Appendix E

Geotechnical Investigation

CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**650 N. King Road Warehouse**
Location	**650 N. King Road** **San Jose, California**
Client	**Black Creek Industrial Acquisitions, LLC**
Client Address	**4675 MacArthur Court, Suite 625** **Newport Beach, California**
Project Number	**855-12-1**
Date	**December 14, 2020**

DRAFT

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CORNERSTONE EARTH GROUP

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SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of Black Creek Industrial Acquisitions, LLC for the 650 N. 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 conceptual site plan titled "Conceptual Site Plan, 650 N. King Road, San Jose, CA, Scheme 8," prepared by HPA Architecture, dated October 22, 2020.
- A preliminary grading plan titled "Appendix G, Preliminary Grading Plan," prepared by Kier+Wright, dated September 1, 2020.
- An ALTA survey plan titled, "ALTA/ACSM Land Title Survey, 650 N. King Road, San Jose, Santa Clara County, California," prepared by Slooten Consulting Inc., last revision date July 12, 2011.

1.1 PROJECT DESCRIPTION

The project will consist of redeveloping the approximately 10¾-acre site for a new warehouse. The new warehouse will be about 208,385 square feet with plan dimensions of approximately 370 feet by 550 feet. Office spaces will be located in the northeast and southeast corners. Currently, loading docks are planned for the west side of the warehouse. Drive aisles and parking stalls will be located along the northeast, east, and west sides of the warehouse. The building is planned to have 36-foot clear height and anticipated to consist of tilt-up construction. Appurtenant utilities, landscaping, and other improvements necessary for the overall site development will also be constructed.

Building loads have not been provided at this time. However, structural loads are expected to be typical of this type of structure. Based on the preliminary grading plan provided, the finished floor elevation will be at Elevation 90.8 feet (datum unspecified) at the north end of the building and at Elevation 89.2 feet at the south end. The finished grade at the loading dock will be about

4 feet below the building finished floor and the grades around the remaining sides of the building are to be at the approximate building finished floor elevation. Based on the current site grades, to achieve the referenced finished floor elevation, site grades will need to be raised roughly 2 to 4 feet. Cuts on the order of about 1 to 3 feet are anticipated to achieve finished grade at the loading docks.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated July 27, 2020 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 twelve borings drilled on September 8, 9, 15, and 16 with truck- and track-mounted, hollow-stem auger drilling equipment and five Cone Penetration Tests (CPTs) advanced on August 28, 2020. The borings were drilled to depths of about 8½ to 41 feet; the CPTs were advanced to depths of about 50 to 150 feet. Seismic shear wave velocity measurements were collected from CPT-3. Borings EB-1, EB-2, EB-3, EB-4, and EB-7 were advanced adjacent to CPT-1, CPT-2, CPT-3, CPT-4, and CPT-5, 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, Plasticity Index tests, consolidation tests, and triaxial compression tests. Details regarding our laboratory program are included in Appendix B.

1.5 CORROSION EVALUATION

Three samples from our borings at depths from 2 to 5½ 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. Additional information and recommendations are provided in “Corrosion Screening” section of this report.

1.6 ENVIRONMENTAL SERVICES

We understand environmental services for the project are being provided by another consultant. If environmental concerns are present, they 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. Alluvial soil thicknesses in the area are mapped to be greater than 500 feet (Rogers & Williams, 1974).

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 Fault (southeast extension)	3.1	5.0
Calaveras Fault (south)	5.8	9.4
Hayward Fault	6.3	10.2
Monte Vista – Shannon Fault	9.9	16.0
San Andreas Fault	14.3	23.0

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 AND SURFACE DESCRIPTION

We reviewed pre- and post-development historic aerial photos provided on www.historicaerials.com taken between 1948 and 2016. The 1948 photos indicate that the site and adjacent areas were undeveloped and used for agricultural purposes. The existing main centrally located structure appears to have been built in the mid to late 1960's. The existing smaller buildings in the northeast and southeast areas of the site appear to have been built by the 1982 photo with the site remaining generally the same since.

The site is currently occupied by the centrally located warehouse building with offices on the southwest side of the building and the two smaller one-story buildings in the northeast and southeast areas of the site. Asphalt and Portland cement concrete parking and drive aisles generally surround the existing buildings with areas of landscaping consisting of grass, small shrubs, and mature trees generally within the eastern and southern portions of the site. The site is relatively flat, graded to drain to storm drainage facilities, and is at elevations ranging from approximately Elevation 84 to 91 (datum unspecified) based on the preliminary grading plan provided by Kier+Wright.

Surface pavements at our borings within the existing parking/drive aisles (Borings EB-1, EB-2, EB-3, EB-4, EB-7, EB-8, EB-9, EB-10, and EB-12) generally consisted of asphalt concrete and/or Portland cement concrete overlying aggregate base. Borings EB-1, EB-2, EB-3, EB-4, EB-7, EB-8, and EB-12 encountered 2½ to 6 inches of asphalt concrete overlying up to 6 inches of aggregate base. Aggregate base was not observed beneath the asphalt concrete in Boring EB-2. Boring EB-9 encountered 2 inches of asphalt concrete over 6 inches of Portland Cement Concrete over 2 inches of aggregate base. Boring EB-10 encountered 3 inches of Portland cement concrete overlying 6 inches of aggregate base. Based on visual observations, the existing exterior pavements are in poor shape with significant rutting and alligator cracking.

Borings EB-5, EB-6 and EB-11 were performed inside the existing main building, which had Portland cement concrete, brick, or tile floor at the surface. At Boring EB-5, the floor section consisted of 6 inches of Portland cement concrete overlying 5 inches of crushed rock overlying a thin concrete slab. At Boring EB-6, 3 inches of brick overlying 5 inches of Portland cement concrete overlying 2 inches of crushed rock was encountered. At Boring EB-11, 1-inch brick tile overlying 7 inches of Portland cement concrete overlying 4 inches of crushed rock and 12 inches of aggregate base was encountered.

3.2 SUBSURFACE CONDITIONS

In the south portion of the site, below the surface pavements, Borings EB-4 and EB-10 encountered undocumented fills to a depth of 7 and 1½ feet, respectively. The fill generally consisted of stiff to very stiff sandy lean clay. The fill at Boring EB-4 was generally underlain by

medium stiff to stiff lean clay with varying amounts of sand and gravel to the terminal depth of the boring at 41 feet. A layer of dense clayey sand was encountered interbedded within the clay at a depth of 38½ to 40½ feet. Beneath the fill at Boring EB-10, very stiff highly expansive clay with some sand was encountered to a depth of 3 feet underlain by very stiff sandy lean clay to a depth of 5½ feet. The lean clay was underlain by an approximate 1½ foot layer of medium dense poorly graded sand with silt to a depth of 7 feet underlain by stiff lean clay with sand to a depth of 8½ feet, the terminal depth of the boring.

In the central and eastern portions of the site, below the existing interior building slab sections, Borings EB-5, EB-6, and EB-11 encountered very stiff to hard sandy lean clay undocumented fill to depths of approximately 2¼ to 3¼ feet beneath the surface. Beneath the surface pavements and fills, Borings EB-2, EB-3, EB-5, EB-6, EB-7, EB-9, EB-11, and EB-12 generally encountered stiff to hard clay with medium to high plasticity and varying amounts of sand to depths of approximately 3¼ to 5 feet. The clay was underlain by an approximate 1¼ to 4½ thick layer of loose to medium dense silty sand, clayey sand, and/or poorly graded sand with silt to depths ranging from about 5¼ to 9 feet beneath the surface. The sand was underlain by medium stiff to very stiff lean clay with varying amounts of sand and gravel with interbedded thin layers of loose to medium dense clayey sand, silty sand, poorly graded sand, and silty, clayey sand to depths ranging from 8½ to 34 feet, the terminal depths of the borings.

In the north/northwestern portion of the site, below the surface pavements Boring EB-1 encountered hard highly expansive clay to a depth of about 2¾ feet underlain by generally medium stiff to hard lean clay with varying amounts of sand to the terminal depth of 36 feet. Interbedded 1½ to 2-foot layers of medium dense clayey sand or silty, clayey sand were encountered at depths of 12, 17½, and 31 feet. Beneath the surface pavements, Boring EB-8 encountered hard highly expansive clay with some fine to medium sand to a depth of 4 feet. The clay was underlain by a 2-foot layer of loose clayey sand with gravel to a depth of 6 feet. The sand was underlain by medium stiff to stiff lean clay with sand to a depth of 10½ feet, the terminal depth of the boring.

We also evaluated the soil correlations from our CPT explorations below the depth of our borings. Beneath the depth of our borings, our CPTs generally interpreted stiff to very stiff clays and silts with generally thin interbedded layers of dense to very dense sands to the maximum depths explored ranging from about 50 to 150 feet beneath the surface. A thicker dense to very dense sand layer was encountered starting at a depth of about 40 to 45 feet to the terminal depth of 50 feet at CPT-2, CPT-4, and CPT-5. Generally dense to very dense sands were encountered at depths of about 40 to 73 feet at CPT-3.

3.2.1 Plasticity/Expansion Potential

We performed four Plasticity Index (PI) tests on representative samples. Test results were used to evaluate expansion potential of surficial soils and the plasticity of the fines in potentially liquefiable layers. The surficial PI test resulted in a PI of 29, indicating moderate to high expansion potential to wetting and drying cycles. Results of the PI tests in potentially liquefiable soils indicated PIs of 6, 7, and 12.

3.2.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from about 5 percent below to 15 percent over the estimated laboratory optimum moisture.

3.3 GROUNDWATER

Groundwater was encountered in our borings at depths ranging from about 6 to 12 feet. Groundwater was not encountered to the maximum depths explored of 10½ feet at EB-8 and 8½ at Borings EB-9, EB-10, and EB-12. Groundwater was inferred in our CPTs at depths of about 5 to 8 feet beneath current site grades based on pore pressure dissipation tests. 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.

Historic high groundwater levels are mapped by CGS to be on the order of 5 to 10 feet below current grades (CGS, San Jose East 7.5 Minute Quadrangle, 2000). Additionally, we reviewed nearby groundwater data obtained from the GeoTracker website (geotracker.waterboards.ca.gov). Groundwater data at 1608 Las Plumas Avenue (approximately 0.3 miles southwest of the site) indicated groundwater depths ranging from about 4¼ to 12½ feet below existing grades between 2007 and 2020. Groundwater data at 1590 Las Plumas Avenue (approximately 0.4 miles southwest of the site) indicated groundwater depths ranging from 4½ to 16¾ feet below existing grades between 2005 and 2020. In general, fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

Based on the above information and our experience in the site vicinity, we recommend a groundwater depth of 5 feet be used for design and evaluation of liquefaction potential.

3.4 Corrosion Screening

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

Table 2A: Summary of Corrosion Test Results

Sample Location	Depth (feet)	Soil pH[1]	Resistivity[2] (ohm-cm)	Chloride[3] (mg/kg)	Sulfate[3,4] (mg/kg)
EB-2	5.5	6.8	1,482	23	60
EB-6	4.0	7.2	666	338	169
EB-10	2.0	7.2	1,076	70	118

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 to corrosion potential.

3.4.1 Preliminary Soil Corrosion Screening

Based on the laboratory test results summarized in Table 2A and published correlations between resistivity and corrosion potential, the soils may be considered severely to very severely corrosive 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 2B.

Table 2B: 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]	W0[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 (W0) "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)

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

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT 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 Fault Hazard Map. As shown in Figure 3, no known surface expression of fault traces is thought to cross the site; therefore, fault rupture hazard is not a significant geologic hazard at the site.

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 21, Section 21.2 of

ASCE 7-16 and Supplement No. 1 and determined in accordance with Section 21.5 of ASCE 7-16. For our liquefaction analysis we used a PGA_M of 0.82g

4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, San Jose East Quadrangle, 2000) as well as a Santa Clara County Liquefaction Hazard Zone (Santa Clara County, 2002). 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 5 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. Soil samples were collected from the borings that were in proximity to the CPTs to visually observe for confirmation of CPT soil behavior types.

The results of our CPT analyses (CPT-1 to CPT-5) are presented on Figures 4A to 4E 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 ranging from less than ¼ inch up to 1½-inch based on the Yoshimine (2006) method. However, as indicated in Andrus and Stokoe (2000), the occurrence of liquefaction in sands with a shear wave velocity of greater than about 700 ft/sec is unlikely. As the shear wave data collected at CPT-3 within the larger sand layers between a depth of about 40 to 50 feet indicate shear waves on the order of 850 feet per second, in our opinion, the sands shown to be liquefiable at depths of about 43 to 48 feet at CPT-2, CPT-4, and CPT-5 would not liquefy due to the higher shear waves. As such, total post-liquefaction settlement at the ground surface is estimated to range from less than ¼ inch up to about 1¼ inch.

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. As to be discussed in the "Conclusions" and "Earthworks" section of this report, we recommend the existing surficial soils be removed and replaced as engineered fill to densify the loose to medium dense sands generally observed at depths ranging from about 3¼ to 9 feet beneath the surface. As such, the post-liquefaction total settlements will be reduced to about ½ inch. In our opinion, differential settlements are anticipated to be on the order of ⅓-inch, or less, between independent foundation elements.

4.3.4 Ground Disruption Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground disruption or ground failure. For ground disruption 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 5-foot thick layer of non-liquefiable cap is sufficient to prevent ground disruption at most locations except at CPT-5, EB-5, and EB-6. Following site grades being raised as shown on the preliminary grading plan, there is still a potential for ground disruption at these locations. However, as mentioned above and as discussed in the "Conclusions" and "Earthworks" section of this report, we recommend the existing surficial soils be removed and replaced as engineered fill. As such,

in our opinion, ground disruption potential will be reduced and 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 to medium dense unsaturated sandy soils can settle during strong seismic shaking. We evaluated the potential for seismic compaction of the loose sands based on the work by Tokimatsu and Seed (1984) and Robertson and Shao (2010). Based on our analysis, the unsaturated granular soils could experience up to about ⅓-inch of total settlement following strong seismic shaking. However, as mentioned above and as discussed in the "Conclusions" and "Earthworks" section of this report, we recommend the existing surficial soils be removed and replaced as engineered fill. As such, in our opinion, the potential for unsaturated sand shaking 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 11 miles inland from the San Francisco Bay shoreline and is at approximately Elevation 84 to 91 feet (datum unspecified) according to the preliminary grading plans provided by Kier+Wright. 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, generally the central, northwest, and northeast portions of the site are located within Zone X, an area of minimal flood hazard. The southwest and southeast portions of the site are located with Zone AH, a special flood hazard area with a base floor Elevation 90 feet shown. We recommend the project civil engineer be retained to confirm this information and verify the base flood elevation, if appropriate.

SECTION 5: 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.

5.1 SITE LOCATION AND PROVIDED DATA FOR 2019 CBC SEISMIC DESIGN

The project is located at latitude 37.363889° and longitude -121.865066°, which is based on Google Earth (WGS84) coordinates at the approximate center of the site at 650 N. 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.

5.2 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}).

Shear wave velocity (V_S) measurements were performed while advancing CPT-3, resulting in a time-averaged shear wave velocity for the top 30 meters (V_{S30}) of 263 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 263 m/s (863 ft/s).

5.3 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 3.

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 6. Values in Table 3 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 3 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 3: 2019 CBC Site Categorization and Site Coefficients

Classification/Coefficient	Design Value
Site Class	D
Site Latitude	37.363889°
Site Longitude	-121.865066°
Risk Category	II**
Short Period Mapped Spectral Acceleration – S_S	1.664
1-second Period Mapped Spectral Acceleration – S_1	0.629
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}	1.664
1-second Period MCE Spectral Response Acceleration Adjusted for Site Effects – S_{M1}	*null
Short Period, Design Earthquake Spectral Response Acceleration – S_{DS}	1.109

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

Table 3 Continues

Table 3: 2019 CBC Site Categorization and Site Coefficients (Continued)

Classification/Coefficient	Design Value
1-second Period, Design Earthquake Spectral Response Acceleration – S_{D1}	*null
Long-Period Transition – T_L	12
Site Coefficient – F_{PGA}	1.1
Site Modified Peak Ground Acceleration – PGA_M	0.771

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

5.4 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).

5.4.1 Probabilistic MCE_R

We performed a probabilistic seismic hazard analysis (PSHA) per 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 (CR) to determine the probabilistic MCE_R. We used Risk Coefficients (CR_S and CR_1) of 0.945 and 0.922, 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 4, Column 3.

The resulting probabilistic MCE_R is presented on Figure 5 (red line). Spectral ordinates are tabulated in Table 4, Column 6.

5.4.2 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 resulted from a M_w 7.08 earthquake on the Hayward Fault (HS+HE segments), located at a distance of approximately 6.72 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 4, 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 2.840 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 4, Column 5. The deterministic MCE_R is presented graphically on Figure 5 (blue line).

5.4.3 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 4, Column 7 and shown graphically on Figure 5 (dashed black line).

Table 4: Site Class D: 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	0.444	0.945	0.900	0.900	1.061	0.900
0.050	0.620	0.945	0.977	0.977	1.428	0.977
0.075	0.708	0.945	1.177	1.177	1.612	1.177
0.100	0.796	0.945	1.412	1.412	1.796	1.412
0.189	1.109	0.945	1.863	1.863	2.302	1.863
0.200	1.109	0.945	1.918	1.918	2.365	1.918
0.250	1.109	0.944	2.046	2.046	2.551	2.046
0.300	1.109	0.942	2.114	2.114	2.737	2.114
0.400	1.109	0.939	2.145	2.145	2.789	2.145
0.500	1.109	0.936	2.094	2.094	2.840	2.094
0.750	1.109	0.929	1.735	1.735	2.501	1.735
0.945	1.109	0.924	1.520	1.520	2.250	1.520
1.000	1.048	0.922	1.460	1.460	2.179	1.460
2.000	0.524	0.922	0.717	0.717	1.254	0.717
3.000	0.349	0.922	0.452	0.452	0.846	0.452
4.000	0.262	0.922	0.305	0.305	0.607	0.305
5.000	0.210	0.922	0.226	0.226	0.466	0.226

5.4.4 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 5, Column 2. Ordinates corresponding to 80% of the general Site Class D response spectrum are tabulated below in Table 5, Column 3. Ordinates of the site-specific DRS are tabulated in Table 5, Column 4. Development of the site-specific DRS is presented graphically on Figure 6 (dashed black line).

Table 5: Site Class D: 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	0.600	0.355	0.600
0.050	0.652	0.496	0.652
0.075	0.784	0.566	0.784
0.100	0.941	0.637	0.941
0.189	1.242	0.887	1.242
0.200	1.279	0.887	1.279
0.250	1.364	0.887	1.364
0.300	1.409	0.887	1.409
0.400	1.430	0.887	1.430
0.500	1.396	0.887	1.396
0.750	1.157	0.887	1.157
0.945	1.013	0.887	1.013
1.000	0.973	0.839	0.973
2.000	0.478	0.419	0.478
3.000	0.301	0.280	0.301
4.000	0.203	0.210	0.210
5.000	0.151	0.168	0.168

5.5 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 3

Recommended design acceleration parameters are summarized in Table 6.

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 5, Column 4.

Table 6: Site Class D: Site-Specific Design Acceleration Parameters

Parameter	Value
S_{DS}	1.287
S_{D1}	0.973
S_{MS}	1.931
S_{M1}	1.460

5.6 SITE-SPECIFIC MCE_G PEAK GROUND ACCELERATION

We calculated the Site-Specific MCE_G Peak Ground Acceleration (PGA_M) per 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 1.020g. The deterministic PGA is considered the greater of the largest 84th percentile deterministic geometric mean PGA (0.818) 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 0.818g. 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 0.771g; 80% of PGA_M is 0.616g.

Based on the above, the recommended Site-Specific PGA_M for the site is 0.82g.

SECTION 6: CONCLUSIONS

6.1 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
- Loose to medium dense near surface sandy soil
- Potential for static settlements from fill placement and building loads
- Shallow groundwater
- Undocumented fill
- Redevelopment considerations
- Expansive soils
- Soil corrosion potential

6.1.1 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. Our analysis indicates total liquefaction-induced settlement up to about 1¼ inches could occur, and there is a potential for ground deformation at a few locations. However, based on the over-excavation and recompaction procedures we recommend and discuss, in our opinion, the ground deformation potential would be reduced to a low potential and the total liquefaction-induced settlement would be reduced to ½ inch, resulting in differential settlement on the order of ⅓ inch between independent foundation elements. Foundations should be designed to tolerate the anticipated total and differential settlements mentioned above. Detailed foundation recommendations are presented in the "Foundations" section.

6.1.2 Loose to Medium Dense Near Surface Sandy Soil Layer

As mentioned, an approximate 1¼- to 4½-foot thick loose to medium dense sandy soil layer was generally encountered at a depth ranging from about 3¼ to 9 feet beneath the surface. These soils have a potential for increased total and differential settlements and will have lower bearing capacities. Additionally, during a seismic event, ground deformation could occur at a few locations as a result of these sandy soils. To reduce the potential for the above, we recommend the upper 5 to 7 feet within the building area be over-excavated and recompacted. Additional recommendations are provided in the "Earthwork" section below.

6.1.3 Potential for Static Settlements from Fill Placement and Building Loads

As part of our evaluation, we performed settlement analyses to estimate the potential static settlements due to new fill placement and building loads. Based on the preliminary grading plans provided, site grades are anticipated to be raised about 2 to 4 feet up to the finished floor elevation within the building footprint. This additional new fill would cause settlement of the existing soils in addition to settlement due to foundation loads. We estimate total settlements from raising site grades to achieve the building finished floor elevation could be on the order of ¾ to 1 inch.

Additionally, we evaluated static settlements due estimated static dead plus live column loads ranging up to 150 kips and wall loads ranging up to 10 kips per foot. For conventional shallow spread and strip footings, total static settlements are estimated to be on the order of about ½- to ¾-inches. The building foundations will need to be designed to tolerate total and differential settlements due to static and liquefaction-induced settlements. Detailed foundation recommendations are presented in the "Foundations" section.

6.1.4 Shallow Groundwater

Shallow groundwater was measured at depths ranging from approximately 6 to 12 feet below the existing ground surface. We anticipate that groundwater exists as shallow as 5 feet below the existing ground surface. Shallow groundwater could significantly impact grading and underground construction. These impacts typically consist of potentially wet and unstable

pavement subgrade and subgrade for over-excavations, difficulty achieving compaction, and difficult underground utility installation. Dewatering and shoring of utility trenches may be required in some isolated areas of the site. Detailed recommendations addressing this concern are presented in the "Earthwork" section of this report.

6.1.5 Undocumented Fill

As mentioned, undocumented fills were encountered within some of our borings ranging up to 7 feet beneath the surface. Additionally, due to the previous development and site history, we anticipated fills may be present in various locations of the site. Undocumented fills are expected to be variable in thickness, density, and consistency across the site. We recommend all undocumented fills blanketing the site be completely removed from within the building areas and replaced as engineered fill.

6.1.6 Re-Development Considerations

As discussed, the site is currently occupied by an existing warehouse, other smaller buildings, and pavements. 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.

6.1.7 Expansive Soils

Moderately to highly expansive surficial soils were encountered in our borings and 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 structure, 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.

6.1.8 Soil Corrosion Potential

Corrosion testing was performed on samples from Borings EB-2, EB-6, and EB-10 at depths of 2 to 5½ feet. Testing on the samples indicate sulfate exposure is low and therefore sulfate resistant concrete is not required per published ACI guidelines. Additionally, corrosion potential for buried metallic structures, such as metal pipes, is considered severely to very severely corrosive. Based on the results of the preliminary soil corrosion screening, special requirements for corrosion control will likely be required to protect metal pipes if metal material is planned for the improvements. We recommend the structural engineer and corrosion engineer review the results, provide additional recommendations, and perform additional testing as deemed necessary for the proposed site development.

6.2 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.

6.3 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 7: EARTHWORK

7.1 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 and/or are currently 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 development. If encountered, Cornerstone should be contacted to address these types of structures on a case-by-case basis.

7.1.1 Demolition of Existing Slabs, Foundations and Pavements

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

As an owner value-engineered option, existing slabs, foundations, and pavements that extend into planned flatwork, pavement, or landscape areas may be left in place provided there is at least 3 feet of engineered fill overlying the remaining materials, they are shown not to conflict with new utilities, and that asphalt and concrete more than 10 feet square is broken up to allow subsurface drainage. Future distress and/or higher maintenance may result from leaving these

prior improvements in place. A discussion of recycling existing improvements is provided later in this report.

Special care should be taken during the demolition and removal of existing floor slabs, foundations, utilities and pavements 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.

7.1.2 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.

7.2 SITE CLEARING AND PREPARATION

7.2.1 Site Stripping

The site should be stripped of all surface vegetation, and surface and subsurface improvements to be removed within the proposed development area. Demolition of existing improvements is discussed in the prior paragraphs. A detailed discussion of removal of existing fills is provided

in Section 6.3. 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 2 to 4 inches below existing grade in vegetated areas.

7.2.2 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.

7.3 REMOVAL OF EXISTING FILLS

As previously discussed, undocumented fills were encountered in some of our borings ranging up to a depth of 7 feet below existing site grades. 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.

7.4 OVER-EXCAVATION AND RECOMPACTION OF BUILDING

As noted in previous sections of this report, a layer of loose to medium dense sandy soil was encountered at depths ranging from 3¼ to 9 feet within many of our explorations. These soils have a potential for increased total and differential settlements and lower bearing capacities. Additionally, there is a potential for ground deformation at some locations.

To reduce the potential for the above concerns, we recommend the upper 5 to 7 feet below existing grades within the building be over-excavated and replaced as engineered fill. The depth will vary based on location and depth of loose to medium dense sandy layer. Over-excavation should extend to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to the final over-excavation depth below the perimeter footing, whichever is greater. Once the over-excavation is completed, the excavation bottom should be scarified, moisture conditioned, and compacted. The minimum recommended performance specification for compaction of the base of the exposed over-excavation area should consist of

a minimum of five overlapping passes with a heavy-duty, vibratory smooth drum roller (such as a Dynapac CA5000, Volvo SD160 or an approved equivalent) that will exert a minimum of 25,000 ft-lbs of energy. The above recommendations may need to be modified at the time of construction based on actual field conditions.

Subgrade preparation and compaction should be performed in accordance with the following sections. If the over-excavated materials meet requirements in the "Materials for Fill" section, they can be reused as engineered fill. Backfill of the over-excavations should be placed in lifts and compacted in accordance with the following sections.

It should be noted that the over-excavation may extend near to the groundwater level. The contractor should anticipate and plan for highly wet and potentially unstable soil conditions.

7.4.1 High Moisture in Fills and Underlying Native Soils

As discussed, the in-situ moisture contents range from about 5 percent below to about 15 percent over the estimated laboratory optimum in the upper 10 feet of the soil profile. Additionally, the soils may become significantly wetter during wet winter weather and at depths close to the groundwater. The contractor should anticipate drying and processing soils prior to reusing them as fill. The contractors should anticipate working with and mitigating unstable soil conditions especially at depths closer to groundwater.

7.5 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.

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.

7.6 SHALLOW GROUNDWATER

As previously stated, groundwater was encountered at depths of about 6 to 12 feet in our borings. We recommend that contractors anticipate dewatering to control water seeping into deeper excavations close to or below the groundwater. Groundwater conditions can be difficult to maintain, and if the groundwater is in a relatively widespread, continuous layer, it may be hard to dewater, requiring continuous dewatering during excavations. The contractors should anticipate working with and mitigating unstable soil conditions, especially when close to the groundwater depth.

7.7 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.

7.8 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 are about 5 percent under to 15 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 others prior to reusing them as fill especially if work is performed in winter or spring. 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.

7.8.1 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.

7.8.2 Scarification and Drying

The subgrade may be scarified to a depth of 8 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.

7.8.3 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 geosynthetic (stabilization fabric or geogrid) is recommended, and what materials are recommended for backfill.

7.9 MATERIAL FOR FILL

7.9.1 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.

7.9.2 Re-Use of On-Site Site Improvements

We anticipate that asphalt concrete (AC) grindings and aggregate base (AB) will be generated during site demolition. If the AC grindings are mixed with the underlying AB to meet Class 2 AB specifications, they may be reused within the new pavement and flatwork structural sections. AC/AB grindings may not be reused within the building areas. Laboratory testing will be required to confirm the grindings meet project specifications.

If the site area allows for on-site pulverization of PCC and provided the PCC is pulverized to meet the "Material for Fill" requirements of this report, it may be used as select fill within the planned building areas, excluding the capillary break layer; as typically pulverized PCC comes close to or meets Class 2 AB specifications, the recycled PCC may likely be used within the pavement structural sections. PCC grindings also make good winter construction access roads, similar to a cement-treated base (CTB) section.

7.9.3 High Moisture in Fills and Underlying Native Soils

As discussed, the in-situ moisture contents range up to about 15 percent over the estimated laboratory optimum in the upper 10 feet of the soil profile. Additionally, the soils may become significantly wetter during wet winter weather. The contractor should anticipate drying and processing soils prior to reusing them as fill. The contractors should anticipate working with and mitigating unstable soil conditions.

7.9.4 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.

7.9.5 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.

7.10 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 7: 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 pavement 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)

7.10.1 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.

7.11 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.

7.12 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.

7.13 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.

- The near-surface soils at the site are generally clayey, and categorized as Hydrologic Soil Group D and are expected to have infiltration rates of less than 0.2 inches per hour. In our opinion, these clayey soils will significantly limit the infiltration of stormwater.

- Locally, seasonal high groundwater is mapped at a depth of 5 feet, and therefore is expected to be within 10 feet of the base of the infiltration measure.

- In our opinion, infiltration locations within 10 feet of the buildings would create a geotechnical hazard.

- 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.

- Local Water District policies or guidelines may limit locations where infiltration may occur, require greater separation from seasonal high groundwater, or require greater setbacks from potential sources of pollution.

7.13.1 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.

7.13.1.1 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.

7.13.1.2 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.

7.13.1.3 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.

7.14 LANDSCAPE CONSIDERATIONS

Since the near-surface soils are moderately to 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 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

Provided the structure can tolerate the estimated static and seismic total and differential settlements, conventional spread footings can be considered for building support. Spread footings should bear on natural, undisturbed soil or engineered fill, be at least 15 inches wide, and extend at least 18 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.

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 2,000 psf for dead loads, 3,000 psf for combined dead plus live loads, and 4,000 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 estimated the typical loading in the following table.

Table 8: Estimated Structural Loading

Foundation Area	Range of Assumed Loads
Interior Isolated Column Footing	100 to 150 kips
Perimeter Strip Footing	8 to 10 kips per lineal foot

For our analysis, we also assumed the bottom of interior column footings and wall footings along the north, east, and south sides of the building will be roughly 3 feet beneath the finished floor elevations shown on the preliminary grading plan provided. Further we assumed the bottom of wall footings along the loading dock along the western side of the building will be roughly 6 to 6½ feet beneath the finished floor elevation. Based on the above loading, the allowable bearing pressures presented above, and assumed bottom of foundations, we estimate

the total static footing settlements due to foundation loads only will be on the order of ½ to ¾ inches. Post-construction differential settlements due to foundation loads only are estimated at ½ inch or less between adjacent foundation elements, or over a horizontal distance of 50 feet.

In addition to the estimated static footing settlements presented above, we estimate differential seismic movement between independent foundation elements will be on the order of ⅓ inch (provided the upper loose to medium dense sands are over-excavated and replaced as engineered fill as previously discussed).

