.56	0.85	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	16.740	0.501	4576.3	3969.1	7.282	3.465	3.15		Clay	100.0			15.82	0.85	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	20.700	0.497	4596.3	3979.1	9.249	2.702	3.00		Clay	100.0			19.57	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	19.310	0.465	4617.5	3989.8	8.522	2.735	3.03		Clay	100.0			18.25	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	19.610	0.572	4637.5	3999.8	8.646	3.309	3.07		Clay	100.0			18.53	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	20.010	0.621	4658.8	4010.4	8.817	3.509	3.08		Clay	100.0			18.91	0.84	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	23.330	0.701	4678.8	4020.4	10.442	3.338	3.01		Clay	100.0			22.05	0.84	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	26.730	0.780	4698.8	4030.4	12.098	3.200	2.95		Clay	98.6			25.26	0.84	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	26.710	0.596	4720.0	4041.1	12.051	2.447	2.88		Clay	93.4			25.25	0.84	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	26.350	0.629	4740.0	4051.1	11.839	2.622	2.90		Clay	95.3			24.91	0.84	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	21.230	0.610	4761.3	4061.7	9.281	3.238	3.04		Clay	100.0			20.07	0.84	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	21.030	0.586	4781.3	4071.8	9.155	3.144	3.04		Clay	100.0			19.88	0.84	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	21.160	0.616	4801.3	4081.8	9.192	3.283	3.05		Clay	100.0			20.00	0.84	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	19.120	0.546	4822.5	4092.4	8.166	3.265	3.09		Clay	100.0			18.07	0.84	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	19.080	0.482	4842.5	4102.4	8.121	2.891	3.06		Clay	100.0			18.03	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	17.820	0.425	4863.8	4113.1	7.483	2.759	3.08		Clay	100.0			16.84	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	17.340	0.370	4883.8	4123.1	7.227	2.482	3.07		Clay	100.0			16.39	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	16.870	0.328	4903.8	4133.1	6.977	2.278	3.06		Clay	100.0			15.95	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	14.960	0.314	4925.0	4143.8	6.032	2.513	3.14		Clay	100.0			14.14	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	15.200	0.394	4945.0	4153.8	6.128	3.092	3.18		Clay	100.0			14.37	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	16.170	0.725	4966.3	4164.4	6.573	5.294	3.29		Clay	100.0			15.28	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	20.500	0.969	4986.3	4174.4	8.627	5.379	3.20		Clay	100.0			19.38	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	22.280	1.047	5006.3	4184.4	9.453	5.295	3.16		Clay	100.0			21.06	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	33.730	1.081	5027.5	4195.1	14.882	3.463	2.89		Clay	94.5			31.88	0.83	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	34.290	1.092	5047.5	4205.1	15.108	3.439	2.89		Clay	93.9			32.41	0.83	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	37.440	1.000	5068.8	4215.7	16.560	2.865	2.81		Clay	87.6			35.39	0.83	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	35.150	0.764	5088.8	4225.8	15.432	2.344	2.78		Clay	85.5			33.22	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	32.080	0.892	5108.8	4235.8	13.941	3.020	2.88		Clay	93.5			30.32	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	24.850	1.036	5130.0	4246.4	10.496	4.647	3.09		Clay	100.0			23.49	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	23.920	1.257	5150.0	4256.4	10.030	5.891	3.17		Clay	100.0			22.61	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	36.790	1.495	5171.3	4267.1	16.032	4.370	2.93		Clay	97.5			34.77	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	43.800	1.603	5191.3	4277.1	19.267	3.890	2.84		Clay	90.0			41.40	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	43.670	1.384	5211.3	4287.1	19.157	3.369	2.80		Clay	87.0			41.28	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	46.000	1.069	5232.5	4297.7	20.189	2.463	2.70		Clay	78.9			43.48	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	41.270	1.243	5252.5	4307.8	17.941	3.218	2.81		Clay	87.8			39.01	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	33.450	1.166	5273.8	4318.4	14.271	3.782	2.93		Clay	97.5			31.62	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	38.260	1.042	5293.8	4328.4	16.455	2.925	2.81		Clay	88.2			36.16	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	39.850	0.889	5315.0	4339.1	17.143	2.389	2.75		Clay	82.9			37.67	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	32.320	0.654	5335.0	4349.1	13.636	2.207	2.81		Clay	87.8			30.55	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	26.940	0.437	5355.0	4359.1	11.132	1.801	2.84		Clay	90.0			25.46	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	20.530	0.484	5376.3	4369.7	8.166	2.712	3.05		Clay	100.0			19.40	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.78

Total Settlement: 0.13 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	16.600	0.440	5396.3	4379.8	6.348	3.162	3.17		Clay	100.0			15.69	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	14.510	0.427	5417.5	4390.4	5.376	3.620	3.27		Clay	100.0			13.71	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	14.620	0.412	5437.5	4400.4	5.409	3.465	3.25		Clay	100.0			13.82	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	14.610	0.402	5457.5	4410.4	5.388	3.383	3.25		Clay	100.0			13.81	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	14.150	0.423	5478.8	4421.1	5.162	3.705	3.29		Clay	100.0			13.37	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	14.750	0.540	5498.8	4431.1	5.417	4.501	3.32		Clay	100.0			13.94	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	16.460	0.787	5520.0	4441.7	6.169	5.744	3.33		Clay	100.0			15.56	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	23.670	0.641	5540.0	4451.7	9.390	3.068	3.02		Clay	100.0			22.37	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	26.670	0.482	5560.0	4461.8	10.709	2.019	2.88		Clay	93.2			25.21	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	23.500	0.741	5581.3	4472.4	9.261	3.576	3.07		Clay	100.0			22.21	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	21.440	0.736	5601.3	4482.4	8.317	3.948	3.13		Clay	100.0			20.26	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	28.780	0.794	5622.5	4493.1	11.559	3.056	2.95		Clay	99.0			27.20	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	31.610	0.864	5642.5	4503.1	12.786	3.000	2.91		Clay	95.8			29.88	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	25.630	0.987	5662.5	4513.1	10.103	4.331	3.09		Clay	100.0			24.22	0.82	n.a.	n.a.	0.85	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	28.880	0.859	5683.8	4523.7	11.512	3.299	2.97		Clay	100.0			27.30	0.82	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	25.620	0.708	5703.8	4533.8	10.044	3.110	3.00		Clay	100.0			24.22	0.82	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	20.220	0.543	5725.0	4544.4	7.639	3.127	3.10		Clay	100.0			19.11	0.82	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	17.710	0.499	5745.0	4554.4	6.516	3.360	3.18		Clay	100.0			16.74	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	16.690	0.480	5765.0	4564.4	6.050	3.477	3.21		Clay	100.0			15.78	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	15.760	0.444	5786.3	4575.1	5.625	3.449	3.24		Clay	100.0			14.90	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	14.600	0.386	5806.3	4585.1	5.102	3.303	3.26		Clay	100.0			13.80	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	14.760	0.395	5827.5	4595.7	5.155	3.334	3.26		Clay	100.0			13.95	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	15.720	0.482	5847.5	4605.7	5.557	3.764	3.26		Clay	100.0			14.86	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	18.470	0.670	5867.5	4615.8	6.732	4.310	3.23		Clay	100.0			17.46	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	23.240	0.906	5888.8	4626.4	8.774	4.462	3.14		Clay	100.0			21.97	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	26.300	1.191	5908.8	4636.4	10.071	5.103	3.13		Clay	100.0			24.86	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	26.980	1.273	5930.0	4647.1	10.336	5.300	3.13		Clay	100.0			25.50	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	26.990	1.329	5950.0	4657.1	10.313	5.534	3.14		Clay	100.0			25.51	0.81	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	29.370	1.355	5970.0	4667.1	11.307	5.136	3.09		Clay	100.0			27.76	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	31.760	1.320	5991.3	4677.7	12.298	4.589	3.03		Clay	100.0			30.02	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	31.160	1.335	6011.3	4687.7	12.012	4.741	3.05		Clay	100.0			29.45	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	28.870	1.558	6032.5	4698.4	11.005	6.027	3.15		Clay	100.0			27.29	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	31.840	1.704	6052.5	4708.4	12.239	5.914	3.11		Clay	100.0			30.09	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	34.060	1.734	6072.5	4718.4	13.150	5.590	3.07		Clay	100.0			32.19	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	32.370	1.687	6093.8	4729.1	12.401	5.753	3.09		Clay	100.0			30.60	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	30.510	1.660	6113.8	4739.1	11.586	6.048	3.13		Clay	100.0			28.84	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.660	192.090	1.313	79.2	79.2	938.263	0.684	1.17		Unsaturated	0.0			181.56	1.70	308.65	308.65	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	189.370	2.214	98.4	98.4	829.799	1.170	1.40		Unsaturated	0.0			178.99	1.70	304.28	304.28	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	167.980	2.375	117.6	117.6	673.246	1.414	1.51		Unsaturated	0.0			158.77	1.70	269.91	269.91	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	125.600	2.937	138.0	138.0	464.605	2.339	1.78		Unsaturated	5.4			118.71	1.70	201.81	202.23	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	81.750	3.057	157.2	157.2	283.215	3.743	2.06		Unsaturated	28.0			77.27	1.70	131.36	189.98	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	63.090	2.825	177.6	177.6	205.541	4.484	2.20		Unsaturated	39.0			59.63	1.70	101.37	166.96	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	57.520	2.576	196.8	196.8	177.965	4.487	2.23		Unsaturated	41.7			54.37	1.70	92.42	157.95	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	54.170	2.327	216.0	216.0	159.933	4.304	2.24		Unsaturated	42.6			51.20	1.70	87.04	151.83	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	49.330	2.119	236.4	236.4	139.161	4.307	2.28		Unsaturated	45.4			46.63	1.70	79.26	143.84	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	44.270	1.763	255.6	255.6	120.045	3.994	2.29		Unsaturated	46.3			41.84	1.70	71.13	134.16	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	39.990	1.406	276.0	276.0	104.296	3.527	2.29		Unsaturated	46.0			37.80	1.70	64.26	125.32	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	36.520	1.290	295.2	295.2	92.042	3.547	2.32		Unsaturated	48.9			34.52	1.70	58.68	119.74	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	33.220	1.407	314.4	314.4	81.072	4.256	2.42		Unsaturated	56.6			31.40	1.70	53.38	116.00	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	28.000	1.618	334.8	334.8	66.135	5.813	2.58		Unsaturated	69.4			26.47	1.70	44.99	108.60	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	23.320	1.589	354.0	354.0	76.470	6.866	2.60		Unsaturated	70.8			22.04	1.70	37.47	99.16	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	20.610	1.476	374.4	374.4	64.887	7.226	2.66		Unsaturated	75.7			19.48	1.70	33.12	94.39	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	19.870	1.367	393.6	393.6	60.355	6.951	2.67		Unsaturated	76.3			18.78	1.70	31.93	92.94	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	20.320	1.232	412.8	412.8	59.683	6.123	2.63		Unsaturated	73.1			19.21	1.70	32.65	93.35	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	25.020	1.212	433.2	433.2	51.813	4.887	2.59		Unsaturated	70.5			23.65	1.70	40.20	102.63	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	36.360	1.338	452.4	452.4	73.863	3.703	2.40		Unsaturated	55.1			34.37	1.70	58.42	121.90	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	42.490	1.511	472.8	472.8	84.488	3.577	2.35		Unsaturated	51.1			40.16	1.70	68.27	132.84	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	41.760	1.508	492.0	492.0	81.374	3.632	2.37		Unsaturated	52.3			39.47	1.70	67.10	131.88	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	39.520	1.509	512.4	512.4	75.415	3.842	2.41		Unsaturated	55.5			37.35	1.70	63.50	128.54	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	35.700	1.533	531.6	531.6	66.819	4.326	2.48		Unsaturated	61.4			33.74	1.70	57.36	122.57	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	32.160	1.458	550.8	550.8	59.069	4.573	2.53		Unsaturated	65.7			30.40	1.70	51.67	116.38	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	27.970	1.414	571.2	571.2	65.442	5.108	2.54		Unsaturated	66.2			26.44	1.70	44.94	107.84	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	25.130	1.291	590.4	590.4	57.363	5.200	2.58		Unsaturated	69.7			23.75	1.70	40.38	102.70	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	23.280	1.092	610.8	610.8	51.820	4.753	2.58		Unsaturated	69.8			22.00	1.70	37.41	98.87	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	20.660	0.929	630.0	630.0	44.905	4.568	2.61		Unsaturated	72.2			19.53	1.70	33.20	93.89	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	17.650	0.818	649.2	649.2	37.445	4.721	2.68		Unsaturated	77.4			16.68	1.70	28.36	88.49	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	16.700	0.735	669.6	669.6	34.612	4.493	2.69		Unsaturated	78.2			15.78	1.70	26.83	86.62	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	15.650	0.692	688.8	688.8	44.441	4.518	2.61		Unsaturated	72.2			14.79	1.70	25.15	83.48	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	17.690	0.767	709.2	709.2	35.219	4.423	2.68		Unsaturated	77.4			16.72	1.70	28.42	88.57	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	20.270	0.886	728.4	728.4	39.691	4.450	2.64		Unsaturated	74.5			19.16	1.70	32.57	93.49	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	22.280	0.978	747.6	747.6	42.892	4.465	2.62		Unsaturated	72.7			21.06	1.69	35.60	97.10	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	22.400	1.003	768.0	768.0	42.302	4.554	2.63		Unsaturated	73.6			21.17	1.67	35.33	96.89	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	22.660	1.004	787.2	787.2	42.050	4.507	2.63		Unsaturated	73.4			21.42	1.65	35.30	96.83	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	22.400	0.992	807.6	807.6	40.802	4.511	2.64		Unsaturated	74.2			21.17	1.63	34.51	95.95	0.99	0.503	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.890	21.990	0.977	826.8	826.8	39.371	4.529	2.65		Unsaturated	75.2			20.78	1.61	33.56	94.87	0.99	0.502	1.096	n.a.	n.a.	n.a.	0.00	0.00
7.050	22.460	0.983	846.0	846.0	39.570	4.462	2.65		Unsaturated	74.7			21.23	1.59	33.85	95.18	0.99	0.502	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.220	23.320	1.010	866.4	866.4	40.416	4.412	2.64		Unsaturated	73.9			22.04	1.57	34.66	96.09	0.99	0.502	1.092	n.a.	n.a.	n.a.	0.00	0.00
7.380	24.000	1.008	885.6	885.6	40.967	4.279	2.62		Unsaturated	72.8			22.68	1.55	35.24	96.64	0.99	0.502	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.550	23.780	1.027	906.0	906.0	39.925	4.402	2.64		Unsaturated	74.1			22.48	1.54	34.56	96.00	0.99	0.502	1.087	n.a.	n.a.	n.a.	0.00	0.00
7.710	24.060	0.932	925.2	925.2	39.799	3.947	2.61		Unsaturated	71.6			22.74	1.52	34.62	95.62	0.99	0.501	1.085	n.a.	n.a.	n.a.	0.00	0.00
7.870	22.820	0.887	944.4	944.4	37.154	3.969	2.63		Unsaturated	73.4			21.57	1.51	32.63	93.38	0.99	0.501	1.081	n.a.	n.a.	n.a.	0.00	0.00
8.040	21.630	0.759	964.8	964.8	34.636	3.590	2.62		Unsaturated	72.8			20.44	1.50	30.74	90.82	0.99	0.501	1.078	n.a.	n.a.	n.a.	0.00	0.00
8.200	19.900	0.652	984.0	984.0	31.352	3.357	2.64		Unsaturated	73.8			18.81	1.50	28.16	87.65	0.99	0.501	1.074	n.a.	n.a.	n.a.	0.00	0.00
8.370	17.930	0.649	1004.4	1004.4	34.703	3.723	2.63		Unsaturated	73.6			16.95	1.49	25.27	83.88	0.99	0.501	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.530	19.730	0.612	1023.6	1023.6	30.199	3.183	2.63		Unsaturated	73.6			18.65	1.47	27.39	86.62	0.99	0.500	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.690	20.310	0.586	1042.8	1042.8	30.694	2.962	2.61		Unsaturated	71.5			19.20	1.45	27.91	86.93	0.99	0.500	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.860	18.130	0.652	1063.2	1063.2	33.105	3.704	2.65		Unsaturated	74.7			17.14	1.45	24.80	83.45	0.99	0.500	1.064	n.a.	n.a.	n.a.	0.00	0.00
9.020	20.530	0.621	1082.4	1082.4	30.206	3.109	2.63		Unsaturated	73.0			19.40	1.43	27.66	86.88	0.99	0.500	1.064	n.a.	n.a.	n.a.	0.00	0.00
9.190	19.780	0.550	1102.8	1102.8	28.680	2.859	2.62		Unsaturated	72.5			18.70	1.42	26.46	85.23	0.99	0.499	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.350	16.040	0.504	1122.0	1122.0	27.592	3.259	2.67		Unsaturated	76.5			15.16	1.42	21.46	79.40	0.98	0.499	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.510	16.280	0.529	1141.2	1141.2	27.531	3.369	2.68		Unsaturated	77.3			15.39	1.40	21.57	79.66	0.98	0.499	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.680	16.260	0.485	1161.6	1161.6	26.996	3.096	2.66		Unsaturated	75.9			15.37	1.39	21.35	79.17	0.98	0.499	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.840	16.350	0.495	1180.8	1180.8	26.693	3.138	2.67		Unsaturated	76.5			15.45	1.38	21.28	79.17	0.98	0.499	1.053	n.a.	n.a.	n.a.	0.00	0.00
10.010	17.130	0.465	1201.2	1201.2	27.521	2.810	2.63		Unsaturated	73.2			16.19	1.36	22.07	79.68	0.98	0.498	1.051	n.a.	n.a.	n.a.	0.00	0.00
10.170	15.250	0.391	1220.4	1220.4	23.992	2.668	2.66		Unsaturated	75.8			14.41	1.36	19.56	76.84	0.98	0.498	1.049	n.a.	n.a.	n.a.	0.00	0.00
10.330	15.220	0.296	1239.6	1239.6	20.065	2.030	2.65		Unsaturated	75.1			14.39	1.35	19.36	76.47	0.98	0.498	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.500	12.800	0.255	1260.0	1260.0	19.317	2.094	2.67		Unsaturated	76.8			12.10	1.34	16.22	72.66	0.98	0.498	1.044	n.a.	n.a.	n.a.	0.00	0.00
10.660	11.560	0.214	1279.2	1279.2	17.074	1.957	2.70		Unsaturated	79.0			10.93	1.33	14.57	70.82	0.98	0.497	1.043	n.a.	n.a.	n.a.	0.00	0.00
10.830	11.460	0.184	1299.6	1299.6	16.636	1.701	2.68		Unsaturated	77.1			10.83	1.32	14.32	70.23	0.98	0.497	1.041	n.a.	n.a.	n.a.	0.00	0.00
10.990	11.220	0.181	1318.8	1318.8	16.015	1.714	2.69		Unsaturated	78.4			10.60	1.31	13.91	69.87	0.98	0.497	1.040	n.a.	n.a.	n.a.	0.00	0.00
11.150	10.130	0.206	1338.0	1338.0	14.142	2.173	2.79		Unsaturated	86.5			9.57	1.30	12.47	69.00	0.98	0.497	1.038	n.a.	n.a.	n.a.	0.00	0.00
11.320	9.960	0.194	1358.4	1358.4	13.664	2.088	2.80		Unsaturated	86.7			9.41	1.29	12.16	68.62	0.98	0.496	1.037	n.a.	n.a.	n.a.	0.00	0.00
11.480	10.210	0.259	1377.6	1377.6	13.823	2.723	2.86		Unsaturated	91.6			9.65	1.28	12.35	69.38	0.98	0.496	1.036	n.a.	n.a.	n.a.	0.00	0.00
11.650	10.180	0.284	1398.0	1398.0	13.564	3.000	2.89		Unsaturated	94.1			9.62	1.27	12.21	69.43	0.98	0.496	1.035	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.810	10.670	0.262	1417.2	1417.2	14.058	2.632	2.84		Unsaturated	90.4			10.09	1.26	12.70	69.71	0.98	0.496	1.034	n.a.	n.a.	n.a.	0.00	0.00
11.980	10.060	0.251	1437.6	1437.6	12.996	2.691	2.88		Unsaturated	93.1			9.51	1.25	11.88	68.91	0.98	0.496	1.032	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.890	0.208	1456.8	1456.8	12.578	2.266	2.85		Unsaturated	90.7			9.35	1.24	11.60	68.30	0.98	0.495	1.031	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.850	0.191	1476.0	1476.0	12.347	2.095	2.83		Unsaturated	89.7			9.31	1.23	11.47	68.04	0.98	0.495	1.030	n.a.	n.a.	n.a.	0.00	0.00
12.470	9.720	0.220	1496.4	1496.4	11.991	2.453	2.88		Unsaturated	93.6			9.19	1.22	11.23	68.10	0.98	0.495	1.029	n.a.	n.a.	n.a.	0.00	0.00
12.630	10.160	0.227	1515.6	1515.6	12.407	2.418	2.87		Unsaturated	92.3			9.60	1.21	11.65	68.52	0.98	0.495	1.028	n.a.	n.a.	n.a.	0.00	0.00
12.800	10.320	0.253	1536.0	1536.0	12.438	2.652	2.89		Unsaturated	94.1			9.75	1.20	11.73	68.80	0.97	0.494	1.027	n.a.	n.a.	n.a.	0.00	0.00
12.960	9.840	0.204	1555.2	1555.2	11.654	2.246	2.87		Unsaturated	92.7			9.30	1.20	11.12	67.87	0.97	0.494	1.025	n.a.	n.a.	n.a.	0.00	0.00
13.120	9.190	0.200	1574.4	1574.4	10.674	2.381	2.92		Unsaturated	96.4			8.69	1.19	10.32	67.15	0.97	0.494	1.024	n.a.	n.a.	n.a.	0.00	0.00
13.290	9.250	0.147	1594.8	1594.8	10.600	1.739	2.85		Unsaturated	90.8			8.74	1.18	10.31	66.63	0.97	0.494	1.023	n.a.	n.a.	n.a.	0.00	0.00
13.450	9.760	0.141	1614.0	1614.0	11.094	1.577	2.81		Unsaturated	87.7			9.22	1.17	10.80	66.96	0.97	0.493	1.022	n.a.	n.a.	n.a.	0.00	0.00
13.620	10.280	0.185	1634.4	1634.4	11.580	1.956	2.84		Unsaturated	90.3			9.72	1.16	11.29	67.86	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.780	11.350	0.305	1653.6	1653.6	12.728	2.894	2.90		Unsaturated	95.2			10.73	1.15	12.36	69.72	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.940	17.360	0.520	1672.8	1672.8	19.756	3.146	2.77		Unsaturated	84.7			16.41	1.14	18.69	76.90	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
14.110	22.460	0.639	1693.2	1693.2	25.530	2.956	2.67		Unsaturated	76.4			21.23	1.13	23.94	82.60	0.97	0.492	1.021	n.a.	n.a.	n.a.	0.00	0.00
14.270	23.930	0.624	1712.4	1712.4	26.949	2.703	2.62		Unsaturated	73.0			22.62	1.12	25.34	83.86	0.97	0.492	1.020	n.a.	n.a.	n.a.	0.00	0.00
14.440	22.450	0.431	1732.8	1732.8	23.463	1.996	2.59		Unsaturated	70.4			21.22	1.11	23.65	81.23	0.97	0.492	1.018	n.a.	n.a.	n.a.	0.00	0.00
14.600	18.500	0.247	1752.0	1752.0	18.307	1.403	2.60		Unsaturated	70.7			17.49	1.11	19.43	75.83	0.97	0.492	1.017	n.a.	n.a.	n.a.	0.00	0.00
14.760	14.840	0.360	1771.2	1771.2	15.757	2.583	2.80		Unsaturated	86.8			14.03	1.11	15.51	73.00	0.97	0.491	1.015	n.a.	n.a.	n.a.	0.00	0.00
14.930	13.440	0.434	1791.6	1791.6	14.003	3.457	2.91		Unsaturated	96.1			12.70	1.10	13.96	71.90	0.97	0.491	1.014	n.a.	n.a.	n.a.	0.00	0.00
15.090	16.350	0.395	1810.8	1810.8	17.058	2.560	2.77		Clay	84.4			15.45	1.04	n.a.	n.a.	0.97	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	14.340	0.433	1831.2	1831.2	14.662	3.225	2.88		Clay	93.4			13.55	1.04	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	14.150	0.464	1850.4	1850.4	14.294	3.508	2.91		Clay	95.9			13.37	1.04	n.a.	n.a.	0.97	0.497	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	18.070	0.422	1869.6	1869.6	18.330	2.462	2.73		Clay	81.6			17.08	1.03	n.a.	n.a.	0.97	0.500	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	19.550	0.348	1890.0	1890.0	19.688	1.872	2.64		Clay	74.1			18.48	1.03	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	13.760	0.293	1909.2	1909.2	13.414	2.287	2.83		Clay	89.0			13.01	1.03	n.a.	n.a.	0.97	0.504	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	11.430	0.266	1929.6	1929.6	10.847	2.541	2.93		Clay	97.2			10.80	1.02	n.a.	n.a.	0.96	0.507	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	11.760	0.296	1948.8	1948.8	11.069	2.748	2.94		Clay	98.1			11.12	1.02	n.a.	n.a.	0.96	0.509	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	11.510	0.315	1968.0	1968.0	10.697	2.994	2.97		Clay	100.0			10.88	1.02	n.a.	n.a.	0.96	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	11.880	0.333	1988.4	1988.4	10.949	3.054	2.97		Clay	100.0			11.23	1.02	n.a.	n.a.	0.96	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	12.420	0.339	2007.6	2007.6	11.373	2.967	2.95		Clay	98.9			11.74	1.01	n.a.	n.a.	0.96	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	12.600	0.344	2028.0	2028.0	11.426	2.965	2.95		Clay	98.7			11.91	1.01	n.a.	n.a.	0.96	0.518	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	11.370	0.266	2047.2	2047.2	10.108	2.573	2.96		Clay	99.5			10.75	1.01	n.a.	n.a.	0.96	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	10.840	0.282	2066.4	2066.4	9.492	2.879	3.01		Clay	100.0			10.25	1.01	n.a.	n.a.	0.96	0.522	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	10.690	0.314	2086.8	2086.8	9.245	3.252	3.04		Clay	100.0			10.10	1.00	n.a.	n.a.	0.96	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	12.880	0.328	2106.0	2106.0	11.232	2.777	2.94		Clay	97.9			12.17	1.00	n.a.	n.a.	0.96	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	13.140	0.328	2126.4	2126.4	11.359	2.717	2.93		Clay	97.1			12.42	1.00	n.a.	n.a.	0.96	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	13.200	0.362	2145.6	2145.6	11.304	2.982	2.95		Clay	99.1			12.48	1.00	n.a.	n.a.	0.96	0.530	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	13.320	0.349	2164.8	2164.8	11.306	2.854	2.94		Clay	98.3			12.59	0.99	n.a.	n.a.	0.96	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	13.110	0.310	2185.2	2185.2	10.999	2.575	2.93		Clay	97.0			12.39	0.99	n.a.	n.a.	0.96	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	12.550	0.250	2204.4	2204.4	10.386	2.182	2.91		Clay	95.6			11.86	0.99	n.a.	n.a.	0.96	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	12.550	0.280	2224.8	2224.8	10.282	2.445	2.94		Clay	98.0			11.86	0.99	n.a.	n.a.	0.96	0.538	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	12.920	0.294	2244.0	2244.0	10.515	2.489	2.93		Clay	97.7			12.21	0.98	n.a.	n.a.	0.96	0.540	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	13.140	0.335	2263.2	2263.2	10.612	2.789	2.96		Clay	99.6			12.42	0.98	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	13.510	0.349	2283.6	2283.6	10.832	2.819	2.95		Clay	99.2			12.77	0.98	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	13.360	0.315	2302.8	2302.8	10.603	2.576	2.94		Clay	98.1			12.63	0.98	n.a.	n.a.	0.95	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	13.030	0.288	2323.2	2323.2	10.217	2.427	2.94		Clay	98.0			12.32	0.98	n.a.	n.a.	0.95	0.547	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	12.950	0.272	2342.4	2342.4	10.057	2.312	2.93		Clay	97.6			12.24	0.97	n.a.	n.a.	0.95	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	13.580	0.320	2362.8	2362.8	10.495	2.581	2.94		Clay	98.4			12.84	0.97	n.a.	n.a.	0.95	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	14.280	0.422	2382.0	2382.0	10.990	3.221	2.98		Clay	100.0			13.50	0.97	n.a.	n.a.	0.95	0.552	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	15.390	0.442	2401.2	2401.2	11.819	3.114	2.95		Clay	98.7			14.55	0.97	n.a.	n.a.	0.95	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	16.670	0.400	2421.6	2421.6	12.768	2.588	2.87		Clay	92.8			15.76	0.97	n.a.	n.a.	0.95	0.556	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	16.000	0.450	2440.8	2440.8	12.110	3.047	2.93		Clay	97.6			15.12	0.96	n.a.	n.a.	0.95	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	15.750	0.405	2461.2	2461.2	11.799	2.787	2.92		Clay	96.6			14.89	0.96	n.a.	n.a.	0.95	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	15.150	0.378	2480.4	2480.4	11.216	2.719	2.93		Clay	97.5			14.32	0.96	n.a.	n.a.	0.95	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	15.400	0.364	2499.6	2499.6	11.322	2.570	2.91		Clay	96.2			14.56	0.96	n.a.	n.a.	0.95	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	16.300	0.395	2520.0	2520.0	11.937	2.624	2.90		Clay	95.0			15.41	0.95	n.a.	n.a.	0.95	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	16.890	0.364	2539.2	2539.2	12.303	2.329	2.86		Clay	91.9			15.96	0.95	n.a.	n.a.	0.95	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	17.140	0.361	2559.6	2559.6	12.393	2.277	2.85		Clay	91.2			16.20	0.95	n.a.	n.a.	0.95	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	17.210	0.333	2578.8	2578.8	12.347	2.088	2.83		Clay	89.7			16.27	0.95	n.a.	n.a.	0.95	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	16.890	0.372	2598.0	2598.0	12.002	2.385	2.88		Clay	93.0			15.96	0.95	n.a.	n.a.	0.95	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	16.270	0.389	2618.4	2618.4	11.427	2.597	2.91		Clay	96.1			15.38	0.95	n.a.	n.a.	0.95	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	15.820	0.398	2637.6	2637.6	10.996	2.744	2.94		Clay	98.3			14.95	0.94	n.a.	n.a.	0.94	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	16.070	0.418	2658.0	2658.0	11.092	2.836	2.95		Clay	98.7			15.19	0.94	n.a.	n.a.	0.94	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	16.630	0.431	2677.2	2677.2	11.423	2.819	2.93		Clay	97.7			15.72	0.94	n.a.	n.a.	0.94	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	16.350	0.427	2696.4	2696.4	11.127	2.846	2.95		Clay	98.7			15.45	0.94	n.a.	n.a.	0.94	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	16.350	0.451	2716.8	2716.8	11.036	3.010	2.96		Clay	100.0			15.45	0.94	n.a.	n.a.	0.94	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.800	16.780	0.445	2736.0	2736.0	11.266	2.889	2.94		Clay	98.6			15.86	0.93	n.a.	n.a.	0.94	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	17.130	0.472	2756.4	2756.4	11.429	2.994	2.95		Clay	98.9			16.19	0.93	n.a.	n.a.	0.94	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	16.800	0.450	2775.6	2775.6	11.105	2.918	2.95		Clay	99.2			15.88	0.93	n.a.	n.a.	0.94	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	17.180	0.452	2795.3	2789.6	11.315	2.865	2.94		Clay	98.3			16.24	0.93	n.a.	n.a.	0.94	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	17.410	0.380	2816.5	2800.3	11.429	2.377	2.89		Clay	94.4			16.46	0.93	n.a.	n.a.	0.94	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	17.320	0.388	2836.5	2810.3	11.317	2.439	2.90		Clay	95.2			16.37	0.93	n.a.	n.a.	0.94	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	17.240	0.416	2857.8	2820.9	11.210	2.632	2.92		Clay	96.9			16.29	0.93	n.a.	n.a.	0.94	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	18.770	0.526	2877.8	2831.0	12.244	3.036	2.93		Clay	97.2			17.74	0.93	n.a.	n.a.	0.94	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	21.960	0.635	2897.8	2841.0	14.440	3.097	2.87		Clay	93.0			20.76	0.93	n.a.	n.a.	0.94	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	26.330	0.607	2919.0	2851.6	17.443	2.441	2.75		Clay	82.8			24.89	0.92	n.a.	n.a.	0.94	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	29.420	0.735	2939.0	2861.6	19.535	2.631	2.73		Clay	81.2			27.81	0.92	n.a.	n.a.	0.94	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	28.410	0.905	2960.3	2872.3	18.752	3.359	2.81		Clay	87.5			26.85	0.92	n.a.	n.a.	0.94	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	31.440	0.814	2980.3	2882.3	20.782	2.719	2.71		Clay	80.2			29.72	0.92	n.a.	n.a.	0.93	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	37.310	0.824	3000.3	2892.3	24.762	2.302	2.61	plastic	Clay	71.8			35.26	0.92	n.a.	n.a.	0.93	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	33.750	0.726	3021.5	2902.9	22.211	2.250	2.64		Clay	74.4			31.90	0.92	n.a.	n.a.	0.93	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	22.860	0.597	3041.5	2913.0	14.651	2.798	2.84		Clay	90.5			21.61	0.92	n.a.	n.a.	0.93	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	18.840	0.403	3062.8	2923.6	11.841	2.327	2.87		Clay	92.9			17.81	0.92	n.a.	n.a.	0.93	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	18.300	0.378	3082.8	2933.6	11.425	2.254	2.88		Clay	93.4			17.30	0.92	n.a.	n.a.	0.93	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	18.000	0.362	3102.8	2943.6	11.176	2.198	2.88		Clay	93.5			17.01	0.92	n.a.	n.a.	0.93	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	17.770	0.352	3124.0	2954.3	10.973	2.172	2.89		Clay	93.9			16.80	0.92	n.a.	n.a.	0.93	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	17.210	0.359	3144.0	2964.3	10.551	2.293	2.91		Clay	96.0			16.27	0.91	n.a.	n.a.	0.93	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	17.380	0.400	3165.3	2974.9	10.620	2.531	2.93		Clay	97.7			16.43	0.91	n.a.	n.a.	0.93	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	17.360	0.413	3185.3	2984.9	10.565	2.616	2.94		Clay	98.5			16.41	0.91	n.a.	n.a.	0.93	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	17.130	0.419	3205.3	2995.0	10.369	2.698	2.96		Clay	99.6			16.19	0.91	n.a.	n.a.	0.93	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	17.480	0.440	3226.5	3005.6	10.558	2.771	2.96		Clay	99.6			16.52	0.91	n.a.	n.a.	0.93	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	17.950	0.448	3246.5	3015.6	10.828	2.742	2.95		Clay	98.7			16.97	0.91	n.a.	n.a.	0.93	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	19.020	0.338	3267.8	3026.3	11.490	1.944	2.84		Clay	90.4			17.98	0.91	n.a.	n.a.	0.93	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	19.770	0.189	3287.8	3036.3	11.940	1.040	2.69		Clay	78.5			18.69	0.91	n.a.	n.a.	0.93	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	19.530	0.335	3309.0	3046.9	11.733	1.876	2.83		Clay	89.2			18.46	0.91	n.a.	n.a.	0.92	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	19.470	0.604	3329.0	3056.9	11.649	3.392	2.97		Clay	100.0			18.40	0.91	n.a.	n.a.	0.92	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	32.010	0.698	3349.0	3067.0	19.782	2.300	2.69		Clay	78.1			30.26	0.91	n.a.	n.a.	0.92	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	62.030	0.733	3370.3	3077.6	47.294	1.214	2.22		Sand	40.5	60.78	1.8	109.40	0.86	94.62	159.77	0.92	0.612	0.935	0.369	0.617	1.01	0.01	0.02
28.050	64.300	0.799	3390.3	3087.6	48.986	1.276	2.22		Sand	40.6		1.8	109.40	0.86	94.48	159.64	0.92	0.613	0.934	0.368	0.614	1.00	0.01	0.02
28.220	52.070	0.760	3411.5	3098.3	39.340	1.508	2.34		Sand	50.1	60.78	1.8	109.40	0.87	94.71	165.88	0.92	0.614	0.930	0.441	0.768	1.25	0.00	0.01
28.380	32.150	0.641	3431.5	3108.3	19.583	2.107	2.67		Clay	76.6			30.39	0.90	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	20.790	0.539	3451.5	3118.3	12.227	2.828	2.91		Clay	95.8			19.65	0.90	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	18.460	0.460	3472.8	3128.9	10.690	2.749	2.95		Clay	99.1			17.45	0.90	n.a.	n.a.	0.92	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	18.280	0.453	3492.8	3138.9	10.535	2.739	2.96		Clay	99.5			17.28	0.90	n.a.	n.a.	0.92	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	18.170	0.460	3514.0	3149.6	10.422	2.800	2.97		Clay	100.0			17.17	0.90	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	18.010	0.449	3534.0	3159.6	10.282	2.766	2.97		Clay	100.0			17.02	0.90	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	17.800	0.421	3554.0	3169.6	10.110	2.628	2.96		Clay	99.9			16.82	0.90	n.a.	n.a.	0.92	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	17.300	0.420	3575.3	3180.3	9.755	2.706	2.98		Clay	100.0			16.35	0.90	n.a.	n.a.	0.92	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	16.460	0.398	3595.3	3190.3	9.192	2.714	3.00		Clay	100.0			15.56	0.90	n.a.	n.a.	0.92	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	16.610	0.433	3616.5	3200.9	9.248	2.927	3.02		Clay	100.0			15.70	0.90	n.a.	n.a.	0.91	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	16.750	0.416	3636.5	3210.9	9.301	2.787	3.00		Clay	100.0			15.83	0.90	n.a.	n.a.	0.91	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	16.880	0.336	3656.5	3220.9	9.346	2.232	2.95		Clay	99.1			15.95	0.90	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	16.630	0.280	3677.8	3231.6	9.154	1.890	2.92		Clay	96.7			15.72	0.89	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	16.900	0.318	3697.8	3241.6	9.286	2.112	2.94		Clay	98.2			15.97	0.89	n.a.	n.a.	0.91	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	17.410	0.354	3719.0	3252.2	9.563	2.273	2.95		Clay	98.7			16.46	0.89	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	17.950	0.393	3739.0	3262.3	9.858	2.443	2.95		Clay	99.2			16.97	0.89	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	18.170	0.481	3759.0	3272.3	9.957	2.950	2.99		Clay	100.0			17.17	0.89	n.a.	n.a.	0.91	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	18.600	0.546	3780.3	3282.9	10.180	3.265	3.01		Clay	100.0			17.58	0.89	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	20.420	0.516	3800.3	3292.9	11.248	2.788	2.94		Clay	97.9			19.30	0.89	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	28.140	0.601	3821.5	3303.6	15.879	2.291	2.77		Clay	84.2			26.60	0.89	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	23.790	0.629	3841.5	3313.6	13.200	2.874	2.89		Clay	94.0			22.49	0.89	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	20.630	0.556	3861.5	3323.6	11.252	2.972	2.95		Clay	99.2			19.50	0.89	n.a.	n.a.	0.91	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	20.530	0.559	3882.8	3334.3	11.150	3.008	2.96		Clay	99.7			19.40	0.89	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	21.020	0.550	3902.8	3344.3	11.404	2.883	2.94		Clay	98.2			19.87	0.89	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	21.390	0.583	3924.0	3354.9	11.582	3.002	2.94		Clay	98.6			20.22	0.89	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	21.400	0.570	3944.0	3364.9	11.547	2.935	2.94		Clay	98.2			20.23	0.88	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	21.630	0.583	3964.0	3374.9	11.643	2.968	2.94		Clay	98.2			20.44	0.88	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	22.950	0.615	3985.3	3385.6	12.380	2.934	2.92		Clay	96.2			21.69	0.88	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	22.520	0.668	4005.3	3395.6	12.085	3.256	2.95		Clay	99.0			21.29	0.88	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	22.290	0.691	4026.5	3406.2	11.906	3.409	2.97		Clay	100.0			21.07	0.88	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	22.220	0.752	4046.5	3416.3	11.824	3.724	2.99		Clay	100.0			21.00	0.88	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	20.710	0.667	4066.5	3426.3	10.902	3.570	3.01		Clay	100.0			19.57	0.88	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	18.680	0.530	4087.8	3436.9	9.681	3.188	3.02		Clay	100.0			17.66	0.88	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.790	17.010	0.483	4107.8	3446.9	8.678	3.226	3.07		Clay	100.0			16.08	0.88	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	16.630	0.530	4129.0	3457.6	8.425	3.639	3.11		Clay	100.0			15.72	0.88	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	18.070	0.678	4149.0	3467.6	9.226	4.236	3.11		Clay	100.0			17.08	0.88	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	20.550	0.812	4169.0	3477.6	10.620	4.399	3.07		Clay	100.0			19.42	0.88	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	22.350	0.806	4190.3	3488.3	11.613	3.980	3.02		Clay	100.0			21.12	0.88	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	24.290	0.629	4210.3	3498.3	12.683	2.836	2.90		Clay	94.9			22.96	0.88	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	23.460	0.603	4231.5	3508.9	12.166	2.827	2.91		Clay	96.0			22.17	0.88	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	20.780	0.525	4251.5	3518.9	10.602	2.813	2.96		Clay	99.8			19.64	0.87	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	19.510	0.395	4271.5	3528.9	9.847	2.276	2.94		Clay	97.9			18.44	0.87	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	18.630	0.337	4292.8	3539.6	9.314	2.041	2.93		Clay	97.5			17.61	0.87	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	18.170	0.353	4312.8	3549.6	9.023	2.206	2.96		Clay	99.9			17.17	0.87	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	19.080	0.398	4334.0	3560.2	9.501	2.354	2.96		Clay	99.6			18.03	0.87	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	21.600	0.439	4354.0	3570.3	10.880	2.259	2.90		Clay	94.8			20.42	0.87	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	22.550	0.380	4375.3	3580.9	11.373	1.868	2.84		Clay	90.0			21.31	0.87	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	24.190	0.335	4395.3	3590.9	12.249	1.521	2.76		Clay	84.1			22.86	0.87	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	23.580	0.439	4415.3	3600.9	11.870	2.055	2.84		Clay	90.5			22.29	0.87	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	20.130	0.462	4436.5	3611.6	9.919	2.579	2.96		Clay	100.0			19.03	0.87	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	20.030	0.500	4456.5	3621.6	9.831	2.806	2.99		Clay	100.0			18.93	0.87	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	19.870	0.508	4477.8	3632.2	9.708	2.883	3.00		Clay	100.0			18.78	0.87	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	19.960	0.489	4497.8	3642.2	9.725	2.758	2.99		Clay	100.0			18.87	0.87	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	19.050	0.464	4517.8	3652.3	9.195	2.764	3.01		Clay	100.0			18.01	0.87	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	18.090	0.464	4539.0	3662.9	8.638	2.935	3.04		Clay	100.0			17.10	0.87	n.a.	n.a.	0.88	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	18.500	0.494	4559.0	3672.9	8.832	3.046	3.05		Clay	100.0			17.49	0.86	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	19.750	0.491	4580.3	3683.6	9.480	2.809	3.00		Clay	100.0			18.67	0.86	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	19.550	0.481	4600.3	3693.6	9.340	2.787	3.00		Clay	100.0			18.48	0.86	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	19.500	0.504	4620.3	3703.6	9.283	2.933	3.02		Clay	100.0			18.43	0.86	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	19.500	0.427	4641.5	3714.2	9.250	2.485	2.98		Clay	100.0			18.43	0.86	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	19.170	0.408	4661.5	3724.3	9.043	2.425	2.98		Clay	100.0			18.12	0.86	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	18.780	0.384	4682.8	3734.9	8.803	2.337	2.98		Clay	100.0			17.75	0.86	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	18.640	0.406	4702.8	3744.9	8.699	2.494	3.00		Clay	100.0			17.62	0.86	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	19.610	0.323	4722.8	3754.9	9.187	1.873	2.92		Clay	96.4			18.53	0.86	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	20.100	0.276	4744.0	3765.6	9.416	1.555	2.87		Clay	92.4			19.00	0.86	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	18.720	0.228	4764.0	3775.6	8.655	1.394	2.88		Clay	93.1			17.69	0.86	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	18.440	0.255	4785.3	3786.2	8.477	1.588	2.91		Clay	96.0			17.43	0.86	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	19.910	0.262	4805.3	3796.2	9.224	1.497	2.87		Clay	92.4			18.82	0.86	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	20.800	0.288	4825.3	3806.3	9.662	1.564	2.86		Clay	91.7			19.66	0.86	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	20.040	0.341	4846.5	3816.9	9.231	1.935	2.92		Clay	96.8			18.94	0.86	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	19.710	0.441	4866.5	3826.9	9.029	2.550	2.99		Clay	100.0			18.63	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	20.680	0.459	4887.8	3837.6	9.504	2.514	2.97		Clay	100.0			19.55	0.85	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	23.800	0.728	4907.8	3847.6	11.096	3.408	2.99		Clay	100.0			22.50	0.85	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	25.430	1.503	4927.8	3857.6	11.907	6.543	3.14		Clay	100.0			24.04	0.85	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	41.080	1.963	4949.0	3868.2	19.960	5.084	2.90		Clay	95.1			38.83	0.85	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	66.520	2.122	4969.0	3878.2	33.023	3.314	2.61		Clay	72.2			62.87	0.85	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	95.670	2.088	4990.3	3888.9	64.962	2.240	2.28		Sand	45.7		1.28	115.74	0.79	91.38	159.21	0.87	0.649	0.894	0.363	0.579	0.89	0.01	0.02
41.010	91.200	2.303	5010.3	3898.9	61.759	2.596	2.34		Sand	50.5		1.28	110.34	0.79	86.74	155.95	0.87	0.649	0.897	0.333	0.520	0.80	0.01	0.03
41.170	89.350	2.769	5030.3	3908.9	60.386	3.189	2.41		Sand	56.1		1.28	108.10	0.79	84.90	156.02	0.87	0.649	0.897	0.334	0.521	0.80	0.01	0.03
41.340	81.890	2.950	5051.5	3919.6	55.116	3.717	2.49		Sand	62.1		1.28	99.07	0.78	77.12	148.11	0.87	0.649	0.903	0.277	0.411	0.63	0.02	0.04
41.500	78.200	2.747	5071.5	3929.6	52.480	3.630	2.50		Sand	62.7		1.28	94.61	0.77	73.20	143.25	0.87	0.649	0.907	0.250	0.361	0.56	0.02	0.04
41.670	79.490	2.529	5092.8	3940.2	53.295	3.287	2.46		Sand	59.9		1.28	96.17	0.77	74.37	143.89	0.87	0.649	0.906	0.253	0.367	0.56	0.02	0.04
41.830	81.560	2.274	5112.8	3950.2	54.652	2.878	2.41		Sand	56.0		1.28	98.67	0.77	76.32	145.05	0.86	0.650	0.904	0.259	0.378	0.58	0.02	0.04
41.990	84.240	2.025	5132.8	3960.3	56.428	2.479	2.36		Sand	51.6		1.28	101.92	0.77	78.87	146.51	0.86	0.650	0.903	0.267	0.393	0.60	0.02	0.04
42.160	87.110	1.817	5154.0	3970.9	58.325	2.150	2.31		Sand	47.4		1.28	105.39	0.77	81.58	147.89	0.86	0.650	0.901	0.275	0.408	0.63	0.02	0.04
42.320	88.510	1.883	5174.0	3980.9	59.209	2.192	2.31		Sand	47.5		1.28	107.08	0.77	82.96	149.66	0.86	0.650	0.899	0.286	0.429	0.66	0.02	0.04
42.490	89.020	1.946	5195.3	3991.6	59.474	2.251	2.31		Sand	48.0		1.28	107.70	0.77	83.43	150.52	0.86	0.650	0.898	0.292	0.439	0.68	0.02	0.04
42.650	89.490	1.840	5215.3	4001.6	59.716	2.118	2.29		Sand	46.5		1.28	108.27	0.77	83.74	150.08	0.86	0.650	0.898	0.289	0.433	0.67	0.02	0.04
42.810	89.640	1.968	5235.3	4011.6	59.737	2.261	2.31		Sand	48.0		1.28	108.45	0.77	83.89	151.10	0.86	0.650	0.897	0.296	0.446	0.69	0.02	0.04
42.980	86.890	1.875	5256.5	4022.2	57.766	2.225	2.32		Sand	48.5	84.73	1.28	108.45	0.77	83.82	151.26	0.86	0.650	0.896	0.297	0.448	0.69	0.02	0.04
43.140	54.870	1.385	5276.5	4032.2	25.907	2.652	2.63		Clay	73.6			51.86	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	35.600	0.999	5297.8	4042.9	16.301	3.032	2.83		Clay	89.2			33.65	0.84	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	27.420	0.635	5317.8	4052.9	12.219	2.565	2.89		Clay	93.9			25.92	0.84	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	28.010	0.471	5339.0	4063.5	12.472	1.857	2.80		Clay	87.2			26.47	0.84	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	30.420	0.455	5359.0	4073.6	13.620	1.640	2.74		Clay	82.3			28.75	0.84	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	27.960	0.772	5379.0	4083.6	12.377	3.053	2.93		Clay	97.0			26.43	0.84	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	26.920	1.307	5400.3	4094.2	11.831	5.395	3.09		Clay	100.0			25.44	0.84	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	47.710	1.835	5420.3	4104.2	21.929	4.078	2.81		Clay	87.6			45.09	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	71.930	1.765	5441.5	4114.9	46.909	2.550	2.43	plastic	Clay	57.0			67.99	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	64.620	2.152	5461.5	4124.9	30.008	3.477	2.66		Clay	75.8			61.08	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.780	48.520	1.821	5481.5	4134.9	22.143	3.977	2.80		Clay	86.8			45.86	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	60.300	1.986	5502.8	4145.6	27.764	3.451	2.68		Clay	77.6			56.99	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	111.930	1.991	5522.8	4155.6	73.630	1.824	2.18		Sand	37.6			105.79	0.75	79.56	138.78	0.85	0.651	0.902	0.229	0.320	0.49	0.02	0.05
45.280	84.360	1.627	5544.0	4166.2	54.958	1.994	2.30		Sand	47.2			79.74	0.73	58.41	118.60	0.85	0.651	0.917	0.168	0.212	0.33	0.03	0.05
45.440	54.100	1.697	5564.0	4176.2	24.576	3.307	2.71		Clay	79.9			51.13	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	77.510	1.364	5584.0	4186.2	50.209	1.825	2.31		Sand	47.6			73.26	0.72	53.07	112.06	0.85	0.651	0.920	0.156	0.191	0.29	0.03	0.06
45.770	55.580	1.301	5605.3	4196.9	25.151	2.465	2.62		Clay	72.8			52.53	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	37.880	0.893	5625.3	4206.9	16.671	2.545	2.77		Clay	84.9			35.80	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	32.200	0.675	5646.5	4217.5	13.931	2.297	2.81		Clay	88.0			30.43	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	26.980	0.642	5666.5	4227.6	11.424	2.657	2.92		Clay	96.6			25.50	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	24.300	0.560	5686.5	4237.6	10.127	2.610	2.96		Clay	99.7			22.97	0.83	n.a.	n.a.	0.85	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	23.710	0.555	5707.8	4248.2	9.819	2.662	2.97		Clay	100.0			22.41	0.83	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	24.080	0.550	5727.8	4258.2	9.965	2.593	2.96		Clay	100.0			22.76	0.83	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	24.000	0.523	5749.0	4268.9	9.897	2.476	2.95		Clay	99.3			22.68	0.83	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	23.830	0.513	5769.0	4278.9	9.790	2.450	2.96		Clay	99.5			22.52	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	23.760	0.491	5789.0	4288.9	9.730	2.355	2.95		Clay	98.9			22.46	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	24.170	0.529	5810.3	4299.5	9.892	2.489	2.96		Clay	99.5			22.84	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	25.270	0.682	5830.3	4309.6	10.375	3.052	2.99		Clay	100.0			23.88	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	26.820	0.865	5851.5	4320.2	11.062	3.619	3.01		Clay	100.0			25.35	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	29.110	1.068	5871.5	4330.2	12.089	4.078	3.01		Clay	100.0			27.51	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	31.380	1.363	5891.5	4340.2	13.103	4.794	3.02		Clay	100.0			29.66	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	33.750	1.743	5912.8	4350.9	14.155	5.659	3.04		Clay	100.0			31.90	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	37.850	2.000	5932.8	4360.9	15.998	5.734	3.01		Clay	100.0			35.78	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	41.560	2.309	5954.0	4371.5	17.652	5.984	2.99		Clay	100.0			39.28	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	43.420	2.616	5974.0	4381.6	18.456	6.469	3.00		Clay	100.0			41.04	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	46.600	2.771	5994.0	4391.6	19.858	6.354	2.97		Clay	100.0			44.05	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	50.200	2.880	6015.3	4402.2	21.440	6.102	2.93		Clay	97.6			47.45	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	51.840	2.989	6035.3	4412.2	22.130	6.122	2.92		Clay	96.8			49.00	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	53.350	3.219	6056.5	4422.9	22.755	6.397	2.93		Clay	97.2			50.43	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	56.050	3.747	6076.5	4432.9	23.917	7.068	2.94		Clay	98.4			52.98	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	66.040	3.100	6096.5	4442.9	28.356	4.922	2.78		Clay	85.4			62.42	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	58.390	2.528	6117.8	4453.5	24.848	4.569	2.80		Clay	87.0			55.19	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	46.670	2.083	6137.8	4463.6	19.536	4.778	2.89		Clay	94.3			44.11	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	43.710	2.484	6159.0	4474.2	18.162	6.114	2.99		Clay	100.0			41.31	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	54.050	2.502	6179.0	4484.2	22.729	4.909	2.85		Clay	90.9			51.09	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	56.350	2.201	6199.0	4494.2	23.697	4.134	2.79		Clay	85.9			53.26	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	37.810	1.385	6220.3	4504.9	15.405	3.991	2.92		Clay	96.6			35.74	0.82	n.a.	n.a.	0.83	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	32.940	0.611	6240.3	4514.9	13.210	2.049	2.80		Clay	87.3			31.13	0.82	n.a.	n.a.	0.83	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	30.330	0.421	6261.5	4525.5	12.020	1.547	2.77		Clay	85.0			28.67	0.82	n.a.	n.a.	0.83	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.180	27.790	0.534	6281.5	4535.5	10.869	2.165	2.89		Clay	94.1			26.27	0.82	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.350	29.750	0.889	6302.8	4546.2	11.702	3.340	2.97		Clay	100.0			28.12	0.82	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.510	38.950	1.268	6322.8	4556.2	15.710	3.542	2.88		Clay	93.5			36.81	0.82	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.670	43.230	1.353	6342.8	4566.2	17.546	3.378	2.83		Clay	89.4			40.86	0.82	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.840	44.570	1.538	6364.0	4576.9	18.086	3.717	2.85		Clay	90.7			42.13	0.82	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.000	51.260	2.858	6384.0	4586.9	20.959	5.945	2.93		Clay	97.5			48.45	0.82	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.170	65.750	3.320	6405.3	4597.5	27.209	5.307	2.82		Clay	88.2			62.15	0.81	n.a.	n.a.	0.82	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.330	96.450	4.109	6425.3	4607.5	40.472	4.407	2.64		Clay	73.8			91.16	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.490	75.640	3.103	6445.3	4617.6	31.366	4.284	2.71		Clay	79.5			71.49	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.660	62.380	2.474	6466.5	4628.2	25.559	4.183	2.76		Clay	84.2			58.96	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.820	51.770	1.746	6486.5	4638.2	20.925	3.598	2.79		Clay	86.1			48.93	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.990	47.930	1.567	6507.8	4648.9	19.220	3.507	2.81		Clay	87.8			45.30	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.150	42.010	1.959	6527.8	4658.9	16.633	5.055	2.96		Clay	99.8			39.71	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.310	43.950	2.244	6547.8	4668.9	17.424	5.516	2.97		Clay	100.0			41.54	0.81	n.a.	n.a.	0.82	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.480	51.460	3.721	6569.0	4679.5	20.590	7.724	3.02		Clay	100.0			48.64	0.81	n.a.	n.a.	0.81	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.640	75.880	4.611	6589.0	4689.5	30.956	6.353	2.83		Clay	89.4			71.72	0.81	n.a.	n.a.	0.81	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.810	105.430	4.981	6610.3	4700.2	43.456	4.877	2.65		Clay	74.6			99.65	0.81	n.a.	n.a.	0.81	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.970	104.790	5.721	6630.3	4710.2	43.087	5.638	2.69		Clay	78.5			99.05	0.81	n.a.	n.a.	0.81	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.130	136.470	5.108	6650.3	4720.2	84.259	3.837	2.37		Sand	53.0			128.99	0.74	95.51	168.23	0.81	0.648	0.849	0.475	0.769	1.19	0.01	0.00
54.300	114.710	4.564	6671.5	4730.9	70.402	4.098	2.45		Sand	58.8			108.42	0.72	78.22	148.47	0.81	0.648	0.873	0.279	0.402	0.62	0.02	0.00
54.460	116.980	4.431	6691.5	4740.9	71.755	3.899	2.43		Sand	57.1			110.57	0.72	79.86	149.96	0.81	0.648	0.871	0.288	0.419	0.65	0.02	0.00
54.630	134.230	2.587	6712.8	4751.5	82.548	1.976	2.17		Sand	36.6			126.87	0.72	91.94	153.20	0.81	0.648	0.867	0.311	0.460	0.71	0.02	0.00
54.790	135.970	1.961	6732.8	4761.5	83.551	1.479	2.08		Sand	29.4			128.52	0.72	92.07	145.25	0.81	0.647	0.876	0.260	0.368	0.57	0.02	0.00
54.950	126.540	1.786	6752.8	4771.6	77.522	1.450	2.10		Sand	30.9			119.60	0.71	84.80	138.44	0.81	0.647	0.882	0.228	0.310	0.48	0.02	0.00
55.120	123.560	1.981	6774.0	4782.2	75.555	1.649	2.14		Sand	34.6			116.79	0.71	82.93	140.16	0.81	0.647	0.880	0.235	0.323	0.50	0.02	0.00
55.280	135.600	1.803	6794.0	4792.2	83.032	1.364	2.06		Sand	27.7			128.17	0.71	91.13	141.69	0.81	0.647	0.878	0.242	0.335	0.52	0.02	0.00
55.450	133.990	1.906	6815.3	4802.9	81.923	1.460	2.08		Sand	29.6			126.64	0.71	90.16	143.24	0.81	0.647	0.876	0.250	0.349	0.54	0.02	0.00
55.610	141.810	1.301	6835.3	4812.9	86.733	0.940	1.94		Sand	18.3			134.04	0.69	92.76	124.59	0.81	0.647	0.894	0.182	0.231	0.36	0.03	0.00