Furthermore, based on a finished floor elevation ranging from Elevation 90.8 feet at the north end and Elevation 89.2 feet at the south end, existing grades will be raised about 2 to 4 feet to achieve finished floor elevation. In addition to the static foundation and seismic settlements discussed above, the building should be designed to accommodate an estimated ¾ to 1 inch settlement due to additional fills to raise existing grades up to the finished floor elevation.

As a result, total combined static settlements from foundation loading and raising site grades to finished floor are estimated at ⅔ to 1¼ inches. Total combined static plus seismic settlement is estimated at 1¼ to 1¾ inches (following recompaction of the upper sand layer). Total combined static plus seismic differential settlement is estimated at ⅔ to 1 inch between independent foundation elements (following recompaction of upper sand layer), or over about 50 feet along continuous perimeter foundations. Below table summarizes the above estimated settlements. We recommend we be retained to review the final footing layout and loading, and verify the settlement estimates above.

Table 9: Summary of Foundation Settlements

Total Static Settlement (Foundation Load + Fill Placement) (inches)	Total Static plus Seismic Settlement[1] (inches)	Total Differential Settlement[1][2] (Foundation Load + Seismic Liquefaction + Fill Placement) (inches)
⅔ to 1¼	1¼ to 1¾	⅔ to 1

(1) Following recompaction of the upper sand layer.
(2) Total differential settlements between independent foundation elements or over about 50 feet along continuous perimeter foundations.

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 0.45 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.

Groundwater is anticipated to be shallow and the existing soils are highly wet in locations. Footing excavations, especially deeper excavations (i.e. loading dock wall footings) may encounter groundwater or highly wet soils. Contractors should anticipate encountering these conditions and needing to remove groundwater and stabilize excavation bottoms prior to steel placement and concrete.

8.3 ALTERNATIVE FOUNDATIONS

If above estimated settlements exceed the structural requirements, a stiffer grid foundation or spread footings overlying ground improvement can be considered to limit settlement. Additionally, the building can also be potentially supported on a deep foundation system including auger cast piles. Further, as an alternative or if over-excavation of the building pad as described in the "Earthwork" section of this report is not feasible, we understand Rapid Impact Compaction or other ground improvement method can be considered to improved the loose to medium dense sands encountered within the upper 9 feet at the site. If these options are to be considered, we can provide additional recommendations.

SECTION 9: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

9.1 OFFICE SLABS-ON-GRADE

As Plasticity Index (PI) tests of the surficial soils indicate high expansion potential, the proposed office slabs-on-grade should be supported on at least 12 inches of non-expansive fill (NEF) 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 and slab-on-grade 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. During design of the slab, we should be consulted to provide subgrade modulus for design of the slab based on anticipated loading conditions (e.g. rack, forklift, etc.), if needed. 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.

Warehouse slabs-on-grade should also be supported on at least 6 inches of 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 6 inches of non-expansive fill (NEF) should underlie the upper granular base. 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 and/or occasional light pick up loading should be at least 4 inches thick and supported on at least 6 inches of non-expansive fill overlying subgrade prepared in accordance with the “Earthwork” recommendations of this report. In addition, the upper 4 inches of NEF should also meet Class 2 aggregate base requirements. 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 on a design R-value of 5. The design R-value was chosen

based on engineering judgement considering the existing surface conditions 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 10: 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 11: 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

*Caltrans Class 2 aggregate base with minimum R-value of 78; minimum chemical-treated subgrade R-value assumed to be 50

Table 11 Continues

Table 11: Asphalt Concrete Pavement Recommendations (Chemical-Treated Subgrade) (Continued)

Design Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base* (inches)	Total Pavement Section Thickness (inches)
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	6.0	8.0	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 50

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 12: PCC Pavement Recommendations (Untreated Subgrade)

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

Table 13: 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.

10.3 TRASH ENCLOSURES

Trash enclosures and the associated stress pads should consist of at least 8 inches of Portland cement concrete (PCC) over at least 6 inches of Class 2 aggregate base, where the aggregate base should be compacted to 95 percent relative compaction. The top 6 inches of the underlying subgrade should be moisture conditioned and compacted according to the "Compaction" section of this report. The compressive strength and construction details should be consistent with the above recommendations for PCC pavements.

10.4 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 including the loading dock 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:

Table 14: 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 greater than 6 feet in height. 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 landscape retaining 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 Black Creek Industrial Acquisitions, LLC specifically to support the design of the 650 N. 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.

Black Creek Industrial Acquisitions, LLC may have provided Cornerstone with plans, reports and other documents prepared by others. Black Creek Industrial Acquisitions, LLC 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.

SECTION 13: REFERENCES

Aagaard, B.T., Blair, J.L., Boatwright, J., Garcia, S.H., Harris, R.A., Michael, A.J., Schwartz, D.P., and DiLeo, J.S., 2016, Earthquake outlook for the San Francisco Bay region 2014–2043 (ver. 1.1, August 2016): U.S. Geological Survey Fact Sheet 2016–3020, 6 p., http://dx.doi.org/10.3133/fs20163020.

Andrus, D.R. and Stokoe, K.H., Liquefaction Resistance of Soils from Shear-Wave Velocity, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Vol. 126, No. 11, November, pp 1015-1025, 2000.

"ATC Hazards". *Hazards.Atcouncil.Org*, 2019, https://hazards.atcouncil.org/.

Boulanger, R.W. and Idriss, I.M., 2004, Evaluating the Potential for Liquefaction or Cyclic Failure of Silts and Clays, Department of Civil & Environmental Engineering, College of Engineering, University of California at Davis.

Boulanger, R.W. and Idriss, I.M., 2014, CPT and SPT Based Liquefaction Triggering Procedures, Department of Civil & Environmental Engineering, College of Engineering, University of California at Davis, Report No. UCD/GCM-14/01, April 2014.

California Building Code, 2019, Structural Engineering Design Provisions, Vol. 2.

California Department of Conservation Division of Mines and Geology, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, International Conference of Building Officials, February, 1998.

California Division of Mines and Geology (2008), “Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A, September.

California Geological Survey, 2000, State of California Seismic Hazard Zones, San Jose East 7.5-Minute Quadrangle, California: Seismic Hazard Zone Report 044.

Federal Emergency Management Administration (FEMA), 2014, FIRM City of San Jose, California, Community Panel #0603490251J.

GitHub, *usgs/shakemap-scenarios*, 2020, https://github.com/usgs/shakemap-scenarios/tree/master/rupture_sets/BSSC2014.

Idriss, I.M., and Boulanger, R.W., 2008, Soil Liquefaction During Earthquakes, Earthquake Engineering Research Institute, Oakland, CA, 237 p.

Ishihara, K., 1985, Stability of Natural Deposits During Earthquakes: Proceedings Eleventh International Conference on Soil Mechanics and Foundation Engineering, San Francisco.

Ishihara, K. and Yoshimine, M., 1992, Evaluation of Settlements in Sand Deposits Following Liquefaction During Earthquakes, Soils and Foundations, 32 (1): 173-188.

Nationwide Environmental Title Research, Historic Aerials by NETR Online, http://www.historicaerials.com/.

Knudsen et al., 2000, Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California.

Portland Cement Association, 1984, Thickness Design for Concrete Highway and Street Pavements: report.

Robertson, P.K., Shao, Lisheng, 2010, Estimation of Seismic Compression in Dry Soils Using the CPT, 5th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, Paper No. 4.05a, May 24-29, 2010.

Ritter, J.R., and Dupre, W.R., 1972, Map Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region, California: San Francisco Bay Region Environment and Resources Planning Study, USGS Basic Data Contribution 52, Misc. Field Studies Map MF-480.

Rogers, T.H., and J.W. Williams, 1974 Potential Seismic Hazards in Santa Clara County, California, Special Report No. 107: California Division of Mines and Geology.

Tokimatsu, K., and Seed, H. Bolton, 1987, Evaluation of Settlements in Sands due to Earthquake Shaking, ASCE Journal of Geotechnical Engineering, Vol. 113, August 1987, pp. 861-878.

Seed, H.B. and I.M. Idriss, 1971, A Simplified Procedure for Evaluation soil Liquefaction Potential: JSMFC, ASCE, Vol. 97, No. SM 9, pp. 1249 – 1274.

Seed, H.B. and I.M. Idriss, 1982, Ground Motions and Soil Liquefaction During Earthquakes: Earthquake Engineering Research Institute.

Seed, Raymond B., Cetin, K.O., Moss, R.E.S., Kammerer, Ann Marie, Wu, J., Pestana, J.M., Riemer, M.F., Sancio, R.B., Bray, Jonathan D., Kayen, Robert E., and Faris, A., 2003, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework., University of California, Earthquake Engineering Research Center Report 2003-06.

Southern California Earthquake Center (SCEC), 1999, Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California, March.

State of California Department of Transportation, Highway Design Manual, Latest Edition.

U.S. Geological Survey, *Unified Hazard Tool*, 2020, https://earthquake.usgs.gov/hazards/interactive/.

U.S. Geological Survey, *Building Seismic Safety Council 2014 Event Set*, ArcGIS Web Application, 2020, https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=14d2f75c7c4f4619936dac0d14e1e468.

U.S. Geological Survey, *USGS Earthquake Hazards Program*, 2020, https://earthquake.usgs.gov/nshmp-haz-ws/apps/spectra-plot.html.

Working Group on California Earthquake Probabilities, 2015, The Third Uniform California Earthquake Rupture Forecast, Version 3 (UCERF), U.S. Geological Survey Open File Report 2013-1165 (CGS Special Report 228). KMZ files available at: www.scec.org/ucerf/images/ucerf3_timedep_30yr_probs.kmz.

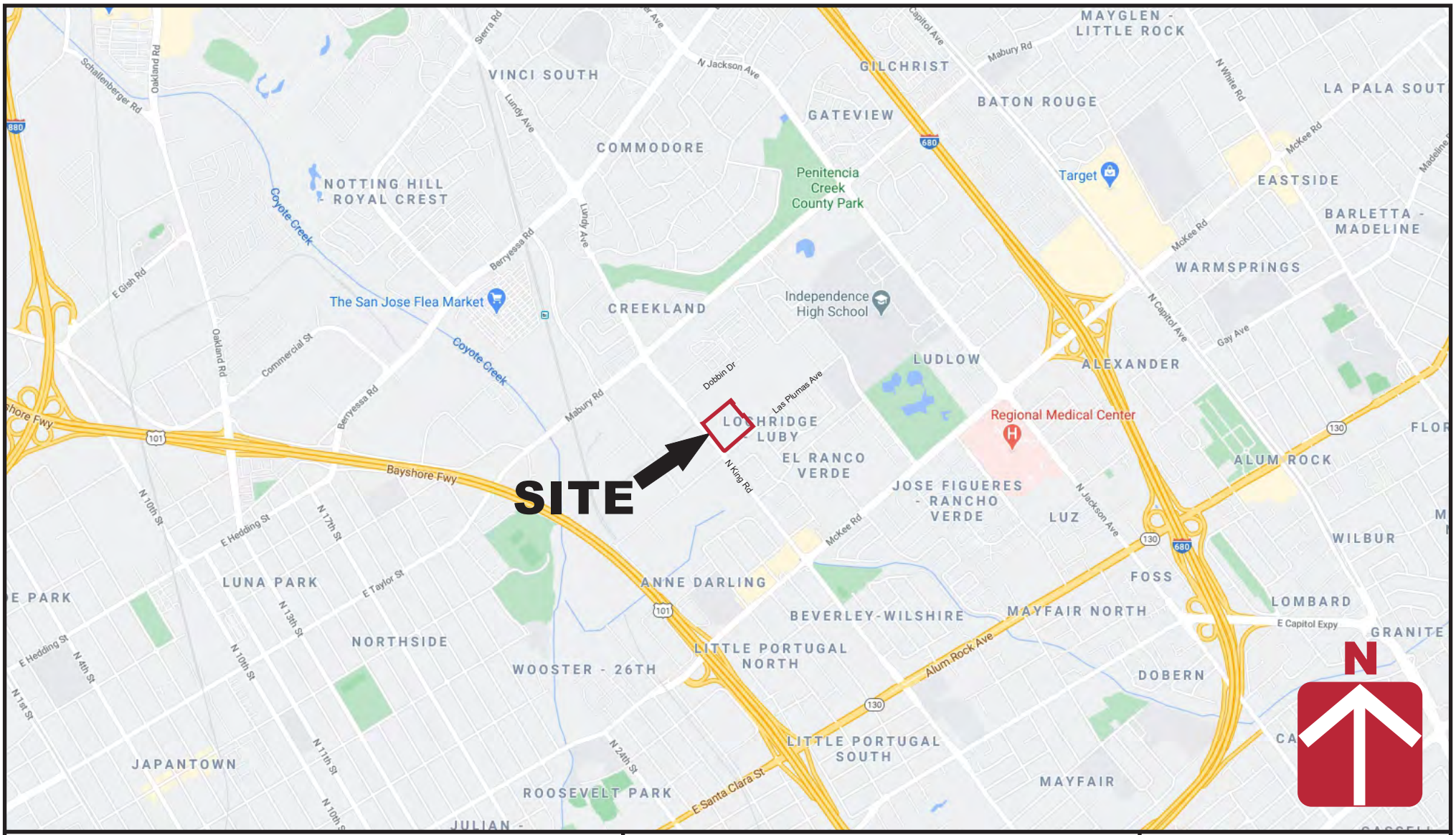
Yoshimine, M., Nishizaki, H., Amano, KI, and Hosono, Y., 2006, Flow Deformation of Liquefied Sand Under Constant Shear Load and Its Application to Analysis of Flow Slide in Infinite Slope, Soil Dynamics and Earthquake Eng. 26, 253-264.

Youd, T.L. and C.T. Garris, 1995, Liquefaction-Induced Ground-Surface Disruption: Journal of Geotechnical Engineering, Vol. 121, No. 11, pp. 805 - 809.

Youd, T.L. and Idriss, I.M., et al, 1997, Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils: National Center for Earthquake Engineering Research, Technical Report NCEER - 97-0022, January 5, 6, 1996.

Youd et al., 2001, “Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils,” ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vo. 127, No. 10, October, 2001.

Youd, T. Leslie, Hansen, Corbett M., and Bartlett, Steven F., 2002, Revised Multilinear Regression Equations for Prediction of Lateral Spread Displacement: ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol. 128, December 2002, p 1007-1017.



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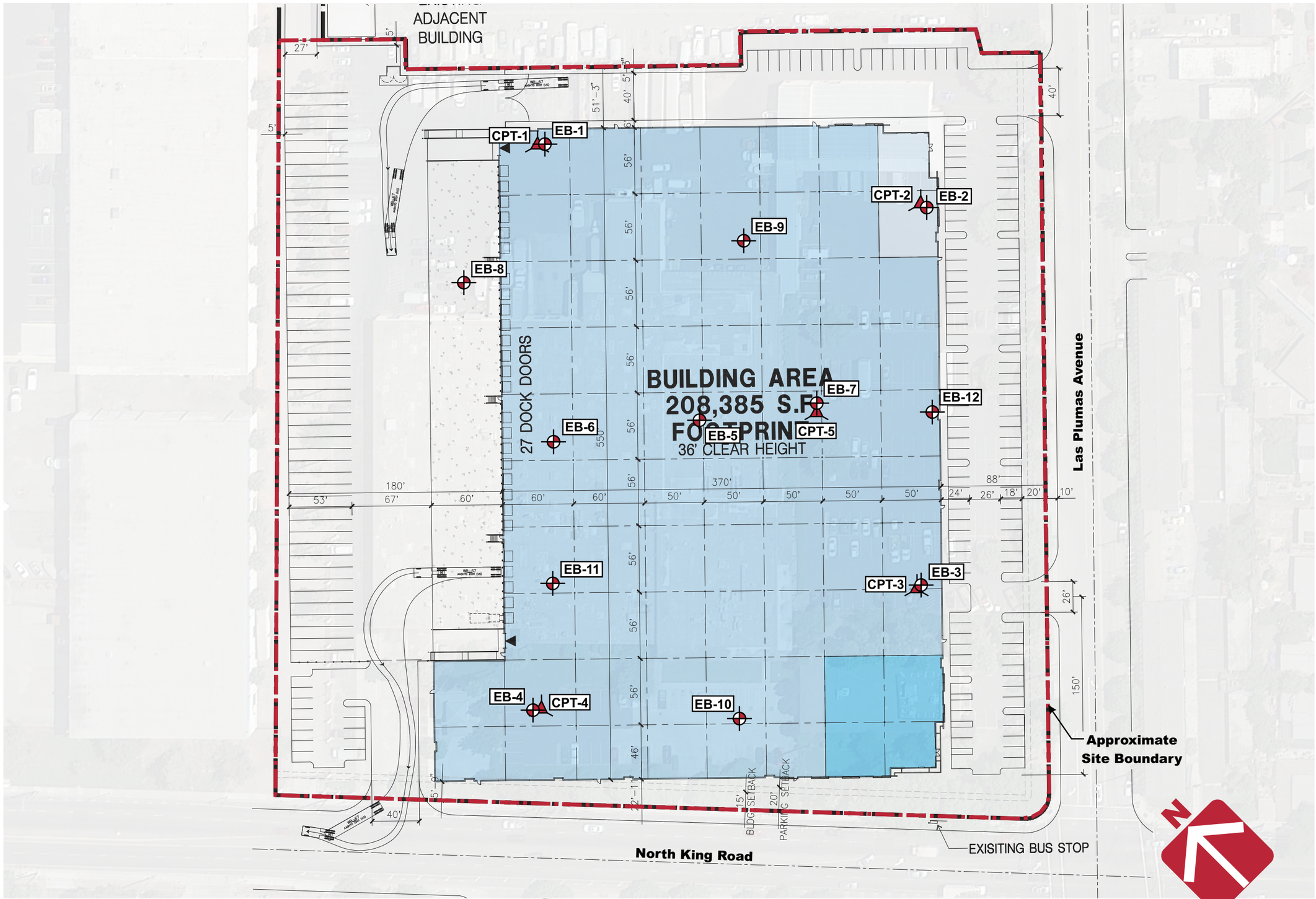
Vicinity Map

650 North King Road Warehouse
San Jose, CA

Project Number	855-12-1
Figure Number	Figure 1
Date	November 2020
Drawn By	RRN



Legend

Approximate location of exploratory boring (EB)

Approximate location of cone penetration test (CPT)

0 80 160

APPROXIMATE SCALE (FEET)

Base by Google Earth, dated 08/09/2018
Overlay by HPA Architecture, Conceptual Site Plan - Scheme 8, dated 10/22/2020

Project Number 855-12-1

Figure Number Figure 2

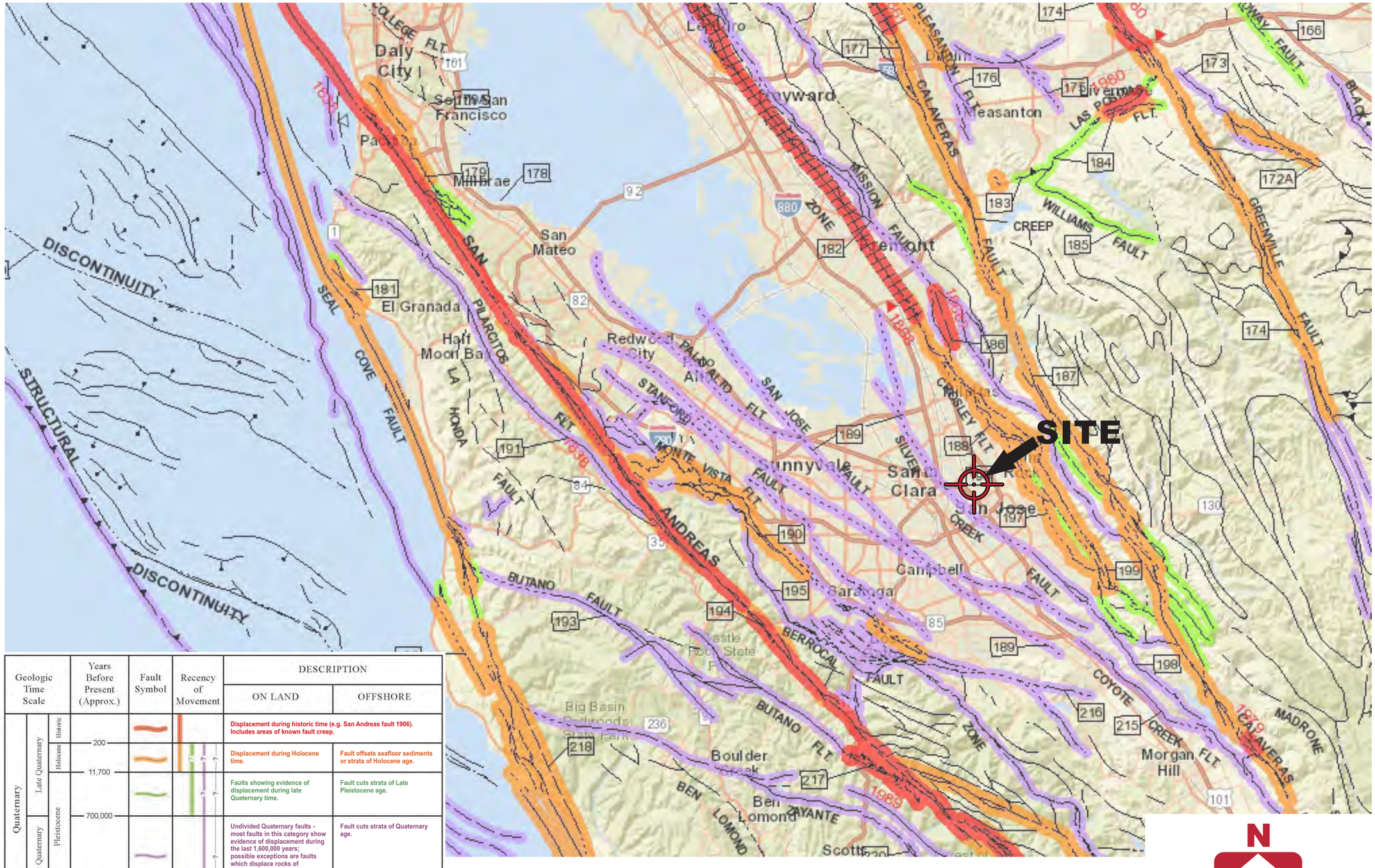
Date November 2020

Drawn By RRN

Site Plan

650 North King Road Warehouse
San Jose, CA

CORNERSTONE EARTH GROUP



Geologic Time Scale		Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION: ON LAND	DESCRIPTION: OFFSHORE
Quaternary	Historic				Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
Quaternary	Late Quaternary, Holocene	200			Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
Quaternary	Late Quaternary, Pleistocene	11,700			Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
Quaternary	Early Quaternary, Pleistocene	700,000			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		1,600,000			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.
		4.5 billion (Age of Earth)				

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

Project Number: 855-12-1

Figure Number: Figure 3

Drawn By: RRN

Date: November 2020

Regional Fault Map

650 North King Road Warehouse
San Jose, CA

CORNERSTONE EARTH GROUP

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FIGURE 4A

CPT NO. 1

PROJECT/CPT DATA

Project Title	650 N King Rd Warehouse
Project No.	855-12-1
Project Manager	MJS

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.08	
PGA (Amax)	0.82	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	6.5
Design Water Depth (feet)	5
Ave. Unit Weight Above GW (pcf)	133
Ave. Unit Weight Below GW (pcf)	133

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	5	FEET
	0.00	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.15	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.1**	**INCHES**

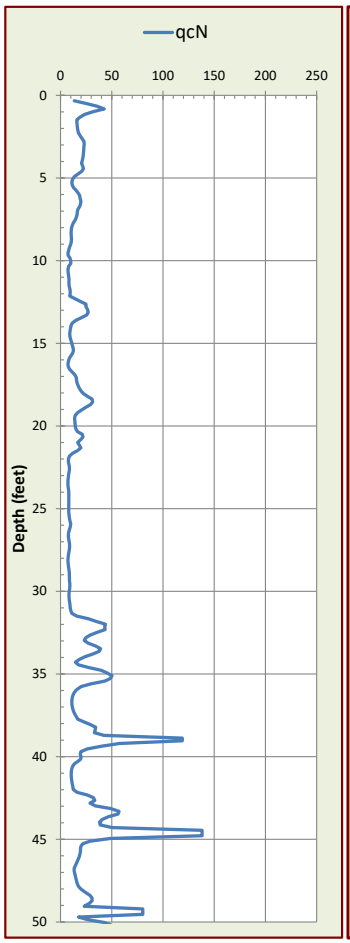
POTENTIAL LATERAL DISPLACEMENT

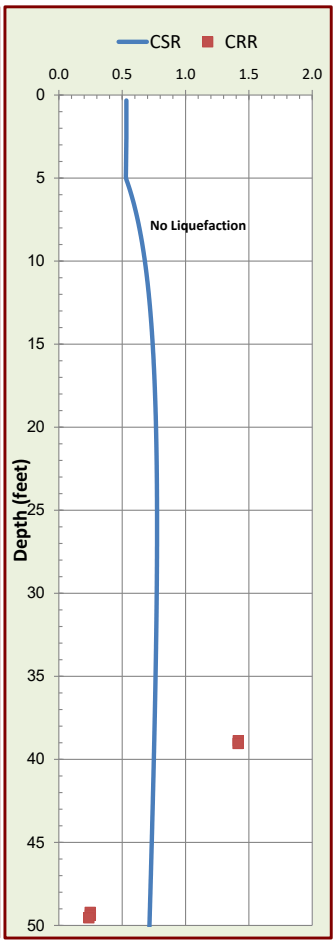
LDI[2]	0.00	L/H	90.6
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

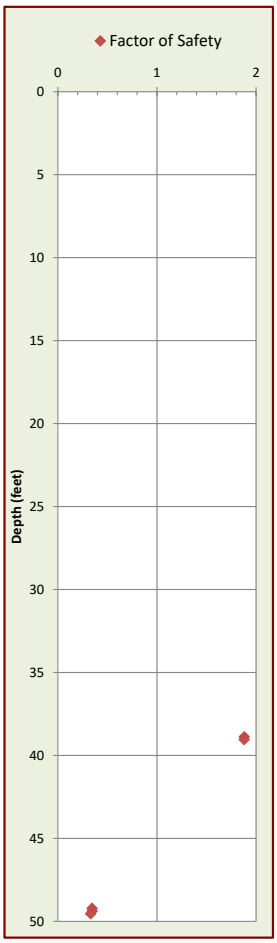
EXPECTED RANGE OF DISPLACEMENT

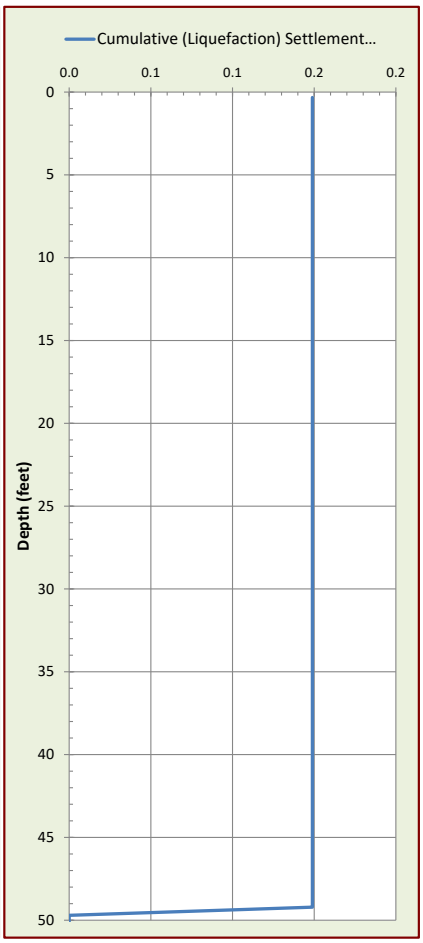
0.0 to 0.0 feet

[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.









CORNERSTONE EARTH GROUP

FIGURE 4B

CPT NO. 2

PROJECT/CPT DATA

Project Title	650 N King Rd Warehouse
Project No.	855-12-1
Project Manager	MJS

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.08	
PGA (Amax)	0.82	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	7
Design Water Depth (feet)	5
Ave. Unit Weight Above GW (pcf)	124
Ave. Unit Weight Below GW (pcf)	135

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	5	FEET
	0.04	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	1.08	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.1**	**INCHES**

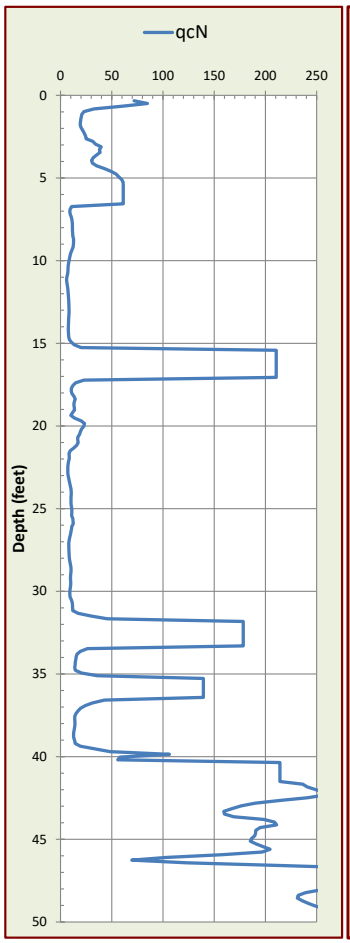
POTENTIAL LATERAL DISPLACEMENT

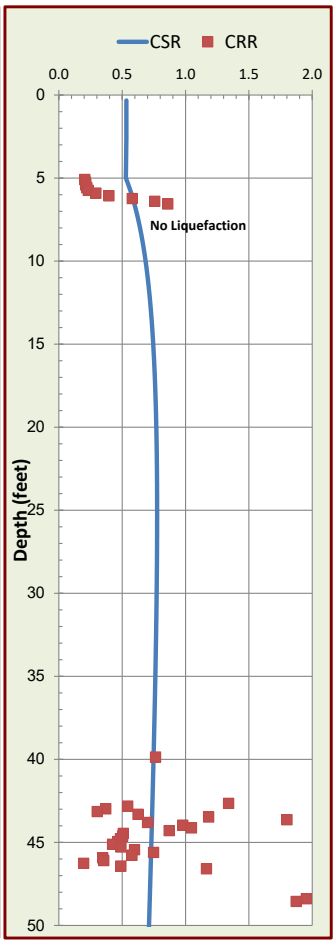
LDI[2]	0.26	L/H	73.8
LDI[1] Corrected for Distance	0.05	(4 < L/H < 40)	

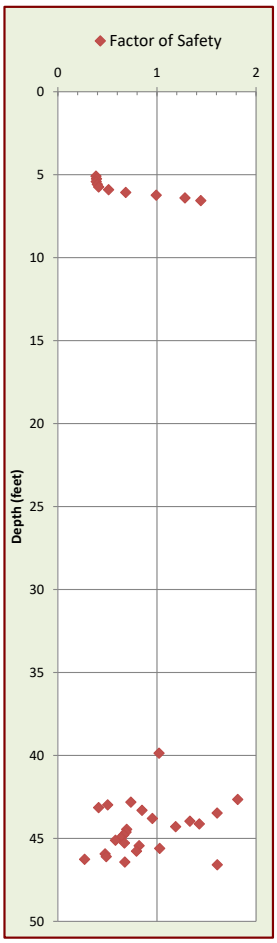
EXPECTED RANGE OF DISPLACEMENT

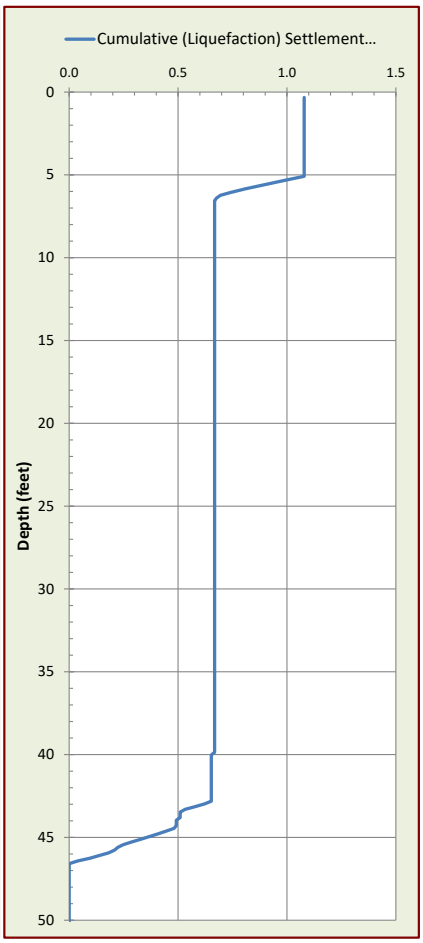
0.0 to 0.1 feet

[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.









CORNERSTONE EARTH GROUP

FIGURE 4C

CPT NO. 3

PROJECT/CPT DATA

Project Title	650 N King Rd Warehouse
Project No.	855-12-1
Project Manager	MJS

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.08	
PGA (Amax)	0.82	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	6
Design Water Depth (feet)	5
Ave. Unit Weight Above GW (pcf)	135
Ave. Unit Weight Below GW (pcf)	128

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	5	FEET
	0.00	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.54	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.5**	**INCHES**

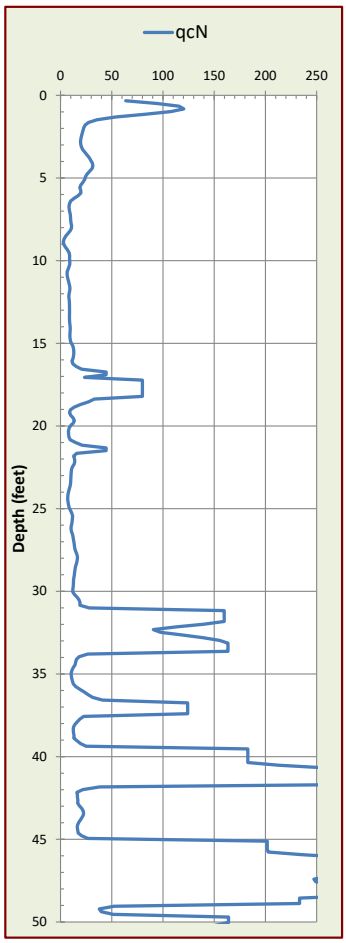
POTENTIAL LATERAL DISPLACEMENT

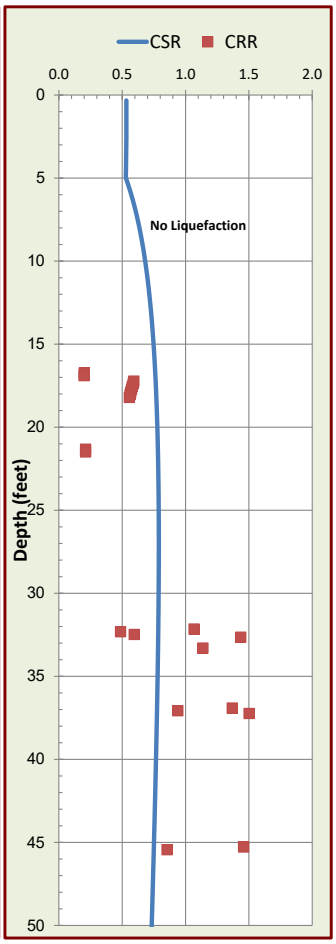
LDI[2]	0.24	L/H	61.3
LDI[1] Corrected for Distance	0.05	(4 < L/H < 40)	

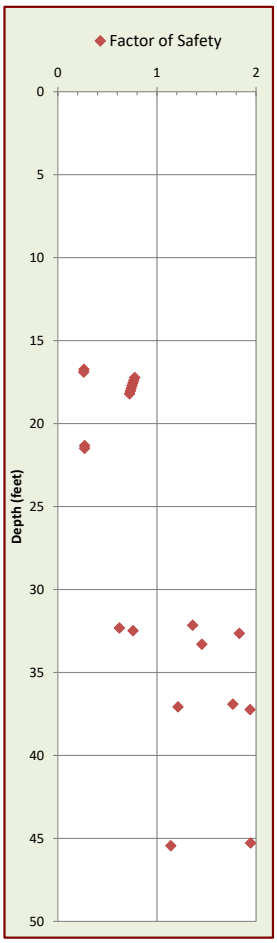
EXPECTED RANGE OF DISPLACEMENT

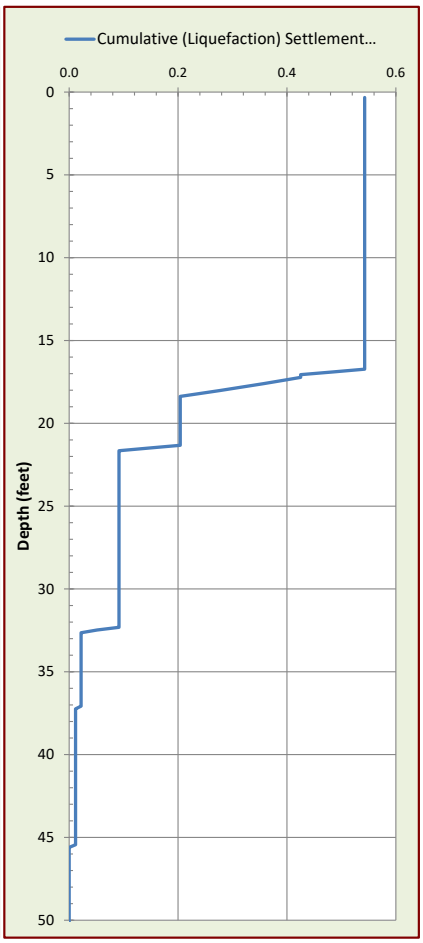
0.0 to 0.1 feet

[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.









CORNERSTONE EARTH GROUP

FIGURE 4D

CPT NO. 4

PROJECT/CPT DATA

Project Title	650 N King Rd Warehouse
Project No.	855-12-1
Project Manager	MJS

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.08	
PGA (Amax)	0.82	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	7.9
Design Water Depth (feet)	5
Ave. Unit Weight Above GW (pcf)	124
Ave. Unit Weight Below GW (pcf)	126

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	5	FEET
	0.00	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.77	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.8**	**INCHES**

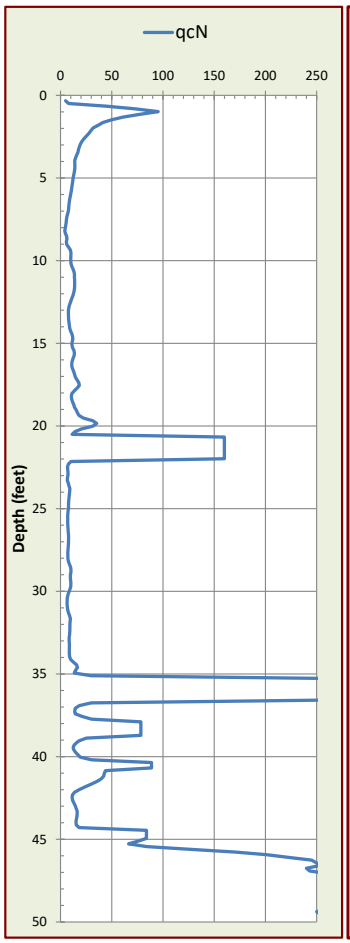
POTENTIAL LATERAL DISPLACEMENT

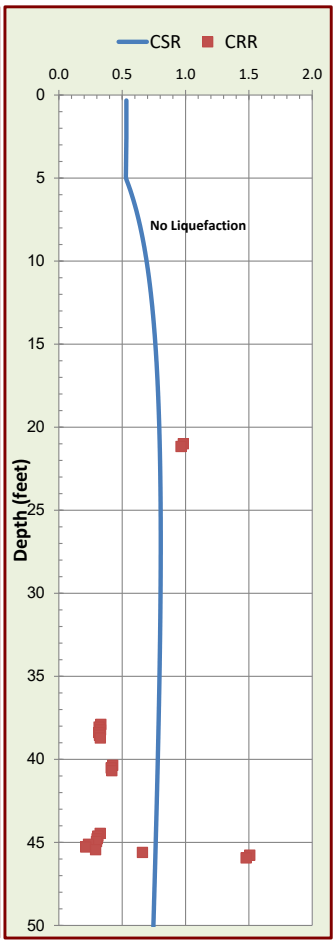
LDI[2]	0.18	L/H	100.0
LDI[1] Corrected for Distance	0.03	(4 < L/H < 40)	

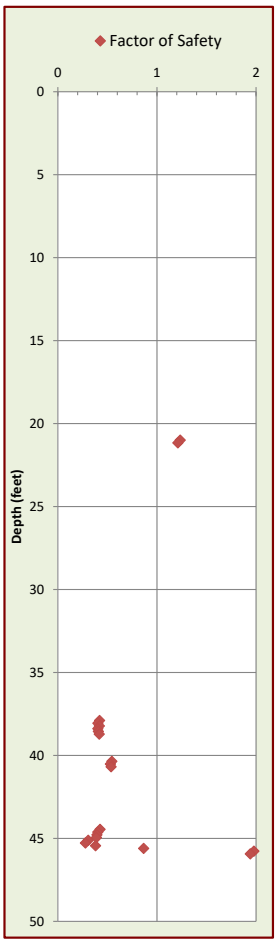
EXPECTED RANGE OF DISPLACEMENT

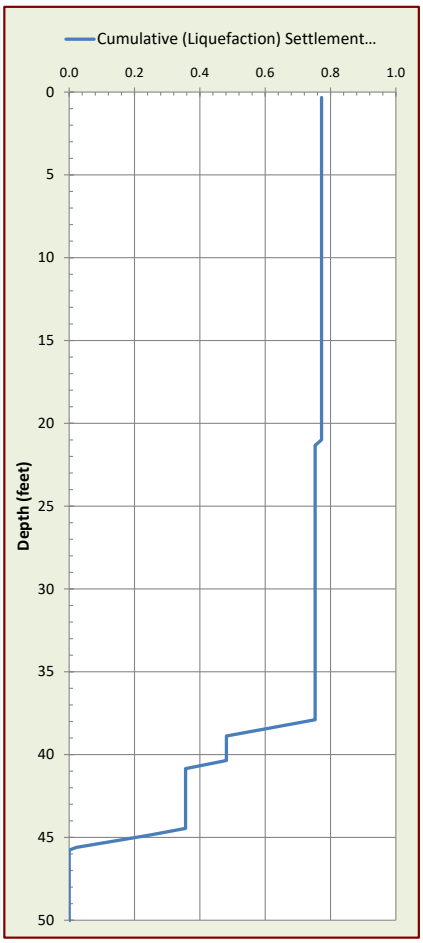
0.0 to 0.1 feet

[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.









CORNERSTONE EARTH GROUP

FIGURE 4E

CPT NO. 5

PROJECT/CPT DATA

Project Title	650 N King Rd Warehouse
Project No.	855-12-1
Project Manager	MJS

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.08	
PGA (Amax)	0.82	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	7
Design Water Depth (feet)	5
Ave. Unit Weight Above GW (pcf)	122
Ave. Unit Weight Below GW (pcf)	130

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	5	FEET
	0.38	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	1.54	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.9**	**INCHES**

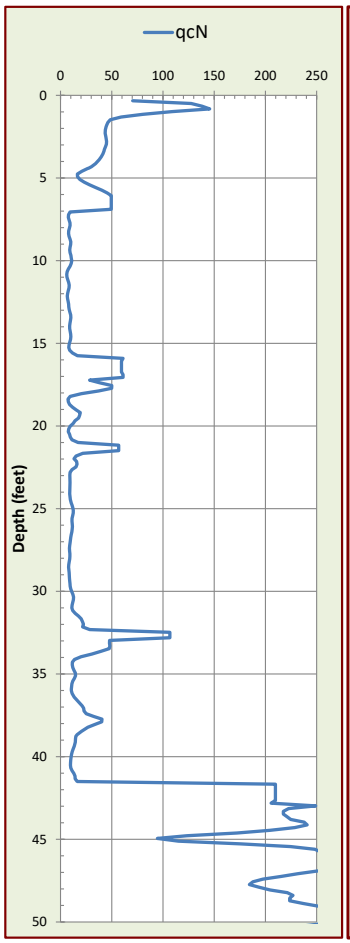
POTENTIAL LATERAL DISPLACEMENT

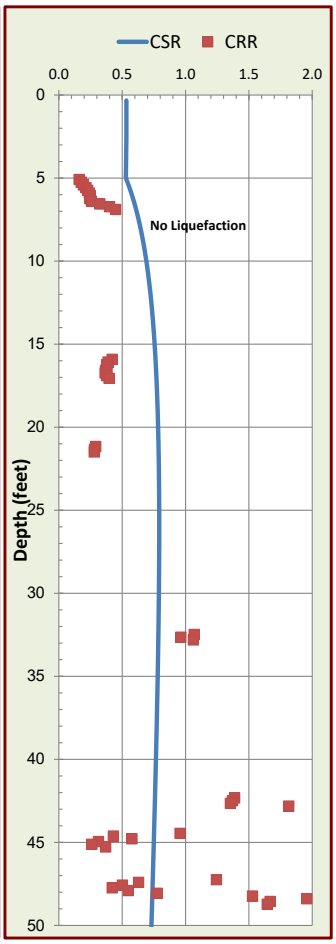
LDI[2]	0.69	L/H	73.1
LDI[1] Corrected for Distance	0.13	(4 < L/H < 40)	

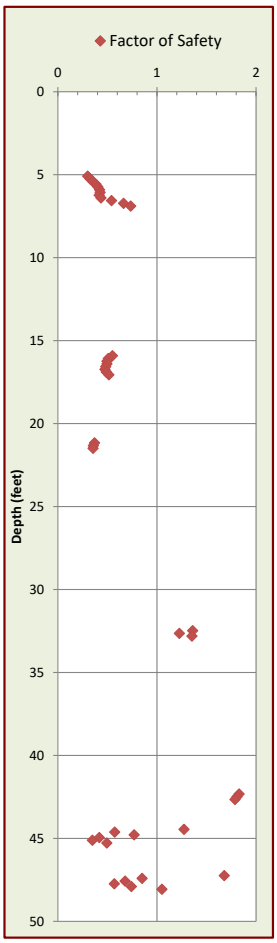
EXPECTED RANGE OF DISPLACEMENT

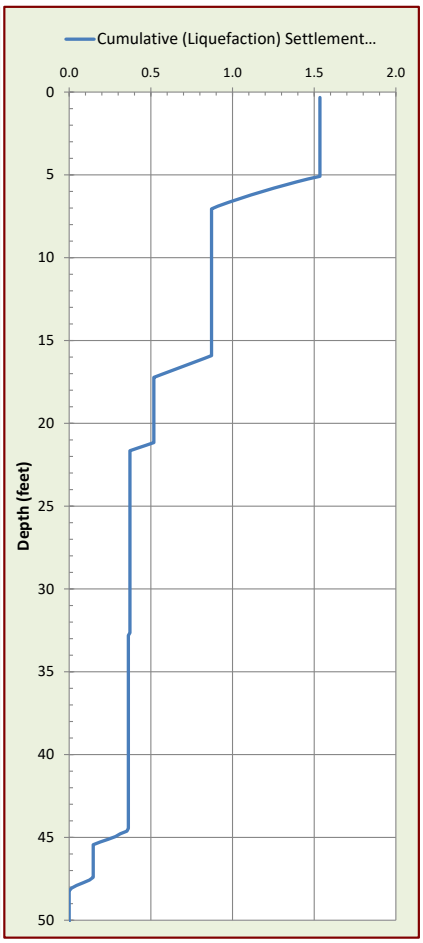
0.1 to 0.3 feet

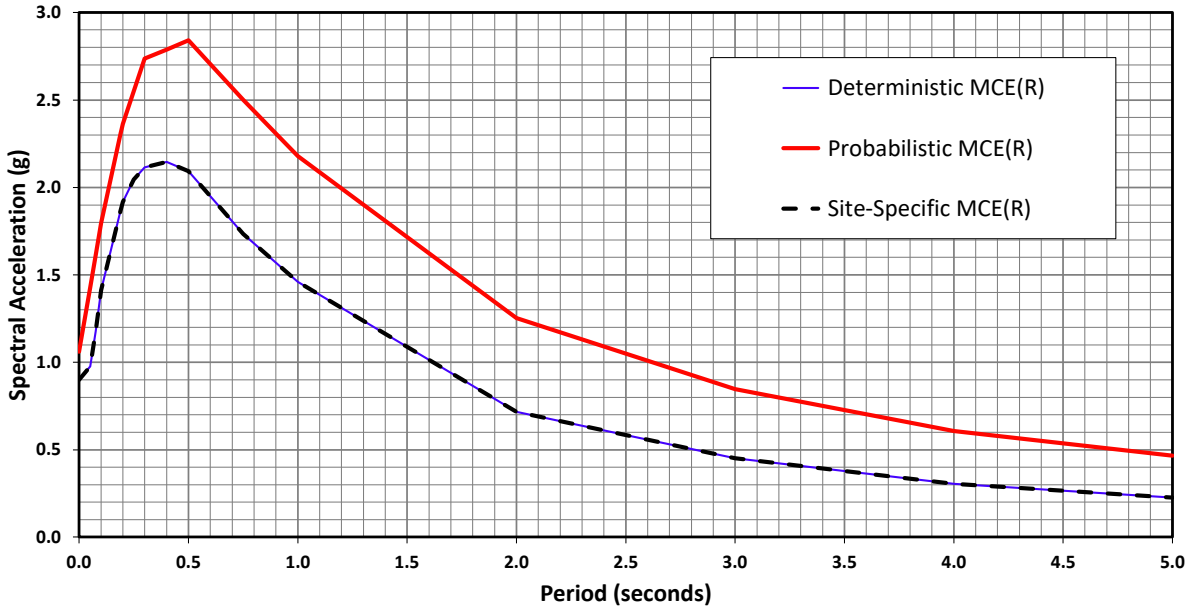
[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.











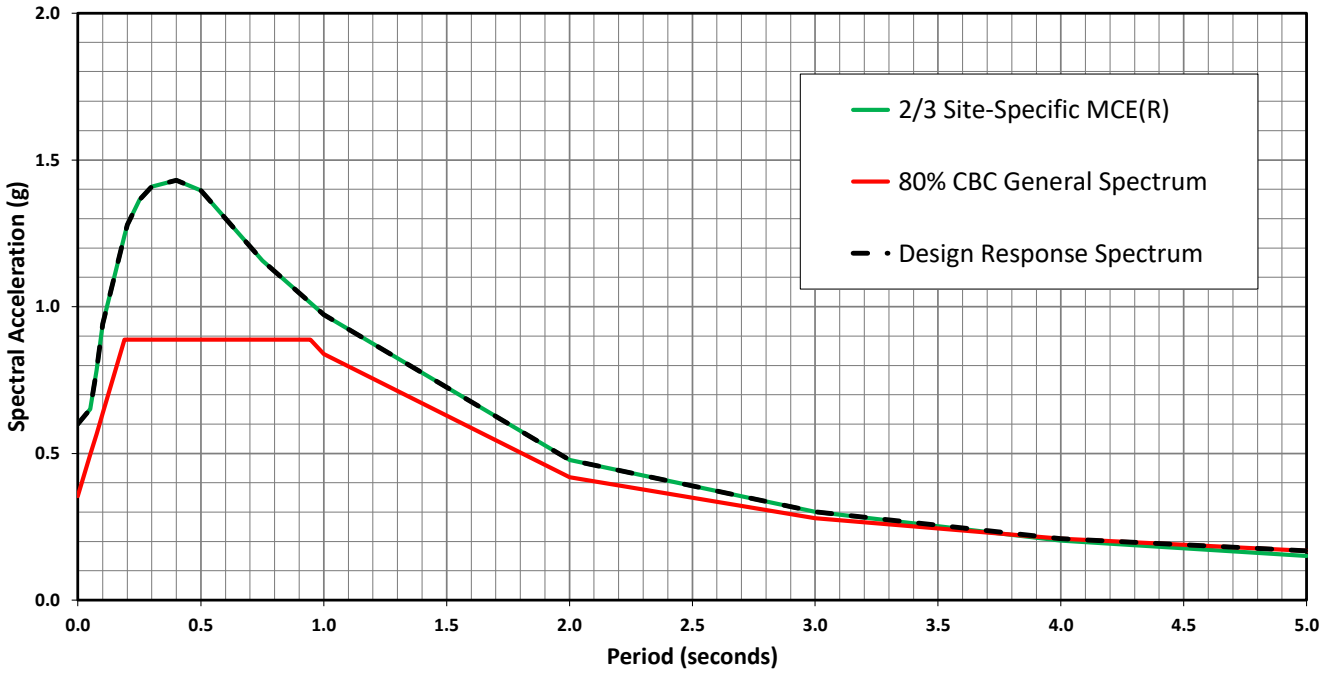
The Site-Specific Maximum Considered Earthquake (MCE_R) is defined as the lesser of the following at all periods:

- 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	0.900
0.05	0.977
0.08	1.177
0.10	1.412
0.19	1.863
0.20	1.918
0.25	2.046
0.30	2.114
0.40	2.145
0.50	2.094
0.75	1.735
0.95	1.520
1.00	1.460
2.00	0.717
3.00	0.452
4.00	0.305
5.00	0.226

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



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	0.600
0.05	0.652
0.08	0.784
0.10	0.941
0.19	1.242
0.20	1.279
0.25	1.364
0.30	1.409
0.40	1.430
0.50	1.396
0.75	1.157
0.95	1.013
1.00	0.973
2.00	0.478
3.00	0.301
4.00	0.210
5.00	0.168

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	263
Site Latitude (degrees)	37.363889
Site Longitude (degrees)	-121.865066
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	0.82

[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}	1.287
S_{D1}	0.973
S_{MS}	1.931
S_{M1}	1.460

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

CORNERSTONE EARTH GROUP

DESIGN RESPONSE SPECTRA

650 N King Road Warehouse
650 N King Road
San Jose, CA

FIGURE 6

PROJECT NO. 855-12-1

December 10, 2020 | MJS

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using truck- and track-mounted, hollow-stem auger drilling equipment and 30-ton truck-mounted Cone Penetration Test equipment. Nine 8-inch-diameter and three 6½-inch-diameter exploratory borings were drilled on September 8, 9, 15, and 16, 2020 to depths of 8½ to 41 feet. Five CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on August 28, 2020 to depths ranging from about 50 to 150 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-2487-98)

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

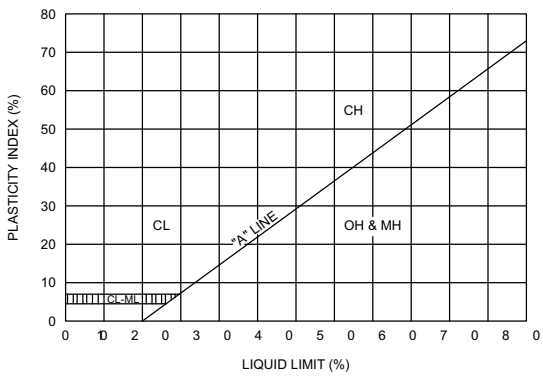
SAMPLER TYPES

- SPT
- Modified California (2.5" I.D.)
- Rock Core
- Shelby Tube
- No Recovery
- Grab Sample

ADDITIONAL TESTS

CA	-	CHEMICAL ANALYSIS (CORROSIVITY)	PI	-	PLASTICITY INDEX
CD	-	CONSOLIDATED DRAINED TRIAXIAL	SW	-	SWELL TEST
CN	-	CONSOLIDATION	TC	-	CYCLIC TRIAXIAL
CU	-	CONSOLIDATED UNDRAINED TRIAXIAL	TV	-	TORVANE SHEAR
DS	-	DIRECT SHEAR	UC	-	UNCONFINED COMPRESSION
PP	-	POCKET PENETROMETER (TSF)	(1.5)	-	(WITH SHEAR STRENGTH IN KSF)
(3.0)	-	(WITH SHEAR STRENGTH IN KSF)			
RV	-	R-VALUE	UU	-	UNCONSOLIDATED UNDRAINED TRIAXIAL
SA	-	SIEVE ANALYSIS: % PASSING #200 SIEVE			
	-	WATER LEVEL			

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 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/8/20 **DATE COMPLETED** 9/8/20
GROUND ELEVATION _____ **BORING DEPTH** 36 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.364557° **LONGITUDE** -121.864589°
DRILLING METHOD Mobile B-61, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY JLC ▽ **AT TIME OF DRILLING** 7 ft.
NOTES _____ ▼ **AT END OF DRILLING** 6.5 ft.

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.

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	2½ inches of asphalt concrete over 3 inches aggregate base							
		Fat Clay (CH) hard, moist, dark gray, some fine sand, high plasticity	48	MC-1B	110	19			>4.5
		Sandy Lean Clay (CL) very stiff, moist, gray with brown mottles. fine to medium sand, low plasticity	41	MC-2B	113	18		55	
	5	becomes dark gray	27	MC-3B	113	19			
		Lean Clay with Sand (CL) medium stiff, moist, gray with brown mottles, fine sand, low to moderate plasticity	22	MC-4B	105	22			
	10	**Clayey Sand (SC)** medium dense, moist, gray brown, fine to coarse sand, trace fine subangular gravel Liquid Limit = 24, Plastic Limit = 12	21	MC-5B	114	18	12	34	
			16	SPT-6		23			
	15	**Sandy Lean Clay (CL)** medium stiff, moist, brown, fine sand, low plasticity							
		Silty, Clayey Sand (SC-SM) medium dense, moist, brown, fine to medium sand, trace fine subrounded gravel Liquid Limit = 23, Plastic Limit = 16	30	MC-7B	125	13	7	28	
			46	MC					
	20	**Sandy Lean Clay (CL)** very stiff, moist, brown, fine to medium sand, trace fine subrounded gravel, low plasticity							
		Lean Clay with Sand (CL) soft, moist, brown with gray mottles, fine to medium sand, low to moderate plasticity		ST-9	102	23			
	25								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

Continued Next Page

BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse

PROJECT NUMBER 855-12-1

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.

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 (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Lean Clay with Sand (CL) soft, moist, brown with gray mottles, fine to medium sand, low to moderate plasticity	20	MC-10B	104	23			○
	30		**Clayey Sand (SC)** medium dense, moist, brown, fine to coarse sand, some fine to coarse subrounded to subangular gravel	30	MC-11B	113	21		40	
	35		**Sandy Lean Clay (CL)** stiff, moist, brown, fine to coarse sand, trace fine subangular gravel, moderate plasticity	51	MC-12		21			○
			Bottom of Boring at 36.0 feet.							
	40									
	45									
	50									
	55									

BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/8/20 **DATE COMPLETED** 9/8/20
GROUND ELEVATION _____ **BORING DEPTH** 20 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.363774° **LONGITUDE** -121.864009°
DRILLING METHOD Mobile B-61, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY JLC ▽ **AT TIME OF DRILLING** 7 ft.
NOTES _____ ▼ **AT END OF DRILLING** 7 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	3 inches of asphalt concrete							
		Fat Clay (CH) hard, moist, dark gray, some fine sand, high plasticity	32	MC-1B	107	16			>4.5
		Sandy Lean Clay (CL) very stiff, moist, gray brown, fine to medium sand, moderate plasticity	24	MC-2B	103	10			
	5	**Silty Sand (SM)** medium dense, moist, brown, fine to medium sand	17	MC-3B	108	26			
		Lean Clay with Sand (CL) stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	19	MC-4B	106	24			
	10			ST					
	15	**Sandy Lean Clay (CL)** medium stiff, moist, brown, fine sand, low plasticity	23	MC-6B	115	21			
		Clayey Sand (SC) medium dense, moist, brown, fine to coarse sand, trace fine subrounded gravel	26	MC-7B	123	13			
	20	Bottom of Boring at 20.0 feet.							
	25								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-3

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/8/20 **DATE COMPLETED** 9/8/20
GROUND ELEVATION _____ **BORING DEPTH** 22.5 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc.
LATITUDE 37.363244° **LONGITUDE** -121.864860°
DRILLING METHOD Mobile B-61, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY JLC
▽ **AT TIME OF DRILLING** 7 ft.
NOTES _____
▼ **AT END OF DRILLING** 6 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
	0	3 inches asphalt concrete over 5½ inches aggregate base						
		Fat Clay (CH) hard, moist, dark gray, some fine sand, high plasticity	44	MC-1B	111	20		
		Sandy Lean Clay (CL) very stiff, moist, gray, fine to coarse sand, moderate plasticity	51	MC-2B	114	19		
	5	**Clayey Sand (SC)** loose, moist, brown, fine to medium sand	13	3A MC 3B	116 109	17 16		40
		Lean Clay with Sand (CL) medium stiff, moist, gray with brown mottles, fine to medium sand, low to moderate plasticity		ST-4	100 99	25 26		
	10		22	MC-5B	109	21		
	15	**Silty, Clayey Sand (SC-SM)** medium dense, moist, brown, fine to medium sand	30	MC-6B	114	18	6	41
		Liquid Limit = 23, Plastic Limit = 17	17	MC-7B	100	27		
		Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity						
	20	**Poorly Graded Sand (SP)** loose, moist, brown, fine sand	17	MC-8	99	25		
		Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity						
		Bottom of Boring at 22.5 feet.						
	25							

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/9/20 **DATE COMPLETED** 9/9/20
GROUND ELEVATION _____ **BORING DEPTH** 41 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.363847° **LONGITUDE** -121.865818°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY EA ▽ **AT TIME OF DRILLING** 12 ft.
NOTES _____ ▼ **AT END OF DRILLING** 15 ft.

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.

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
	0		5 inches of asphalt concrete over 5 inches aggregate base						
			Sandy Lean Clay (CL) [Fill] very stiff, moist, gray with brown and dark gray mottles, fine sand, some angular gravel, low to moderate plasticity	36	MC-1B	110	19		
				30	MC	97	22		
	5		becomes stiff	21	MC-3B	101	24		
			Lean Clay (CL) stiff, moist, dark gray, some fine sand, moderate plasticity	13	MC-4B	93	32		
	10		**Lean Clay with Sand (CL)** medium stiff, moist, gray with brown mottles, fine sand, moderate plasticity						
				15	MC-5B	106	23		
	15		**Sandy Lean Clay (CL)** medium stiff, moist, brown, fine sand, some fine subrounded gravel, low plasticity						
				26	MC-6B	106	23		
	20		**Lean Clay with Sand (CL)** medium stiff, moist, brown with gray mottles, fine sand, low to moderate plasticity						
				13	MC-7B	100	26		
	25								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

Continued Next Page

BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse

PROJECT NUMBER 855-12-1

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.

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 (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Lean Clay with Sand (CL) medium stiff, moist, brown with gray mottles, fine sand, low to moderate plasticity							
	30			21	MC					○
				30	SPT-9A		26			○
	35									
				43	SPT-10B		19			○
	40		**Clayey Sand (SC)** dense, moist, brown, fine to medium sand, trace fine subrounded gravel	22	MC-11B	91	30			○
			Lean Clay with Sand (CL) stiff, moist, gray, some fine sand, moderate plasticity							
			Bottom of Boring at 41.0 feet.							
	45									
	50									
	55									

BORING NUMBER EB-5

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/15/20 **DATE COMPLETED** 9/15/20
GROUND ELEVATION _____ **BORING DEPTH** 8.5 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** 8 ft.
NOTES _____
▼ **AT END OF DRILLING** 8 ft.