CPT No.	2	PGA (A_{max})	0.78	Total Settlement:	0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
55.770	139.310	2.438	6855.3	4822.9	85.071	1.794	2.13		Sand	33.5			131.67	0.72	94.93	153.75	0.80	0.646	0.864	0.315	0.467	0.72	0.02	0.00
55.940	124.910	3.186	6876.5	4833.5	75.965	2.623	2.28		Sand	45.6			118.06	0.72	84.71	150.82	0.80	0.646	0.867	0.294	0.428	0.66	0.02	0.00
56.100	118.340	3.434	6896.5	4843.5	71.776	2.989	2.34		Sand	50.3			111.85	0.71	79.77	147.03	0.80	0.646	0.871	0.270	0.385	0.60	0.02	0.00
56.270	65.330	2.658	6917.8	4854.2	25.492	4.295	2.77		Clay	84.9			61.75	0.80	n.a.	n.a.	0.80	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.430	74.170	3.728	6937.8	4864.2	29.070	5.273	2.79		Clay	86.4			70.10	0.80	n.a.	n.a.	0.80	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.590	242.600	4.972	6957.8	4874.2	148.915	2.079	2.01		Sand	23.9			229.30	0.79	181.74	241.04	0.80	0.646	0.750	47.945	79.074	122.49	0.00	0.00
56.760	217.980	5.290	6979.0	4884.9	133.430	2.466	2.10		Sand	30.9			206.03	0.78	161.63	231.22	0.80	0.645	0.749	18.320	30.188	46.78	0.00	0.00
56.920	185.350	5.070	6999.0	4894.9	113.010	2.788	2.19		Sand	37.9			175.19	0.76	133.77	206.00	0.80	0.645	0.763	2.696	4.527	7.02	0.00	0.00
57.090	153.900	4.947	7020.3	4905.5	93.357	3.289	2.30		Sand	46.6			145.46	0.74	107.78	180.40	0.80	0.645	0.821	0.738	1.270	1.97	0.00	0.00
57.250	159.840	3.635	7040.3	4915.5	96.940	2.325	2.17		Sand	36.8			151.08	0.74	111.44	177.31	0.80	0.645	0.826	0.654	1.105	1.71	0.00	0.00
57.410	158.750	3.540	7060.3	4925.5	96.160	2.280	2.17		Sand	36.5			150.05	0.74	110.38	175.71	0.80	0.645	0.829	0.616	1.030	1.60	0.00	0.00
57.580	171.760	3.044	7081.5	4936.2	104.100	1.809	2.07		Sand	28.8			162.34	0.74	119.55	177.19	0.80	0.644	0.826	0.651	1.098	1.70	0.00	0.00
57.740	219.880	2.974	7101.5	4946.2	133.737	1.375	1.91		Sand	15.8			207.83	0.74	154.42	185.14	0.80	0.644	0.811	0.901	1.590	2.47	0.00	0.00
57.910	241.100	3.721	7122.8	4956.8	146.691	1.567	1.92		Sand	16.9			227.88	0.76	174.22	210.78	0.80	0.644	0.745	3.671	6.016	9.34	0.00	0.00
58.070	225.990	3.500	7142.8	4966.9	137.215	1.574	1.95		Sand	18.6			213.60	0.76	161.75	202.75	0.79	0.644	0.768	2.215	3.744	5.81	0.00	0.00
58.230	203.760	3.328	7162.8	4976.9	123.371	1.663	1.99		Sand	22.5			192.59	0.75	144.29	194.02	0.79	0.644	0.790	1.371	2.382	3.70	0.00	0.00
58.400	158.850	3.244	7184.0	4987.5	95.584	2.089	2.14		Sand	34.4			150.14	0.73	109.50	172.48	0.79	0.643	0.832	0.548	0.897	1.39	0.00	0.00
58.560	141.650	3.768	7204.0	4997.5	84.903	2.729	2.26		Sand	44.0			133.88	0.72	96.59	164.69	0.79	0.643	0.843	0.425	0.666	1.03	0.01	0.00
58.730	126.020	2.257	7225.3	5008.2	75.204	1.844	2.18		Sand	37.3			119.11	0.70	83.33	143.20	0.79	0.643	0.870	0.249	0.346	0.54	0.02	0.00
58.890	97.900	1.919	7245.3	5018.2	57.864	2.036	2.29		Sand	46.4			92.53	0.68	62.75	123.63	0.79	0.643	0.889	0.180	0.226	0.35	0.03	0.00
59.060	109.440	2.035	7266.5	5028.8	64.871	1.923	2.24		Sand	42.1			103.44	0.69	70.96	131.43	0.79	0.643	0.882	0.202	0.263	0.41	0.02	0.00
59.220	191.990	2.347	7286.5	5038.9	115.362	1.246	1.93		Sand	17.1			181.47	0.72	130.19	162.88	0.79	0.642	0.844	0.403	0.623	0.97	0.01	0.00
59.380	154.480	3.044	7306.5	5048.9	92.290	2.018	2.14		Sand	34.4			146.01	0.72	105.30	167.34	0.79	0.642	0.837	0.462	0.732	1.14	0.01	0.00
59.550	163.700	2.226	7327.8	5059.5	97.822	1.391	2.01		Sand	24.0			154.73	0.71	110.00	157.33	0.79	0.642	0.851	0.345	0.517	0.81	0.01	0.00
59.710	183.570	2.828	7347.8	5069.5	109.853	1.572	2.01		Sand	24.0			173.51	0.73	126.44	176.57	0.79	0.642	0.821	0.636	1.062	1.65	0.00	0.00
59.880	244.100	4.365	7369.0	5080.2	146.655	1.816	1.97		Sand	20.7			230.72	0.77	178.38	228.23	0.79	0.642	0.737	14.030	22.756	35.47	0.00	0.00
60.040	243.090	4.386	7389.0	5090.2	145.889	1.832	1.98		Sand	21.1			229.76	0.77	177.57	228.37	0.79	0.641	0.737	14.208	23.026	35.90	0.00	0.00
60.200	123.180	3.333	7409.0	5100.2	72.737	2.789	2.32		Sand	48.2			116.43	0.70	81.43	148.12	0.79	0.641	0.862	0.277	0.393	0.61	0.02	0.00
60.370	62.000	2.066	7430.3	5110.8	22.808	3.544	2.76		Clay	83.4			58.60	0.79	n.a.	n.a.	0.79	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.530	49.910	1.365	7450.3	5120.9	18.038	2.955	2.79		Clay	85.8			47.17	0.79	n.a.	n.a.	0.78	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.700	49.980	1.251	7471.5	5131.5	18.024	2.705	2.76		Clay	84.0			47.24	0.79	n.a.	n.a.	0.78	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.860	50.510	1.231	7491.5	5141.5	18.191	2.632	2.75		Clay	83.2			47.74	0.79	n.a.	n.a.	0.78	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.020	50.790	1.413	7511.5	5151.5	18.260	3.005	2.79		Clay	85.9			48.01	0.79	n.a.	n.a.	0.78	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.190	53.180	1.781	7532.8	5162.2	19.145	3.603	2.82		Clay	88.5			50.26	0.79	n.a.	n.a.	0.78	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.350	57.060	2.103	7552.8	5172.2	20.604	3.947	2.82		Clay	88.5			53.93	0.79	n.a.	n.a.	0.78	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.520	59.720	2.172	7574.0	5182.8	21.584	3.883	2.80		Clay	86.9			56.45	0.79	n.a.	n.a.	0.78	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.680	61.500	2.279	7594.0	5192.8	22.224	3.950	2.79		Clay	86.5			58.13	0.79	n.a.	n.a.	0.78	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.840	61.090	2.278	7614.0	5202.9	22.020	3.977	2.80		Clay	86.9			57.74	0.79	n.a.	n.a.	0.78	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.010	59.900	2.377	7635.3	5213.5	21.514	4.239	2.82		Clay	89.0			56.62	0.79	n.a.	n.a.	0.78	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.170	55.330	2.181	7655.3	5223.5	19.719	4.236	2.85		Clay	91.3			52.30	0.79	n.a.	n.a.	0.78	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.340	51.020	1.849	7676.5	5234.2	18.028	3.918	2.86		Clay	91.9			48.22	0.79	n.a.	n.a.	0.78	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.500	46.870	1.777	7696.5	5244.2	16.407	4.130	2.91		Clay	95.6			44.30	0.79	n.a.	n.a.	0.78	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.660	52.230	1.892	7716.5	5254.2	18.413	3.912	2.85		Clay	91.3			49.37	0.79	n.a.	n.a.	0.78	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.830	52.620	1.593	7737.8	5264.8	18.520	3.267	2.80		Clay	87.3			49.74	0.79	n.a.	n.a.	0.77	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.990	46.970	1.301	7757.8	5274.9	16.338	3.019	2.83		Clay	89.0			44.40	0.79	n.a.	n.a.	0.77	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.160	39.660	1.026	7779.0	5285.5	13.535	2.868	2.88		Clay	93.2			37.49	0.79	n.a.	n.a.	0.77	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.320	36.690	0.867	7799.0	5295.5	12.384	2.643	2.89		Clay	94.1			34.68	0.79	n.a.	n.a.	0.77	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.480	35.490	0.831	7819.0	5305.5	11.905	2.632	2.90		Clay	95.2			33.54	0.78	n.a.	n.a.	0.77	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.650	35.110	1.205	7840.3	5316.2	11.734	3.864	3.00		Clay	100.0			33.19	0.78	n.a.	n.a.	0.77	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.810	36.630	2.313	7860.3	5326.2	12.279	7.073	3.15		Clay	100.0			34.62	0.78	n.a.	n.a.	0.77	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.980	56.000	3.173	7881.5	5336.8	19.509	6.094	2.96		Clay	99.9			52.93	0.78	n.a.	n.a.	0.77	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.140	80.940	2.772	7901.5	5346.8	28.798	3.601	2.68		Clay	77.6			76.50	0.78	n.a.	n.a.	0.77	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.300	48.690	3.136	7921.5	5356.9	16.700	7.012	3.05		Clay	100.0			46.02	0.78	n.a.	n.a.	0.77	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.470	47.220	3.926	7942.8	5367.5	16.115	9.077	3.14		Clay	100.0			44.63	0.78	n.a.	n.a.	0.77	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.630	131.380	4.548	7962.8	5377.5	75.535	3.570	2.38		Sand	53.6			124.18	0.69	86.10	156.54	0.77	0.635	0.842	0.338	0.498	0.78	0.01	0.00
64.800	118.020	3.747	7984.0	5388.2	67.540	3.286	2.39		Sand	54.1			111.55	0.68	75.76	143.61	0.77	0.634	0.859	0.251	0.345	0.54	0.02	0.00
64.960	80.060	2.635	8004.0	5398.2	28.179	3.464	2.68		Clay	77.3			75.67	0.78	n.a.	n.a.	0.77	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.120	51.120	1.970	8024.0	5408.2	17.421	4.182	2.89		Clay	94.3			48.32	0.78	n.a.	n.a.	0.77	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.290	44.860	1.790	8045.3	5418.8	15.072	4.383	2.95		Clay	99.2			42.40	0.78	n.a.	n.a.	0.76	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.450	42.980	1.900	8065.3	5428.9	14.348	4.879	3.00		Clay	100.0			40.62	0.78	n.a.	n.a.	0.76	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.620	41.520	1.661	8086.5	5439.5	13.780	4.433	2.99		Clay	100.0			39.24	0.78	n.a.	n.a.	0.76	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.780	39.660	1.579	8106.5	5449.5	13.068	4.435	3.00		Clay	100.0			37.49	0.78	n.a.	n.a.	0.76	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.940	40.070	1.473	8126.5	5459.5	13.190	4.091	2.98		Clay	100.0			37.87	0.78	n.a.	n.a.	0.76	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.110	40.090	1.398	8147.8	5470.2	13.168	3.882	2.97		Clay	100.0			37.89	0.78	n.a.	n.a.	0.76	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.270	36.690	1.203	8167.8	5480.2	11.900	3.689	2.99		Clay	100.0			34.68	0.78	n.a.	n.a.	0.76	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.440	33.500	1.017	8189.0	5490.8	10.711	3.458	3.01		Clay	100.0			31.66	0.78	n.a.	n.a.	0.76	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.600	34.310	1.124	8209.0	5500.8	10.982	3.722	3.02		Clay	100.0			32.43	0.78	n.a.	n.a.	0.76	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
66.770	36.100	1.202	8230.3	5511.5	11.607	3.757	3.00		Clay	100.0			34.12	0.78	n.a.	n.a.	0.76	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.930	36.480	1.240	8250.3	5521.5	11.720	3.831	3.00		Clay	100.0			34.48	0.78	n.a.	n.a.	0.76	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.090	35.280	1.136	8270.3	5531.5	11.261	3.647	3.00		Clay	100.0			33.35	0.78	n.a.	n.a.	0.76	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.260	33.050	1.120	8291.5	5542.2	10.431	3.876	3.05		Clay	100.0			31.24	0.78	n.a.	n.a.	0.76	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.420	32.090	1.006	8311.5	5552.2	10.062	3.602	3.04		Clay	100.0			30.33	0.78	n.a.	n.a.	0.76	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.590	31.530	0.850	8332.8	5562.8	9.838	3.107	3.01		Clay	100.0			29.80	0.77	n.a.	n.a.	0.76	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.750	29.240	0.739	8352.8	5572.8	8.995	2.948	3.03		Clay	100.0			27.64	0.77	n.a.	n.a.	0.75	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.910	28.540	0.601	8372.8	5582.8	8.724	2.466	3.00		Clay	100.0			26.98	0.77	n.a.	n.a.	0.75	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.080	27.230	0.548	8394.0	5593.5	8.236	2.381	3.01		Clay	100.0			25.74	0.77	n.a.	n.a.	0.75	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.240	26.430	0.515	8414.0	5603.5	7.932	2.318	3.02		Clay	100.0			24.98	0.77	n.a.	n.a.	0.75	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.410	28.120	0.439	8435.3	5614.1	8.515	1.835	2.94		Clay	98.3			26.58	0.77	n.a.	n.a.	0.75	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.570	27.720	0.359	8455.3	5624.2	8.354	1.530	2.91		Clay	95.8			26.20	0.77	n.a.	n.a.	0.75	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.730	25.640	0.439	8475.3	5634.2	7.597	2.050	3.01		Clay	100.0			24.23	0.77	n.a.	n.a.	0.75	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.900	26.970	0.541	8496.5	5644.8	8.050	2.380	3.02		Clay	100.0			25.49	0.77	n.a.	n.a.	0.75	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.060	34.620	0.625	8516.5	5654.8	10.738	2.058	2.88		Clay	93.5			32.72	0.77	n.a.	n.a.	0.75	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.230	36.650	0.937	8537.8	5665.5	11.431	2.893	2.94		Clay	98.2			34.64	0.77	n.a.	n.a.	0.75	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.390	39.070	1.466	8557.8	5675.5	12.260	4.214	3.01		Clay	100.0			36.93	0.77	n.a.	n.a.	0.75	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.550	45.460	1.426	8577.8	5685.5	14.483	3.463	2.90		Clay	95.2			42.97	0.77	n.a.	n.a.	0.75	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.720	54.800	1.100	8599.0	5696.2	17.731	2.179	2.71		Clay	80.1			51.80	0.77	n.a.	n.a.	0.75	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.880	36.780	0.997	8619.0	5706.2	11.381	3.069	2.96		Clay	99.5			34.76	0.77	n.a.	n.a.	0.75	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.050	30.720	0.857	8640.3	5716.8	9.236	3.244	3.04		Clay	100.0			29.04	0.77	n.a.	n.a.	0.75	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.210	28.420	0.450	8660.3	5726.8	8.413	1.867	2.95		Clay	99.0			26.86	0.77	n.a.	n.a.	0.75	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.370	23.650	0.304	8680.3	5736.8	6.732	1.573	3.00		Clay	100.0			22.35	0.77	n.a.	n.a.	0.74	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.540	22.320	0.244	8701.5	5747.5	6.253	1.360	3.00		Clay	100.0			21.10	0.77	n.a.	n.a.	0.74	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.700	22.010	0.239	8721.5	5757.5	6.131	1.353	3.00		Clay	100.0			20.80	0.77	n.a.	n.a.	0.74	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.870	22.550	0.276	8742.8	5768.1	6.303	1.516	3.02		Clay	100.0			21.31	0.77	n.a.	n.a.	0.74	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.030	23.720	0.268	8762.8	5778.2	6.694	1.386	2.97		Clay	100.0			22.42	0.77	n.a.	n.a.	0.74	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.190	23.830	0.332	8782.8	5788.2	6.717	1.706	3.02		Clay	100.0			22.52	0.77	n.a.	n.a.	0.74	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.360	23.970	0.334	8804.0	5798.8	6.749	1.708	3.01		Clay	100.0			22.66	0.77	n.a.	n.a.	0.74	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.520	26.980	0.360	8824.0	5808.8	7.770	1.596	2.95		Clay	98.7			25.50	0.77	n.a.	n.a.	0.74	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.690	26.420	0.361	8845.3	5819.5	7.560	1.642	2.96		Clay	100.0			24.97	0.77	n.a.	n.a.	0.74	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.850	26.520	0.337	8865.3	5829.5	7.578	1.528	2.95		Clay	98.7			25.07	0.77	n.a.	n.a.	0.74	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.010	25.540	0.327	8885.3	5839.5	7.226	1.550	2.97		Clay	100.0			24.14	0.77	n.a.	n.a.	0.74	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.180	25.220	0.416	8906.5	5850.1	7.100	2.004	3.03		Clay	100.0			23.84	0.76	n.a.	n.a.	0.74	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.340	26.430	0.463	8926.5	5860.2	7.497	2.108	3.02		Clay	100.0			24.98	0.76	n.a.	n.a.	0.74	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.510	28.950	0.531	8947.8	5870.8	8.338	2.168	2.99		Clay	100.0			27.36	0.76	n.a.	n.a.	0.74	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.670	30.460	0.743	8967.8	5880.8	8.834	2.859	3.03		Clay	100.0			28.79	0.76	n.a.	n.a.	0.74	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.830	36.060	0.961	8987.8	5890.8	10.717	3.044	2.98		Clay	100.0			34.08	0.76	n.a.	n.a.	0.74	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.000	43.510	1.255	9009.0	5901.5	13.219	3.217	2.92		Clay	96.2			41.12	0.76	n.a.	n.a.	0.73	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.160	44.190	1.372	9029.0	5911.5	13.423	3.457	2.93		Clay	97.3			41.77	0.76	n.a.	n.a.	0.73	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.330	40.150	0.977	9050.3	5922.1	12.031	2.743	2.91		Clay	95.7			37.95	0.76	n.a.	n.a.	0.73	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.490	34.550	0.837	9070.3	5932.2	10.119	2.788	2.97		Clay	100.0			32.66	0.76	n.a.	n.a.	0.73	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.650	30.900	0.901	9090.3	5942.2	8.870	3.420	3.07		Clay	100.0			29.21	0.76	n.a.	n.a.	0.73	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.820	34.490	0.956	9111.5	5952.8	10.057	3.193	3.01		Clay	100.0			32.60	0.76	n.a.	n.a.	0.73	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.980	43.390	0.872	9131.5	5962.8	13.022	2.245	2.83		Clay	89.5			41.01	0.76	n.a.	n.a.	0.73	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.150	45.160	0.829	9152.8	5973.5	13.588	2.042	2.79		Clay	86.5			42.68	0.76	n.a.	n.a.	0.73	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.310	42.550	0.998	9172.8	5983.5	12.689	2.628	2.88		Clay	93.3			40.22	0.76	n.a.	n.a.	0.73	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.480	43.960	1.382	9194.0	5994.1	13.134	3.512	2.94		Clay	98.2			41.55	0.76	n.a.	n.a.	0.73	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.640	50.240	1.737	9214.0	6004.1	15.201	3.807	2.91		Clay	95.9			47.49	0.76	n.a.	n.a.	0.73	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.800	52.530	1.956	9234.0	6014.2	15.933	4.082	2.91		Clay	96.2			49.65	0.76	n.a.	n.a.	0.73	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.970	58.180	2.309	9255.3	6024.8	17.777	4.311	2.89		Clay	94.4			54.99	0.76	n.a.	n.a.	0.73	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.130	66.760	2.617	9275.3	6034.8	20.588	4.213	2.84		Clay	90.0			63.10	0.76	n.a.	n.a.	0.73	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.300	71.000	2.783	9296.5	6045.5	21.951	4.194	2.82		Clay	88.2			67.11	0.76	n.a.	n.a.	0.73	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.460	73.680	2.974	9316.5	6055.5	22.796	4.309	2.81		Clay	87.9			69.64	0.76	n.a.	n.a.	0.73	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.620	73.480	3.291	9336.5	6065.5	22.690	4.783	2.84		Clay	90.4			69.45	0.76	n.a.	n.a.	0.72	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.790	70.310	2.965	9357.8	6076.1	21.603	4.518	2.84		Clay	90.3			66.46	0.76	n.a.	n.a.	0.72	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.950	72.550	2.434	9377.8	6086.2	22.300	3.587	2.77		Clay	84.3			68.57	0.76	n.a.	n.a.	0.72	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.120	56.600	1.635	9399.0	6096.8	17.026	3.150	2.82		Clay	88.8			53.50	0.76	n.a.	n.a.	0.72	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.280	53.710	1.611	9419.0	6106.8	16.048	3.289	2.85		Clay	91.3			50.77	0.76	n.a.	n.a.	0.72	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.440	56.120	1.795	9439.0	6116.8	16.806	3.493	2.85		Clay	91.3			53.04	0.76	n.a.	n.a.	0.72	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.610	62.680	1.772	9460.3	6127.5	18.915	3.058	2.78		Clay	85.3			59.24	0.76	n.a.	n.a.	0.72	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.770	58.670	1.881	9480.3	6137.5	17.574	3.488	2.84		Clay	90.1			55.45	0.76	n.a.	n.a.	0.72	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.940	66.770	2.196	9501.5	6148.1	20.175	3.541	2.80		Clay	86.7			63.11	0.75	n.a.	n.a.	0.72	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.100	56.210	2.153	9521.5	6158.1	16.709	4.185	2.91		Clay	95.4			53.13	0.75	n.a.	n.a.	0.72	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.260	69.290	2.567	9541.5	6168.2	20.920	3.978	2.82		Clay	88.3			65.49	0.75	n.a.	n.a.	0.72	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.430	72.620	3.281	9562.8	6178.8	21.959	4.837	2.86		Clay	91.5			68.64	0.75	n.a.	n.a.	0.72	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.590	90.380	4.650	9582.8	6188.8	27.659	5.432	2.82		Clay	88.4			85.43	0.75	n.a.	n.a.	0.72	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
77.760	96.280	5.079	9604.0	6199.5	29.512	5.552	2.80		Clay	87.3			91.00	0.75	n.a.	n.a.	0.72	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.920	100.260	6.382	9624.0	6209.5	30.743	6.686	2.85		Clay	90.9			94.76	0.75	n.a.	n.a.	0.72	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.080	134.700	6.393	9644.0	6219.5	41.765	4.923	2.66		Clay	75.8			127.32	0.75	n.a.	n.a.	0.72	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.250	139.190	5.193	9665.3	6230.1	74.009	3.865	2.41		Sand	56.1			131.56	0.66	86.28	157.79	0.72	0.611	0.815	0.350	0.503	0.82	0.01	0.00
78.410	82.670	3.227	9685.3	6240.1	24.944	4.146	2.77		Clay	84.6			78.14	0.75	n.a.	n.a.	0.71	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.580	69.850	2.470	9706.5	6250.8	20.796	3.800	2.81		Clay	87.4			66.02	0.75	n.a.	n.a.	0.71	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.740	66.580	2.551	9726.5	6260.8	19.715	4.133	2.85		Clay	90.7			62.93	0.75	n.a.	n.a.	0.71	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.900	66.630	2.489	9746.5	6270.8	19.697	4.030	2.84		Clay	90.2			62.98	0.75	n.a.	n.a.	0.71	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.070	65.260	2.276	9767.8	6281.5	19.224	3.770	2.83		Clay	89.4			61.68	0.75	n.a.	n.a.	0.71	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.230	57.020	1.858	9787.8	6291.5	16.570	3.564	2.86		Clay	92.2			53.89	0.75	n.a.	n.a.	0.71	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.400	52.880	1.670	9809.0	6302.1	15.225	3.482	2.89		Clay	94.0			49.98	0.75	n.a.	n.a.	0.71	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.560	55.520	1.628	9829.0	6312.1	16.034	3.218	2.85		Clay	90.9			52.48	0.75	n.a.	n.a.	0.71	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.720	52.140	1.405	9849.0	6322.2	14.937	2.976	2.85		Clay	91.2			49.28	0.75	n.a.	n.a.	0.71	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.890	47.400	1.444	9870.3	6332.8	13.411	3.400	2.92		Clay	97.0			44.80	0.75	n.a.	n.a.	0.71	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.050	43.590	1.434	9890.3	6342.8	12.185	3.712	2.98		Clay	100.0			41.20	0.75	n.a.	n.a.	0.71	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.220	46.950	1.472	9911.5	6353.5	13.219	3.504	2.94		Clay	98.0			44.38	0.75	n.a.	n.a.	0.71	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.380	45.630	1.407	9931.5	6363.5	12.781	3.461	2.95		Clay	98.7			43.13	0.75	n.a.	n.a.	0.71	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.540	41.550	1.326	9951.5	6373.5	11.477	3.624	3.00		Clay	100.0			39.27	0.75	n.a.	n.a.	0.71	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.710	37.450	1.131	9972.8	6384.1	10.170	3.485	3.03		Clay	100.0			35.40	0.75	n.a.	n.a.	0.71	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.870	35.670	0.988	9992.8	6394.1	9.594	3.219	3.03		Clay	100.0			33.71	0.75	n.a.	n.a.	0.71	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.040	34.470	0.801	10014.0	6404.8	9.200	2.720	3.00		Clay	100.0			32.58	0.75	n.a.	n.a.	0.71	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.200	30.730	0.794	10034.0	6414.8	8.017	3.089	3.08		Clay	100.0			29.05	0.75	n.a.	n.a.	0.71	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.360	28.080	1.337	10054.0	6424.8	7.176	5.799	3.28		Clay	100.0			26.54	0.75	n.a.	n.a.	0.70	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.530	28.920	2.291	10075.3	6435.5	7.422	9.592	3.41		Clay	100.0			27.33	0.75	n.a.	n.a.	0.70	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.690	59.440	2.618	10095.3	6445.5	16.878	4.813	2.94		Clay	98.3			56.18	0.75	n.a.	n.a.	0.70	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.860	69.480	2.357	10116.5	6456.1	19.957	3.658	2.81		Clay	87.7			65.67	0.75	n.a.	n.a.	0.70	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.020	56.290	1.659	10136.5	6466.1	15.843	3.239	2.85		Clay	91.4			53.20	0.74	n.a.	n.a.	0.70	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.190	47.010	1.416	10157.8	6476.8	12.948	3.378	2.94		Clay	97.8			44.43	0.74	n.a.	n.a.	0.70	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.350	47.690	1.472	10177.8	6486.8	13.135	3.454	2.94		Clay	97.9			45.08	0.74	n.a.	n.a.	0.70	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.510	52.430	1.825	10197.8	6496.8	14.571	3.856	2.93		Clay	97.4			49.56	0.74	n.a.	n.a.	0.70	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.680	51.800	2.097	10219.0	6507.4	14.350	4.490	2.98		Clay	100.0			48.96	0.74	n.a.	n.a.	0.70	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.840	55.970	2.133	10239.0	6517.5	15.604	4.194	2.93		Clay	97.3			52.90	0.74	n.a.	n.a.	0.70	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.010	46.150	2.676	10260.3	6528.1	12.567	6.525	3.12		Clay	100.0			43.62	0.74	n.a.	n.a.	0.70	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.170	67.450	3.086	10280.3	6538.1	19.060	4.953	2.91		Clay	95.7			63.75	0.74	n.a.	n.a.	0.70	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.330	102.490	3.059	10300.3	6548.1	29.731	3.142	2.63		Clay	73.7			96.87	0.74	n.a.	n.a.	0.70	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.500	63.470	3.815	10321.5	6558.8	17.781	6.543	3.01		Clay	100.0			59.99	0.74	n.a.	n.a.	0.70	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.660	80.560	4.125	10341.5	6568.8	22.954	5.472	2.88		Clay	93.2			76.14	0.74	n.a.	n.a.	0.70	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.830	170.520	5.035	10362.8	6579.4	88.624	3.045	2.28		Sand	45.8			161.17	0.67	107.37	179.37	0.70	0.601	0.761	0.708	1.121	1.86	0.00	0.00
83.990	223.050	5.166	10382.8	6589.5	116.687	2.371	2.12		Sand	32.9			210.82	0.71	149.06	218.92	0.70	0.601	0.659	6.564	9.520	15.84	0.00	0.00
84.150	194.800	4.466	10402.8	6599.5	101.474	2.356	2.16		Sand	36.0			184.12	0.68	125.34	193.64	0.70	0.601	0.722	1.345	2.136	3.56	0.00	0.00
84.320	106.050	3.536	10424.0	6610.1	30.510	3.506	2.66		Clay	75.5			100.24	0.74	n.a.	n.a.	0.69	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.480	56.320	1.853	10444.0	6620.1	15.437	3.627	2.89		Clay	94.5			53.23	0.74	n.a.	n.a.	0.69	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.650	50.020	1.324	10465.3	6630.8	13.509	2.956	2.89		Clay	93.9			47.28	0.74	n.a.	n.a.	0.69	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.810	50.840	1.644	10485.3	6640.8	13.733	3.606	2.93		Clay	97.6			48.05	0.74	n.a.	n.a.	0.69	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.970	50.670	1.541	10505.3	6650.8	13.658	3.393	2.92		Clay	96.4			47.89	0.74	n.a.	n.a.	0.69	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.140	50.390	1.446	10526.5	6661.4	13.549	3.205	2.91		Clay	95.5			47.63	0.74	n.a.	n.a.	0.69	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.300	41.190	1.087	10546.5	6671.5	10.767	3.028	2.97		Clay	100.0			38.93	0.74	n.a.	n.a.	0.69	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.470	40.330	1.384	10567.8	6682.1	10.490	3.948	3.05		Clay	100.0			38.12	0.74	n.a.	n.a.	0.69	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.630	41.210	1.921	10587.8	6692.1	10.734	5.347	3.12		Clay	100.0			38.95	0.74	n.a.	n.a.	0.69	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.790	45.370	2.540	10607.8	6702.1	11.956	6.341	3.13		Clay	100.0			42.88	0.74	n.a.	n.a.	0.69	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.960	61.840	2.189	10629.0	6712.8	16.841	3.873	2.88		Clay	93.5			58.45	0.74	n.a.	n.a.	0.69	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.120	50.890	1.487	10649.0	6722.8	13.556	3.263	2.91		Clay	95.8			48.10	0.74	n.a.	n.a.	0.69	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.290	38.040	1.075	10670.3	6733.4	9.714	3.285	3.03		Clay	100.0			35.95	0.74	n.a.	n.a.	0.69	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.450	38.470	0.920	10690.3	6743.5	9.824	2.776	2.98		Clay	100.0			36.36	0.74	n.a.	n.a.	0.69	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.610	35.470	0.840	10710.3	6753.5	8.918	2.789	3.02		Clay	100.0			33.53	0.74	n.a.	n.a.	0.69	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.780	30.950	0.689	10731.5	6764.1	7.565	2.693	3.07		Clay	100.0			29.25	0.74	n.a.	n.a.	0.69	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.940	28.230	0.546	10751.5	6774.1	6.748	2.390	3.09		Clay	100.0			26.68	0.74	n.a.	n.a.	0.69	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.110	28.610	0.574	10772.8	6784.8	6.846	2.470	3.09		Clay	100.0			27.04	0.74	n.a.	n.a.	0.69	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.270	31.900	1.175	10792.8	6794.8	7.801	4.433	3.18		Clay	100.0			30.15	0.74	n.a.	n.a.	0.69	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.430	36.670	1.805	10812.8	6804.8	9.189	5.773	3.20		Clay	100.0			34.66	0.73	n.a.	n.a.	0.69	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.600	59.950	1.841	10834.0	6815.4	16.003	3.375	2.86		Clay	92.0			56.66	0.73	n.a.	n.a.	0.68	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.760	55.450	1.832	10854.0	6825.5	14.658	3.662	2.91		Clay	96.1			52.41	0.73	n.a.	n.a.	0.68	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.930	50.700	1.709	10875.3	6836.1	13.242	3.775	2.96		Clay	99.5			47.92	0.73	n.a.	n.a.	0.68	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.090	54.820	2.049	10895.3	6846.1	14.423	4.149	2.95		Clay	99.2			51.81	0.73	n.a.	n.a.	0.68	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.250	68.410	2.154	10915.3	6856.1	18.364	3.422	2.82		Clay	88.5			64.66	0.73	n.a.	n.a.	0.68	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.420	58.670	2.242	10936.5	6866.8	15.495	4.214	2.93		Clay	97.6			55.45	0.73	n.a.	n.a.	0.68	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.580	67.300	2.964	10956.5	6876.8	17.980	4.795	2.92		Clay	96.5			63.61	0.73	n.a.	n.a.	0.68	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.78