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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 (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0, 2.0, 3.0, 4.0)
	0		6 inches Portland cement concrete over 5 inches crushed rock and thin concrete slab							
			Sandy Lean Clay (CL) [Fill] hard, moist, brown and gray mottled, fine to coarse sand, some fine gravel, low to moderate plasticity	17	MC-1B	103	18			○
			Lean Clay with Sand (CL) stiff, moist, gray with brown mottles, fine to coarse sand, moderate plasticity	14	MC-2B	110	21			○
	5		**Silty Sand (SM)** loose, moist, gray and brown, fine to medium sand	8	MC-3B	108	13			
▼			**Lean Clay with Sand (CL)** medium stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity		MC-4B	102	24			○
			Bottom of Boring at 8.5 feet.							
	10									
	15									
	20									
	25									

BORING NUMBER EB-6

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/15/20 **DATE COMPLETED** 9/15/20
GROUND ELEVATION _____ **BORING DEPTH** 13.5 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** 11 ft.
NOTES _____
▼ **AT END OF DRILLING** 8 ft.

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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
	0		3 inches brick floor over 5 inches Portland cement concrete and 2 inches crushed rock							
			Sandy Lean Clay (CL) [Fill] very stiff, moist, brown, fine to coarse sand, some fine gravel, low plasticity	14	MC-1B	101	21			○
			Lean Clay with Sand (CL) very stiff, moist, gray with brown mottles, fine to coarse sand, moderate plasticity	11	MC-2B	109	16			○
	5		**Silty Sand (SM)** loose, moist, brown, fine to medium sand	10	MC-3B	102	10			
			Lean Clay with Sand (CL) medium stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	3	SPT-4		22			○
	10			5	MC					○
				6	MC-6B	107	22			○
			Bottom of Boring at 13.5 feet.							
	15									
	20									
	25									

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 12/11/20 12:23 - P:\DRAFTING\GINT FILES\855-12-1 650 N. KING RD. WAREHOUSE.GPJ

BORING NUMBER EB-7

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/8/20 **DATE COMPLETED** 9/8/20
GROUND ELEVATION _____ **BORING DEPTH** 34.5 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.363669° **LONGITUDE** -121.864674°
DRILLING METHOD Mobile B-61, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY JLC ▽ **AT TIME OF DRILLING** 7 ft.
NOTES _____ ▼ **AT END OF DRILLING** 7 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
	0	6 inches asphalt concrete over 6 inches aggregate base						
		Sandy Lean Clay (CL) hard, moist, dark gray to gray, fine to coarse sand, moderate plasticity	35	MC-1B	113	13		
		Clayey Sand (SC) medium dense, moist, gray brown, fine to coarse sand	21	MC-2B	108	12		
	5	**Silty Sand (SM)** loose, moist, gray brown, fine to medium sand	8	MC-3B	94	26		
		Lean Clay with Sand (CL) very stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	11	MC-4B	99	24		
			16	MC-5	108	21		
	10							
		Sandy Lean Clay (CL) stiff, moist, brown with gray mottles, fine to coarse sand, low plasticity	23	MC-6B	113	21		
	15	**Poorly Graded Sand with Clay (SP-SC)** medium dense, moist, brown, fine to coarse sand	36	MC-7B	120	13		11
		Sandy Lean Clay (CL) stiff, moist, brown, fine coarse sand, low plasticity	21	MC-8B	112	21		
	20							
		Silty Sand (SM) medium dense, moist, brown, fine to coarse sand	36	MC-9B	113	15		28
		Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	35	MC-10	97	28		
	25							

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0
>4.5

Continued Next Page

BORING NUMBER EB-7

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse

PROJECT NUMBER 855-12-1

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.

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
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine sand, moderate plasticity	18	MC				
	30			24	NR				
			becomes very stiff	47	MC-13	106	26		
	35		Bottom of Boring at 34.5 feet.						
	40								
	45								
	50								
	55								

UNDRAINED SHEAR STRENGTH, ksf

- ○ HAND PENETROMETER
- △ TORVANE
- ● UNCONFINED COMPRESSION
- ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL

1.0 2.0 3.0 4.0

BORING NUMBER EB-8

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/9/20 **DATE COMPLETED** 9/9/20
GROUND ELEVATION _____ **BORING DEPTH** 10.5 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.364467° **LONGITUDE** -121.865038°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY EA **AT TIME OF DRILLING** Not Encountered
NOTES _____ **AT END OF DRILLING** Not Encountered

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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
	0		2 inches asphalt concrete over 4 inches aggregate base							
			Fat Clay (CH) hard, moist, dark gray, some fine to medium sand, high plasticity Liquid Limit = 50, Plastic Limit = 21	45	MC-1B	99	24	29		>4.5
				41	MC-2B	128	6			>4.5
	5		**Clayey Sand with Gravel (SC)** loose, moist, brown, fine to coarse sand, some fine subangular to subrounded gravel	16	MC-3A	106	18			
			Lean Clay with Sand (CL) stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	11	MC-4B	106	22			
	10		becomes medium stiff	11	MC-5B	106	21			
			Bottom of Boring at 10.5 feet.							
	15									
	20									
	25									

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 12/11/20 12:23 - P:\DRAFTING\GINT FILES\855-12-1 650 N. KING RD. WAREHOUSE.GPJ

BORING NUMBER EB-9

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/9/20 **DATE COMPLETED** 9/9/20
GROUND ELEVATION _____ **BORING DEPTH** 8.5 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.364027° **LONGITUDE** -121.864409°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY EA **AT TIME OF DRILLING** Not Encountered
NOTES _____ **AT END OF DRILLING** Not Encountered

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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
	0		2 inches of asphalt concrete over 6 inches Portland cement concrete and 2 inches aggregate base							
			Sandy Lean Clay (CL) hard, moist, brown with gray mottles, fine to coarse sand, moderate plasticity becomes stiff	34	MC-1B	112	17			>4.5
				21	2A MC 2B	109 113	16 12			
	5		**Silty Sand (SM)** medium dense, moist, brown, fine to medium sand, some fine subangular to subrounded gravel	24	MC-3B	105	22			
			Lean Clay with Sand (CL) stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	12	MC-4B	110	22			
			Bottom of Boring at 8.5 feet.							
	10									
	15									
	20									
	25									

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-10

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/9/20 **DATE COMPLETED** 9/9/20
GROUND ELEVATION _____ **BORING DEPTH** 8.5 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.363506° **LONGITUDE** -121.865426°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY EA ▽ **AT TIME OF DRILLING** Not Encountered
NOTES _____ ▼ **AT END OF DRILLING** Not Encountered

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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
	0		3 inches Portland cement concrete over 6 inches aggregate base						
			Sandy Lean Clay (CL) [Fill]	38	MC-1B	88	32		
			Fat Clay (CH) very stiff, moist, dark gray, some fine to medium sand, high plasticity	37	MC				
	5		**Sandy Lean Clay (CL)** very stiff, moist, gray with brown mottles, fine sand, moderate plasticity	22	MC-3B	103	18		
			Poorly Graded Sand with Silt (SP-SM) medium dense, moist, gray, fine to medium sand	17	MC-4B	116	20		
			Lean Clay with Sand (CL) stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity						
			Bottom of Boring at 8.5 feet.						
	10								
	15								
	20								
	25								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-11

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/15/20 **DATE COMPLETED** 9/15/20
GROUND ELEVATION _____ **BORING DEPTH** 13.5 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** 12 ft.
NOTES _____
▼ **AT END OF DRILLING** 8.5 ft.

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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
	0		1 inch tile floor over 7 inches Portland cement concrete, 4 inches crushed rock and 12 inches aggregate base						
			Sandy Lean Clay (CL) [Fill] very stiff, moist, brown and gray, fine to coarse sand, some fine gravel, low plasticity		GB-1		19		
			Fat Clay (CH) very stiff, moist, dark gray, some fine sand, high plasticity	15	MC-2B	101	18		
	5		**Clayey Sand (SC)** loose, moist, gray brown, fine to coarse sand	17	MC-3B	108	15		
			Silty Sand (SM) loose, moist, brown, fine to medium sand	7	MC-4B	99	22		
			Lean Clay with Sand (CL) medium stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	8	MC				
				6	MC-6B	111	23		
	10		Bottom of Boring at 13.5 feet.						
	15								
	20								
	25								

UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

BORING NUMBER EB-12

CORNERSTONE EARTH GROUP

PROJECT NAME 650 North King Road Warehouse
PROJECT NUMBER 855-12-1
PROJECT LOCATION San Jose, CA

DATE STARTED 9/9/20 **DATE COMPLETED** 9/9/20
GROUND ELEVATION _____ **BORING DEPTH** 8.5 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc. **LATITUDE** 37.363532° **LONGITUDE** -121.864519°
DRILLING METHOD Mobile B-53, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY EA **AT TIME OF DRILLING** Not Encountered
NOTES _____ **AT END OF DRILLING** Not Encountered

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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
	0		4 inches of asphalt concrete over 6 inches aggregate base							
			Sandy Lean Clay (CL) hard, moist, dark gray to gray with brown mottles, fine to medium sand, moderate plasticity	29	MC-1B	113	17			>4.5
				36	MC					>4.5
	5		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to medium sand		3A	103	14			
			Silty Sand (SM) loose, moist, brown, fine to medium sand	12	MC					
					3B	108	15			
			Lean Clay with Sand (CL) stiff, moist, dark gray to gray with brown mottles, fine sand, moderate plasticity	23	MC-4B	115	21			
			Bottom of Boring at 8.5 feet.							
	10									
	15									
	20									
	25									

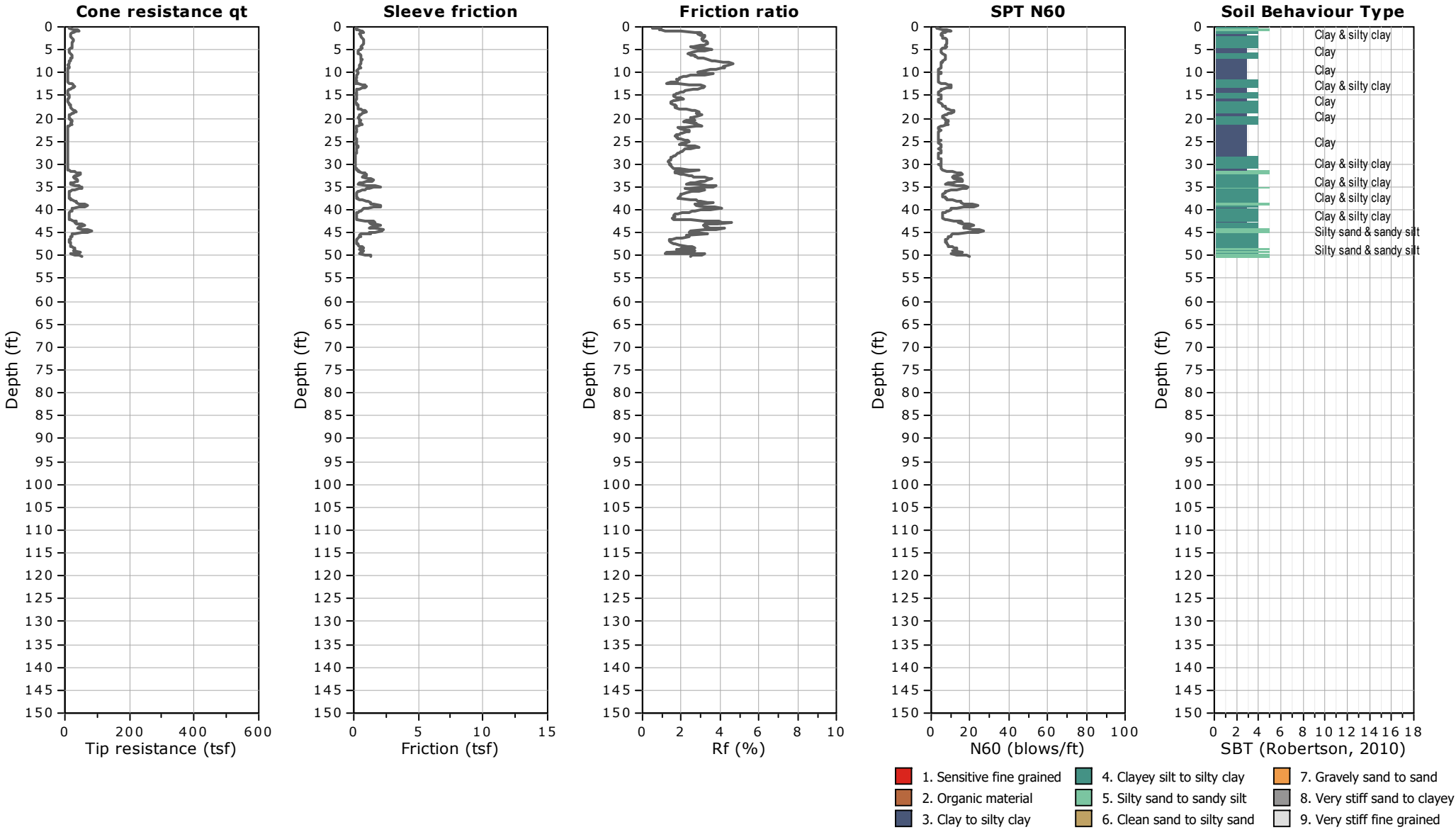
UNDRAINED SHEAR STRENGTH, ksf
○ HAND PENETROMETER
△ TORVANE
● UNCONFINED COMPRESSION
▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL
1.0 2.0 3.0 4.0

GREGG DRILLING, LLC
WWW.GREGGDRILLING.COM

CPT: CPT-1

CLIENT: CORNERSTONE EARTH
SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES
Total depth: 50.36 ft, Date: 8/28/2020