Total Settlement:	0.73	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
88.750	71.270	3.797	10977.8	6887.4	19.102	5.773	2.95		Clay	99.2			67.36	0.73	n.a.	n.a.	0.68	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.910	89.800	3.965	10997.8	6897.4	24.444	4.703	2.81		Clay	88.1			84.88	0.73	n.a.	n.a.	0.68	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.070	78.110	3.548	11017.8	6907.5	21.021	4.888	2.87		Clay	92.9			73.83	0.73	n.a.	n.a.	0.68	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.240	81.650	3.493	11039.0	6918.1	22.009	4.588	2.84		Clay	90.2			77.17	0.73	n.a.	n.a.	0.68	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.400	78.410	2.377	11059.0	6928.1	21.039	3.262	2.76		Clay	83.8			74.11	0.73	n.a.	n.a.	0.68	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.570	56.130	1.526	11080.3	6938.8	14.582	3.016	2.86		Clay	92.2			53.05	0.73	n.a.	n.a.	0.68	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.730	43.150	1.372	11100.3	6948.8	10.822	3.650	3.02		Clay	100.0			40.78	0.73	n.a.	n.a.	0.68	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.900	39.860	1.368	11121.5	6959.4	9.857	3.987	3.07		Clay	100.0			37.67	0.73	n.a.	n.a.	0.68	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.060	40.740	1.427	11141.5	6969.4	10.092	4.058	3.07		Clay	100.0			38.51	0.73	n.a.	n.a.	0.68	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.220	41.360	1.260	11161.5	6979.5	10.253	3.522	3.03		Clay	100.0			39.09	0.73	n.a.	n.a.	0.68	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.390	38.720	1.074	11182.8	6990.1	9.479	3.240	3.04		Clay	100.0			36.60	0.73	n.a.	n.a.	0.68	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.550	37.170	1.313	11202.8	7000.1	9.019	4.160	3.12		Clay	100.0			35.13	0.73	n.a.	n.a.	0.68	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.720	39.310	1.882	11224.0	7010.8	9.613	5.584	3.17		Clay	100.0			37.16	0.73	n.a.	n.a.	0.68	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.880	58.090	1.789	11244.0	7020.8	14.947	3.410	2.89		Clay	94.1			54.91	0.73	n.a.	n.a.	0.68	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.040	51.980	1.431	11264.0	7030.8	13.184	3.087	2.91		Clay	95.5			49.13	0.73	n.a.	n.a.	0.67	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.210	41.810	1.165	11285.3	7041.4	10.273	3.220	3.00		Clay	100.0			39.52	0.73	n.a.	n.a.	0.67	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.370	40.710	1.173	11305.3	7051.4	9.943	3.346	3.03		Clay	100.0			38.48	0.73	n.a.	n.a.	0.67	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.540	44.810	1.187	11326.5	7062.1	11.086	3.031	2.96		Clay	100.0			42.35	0.73	n.a.	n.a.	0.67	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.700	45.130	1.279	11346.5	7072.1	11.158	3.240	2.98		Clay	100.0			42.66	0.73	n.a.	n.a.	0.67	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.860	45.460	1.341	11366.5	7082.1	11.233	3.372	2.98		Clay	100.0			42.97	0.73	n.a.	n.a.	0.67	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.030	48.330	1.343	11387.8	7092.8	12.022	3.149	2.94		Clay	98.5			45.68	0.73	n.a.	n.a.	0.67	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.190	49.160	1.392	11407.8	7102.8	12.236	3.202	2.94		Clay	98.3			46.47	0.73	n.a.	n.a.	0.67	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.360	51.560	1.541	11429.0	7113.4	12.890	3.362	2.94		Clay	97.9			48.73	0.73	n.a.	n.a.	0.67	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.520	57.570	1.623	11449.0	7123.4	14.556	3.131	2.87		Clay	93.0	86.74	1.69	146.59	0.73	n.a.	n.a.	0.67	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.680	59.750	1.567	11469.0	7133.4	15.144	2.902	2.84		Clay	90.3	86.74	1.69	146.59	0.73	n.a.	n.a.	0.67	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.850	56.980	1.532	11490.3	7144.1	14.343	2.989	2.87		Clay	92.5	86.74	1.69	146.59	0.73	n.a.	n.a.	0.67	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.010	56.280	1.446	11510.3	7154.1	14.125	2.863	2.86		Clay	92.0	86.74	1.69	146.59	0.73	n.a.	n.a.	0.67	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.180	55.130	1.476	11531.5	7164.7	13.780	2.990	2.88		Clay	93.6		1.69	88.06	0.72	n.a.	n.a.	0.67	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.340	53.890	1.344	11551.5	7174.8	13.412	2.794	2.87		Clay	93.0	86.74	1.69	146.59	0.72	n.a.	n.a.	0.67	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.500	50.110	1.217	11571.5	7184.8	12.338	2.745	2.90		Clay	95.0	86.74	1.69	146.59	0.72	n.a.	n.a.	0.67	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.670	46.240	1.138	11592.8	7195.4	11.241	2.813	2.94		Clay	98.1	86.74	1.69	146.59	0.72	n.a.	n.a.	0.67	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.830	41.810	1.279	11612.8	7205.4	9.993	3.551	3.04		Clay	100.0	86.74	1.69	146.59	0.72	n.a.	n.a.	0.67	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.000	42.560	1.204	11634.0	7216.1	10.184	3.277	3.01		Clay	100.0	86.74	1.69	146.59	0.72	n.a.	n.a.	0.67	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.160	44.970	1.137	11654.0	7226.1	10.834	2.904	2.96		Clay	99.8	86.74	1.69	146.59	0.72	n.a.	n.a.	0.67	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.320	41.970	1.184	11674.0	7236.1	9.987	3.276	3.02		Clay	100.0			39.67	0.72	n.a.	n.a.	0.67	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.490	40.110	1.111	11695.3	7246.8	9.456	3.243	3.04		Clay	100.0			37.91	0.72	n.a.	n.a.	0.67	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.650	38.650	1.151	11715.3	7256.8	9.038	3.508	3.07		Clay	100.0			36.53	0.72	n.a.	n.a.	0.66	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.820	41.310	1.451	11736.5	7267.4	9.754	4.094	3.08		Clay	100.0			39.05	0.72	n.a.	n.a.	0.66	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.980	46.960	1.739	11756.5	7277.4	11.290	4.234	3.04		Clay	100.0			44.39	0.72	n.a.	n.a.	0.66	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.140	61.240	2.422	11776.5	7287.4	15.191	4.376	2.95		Clay	99.0			57.88	0.72	n.a.	n.a.	0.66	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.310	64.810	2.600	11797.8	7298.1	16.144	4.413	2.93		Clay	97.5			61.26	0.72	n.a.	n.a.	0.66	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.470	83.260	2.699	11817.8	7308.1	21.169	3.490	2.78		Clay	85.1			78.70	0.72	n.a.	n.a.	0.66	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.640	63.380	2.280	11839.0	7318.7	15.702	3.967	2.91		Clay	95.9			59.91	0.72	n.a.	n.a.	0.66	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.800	59.360	1.931	11859.0	7328.8	14.581	3.613	2.91		Clay	96.0			56.11	0.72	n.a.	n.a.	0.66	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.960	55.260	1.843	11879.0	7338.8	13.441	3.737	2.95		Clay	98.9			52.23	0.72	n.a.	n.a.	0.66	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.130	56.680	1.924	11900.3	7349.4	13.805	3.792	2.94		Clay	98.5			53.57	0.72	n.a.	n.a.	0.66	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.290	63.580	2.069	11920.3	7359.4	15.659	3.591	2.89		Clay	93.9			60.09	0.72	n.a.	n.a.	0.66	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.460	67.520	2.411	11941.5	7370.1	16.702	3.917	2.89		Clay	94.0			63.82	0.72	n.a.	n.a.	0.66	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.620	67.150	2.374	11961.5	7380.1	16.577	3.881	2.89		Clay	94.0			63.47	0.72	n.a.	n.a.	0.66	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.780	57.850	1.916	11981.5	7390.1	14.035	3.695	2.93		Clay	97.5			54.68	0.72	n.a.	n.a.	0.66	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.950	56.380	1.381	12002.8	7400.8	13.614	2.741	2.86		Clay	92.2			53.29	0.72	n.a.	n.a.	0.66	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.110	51.400	1.206	12022.8	7410.8	12.249	2.656	2.89		Clay	94.5			48.58	0.72	n.a.	n.a.	0.66	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.280	50.540	1.163	12044.0	7421.4	11.997	2.612	2.90		Clay	94.8			47.77	0.72	n.a.	n.a.	0.66	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.440	51.180	1.278	12064.0	7431.4	12.151	2.831	2.91		Clay	96.0			48.37	0.72	n.a.	n.a.	0.66	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.600	51.690	1.406	12084.0	7441.4	12.269	3.079	2.93		Clay	97.5			48.86	0.72	n.a.	n.a.	0.66	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.770	52.850	1.554	12105.3	7452.1	12.560	3.320	2.94		Clay	98.3			49.95	0.72	n.a.	n.a.	0.66	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.930	52.870	1.546	12125.3	7462.1	12.545	3.304	2.94		Clay	98.3			49.97	0.72	n.a.	n.a.	0.66	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.100	51.310	2.587	12146.5	7472.7	12.107	5.719	3.10		Clay	100.0			48.50	0.72	n.a.	n.a.	0.66	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.260	52.500	4.132	12166.5	7482.8	12.406	8.902	3.22		Clay	100.0			49.62	0.72	n.a.	n.a.	0.66	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.430	117.180	5.994	12187.8	7493.4	29.649	5.395	2.79		Clay	86.5			110.76	0.72	n.a.	n.a.	0.66	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.590	276.190	7.474	12207.8	7503.4	135.564	2.767	2.13		Sand	33.7			261.05	0.72	186.93	266.11	0.66	0.579	0.620	1088.906	1485.869	2567.37	0.00	0.00
98.750	276.390	9.430	12227.8	7513.4	135.569	3.489	2.21		Sand	40.0			261.24	0.72	187.00	274.09	0.66	0.579	0.620	3703.581	5050.468	8729.52	0.00	0.00
98.920	287.860	10.777	12249.0	7524.1	141.217	3.825	2.23		Sand	41.7			272.08	0.72	194.69	285.40	0.65	0.578	0.619	26100.402	35567.990	61500.30	0.00	0.00
99.080	237.930	10.174	12269.0	7534.1	116.108	4.389	2.33		Sand	49.6			224.89	0.71	159.33	247.31	0.65	0.578	0.619	95.193	129.639	224.23	0.00	0.00
99.250	193.200	8.916	12290.3	7544.7	93.631	4.767	2.42		Sand	56.5			182.61	0.66	120.41	201.46	0.65	0.578	0.660	2.054	2.983	5.16	0.00	0.00
99.410	139.030	7.481	12310.3	7554.7	35.177	5.630	2.75		Clay	83.3			131.41	0.71	n.a.	n.a.	0.65	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.570	170.170	7.156	12330.3	7564.8	43.360	4.363	2.61		Clay	71.9			160.84	0.71	n.a.	n.a.	0.65	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
99.740	176.520	1.082	12351.5	7575.4	85.094	0.635	1.85		Sand	10.9			166.84	0.53	87.78	97.58	0.65	0.577	0.867	0.134	0.145	0.25	0.03	0.00
99.900	135.750	1.012	12371.5	7585.4	64.680	0.781	2.00		Sand	22.8			128.31	0.54	69.44	108.00	0.65	0.577	0.855	0.149	0.166	0.29	0.03	0.00
100.070	80.650	0.998	12392.8	7596.1	37.142	1.340	2.33		Sand	49.3			76.23	0.52	39.89	96.19	0.65	0.577	0.868	0.133	0.143	0.25	0.03	0.00
100.230	44.650	1.094	12412.8	7606.1	10.109	2.846	2.98		Clay	100.0			42.20	0.71	n.a.	n.a.	0.65	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.390	60.010	1.462	12432.8	7616.1	14.126	2.719	2.85		Clay	91.0			56.72	0.71	n.a.	n.a.	0.65	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.560	61.060	1.749	12454.0	7626.7	14.379	3.189	2.88		Clay	93.7			57.71	0.71	n.a.	n.a.	0.65	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.720	62.360	2.109	12474.0	7636.8	14.698	3.758	2.92		Clay	96.6			58.94	0.71	n.a.	n.a.	0.65	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.890	68.340	2.594	12495.3	7647.4	16.239	4.178	2.91		Clay	96.2			64.59	0.71	n.a.	n.a.	0.65	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.050	72.280	2.778	12515.3	7657.4	17.244	4.208	2.90		Clay	94.7			68.32	0.71	n.a.	n.a.	0.65	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.210	74.090	2.856	12535.3	7667.4	17.691	4.211	2.89		Clay	94.0			70.03	0.71	n.a.	n.a.	0.65	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.380	77.740	2.992	12556.5	7678.1	18.615	4.186	2.87		Clay	92.5			73.48	0.71	n.a.	n.a.	0.65	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.540	80.320	2.918	12576.5	7688.1	19.259	3.942	2.84		Clay	90.3			75.92	0.71	n.a.	n.a.	0.65	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.710	78.580	2.810	12597.8	7698.7	18.777	3.887	2.85		Clay	90.7			74.27	0.71	n.a.	n.a.	0.65	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.870	79.030	2.767	12617.8	7708.7	18.867	3.805	2.84		Clay	90.1			74.70	0.71	n.a.	n.a.	0.65	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.030	79.360	2.954	12637.8	7718.8	18.926	4.044	2.85		Clay	91.3			75.01	0.71	n.a.	n.a.	0.65	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.200	79.960	3.161	12659.0	7729.4	19.052	4.293	2.87		Clay	92.5			75.58	0.71	n.a.	n.a.	0.65	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.360	82.680	3.205	12679.0	7739.4	19.728	4.199	2.85		Clay	91.1			78.15	0.71	n.a.	n.a.	0.65	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.530	86.570	3.319	12700.3	7750.1	20.702	4.138	2.83		Clay	89.5			81.82	0.71	n.a.	n.a.	0.65	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.690	92.820	3.142	12720.3	7760.1	22.283	3.634	2.77		Clay	84.6			87.73	0.71	n.a.	n.a.	0.65	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.850	89.590	3.295	12740.3	7770.1	21.421	3.959	2.81		Clay	87.6			84.68	0.71	n.a.	n.a.	0.65	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.020	79.180	3.312	12761.5	7780.7	18.713	4.550	2.89		Clay	94.3			74.84	0.71	n.a.	n.a.	0.65	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.180	67.750	3.160	12781.5	7790.7	15.752	5.149	2.98		Clay	100.0			64.04	0.71	n.a.	n.a.	0.65	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.350	59.010	2.435	12802.8	7801.4	13.487	4.629	3.01		Clay	100.0			55.78	0.71	n.a.	n.a.	0.65	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.510	61.420	1.964	12822.8	7811.4	14.084	3.569	2.92		Clay	96.7			58.05	0.71	n.a.	n.a.	0.65	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.670	56.010	1.760	12842.8	7821.4	12.680	3.549	2.96		Clay	99.4			52.94	0.71	n.a.	n.a.	0.64	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.840	46.080	1.593	12864.0	7832.1	10.125	4.017	3.07		Clay	100.0			43.55	0.71	n.a.	n.a.	0.64	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.000	46.590	1.656	12884.0	7842.1	10.239	4.124	3.07		Clay	100.0			44.04	0.71	n.a.	n.a.	0.64	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.170	55.940	2.987	12905.3	7852.7	12.604	6.035	3.10		Clay	100.0			52.87	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.330	77.240	4.461	12925.3	7862.7	18.003	6.303	3.00		Clay	100.0			73.01	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.490	92.870	6.262	12945.3	7872.8	21.948	7.248	2.98		Clay	100.0			87.78	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.660	129.580	6.912	12966.5	7883.4	31.229	5.615	2.79		Clay	86.2			122.48	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.820	149.630	7.304	12986.5	7893.4	36.267	5.103	2.71		Clay	80.1			141.43	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.990	128.650	7.368	13007.8	7904.1	30.907	6.032	2.81		Clay	88.2			121.60	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.150	135.840	7.136	13027.8	7914.1	32.683	5.518	2.77		Clay	84.6			128.39	0.71	n.a.	n.a.	0.64	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.320	136.580	5.656	13049.0	7924.7	32.823	4.349	2.70		Clay	78.7			129.09	0.71	n.a.	n.a.	0.64	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.480	80.980	4.773	13069.0	7934.7	18.764	6.412	2.99		Clay	100.0			76.54	0.71	n.a.	n.a.	0.64	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.640	73.460	3.624	13089.0	7944.7	16.845	5.416	2.97		Clay	100.0			69.43	0.71	n.a.	n.a.	0.64	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.810	87.040	3.766	13110.3	7955.4	20.234	4.680	2.87		Clay	92.9			82.27	0.71	n.a.	n.a.	0.64	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.970	88.300	4.302	13130.3	7965.4	20.522	5.263	2.90		Clay	95.2			83.46	0.70	n.a.	n.a.	0.64	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.140	80.260	3.819	13151.5	7976.0	18.476	5.182	2.93		Clay	97.6			75.86	0.70	n.a.	n.a.	0.64	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.300	69.420	3.375	13171.5	7986.1	15.736	5.372	2.99		Clay	100.0			65.61	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.460	59.140	2.955	13191.5	7996.1	13.143	5.624	3.07		Clay	100.0			55.90	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.630	55.320	3.676	13212.8	8006.7	12.168	7.545	3.18		Clay	100.0			52.29	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.790	65.760	4.243	13232.8	8016.7	14.755	7.174	3.10		Clay	100.0			62.16	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.960	72.850	3.081	13254.0	8027.4	16.499	4.653	2.94		Clay	98.1			68.86	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.120	54.010	3.107	13274.0	8037.4	11.788	6.558	3.15		Clay	100.0			51.05	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.280	54.730	4.597	13294.0	8047.4	11.950	9.561	3.25		Clay	100.0			51.73	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.450	112.920	6.480	13315.3	8058.1	26.374	6.098	2.87		Clay	92.3			106.73	0.70	n.a.	n.a.	0.64	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.610	190.570	8.098	13335.3	8068.1	89.017	4.404	2.41		Sand	55.4			180.12	0.64	114.54	193.53	0.64	0.569	0.673	1.337	1.981	3.48	0.00	0.00
107.780	181.950	9.356	13356.5	8078.7	43.391	5.338	2.67		Clay	76.9			171.98	0.70	n.a.	n.a.	0.64	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.940	216.880	8.660	13376.5	8088.7	101.613	4.120	2.35		Sand	50.7			204.99	0.66	136.06	218.53	0.64	0.569	0.598	6.373	8.381	14.73	0.00	0.00
108.100	158.810	8.971	13396.5	8098.7	37.564	5.898	2.75		Clay	82.9			150.10	0.70	n.a.	n.a.	0.64	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.270	147.380	9.760	13417.8	8109.4	34.693	6.938	2.82		Clay	88.9			139.30	0.70	n.a.	n.a.	0.64	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.430	205.390	9.547	13437.8	8119.4	48.937	4.806	2.61		Clay	71.4			194.13	0.70	n.a.	n.a.	0.64	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.600	320.830	9.944	13459.0	8130.0	151.459	3.166	2.15		Sand	35.0			303.24	0.70	212.60	299.41	0.64	0.569	0.596	#########	########	991652.32	0.00	0.00
108.760	405.970	7.392	13479.0	8140.1	192.390	1.852	1.90		Sand	15.2			383.71	0.70	268.93	307.14	0.64	0.569	0.596	#########	########	5673456.68	0.00	0.00
108.920	298.200	5.745	13499.0	8150.1	140.364	1.971	2.01		Sand	23.9			281.85	0.70	197.48	259.21	0.64	0.568	0.595	415.254	543.978	957.05	0.00	0.00
109.090	284.430	4.680	13520.3	8160.7	133.640	1.685	1.97		Sand	21.0			268.84	0.68	182.41	233.59	0.64	0.568	0.595	22.828	29.885	52.59	0.00	0.00
109.250	324.880	6.063	13540.3	8170.7	153.010	1.906	1.98		Sand	21.0			307.07	0.70	215.00	271.04	0.64	0.568	0.595	2287.752	2993.112	5268.12	0.00	0.00
109.420	311.110	7.482	13561.5	8181.4	146.286	2.459	2.07		Sand	28.8			294.05	0.70	205.82	280.56	0.64	0.568	0.594	10951.419	14318.550	25207.13	0.00	0.00
109.580	211.290	6.390	13581.5	8191.4	98.239	3.124	2.26		Sand	44.1			199.71	0.65	129.10	205.49	0.63	0.568	0.620	2.611	3.563	6.27	0.00	0.00
109.740	113.690	3.689	13601.5	8201.4	26.066	3.452	2.70		Clay	79.3			107.46	0.70	n.a.	n.a.	0.63	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.910	81.170	3.261	13622.8	8212.0	18.110	4.385	2.89		Clay	94.3			76.72	0.70	n.a.	n.a.	0.63	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.070	86.210	4.111	13642.8	8222.1	19.311	5.178	2.92		Clay	96.4			81.48	0.70	n.a.	n.a.	0.63	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.240	92.640	5.021	13664.0	8232.7	20.846	5.851	2.93		Clay	97.3			87.56	0.70	n.a.	n.a.	0.63	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.400	98.230	5.195	13684.0	8242.7	22.174	5.685	2.90		Clay	95.0			92.84	0.70	n.a.	n.a.	0.63	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.560	100.120	6.425	13704.0	8252.7	22.603	6.888	2.95		Clay	99.1			94.63	0.70	n.a.	n.a.	0.63	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
110.730	115.650	7.625	13725.3	8263.4	26.330	7.009	2.91		Clay	95.8			109.31	0.70	n.a.	n.a.	0.63	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.890	173.580	8.911	13745.3	8273.4	40.300	5.345	2.70		Clay	78.7			164.06	0.70	n.a.	n.a.	0.63	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.060	207.790	9.747	13766.5	8284.0	48.505	4.851	2.61		Clay	71.9			196.40	0.70	n.a.	n.a.	0.63	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.220	223.960	10.412	13786.5	8294.1	103.629	4.797	2.39		Sand	54.5			211.68	0.67	141.54	227.46	0.63	0.567	0.590	13.128	17.045	30.07	0.00	0.00
111.380	207.960	6.718	13806.5	8304.1	95.928	3.341	2.29		Sand	46.4			196.56	0.64	125.99	203.18	0.63	0.567	0.627	2.271	3.132	5.53	0.00	0.00
111.550	219.610	8.124	13827.8	8314.7	101.416	3.820	2.32		Sand	48.7			207.57	0.66	136.46	217.85	0.63	0.567	0.589	6.058	7.856	13.86	0.00	0.00
111.710	221.420	6.499	13847.8	8324.7	102.213	3.030	2.24		Sand	42.4			209.28	0.65	136.48	213.39	0.63	0.567	0.589	4.386	5.685	10.03	0.00	0.00
111.880	116.840	5.172	13869.0	8335.4	26.371	4.706	2.79		Clay	86.1			110.43	0.70	n.a.	n.a.	0.63	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.040	233.510	5.368	13889.0	8345.4	107.831	2.369	2.15		Sand	34.7			220.71	0.65	144.35	215.49	0.63	0.566	0.588	5.092	6.591	11.64	0.00	0.00
112.200	302.980	5.012	13909.0	8355.4	140.805	1.693	1.96		Sand	19.9			286.37	0.69	197.11	246.79	0.63	0.566	0.588	89.771	116.125	205.05	0.00	0.00
112.370	294.280	5.119	13930.3	8366.0	136.575	1.782	1.99		Sand	21.9			278.15	0.69	191.30	246.50	0.63	0.566	0.588	86.882	112.314	198.35	0.00	0.00
112.530	333.510	4.467	13950.3	8376.1	155.125	1.368	1.86		Sand	12.1			315.23	0.67	211.50	231.29	0.63	0.566	0.587	18.448	23.833	42.10	0.00	0.00
112.700	311.690	4.453	13971.5	8386.7	144.662	1.461	1.91		Sand	15.5			294.60	0.67	197.36	230.58	0.63	0.566	0.587	17.295	22.330	39.45	0.00	0.00
112.860	300.610	5.286	13991.5	8396.7	139.314	1.800	1.98		Sand	21.7			284.13	0.69	197.08	252.57	0.63	0.566	0.587	177.392	228.891	404.41	0.00	0.00
113.020	326.030	6.002	14011.5	8406.7	151.280	1.881	1.97		Sand	20.9			308.16	0.69	214.15	269.78	0.63	0.566	0.586	1885.944	2431.974	4297.47	0.00	0.00
113.190	330.960	5.921	14032.8	8417.4	153.516	1.828	1.96		Sand	19.9			312.82	0.69	217.31	269.67	0.63	0.566	0.586	1852.230	2386.953	4218.51	0.00	0.00
113.350	313.710	5.181	14052.8	8427.4	145.250	1.689	1.95		Sand	19.1			296.51	0.69	205.92	254.04	0.63	0.566	0.585	212.879	274.169	484.61	0.00	0.00
113.520	309.780	5.321	14074.0	8438.0	143.293	1.757	1.97		Sand	20.4			292.80	0.69	203.27	255.63	0.63	0.566	0.585	260.167	334.854	591.95	0.00	0.00
113.680	312.160	4.743	14094.0	8448.0	144.329	1.555	1.93		Sand	17.1			295.05	0.68	200.46	240.52	0.63	0.566	0.585	45.391	58.385	103.23	0.00	0.00
113.850	317.920	4.931	14115.3	8458.7	146.956	1.586	1.93		Sand	17.2			300.49	0.69	206.33	247.37	0.63	0.566	0.584	95.868	123.234	217.91	0.00	0.00
114.010	316.530	4.920	14135.3	8468.7	146.208	1.590	1.93		Sand	17.4			299.18	0.69	205.18	246.79	0.63	0.565	0.584	89.793	115.355	204.00	0.00	0.00
114.170	323.150	4.185	14155.3	8478.7	149.243	1.324	1.87		Sand	12.2			305.43	0.66	200.35	220.01	0.63	0.565	0.584	7.136	9.162	16.20	0.00	0.00
114.340	312.090	4.576	14176.5	8489.4	143.925	1.500	1.92		Sand	16.3			294.98	0.67	198.29	234.81	0.63	0.565	0.583	25.640	32.898	58.19	0.00	0.00
114.500	310.660	5.359	14196.5	8499.4	143.161	1.765	1.97		Sand	20.6			293.63	0.69	203.46	256.29	0.63	0.565	0.583	283.266	363.229	642.58	0.00	0.00
114.670	306.600	3.548	14217.8	8510.0	141.153	1.185	1.85		Sand	10.9			289.79	0.63	181.33	194.52	0.63	0.565	0.656	1.406	2.031	3.59	0.00	0.00
114.830	350.920	5.022	14237.8	8520.0	161.942	1.461	1.87		Sand	12.8			331.68	0.69	229.36	253.10	0.63	0.565	0.582	189.445	242.620	429.31	0.00	0.00
114.990	321.650	7.092	14257.8	8530.1	148.063	2.255	2.04		Sand	26.2			304.02	0.69	210.46	280.39	0.63	0.565	0.582	10640.386	13618.790	24100.53	0.00	0.00
115.160	295.950	7.342	14279.0	8540.7	135.875	2.542	2.10		Sand	31.4			279.73	0.69	193.58	270.50	0.63	0.565	0.581	2104.276	2691.563	4763.64	0.00	0.00
115.320	249.740	6.983	14299.0	8550.7	114.063	2.879	2.19		Sand	38.6			236.05	0.67	159.21	238.09	0.63	0.565	0.581	35.418	45.276	80.14	0.00	0.00
115.490	235.500	6.521	14320.3	8561.4	107.296	2.856	2.21		Sand	39.7			222.59	0.66	146.44	223.44	0.63	0.565	0.581	9.372	11.972	21.19	0.00	0.00
115.650	295.950	6.747	14340.3	8571.4	135.617	2.336	2.08		Sand	29.1			279.73	0.69	193.40	266.29	0.63	0.565	0.580	1118.214	1427.653	2527.44	0.00	0.00
115.810	297.110	6.749	14360.3	8581.4	136.078	2.328	2.07		Sand	29.0			280.82	0.69	194.10	266.79	0.63	0.565	0.580	1203.827	1536.029	2719.54	0.00	0.00
115.980	247.210	6.534	14381.5	8592.0	112.582	2.722	2.18		Sand	37.4			233.66	0.67	156.04	232.90	0.63	0.565	0.580	21.402	27.290	48.32	0.00	0.00
116.140	258.330	6.020	14401.5	8602.0	117.725	2.397	2.13		Sand	33.0			244.17	0.67	164.25	237.51	0.63	0.565	0.579	33.411	42.578	75.40	0.00	0.00
116.310	231.670	4.230	14422.8	8612.7	105.157	1.884	2.08		Sand	29.5			218.97	0.63	138.02	200.53	0.63	0.565	0.629	1.948	2.694	4.77	0.00	0.00
116.470	211.200	5.063	14442.8	8622.7	95.507	2.482	2.20		Sand	38.8			199.62	0.62	124.58	195.46	0.63	0.565	0.649	1.477	2.110	3.74	0.00	0.00
116.630	234.850	5.510	14462.8	8632.7	106.514	2.421	2.16		Sand	35.6			221.98	0.65	143.72	215.72	0.63	0.565	0.578	5.180	6.589	11.67	0.00	0.00
116.800	248.800	6.660	14484.0	8643.4	112.967	2.757	2.18		Sand	37.6			235.16	0.67	157.23	234.66	0.63	0.565	0.578	25.287	32.144	56.94	0.00	0.00
116.960	273.950	6.684	14504.0	8653.4	124.652	2.506	2.12		Sand	32.9			258.93	0.69	178.57	254.75	0.63	0.565	0.577	232.707	295.641	523.72	0.00	0.00
117.130	326.520	7.284	14525.3	8664.0	149.126	2.282	2.04		Sand	26.4			308.62	0.69	212.77	283.50	0.63	0.564	0.577	18435.172	23405.853	41465.41	0.00	0.00
117.290	326.980	8.073	14545.3	8674.0	149.250	2.525	2.08		Sand	29.1			309.05	0.69	213.00	289.74	0.63	0.564	0.577	59291.686	75233.308	133290.06	0.00	0.00
117.450	328.690	8.883	14565.3	8684.1	149.957	2.764	2.11		Sand	31.5			310.67	0.69	214.05	295.48	0.63	0.564	0.576	#########	########	420650.51	0.00	0.00
117.620	285.510	8.955	14586.5	8694.7	129.726	3.219	2.20		Sand	38.8			269.86	0.69	185.87	271.29	0.63	0.564	0.576	2378.770	3014.610	5341.56	0.00	0.00
117.780	179.880	6.601	14606.5	8704.7	80.422	3.825	2.39		Sand	54.0			170.02	0.60	101.92	176.82	0.63	0.564	0.710	0.642	0.928	1.64	0.00	0.00
117.950	115.710	4.090	14627.8	8715.4	24.875	3.773	2.74		Clay	82.5			109.37	0.69	n.a.	n.a.	0.63	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.110	86.420	2.580	14647.8	8725.4	18.130	3.261	2.81		Clay	87.8			81.68	0.69	n.a.	n.a.	0.63	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.270	75.200	2.976	14667.8	8735.4	15.538	4.384	2.94		Clay	98.4			71.08	0.69	n.a.	n.a.	0.63	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.440	78.020	3.841	14689.0	8746.0	16.162	5.435	2.99		Clay	100.0			73.74	0.69	n.a.	n.a.	0.63	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.600	91.880	4.452	14709.0	8756.0	19.307	5.266	2.92		Clay	96.8			86.84	0.69	n.a.	n.a.	0.63	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.770	95.450	5.561	14730.3	8766.7	20.095	6.313	2.96		Clay	100.0			90.22	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.930	109.170	6.310	14750.3	8776.7	23.197	6.198	2.91		Clay	95.9			103.19	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.090	166.060	6.914	14770.3	8786.7	36.117	4.357	2.67		Clay	76.4			156.96	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.260	158.450	5.083	14791.5	8797.4	34.341	3.365	2.61		Clay	71.5			149.76	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.420	92.860	3.393	14811.5	8807.4	19.405	3.970	2.84		Clay	90.3			87.77	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.590	58.190	2.097	14832.8	8818.0	11.516	4.130	3.03		Clay	100.0			55.00	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.750	58.570	2.625	14852.8	8828.0	11.587	5.132	3.08		Clay	100.0			55.36	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.910	62.260	3.541	14872.8	8838.0	12.406	6.458	3.13		Clay	100.0			58.85	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.080	81.770	4.365	14894.0	8848.7	16.799	5.873	3.00		Clay	100.0			77.29	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.240	84.120	4.074	14914.0	8858.7	17.308	5.314	2.96		Clay	99.9			79.51	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.410	85.230	4.722	14935.3	8869.3	17.535	6.072	2.99		Clay	100.0			80.56	0.69	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.570	90.350	3.774	14955.3	8879.4	18.666	4.554	2.89		Clay	94.4			85.40	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.730	120.270	3.166	14975.3	8889.4	25.375	2.808	2.66		Clay	75.4			113.68	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.900	59.620	1.795	14996.5	8900.0	11.713	3.443	2.98		Clay	100.0			56.35	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.060	56.320	1.405	15016.5	8910.0	10.957	2.877	2.95		Clay	99.3			53.23	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.230	54.900	1.384	15037.8	8920.7	10.623	2.922	2.97		Clay	100.0			51.89	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.390	53.700	1.553	15057.8	8930.7	10.340	3.362	3.01		Clay	100.0			50.76	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.560	55.640	2.447	15079.0	8941.3	10.759	5.088	3.11		Clay	100.0			52.59	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.78

Total Settlement: 0.73 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
121.720	63.260	4.111	15099.0	8951.4	12.447	7.378	3.16		Clay	100.0			59.79	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.880	119.170	6.349	15119.0	8961.4	24.909	5.688	2.86		Clay	92.1			112.64	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.050	197.510	5.444	15140.3	8972.0	87.185	2.866	2.27		Sand	44.6			186.68	0.60	112.64	185.21	0.62	0.564	0.677	0.903	1.333	2.36	0.00	0.00
122.210	194.460	4.808	15160.3	8982.0	85.733	2.573	2.24		Sand	42.2			183.80	0.60	109.61	179.76	0.62	0.564	0.695	0.719	1.042	1.85	0.00	0.00
122.380	164.870	3.306	15181.5	8992.7	72.111	2.102	2.23		Sand	41.5			155.83	0.56	87.21	151.29	0.62	0.564	0.766	0.297	0.383	0.68	0.02	0.00
122.540	92.580	2.236	15201.5	9002.7	18.879	2.631	2.74		Clay	82.1			87.50	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.700	59.460	2.008	15221.5	9012.7	11.506	3.873	3.01		Clay	100.0			56.20	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.870	61.340	1.838	15242.8	9023.3	11.907	3.421	2.97		Clay	100.0			57.98	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.030	70.420	1.565	15262.8	9033.4	13.902	2.492	2.83		Clay	89.7			66.56	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.200	63.010	1.292	15284.0	9044.0	12.244	2.333	2.86		Clay	92.0			59.56	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.360	55.740	1.026	15304.0	9054.0	10.622	2.133	2.89		Clay	94.5			52.68	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.520	51.190	0.901	15324.0	9064.0	9.605	2.069	2.92		Clay	96.9			48.38	0.68	n.a.	n.a.	0.62	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.690	49.070	0.962	15345.3	9074.7	9.124	2.323	2.97		Clay	100.0			46.38	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.850	49.790	1.171	15365.3	9084.7	9.270	2.781	3.01		Clay	100.0			47.06	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.020	57.740	1.370	15386.5	9095.3	11.005	2.737	2.94		Clay	98.2			54.57	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.180	66.080	1.864	15406.5	9105.3	12.823	3.194	2.92		Clay	97.0			62.46	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.340	68.510	2.363	15426.5	9115.4	13.339	3.887	2.96		Clay	100.0			64.75	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.510	72.880	2.786	15447.8	9126.0	14.279	4.276	2.96		Clay	100.0			68.88	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.670	73.980	3.312	15467.8	9136.0	14.502	4.999	3.00		Clay	100.0			69.92	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.840	74.910	3.409	15489.0	9146.7	14.686	5.076	3.00		Clay	100.0			70.80	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.000	75.010	3.375	15509.0	9156.7	14.690	5.018	3.00		Clay	100.0			70.90	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.160	74.500	3.093	15529.0	9166.7	14.560	4.635	2.98		Clay	100.0			70.42	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.330	76.520	2.883	15550.3	9177.3	14.981	4.194	2.94		Clay	98.4			72.33	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.490	76.820	2.616	15570.3	9187.4	15.028	3.789	2.91		Clay	96.1			72.61	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.660	74.830	2.452	15591.5	9198.0	14.576	3.657	2.92		Clay	96.2			70.73	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.820	66.770	2.148	15611.5	9208.0	12.807	3.644	2.96		Clay	99.7			63.11	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.980	60.000	1.846	15631.5	9218.0	11.322	3.537	2.99		Clay	100.0			56.71	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.150	51.890	1.545	15652.8	9228.7	9.549	3.507	3.05		Clay	100.0			49.05	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.310	45.320	1.279	15672.8	9238.7	8.114	3.413	3.10		Clay	100.0			42.84	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.480	41.440	1.203	15694.0	9249.3	7.264	3.582	3.15		Clay	100.0			39.17	0.68	n.a.	n.a.	0.62	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.640	38.540	1.205	15714.0	9259.3	6.627	3.928	3.21		Clay	100.0			36.43	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.800	39.260	1.358	15734.0	9269.4	6.773	4.326	3.23		Clay	100.0			37.11	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.970	43.260	1.710	15755.3	9280.0	7.626	4.834	3.21		Clay	100.0			40.89	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.130	50.890	2.143	15775.3	9290.0	9.258	4.982	3.15		Clay	100.0			48.10	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.300	60.400	2.016	15796.5	9300.7	11.290	3.839	3.02		Clay	100.0			57.09	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.460	58.630	1.647	15816.5	9310.7	10.895	3.248	2.99		Clay	100.0			55.42	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.620	48.800	1.450	15836.5	9320.7	8.772	3.546	3.09		Clay	100.0			46.12	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.790	48.430	1.199	15857.8	9331.3	8.681	2.960	3.04		Clay	100.0			45.78	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.950	50.510	1.202	15877.8	9341.4	9.115	2.824	3.02		Clay	100.0			47.74	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.120	45.270	0.918	15899.0	9352.0	7.981	2.460	3.03		Clay	100.0			42.79	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.280	42.020	0.838	15919.0	9362.0	7.276	2.460	3.07		Clay	100.0			39.72	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.440	41.960	0.832	15939.0	9372.0	7.254	2.448	3.07		Clay	100.0			39.66	0.68	n.a.	n.a.	0.62	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.610	41.250	0.855	15960.3	9382.7	7.092	2.570	3.08		Clay	100.0			38.99	0.68	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.770	41.730	0.869	15980.3	9392.7	7.184	2.574	3.08		Clay	100.0			39.44	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.940	44.020	0.977	16001.5	9403.3	7.661	2.712	3.07		Clay	100.0			41.61	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.100	45.520	1.094	16021.5	9413.3	7.969	2.917	3.07		Clay	100.0			43.02	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.270	44.690	1.084	16042.8	9424.0	7.782	2.956	3.08		Clay	100.0			42.24	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.430	44.750	1.058	16062.8	9434.0	7.784	2.881	3.08		Clay	100.0			42.30	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.590	43.420	1.111	16082.8	9444.0	7.492	3.139	3.11		Clay	100.0			41.04	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.760	43.210	1.829	16104.0	9454.7	7.437	5.202	3.24		Clay	100.0			40.84	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.920	43.550	2.619	16124.0	9464.7	7.499	7.381	3.33		Clay	100.0			41.16	0.67	n.a.	n.a.	0.62	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.090	67.950	2.454	16145.3	9475.3	12.639	4.098	2.99		Clay	100.0			64.22	0.67	n.a.	n.a.	0.62	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.250	60.570	2.068	16165.3	9485.3	11.067	3.940	3.03		Clay	100.0			57.25	0.67	n.a.	n.a.	0.62	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.410	48.460	1.623	16185.3	9495.3	8.503	4.021	3.13		Clay	100.0			45.80	0.67	n.a.	n.a.	0.62	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.580	46.920	2.390	16206.5	9506.0	8.167	6.158	3.25		Clay	100.0			44.35	0.67	n.a.	n.a.	0.62	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.740	58.930	4.537	16226.5	9516.0	10.680	8.928	3.27		Clay	100.0			55.70	0.67	n.a.	n.a.	0.62	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.910	103.130	8.406	16247.8	9526.6	19.945	8.847	3.07		Clay	100.0			97.48	0.67	n.a.	n.a.	0.62	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.070	261.710	11.676	16267.8	9536.7	112.897	4.604	2.36		Sand	51.6			247.36	0.67	166.27	257.28	0.62	0.568	0.548	321.892	388.296	683.28	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.78