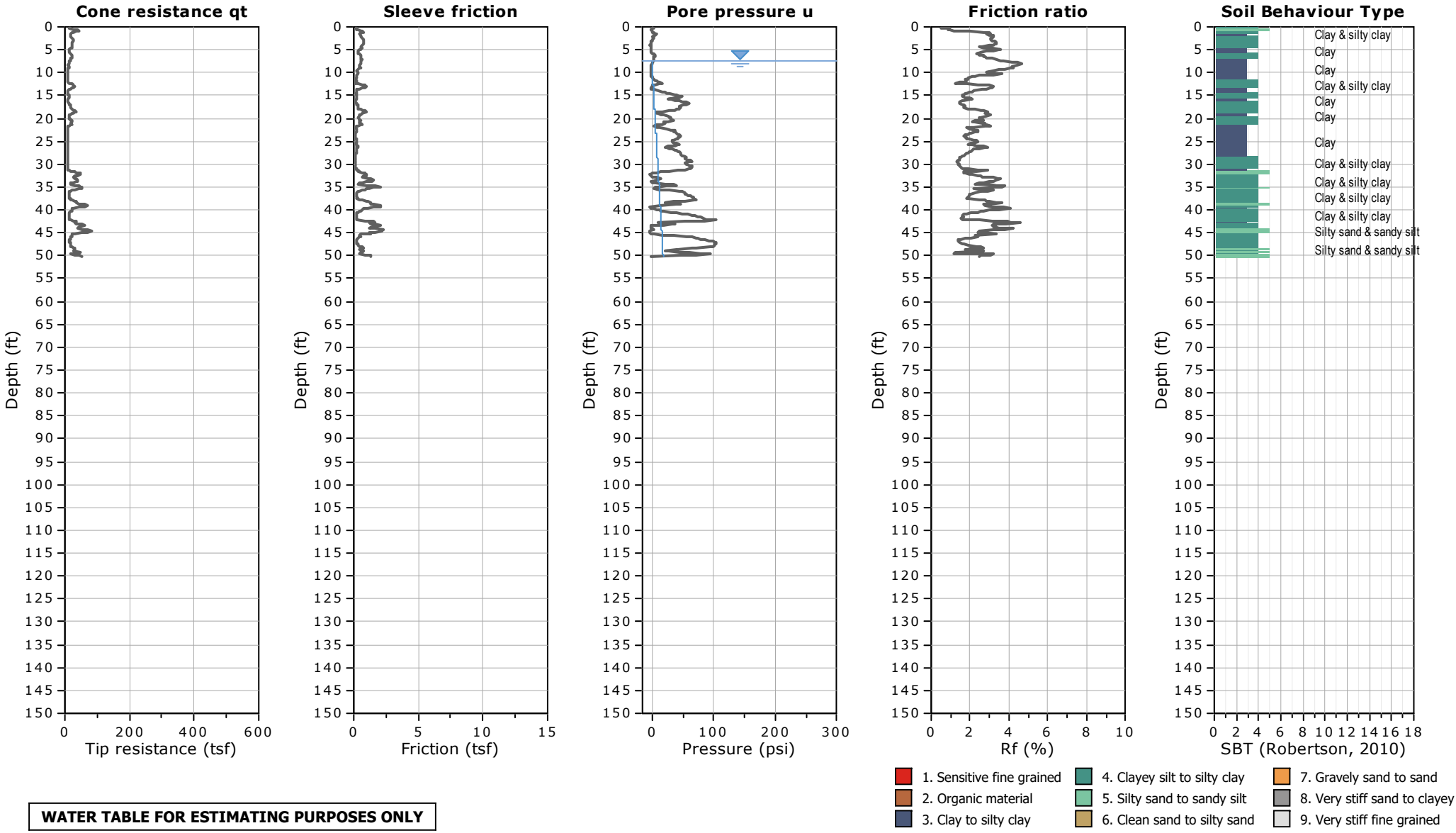
CPT: CPT-1

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.36 ft, Date: 8/28/2020



WATER TABLE FOR ESTIMATING PURPOSES ONLY

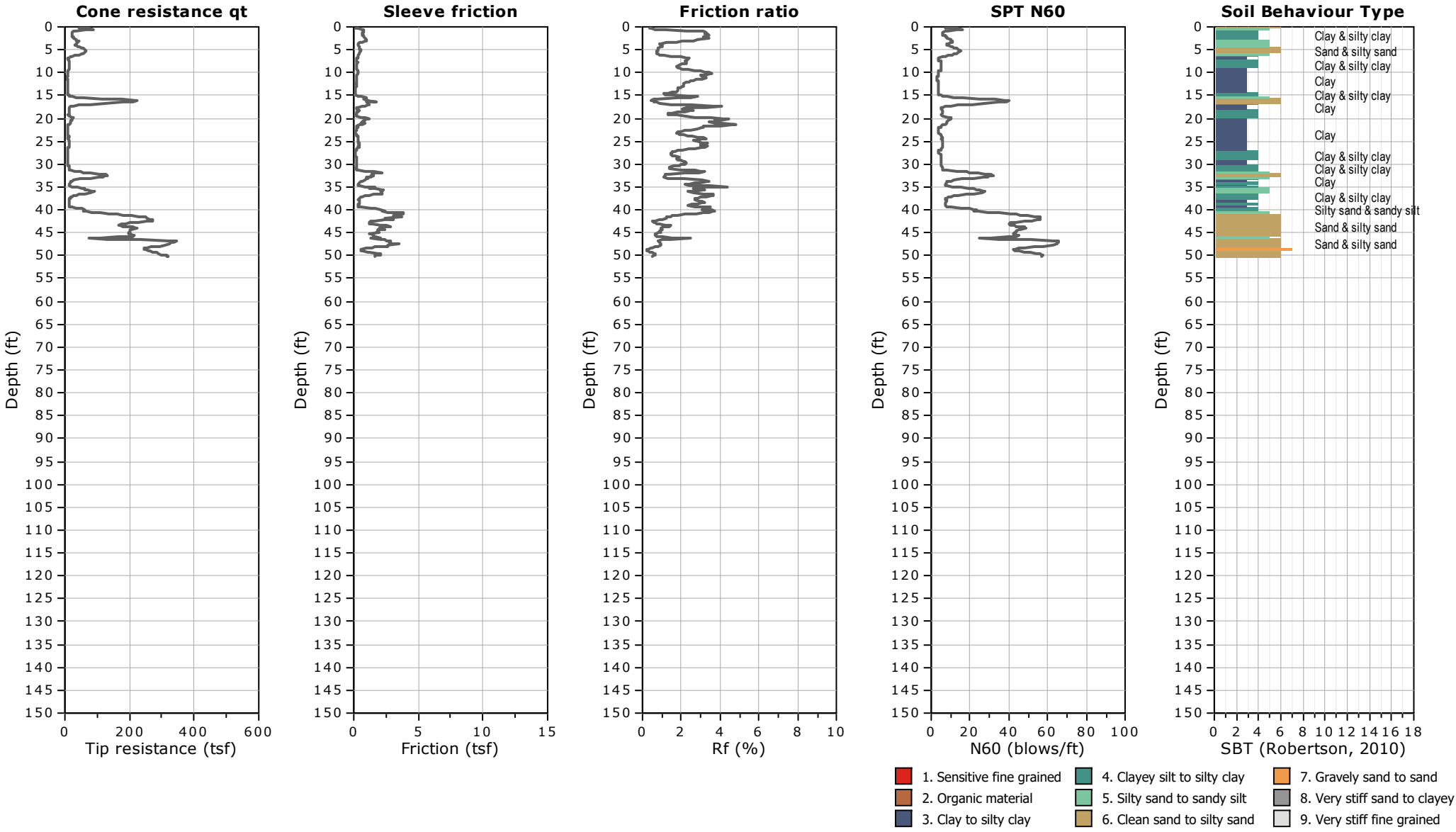
CPT: CPT-2

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.36 ft, Date: 8/28/2020



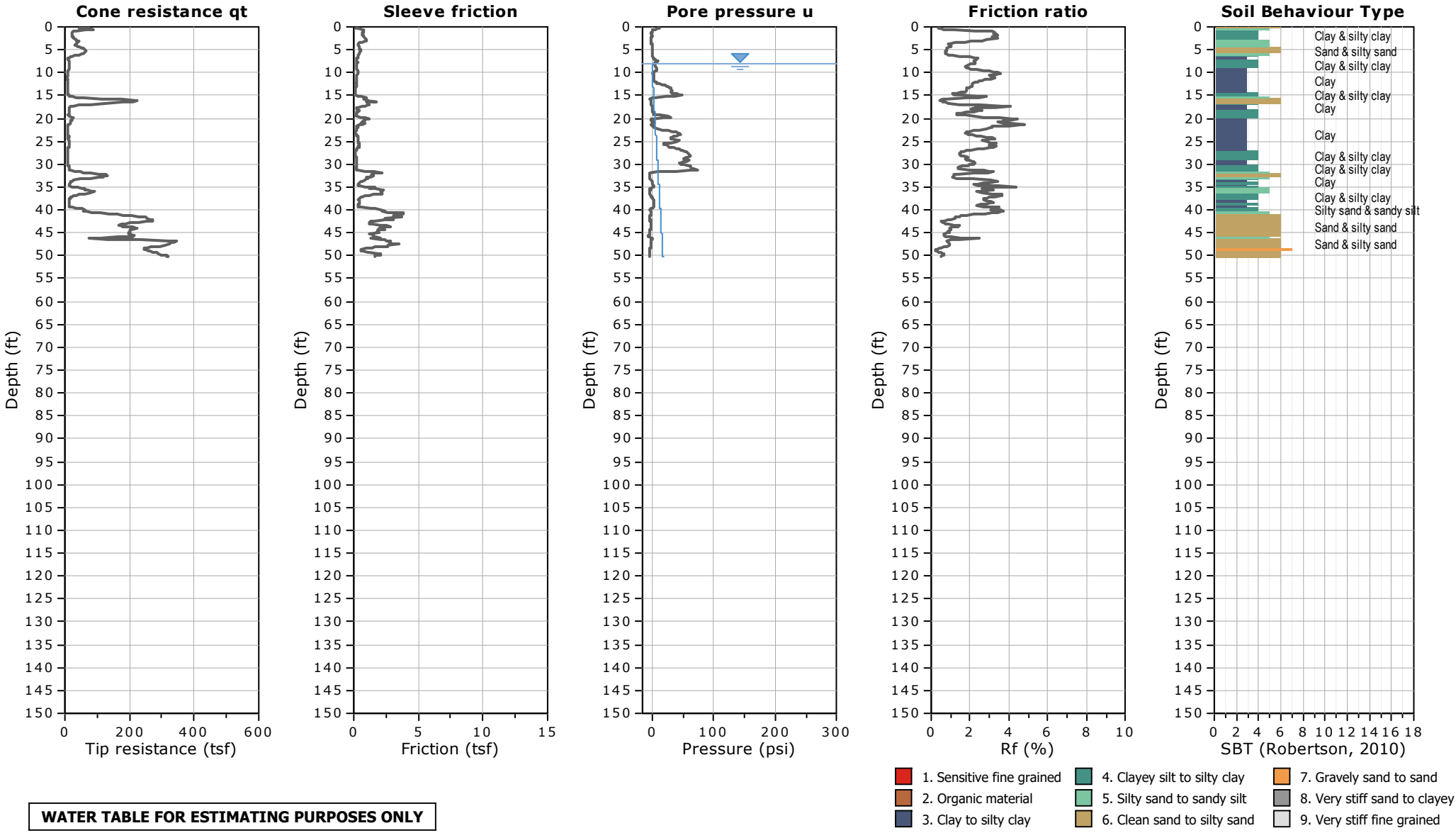
CPT: CPT-2

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.36 ft, Date: 8/28/2020



WATER TABLE FOR ESTIMATING PURPOSES ONLY

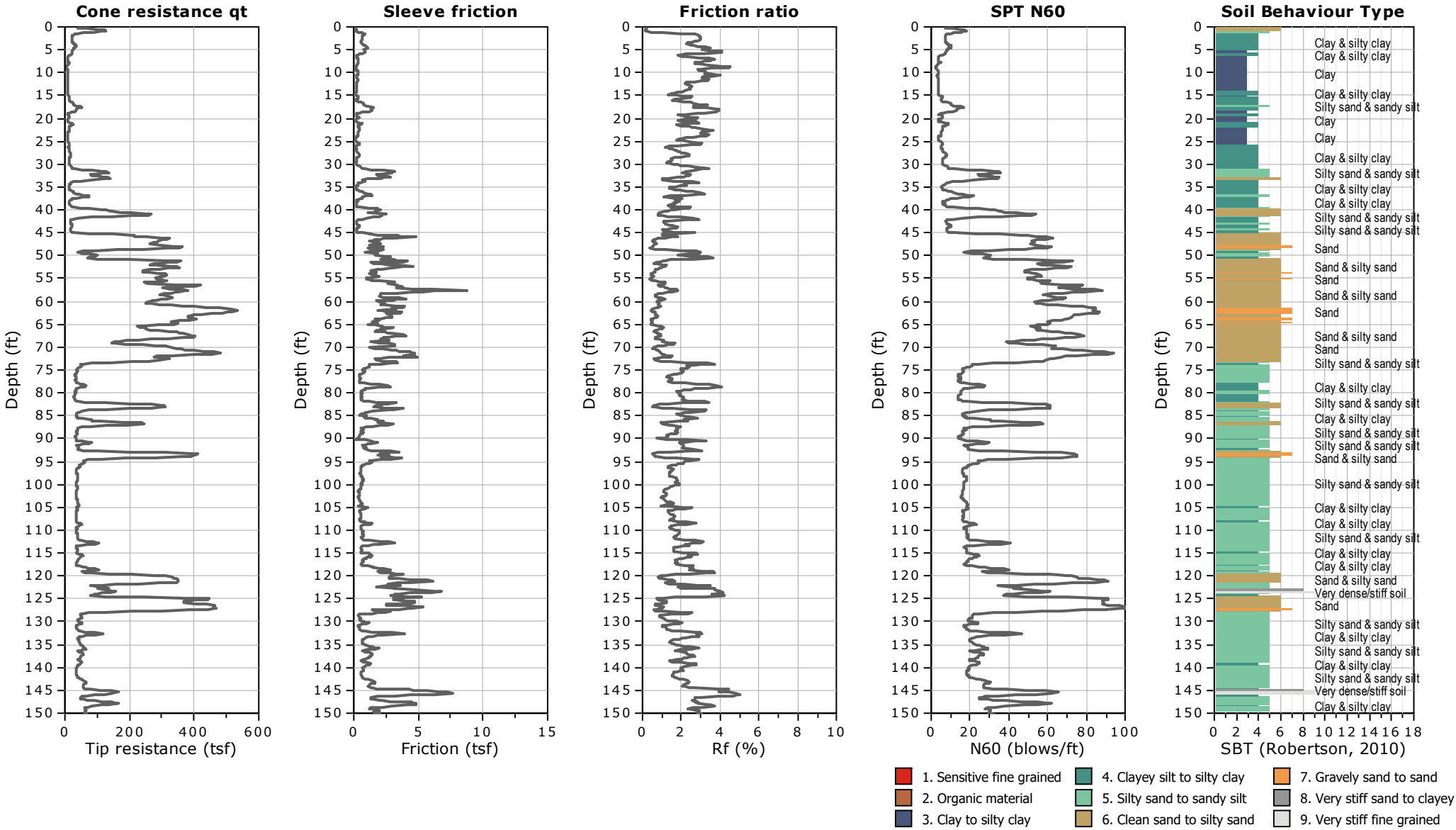
CPT: SCPT-3

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 150.43 ft, Date: 8/28/2020



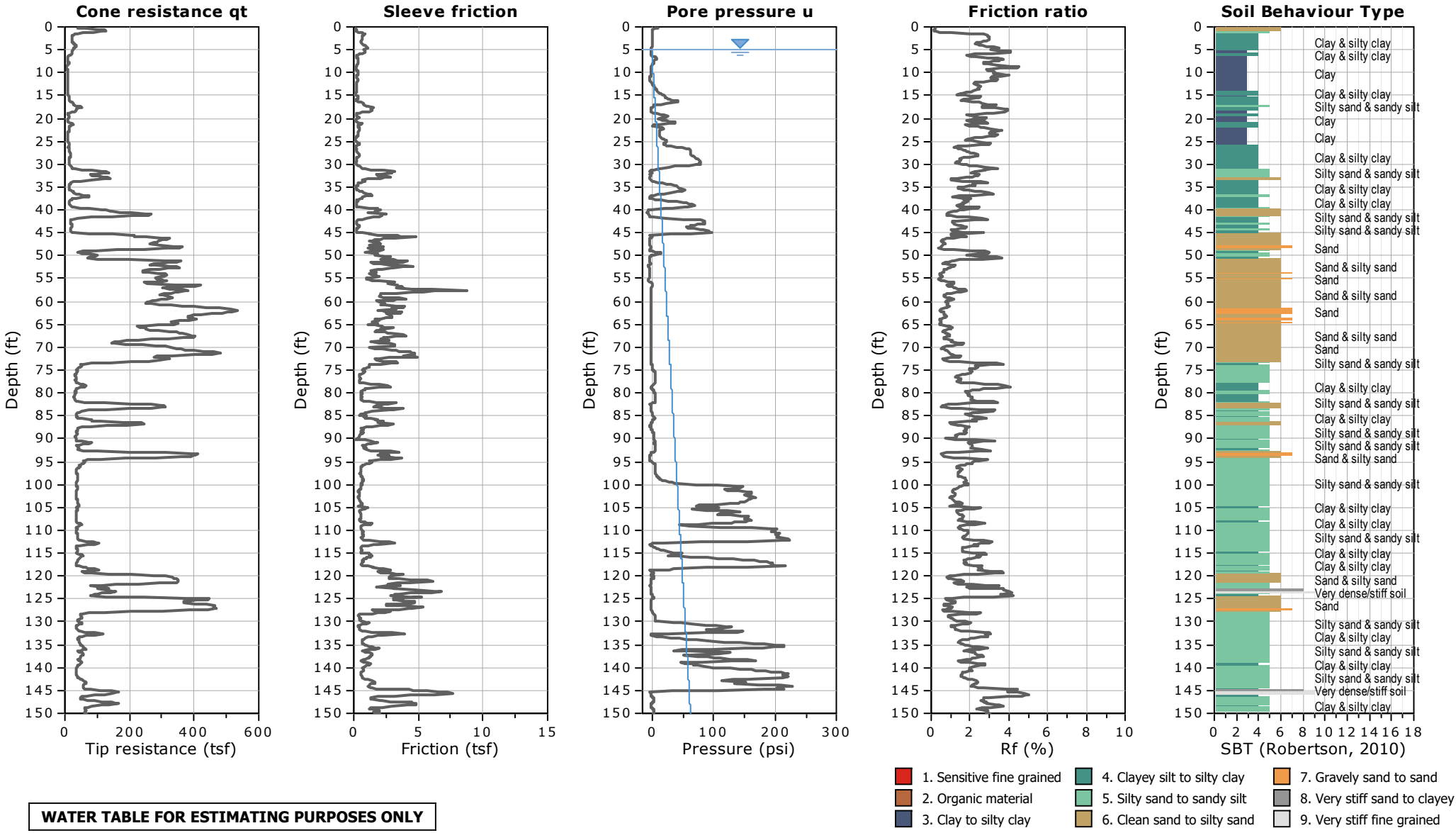
CPT: SCPT-3

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 150.43 ft, Date: 8/28/2020



WATER TABLE FOR ESTIMATING PURPOSES ONLY

GREGG DRILLING, LLC
WWW.GREGGDRILLING.COM

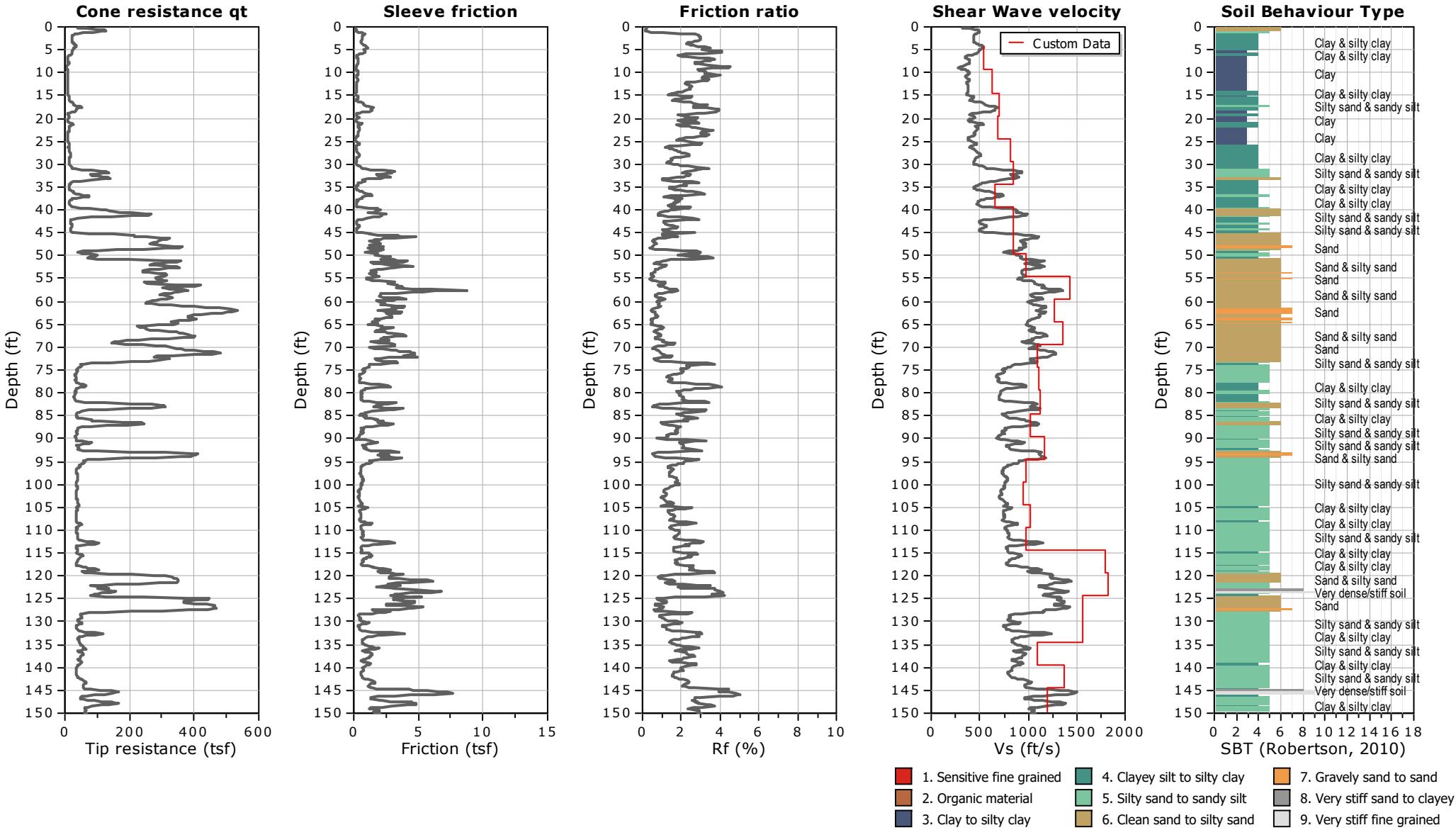
CPT: SCPT-3

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 150.43 ft, Date: 8/28/2020



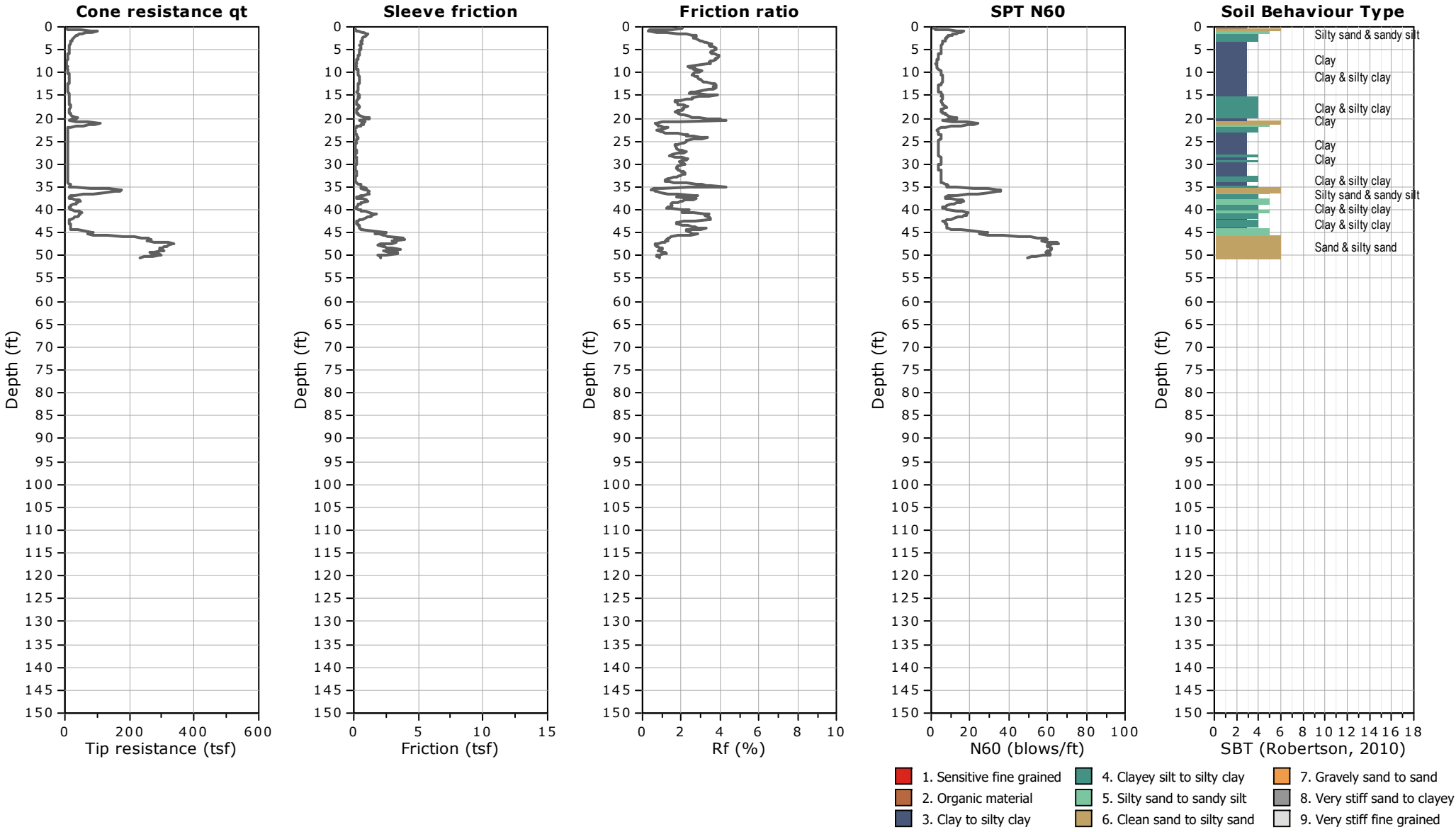
CPT: CPT-4

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.52 ft, Date: 8/28/2020



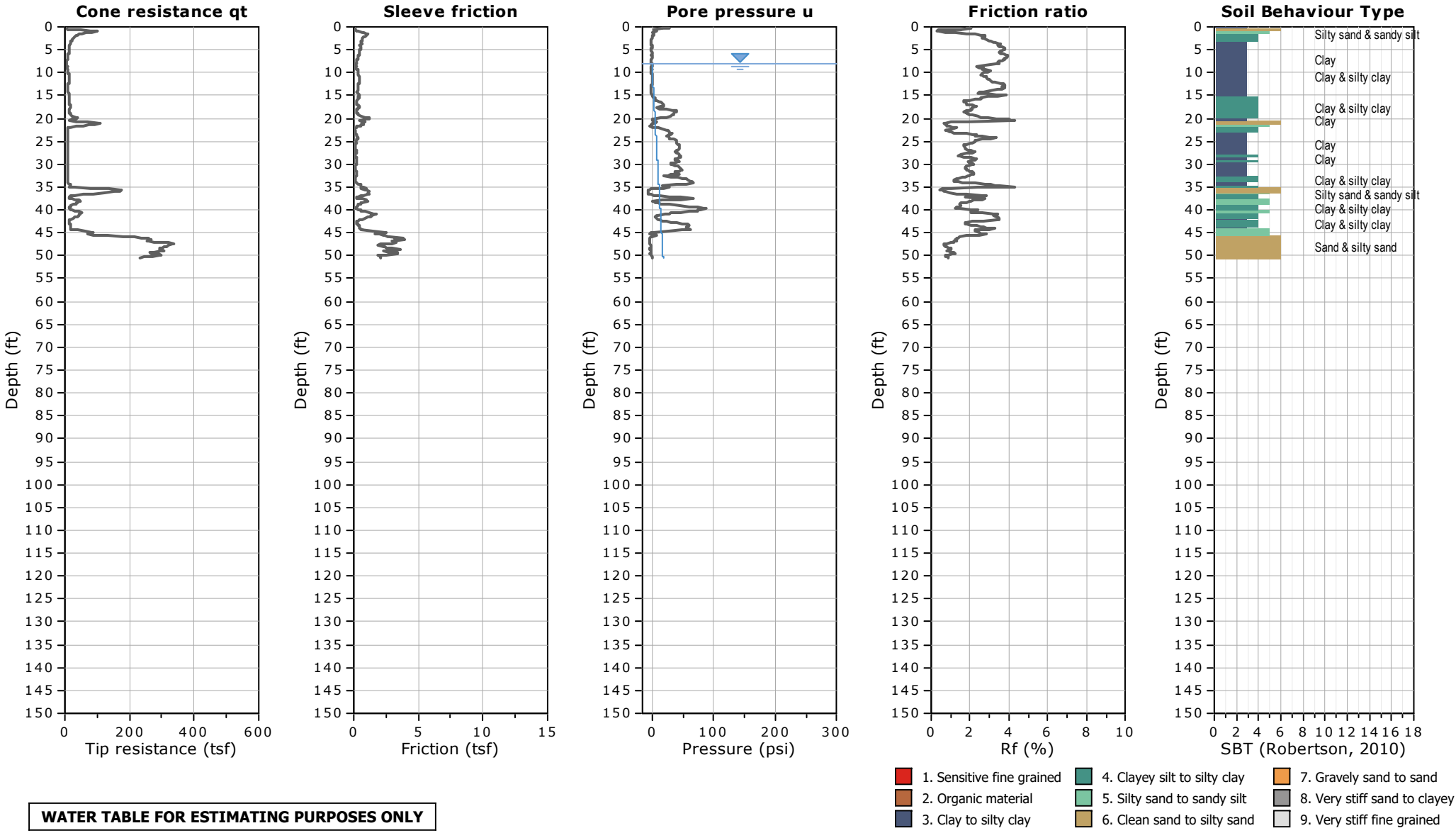
CPT: CPT-4

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.52 ft, Date: 8/28/2020



WATER TABLE FOR ESTIMATING PURPOSES ONLY

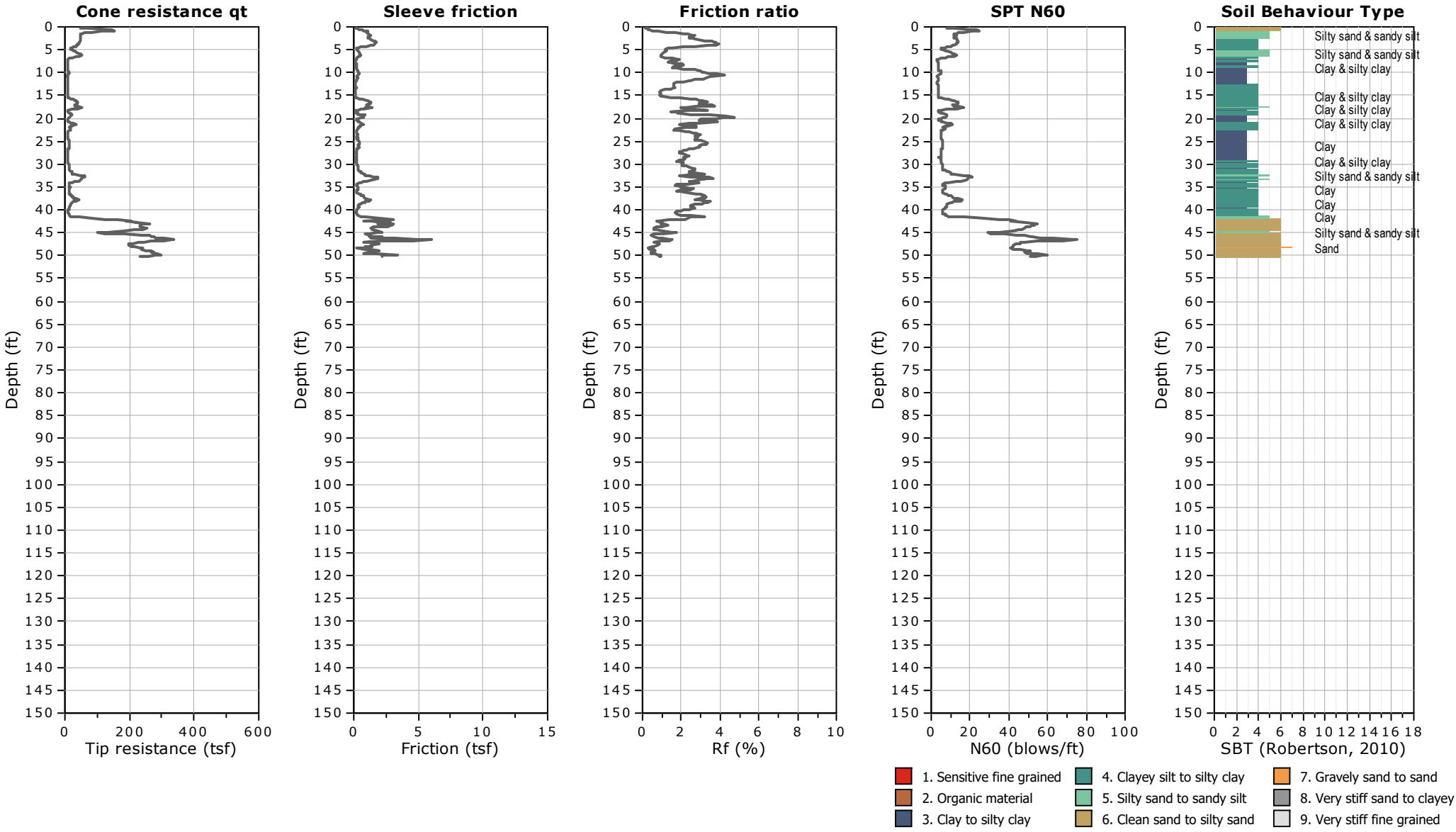
CPT: CPT-5

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.36 ft, Date: 8/28/2020



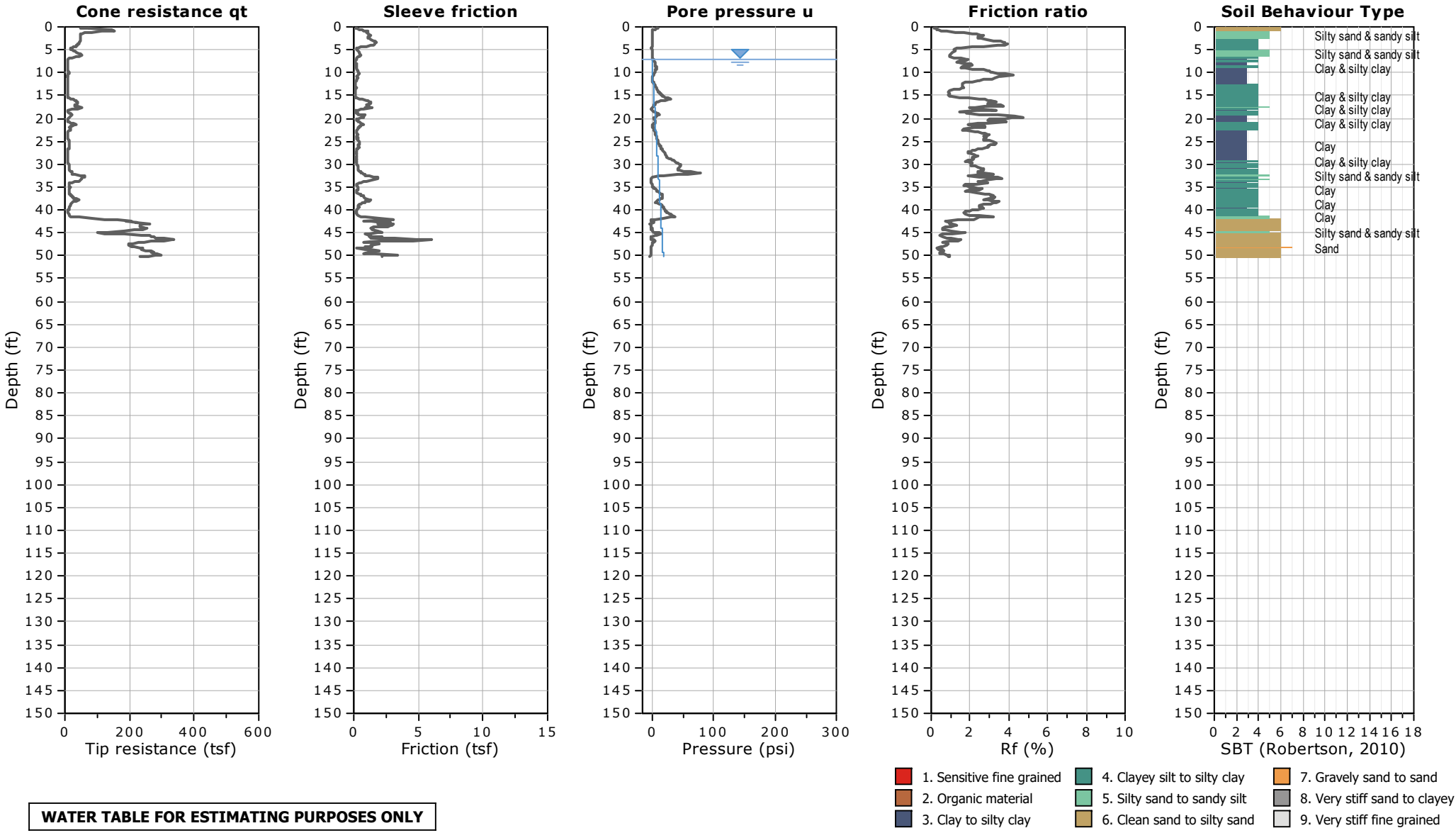
CPT: CPT-5

CLIENT: CORNERSTONE EARTH

SITE: 650 N. KING RD., SAN JOSE, CA

FIELD REP: B. CERVANTES

Total depth: 50.36 ft, Date: 8/28/2020



WATER TABLE FOR ESTIMATING PURPOSES ONLY

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 79 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 73 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 eight 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.

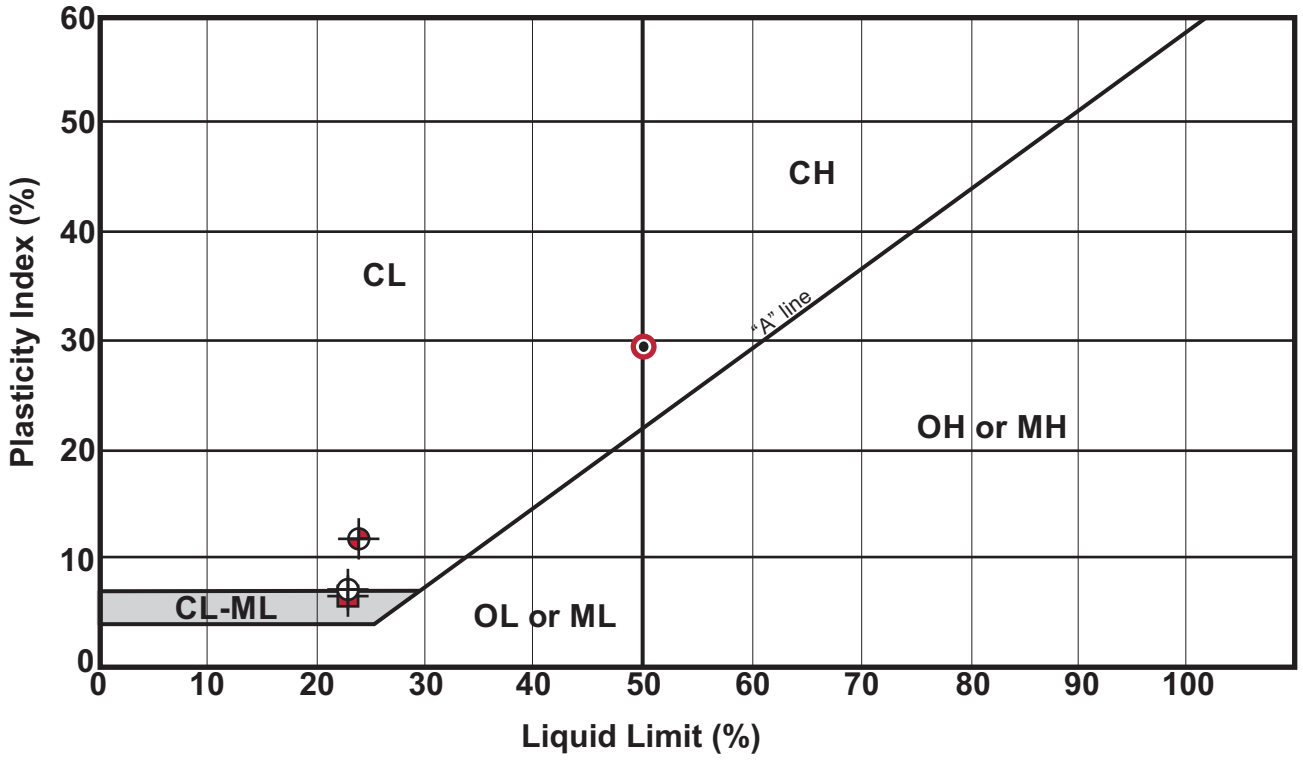
Plasticity Index: Four Plasticity Index determinations (ASTM D4318) were performed on samples of the subsurface soils to measure the range of water contents over which the material exhibits plasticity. The Plasticity Index was used to classify the soil in accordance with the Unified Soil Classification System and to evaluate the soil expansion potential. Results of these tests are shown on the boring logs at the appropriate sample depths.

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

Consolidation: Two consolidation tests (ASTM D2435) were performed on relatively undisturbed samples of the subsurface clayey soils to assist in evaluating the compressibility property of this soil. Results of the consolidation tests are presented graphically in this appendix.

Corrosion: Three soluble sulfate determinations (ASTM D4327), resistivity tests (ASTM G57), chloride determinations (ASTM D4327), and pH determinations (ASTM G51) were performed on four representative samples of the subsurface soils. Results of these tests are attached to 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-1	13.0	18	24	12	12	34	Clayey Sand (SC) (CL fines)
⊕	EB-1	17.5	13	23	16	7	28	Silty, Clayey Sand (SC-SM) (CL-ML fines)
■	EB-3	16.5	18	23	17	6	41	Silty, Clayey Sand (SC-SM) (CL-ML fines)
◉	EB-8	2.0	24	50	21	29	—	Fat Clay (CH)

Samples prepared in accordance with ASTM D421

CORNERSTONE EARTH GROUP

Plasticity Index Testing Summary

650 North King Road Warehouse
San Jose, CA

Project Number: 855-12-1

Figure Number: Figure B1

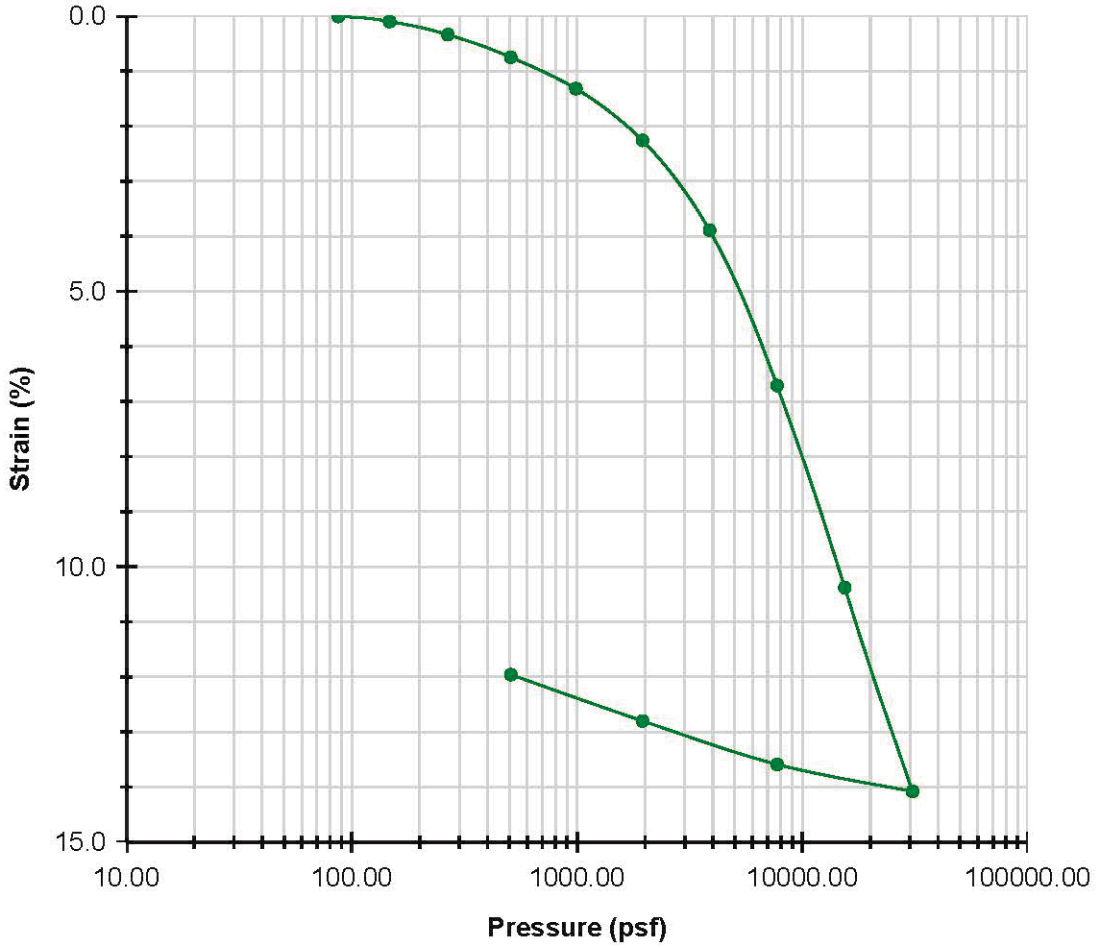
Date: September 2020

Drawn By: FLL

Consolidation Test ASTM D2435

Boring: EB-1 **Sample:** 9 **Depth:** 24.0'

Description: Lean Clay with Sand (CL)



	BEFORE	AFTER
Moisture (%)	22.5	17.8
Dry Density (pcf)	101.7	114.4
Saturation (%)	91.5	100.0
Void Ratio	0.67	0.48

(A) Stress Strain Curve

CORNERSTONE EARTH GROUP

Strain-Log Curve - EB-1 @ 24.0'