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.490	8.540	0.152	58.8	58.8	48.255	1.780	2.31		Unsaturated	48.1			8.07	1.70	13.72	62.67	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	14.370	0.139	79.2	79.2	70.011	0.969	2.02		Unsaturated	24.9			13.58	1.70	23.09	57.22	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	14.350	0.053	98.4	98.4	62.681	0.369	1.85		Unsaturated	10.9			13.56	1.70	23.06	30.45	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	0.610	0.011	196.8	196.8	5.199	2.111	3.16		Unsaturated	100.0			0.58	1.70	0.98	55.22	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	0.390	0.222	216.0	216.0	2.611	78.546	4.36		Unsaturated	100.0			0.37	1.70	0.63	54.75	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	8.580	0.622	236.4	236.4	71.589	7.350	2.64		Unsaturated	74.1			8.11	1.70	13.79	69.09	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	14.590	0.822	255.6	255.6	60.023	5.682	2.60		Unsaturated	71.0			13.79	1.70	23.44	81.07	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	17.660	1.194	276.0	276.0	68.916	6.812	2.62		Unsaturated	72.8			16.69	1.70	28.38	87.77	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	27.110	1.525	295.2	295.2	68.230	5.657	2.56		Unsaturated	68.0			25.62	1.70	43.56	106.45	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	37.420	1.681	314.4	314.4	91.371	4.511	2.41		Unsaturated	55.5			35.37	1.70	60.13	124.23	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	49.590	1.737	334.8	334.8	117.437	3.514	2.25		Unsaturated	43.3			46.87	1.70	79.68	143.09	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	57.760	1.948	354.0	354.0	133.065	3.384	2.21		Unsaturated	39.6			54.59	1.70	92.81	156.80	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	66.780	2.402	374.4	374.4	149.634	3.607	2.20		Unsaturated	38.9			63.12	1.70	107.30	174.20	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	74.530	2.653	393.6	393.6	162.902	3.570	2.17		Unsaturated	36.9			70.44	1.70	119.76	187.69	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	76.570	2.737	412.8	412.8	163.414	3.584	2.17		Unsaturated	36.9			72.37	1.70	123.03	191.77	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	74.890	2.779	433.2	433.2	155.989	3.722	2.20		Unsaturated	38.9			70.78	1.70	120.33	190.36	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	74.070	2.800	452.4	452.4	150.947	3.792	2.21		Unsaturated	40.1			70.01	1.70	118.94	189.68	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	71.620	2.923	472.8	472.8	142.735	4.094	2.26		Unsaturated	43.4			67.69	1.69	114.09	186.22	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	71.010	2.928	492.0	492.0	138.708	4.137	2.27		Unsaturated	44.3			67.12	1.67	112.02	184.24	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	70.270	2.860	512.4	512.4	134.478	4.085	2.27		Unsaturated	44.6			66.42	1.65	109.84	181.70	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	67.390	2.765	531.6	531.6	126.578	4.119	2.29		Unsaturated	46.1			63.70	1.65	105.03	176.62	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	63.360	2.646	550.8	550.8	116.869	4.194	2.32		Unsaturated	48.2			59.89	1.65	98.78	170.02	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	59.440	2.459	571.2	571.2	107.613	4.157	2.33		Unsaturated	49.7			56.18	1.65	92.69	163.12	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	55.670	2.332	590.4	590.4	99.086	4.211	2.36		Unsaturated	51.9			52.62	1.65	86.83	156.72	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	51.610	1.824	610.8	610.8	90.257	3.556	2.33		Unsaturated	49.4			48.78	1.66	80.85	147.98	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	48.730	1.722	630.0	630.0	83.865	3.557	2.35		Unsaturated	51.1			46.06	1.65	76.17	142.86	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	45.630	1.572	649.2	649.2	77.310	3.469	2.37		Unsaturated	52.3			43.13	1.65	71.27	137.17	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	41.510	1.480	669.6	669.6	69.183	3.594	2.41		Unsaturated	55.8			39.23	1.65	64.88	130.41	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	38.960	1.403	688.8	688.8	63.972	3.634	2.44		Unsaturated	58.0			36.82	1.65	60.72	125.82	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	39.490	1.352	709.2	709.2	63.894	3.454	2.42		Unsaturated	56.7			37.33	1.63	60.79	125.50	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	38.710	1.293	728.4	728.4	61.774	3.373	2.42		Unsaturated	56.9			36.59	1.62	59.13	123.45	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	37.790	1.198	747.6	747.6	59.497	3.202	2.42		Unsaturated	56.5			35.72	1.61	57.33	121.02	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	36.660	1.162	768.0	768.0	56.913	3.204	2.43		Unsaturated	57.6			34.65	1.59	55.19	118.65	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	36.560	1.096	787.2	787.2	56.045	3.030	2.42		Unsaturated	56.6			34.56	1.58	54.55	117.50	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	35.630	0.990	807.6	807.6	53.894	2.812	2.41		Unsaturated	55.8			33.68	1.57	52.79	114.98	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	35.820	0.931	826.8	826.8	53.537	2.630	2.39		Unsaturated	54.4			33.86	1.55	52.57	114.20	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.050	34.720	0.857	846.0	846.0	51.268	2.497	2.39		Unsaturated	54.2			32.82	1.54	50.64	111.71	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.220	32.820	0.914	866.4	866.4	47.839	2.823	2.45		Unsaturated	58.9			31.02	1.53	47.55	109.27	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.380	29.400	0.824	885.6	885.6	42.307	2.846	2.49		Unsaturated	62.2			27.79	1.53	42.57	103.82	0.99	0.502	1.095	n.a.	n.a.	n.a.	0.00	0.00
7.550	21.500	0.661	906.0	906.0	36.023	3.139	2.57		Unsaturated	68.7			20.32	1.55	31.55	91.09	0.99	0.502	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.710	13.930	0.469	925.2	925.2	29.112	3.485	2.67		Unsaturated	76.6			13.17	1.58	20.75	78.50	0.99	0.501	1.074	n.a.	n.a.	n.a.	0.00	0.00
7.870	11.540	0.454	944.4	944.4	23.439	4.103	2.79		Unsaturated	86.0			10.91	1.57	17.13	75.02	0.99	0.501	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.040	15.510	0.537	964.8	964.8	31.152	3.575	2.66		Unsaturated	75.4			14.66	1.53	22.49	80.57	0.99	0.501	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.200	15.960	0.533	984.0	984.0	31.439	3.446	2.64		Unsaturated	74.3			15.09	1.52	22.88	80.90	0.99	0.501	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.370	11.460	0.434	1004.4	1004.4	21.820	3.958	2.80		Unsaturated	87.1			10.83	1.52	16.46	74.27	0.99	0.501	1.065	n.a.	n.a.	n.a.	0.00	0.00
8.530	9.720	0.322	1023.6	1023.6	17.992	3.496	2.83		Unsaturated	89.5			9.19	1.51	13.90	71.19	0.99	0.500	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.690	9.290	0.326	1042.8	1042.8	16.817	3.717	2.87		Unsaturated	92.7			8.78	1.50	13.16	70.54	0.99	0.500	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.860	9.720	0.336	1063.2	1063.2	17.284	3.657	2.86		Unsaturated	91.6			9.19	1.48	13.61	71.01	0.99	0.500	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.020	9.130	0.376	1082.4	1082.4	15.870	4.375	2.93		Unsaturated	97.8			8.63	1.47	12.67	70.35	0.99	0.500	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.190	9.320	0.356	1102.8	1102.8	15.902	4.063	2.91		Unsaturated	96.1			8.81	1.45	12.79	70.37	0.99	0.499	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.350	10.010	0.357	1122.0	1122.0	16.843	3.781	2.87		Unsaturated	93.0			9.46	1.44	13.59	71.12	0.98	0.499	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.510	9.580	0.311	1141.2	1141.2	15.789	3.452	2.87		Unsaturated	92.8			9.05	1.42	12.90	70.20	0.98	0.499	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.680	9.120	0.281	1161.6	1161.6	14.702	3.292	2.88		Unsaturated	93.8			8.62	1.41	12.17	69.35	0.98	0.499	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.840	9.290	0.237	1180.8	1180.8	14.735	2.723	2.83		Unsaturated	89.8			8.78	1.40	12.29	69.11	0.98	0.499	1.049	n.a.	n.a.	n.a.	0.00	0.00
10.010	8.120	0.211	1201.2	1201.2	12.520	2.801	2.90		Unsaturated	95.0			7.67	1.39	10.66	67.48	0.98	0.498	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.170	7.540	0.221	1220.4	1220.4	11.357	3.191	2.97		Unsaturated	100.0			7.13	1.38	9.82	66.81	0.98	0.498	1.045	n.a.	n.a.	n.a.	0.00	0.00
10.330	7.300	0.292	1239.6	1239.6	10.778	4.376	3.07		Unsaturated	100.0			6.90	1.37	9.43	66.29	0.98	0.498	1.044	n.a.	n.a.	n.a.	0.00	0.00
10.500	8.450	0.369	1260.0	1260.0	12.413	4.723	3.04		Unsaturated	100.0			7.99	1.35	10.78	68.07	0.98	0.498	1.043	n.a.	n.a.	n.a.	0.00	0.00
10.660	10.680	0.487	1279.2	1279.2	15.698	4.846	2.97		Unsaturated	100.0			10.09	1.33	13.44	71.55	0.98	0.497	1.043	n.a.	n.a.	n.a.	0.00	0.00
10.830	11.550	0.569	1299.6	1299.6	16.775	5.216	2.97		Unsaturated	100.0			10.92	1.32	14.38	72.78	0.98	0.497	1.042	n.a.	n.a.	n.a.	0.00	0.00
10.990	16.610	0.540	1318.8	1318.8	24.190	3.384	2.72		Unsaturated	80.8			15.70	1.30	20.36	78.59	0.98	0.497	1.042	n.a.	n.a.	n.a.	0.00	0.00
11.150	21.550	0.600	1338.0	1338.0	27.202	2.872	2.64		Unsaturated	74.0			20.37	1.28	26.01	84.91	0.98	0.497	1.043	n.a.	n.a.	n.a.	0.00	0.00
11.320	25.660	0.738	1358.4	1358.4	32.200	2.955	2.59		Unsaturated	70.2			24.25	1.26	30.55	90.11	0.98	0.496	1.044	n.a.	n.a.	n.a.	0.00	0.00
11.480	23.600	0.594	1377.6	1377.6	29.244	2.591	2.59		Unsaturated	69.8			22.31	1.25	27.99	86.73	0.98	0.496	1.041	n.a.	n.a.	n.a.	0.00	0.00
11.650	15.710	0.575	1398.0	1398.0	21.475	3.831	2.80		Unsaturated	86.8			14.85	1.26	18.68	77.13	0.98	0.496	1.037	n.a.	n.a.	n.a.	0.00	0.00
11.810	13.600	0.477	1417.2	1417.2	18.193	3.697	2.84		Unsaturated	90.4			12.85	1.25	16.10	74.15	0.98	0.496	1.035	n.a.	n.a.	n.a.	0.00	0.00
11.980	15.120	0.361	1437.6	1437.6	20.035	2.508	2.71		Unsaturated	79.5			14.29	1.24	17.74	75.00	0.98	0.496	1.034	n.a.	n.a.	n.a.	0.00	0.00
12.140	13.310	0.335	1456.8	1456.8	17.273	2.663	2.77		Unsaturated	84.9			12.58	1.24	15.54	72.81	0.98	0.495	1.032	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.78

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
12.300	13.260	0.490	1476.0	1476.0	16.967	3.916	2.88		Unsaturated	93.6			12.53	1.23	15.35	73.49	0.98	0.495	1.031	n.a.	n.a.	n.a.	0.00	0.00
12.470	12.380	0.453	1496.4	1496.4	15.546	3.893	2.91		Unsaturated	95.8			11.70	1.22	14.24	72.24	0.98	0.495	1.030	n.a.	n.a.	n.a.	0.00	0.00
12.630	22.310	0.624	1515.6	1515.6	28.440	2.894	2.63		Unsaturated	73.0			21.09	1.20	25.22	83.72	0.98	0.495	1.031	n.a.	n.a.	n.a.	0.00	0.00
12.800	28.690	0.394	1536.0	1536.0	30.976	1.410	2.41		Unsaturated	55.5			27.12	1.18	32.08	88.50	0.97	0.494	1.031	n.a.	n.a.	n.a.	0.00	0.00
12.960	16.470	0.257	1555.2	1555.2	18.400	1.637	2.63		Unsaturated	73.4			15.57	1.19	18.49	75.08	0.97	0.494	1.027	n.a.	n.a.	n.a.	0.00	0.00
13.120	9.620	0.245	1574.4	1574.4	11.221	2.771	2.94		Unsaturated	97.9			9.09	1.19	10.79	67.90	0.97	0.494	1.024	n.a.	n.a.	n.a.	0.00	0.00
13.290	8.570	0.233	1594.8	1594.8	9.747	2.991	3.01		Unsaturated	100.0			8.10	1.18	9.55	66.45	0.97	0.494	1.023	n.a.	n.a.	n.a.	0.00	0.00
13.450	9.550	0.303	1614.0	1614.0	10.834	3.468	3.00		Unsaturated	100.0			9.03	1.17	10.56	67.77	0.97	0.493	1.022	n.a.	n.a.	n.a.	0.00	0.00
13.620	9.560	0.343	1634.4	1634.4	10.698	3.923	3.04		Unsaturated	100.0			9.04	1.16	10.50	67.69	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.780	10.460	0.350	1653.6	1653.6	11.651	3.637	2.99		Unsaturated	100.0			9.89	1.15	11.40	68.87	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.940	10.650	0.333	1672.8	1672.8	11.733	3.390	2.97		Unsaturated	100.0			10.07	1.15	11.53	69.04	0.97	0.493	1.020	n.a.	n.a.	n.a.	0.00	0.00
14.110	9.630	0.313	1693.2	1693.2	10.375	3.564	3.03		Unsaturated	100.0			9.10	1.14	10.36	67.51	0.97	0.492	1.018	n.a.	n.a.	n.a.	0.00	0.00
14.270	8.790	0.298	1712.4	1712.4	9.266	3.757	3.08		Unsaturated	100.0			8.31	1.13	9.40	66.25	0.97	0.492	1.017	n.a.	n.a.	n.a.	0.00	0.00
14.440	8.770	0.297	1732.8	1732.8	9.122	3.753	3.09		Unsaturated	100.0			8.29	1.12	9.32	66.14	0.97	0.492	1.016	n.a.	n.a.	n.a.	0.00	0.00
14.600	9.030	0.294	1752.0	1752.0	9.308	3.609	3.07		Unsaturated	100.0			8.53	1.12	9.53	66.42	0.97	0.492	1.015	n.a.	n.a.	n.a.	0.00	0.00
14.760	8.700	0.284	1771.2	1771.2	8.824	3.632	3.09		Unsaturated	100.0			8.22	1.11	9.13	65.89	0.97	0.491	1.014	n.a.	n.a.	n.a.	0.00	0.00
14.930	8.760	0.261	1791.6	1791.6	8.779	3.324	3.07		Unsaturated	100.0			8.28	1.10	9.13	65.89	0.97	0.491	1.014	n.a.	n.a.	n.a.	0.00	0.00
15.090	9.060	0.236	1810.8	1810.8	9.007	2.899	3.03		Clay	100.0			8.56	1.04	n.a.	n.a.	0.97	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	9.170	0.252	1831.2	1831.2	9.015	3.047	3.04		Clay	100.0			8.67	1.04	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	9.320	0.269	1850.4	1850.4	9.073	3.201	3.05		Clay	100.0			8.81	1.04	n.a.	n.a.	0.97	0.497	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	9.580	0.249	1869.6	1869.6	9.248	2.885	3.02		Clay	100.0			9.05	1.03	n.a.	n.a.	0.97	0.500	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	9.410	0.247	1890.0	1890.0	8.958	2.918	3.03		Clay	100.0			8.89	1.03	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	9.340	0.223	1909.2	1909.2	8.784	2.664	3.01		Clay	100.0			8.83	1.03	n.a.	n.a.	0.97	0.504	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	9.200	0.239	1929.6	1929.6	8.536	2.897	3.05		Clay	100.0			8.70	1.02	n.a.	n.a.	0.96	0.507	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	9.350	0.255	1948.8	1948.8	8.596	3.039	3.05		Clay	100.0			8.84	1.02	n.a.	n.a.	0.96	0.509	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	9.990	0.256	1968.0	1968.0	9.152	2.838	3.02		Clay	100.0			9.44	1.02	n.a.	n.a.	0.96	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	10.370	0.290	1988.4	1988.4	9.430	3.090	3.03		Clay	100.0			9.80	1.02	n.a.	n.a.	0.96	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	10.760	0.346	2007.6	2007.6	9.719	3.546	3.05		Clay	100.0			10.17	1.01	n.a.	n.a.	0.96	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	11.910	0.347	2028.0	2028.0	10.746	3.184	2.99		Clay	100.0			11.26	1.01	n.a.	n.a.	0.96	0.518	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	12.230	0.355	2047.2	2047.2	10.948	3.168	2.98		Clay	100.0			11.56	1.01	n.a.	n.a.	0.96	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	11.530	0.364	2066.4	2066.4	10.160	3.471	3.03		Clay	100.0			10.90	1.01	n.a.	n.a.	0.96	0.522	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	11.030	0.378	2086.8	2086.8	9.571	3.789	3.07		Clay	100.0			10.43	1.00	n.a.	n.a.	0.96	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	12.030	0.338	2106.0	2106.0	10.425	3.081	2.99		Clay	100.0			11.37	1.00	n.a.	n.a.	0.96	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	13.320	0.388	2126.4	2126.4	11.528	3.162	2.96		Clay	99.7			12.59	1.00	n.a.	n.a.	0.96	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	12.920	0.466	2145.6	2145.6	11.043	3.935	3.03		Clay	100.0			12.21	1.00	n.a.	n.a.	0.96	0.530	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	13.170	0.409	2164.8	2164.8	11.167	3.384	2.99		Clay	100.0			12.45	0.99	n.a.	n.a.	0.96	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	15.200	0.307	2185.2	2185.2	12.912	2.175	2.83		Clay	89.1			14.37	0.99	n.a.	n.a.	0.96	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	14.310	0.286	2204.4	2204.4	11.983	2.166	2.85		Clay	91.2			13.53	0.99	n.a.	n.a.	0.96	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	12.670	0.274	2224.8	2224.8	10.390	2.368	2.93		Clay	97.1			11.98	0.99	n.a.	n.a.	0.96	0.538	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	11.490	0.246	2244.0	2244.0	9.241	2.374	2.97		Clay	100.0			10.86	0.98	n.a.	n.a.	0.96	0.540	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	11.370	0.296	2263.2	2263.2	9.048	2.886	3.02		Clay	100.0			10.75	0.98	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	11.370	0.322	2283.6	2283.6	8.958	3.147	3.05		Clay	100.0			10.75	0.98	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	11.660	0.300	2302.8	2302.8	9.127	2.858	3.02		Clay	100.0			11.02	0.98	n.a.	n.a.	0.95	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	11.360	0.282	2323.2	2323.2	8.780	2.764	3.02		Clay	100.0			10.74	0.98	n.a.	n.a.	0.95	0.547	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.340	0.311	2342.4	2342.4	8.682	3.059	3.05		Clay	100.0			10.72	0.97	n.a.	n.a.	0.95	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	11.360	0.357	2362.8	2362.8	8.616	3.510	3.09		Clay	100.0			10.74	0.97	n.a.	n.a.	0.95	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	11.730	0.400	2382.0	2382.0	8.849	3.794	3.10		Clay	100.0			11.09	0.97	n.a.	n.a.	0.95	0.552	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	12.280	0.397	2401.2	2401.2	9.228	3.581	3.07		Clay	100.0			11.61	0.97	n.a.	n.a.	0.95	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	12.770	0.391	2421.6	2421.6	9.547	3.383	3.04		Clay	100.0			12.07	0.97	n.a.	n.a.	0.95	0.556	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	12.820	0.370	2440.8	2440.8	9.505	3.191	3.03		Clay	100.0			12.12	0.96	n.a.	n.a.	0.95	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	12.830	0.370	2461.2	2461.2	9.426	3.187	3.03		Clay	100.0			12.13	0.96	n.a.	n.a.	0.95	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	12.900	0.357	2480.4	2480.4	9.402	3.065	3.02		Clay	100.0			12.19	0.96	n.a.	n.a.	0.95	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	13.120	0.344	2499.6	2499.6	9.498	2.900	3.01		Clay	100.0			12.40	0.96	n.a.	n.a.	0.95	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	13.200	0.303	2520.0	2520.0	9.476	2.539	2.98		Clay	100.0			12.48	0.95	n.a.	n.a.	0.95	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	12.930	0.314	2539.2	2539.2	9.184	2.689	3.00		Clay	100.0			12.22	0.95	n.a.	n.a.	0.95	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	12.850	0.339	2559.6	2559.6	9.041	2.933	3.03		Clay	100.0			12.15	0.95	n.a.	n.a.	0.95	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	14.520	0.413	2578.8	2578.8	10.261	3.118	3.00		Clay	100.0			13.72	0.95	n.a.	n.a.	0.95	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	16.260	0.565	2598.0	2598.0	11.517	3.778	3.01		Clay	100.0			15.37	0.95	n.a.	n.a.	0.95	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	15.950	0.440	2618.4	2618.4	11.183	3.003	2.96		Clay	99.6			15.08	0.95	n.a.	n.a.	0.95	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	24.500	0.400	2637.6	2637.6	17.577	1.726	2.66		Clay	75.8			23.16	0.94	n.a.	n.a.	0.94	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	17.990	0.402	2658.0	2658.0	12.536	2.413	2.86		Clay	92.0			17.00	0.94	n.a.	n.a.	0.94	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	15.210	0.405	2677.2	2677.2	10.363	2.918	2.98		Clay	100.0			14.38	0.94	n.a.	n.a.	0.94	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	17.750	0.307	2696.4	2696.4	12.166	1.871	2.81		Clay	88.1			16.78	0.94	n.a.	n.a.	0.94	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	16.950	0.279	2716.8	2716.8	11.478	1.792	2.82		Clay	89.0			16.02	0.94	n.a.	n.a.	0.94	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	14.680	0.265	2736.0	2736.0	9.731	1.993	2.91		Clay	95.8			13.88	0.93	n.a.	n.a.	0.94	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	12.470	0.283	2756.4	2756.4	8.048	2.550	3.04		Clay	100.0			11.79	0.93	n.a.	n.a.	0.94	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.470	0.287	2775.6	2775.6	7.985	2.586	3.04		Clay	100.0			11.79	0.93	n.a.	n.a.	0.94	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 3

PGA (A_{max}) 0.78

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
23.290	12.650	0.295	2794.8	2794.8	8.053	2.619	3.04		Clay	100.0			11.96	0.93	n.a.	n.a.	0.94	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.860	0.287	2815.2	2815.2	8.136	2.503	3.03		Clay	100.0			12.16	0.93	n.a.	n.a.	0.94	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	12.690	0.278	2834.4	2834.4	7.954	2.467	3.03		Clay	100.0			11.99	0.93	n.a.	n.a.	0.94	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	12.090	0.266	2854.8	2854.8	7.470	2.496	3.06		Clay	100.0			11.43	0.92	n.a.	n.a.	0.94	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	12.310	0.297	2874.0	2874.0	7.566	2.735	3.08		Clay	100.0			11.64	0.92	n.a.	n.a.	0.94	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	12.500	0.259	2893.2	2893.2	7.641	2.340	3.04		Clay	100.0			11.81	0.92	n.a.	n.a.	0.94	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	13.500	0.334	2913.6	2913.6	8.267	2.770	3.05		Clay	100.0			12.76	0.92	n.a.	n.a.	0.94	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	14.660	0.399	2932.8	2932.8	8.997	3.020	3.04		Clay	100.0			13.86	0.92	n.a.	n.a.	0.94	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	16.990	0.395	2953.2	2953.2	10.506	2.546	2.94		Clay	98.1			16.06	0.92	n.a.	n.a.	0.94	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	19.810	0.573	2972.4	2972.4	12.329	3.126	2.93		Clay	97.6			18.72	0.91	n.a.	n.a.	0.93	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	20.990	0.396	2991.6	2991.6	13.033	2.031	2.81		Clay	87.6			19.84	0.91	n.a.	n.a.	0.93	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	19.990	0.350	3012.0	3012.0	12.274	1.891	2.81		Clay	88.0			18.89	0.91	n.a.	n.a.	0.93	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	14.020	0.350	3031.2	3031.2	8.250	2.801	3.05		Clay	100.0			13.25	0.91	n.a.	n.a.	0.93	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	12.460	0.366	3051.6	3051.6	7.166	3.349	3.14		Clay	100.0			11.78	0.91	n.a.	n.a.	0.93	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	12.740	0.386	3070.8	3070.8	7.298	3.444	3.14		Clay	100.0			12.04	0.91	n.a.	n.a.	0.93	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	12.700	0.367	3090.0	3090.0	7.220	3.288	3.14		Clay	100.0			12.00	0.90	n.a.	n.a.	0.93	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	12.370	0.367	3110.4	3110.4	6.954	3.397	3.16		Clay	100.0			11.69	0.90	n.a.	n.a.	0.93	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	12.080	0.385	3129.6	3129.6	6.720	3.662	3.19		Clay	100.0			11.42	0.90	n.a.	n.a.	0.93	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	12.470	0.416	3150.0	3150.0	6.917	3.817	3.19		Clay	100.0			11.79	0.90	n.a.	n.a.	0.93	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	13.270	0.461	3169.2	3169.2	7.374	3.945	3.17		Clay	100.0			12.54	0.90	n.a.	n.a.	0.93	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	13.700	0.438	3188.8	3184.4	7.603	3.621	3.14		Clay	100.0			12.95	0.90	n.a.	n.a.	0.93	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	13.360	0.413	3210.0	3195.0	7.358	3.514	3.15		Clay	100.0			12.63	0.90	n.a.	n.a.	0.93	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	12.850	0.414	3230.0	3205.0	7.011	3.684	3.17		Clay	100.0			12.15	0.90	n.a.	n.a.	0.93	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	13.930	0.322	3251.3	3215.7	7.653	2.616	3.06		Clay	100.0			13.17	0.90	n.a.	n.a.	0.93	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	15.430	0.446	3271.3	3225.7	8.553	3.231	3.07		Clay	100.0			14.58	0.89	n.a.	n.a.	0.93	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	14.580	0.497	3292.5	3236.3	7.993	3.839	3.14		Clay	100.0			13.78	0.89	n.a.	n.a.	0.92	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	15.080	0.584	3312.5	3246.4	8.270	4.353	3.16		Clay	100.0			14.25	0.89	n.a.	n.a.	0.92	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	15.190	0.581	3332.5	3256.4	8.306	4.295	3.15		Clay	100.0			14.36	0.89	n.a.	n.a.	0.92	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	15.890	0.406	3353.8	3267.0	8.701	2.855	3.03		Clay	100.0			15.02	0.89	n.a.	n.a.	0.92	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	17.880	0.339	3373.8	3277.0	9.883	2.095	2.92		Clay	96.3			16.90	0.89	n.a.	n.a.	0.92	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	15.940	0.472	3395.0	3287.7	8.664	3.314	3.07		Clay	100.0			15.07	0.89	n.a.	n.a.	0.92	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	14.740	0.572	3415.0	3297.7	7.904	4.391	3.18		Clay	100.0			13.93	0.89	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	15.510	0.520	3435.0	3307.7	8.340	3.772	3.12		Clay	100.0			14.66	0.89	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	19.160	0.521	3456.3	3318.3	10.506	2.989	2.98		Clay	100.0			18.11	0.89	n.a.	n.a.	0.92	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	17.540	0.592	3476.3	3328.4	9.495	3.748	3.07		Clay	100.0			16.58	0.89	n.a.	n.a.	0.92	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	15.370	0.592	3497.5	3339.0	8.159	4.348	3.16		Clay	100.0			14.53	0.89	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	14.990	0.530	3517.5	3349.0	7.902	4.006	3.15		Clay	100.0			14.17	0.89	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	14.950	0.489	3537.5	3359.0	7.848	3.708	3.14		Clay	100.0			14.13	0.89	n.a.	n.a.	0.92	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	14.830	0.436	3558.8	3369.7	7.746	3.341	3.11		Clay	100.0			14.02	0.88	n.a.	n.a.	0.92	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	14.840	0.406	3578.8	3379.7	7.723	3.109	3.10		Clay	100.0			14.03	0.88	n.a.	n.a.	0.92	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	15.110	0.399	3600.0	3390.3	7.852	2.995	3.08		Clay	100.0			14.28	0.88	n.a.	n.a.	0.91	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	15.590	0.480	3620.0	3400.4	8.105	3.480	3.11		Clay	100.0			14.74	0.88	n.a.	n.a.	0.91	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	16.350	0.570	3640.0	3410.4	8.521	3.920	3.12		Clay	100.0			15.45	0.88	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	16.930	0.662	3661.3	3421.0	8.827	4.384	3.14		Clay	100.0			16.00	0.88	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	16.880	0.660	3681.3	3431.0	8.767	4.388	3.14		Clay	100.0			15.95	0.88	n.a.	n.a.	0.91	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	16.850	0.650	3702.5	3441.7	8.716	4.330	3.14		Clay	100.0			15.93	0.88	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	17.220	0.685	3722.5	3451.7	8.899	4.460	3.14		Clay	100.0			16.28	0.88	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	17.740	0.780	3742.5	3461.7	9.168	4.912	3.15		Clay	100.0			16.77	0.88	n.a.	n.a.	0.91	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	18.790	0.867	3763.8	3472.3	9.739	5.129	3.14		Clay	100.0			17.76	0.88	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	19.740	0.900	3783.8	3482.4	10.251	5.041	3.12		Clay	100.0			18.66	0.88	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	20.600	0.930	3805.0	3493.0	10.706	4.974	3.10		Clay	100.0			19.47	0.88	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	22.360	1.036	3825.0	3503.0	11.674	5.067	3.08		Clay	100.0			21.13	0.88	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	22.570	1.035	3845.0	3513.0	11.755	5.012	3.07		Clay	100.0			21.33	0.87	n.a.	n.a.	0.91	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	21.160	1.009	3866.3	3523.7	10.913	5.249	3.11		Clay	100.0			20.00	0.87	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	19.450	0.912	3886.3	3533.7	9.909	5.211	3.14		Clay	100.0			18.38	0.87	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	18.050	0.807	3907.5	3544.3	9.083	5.010	3.16		Clay	100.0			17.06	0.87	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	16.530	0.658	3927.5	3554.3	8.196	4.514	3.17		Clay	100.0			15.62	0.87	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	14.700	0.527	3947.5	3564.4	7.141	4.140	3.20		Clay	100.0			13.89	0.87	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	13.750	0.409	3968.8	3575.0	6.582	3.478	3.18		Clay	100.0			13.00	0.87	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	13.110	0.366	3988.8	3585.0	6.201	3.294	3.19		Clay	100.0			12.39	0.87	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	12.880	0.341	4010.0	3595.7	6.049	3.134	3.19		Clay	100.0			12.17	0.87	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	12.820	0.393	4030.0	3605.7	5.993	3.635	3.23		Clay	100.0			12.12	0.87	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	13.420	0.415	4050.0	3615.7	6.303	3.639	3.21		Clay	100.0			12.68	0.87	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	13.960	0.409	4071.3	3626.3	6.577	3.427	3.18		Clay	100.0			13.19	0.87	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	13.350	0.407	4091.3	3636.4	6.217	3.602	3.21		Clay	100.0			12.62	0.87	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	13.180	0.387	4112.5	3647.0	6.100	3.475	3.21		Clay	100.0			12.46	0.87	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	13.520	0.370	4132.5	3657.0	6.264	3.228	3.18		Clay	100.0			12.78	0.87	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.78