650 North King Road Warehouse
San Jose, CA

Project Number: 855-12-1

Figure Number: Figure B2

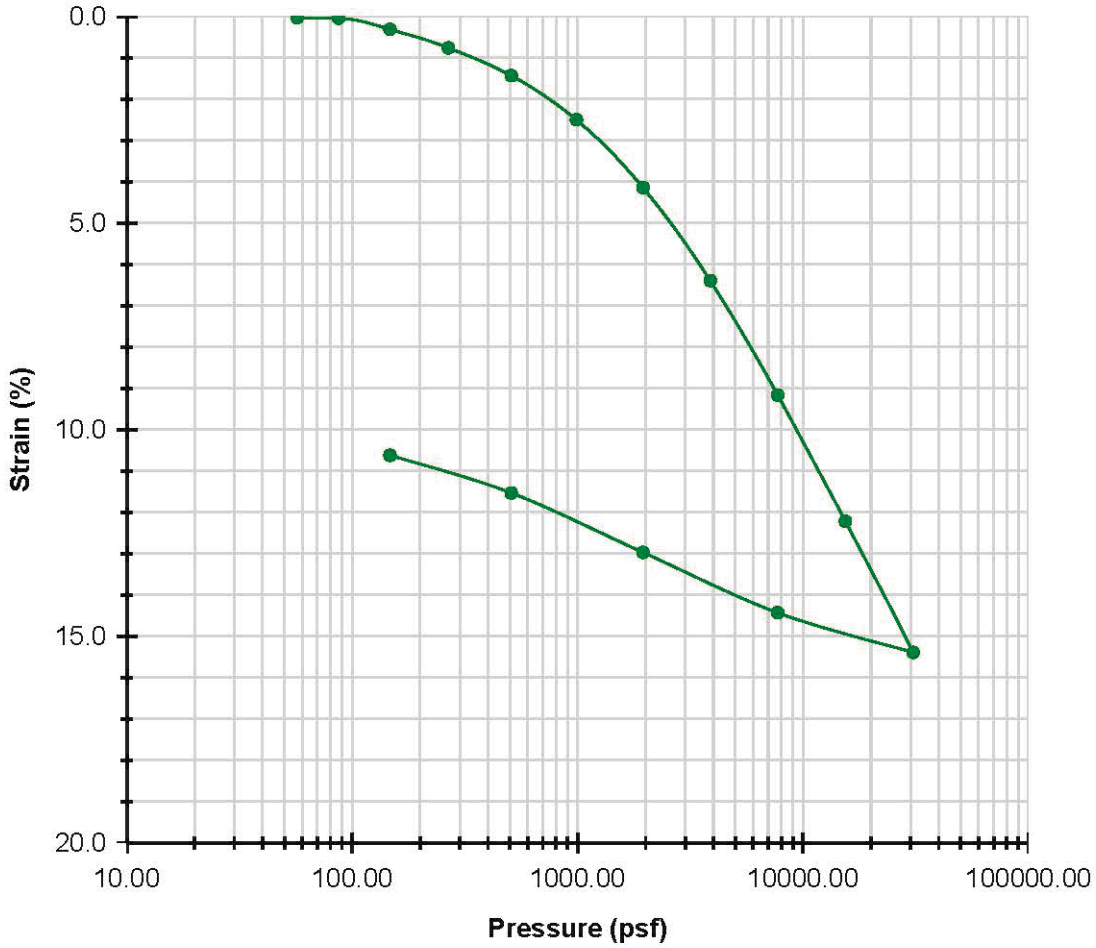
Date: September 2020

Drawn By: FLL

Consolidation Test ASTM D2435

Boring: EB-3 **Sample:** 3 **Depth:** 9.8'

Description: Lean Clay with Sand (CL)



	BEFORE	AFTER
Moisture (%)	26.2	20.6
Dry Density (pcf)	98.7	108.8
Saturation (%)	98.9	100.0
Void Ratio	0.72	0.56

(A) Stress Strain Curve

CORNERSTONE EARTH GROUP

Strain-Log Curve - EB-3 @ 9.8'

650 North King Road Warehouse
San Jose, CA

Project Number: 855-12-1

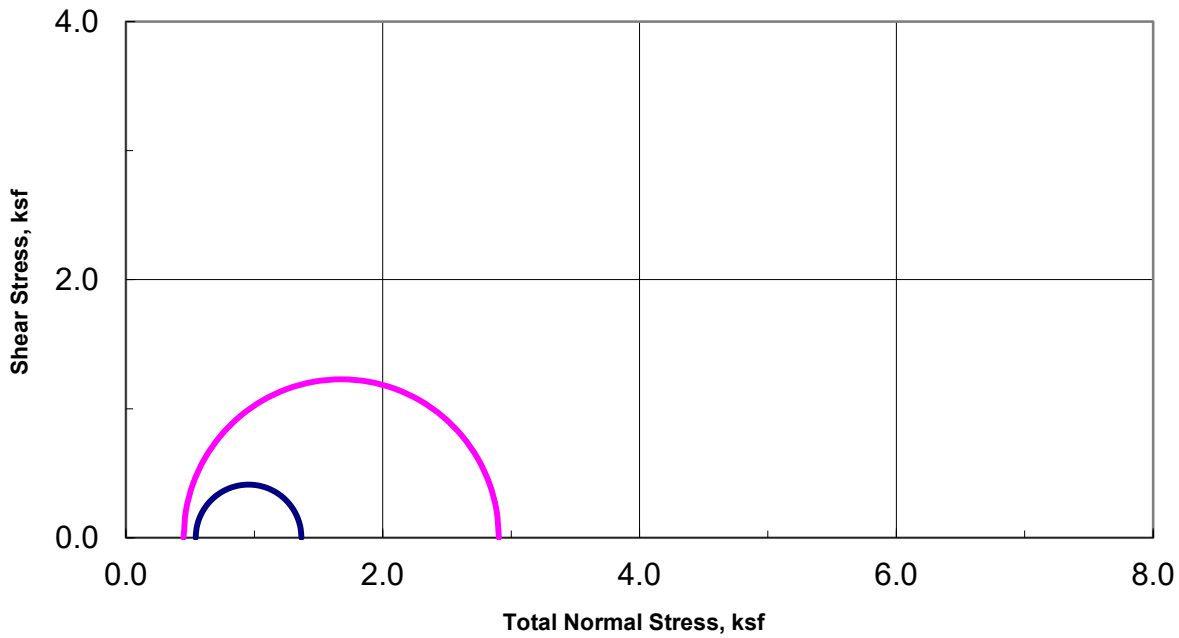
Figure Number: Figure B3

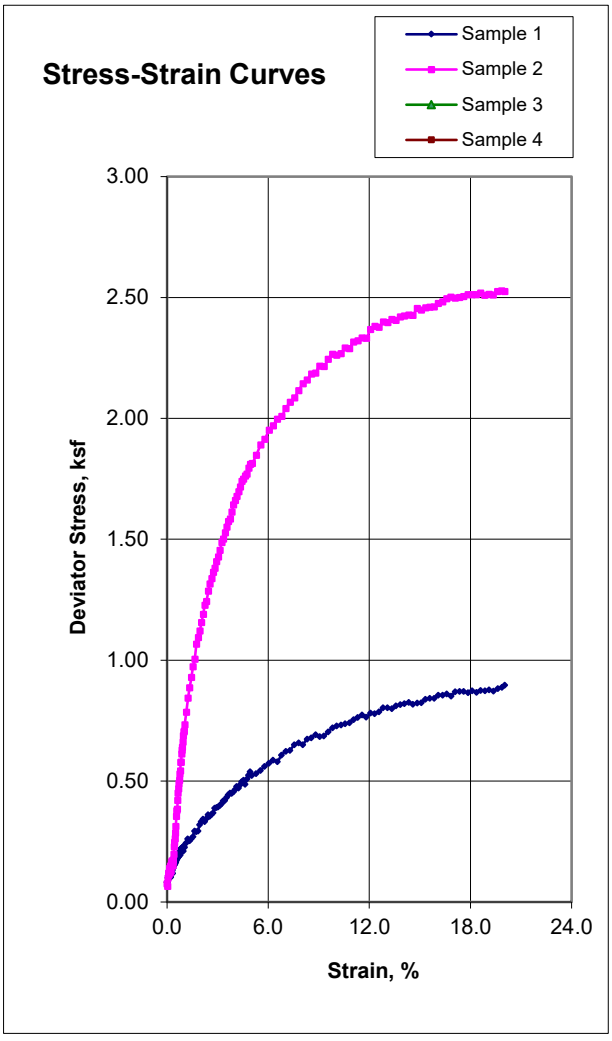
Date: September 2020

Drawn By: FLL

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

Unconsolidated-Undrained Triaxial Test
ASTM D2850





Sample Data	1	2	3	4
Moisture %	22.1	22.0		
Dry Den,pcf	105.3	105.2		
Void Ratio	0.601	0.602		
Saturation %	99.1	98.8		
Height in	5.02	5.00		
Diameter in	2.42	2.40		
Cell psi	3.8	3.1		
Strain %	15.00	15.00		
Deviator, ksf	0.823	2.455		
Rate %/min	1.00	1.00		
in/min	0.050	0.050		
Job No.:	640-1423			
Client:	Cornerstone Earth Group			
Project:	855-12-1			
Boring:	EB-1	EB-9		
Sample:	4B	3B		
Depth ft:	7.5	5.5		

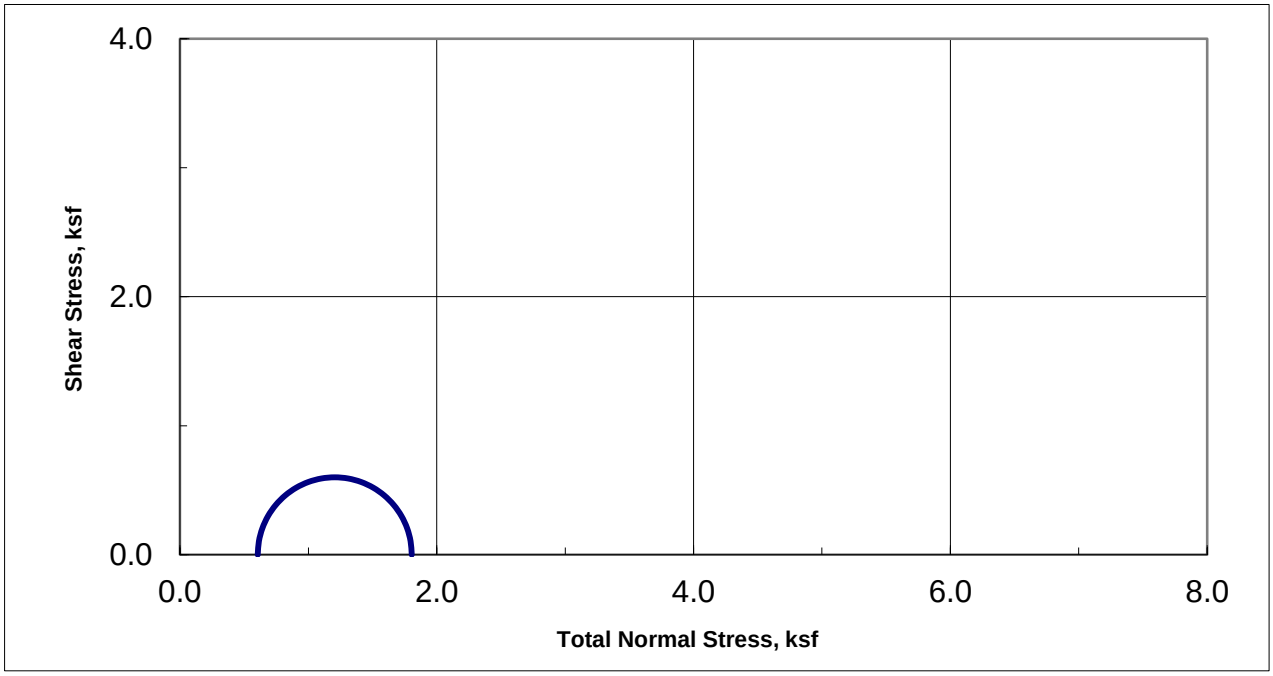
Visual Soil Description	
Sample #	
1	Olive Gray Sandy CLAY w/ Gravel
2	Dark Brown Sandy CLAY
3	
4	

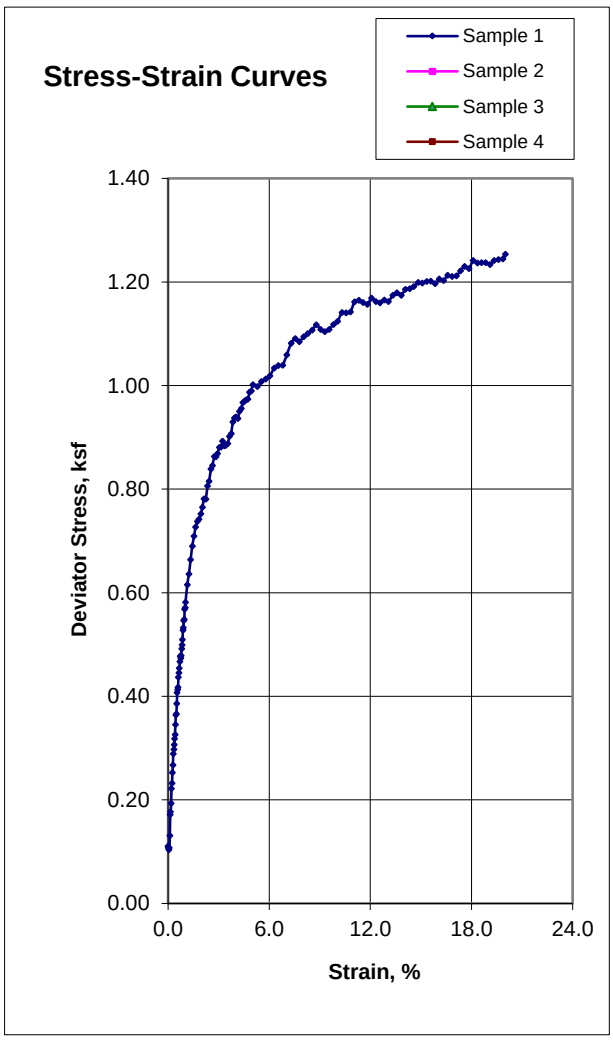
Remarks:

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

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

Unconsolidated-Undrained Triaxial Test
ASTM D2850





Sample Data	1	2	3	4
Moisture %	24.9			
Dry Den,pcf	100.3			
Void Ratio	0.680			
Saturation %	98.9			
Height in	5.96			
Diameter in	2.85			
Cell psi	4.2			
Strain %	15.00			
Deviator, ksf	1.199			
Rate %/min	1.00			
in/min	0.060			
Job No.:	640-1424			
Client:	Cornerstone Earth Group			
Project:	855-12-1			
Boring:	EB-3			
Sample:	4			
Depth ft:	8.0			

Visual Soil Description	
Sample #	
1	Dark Olive Gray Sandy CLAY
2	
3	
4	

Remarks:

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

APPENDIX C: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.82

Total Settlement: 0.15 (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)
0.328	14.179	0.174	43.6	43.6	93.194	1.229	1.99		Unsaturated	22.3			13.40	1.70	22.78	53.20	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.492	26.544	0.184	65.4	65.4	142.493	0.694	1.69		Unsaturated	0.0			25.09	1.70	42.65	42.65	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.656	37.664	0.327	87.2	87.2	175.113	0.869	1.69		Unsaturated	0.0			35.60	1.70	60.52	60.52	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	45.113	0.536	109.1	109.1	187.593	1.190	1.76		Unsaturated	4.1			42.64	1.70	72.49	72.51	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.984	33.966	0.687	130.9	130.9	128.841	2.027	2.04		Unsaturated	26.6			32.10	1.70	54.58	96.60	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.148	25.171	0.748	152.7	152.7	88.299	2.981	2.28		Unsaturated	45.3			23.79	1.70	40.44	95.08	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.312	20.324	0.599	174.5	174.5	66.607	2.960	2.36		Unsaturated	51.8			19.21	1.70	32.66	88.00	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.476	16.854	0.482	196.3	196.3	51.996	2.877	2.43		Unsaturated	57.2			15.93	1.70	27.08	82.64	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	16.912	0.457	218.1	218.1	49.466	2.720	2.43		Unsaturated	57.2			15.98	1.70	27.17	82.74	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.804	17.213	0.519	239.9	239.9	47.979	3.036	2.47		Unsaturated	60.6			16.27	1.70	27.66	84.27	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.969	17.516	0.567	261.9	261.9	46.709	3.261	2.50		Unsaturated	62.9			16.56	1.70	28.14	85.48	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.133	17.927	0.584	283.7	283.7	45.910	3.284	2.51		Unsaturated	63.5			16.94	1.70	28.81	86.47	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.297	18.666	0.584	305.5	305.5	46.052	3.154	2.49		Unsaturated	62.5			17.64	1.70	29.99	87.75	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.461	20.394	0.640	327.3	327.3	48.618	3.164	2.48		Unsaturated	61.2			19.28	1.70	32.77	90.99	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.625	22.494	0.694	349.1	349.1	51.936	3.109	2.45		Unsaturated	59.1			21.26	1.70	36.14	94.76	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.789	24.223	0.748	370.9	370.9	54.264	3.112	2.44		Unsaturated	58.1			22.90	1.70	38.92	98.00	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.953	24.463	0.762	392.7	392.7	53.238	3.140	2.45		Unsaturated	58.8			23.12	1.70	39.31	98.70	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.117	24.143	0.806	414.6	414.6	51.112	3.367	2.48		Unsaturated	61.5			22.82	1.70	38.79	98.78	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.281	23.808	0.801	436.4	436.4	49.098	3.396	2.50		Unsaturated	62.7			22.50	1.70	38.25	98.39	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.445	23.766	0.786	458.2	458.2	47.808	3.339	2.50		Unsaturated	62.9			22.46	1.70	38.19	98.37	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.609	23.743	0.806	480.0	480.0	46.642	3.429	2.51		Unsaturated	64.2			22.44	1.70	38.15	98.63	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.773	23.219	0.795	501.8	501.8	44.579	3.461	2.53		Unsaturated	65.6			21.95	1.70	37.31	97.86	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.937	22.235	0.703	523.6	523.6	41.750	3.199	2.53		Unsaturated	65.3			21.02	1.70	35.73	95.77	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.101	21.676	0.634	545.4	545.4	39.846	2.962	2.52		Unsaturated	64.7			20.49	1.70	34.83	94.48	1.00	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.265	22.795	0.592	567.2	567.2	41.095	2.630	2.48		Unsaturated	61.1			21.55	1.70	36.63	95.92	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.429	23.765	0.576	589.1	589.1	42.045	2.454	2.45		Unsaturated	59.0			22.46	1.70	38.19	97.32	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.593	21.995	0.605	610.9	610.9	38.155	2.789	2.52		Unsaturated	64.4			20.79	1.70	35.34	95.07	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.757	18.031	0.595	632.7	632.7	38.983	3.359	2.57		Unsaturated	68.2			17.04	1.70	28.97	87.68	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.921	14.214	0.514	654.5	654.5	29.843	3.701	2.68		Unsaturated	77.3			13.43	1.70	22.84	81.32	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.085	12.411	0.416	676.3	676.3	35.702	3.446	2.60	plastic	Clay	71.1			11.73	1.35	n.a.	n.a.	0.99	0.533	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.249	11.679	0.364	698.1	698.1	32.459	3.213	2.61	plastic	Clay	71.9			11.04	1.34	n.a.	n.a.	0.99	0.541	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.413	12.030	0.354	719.9	719.9	23.461	3.033	2.70	plastic	Clay	79.2			11.37	1.33	n.a.	n.a.	0.99	0.548	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.577	13.367	0.322	741.7	741.7	25.587	2.478	2.62	plastic	Clay	72.5			12.63	1.32	n.a.	n.a.	0.99	0.555	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.741	15.960	0.360	763.6	763.6	30.054	2.311	2.54	plastic	Clay	66.6			15.09	1.31	n.a.	n.a.	0.99	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.906	18.200	0.437	785.5	785.5	27.625	2.454	2.59	plastic	Clay	70.2			17.20	1.30	n.a.	n.a.	0.99	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.070	19.816	0.499	807.3	807.3	29.705	2.571	2.58	plastic	Clay	69.2			18.73	1.29	n.a.	n.a.	0.99	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.234	20.178	0.542	829.1	829.1	29.842	2.742	2.59	plastic	Clay	70.5			19.07	1.28	n.a.	n.a.	0.99	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.398	21.087	0.581	850.9	850.9	30.795	2.812	2.59	plastic	Clay	70.3			19.93	1.27	n.a.	n.a.	0.99	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.562	20.673	0.578	872.7	868.9	35.665	2.856	2.55	plastic	Clay	66.7			19.54	1.26	n.a.	n.a.	0.99	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.726	19.796	0.579	894.6	880.5	33.786	2.992	2.58	plastic	Clay	69.2			18.71	1.26	n.a.	n.a.	0.99	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.890	17.987	0.555	916.4	892.0	30.329	3.166	2.63	plastic	Clay	73.3			17.00	1.26	n.a.	n.a.	0.99	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.054	17.310	0.576	938.2	903.6	28.877	3.420	2.67	plastic	Clay	76.4			16.36	1.25	n.a.	n.a.	0.99	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.218	17.125	0.604	960.0	915.2	36.375	3.629	2.61	plastic	Clay	71.8			16.19	1.25	n.a.	n.a.	0.99	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.382	16.326	0.560	981.8	926.8	34.173	3.536	2.62		Clay	72.8			15.43	1.24	n.a.	n.a.	0.98	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.546	15.096	0.578	1003.6	938.3	31.106	3.960	2.69		Clay	77.9			14.27	1.24	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.710	13.267	0.549	1025.4	949.9	26.853	4.304	2.76		Clay	83.6			12.54	1.24	n.a.	n.a.	0.98	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.874	12.088	0.525	1047.2	961.5	24.055	4.540	2.81		Clay	87.7			11.43	1.23	n.a.	n.a.	0.98	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.038	11.301	0.553	1069.1	973.1	22.129	5.136	2.87		Clay	92.7			10.68	1.23	n.a.	n.a.	0.98	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.202	11.027	0.512	1090.9	984.7	21.290	4.885	2.87		Clay	92.5			10.42	1.22	n.a.	n.a.	0.98	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.366	10.913	0.478	1112.7	996.2	20.792	4.615	2.86		Clay	91.8			10.31	1.22	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	11.092	0.458	1134.5	1007.8	20.886	4.352	2.84		Clay	90.4			10.48	1.22	n.a.	n.a.	0.98	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.694	11.279	0.458	1156.3	1019.4	20.994	4.280	2.84		Clay	89.9			10.66	1.21	n.a.	n.a.	0.98	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.858	11.089	0.514	1178.1	1031.0	20.369	4.895	2.88		Clay	93.7			10.48	1.21	n.a.	n.a.	0.98	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.022	10.472	0.429	1199.9	1042.6	18.938	4.346	2.87		Clay	92.9			9.90	1.21	n.a.	n.a.	0.98	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.186	9.312	0.353	1221.7	1054.1	16.509	4.057	2.90		Clay	95.1			8.80	1.20	n.a.	n.a.	0.98	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	8.576	0.286	1243.6	1065.7	14.928	3.596	2.90		Clay	95.2			8.11	1.20	n.a.	n.a.	0.98	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.514	7.735	0.254	1265.4	1077.3	13.186	3.576	2.94		Clay	98.5			7.31	1.19	n.a.	n.a.	0.98	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.678	7.816	0.212	1287.2	1088.9	13.174	2.956	2.90		Clay	94.6			7.39	1.19	n.a.	n.a.	0.98	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.843	9.738	0.284	1309.1	1100.5	16.508	3.127	2.83		Clay	89.5			9.20	1.19	n.a.	n.a.	0.98	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.007	10.617	0.341	1330.9	1112.1	17.897	3.427	2.83		Clay	89.2			10.03	1.18	n.a.	n.a.	0.97	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	10.541	0.356	1352.7	1123.7	17.558	3.609	2.85		Clay	90.9			9.96	1.18	n.a.	n.a.	0.97	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	8.411	0.355	1374.6	1135.3	13.607	4.596	3.00		Clay	100.0			7.95	1.18	n.a.	n.a.	0.97	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	7.779	0.209	1396.4	1146.8	12.349	2.952	2.92		Clay	96.4			7.35	1.18	n.a.	n.a.	0.97	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	7.792	0.191	1418.2	1158.4	12.229	2.697	2.90		Clay	94.9			7.36	1.17	n.a.	n.a.	0.97	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	8.147	0.187	1440.0	1170.0	12.696	2.518	2.87		Clay	92.5			7.70	1.17	n.a.	n.a.	0.97	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	8.532	0.177	1461.8	1181.6	13.205	2.269	2.83		Clay	89.3			8.06	1.17	n.a.	n.a.	0.97	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	8.759	0.184	1483.6	1193.1	13.439	2.295	2.83		Clay	89.0			8.28	1.16	n.a.	n.a.	0.97	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.82

Total Settlement: 0.15 (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)
11.319	8.688	0.145	1505.4	1204.7	13.174	1.827	2.78		Clay	85.3			8.21	1.16	n.a.	n.a.	0.97	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	8.774	0.158	1527.2	1216.3	13.172	1.972	2.80		Clay	86.7			8.29	1.16	n.a.	n.a.	0.97	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	9.424	0.166	1549.1	1227.9	14.088	1.919	2.77		Clay	84.2			8.91	1.15	n.a.	n.a.	0.97	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	9.982	0.190	1570.9	1239.5	14.840	2.066	2.76		Clay	84.1			9.43	1.15	n.a.	n.a.	0.97	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	9.955	0.189	1592.7	1251.0	14.642	2.064	2.77		Clay	84.5			9.41	1.15	n.a.	n.a.	0.97	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	9.576	0.155	1614.5	1262.6	13.890	1.768	2.75		Clay	83.1			9.05	1.15	n.a.	n.a.	0.97	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	15.018	0.081	1636.3	1274.2	17.296	0.570	2.44	plastic	Clay	57.9			14.19	1.14	n.a.	n.a.	0.97	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	20.503	0.324	1658.1	1285.8	23.855	1.647	2.54	plastic	Clay	66.1			19.38	1.14	n.a.	n.a.	0.97	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	26.261	0.711	1679.9	1297.3	30.686	2.797	2.59	plastic	Clay	70.2			24.82	1.14	n.a.	n.a.	0.96	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	26.397	0.839	1701.7	1308.9	33.796	3.284	2.60	plastic	Clay	71.4			24.95	1.14	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	27.975	0.829	1723.5	1320.5	32.440	3.058	2.60	plastic	Clay	70.8			26.44	1.13	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	28.637	1.004	1745.4	1332.1	36.282	3.616	2.61	plastic	Clay	71.8			27.07	1.13	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	27.066	0.914	1767.2	1343.7	34.008	3.491	2.62	plastic	Clay	72.6			25.58	1.13	n.a.	n.a.	0.96	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	21.476	0.626	1789.0	1355.2	30.373	3.042	2.62	plastic	Clay	72.4			20.30	1.12	n.a.	n.a.	0.96	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	15.616	0.426	1810.8	1366.8	21.525	2.896	2.72		Clay	80.6			14.76	1.12	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	11.953	0.266	1832.7	1378.5	16.013	2.410	2.77		Clay	85.0			11.30	1.12	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	10.862	0.242	1854.6	1390.0	14.294	2.436	2.82		Clay	88.4			10.27	1.12	n.a.	n.a.	0.96	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	10.225	0.205	1876.4	1401.6	13.252	2.207	2.82		Clay	88.7			9.66	1.11	n.a.	n.a.	0.96	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	9.821	0.197	1898.2	1413.2	12.556	2.220	2.84		Clay	90.3			9.28	1.11	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	9.537	0.174	1920.0	1424.8	12.040	2.029	2.84		Clay	89.9			9.01	1.11	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	9.762	0.145	1941.8	1436.4	12.241	1.649	2.78		Clay	85.6			9.23	1.11	n.a.	n.a.	0.96	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	10.464	0.183	1963.6	1447.9	13.098	1.930	2.79		Clay	86.5			9.89	1.11	n.a.	n.a.	0.96	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	11.376	0.193	1985.4	1459.5	14.228	1.859	2.75		Clay	83.3			10.75	1.10	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	11.986	0.179	2007.2	1471.1	14.931	1.630	2.71		Clay	79.5			11.33	1.10	n.a.	n.a.	0.95	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	12.914	0.205	2029.0	1482.7	16.051	1.723	2.69		Clay	78.4			12.21	1.10	n.a.	n.a.	0.95	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	13.332	0.229	2050.9	1494.3	16.472	1.861	2.70		Clay	79.1			12.60	1.10	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	12.631	0.266	2072.7	1505.8	15.400	2.294	2.78		Clay	85.1			11.94	1.09	n.a.	n.a.	0.95	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	10.865	0.250	2094.5	1517.4	12.940	2.546	2.86		Clay	92.1			10.27	1.09	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	9.005	0.167	2116.3	1529.0	10.395	2.101	2.90		Clay	94.8			8.51	1.09	n.a.	n.a.	0.95	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	8.266	0.134	2138.1	1540.6	9.343	1.862	2.91		Clay	95.8			7.81	1.09	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	7.698	0.116	2159.9	1552.1	8.528	1.753	2.93		Clay	97.5			7.28	1.09	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	7.997	0.116	2181.7	1563.7	8.833	1.680	2.91		Clay	95.7			7.56	1.08	n.a.	n.a.	0.95	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	9.349	0.123	2203.5	1575.3	10.471	1.491	2.82		Clay	88.5			8.84	1.08	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	12.036	0.168	2225.4	1586.9	13.767	1.538	2.72		Clay	80.8			11.38	1.08	n.a.	n.a.	0.95	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	14.657	0.234	2247.2	1598.5	16.933	1.729	2.67		Clay	76.9			13.85	1.08	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	16.274	0.292	2269.0	1610.0	18.806	1.929	2.66		Clay	76.0			15.38	1.07	n.a.	n.a.	0.95	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	16.586	0.303	2290.8	1621.6	19.043	1.962	2.66		Clay	76.0			15.68	1.07	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	16.939	0.275	2312.6	1633.2	19.327	1.742	2.63	plastic	Clay	73.2			16.01	1.07	n.a.	n.a.	0.94	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	18.160	0.292	2334.4	1644.8	20.663	1.718	2.60	plastic	Clay	71.0			17.16	1.07	n.a.	n.a.	0.94	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	19.501	0.329	2356.4	1656.4	20.556	1.796	2.61	plastic	Clay	72.0			18.43	1.07	n.a.	n.a.	0.94	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	21.165	0.356	2378.2	1668.0	21.266	1.782	2.60	plastic	Clay	70.9			20.00	1.06	n.a.	n.a.	0.94	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	23.756	0.538	2400.0	1679.6	25.061	2.385	2.62	plastic	Clay	72.2			22.45	1.06	n.a.	n.a.	0.94	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	27.893	0.704	2421.8	1691.2	29.503	2.638	2.59	plastic	Clay	70.0			26.36	1.06	n.a.	n.a.	0.94	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	32.622	0.893	2443.6	1702.7	33.085	2.844	2.57	plastic	Clay	68.6			30.83	1.06	n.a.	n.a.	0.94	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	33.235	1.022	2465.4	1714.3	33.605	3.194	2.60	plastic	Clay	70.9			31.41	1.06	n.a.	n.a.	0.94	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	31.186	1.024	2487.2	1725.9	34.698	3.420	2.61	plastic	Clay	71.6			29.48	1.06	n.a.	n.a.	0.94	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	26.204	0.684	2509.0	1737.5	28.719	2.742	2.61	plastic	Clay	71.6			24.77	1.05	n.a.	n.a.	0.94	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	21.883	0.607	2530.9	1749.0	23.576	2.944	2.69		Clay	78.4			20.68	1.05	n.a.	n.a.	0.94	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	17.682	0.525	2552.7	1760.6	18.636	3.200	2.80		Clay	86.6			16.71	1.05	n.a.	n.a.	0.94	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	15.219	0.481	2574.5	1772.2	15.723	3.453	2.87		Clay	92.9			14.38	1.05	n.a.	n.a.	0.94	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	14.516	0.399	2596.3	1783.8	14.820	3.019	2.86		Clay	91.7			13.72	1.05	n.a.	n.a.	0.93	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	14.779	0.364	2618.1	1795.4	15.005	2.702	2.83		Clay	89.1			13.97	1.04	n.a.	n.a.	0.93	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	14.960	0.359	2639.9	1806.9	15.097	2.632	2.82		Clay	88.4			14.14	1.04	n.a.	n.a.	0.93	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	15.278	0.385	2661.7	1818.5	15.339	2.760	2.82		Clay	88.9			14.44	1.04	n.a.	n.a.	0.93	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	15.887	0.407	2683.5	1830.1	15.896	2.798	2.82		Clay	88.2			15.02	1.04	n.a.	n.a.	0.93	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	17.642	0.455	2705.4	1841.7	17.690	2.793	2.78		Clay	85.2			16.67	1.04	n.a.	n.a.	0.93	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	22.567	0.568	2727.2	1853.3	22.882	2.679	2.68		Clay	77.2			21.33	1.04	n.a.	n.a.	0.93	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	23.184	0.492	2749.0	1864.8	23.390	2.256	2.62	plastic	Clay	73.0			21.91	1.03	n.a.	n.a.	0.93	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	20.660	0.411	2770.8	1876.4	20.544	2.132	2.66		Clay	75.5			19.53	1.03	n.a.	n.a.	0.93	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	17.705	0.437	2792.6	1888.0	17.276	2.680	2.77		Clay	85.0			16.73	1.03	n.a.	n.a.	0.93	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	19.500	0.553	2814.4	1899.6	19.049	3.056	2.78		Clay	85.1			18.43	1.03	n.a.	n.a.	0.93	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	21.028	0.617	2836.2	1911.1	20.522	3.146	2.76		Clay	83.6			19.88	1.03	n.a.	n.a.	0.93	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	17.524	0.511	2858.2	1922.8	16.741	3.175	2.83		Clay	89.4			16.56	1.03	n.a.	n.a.	0.93	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	12.442	0.373	2880.0	1934.4	11.375	3.390	2.98		Clay	100.0			11.76	1.02	n.a.	n.a.	0.92	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	9.327	0.256	2901.8	1946.0	8.095	3.250	3.09		Clay	100.0			8.82	1.02	n.a.	n.a.	0.92	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	8.192	0.152	2923.6	1957.5	6.876	2.258	3.07		Clay	100.0			7.74	1.02	n.a.	n.a.	0.92	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	8.075	0.125	2945.4	1969.1	6.706	1.893	3.04		Clay	100.0			7.63	1.02	n.a.	n.a.	0.92	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.82

Total Settlement: 0.15 (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)
22.310	8.641	0.167	2967.2	1980.7	7.227	2.333	3.06		Clay	100.0			8.17	1.02	n.a.	n.a.	0.92	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	9.189	0.215	2989.0	1992.3	7.724	2.794	3.07		Clay	100.0			8.69	1.02	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	9.213	0.240	3010.9	2003.8	7.693	3.114	3.10		Clay	100.0			8.71	1.01	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	8.705	0.219	3032.7	2015.4	7.134	3.046	3.12		Clay	100.0			8.23	1.01	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	8.307	0.179	3054.5	2027.0	6.689	2.640	3.11		Clay	100.0			7.85	1.01	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	7.971	0.160	3076.3	2038.6	6.311	2.487	3.12		Clay	100.0			7.53	1.01	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	7.749	0.151	3098.1	2050.2	6.048	2.436	3.13		Clay	100.0			7.32	1.01	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	7.615	0.149	3119.9	2061.7	5.874	2.461	3.15		Clay	100.0			7.20	1.01	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	7.741	0.126	3141.7	2073.3	5.952	2.042	3.10		Clay	100.0			7.32	1.01	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	8.148	0.133	3163.5	2084.9	6.299	2.026	3.08		Clay	100.0			7.70	1.00	n.a.	n.a.	0.91	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	8.528	0.150	3185.4	2096.5	6.616	2.163	3.07		Clay	100.0			8.06	1.00	n.a.	n.a.	0.91	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	8.594	0.163	3207.2	2108.0	6.632	2.332	3.09		Clay	100.0			8.12	1.00	n.a.	n.a.	0.91	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	8.447	0.149	3229.0	2119.6	6.447	2.181	3.08		Clay	100.0			7.98	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	8.389	0.147	3250.8	2131.2	6.347	2.173	3.09		Clay	100.0			7.93	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	8.645	0.165	3272.6	2142.8	6.542	2.354	3.10		Clay	100.0			8.17	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	8.681	0.200	3294.4	2154.4	6.530	2.843	3.14		Clay	100.0			8.21	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	8.550	0.208	3316.2	2165.9	6.364	3.018	3.16		Clay	100.0			8.08	0.99	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	8.255	0.197	3338.0	2177.5	6.049	2.991	3.18		Clay	100.0			7.80	0.99	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	8.375	0.197	3359.8	2189.1	6.117	2.942	3.17		Clay	100.0			7.92	0.99	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	8.625	0.148	3381.8	2200.7	6.302	2.134	3.09		Clay	100.0			8.15	0.99	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	9.449	0.179	3403.6	2212.3	7.004	2.311	3.07		Clay	100.0			8.93	0.99	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	10.050	0.212	3425.4	2223.9	7.498	2.543	3.06		Clay	100.0			9.50	0.99	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	10.573	0.243	3447.2	2235.5	7.917	2.746	3.06		Clay	100.0			9.99	0.99	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	10.119	0.293	3469.0	2247.1	7.463	3.495	3.14		Clay	100.0			9.56	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	9.365	0.278	3490.9	2258.6	6.747	3.648	3.19		Clay	100.0			8.85	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	8.531	0.245	3512.7	2270.2	5.968	3.616	3.23		Clay	100.0			8.06	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	8.135	0.193	3534.5	2281.8	5.581	3.031	3.21		Clay	100.0			7.69	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	8.244	0.170	3556.3	2293.4	5.639	2.629	3.18		Clay	100.0			7.79	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	8.638	0.186	3578.1	2305.0	5.943	2.716	3.16		Clay	100.0			8.16	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	9.160	0.198	3599.9	2316.5	6.354	2.690	3.14		Clay	100.0			8.66	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.231	9.374	0.198	3621.7	2328.1	6.497	2.618	3.12		Clay	100.0			8.86	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	9.271	0.182	3643.5	2339.7	6.368	2.443	3.11		Clay	100.0			8.76	0.97	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	8.871	0.166	3665.3	2351.3	5.987	2.359	3.13		Clay	100.0			8.38	0.97	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	8.366	0.147	3687.2	2362.8	5.521	2.254	3.15		Clay	100.0			7.91	0.97	n.a.	n.a.	0.89	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	7.978	0.136	3709.0	2374.4	5.158	2.221	3.17		Clay	100.0			7.54	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	7.724	0.131	3730.8	2386.0	4.911	2.236	3.19		Clay	100.0			7.30	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	7.726	0.122	3752.6	2397.6	4.880	2.086	3.18		Clay	100.0			7.30	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	7.970	0.119	3774.4	2409.2	5.050	1.956	3.15		Clay	100.0			7.53	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	8.326	0.131	3796.2	2420.7	5.311	2.038	3.14		Clay	100.0			7.87	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	8.748	0.121	3818.0	2432.3	5.623	1.769	3.09		Clay	100.0			8.27	0.96	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	9.026	0.137	3839.8	2443.9	5.815	1.928	3.10		Clay	100.0			8.53	0.96	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	9.153	0.129	3861.7	2455.5	5.883	1.786	3.08		Clay	100.0			8.65	0.96	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	9.142	0.126	3883.5	2467.0	5.837	1.750	3.07		Clay	100.0			8.64	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	9.229	0.121	3905.4	2478.7	5.871	1.663	3.06		Clay	100.0			8.72	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	9.591	0.126	3927.2	2490.3	6.126	1.652	3.04		Clay	100.0			9.07	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	9.620	0.133	3949.0	2501.9	6.112	1.740	3.06		Clay	100.0			9.09	0.96	n.a.	n.a.	0.88	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	9.412	0.137	3970.8	2513.4	5.910	1.845	3.08		Clay	100.0			8.90	0.96	n.a.	n.a.	0.88	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	8.896	0.129	3992.7	2525.0	5.465	1.870	3.11		Clay	100.0			8.41	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	8.762	0.117	4014.5	2536.6	5.326	1.732	3.11		Clay	100.0			8.28	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	8.785	0.126	4036.3	2548.2	5.311	1.862	3.12		Clay	100.0			8.30	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	9.005	0.133	4058.1	2559.7	5.451	1.907	3.12		Clay	100.0			8.51	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	9.390	0.139	4079.9	2571.3	5.717	1.891	3.10		Clay	100.0			8.88	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	9.797	0.158	4101.7	2582.9	5.998	2.040	3.10		Clay	100.0			9.26	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	9.968	0.182	4123.5	2594.5	6.095	2.302	3.12		Clay	100.0			9.42	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	10.634	0.239	4145.3	2606.1	6.570	2.792	3.13		Clay	100.0			10.05	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	11.691	0.355	4167.2	2617.6	7.341	3.695	3.16		Clay	100.0			11.05	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	16.588	0.441	4189.0	2629.2	11.025	3.043	2.97		Clay	100.0			15.68	0.94	n.a.	n.a.	0.87	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	28.877	0.350	4210.8	2640.8	22.651	1.307	2.50	plastic	Clay	63.1			27.29	0.94	n.a.	n.a.	0.87	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	36.965	0.677	4232.6	2652.4	29.420	1.943	2.51	plastic	Clay	63.5			34.94	0.94	n.a.	n.a.	0.87	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	46.424	0.828	4254.4	2664.0	37.315	1.869	2.41	plastic	Clay	56.1			43.88	0.94	n.a.	n.a.	0.87	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	45.648	0.897	4276.2	2675.5	36.573	2.062	2.45	plastic	Clay	58.8			43.15	0.94	n.a.	n.a.	0.87	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	46.043	1.024	4298.0	2687.1	36.816	2.333	2.48	plastic	Clay	61.3			43.52	0.94	n.a.	n.a.	0.87	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	37.926	0.992	4319.8	2698.7	26.506	2.774	2.64	plastic	Clay	74.0			35.85	0.94	n.a.	n.a.	0.87	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	30.819	0.761	4341.7	2710.3	21.140	2.656	2.70		Clay	79.2			29.13	0.94	n.a.	n.a.	0.87	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	26.091	0.634	4363.5	2721.8	17.568	2.652	2.77		Clay	84.3			24.66	0.94	n.a.	n.a.	0.87	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	24.478	0.661	4385.3	2733.4	16.306	2.966	2.82		Clay	88.7			23.14	0.93	n.a.	n.a.	0.87	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	28.564	1.043	4407.1	2745.0	19.206	3.957	2.84		Clay	90.5			27.00	0.93	n.a.	n.a.	0.87	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.82

Total Settlement: 0.15 (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)
33.301	35.950	1.259	4429.0	2756.7	24.476	3.732	2.75		Clay	82.7			33.98	0.93	n.a.	n.a.	0.87	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	41.406	1.521	4450.8	2768.2	28.307	3.882	2.71		Clay	79.8			39.14	0.93	n.a.	n.a.	0.86	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	40.040	1.392	4472.7	2779.8	27.199	3.682	2.71		Clay	79.6			37.84	0.93	n.a.	n.a.	0.86	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	33.254	0.964	4494.5	2791.4	22.216	3.109	2.73		Clay	81.2			31.43	0.93	n.a.	n.a.	0.86	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	25.143	0.658	4516.3	2803.0	16.329	2.875	2.81		Clay	88.0			23.76	0.93	n.a.	n.a.	0.86	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	19.405	0.391	4538.1	2814.5	12.177	2.282	2.86		Clay	91.8			18.34	0.93	n.a.	n.a.	0.86	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	15.370	0.378	4559.9	2826.1	9.264	2.888	3.02		Clay	100.0			14.53	0.93	n.a.	n.a.	0.86	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	18.540	0.284	4581.7	2837.7	11.452	1.748	2.82		Clay	88.6			17.52	0.93	n.a.	n.a.	0.86	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	29.344	0.992	4603.5	2849.3	18.982	3.668	2.83		Clay	89.1			27.74	0.92	n.a.	n.a.	0.86	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	41.954	1.692	4625.3	2860.9	27.713	4.268	2.74		Clay	82.6			39.65	0.92	n.a.	n.a.	0.86	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	48.158	2.058	4647.2	2872.4	31.913	4.490	2.71		Clay	80.2			45.52	0.92	n.a.	n.a.	0.86	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	53.156	1.554	4669.0	2884.0	41.145	3.058	2.52	plastic	Clay	64.6			50.24	0.92	n.a.	n.a.	0.86	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	51.536	1.193	4690.8	2895.6	39.745	2.425	2.46	plastic	Clay	60.2			48.71	0.92	n.a.	n.a.	0.85	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	45.596	0.963	4712.6	2907.2	34.867	2.227	2.48	plastic	Clay	61.8			43.10	0.92	n.a.	n.a.	0.85	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	31.496	0.878	4734.4	2918.7	19.960	3.014	2.76		Clay	83.5			29.77	0.92	n.a.	n.a.	0.85	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	21.316	0.681	4756.2	2930.3	12.925	3.596	2.95		Clay	99.2			20.15	0.92	n.a.	n.a.	0.85	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	17.362	0.474	4778.0	2941.9	10.179	3.166	3.00		Clay	100.0			16.41	0.92	n.a.	n.a.	0.85	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	14.517	0.359	4799.8	2953.5	8.205	2.963	3.07		Clay	100.0			13.72	0.92	n.a.	n.a.	0.85	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	13.048	0.272	4821.6	2965.1	7.175	2.557	3.08		Clay	100.0			12.33	0.91	n.a.	n.a.	0.85	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	12.267	0.240	4843.5	2976.6	6.615	2.438	3.10		Clay	100.0			11.59	0.91	n.a.	n.a.	0.85	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	11.767	0.229	4865.3	2988.2	6.247	2.453	3.12		Clay	100.0			11.12	0.91	n.a.	n.a.	0.85	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	11.686	0.235	4887.1	2999.8	6.162	2.543	3.13		Clay	100.0			11.05	0.91	n.a.	n.a.	0.85	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	11.875	0.232	4908.9	3011.4	6.257	2.463	3.12		Clay	100.0			11.22	0.91	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	12.453	0.229	4930.7	3023.0	6.608	2.293	3.09		Clay	100.0			11.77	0.91	n.a.	n.a.	0.84	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	13.294	0.253	4952.7	3034.6	7.130	2.339	3.06		Clay	100.0			12.57	0.91	n.a.	n.a.	0.84	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	14.688	0.287	4974.5	3046.2	8.011	2.352	3.02		Clay	100.0			13.88	0.91	n.a.	n.a.	0.84	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	16.211	0.259	4996.3	3057.8	8.969	1.889	2.93		Clay	97.3			15.32	0.91	n.a.	n.a.	0.84	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	17.728	0.384	5018.1	3069.3	9.917	2.523	2.96		Clay	99.6			16.76	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	24.001	0.666	5039.9	3080.9	13.945	3.100	2.89		Clay	94.0			22.69	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	30.761	0.950	5061.7	3092.5	18.257	3.365	2.82		Clay	88.3			29.07	0.90	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.222	36.349	1.044	5083.5	3104.1	21.782	3.088	2.73		Clay	81.6			34.36	0.90	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	35.735	1.266	5105.3	3115.7	21.300	3.815	2.80		Clay	86.9			33.78	0.90	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	34.968	1.302	5127.2	3127.2	20.724	4.018	2.82		Clay	88.8			33.05	0.90	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	44.848	1.288	5149.0	3138.8	26.936	3.047	2.66		Clay	75.6			42.39	0.90	n.a.	n.a.	0.84	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	61.144	1.565	5170.8	3150.4	45.361	2.673	2.45		Sand	59.0	66.04	1.8	118.87	0.87	103.14	180.40	0.84	0.753	0.915	0.738	1.416	1.88	0.00	0.00
39.042	69.866	2.120	5192.6	3162.0	52.013	3.151	2.46		Sand	59.4		1.8	118.86	0.87	103.00	180.39	0.83	0.753	0.915	0.738	1.415	1.88	0.00	0.00
39.206	60.849	2.102	5214.4	3173.5	36.705	3.609	2.61		Clay	71.4			57.51	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	42.301	1.562	5236.2	3185.1	24.918	3.936	2.76		Clay	83.5			39.98	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	27.770	1.096	5258.0	3196.7	15.729	4.359	2.94		Clay	98.0			26.25	0.90	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	21.021	0.718	5279.8	3208.3	11.459	3.906	3.02		Clay	100.0			19.87	0.90	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	20.371	0.700	5301.6	3219.9	11.007	3.950	3.03		Clay	100.0			19.25	0.90	n.a.	n.a.	0.83	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	21.296	0.711	5323.5	3231.4	11.533	3.816	3.01		Clay	100.0			20.13	0.89	n.a.	n.a.	0.83	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	20.153	0.508	5345.3	3243.0	10.780	2.906	2.96		Clay	100.0			19.05	0.89	n.a.	n.a.	0.83	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	16.037	0.414	5367.1	3254.6	8.206	3.100	3.08		Clay	100.0			15.16	0.89	n.a.	n.a.	0.83	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	13.006	0.298	5388.9	3266.2	6.314	2.890	3.15		Clay	100.0			12.29	0.89	n.a.	n.a.	0.83	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	11.832	0.229	5410.7	3277.7	5.569	2.509	3.17		Clay	100.0			11.18	0.89	n.a.	n.a.	0.83	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	11.304	0.197	5432.5	3289.3	5.222	2.294	3.17		Clay	100.0			10.68	0.89	n.a.	n.a.	0.82	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	11.079	0.190	5454.3	3300.9	5.060	2.275	3.18		Clay	100.0			10.47	0.89	n.a.	n.a.	0.82	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	11.072	0.173	5476.3	3312.6	5.032	2.076	3.17		Clay	100.0			10.47	0.89	n.a.	n.a.	0.82	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	11.383	0.173	5498.1	3324.1	5.195	2.004	3.15		Clay	100.0			10.76	0.89	n.a.	n.a.	0.82	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	11.822	0.201	5519.9	3335.7	5.433	2.218	3.15		Clay	100.0			11.17	0.89	n.a.	n.a.	0.82	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	12.318	0.205	5541.7	3347.3	5.704	2.147	3.13		Clay	100.0			11.64	0.89	n.a.	n.a.	0.82	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	12.786	0.211	5563.5	3358.9	5.957	2.109	3.11		Clay	100.0			12.09	0.89	n.a.	n.a.	0.82	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	13.242	0.176	5585.3	3370.4	6.201	1.684	3.04		Clay	100.0			12.52	0.88	n.a.	n.a.	0.82	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	17.223	0.251	5607.1	3382.0	8.527	1.741	2.93		Clay	97.4			16.28	0.88	n.a.	n.a.	0.82	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	27.802	0.848	5629.0	3393.6	14.726	3.394	2.89		Clay	94.4			26.28	0.88	n.a.	n.a.	0.82	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	34.054	1.503	5650.8	3405.2	18.342	4.813	2.91		Clay	96.1			32.19	0.88	n.a.	n.a.	0.82	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	35.404	1.646	5672.6	3416.8	19.064	5.054	2.91		Clay	96.2			33.46	0.88	n.a.	n.a.	0.81	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	30.453	1.183	5694.4	3428.3	16.104	4.285	2.92		Clay	96.9			28.78	0.88	n.a.	n.a.	0.81	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	36.059	1.345	5716.2	3439.9	19.303	4.051	2.85		Clay	90.8			34.08	0.88	n.a.	n.a.	0.81	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	51.899	1.635	5738.0	3451.5	28.411	3.335	2.67		Clay	76.2			49.05	0.88	n.a.	n.a.	0.81	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	60.402	2.033	5759.8	3463.1	33.220	3.534	2.63		Clay	73.5			57.09	0.88	n.a.	n.a.	0.81	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	59.395	2.088	5781.6	3474.7	32.524	3.695	2.65		Clay	75.1			56.14	0.88	n.a.	n.a.	0.81	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	49.235	1.518	5803.5	3486.2	26.581	3.276	2.68		Clay	77.6			46.54	0.88	n.a.	n.a.	0.81	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	43.073	1.392	5825.3	3497.8	22.963	3.466	2.75		Clay	82.7			40.71	0.88	n.a.	n.a.	0.81	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	40.386	1.244	5847.1	3509.4	21.350	3.321	2.76		Clay	83.7			38.17	0.88	n.a.	n.a.	0.81	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	40.954	1.647	5868.9	3521.0	21.596	4.332	2.83		Clay	89.4			38.71	0.87	n.a.	n.a.	0.81	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.82

Total Settlement: 0.15 (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)
44.291	53.174	2.301	5890.7	3532.5	28.438	4.581	2.76		Clay	83.6			50.26	0.87	n.a.	n.a.	0.81	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	69.019	2.139	5912.5	3544.1	48.247	3.238	2.49		Sand	62.0	76.76	1.8	138.17	0.84	116.46	198.53	0.80	0.735	0.867	1.741	3.320	4.52	0.00	0.00
44.619	81.212	2.210	5934.3	3555.7	57.051	2.824	2.39		Sand	54.5		1.8	138.17	0.84	116.04	195.02	0.80	0.735	0.871	1.443	2.766	3.77	0.00	0.00
44.783	71.216	1.660	5956.1	3567.3	49.674	2.433	2.39		Sand	54.4	76.76	1.8	138.17	0.84	115.90	194.81	0.80	0.734	0.871	1.428	2.735	3.73	0.00	0.00
44.948	51.734	1.235	5978.1	3578.9	27.240	2.534	2.60		Clay	71.3			48.90	0.87	n.a.	n.a.	0.80	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	30.580	1.314	5999.9	3590.5	15.363	4.764	2.97		Clay	100.0			28.90	0.87	n.a.	n.a.	0.80	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	22.777	0.518	6021.7	3602.1	10.975	2.621	2.93		Clay	97.4			21.53	0.87	n.a.	n.a.	0.80	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	20.990	0.443	6043.5	3613.7	9.945	2.465	2.95		Clay	99.1			19.84	0.87	n.a.	n.a.	0.80	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	20.639	0.465	6065.3	3625.2	9.713	2.641	2.98		Clay	100.0			19.51	0.87	n.a.	n.a.	0.80	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	20.678	0.569	6087.1	3636.8	9.698	3.227	3.03		Clay	100.0			19.54	0.87	n.a.	n.a.	0.80	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	19.687	0.467	6109.0	3648.4	9.118	2.808	3.01		Clay	100.0			18.61	0.87	n.a.	n.a.	0.80	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	19.141	0.375	6130.8	3660.0	8.785	2.333	2.98		Clay	100.0			18.09	0.87	n.a.	n.a.	0.80	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	18.091	0.337	6152.6	3671.6	8.179	2.244	3.00		Clay	100.0			17.10	0.86	n.a.	n.a.	0.80	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	16.715	0.245	6174.4	3683.1	7.400	1.798	2.99		Clay	100.0			15.80	0.86	n.a.	n.a.	0.79	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	15.220	0.194	6196.2	3694.7	6.562	1.600	3.01		Clay	100.0			14.39	0.86	n.a.	n.a.	0.79	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	14.081	0.196	6218.0	3706.3	5.921	1.786	3.07		Clay	100.0			13.31	0.86	n.a.	n.a.	0.79	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	14.100	0.195	6239.8	3717.9	5.907	1.776	3.07		Clay	100.0			13.33	0.86	n.a.	n.a.	0.79	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	14.756	0.210	6261.6	3729.4	6.234	1.806	3.06		Clay	100.0			13.95	0.86	n.a.	n.a.	0.79	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	15.464	0.235	6283.5	3741.0	6.588	1.907	3.05		Clay	100.0			14.62	0.86	n.a.	n.a.	0.79	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	16.070	0.247	6305.3	3752.6	6.884	1.912	3.03		Clay	100.0			15.19	0.86	n.a.	n.a.	0.79	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	16.718	0.278	6327.1	3764.2	7.202	2.051	3.03		Clay	100.0			15.80	0.86	n.a.	n.a.	0.79	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	17.679	0.334	6348.9	3775.8	7.683	2.303	3.03		Clay	100.0			16.71	0.86	n.a.	n.a.	0.79	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	19.205	0.385	6370.7	3787.3	8.460	2.403	3.00		Clay	100.0			18.15	0.86	n.a.	n.a.	0.79	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	22.605	0.619	6392.5	3798.9	10.218	3.189	3.00		Clay	100.0			21.37	0.86	n.a.	n.a.	0.79	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	25.940	0.724	6414.3	3810.5	11.932	3.185	2.95		Clay	98.9			24.52	0.86	n.a.	n.a.	0.78	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	30.481	0.735	6436.1	3822.1	14.266	2.696	2.84		Clay	90.5			28.81	0.86	n.a.	n.a.	0.78	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	32.598	0.436	6457.9	3833.7	15.322	1.485	2.68		Clay	77.0			30.81	0.85	n.a.	n.a.	0.78	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	32.697	0.679	6479.8	3845.2	15.321	2.305	2.78		Clay	85.3			30.90	0.85	n.a.	n.a.	0.78	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	29.551	0.585	6501.7	3856.9	13.638	2.224	2.81		Clay	88.0			27.93	0.85	n.a.	n.a.	0.78	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	24.436	0.719	6523.5	3868.5	10.947	3.396	3.00		Clay	100.0			23.10	0.85	n.a.	n.a.	0.78	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.213	47.203	0.682	6545.3	3880.0	30.663	1.552	2.43		Sand	57.7		1.8	80.31	0.76	61.34	126.54	0.78	0.718	0.920	0.187	0.248	0.35	0.03	0.05
49.377	44.219	0.602	6567.1	3891.6	28.530	1.471	2.45		Sand	58.7	44.62	1.8	80.32	0.76	61.28	126.78	0.78	0.717	0.920	0.188	0.249	0.35	0.03	0.05
49.541	42.950	0.399	6589.0	3903.2	27.597	1.006	2.37		Sand	52.5	44.62	1.8	80.32	0.76	61.03	124.25	0.78	0.717	0.921	0.181	0.237	0.33	0.03	0.05
49.705	18.518	0.491	6610.8	3914.8	7.772	3.228	3.11		Clay	100.0			17.50	0.85	n.a.	n.a.	0.78	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	28.719	0.878	6632.6	3926.4	12.940	3.456	2.94		Clay	98.3			27.14	0.85	n.a.	n.a.	0.78	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	45.390	1.291	6654.4	3937.9	21.363	3.069	2.74		Clay	82.0			42.90	0.85	n.a.	n.a.	0.77	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.197	52.745	1.334	6676.2	3949.5	25.019	2.700	2.65		Clay	74.9			49.85	0.85	n.a.	n.a.	0.77	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.82

Total Settlement: 1.08 (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)
0.328	75.921	0.277	40.7	40.7	517.452	0.365	1.09		Unsaturated	0.0			71.76	1.70	121.99	121.99	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.492	89.764	0.637	61.0	61.0	499.498	0.710	1.32		Unsaturated	0.0			84.84	1.70	144.23	144.23	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.656	63.989	0.788	81.3	81.3	308.275	1.232	1.64		Unsaturated	0.0			60.48	1.70	102.82	102.82	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	34.513	0.815	101.7	101.7	148.593	2.365	2.06		Unsaturated	27.4			32.62	1.70	55.46	98.82	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.984	24.189	0.764	122.0	122.0	94.970	3.166	2.28		Unsaturated	45.2			22.86	1.70	38.87	93.05	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.148	22.032	0.724	142.4	142.4	80.027	3.297	2.34		Unsaturated	50.2			20.82	1.70	35.40	90.86	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.312	21.274	0.680	162.7	162.7	72.240	3.209	2.36		Unsaturated	51.9			20.11	1.70	34.18	89.96	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.476	20.990	0.673	183.0	183.0	67.163	3.220	2.38		Unsaturated	53.7			19.84	1.70	33.73	90.02	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	20.496	0.685	203.4	203.4	62.180	3.359	2.42		Unsaturated	56.6			19.37	1.70	32.93	89.93	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.804	20.495	0.698	223.7	223.7	59.254	3.424	2.44		Unsaturated	58.3			19.37	1.70	32.93	90.41	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.969	21.359	0.717	244.2	244.2	59.092	3.376	2.44		Unsaturated	58.0			20.19	1.70	34.32	92.10	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.133	23.025	0.740	264.5	264.5	61.202	3.232	2.41		Unsaturated	56.1			21.76	1.70	37.00	94.94	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.297	24.728	0.771	284.8	284.8	63.338	3.136	2.39		Unsaturated	54.5			23.37	1.70	39.73	97.91	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.461	25.883	0.829	305.2	305.2	64.040	3.222	2.40		Unsaturated	54.9			24.46	1.70	41.59	100.41	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.625	26.427	0.899	325.5	325.5	63.294	3.423	2.42		Unsaturated	56.7			24.98	1.70	42.46	102.11	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.789	33.448	0.978	345.8	345.8	77.796	2.939	2.31		Unsaturated	47.9			31.61	1.70	53.74	113.06	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.953	36.172	0.992	366.2	366.2	81.771	2.756	2.28		Unsaturated	45.1			34.19	1.70	58.12	117.16	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.117	42.039	0.886	386.5	386.5	92.543	2.117	2.16		Unsaturated	35.5			39.73	1.70	67.55	122.22	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.281	40.232	0.711	406.8	406.8	86.284	1.776	2.12		Unsaturated	32.9			38.03	1.70	64.64	116.24	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.445	40.929	0.480	427.2	427.2	85.650	1.179	2.01		Unsaturated	23.6			38.69	1.70	65.76	105.15	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.609	37.221	0.325	447.5	447.5	76.039	0.878	1.97		Unsaturated	20.6			35.18	1.70	59.81	92.53	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.773	33.787	0.275	467.9	467.9	67.445	0.820	1.99		Unsaturated	22.6			31.93	1.70	54.29	89.98	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.937	32.074	0.290	488.2	488.2	62.635	0.911	2.05		Unsaturated	26.8			30.32	1.70	51.54	93.28	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.101	32.970	0.349	508.5	508.5	63.077	1.067	2.08		Unsaturated	29.8			31.16	1.70	52.98	98.75	1.00	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.265	37.396	0.402	528.9	528.9	70.201	1.083	2.05		Unsaturated	27.1			35.35	1.70	60.09	103.93	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.429	45.278	0.415	549.2	549.2	83.494	0.922	1.95		Unsaturated	19.0			42.80	1.70	72.75	103.73	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.593	51.955	0.427	569.5	569.5	94.136	0.826	1.88		Unsaturated	13.3			49.11	1.70	83.48	100.27	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.757	57.351	0.447	589.9	589.9	102.140	0.783	1.84		Unsaturated	10.0			54.21	1.70	92.15	99.55	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.921	59.989	0.468	610.2	610.2	105.049	0.784	1.83		Unsaturated	9.2			56.70	1.70	96.39	101.99	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.085	63.095	0.495	630.5	630.5	108.701	0.788	1.82		Sand	8.4			59.64	1.70	101.38	105.24	0.99	0.533	1.100	0.145	0.205	0.38	0.03	0.06
5.249	64.601	0.506	650.9	650.9	109.539	0.787	1.81		Sand	8.1			61.06	1.70	103.80	107.21	0.99	0.541	1.100	0.148	0.211	0.39	0.03	0.06
5.413	64.761	0.501	671.2	671.2	108.118	0.778	1.82		Sand	8.2			61.21	1.70	104.06	107.66	0.99	0.549	1.100	0.148	0.213	0.39	0.03	0.06
5.577	62.632	0.480	691.5	691.5	102.980	0.771	1.83		Sand	9.4	61.21		61.21	1.70	104.06	110.27	0.99	0.557	1.100	0.152	0.221	0.40	0.03	0.06
5.741	57.754	0.423	711.9	711.9	93.533	0.737	1.85		Sand	11.2	61.21		61.21	1.67	102.15	113.25	0.99	0.564	1.100	0.158	0.232	0.41	0.03	0.06
5.906	50.636	0.395	732.3	732.3	80.765	0.786	1.92		Sand	16.6	61.21		61.21	1.60	98.21	125.87	0.99	0.571	1.100	0.186	0.292	0.51	0.03	0.05
6.070	42.142	0.357	752.7	752.7	66.189	0.855	2.01		Sand	23.9	61.21		61.21	1.55	94.61	139.34	0.99	0.578	1.100	0.231	0.396	0.69	0.02	0.04
6.234	32.416	0.355	773.0	773.0	50.087	1.108	2.18		Sand	37.0	61.21		61.21	1.49	91.43	152.94	0.99	0.584	1.100	0.309	0.579	0.99	0.01	0.02
6.398	23.065	0.355	793.4	793.4	34.991	1.566	2.39		Sand	54.2	61.21		61.21	1.46	89.36	160.94	0.99	0.590	1.100	0.381	0.757	1.28	0.00	0.01
6.562	15.553	0.298	813.7	813.7	23.086	1.967	2.59		Sand	70.5	61.21		61.21	1.44	88.04	164.43	0.99	0.596	1.100	0.422	0.860	1.44	0.00	0.00
6.726	11.514	0.283	834.0	834.0	26.611	2.550	2.61		Clay	72.0			10.88	1.28	n.a.	n.a.	0.99	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.890	9.877	0.210	854.4	854.4	22.121	2.222	2.64		Clay	74.2			9.34	1.27	n.a.	n.a.	0.99	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.054	9.631	0.211	875.3	871.9	21.088	2.295	2.67		Clay	76.2			9.10	1.26	n.a.	n.a.	0.99	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.218	10.141	0.245	897.4	883.8	21.933	2.528	2.68		Clay	77.1			9.59	1.26	n.a.	n.a.	0.99	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.382	11.097	0.250	919.6	895.7	23.751	2.350	2.63		Clay	73.4			10.49	1.25	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.546	11.890	0.258	941.7	907.6	19.520	2.259	2.69	plastic	Clay	78.1			11.24	1.25	n.a.	n.a.	0.98	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.710	12.281	0.267	963.9	919.5	19.986	2.263	2.68	plastic	Clay	77.4			11.61	1.25	n.a.	n.a.	0.98	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.874	12.359	0.298	986.0	931.5	25.479	2.511	2.62		Clay	72.9			11.68	1.24	n.a.	n.a.	0.98	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.038	12.191	0.271	1008.1	943.4	24.777	2.319	2.61		Clay	72.0			11.52	1.24	n.a.	n.a.	0.98	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.202	12.136	0.248	1030.3	955.3	19.166	2.134	2.68	plastic	Clay	77.4			11.47	1.23	n.a.	n.a.	0.98	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.366	12.526	0.225	1052.4	967.2	19.620	1.875	2.64	plastic	Clay	74.2			11.84	1.23	n.a.	n.a.	0.98	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	13.139	0.229	1074.6	979.1	20.428	1.817	2.62	plastic	Clay	72.4			12.42	1.23	n.a.	n.a.	0.98	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.694	13.471	0.229	1096.7	991.0	20.772	1.772	2.61	plastic	Clay	71.5			12.73	1.22	n.a.	n.a.	0.98	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.858	13.484	0.247	1118.8	1002.9	20.602	1.911	2.63	plastic	Clay	73.2			12.74	1.22	n.a.	n.a.	0.98	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.022	13.337	0.260	1141.0	1014.8	20.183	2.037	2.65	plastic	Clay	75.0			12.61	1.21	n.a.	n.a.	0.98	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.186	12.912	0.264	1163.1	1026.7	24.019	2.141	2.60		Clay	71.2			12.20	1.21	n.a.	n.a.	0.98	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	11.821	0.268	1185.3	1038.6	21.622	2.387	2.67		Clay	76.3			11.17	1.21	n.a.	n.a.	0.98	0.672	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.514	10.700	0.298	1207.4	1050.5	19.222	2.952	2.76		Clay	84.1			10.11	1.20	n.a.	n.a.	0.98	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.678	9.902	0.302	1229.5	1062.4	17.483	3.252	2.82		Clay	88.7			9.36	1.20	n.a.	n.a.	0.98	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.843	9.356	0.298	1251.8	1074.4	16.251	3.413	2.86		Clay	91.8			8.84	1.20	n.a.	n.a.	0.98	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.007	8.780	0.304	1273.9	1086.3	14.992	3.733	2.91		Clay	95.9			8.30	1.19	n.a.	n.a.	0.97	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	8.256	0.298	1296.1	1098.2	13.855	3.917	2.95		Clay	99.1			7.80	1.19	n.a.	n.a.	0.97	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	7.878	0.285	1318.2	1110.1	13.006	3.948	2.97		Clay	100.0			7.45	1.19	n.a.	n.a.	0.97	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	7.750	0.248	1340.4	1122.0	12.620	3.503	2.95		Clay	99.3			7.33	1.18	n.a.	n.a.	0.97	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	7.640	0.233	1362.5	1133.9	12.274	3.348	2.95		Clay	99.2			7.22	1.18	n.a.	n.a.	0.97	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	7.216	0.212	1384.6	1145.8	11.387	3.250	2.97		Clay	100.0			6.82	1.18	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	6.534	0.217	1406.8	1157.7	10.072	3.722	3.05		Clay	100.0			6.18	1.17	n.a.	n.a.	0.97	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	6.230	0.203	1428.9	1169.7	9.431	3.681	3.07		Clay	100.0			5.89	1.17	n.a.	n.a.	0.97	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.82