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
34.280	13.270	0.345	4152.5	3667.0	6.105	3.083	3.18		Clay	100.0			12.54	0.86	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	12.920	0.352	4173.8	3677.7	5.891	3.250	3.21		Clay	100.0			12.21	0.86	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	13.770	0.343	4193.8	3687.7	6.331	2.934	3.16		Clay	100.0			13.02	0.86	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	14.360	0.290	4215.0	3698.3	6.626	2.366	3.09		Clay	100.0			13.57	0.86	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	13.300	0.347	4235.0	3708.3	6.031	3.099	3.19		Clay	100.0			12.57	0.86	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	13.740	0.338	4255.0	3718.4	6.246	2.910	3.16		Clay	100.0			12.99	0.86	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	18.590	0.301	4276.3	3729.0	8.824	1.828	2.93		Clay	97.2			17.57	0.86	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	16.170	0.337	4296.3	3739.0	7.500	2.401	3.05		Clay	100.0			15.28	0.86	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	15.110	0.331	4317.5	3749.7	6.908	2.557	3.09		Clay	100.0			14.28	0.86	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	14.880	0.310	4337.5	3759.7	6.762	2.440	3.09		Clay	100.0			14.06	0.86	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	14.660	0.292	4358.8	3770.3	6.620	2.340	3.09		Clay	100.0			13.86	0.86	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	14.240	0.287	4378.8	3780.3	6.375	2.381	3.11		Clay	100.0			13.46	0.86	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	15.000	0.285	4398.8	3790.4	6.754	2.230	3.07		Clay	100.0			14.18	0.86	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	15.870	0.247	4420.0	3801.0	7.188	1.806	3.00		Clay	100.0			15.00	0.86	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	18.400	0.328	4440.0	3811.0	8.491	2.028	2.96		Clay	100.0			17.39	0.86	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	16.860	0.398	4461.3	3821.7	7.656	2.719	3.07		Clay	100.0			15.94	0.86	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	18.730	0.334	4481.3	3831.7	8.607	2.023	2.96		Clay	99.7			17.70	0.86	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	20.310	0.481	4501.3	3841.7	9.402	2.661	2.99		Clay	100.0			19.20	0.85	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	18.680	0.661	4522.5	3852.3	8.524	4.028	3.13		Clay	100.0			17.66	0.85	n.a.	n.a.	0.88	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	22.310	0.638	4542.5	3862.3	10.376	3.181	3.00		Clay	100.0			21.09	0.85	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	27.180	0.801	4563.8	3873.0	12.857	3.218	2.93		Clay	97.0			25.69	0.85	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	26.460	0.824	4583.8	3883.0	12.448	3.409	2.95		Clay	99.1			25.01	0.85	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	28.410	0.940	4603.8	3893.0	13.413	3.601	2.94		Clay	98.2			26.85	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	27.820	0.894	4625.0	3903.7	13.069	3.506	2.94		Clay	98.4			26.29	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	26.490	0.795	4645.0	3913.7	12.350	3.289	2.95		Clay	98.6			25.04	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	27.100	0.754	4666.3	3924.3	12.622	3.045	2.92		Clay	96.4			25.61	0.85	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	25.860	0.694	4686.3	3934.3	11.955	2.949	2.93		Clay	97.3			24.44	0.85	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	23.940	0.597	4706.3	3944.3	10.946	2.764	2.94		Clay	98.6			22.63	0.85	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	22.990	0.583	4727.5	3955.0	10.430	2.826	2.97		Clay	100.0			21.73	0.85	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	24.170	0.598	4747.5	3965.0	10.994	2.743	2.94		Clay	98.3			22.84	0.85	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	24.380	0.874	4768.8	3975.6	11.065	3.971	3.03		Clay	100.0			23.04	0.85	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	25.550	0.964	4788.8	3985.7	11.619	4.164	3.03		Clay	100.0			24.15	0.85	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	31.760	0.977	4808.8	3995.7	14.694	3.327	2.89		Clay	94.0			30.02	0.85	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	35.050	0.908	4830.0	4006.3	16.292	2.781	2.81		Clay	87.4			33.13	0.85	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	31.770	0.821	4850.0	4016.3	14.613	2.797	2.84		Clay	90.6			30.03	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	31.010	1.099	4871.3	4027.0	14.191	3.846	2.94		Clay	98.0			29.31	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	29.120	1.517	4891.3	4037.0	13.215	5.687	3.07		Clay	100.0			27.52	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	37.380	1.624	4911.3	4047.0	17.259	4.649	2.92		Clay	96.9			35.33	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	45.750	1.341	4932.5	4057.7	21.334	3.098	2.74		Clay	82.3			43.24	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	43.060	1.124	4952.5	4067.7	19.954	2.770	2.73		Clay	81.7			40.70	0.84	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	29.560	0.959	4973.8	4078.3	13.277	3.541	2.94		Clay	98.1			27.94	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	24.390	0.697	4993.8	4088.3	10.710	3.183	2.99		Clay	100.0			23.05	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	26.400	0.791	5013.8	4098.3	11.660	3.310	2.97		Clay	100.0			24.95	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	21.110	0.767	5035.0	4109.0	9.050	4.126	3.11		Clay	100.0			19.95	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	26.460	0.982	5055.0	4119.0	11.621	4.102	3.02		Clay	100.0			25.01	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	26.850	1.165	5076.3	4129.6	11.774	4.793	3.06		Clay	100.0			25.38	0.84	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	33.100	1.042	5096.3	4139.7	14.761	3.411	2.89		Clay	94.4			31.29	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	35.760	1.448	5116.3	4149.7	16.002	4.361	2.93		Clay	97.5			33.80	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	41.260	1.584	5137.5	4160.3	18.600	4.093	2.86		Clay	92.1			39.00	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	43.260	1.585	5157.5	4170.3	19.510	3.895	2.83		Clay	89.7			40.89	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	38.780	1.399	5178.8	4181.0	17.312	3.866	2.87		Clay	92.7			36.65	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	26.410	0.843	5198.8	4191.0	11.363	3.539	2.99		Clay	100.0			24.96	0.84	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	17.300	0.546	5218.8	4201.0	6.994	3.714	3.18		Clay	100.0			16.35	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	14.860	0.451	5240.0	4211.6	5.812	3.685	3.24		Clay	100.0			14.05	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	15.150	0.478	5260.0	4221.7	5.931	3.821	3.24		Clay	100.0			14.32	0.83	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	15.050	0.476	5281.3	4232.3	5.864	3.839	3.25		Clay	100.0			14.22	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	14.840	0.473	5301.3	4242.3	5.747	3.884	3.26		Clay	100.0			14.03	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	14.100	0.419	5322.5	4253.0	5.379	3.665	3.27		Clay	100.0			13.33	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	13.670	0.421	5342.5	4263.0	5.160	3.831	3.29		Clay	100.0			12.92	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	14.080	0.428	5362.5	4273.0	5.335	3.750	3.28		Clay	100.0			13.31	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	14.700	0.456	5383.8	4283.6	5.607	3.795	3.26		Clay	100.0			13.89	0.83	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	14.920	0.666	5403.8	4293.7	5.691	5.448	3.35		Clay	100.0			14.10	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	17.790	1.058	5425.0	4304.3	7.006	7.018	3.34		Clay	100.0			16.81	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	24.910	1.661	5445.0	4314.3	10.286	7.484	3.23		Clay	100.0			23.54	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	29.700	2.503	5465.0	4324.3	12.472	9.280	3.23		Clay	100.0			28.07	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	39.720	2.379	5486.3	4335.0	17.060	6.433	3.02		Clay	100.0			37.54	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	46.380	2.290	5506.3	4345.0	20.081	5.248	2.91		Clay	95.7			43.84	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.78

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
45.280	39.330	2.061	5527.5	4355.6	16.790	5.637	2.99		Clay	100.0			37.17	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	40.150	2.014	5547.5	4365.6	17.123	5.387	2.97		Clay	100.0			37.95	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	41.530	1.877	5567.5	4375.7	17.710	4.844	2.93		Clay	97.1			39.25	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	41.800	1.715	5588.8	4386.3	17.785	4.398	2.90		Clay	94.9			39.51	0.83	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	41.350	1.517	5608.8	4396.3	17.535	3.935	2.87		Clay	92.8			39.08	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	41.930	1.555	5630.0	4407.0	17.751	3.975	2.87		Clay	92.7			39.63	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	43.800	1.710	5650.0	4417.0	18.553	4.174	2.87		Clay	92.6			41.40	0.82	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	45.490	2.086	5670.0	4427.0	19.270	4.889	2.90		Clay	95.1			43.00	0.82	n.a.	n.a.	0.85	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	46.450	2.203	5691.3	4437.6	19.652	5.053	2.90		Clay	95.4			43.90	0.82	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	47.960	2.164	5711.3	4447.7	20.282	4.797	2.88		Clay	93.4			45.33	0.82	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	48.740	2.066	5732.5	4458.3	20.579	4.503	2.86		Clay	91.5			46.07	0.82	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	46.050	2.067	5752.5	4468.3	19.324	4.786	2.89		Clay	94.6			43.53	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	46.620	2.312	5772.5	4478.3	19.531	5.287	2.92		Clay	96.6			44.06	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	48.390	2.497	5793.8	4489.0	20.269	5.489	2.92		Clay	96.5			45.74	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	54.290	2.920	5813.8	4499.0	22.842	5.682	2.89		Clay	94.3			51.31	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	53.870	4.063	5835.0	4509.6	22.597	7.975	3.00		Clay	100.0			50.92	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	64.610	5.205	5855.0	4519.6	27.295	8.438	2.96		Clay	99.5			61.07	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	80.730	5.378	5875.0	4529.7	34.348	6.913	2.83		Clay	89.0			76.30	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	71.580	4.948	5896.3	4540.3	30.232	7.209	2.88		Clay	93.1			67.66	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	64.290	4.031	5916.3	4550.3	26.957	6.572	2.88		Clay	93.6			60.77	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	66.010	3.332	5937.5	4561.0	27.644	5.285	2.81		Clay	87.7			62.39	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	59.140	2.952	5957.5	4571.0	24.573	5.256	2.84		Clay	90.6			55.90	0.82	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	51.580	2.457	5977.5	4581.0	21.214	5.056	2.88		Clay	93.4			48.75	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	50.760	2.310	5998.8	4591.6	20.803	4.836	2.87		Clay	92.9			47.98	0.82	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	46.280	2.048	6018.8	4601.6	18.807	4.733	2.90		Clay	95.0			43.74	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	42.730	1.930	6040.0	4612.3	17.219	4.861	2.94		Clay	98.0			40.39	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	41.850	1.799	6060.0	4622.3	16.797	4.633	2.93		Clay	97.5			39.56	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	42.680	1.673	6080.0	4632.3	17.115	4.221	2.90		Clay	95.0			40.34	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	44.390	1.561	6101.3	4643.0	17.807	3.777	2.86		Clay	91.5			41.96	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	42.610	1.482	6121.3	4653.0	17.000	3.746	2.87		Clay	92.5			40.27	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	41.390	1.524	6142.5	4663.6	16.433	3.976	2.90		Clay	94.8			39.12	0.81	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 4

PGA (A_{max}) 0.78

Total Settlement: 0.02 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.490	13.760	0.377	58.8	58.8	77.853	2.744	2.29		Unsaturated	46.2			13.01	1.70	22.11	72.45	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	35.640	0.693	79.2	79.2	173.926	1.947	1.95		Unsaturated	18.7			33.69	1.70	57.27	85.81	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	43.490	0.919	98.4	98.4	190.402	2.116	1.95		Unsaturated	19.1			41.11	1.70	69.88	100.72	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	52.520	0.872	117.6	117.6	210.333	1.662	1.84		Unsaturated	10.3			49.64	1.70	84.39	92.47	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	65.420	0.656	138.0	138.0	241.872	1.004	1.63		Unsaturated	0.0			61.83	1.70	105.12	105.12	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	69.890	0.806	157.2	157.2	242.087	1.155	1.68		Unsaturated	0.0			66.06	1.70	112.30	112.30	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	74.160	0.778	177.6	177.6	241.657	1.050	1.65		Unsaturated	0.0			70.09	1.70	119.16	119.16	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	91.280	1.260	196.8	196.8	282.597	1.381	1.70		Unsaturated	0.0			86.28	1.70	146.67	146.67	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	82.190	1.215	216.0	216.0	242.825	1.480	1.76		Unsaturated	4.1			77.68	1.70	132.06	132.09	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	99.700	0.911	236.4	236.4	281.597	0.915	1.56		Unsaturated	0.0			94.23	1.70	160.20	160.20	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	93.670	0.834	255.6	255.6	254.390	0.892	1.58		Unsaturated	0.0			88.53	1.70	150.51	150.51	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	86.740	1.495	276.0	276.0	226.645	1.726	1.83		Unsaturated	9.8			81.98	1.70	139.37	147.43	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	98.340	2.643	295.2	295.2	248.480	2.691	1.97		Unsaturated	20.5			92.95	1.70	158.01	204.40	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	90.100	3.119	314.4	314.4	220.545	3.468	2.09		Unsaturated	30.2			85.16	1.70	144.77	209.69	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	64.500	2.742	334.8	334.8	152.866	4.262	2.25		Unsaturated	43.2			60.96	1.70	103.64	172.99	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	32.740	1.742	354.0	354.0	75.248	5.350	2.52		Unsaturated	64.4			30.95	1.70	52.61	117.25	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	30.000	1.435	374.4	374.4	66.990	4.812	2.51		Unsaturated	64.1			28.36	1.70	48.20	111.54	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	36.560	1.702	393.6	393.6	79.691	4.680	2.46		Unsaturated	59.5			34.56	1.70	58.74	123.78	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	47.460	2.077	412.8	412.8	101.120	4.396	2.37		Unsaturated	52.6			44.86	1.70	76.26	143.63	1.00	0.507	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	54.320	2.334	433.2	433.2	113.019	4.314	2.33		Unsaturated	49.7			51.34	1.70	87.28	156.27	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	52.030	2.353	452.4	452.4	105.894	4.543	2.37		Unsaturated	52.5			49.18	1.70	83.60	152.91	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	48.460	2.317	472.8	472.8	96.426	4.805	2.41		Unsaturated	56.1			45.80	1.70	77.87	147.04	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	44.160	2.233	492.0	492.0	86.078	5.085	2.46		Unsaturated	60.1			41.74	1.70	70.96	139.58	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	41.970	2.148	512.4	512.4	80.121	5.150	2.49		Unsaturated	62.0			39.67	1.70	67.44	135.65	1.00	0.506	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	39.590	2.144	531.6	531.6	74.155	5.453	2.53		Unsaturated	65.2			37.42	1.70	63.61	131.62	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	39.380	2.134	550.8	550.8	72.444	5.458	2.53		Unsaturated	65.7			37.22	1.70	63.28	131.32	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	37.350	2.076	571.2	571.2	67.427	5.601	2.56		Unsaturated	68.0			35.30	1.70	60.01	127.67	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	37.330	1.996	590.4	590.4	66.269	5.388	2.55		Unsaturated	67.4			35.28	1.70	59.98	127.48	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	37.890	1.905	610.8	610.8	66.120	5.068	2.54		Unsaturated	65.8			35.81	1.70	60.88	128.26	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	37.390	1.653	630.0	630.0	64.222	4.459	2.50		Unsaturated	63.1			35.34	1.70	60.08	126.53	1.00	0.505	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	36.750	1.740	649.2	649.2	62.157	4.776	2.53		Unsaturated	65.7			34.74	1.69	58.84	125.59	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	37.190	1.878	669.6	669.6	61.925	5.095	2.56		Unsaturated	67.4			35.15	1.67	58.70	125.84	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	38.050	1.915	688.8	688.8	62.464	5.080	2.55		Unsaturated	67.2			35.96	1.65	59.23	126.45	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	40.670	1.837	709.2	709.2	65.820	4.558	2.50		Unsaturated	63.1			38.44	1.62	62.14	129.18	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	41.470	1.754	728.4	728.4	66.220	4.268	2.48		Unsaturated	61.3			39.20	1.60	62.62	129.27	0.99	0.504	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	41.280	1.635	747.6	747.6	65.047	3.996	2.46		Unsaturated	60.0			39.02	1.58	61.79	127.83	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	40.100	1.589	768.0	768.0	62.310	4.001	2.48		Unsaturated	61.0			37.90	1.57	59.60	125.32	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	40.010	1.545	787.2	787.2	61.391	3.899	2.47		Unsaturated	60.7			37.82	1.56	58.92	124.36	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	37.690	1.554	807.6	807.6	57.046	4.167	2.51		Unsaturated	64.2			35.62	1.55	55.25	120.59	0.99	0.503	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	35.330	1.600	826.8	826.8	52.796	4.583	2.57		Unsaturated	68.4			33.39	1.54	51.59	116.89	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.050	34.770	1.624	846.0	846.0	51.342	4.728	2.59		Unsaturated	69.9			32.86	1.53	50.35	115.60	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.220	33.880	1.645	866.4	866.4	59.065	4.918	2.56		Unsaturated	67.6			32.02	1.52	48.74	113.04	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.380	34.890	1.545	885.6	885.6	50.328	4.485	2.57		Unsaturated	69.0			32.98	1.50	49.56	114.41	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.550	36.140	1.373	906.0	906.0	51.549	3.846	2.52		Unsaturated	64.6			34.16	1.49	50.75	114.92	0.99	0.502	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.710	36.040	1.203	925.2	925.2	50.854	3.381	2.48		Unsaturated	61.7			34.06	1.47	50.24	113.51	0.99	0.501	1.098	n.a.	n.a.	n.a.	0.00	0.00
7.870	35.770	1.196	944.4	944.4	49.939	3.389	2.49		Unsaturated	62.2			33.81	1.46	49.45	112.64	0.99	0.501	1.095	n.a.	n.a.	n.a.	0.00	0.00
8.040	34.480	1.244	964.8	964.8	47.588	3.659	2.53		Unsaturated	65.3			32.59	1.45	47.34	110.70	0.99	0.501	1.091	n.a.	n.a.	n.a.	0.00	0.00
8.200	31.110	1.200	984.0	984.0	42.438	3.920	2.58		Unsaturated	69.8			29.40	1.45	42.66	105.66	0.99	0.501	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.370	28.130	1.085	1004.4	1004.4	43.993	3.926	2.57		Unsaturated	68.9			26.59	1.45	38.53	100.16	0.99	0.501	1.079	n.a.	n.a.	n.a.	0.00	0.00
8.530	29.800	0.880	1023.6	1023.6	39.802	3.006	2.53		Unsaturated	65.1			28.17	1.43	40.34	101.64	0.99	0.500	1.078	n.a.	n.a.	n.a.	0.00	0.00
8.690	31.380	0.844	1042.8	1042.8	41.548	2.734	2.48		Unsaturated	61.8			29.66	1.42	42.00	102.97	0.99	0.500	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.860	32.420	0.825	1063.2	1063.2	42.520	2.588	2.46		Unsaturated	59.9			30.64	1.40	42.94	103.66	0.99	0.500	1.075	n.a.	n.a.	n.a.	0.00	0.00
9.020	35.030	0.891	1082.4	1082.4	45.578	2.585	2.44		Unsaturated	58.1			33.11	1.38	45.78	106.77	0.99	0.500	1.075	n.a.	n.a.	n.a.	0.00	0.00
9.190	35.710	0.912	1102.8	1102.8	46.032	2.593	2.44		Unsaturated	57.9			33.75	1.37	46.22	107.27	0.99	0.499	1.073	n.a.	n.a.	n.a.	0.00	0.00
9.350	35.070	0.912	1122.0	1122.0	44.793	2.641	2.45		Unsaturated	59.0			33.15	1.36	45.08	106.16	0.98	0.499	1.071	n.a.	n.a.	n.a.	0.00	0.00
9.510	34.630	0.849	1141.2	1141.2	43.836	2.493	2.44		Unsaturated	58.2			32.73	1.35	44.23	104.84	0.98	0.499	1.068	n.a.	n.a.	n.a.	0.00	0.00
9.680	33.720	0.880	1161.6	1161.6	42.275	2.656	2.47		Unsaturated	60.6			31.87	1.34	42.76	103.64	0.98	0.499	1.066	n.a.	n.a.	n.a.	0.00	0.00
9.840	32.150	0.920	1180.8	1180.8	39.931	2.915	2.52		Unsaturated	64.3			30.39	1.33	40.54	101.72	0.98	0.499	1.063	n.a.	n.a.	n.a.	0.00	0.00
10.010	25.920	0.926	1201.2	1201.2	35.571	3.657	2.62		Unsaturated	72.6			24.50	1.34	32.76	93.39	0.98	0.498	1.057	n.a.	n.a.	n.a.	0.00	0.00
10.170	21.750	0.911	1220.4	1220.4	34.644	4.311	2.68		Unsaturated	77.2			20.56	1.34	27.49	87.32	0.98	0.498	1.053	n.a.	n.a.	n.a.	0.00	0.00
10.330	22.730	0.902	1239.6	1239.6	35.673	4.079	2.65		Unsaturated	75.1			21.48	1.32	28.45	88.25	0.98	0.498	1.052	n.a.	n.a.	n.a.	0.00	0.00
10.500	22.800	0.901	1260.0	1260.0	35.190	4.063	2.65		Unsaturated	75.3			21.55	1.31	28.30	88.09	0.98	0.498	1.050	n.a.	n.a.	n.a.	0.00	0.00
10.660	20.660	0.739	1279.2	1279.2	31.301	3.690	2.66		Unsaturated	76.0			19.53	1.31	25.55	84.64	0.98	0.497	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.830	19.440	0.636	1299.6	1299.6	28.917	3.387	2.66		Unsaturated	76.1			18.37	1.30	23.90	82.51	0.98	0.497	1.045	n.a.	n.a.	n.a.	0.00	0.00
10.990	25.120	0.628	1318.8	1318.8	29.285	2.566	2.58		Unsaturated	69.6			23.74	1.28	30.39	89.77	0.98	0.497	1.046	n.a.	n.a.	n.a.	0.00	0.00
11.150	29.820	0.643	1338.0	1338.0	34.650	2.206	2.48		Unsaturated	61.7			28.19	1.26	35.61	94.76	0.98	0.497	1.047	n.a.	n.a.	n.a.	0.00	0.00
11.320	30.230	0.715	1358.4	1358.4	34.860	2.420	2.51		Unsaturated	63.6			28.57	1.25	35.79	95.46	0.98	0.496	1.045	n.a.	n.a.	n.a.	0.00	0.00
11.480	26.910	0.478	1377.6	1377.6	30.716	1.822	2.47		Unsaturated	61.0			25.43	1.25	31.82	89.70	0.98	0.496	1.042	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.78

Total Settlement: 0.02 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.650	17.550	0.385	1398.0	1398.0	24.107	2.284	2.62		Unsaturated	72.4			16.59	1.26	20.85	77.96	0.98	0.496	1.037	n.a.	n.a.	n.a.	0.00	0.00
11.810	11.450	0.332	1417.2	1417.2	15.159	3.094	2.86		Unsaturated	91.6			10.82	1.26	13.60	71.01	0.98	0.496	1.034	n.a.	n.a.	n.a.	0.00	0.00
11.980	9.620	0.298	1437.6	1437.6	12.383	3.351	2.95		Unsaturated	98.9			9.09	1.25	11.37	68.74	0.98	0.496	1.032	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.130	0.260	1456.8	1456.8	11.534	3.089	2.95		Unsaturated	99.3			8.63	1.24	10.71	67.91	0.98	0.495	1.031	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.280	0.237	1476.0	1476.0	11.575	2.769	2.92		Unsaturated	97.0			8.77	1.23	10.81	67.85	0.98	0.495	1.030	n.a.	n.a.	n.a.	0.00	0.00
12.470	8.640	0.240	1496.4	1496.4	10.548	3.035	2.98		Unsaturated	100.0			8.17	1.22	9.99	67.03	0.98	0.495	1.028	n.a.	n.a.	n.a.	0.00	0.00
12.630	8.090	0.254	1515.6	1515.6	9.676	3.461	3.04		Unsaturated	100.0			7.65	1.22	9.30	66.11	0.98	0.495	1.027	n.a.	n.a.	n.a.	0.00	0.00
12.800	7.990	0.250	1536.0	1536.0	9.404	3.463	3.05		Unsaturated	100.0			7.55	1.21	9.11	65.87	0.97	0.494	1.026	n.a.	n.a.	n.a.	0.00	0.00
12.960	7.460	0.261	1555.2	1555.2	8.594	3.906	3.12		Unsaturated	100.0			7.05	1.20	8.45	65.01	0.97	0.494	1.025	n.a.	n.a.	n.a.	0.00	0.00
13.120	7.670	0.285	1574.4	1574.4	8.743	4.144	3.13		Unsaturated	100.0			7.25	1.19	8.63	65.24	0.97	0.494	1.024	n.a.	n.a.	n.a.	0.00	0.00
13.290	8.110	0.315	1594.8	1594.8	9.171	4.301	3.12		Unsaturated	100.0			7.67	1.18	9.05	65.79	0.97	0.494	1.023	n.a.	n.a.	n.a.	0.00	0.00
13.450	8.680	0.323	1614.0	1614.0	9.756	4.099	3.08		Unsaturated	100.0			8.20	1.17	9.61	66.53	0.97	0.493	1.022	n.a.	n.a.	n.a.	0.00	0.00
13.620	9.580	0.434	1634.4	1634.4	10.723	4.952	3.10		Unsaturated	100.0			9.05	1.16	10.52	67.72	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.780	11.940	0.514	1653.6	1653.6	13.441	4.629	3.01		Unsaturated	100.0			11.29	1.15	12.99	70.96	0.97	0.493	1.021	n.a.	n.a.	n.a.	0.00	0.00
13.940	15.300	0.511	1672.8	1672.8	17.293	3.532	2.85		Unsaturated	90.8			14.46	1.14	16.50	74.71	0.97	0.493	1.020	n.a.	n.a.	n.a.	0.00	0.00
14.110	16.060	0.431	1693.2	1693.2	17.970	2.832	2.78		Unsaturated	85.1			15.18	1.13	17.20	74.99	0.97	0.492	1.019	n.a.	n.a.	n.a.	0.00	0.00
14.270	11.970	0.410	1712.4	1712.4	12.980	3.691	2.96		Unsaturated	99.6			11.31	1.13	12.77	70.64	0.97	0.492	1.018	n.a.	n.a.	n.a.	0.00	0.00
14.440	11.090	0.387	1732.8	1732.8	11.800	3.789	3.00		Unsaturated	100.0			10.48	1.12	11.76	69.34	0.97	0.492	1.017	n.a.	n.a.	n.a.	0.00	0.00
14.600	10.880	0.351	1752.0	1752.0	11.420	3.513	2.99		Unsaturated	100.0			10.28	1.11	11.47	68.96	0.97	0.492	1.016	n.a.	n.a.	n.a.	0.00	0.00
14.760	10.290	0.285	1771.2	1771.2	10.619	3.033	2.98		Unsaturated	100.0			9.73	1.11	10.78	68.06	0.97	0.491	1.015	n.a.	n.a.	n.a.	0.00	0.00
14.930	10.200	0.220	1791.6	1791.6	10.386	2.368	2.93		Unsaturated	97.1			9.64	1.10	10.62	67.61	0.97	0.491	1.014	n.a.	n.a.	n.a.	0.00	0.00
15.090	9.100	0.196	1810.8	1810.8	9.051	2.392	2.98		Clay	100.0			8.60	1.04	n.a.	n.a.	0.97	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	8.480	0.195	1831.2	1831.2	8.262	2.577	3.03		Clay	100.0			8.02	1.04	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.300	0.224	1850.4	1850.4	7.971	3.036	3.08		Clay	100.0			7.84	1.04	n.a.	n.a.	0.97	0.497	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	9.420	0.207	1869.6	1869.6	9.077	2.438	2.98		Clay	100.0			8.90	1.03	n.a.	n.a.	0.97	0.500	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	8.030	0.231	1890.0	1890.0	7.497	3.256	3.12		Clay	100.0			7.59	1.03	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	8.060	0.261	1909.2	1909.2	7.443	3.673	3.15		Clay	100.0			7.62	1.03	n.a.	n.a.	0.97	0.504	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	8.870	0.274	1929.6	1929.6	8.194	3.461	3.10		Clay	100.0			8.38	1.02	n.a.	n.a.	0.96	0.507	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	9.260	0.303	1948.8	1948.8	8.503	3.659	3.10		Clay	100.0			8.75	1.02	n.a.	n.a.	0.96	0.509	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	9.530	0.333	1968.0	1968.0	8.685	3.899	3.11		Clay	100.0			9.01	1.02	n.a.	n.a.	0.96	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	10.550	0.350	1988.4	1988.4	9.612	3.657	3.06		Clay	100.0			9.97	1.02	n.a.	n.a.	0.96	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	11.280	0.386	2007.6	2007.6	10.237	3.755	3.04		Clay	100.0			10.66	1.01	n.a.	n.a.	0.96	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	10.290	0.376	2028.0	2028.0	9.148	4.052	3.10		Clay	100.0			9.73	1.01	n.a.	n.a.	0.96	0.518	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	9.760	0.359	2047.2	2047.2	8.535	4.112	3.13		Clay	100.0			9.22	1.01	n.a.	n.a.	0.96	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	9.650	0.348	2066.4	2066.4	8.340	4.040	3.14		Clay	100.0			9.12	1.01	n.a.	n.a.	0.96	0.522	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	9.540	0.343	2086.8	2086.8	8.143	4.036	3.14		Clay	100.0			9.02	1.00	n.a.	n.a.	0.96	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	9.800	0.368	2106.0	2106.0	8.307	4.204	3.15		Clay	100.0			9.26	1.00	n.a.	n.a.	0.96	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	9.870	0.357	2126.4	2126.4	8.283	4.053	3.14		Clay	100.0			9.33	1.00	n.a.	n.a.	0.96	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	9.520	0.354	2145.6	2145.6	7.874	4.193	3.17		Clay	100.0			9.00	1.00	n.a.	n.a.	0.96	0.530	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	8.570	0.316	2164.8	2164.8	6.918	4.215	3.21		Clay	100.0			8.10	0.99	n.a.	n.a.	0.96	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	8.510	0.267	2185.2	2185.2	6.789	3.598	3.18		Clay	100.0			8.04	0.99	n.a.	n.a.	0.96	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	8.700	0.288	2204.4	2204.4	6.893	3.791	3.19		Clay	100.0			8.22	0.99	n.a.	n.a.	0.96	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	8.850	0.324	2224.8	2224.8	6.956	4.185	3.21		Clay	100.0			8.36	0.99	n.a.	n.a.	0.96	0.538	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	10.110	0.355	2244.0	2244.0	8.011	3.944	3.14		Clay	100.0			9.56	0.98	n.a.	n.a.	0.96	0.540	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	10.730	0.401	2263.2	2263.2	8.482	4.181	3.14		Clay	100.0			10.14	0.98	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	11.300	0.462	2283.6	2283.6	8.897	4.545	3.14		Clay	100.0			10.68	0.98	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	11.510	0.441	2302.8	2302.8	8.997	4.261	3.12		Clay	100.0			10.88	0.98	n.a.	n.a.	0.95	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	10.980	0.383	2323.2	2323.2	8.452	3.904	3.12		Clay	100.0			10.38	0.98	n.a.	n.a.	0.95	0.547	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	9.890	0.290	2342.4	2342.4	7.444	3.325	3.13		Clay	100.0			9.35	0.97	n.a.	n.a.	0.95	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	9.570	0.225	2362.8	2362.8	7.101	2.682	3.09		Clay	100.0			9.05	0.97	n.a.	n.a.	0.95	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	8.990	0.215	2382.0	2382.0	6.548	2.762	3.13		Clay	100.0			8.50	0.97	n.a.	n.a.	0.95	0.552	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	8.850	0.288	2401.2	2401.2	6.371	3.761	3.21		Clay	100.0			8.36	0.97	n.a.	n.a.	0.95	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	9.870	0.424	2421.6	2421.6	7.152	4.897	3.24		Clay	100.0			9.33	0.97	n.a.	n.a.	0.95	0.556	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	12.650	0.511	2440.8	2440.8	9.365	4.466	3.12		Clay	100.0			11.96	0.96	n.a.	n.a.	0.95	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	12.590	0.476	2461.3	2460.6	9.233	4.191	3.11		Clay	100.0			11.90	0.96	n.a.	n.a.	0.95	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	11.960	0.371	2481.3	2470.6	8.677	3.458	3.08		Clay	100.0			11.30	0.96	n.a.	n.a.	0.95	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	11.380	0.317	2501.3	2480.7	8.167	3.128	3.08		Clay	100.0			10.76	0.96	n.a.	n.a.	0.95	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	11.660	0.302	2522.5	2491.3	8.348	2.900	3.05		Clay	100.0			11.02	0.96	n.a.	n.a.	0.95	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	12.130	0.280	2542.5	2501.3	8.682	2.576	3.01		Clay	100.0			11.47	0.96	n.a.	n.a.	0.95	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	13.810	0.319	2563.8	2512.0	9.975	2.549	2.96		Clay	99.7			13.05	0.96	n.a.	n.a.	0.95	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	12.830	0.337	2583.8	2522.0	9.150	2.920	3.02		Clay	100.0			12.13	0.95	n.a.	n.a.	0.95	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	12.760	0.361	2603.8	2532.0	9.051	3.153	3.04		Clay	100.0			12.06	0.95	n.a.	n.a.	0.95	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	12.970	0.387	2625.0	2542.6	9.170	3.322	3.05		Clay	100.0			12.26	0.95	n.a.	n.a.	0.95	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	13.040	0.391	2645.0	2552.6	9.181	3.339	3.05		Clay	100.0			12.33	0.95	n.a.	n.a.	0.94	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	12.360	0.393	2666.3	2563.3	8.604	3.568	3.09		Clay	100.0			11.68	0.95	n.a.	n.a.	0.94	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	12.400	0.411	2686.3	2573.3	8.594	3.717	3.10		Clay	100.0			11.72	0.95	n.a.	n.a.	0.94	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	12.510	0.410	2706.3	2583.3	8.638	3.676	3.10		Clay	100.0			11.82	0.95	n.a.	n.a.	0.94	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.78

Total Settlement: 0.02 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.640	12.740	0.402	2727.5	2594.0	8.771	3.535	3.08		Clay	100.0			12.04	0.95	n.a.	n.a.	0.94	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	12.770	0.398	2747.5	2604.0	8.753	3.491	3.08		Clay	100.0			12.07	0.95	n.a.	n.a.	0.94	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	12.530	0.408	2768.8	2614.6	8.526	3.658	3.10		Clay	100.0			11.84	0.95	n.a.	n.a.	0.94	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.910	0.409	2788.8	2624.6	8.775	3.553	3.09		Clay	100.0			12.20	0.94	n.a.	n.a.	0.94	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	12.900	0.383	2808.8	2634.7	8.726	3.335	3.07		Clay	100.0			12.19	0.94	n.a.	n.a.	0.94	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.410	0.386	2830.0	2645.3	8.313	3.510	3.10		Clay	100.0			11.73	0.94	n.a.	n.a.	0.94	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	12.790	0.378	2850.0	2655.3	8.560	3.324	3.08		Clay	100.0			12.09	0.94	n.a.	n.a.	0.94	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	13.080	0.364	2871.3	2666.0	8.736	3.128	3.06		Clay	100.0			12.36	0.94	n.a.	n.a.	0.94	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	12.840	0.310	2891.3	2676.0	8.516	2.722	3.03		Clay	100.0			12.14	0.94	n.a.	n.a.	0.94	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	12.800	0.307	2911.3	2686.0	8.447	2.710	3.03		Clay	100.0			12.10	0.94	n.a.	n.a.	0.94	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	12.820	0.327	2932.5	2696.6	8.421	2.876	3.05		Clay	100.0			12.12	0.94	n.a.	n.a.	0.94	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	12.530	0.386	2952.5	2706.6	8.168	3.496	3.11		Clay	100.0			11.84	0.94	n.a.	n.a.	0.94	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	13.030	0.456	2973.8	2717.3	8.496	3.954	3.12		Clay	100.0			12.32	0.94	n.a.	n.a.	0.94	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	17.030	0.565	2993.8	2727.3	11.391	3.637	3.00		Clay	100.0			16.10	0.94	n.a.	n.a.	0.93	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	19.160	0.594	3013.8	2737.3	12.898	3.366	2.94		Clay	97.9			18.11	0.93	n.a.	n.a.	0.93	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	27.080	0.608	3035.0	2748.0	18.605	2.379	2.72		Clay	80.5			25.60	0.93	n.a.	n.a.	0.93	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	19.300	0.515	3055.0	2758.0	12.888	2.900	2.90		Clay	94.9			18.24	0.93	n.a.	n.a.	0.93	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	15.590	0.421	3076.3	2768.6	10.151	2.998	2.99		Clay	100.0			14.74	0.93	n.a.	n.a.	0.93	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	14.510	0.384	3096.3	2778.6	9.330	2.966	3.02		Clay	100.0			13.71	0.93	n.a.	n.a.	0.93	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	13.810	0.402	3116.3	2788.7	8.787	3.280	3.07		Clay	100.0			13.05	0.93	n.a.	n.a.	0.93	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	13.880	0.421	3137.5	2799.3	8.796	3.416	3.07		Clay	100.0			13.12	0.93	n.a.	n.a.	0.93	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	14.420	0.482	3157.5	2809.3	9.142	3.752	3.08		Clay	100.0			13.63	0.93	n.a.	n.a.	0.93	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	14.490	0.579	3178.8	2820.0	9.150	4.491	3.13		Clay	100.0			13.70	0.93	n.a.	n.a.	0.93	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	18.210	0.574	3198.8	2830.0	11.739	3.453	2.98		Clay	100.0			17.21	0.93	n.a.	n.a.	0.93	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	21.580	0.509	3218.8	2840.0	14.064	2.548	2.83		Clay	89.8			20.40	0.93	n.a.	n.a.	0.93	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	20.340	0.422	3240.0	2850.6	13.134	2.256	2.83		Clay	89.4			19.22	0.92	n.a.	n.a.	0.93	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	17.660	0.375	3260.0	2860.6	11.207	2.342	2.90		Clay	94.7			16.69	0.92	n.a.	n.a.	0.93	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	16.750	0.389	3281.3	2871.3	10.524	2.573	2.94		Clay	98.3			15.83	0.92	n.a.	n.a.	0.93	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	14.780	0.409	3301.3	2881.3	9.114	3.114	3.04		Clay	100.0			13.97	0.92	n.a.	n.a.	0.93	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	14.120	0.394	3322.5	2891.9	8.616	3.165	3.06		Clay	100.0			13.35	0.92	n.a.	n.a.	0.92	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	13.780	0.371	3342.5	2902.0	8.345	3.065	3.07		Clay	100.0			13.02	0.92	n.a.	n.a.	0.92	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	13.790	0.359	3362.5	2912.0	8.317	2.967	3.06		Clay	100.0			13.03	0.92	n.a.	n.a.	0.92	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	13.770	0.345	3383.8	2922.6	8.265	2.859	3.05		Clay	100.0			13.02	0.92	n.a.	n.a.	0.92	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	13.770	0.325	3403.8	2932.6	8.230	2.694	3.04		Clay	100.0			13.02	0.92	n.a.	n.a.	0.92	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	13.490	0.309	3425.0	2943.3	8.003	2.625	3.05		Clay	100.0			12.75	0.92	n.a.	n.a.	0.92	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	13.290	0.287	3445.0	2953.3	7.834	2.484	3.04		Clay	100.0			12.56	0.92	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	13.120	0.288	3465.0	2963.3	7.686	2.529	3.05		Clay	100.0			12.40	0.91	n.a.	n.a.	0.92	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	13.520	0.338	3486.3	2973.9	7.920	2.867	3.07		Clay	100.0			12.78	0.91	n.a.	n.a.	0.92	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	14.130	0.422	3506.3	2984.0	8.296	3.410	3.10		Clay	100.0			13.36	0.91	n.a.	n.a.	0.92	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	15.130	0.445	3527.5	2994.6	8.927	3.331	3.06		Clay	100.0			14.30	0.91	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	15.080	0.401	3547.5	3004.6	8.857	3.013	3.04		Clay	100.0			14.25	0.91	n.a.	n.a.	0.92	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	14.740	0.376	3567.5	3014.6	8.596	2.899	3.04		Clay	100.0			13.93	0.91	n.a.	n.a.	0.92	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	14.440	0.337	3588.8	3025.3	8.360	2.667	3.03		Clay	100.0			13.65	0.91	n.a.	n.a.	0.92	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	14.630	0.328	3608.8	3035.3	8.451	2.557	3.02		Clay	100.0			13.83	0.91	n.a.	n.a.	0.92	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	14.580	0.294	3630.0	3045.9	8.382	2.300	3.00		Clay	100.0			13.78	0.91	n.a.	n.a.	0.91	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	14.940	0.296	3650.0	3056.0	8.583	2.254	2.98		Clay	100.0			14.12	0.91	n.a.	n.a.	0.91	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	14.320	0.306	3670.0	3066.0	8.144	2.447	3.02		Clay	100.0			13.53	0.91	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	13.890	0.332	3691.3	3076.6	7.830	2.758	3.07		Clay	100.0			13.13	0.91	n.a.	n.a.	0.91	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	14.360	0.345	3711.3	3086.6	8.102	2.762	3.05		Clay	100.0			13.57	0.91	n.a.	n.a.	0.91	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	14.800	0.361	3732.5	3097.3	8.352	2.792	3.04		Clay	100.0			13.99	0.90	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	14.350	0.354	3752.5	3107.3	8.029	2.836	3.06		Clay	100.0			13.56	0.90	n.a.	n.a.	0.91	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	13.620	0.354	3772.5	3117.3	7.528	3.016	3.10		Clay	100.0			12.87	0.90	n.a.	n.a.	0.91	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	14.560	0.394	3793.8	3127.9	8.097	3.110	3.08		Clay	100.0			13.76	0.90	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	16.580	0.464	3813.8	3138.0	9.352	3.165	3.03		Clay	100.0			15.67	0.90	n.a.	n.a.	0.91	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	18.430	0.526	3835.0	3148.6	10.489	3.182	2.99		Clay	100.0			17.42	0.90	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	18.190	0.551	3855.0	3158.6	10.297	3.387	3.02		Clay	100.0			17.19	0.90	n.a.	n.a.	0.91	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	17.250	0.522	3875.0	3168.6	9.665	3.410	3.04		Clay	100.0			16.30	0.90	n.a.	n.a.	0.91	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	17.240	0.508	3896.3	3179.3	9.620	3.323	3.04		Clay	100.0			16.29	0.90	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	16.210	0.520	3916.3	3189.3	8.937	3.651	3.09		Clay	100.0			15.32	0.90	n.a.	n.a.	0.91	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	15.090	0.518	3937.5	3199.9	8.201	3.951	3.14		Clay	100.0			14.26	0.90	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	15.640	0.549	3957.5	3209.9	8.512	4.020	3.13		Clay	100.0			14.78	0.90	n.a.	n.a.	0.90	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	15.520	0.605	3977.5	3220.0	8.405	4.470	3.16		Clay	100.0			14.67	0.90	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	15.790	0.618	3998.8	3230.6	8.537	4.479	3.15		Clay	100.0			14.92	0.89	n.a.	n.a.	0.90	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	15.900	0.612	4018.8	3240.6	8.573	4.404	3.15		Clay	100.0			15.03	0.89	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	15.460	0.569	4040.0	3251.3	8.268	4.231	3.15		Clay	100.0			14.61	0.89	n.a.	n.a.	0.90	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	14.760	0.494	4060.0	3261.3	7.807	3.883	3.15		Clay	100.0			13.95	0.89	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	13.700	0.520	4080.0	3271.3	7.129	4.456	3.22		Clay	100.0			12.95	0.89	n.a.	n.a.	0.90	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.78

Total Settlement: 0.02 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.630	14.660	0.597	4101.3	3281.9	7.684	4.736	3.20		Clay	100.0			13.86	0.89	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	15.990	0.684	4121.3	3292.0	8.463	4.913	3.18		Clay	100.0			15.11	0.89	n.a.	n.a.	0.90	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	15.470	0.609	4142.5	3302.6	8.114	4.547	3.18		Clay	100.0			14.62	0.89	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	15.100	0.481	4162.5	3312.6	7.860	3.693	3.13		Clay	100.0			14.27	0.89	n.a.	n.a.	0.90	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	15.750	0.495	4182.5	3322.6	8.222	3.623	3.11		Clay	100.0			14.89	0.89	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	16.060	0.556	4203.8	3333.3	8.375	3.985	3.13		Clay	100.0			15.18	0.89	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	16.180	0.540	4223.8	3343.3	8.416	3.841	3.12		Clay	100.0			15.29	0.89	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	16.460	0.470	4245.0	3353.9	8.550	3.277	3.07		Clay	100.0			15.56	0.89	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	17.480	0.423	4265.0	3363.9	9.125	2.756	3.01		Clay	100.0			16.52	0.88	n.a.	n.a.	0.89	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	16.560	0.416	4285.0	3374.0	8.546	2.883	3.04		Clay	100.0			15.65	0.88	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	15.860	0.467	4306.3	3384.6	8.100	3.408	3.10		Clay	100.0			14.99	0.88	n.a.	n.a.	0.89	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	15.730	0.508	4326.3	3394.6	7.993	3.743	3.13		Clay	100.0			14.87	0.88	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	16.270	0.572	4347.5	3405.3	8.279	4.055	3.14		Clay	100.0			15.38	0.88	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	16.480	0.642	4367.5	3415.3	8.372	4.493	3.16		Clay	100.0			15.58	0.88	n.a.	n.a.	0.89	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	17.510	0.662	4388.8	3425.9	8.941	4.324	3.13		Clay	100.0			16.55	0.88	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	17.980	0.649	4408.8	3435.9	9.183	4.115	3.11		Clay	100.0			16.99	0.88	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	16.520	0.592	4428.8	3446.0	8.303	4.138	3.14		Clay	100.0			15.61	0.88	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	16.530	0.553	4450.0	3456.6	8.277	3.863	3.13		Clay	100.0			15.62	0.88	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	16.310	0.495	4470.0	3466.6	8.120	3.518	3.11		Clay	100.0			15.42	0.88	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	15.260	0.487	4491.3	3477.3	7.485	3.740	3.15		Clay	100.0			14.42	0.88	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	15.810	0.528	4511.3	3487.3	7.774	3.892	3.15		Clay	100.0			14.94	0.88	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	17.720	0.528	4531.3	3497.3	8.838	3.418	3.07		Clay	100.0			16.75	0.88	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	17.500	0.501	4552.5	3507.9	8.680	3.292	3.07		Clay	100.0			16.54	0.88	n.a.	n.a.	0.88	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	16.200	0.528	4572.5	3517.9	7.910	3.796	3.14		Clay	100.0			15.31	0.87	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	18.380	0.721	4593.8	3528.6	9.116	4.480	3.13		Clay	100.0			17.37	0.87	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	21.950	0.828	4613.8	3538.6	11.102	4.213	3.05		Clay	100.0			20.75	0.87	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	23.790	0.768	4633.8	3548.6	12.102	3.577	2.97		Clay	100.0			22.49	0.87	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	19.800	0.686	4655.0	3559.3	9.818	3.926	3.07		Clay	100.0			18.71	0.87	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	21.310	0.558	4675.0	3569.3	10.631	2.942	2.97		Clay	100.0			20.14	0.87	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	19.280	0.400	4696.3	3579.9	9.459	2.362	2.96		Clay	99.8			18.22	0.87	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	16.950	0.268	4716.3	3589.9	8.129	1.839	2.96		Clay	99.7			16.02	0.87	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	14.520	0.224	4736.3	3599.9	6.751	1.843	3.03		Clay	100.0			13.72	0.87	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	13.280	0.239	4757.5	3610.6	6.038	2.191	3.11		Clay	100.0			12.55	0.87	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	13.810	0.287	4777.5	3620.6	6.309	2.516	3.12		Clay	100.0			13.05	0.87	n.a.	n.a.	0.88	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	14.940	0.345	4798.8	3631.2	6.907	2.751	3.11		Clay	100.0			14.12	0.87	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	16.650	0.354	4818.8	3641.3	7.822	2.487	3.04		Clay	100.0			15.74	0.87	n.a.	n.a.	0.88	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	18.350	0.421	4838.8	3651.3	8.726	2.644	3.02		Clay	100.0			17.34	0.87	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	20.600	0.505	4860.0	3661.9	9.924	2.777	2.98		Clay	100.0			19.47	0.87	n.a.	n.a.	0.87	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	21.470	0.477	4880.0	3671.9	10.365	2.505	2.94		Clay	98.2			20.29	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	21.960	0.493	4901.3	3682.6	10.595	2.525	2.93		Clay	97.7			20.76	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	23.000	0.431	4921.3	3692.6	11.125	2.100	2.87		Clay	92.8			21.74	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	20.490	0.431	4941.3	3702.6	9.733	2.390	2.95		Clay	99.2			19.37	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	19.820	0.410	4962.5	3713.3	9.339	2.362	2.96		Clay	100.0			18.73	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	20.360	0.428	4982.5	3723.3	9.598	2.396	2.96		Clay	99.6			19.24	0.86	n.a.	n.a.	0.87	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	20.190	0.397	5003.8	3733.9	9.474	2.247	2.95		Clay	98.8			19.08	0.86	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	20.460	0.419	5023.8	3743.9	9.588	2.332	2.95		Clay	99.1			19.34	0.86	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	19.340	0.588	5043.8	3753.9	8.960	3.494	3.07		Clay	100.0			18.28	0.86	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	21.320	0.538	5065.0	3764.6	9.981	2.863	2.99		Clay	100.0			20.15	0.86	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	21.490	0.543	5085.0	3774.6	10.039	2.867	2.98		Clay	100.0			20.31	0.86	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	23.390	0.525	5106.3	3785.2	11.010	2.521	2.92		Clay	96.6			22.11	0.86	n.a.	n.a.	0.87	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	21.860	0.496	5126.3	3795.3	10.169	2.568	2.95		Clay	99.2			20.66	0.86	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	22.810	0.611	5146.3	3805.3	10.636	3.020	2.98		Clay	100.0			21.56	0.86	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	23.340	0.830	5167.5	3815.9	10.879	3.997	3.04		Clay	100.0			22.06	0.86	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	26.910	1.033	5187.5	3825.9	12.711	4.249	3.00		Clay	100.0			25.43	0.86	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	30.020	1.342	5208.8	3836.6	14.292	4.894	3.00		Clay	100.0			28.37	0.85	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	31.420	1.505	5228.8	3846.6	14.977	5.224	3.00		Clay	100.0			29.70	0.85	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	37.560	2.020	5248.8	3856.6	18.117	5.781	2.97		Clay	100.0			35.50	0.85	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	56.660	1.445	5270.0	3867.2	27.940	2.674	2.61		Clay	71.8			53.55	0.85	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	53.590	1.500	5290.0	3877.3	26.279	2.944	2.66		Clay	75.5			50.65	0.85	n.a.	n.a.	0.86	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	36.540	1.559	5311.3	3887.9	17.431	4.601	2.92		Clay	96.4			34.54	0.85	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	40.340	1.919	5331.3	3897.9	19.330	5.092	2.91		Clay	96.0			38.13	0.85	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	57.340	1.792	5352.5	3908.6	27.971	3.277	2.67		Clay	76.3			54.20	0.85	n.a.	n.a.	0.86	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	62.410	1.318	5372.5	3918.6	41.482	2.207	2.42		Sand	56.9	67.24	1.8	121.03	0.80	96.33	170.92	0.86	0.651	0.881	0.519	0.890	1.37	0.00	0.00
43.960	71.140	0.935	5392.5	3928.6	47.477	1.367	2.25		Sand	42.9		1.8	121.03	0.79	95.48	162.55	0.86	0.651	0.889	0.399	0.648	1.00	0.01	0.02
44.130	45.020	0.718	5413.8	3939.2	29.312	1.696	2.47		Sand	60.8	67.24	1.8	121.03	0.80	96.26	172.23	0.86	0.651	0.878	0.543	0.938	1.44	0.00	0.00
44.290	24.620	0.479	5433.8	3949.3	11.092	2.185	2.88		Clay	93.6			23.27	0.85	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	19.190	0.261	5455.0	3959.9	8.315	1.584	2.92		Clay	96.5			18.14	0.85	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.78

Total Settlement: 0.02 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'_{vc} = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.620	18.170	0.399	5475.0	3969.9	7.775	2.588	3.05		Clay	100.0			17.17	0.85	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	18.550	0.354	5495.0	3979.9	7.941	2.240	3.01		Clay	100.0			17.53	0.85	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	18.390	0.314	5516.3	3990.6	7.834	2.008	2.99		Clay	100.0			17.38	0.85	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	17.450	0.335	5536.3	4000.6	7.340	2.279	3.04		Clay	100.0			16.49	0.85	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	16.630	0.370	5557.5	4011.2	6.906	2.673	3.10		Clay	100.0			15.72	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	16.920	0.453	5577.5	4021.2	7.028	3.204	3.14		Clay	100.0			15.99	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	17.080	0.496	5597.5	4031.3	7.085	3.472	3.16		Clay	100.0			16.14	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	18.350	0.705	5618.8	4041.9	7.690	4.533	3.19		Clay	100.0			17.34	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	23.190	1.010	5638.8	4051.9	10.055	4.957	3.12		Clay	100.0			21.92	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	30.300	1.370	5660.0	4062.6	13.523	4.987	3.02		Clay	100.0			28.64	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	33.740	1.676	5680.0	4072.6	15.175	5.425	3.01		Clay	100.0			31.89	0.84	n.a.	n.a.	0.85	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	37.610	1.907	5700.0	4082.6	17.028	5.487	2.98		Clay	100.0			35.55	0.84	n.a.	n.a.	0.85	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	41.450	2.049	5721.3	4093.2	18.855	5.309	2.93		Clay	97.6			39.18	0.84	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	43.810	2.201	5741.3	4103.3	19.955	5.375	2.92		Clay	96.4			41.41	0.84	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	43.220	2.292	5762.5	4113.9	19.611	5.682	2.94		Clay	98.2			40.85	0.84	n.a.	n.a.	0.84	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	44.950	2.263	5782.5	4123.9	20.398	5.380	2.91		Clay	95.9			42.49	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	46.850	2.318	5802.5	4133.9	21.262	5.275	2.89		Clay	94.3			44.28	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	48.230	2.425	5823.8	4144.6	21.869	5.350	2.89		Clay	93.9			45.59	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	51.660	2.481	5843.8	4154.6	23.462	5.091	2.85		Clay	91.0			48.83	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	52.460	2.430	5865.0	4165.2	23.781	4.907	2.83		Clay	89.8			49.58	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	47.710	2.077	5885.0	4175.2	21.444	4.638	2.85		Clay	91.1			45.09	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	40.320	1.844	5905.0	4185.3	17.857	4.935	2.93		Clay	97.3			38.11	0.84	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	34.200	1.944	5926.3	4195.9	14.889	6.225	3.06		Clay	100.0			32.33	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	42.530	1.991	5946.3	4205.9	18.810	5.034	2.92		Clay	96.4			40.20	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	40.230	1.613	5967.5	4216.6	17.667	4.331	2.90		Clay	94.7			38.02	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	39.610	1.480	5987.5	4226.6	17.327	4.041	2.88		Clay	93.7			37.44	0.83	n.a.	n.a.	0.84	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	32.140	1.568	6007.5	4236.6	13.755	5.381	3.04		Clay	100.0			30.38	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	37.480	1.419	6028.8	4247.2	16.230	4.118	2.91		Clay	95.9			35.43	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	41.750	0.892	6048.8	4257.2	18.193	2.304	2.72		Clay	80.5			39.46	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	27.740	0.537	6070.0	4267.9	11.577	2.175	2.87		Clay	92.3			26.22	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	21.820	0.352	6090.0	4277.9	8.778	1.873	2.93		Clay	97.8			20.62	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	22.140	0.379	6110.0	4287.9	8.902	1.987	2.94		Clay	98.4			20.93	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	23.580	0.433	6131.3	4298.6	9.545	2.110	2.93		Clay	97.4			22.29	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	26.910	0.640	6151.3	4308.6	11.064	2.686	2.93		Clay	97.7			25.43	0.83	n.a.	n.a.	0.83	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00