Total Settlement: 1.08 (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)
11.319	6.544	0.191	1451.1	1181.6	9.849	3.283	3.02		Clay	100.0			6.19	1.17	n.a.	n.a.	0.97	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	6.934	0.200	1473.2	1193.5	10.386	3.227	3.00		Clay	100.0			6.55	1.16	n.a.	n.a.	0.97	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	7.213	0.182	1495.3	1205.4	10.728	2.815	2.96		Clay	99.5			6.82	1.16	n.a.	n.a.	0.97	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	7.653	0.189	1517.5	1217.3	11.327	2.741	2.93		Clay	97.4			7.23	1.16	n.a.	n.a.	0.97	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	8.176	0.205	1539.6	1229.2	12.051	2.768	2.91		Clay	95.8			7.73	1.15	n.a.	n.a.	0.97	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	8.336	0.190	1561.8	1241.1	12.175	2.515	2.88		Clay	93.6			7.88	1.15	n.a.	n.a.	0.97	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	8.253	0.164	1583.9	1253.0	11.909	2.198	2.86		Clay	91.7			7.80	1.15	n.a.	n.a.	0.97	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	8.359	0.179	1606.0	1264.9	11.947	2.369	2.88		Clay	93.0			7.90	1.15	n.a.	n.a.	0.97	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	8.591	0.189	1628.2	1276.8	12.182	2.430	2.87		Clay	93.0			8.12	1.14	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	8.707	0.183	1650.3	1288.7	12.232	2.322	2.86		Clay	92.0			8.23	1.14	n.a.	n.a.	0.96	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	8.750	0.184	1672.5	1300.6	12.169	2.325	2.86		Clay	92.1			8.27	1.14	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	8.818	0.187	1694.6	1312.5	12.146	2.346	2.87		Clay	92.4			8.33	1.13	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	8.697	0.162	1716.7	1324.4	11.837	2.067	2.85		Clay	90.7			8.22	1.13	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	8.478	0.160	1738.9	1336.3	11.387	2.103	2.86		Clay	92.2			8.01	1.13	n.a.	n.a.	0.96	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	8.228	0.152	1761.0	1348.2	10.899	2.069	2.88		Clay	93.1			7.78	1.13	n.a.	n.a.	0.96	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	8.086	0.139	1783.3	1360.2	10.578	1.932	2.87		Clay	92.8			7.64	1.12	n.a.	n.a.	0.96	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	8.126	0.152	1805.4	1372.1	10.529	2.104	2.89		Clay	94.5			7.68	1.12	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	8.113	0.150	1827.6	1384.0	10.403	2.084	2.90		Clay	94.6			7.67	1.12	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	8.106	0.124	1849.7	1395.9	10.289	1.727	2.86		Clay	91.6			7.66	1.12	n.a.	n.a.	0.96	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	8.109	0.104	1871.9	1407.9	10.190	1.450	2.82		Clay	88.8			7.66	1.11	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	8.442	0.094	1894.0	1419.8	10.558	1.254	2.78		Clay	85.3			7.98	1.11	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	9.052	0.085	1916.1	1431.7	11.307	1.050	2.72		Clay	80.3			8.56	1.11	n.a.	n.a.	0.96	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	11.174	0.136	1938.3	1443.6	14.138	1.333	2.68		Clay	77.5			10.56	1.11	n.a.	n.a.	0.96	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	14.218	0.309	1960.4	1455.5	18.190	2.334	2.72		Clay	80.7			13.44	1.10	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	21.240	0.555	1982.6	1467.4	27.598	2.741	2.62		Clay	72.6			20.08	1.10	n.a.	n.a.	0.95	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	33.807	0.933	2004.7	1479.3	37.083	2.844	2.53		Sand	65.6	210.51		210.51	1.10	231.36	347.61	0.95	0.748	1.100	#########	########	##########	0.00	0.00
15.584	55.046	1.002	2026.8	1491.2	60.836	1.854	2.25		Sand	42.9	210.51		210.51	1.10	230.87	331.72	0.95	0.749	1.100	#########	########	##########	0.00	0.00
15.748	113.708	1.025	2049.0	1503.1	126.368	0.910	1.81		Sand	7.5	210.51		210.51	1.10	232.08	235.39	0.95	0.750	1.100	27.111	65.609	87.46	0.00	0.00
15.912	173.536	0.794	2071.1	1515.0	192.688	0.460	1.48		Sand	0.0	210.51		210.51	1.10	231.88	231.88	0.95	0.751	1.100	19.466	47.107	62.71	0.00	0.00
16.076	218.293	1.066	2093.3	1526.9	241.722	0.491	1.42		Sand	0.0	210.51		210.51	1.10	231.40	231.40	0.95	0.752	1.098	18.625	44.985	59.80	0.00	0.00
16.240	222.724	0.978	2115.4	1538.8	245.684	0.441	1.38		Sand	0.0			210.51	1.10	230.92	230.92	0.95	0.753	1.096	17.837	42.990	57.08	0.00	0.00
16.404	208.472	1.723	2137.5	1550.7	228.992	0.831	1.59		Sand	0.0	210.51		210.51	1.09	230.44	230.44	0.95	0.754	1.093	17.079	41.076	54.46	0.00	0.00
16.568	177.814	0.996	2159.7	1562.6	194.385	0.564	1.53		Sand	0.0	210.51		210.51	1.09	229.97	229.97	0.95	0.755	1.091	16.368	39.284	52.02	0.00	0.00
16.732	127.864	1.117	2181.8	1574.5	138.906	0.881	1.77		Sand	4.3	210.51		210.51	1.09	229.49	229.55	0.95	0.756	1.089	15.771	37.772	49.96	0.00	0.00
16.896	77.260	1.194	2204.0	1586.4	83.133	1.568	2.10		Sand	30.9	210.51		210.51	1.08	227.13	310.28	0.95	0.757	1.086	#########	########	##########	0.00	0.00
17.060	42.513	1.095	2226.1	1598.4	45.023	2.645	2.45		Sand	58.9	210.51		210.51	1.08	226.68	338.39	0.95	0.758	1.084	#########	########	##########	0.00	0.00
17.224	24.221	0.913	2248.2	1610.3	28.687	3.953	2.71		Clay	79.9			22.89	1.07	n.a.	n.a.	0.95	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	15.595	0.665	2270.4	1622.2	17.828	4.599	2.91		Clay	95.8			14.74	1.07	n.a.	n.a.	0.94	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	12.720	0.345	2292.5	1634.1	14.165	2.981	2.87		Clay	92.7			12.02	1.07	n.a.	n.a.	0.94	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	11.244	0.245	2314.8	1646.1	12.255	2.429	2.87		Clay	92.8			10.63	1.07	n.a.	n.a.	0.94	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	11.058	0.165	2336.9	1658.0	11.930	1.668	2.79		Clay	86.5			10.45	1.07	n.a.	n.a.	0.94	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	11.851	0.259	2359.1	1669.9	12.781	2.427	2.86		Clay	91.6			11.20	1.06	n.a.	n.a.	0.94	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	13.926	0.427	2381.2	1681.8	15.145	3.353	2.88		Clay	93.3			13.16	1.06	n.a.	n.a.	0.94	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	15.234	0.398	2403.4	1693.7	16.570	2.836	2.80		Clay	87.3			14.40	1.06	n.a.	n.a.	0.94	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	14.210	0.297	2425.5	1705.6	15.241	2.285	2.78		Clay	85.3			13.43	1.06	n.a.	n.a.	0.94	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	13.758	0.241	2447.6	1717.5	14.596	1.923	2.75		Clay	83.2			13.00	1.06	n.a.	n.a.	0.94	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	14.180	0.222	2469.8	1729.4	14.971	1.715	2.72		Clay	80.3			13.40	1.05	n.a.	n.a.	0.94	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	14.466	0.181	2491.9	1741.3	15.184	1.369	2.66		Clay	75.8			13.67	1.05	n.a.	n.a.	0.94	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	12.427	0.172	2514.1	1753.2	12.742	1.540	2.75		Clay	83.2			11.75	1.05	n.a.	n.a.	0.94	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	10.626	0.132	2536.2	1765.1	10.603	1.411	2.80		Clay	87.2			10.04	1.05	n.a.	n.a.	0.94	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	14.401	0.247	2558.3	1777.0	14.768	1.882	2.74		Clay	82.5			13.61	1.05	n.a.	n.a.	0.93	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	21.181	0.562	2580.5	1788.9	22.238	2.825	2.70		Clay	79.1			20.02	1.05	n.a.	n.a.	0.93	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	24.865	0.896	2602.6	1800.8	26.170	3.802	2.73		Clay	81.4			23.50	1.04	n.a.	n.a.	0.93	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	24.038	1.182	2624.8	1812.7	25.073	5.201	2.83		Clay	89.8			22.72	1.04	n.a.	n.a.	0.93	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	21.799	0.914	2646.9	1824.7	22.443	4.464	2.83		Clay	89.1			20.60	1.04	n.a.	n.a.	0.93	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	20.503	0.835	2669.0	1836.6	20.874	4.356	2.84		Clay	90.4			19.38	1.04	n.a.	n.a.	0.93	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	19.705	0.736	2691.2	1848.5	19.865	4.009	2.84		Clay	89.8			18.62	1.04	n.a.	n.a.	0.93	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	17.884	0.650	2713.3	1860.4	17.768	3.933	2.87		Clay	92.4			16.90	1.03	n.a.	n.a.	0.93	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	17.744	0.624	2735.5	1872.3	17.493	3.810	2.86		Clay	92.1			16.77	1.03	n.a.	n.a.	0.93	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	18.221	0.568	2757.6	1884.2	17.877	3.372	2.82		Clay	88.9			17.22	1.03	n.a.	n.a.	0.93	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	16.822	0.841	2779.7	1896.1	16.278	5.450	2.99		Clay	100.0			15.90	1.03	n.a.	n.a.	0.93	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	13.840	0.656	2801.9	1908.0	13.039	5.274	3.05		Clay	100.0			13.08	1.03	n.a.	n.a.	0.93	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	10.142	0.492	2824.2	1920.0	9.094	5.636	3.19		Clay	100.0			9.59	1.03	n.a.	n.a.	0.93	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	8.791	0.273	2846.3	1931.9	7.628	3.705	3.15		Clay	100.0			8.31	1.02	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	9.015	0.293	2868.4	1943.8	7.800	3.865	3.15		Clay	100.0			8.52	1.02	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	8.958	0.287	2890.6	1955.7	7.683	3.820	3.15		Clay	100.0			8.47	1.02	n.a.	n.a.	0.92	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	8.274	0.266	2912.7	1967.6	6.930	3.902	3.19		Clay	100.0			7.82	1.02	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.82

Total Settlement: 1.08 (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)
22.310	7.806	0.206	2934.9	1979.5	6.404	3.250	3.18		Clay	100.0			7.38	1.02	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	7.580	0.189	2957.0	1991.4	6.128	3.098	3.18		Clay	100.0			7.16	1.02	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	7.532	0.167	2979.1	2003.3	6.032	2.764	3.16		Clay	100.0			7.12	1.01	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	7.551	0.142	3001.3	2015.2	6.005	2.347	3.13		Clay	100.0			7.14	1.01	n.a.	n.a.	0.92	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	7.769	0.143	3023.4	2027.1	6.174	2.285	3.11		Clay	100.0			7.34	1.01	n.a.	n.a.	0.92	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	8.312	0.145	3045.6	2039.0	6.659	2.136	3.07		Clay	100.0			7.86	1.01	n.a.	n.a.	0.92	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	8.816	0.157	3067.7	2050.9	7.101	2.156	3.04		Clay	100.0			8.33	1.01	n.a.	n.a.	0.92	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	9.543	0.179	3089.8	2062.9	7.754	2.238	3.02		Clay	100.0			9.02	1.01	n.a.	n.a.	0.92	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	10.180	0.206	3112.0	2074.8	8.313	2.389	3.01		Clay	100.0			9.62	1.01	n.a.	n.a.	0.92	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	10.744	0.264	3134.1	2086.7	8.796	2.877	3.03		Clay	100.0			10.16	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	10.982	0.275	3156.3	2098.6	8.962	2.924	3.03		Clay	100.0			10.38	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	11.104	0.306	3178.4	2110.5	9.017	3.216	3.05		Clay	100.0			10.50	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	10.912	0.361	3200.5	2122.4	8.775	3.877	3.11		Clay	100.0			10.31	1.00	n.a.	n.a.	0.91	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	10.790	0.353	3222.7	2134.3	8.601	3.846	3.11		Clay	100.0			10.20	1.00	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	10.707	0.343	3244.8	2146.2	8.466	3.776	3.11		Clay	100.0			10.12	1.00	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	11.031	0.284	3267.0	2158.1	8.709	3.022	3.05		Clay	100.0			10.43	0.99	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	11.414	0.293	3289.1	2170.0	9.004	2.999	3.03		Clay	100.0			10.79	0.99	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	11.680	0.319	3311.2	2181.9	9.189	3.182	3.04		Clay	100.0			11.04	0.99	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	11.651	0.404	3333.4	2193.8	9.102	4.046	3.11		Clay	100.0			11.01	0.99	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	11.460	0.361	3355.6	2205.8	8.870	3.690	3.09		Clay	100.0			10.83	0.99	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	12.677	0.394	3377.8	2217.7	9.909	3.586	3.04		Clay	100.0			11.98	0.99	n.a.	n.a.	0.91	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	12.939	0.390	3399.9	2229.6	10.082	3.470	3.03		Clay	100.0			12.23	0.99	n.a.	n.a.	0.90	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	13.130	0.401	3422.1	2241.5	10.189	3.512	3.03		Clay	100.0			12.41	0.98	n.a.	n.a.	0.90	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	11.661	0.375	3444.2	2253.4	8.821	3.773	3.10		Clay	100.0			11.02	0.98	n.a.	n.a.	0.90	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	11.276	0.394	3466.3	2265.3	8.425	4.129	3.14		Clay	100.0			10.66	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	10.714	0.320	3488.5	2277.2	7.878	3.568	3.12		Clay	100.0			10.13	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	10.189	0.272	3510.6	2289.1	7.368	3.225	3.12		Clay	100.0			9.63	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	9.458	0.229	3532.8	2301.1	6.685	2.977	3.14		Clay	100.0			8.94	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	8.948	0.174	3554.9	2313.0	6.200	2.427	3.12		Clay	100.0			8.46	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	8.525	0.156	3577.0	2324.9	5.795	2.316	3.14		Clay	100.0			8.06	0.98	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.231	8.471	0.134	3599.2	2336.8	5.710	2.009	3.11		Clay	100.0			8.01	0.97	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	8.570	0.135	3621.3	2348.7	5.756	1.997	3.11		Clay	100.0			8.10	0.97	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	8.755	0.131	3643.5	2360.6	5.874	1.889	3.09		Clay	100.0			8.28	0.97	n.a.	n.a.	0.90	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	8.849	0.133	3665.6	2372.5	5.915	1.896	3.09		Clay	100.0			8.36	0.97	n.a.	n.a.	0.89	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	8.986	0.130	3687.7	2384.4	5.991	1.820	3.07		Clay	100.0			8.49	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	9.224	0.135	3709.9	2396.3	6.150	1.832	3.06		Clay	100.0			8.72	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	9.699	0.158	3732.0	2408.2	6.505	2.017	3.06		Clay	100.0			9.17	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	10.258	0.198	3754.2	2420.1	6.926	2.363	3.07		Clay	100.0			9.70	0.97	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	10.758	0.220	3776.3	2432.0	7.294	2.480	3.07		Clay	100.0			10.17	0.96	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	10.841	0.179	3798.4	2443.9	7.318	2.002	3.02		Clay	100.0			10.25	0.96	n.a.	n.a.	0.89	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	10.699	0.186	3820.6	2455.8	7.157	2.116	3.04		Clay	100.0			10.11	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	10.367	0.189	3842.7	2467.7	6.845	2.238	3.07		Clay	100.0			9.80	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	10.319	0.197	3864.9	2479.6	6.764	2.349	3.08		Clay	100.0			9.75	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	10.462	0.222	3887.1	2491.6	6.838	2.606	3.10		Clay	100.0			9.89	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	10.567	0.239	3909.3	2503.5	6.880	2.775	3.11		Clay	100.0			9.99	0.96	n.a.	n.a.	0.89	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	10.364	0.237	3931.4	2515.4	6.677	2.822	3.13		Clay	100.0			9.80	0.96	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	9.932	0.226	3953.6	2527.3	6.295	2.841	3.15		Clay	100.0			9.39	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	9.591	0.204	3975.7	2539.3	5.988	2.683	3.16		Clay	100.0			9.07	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	9.633	0.196	3997.8	2551.2	5.985	2.567	3.15		Clay	100.0			9.10	0.95	n.a.	n.a.	0.88	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	9.890	0.177	4020.0	2563.1	6.149	2.246	3.11		Clay	100.0			9.35	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	11.223	0.194	4042.1	2575.0	7.147	2.108	3.04		Clay	100.0			10.61	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	12.105	0.168	4064.3	2586.9	7.788	1.668	2.95		Clay	99.4			11.44	0.95	n.a.	n.a.	0.88	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	12.375	0.149	4086.4	2598.8	7.951	1.442	2.92		Clay	96.3			11.70	0.95	n.a.	n.a.	0.88	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	12.421	0.194	4108.5	2610.7	7.942	1.871	2.97		Clay	100.0			11.74	0.95	n.a.	n.a.	0.88	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	12.619	0.169	4130.7	2622.6	8.048	1.601	2.93		Clay	97.7			11.93	0.94	n.a.	n.a.	0.88	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	18.225	0.375	4152.8	2634.5	12.259	2.322	2.86		Clay	91.9			17.23	0.94	n.a.	n.a.	0.88	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	31.678	0.921	4175.0	2646.4	22.363	3.112	2.73		Clay	81.1			29.94	0.94	n.a.	n.a.	0.87	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	48.157	1.532	4197.1	2658.3	34.652	3.326	2.60		Clay	71.0			45.52	0.94	n.a.	n.a.	0.87	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	57.905	2.190	4219.2	2670.2	46.946	3.925	2.55		Sand	67.3	122.16	1.46	178.35	0.94	167.74	266.34	0.87	0.769	0.930	1126.650	2305.646	2999.45	0.00	0.00
31.988	76.972	1.382	4241.4	2682.1	62.839	1.846	2.24		Sand	42.0	122.16	1.46	178.35	0.94	167.43	251.63	0.87	0.768	0.929	158.245	323.378	420.86	0.00	0.00
32.152	103.893	1.448	4263.5	2694.0	85.242	1.423	2.06		Sand	28.0	122.16	1.46	178.35	0.93	166.31	231.78	0.87	0.768	0.928	19.295	39.373	51.26	0.00	0.00
32.316	127.079	1.533	4285.7	2705.9	104.424	1.227	1.95		Sand	19.3	122.16	1.46	178.35	0.92	164.93	208.67	0.87	0.768	0.928	3.193	6.520	8.49	0.00	0.00
32.480	129.248	1.361	4307.8	2717.8	105.995	1.071	1.91		Sand	15.8		1.46	178.36	0.92	163.99	195.51	0.87	0.767	0.938	1.481	3.054	3.98	0.00	0.00
32.644	122.246	1.527	4329.9	2729.8	99.927	1.272	1.98		Sand	21.3	122.16	1.46	178.35	0.92	164.78	214.36	0.87	0.767	0.924	4.696	9.542	12.44	0.00	0.00
32.808	119.290	1.313	4352.1	2741.7	97.246	1.121	1.95		Sand	19.1	122.16	1.46	178.35	0.92	164.16	207.13	0.87	0.767	0.926	2.893	5.892	7.68	0.00	0.00
32.972	105.382	1.030	4374.2	2753.6	85.503	0.998	1.96		Sand	20.0	122.16	1.46	178.35	0.92	164.08	209.77	0.87	0.766	0.922	3.432	6.963	9.09	0.00	0.00
33.136	77.282	1.079	4396.4	2765.5	62.077	1.437	2.17		Sand	36.6	122.16	1.46	178.35	0.93	165.69	243.93	0.87	0.766	0.920	65.282	132.088	172.44	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.82

Total Settlement: 1.08 (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)
33.301	46.844	0.987	4418.6	2777.5	36.823	2.211	2.46		Sand	60.1	122.16	1.46	178.35	0.93	166.00	261.32	0.87	0.766	0.918	553.247	1117.822	1460.02	0.00	0.00
33.465	27.833	0.872	4440.8	2789.4	18.365	3.405	2.82		Clay	88.4			26.31	0.93	n.a.	n.a.	0.86	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	20.603	0.711	4462.9	2801.3	13.117	3.870	2.97		Clay	100.0			19.47	0.93	n.a.	n.a.	0.86	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	17.113	0.528	4485.1	2813.2	10.572	3.551	3.02		Clay	100.0			16.17	0.93	n.a.	n.a.	0.86	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	16.180	0.482	4507.2	2825.1	9.859	3.461	3.04		Clay	100.0			15.29	0.93	n.a.	n.a.	0.86	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	15.831	0.455	4529.3	2837.0	9.564	3.354	3.04		Clay	100.0			14.96	0.93	n.a.	n.a.	0.86	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	15.230	0.335	4551.5	2848.9	9.094	2.586	3.00		Clay	100.0			14.40	0.92	n.a.	n.a.	0.86	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	15.109	0.320	4573.6	2860.8	8.964	2.496	2.99		Clay	100.0			14.28	0.92	n.a.	n.a.	0.86	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	14.650	0.322	4595.8	2872.7	8.600	2.607	3.02		Clay	100.0			13.85	0.92	n.a.	n.a.	0.86	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	15.254	0.401	4617.9	2884.6	8.975	3.098	3.04		Clay	100.0			14.42	0.92	n.a.	n.a.	0.86	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	21.655	0.834	4640.0	2896.5	13.351	4.313	2.99		Clay	100.0			20.47	0.92	n.a.	n.a.	0.86	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	37.948	1.590	4662.2	2908.4	24.492	4.464	2.80		Clay	86.8			35.87	0.92	n.a.	n.a.	0.86	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	54.229	1.247	4684.3	2920.3	41.746	2.403	2.45		Sand	58.7	86.08	1.62	139.45	0.90	125.90	209.40	0.85	0.761	0.905	3.348	6.667	8.76	0.00	0.00
35.433	63.372	1.612	4706.5	2932.2	48.993	2.642	2.42		Sand	56.7	86.08	1.62	139.45	0.90	125.68	208.29	0.85	0.760	0.905	3.117	6.207	8.16	0.00	0.00
35.597	63.425	2.186	4728.6	2944.1	48.928	3.580	2.51		Sand	64.1	86.08	1.62	139.45	0.90	125.67	211.08	0.85	0.760	0.901	3.745	7.422	9.76	0.00	0.00
35.761	71.982	2.295	4750.7	2956.0	55.663	3.297	2.45		Sand	58.9	86.08	1.62	139.45	0.90	125.39	208.81	0.85	0.760	0.902	3.223	6.399	8.42	0.00	0.00
35.925	84.244	2.235	4772.9	2968.0	65.328	2.730	2.34		Sand	50.3	86.08	1.62	139.45	0.90	124.98	204.25	0.85	0.759	0.907	2.422	4.829	6.36	0.00	0.00
36.089	91.071	2.050	4795.0	2979.9	70.627	2.312	2.27		Sand	44.3		1.62	139.45	0.89	124.57	199.97	0.85	0.759	0.910	1.886	3.776	4.98	0.00	0.00
36.253	80.801	2.164	4817.2	2991.8	62.314	2.760	2.36		Sand	51.7	86.08	1.62	139.45	0.89	124.67	204.64	0.85	0.758	0.904	2.479	4.930	6.50	0.00	0.00
36.417	62.320	2.176	4839.3	3003.7	47.520	3.633	2.53		Sand	65.1	86.08	1.62	139.45	0.90	124.84	210.37	0.85	0.758	0.896	3.570	7.034	9.28	0.00	0.00
36.581	45.371	1.558	4861.4	3015.6	28.479	3.628	2.69		Clay	78.1			42.88	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	33.247	1.237	4883.6	3027.5	20.350	4.016	2.83		Clay	89.2			31.42	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	25.676	0.827	4905.7	3039.4	15.281	3.561	2.89		Clay	94.4			24.27	0.91	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	20.744	0.676	4927.9	3051.3	11.982	3.698	2.99		Clay	100.0			19.61	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	17.978	0.520	4950.1	3063.3	10.122	3.354	3.02		Clay	100.0			16.99	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	15.856	0.423	4972.3	3075.2	8.695	3.164	3.06		Clay	100.0			14.99	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	14.732	0.401	4994.4	3087.1	7.926	3.278	3.10		Clay	100.0			13.92	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	14.696	0.370	5016.6	3099.0	7.866	3.036	3.09		Clay	100.0			13.89	0.90	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	14.867	0.411	5038.7	3110.9	7.938	3.329	3.11		Clay	100.0			14.05	0.90	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	14.896	0.432	5060.8	3122.8	7.920	3.494	3.12		Clay	100.0			14.08	0.90	n.a.	n.a.	0.84	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.222	14.557	0.463	5083.0	3134.7	7.666	3.853	3.15		Clay	100.0			13.76	0.90	n.a.	n.a.	0.84	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	14.011	0.454	5105.1	3146.6	7.283	3.962	3.18		Clay	100.0			13.24	0.90	n.a.	n.a.	0.84	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	13.561	0.424	5127.3	3158.5	6.964	3.855	3.19		Clay	100.0			12.82	0.90	n.a.	n.a.	0.84	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	13.424	0.383	5149.4	3170.4	6.844	3.530	3.17		Clay	100.0			12.69	0.90	n.a.	n.a.	0.84	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	13.777	0.337	5171.5	3182.3	7.033	3.011	3.12		Clay	100.0			13.02	0.90	n.a.	n.a.	0.84	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	14.684	0.337	5193.7	3194.2	7.568	2.788	3.08		Clay	100.0			13.88	0.90	n.a.	n.a.	0.83	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	15.147	0.365	5215.8	3206.2	7.822	2.911	3.08		Clay	100.0			14.32	0.90	n.a.	n.a.	0.83	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	20.506	0.533	5238.0	3218.1	11.117	2.980	2.96		Clay	99.6			19.38	0.90	n.a.	n.a.	0.83	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	35.733	1.278	5260.1	3230.0	20.497	3.861	2.81		Clay	88.2			33.77	0.89	n.a.	n.a.	0.83	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	51.187	1.625	5282.2	3241.9	29.949	3.347	2.65		Clay	74.9			48.38	0.89	n.a.	n.a.	0.83	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	62.463	2.089	5304.4	3253.8	45.589	3.493	2.53		Sand	65.2		1.8	106.27	0.85	90.32	165.98	0.83	0.748	0.921	0.442	0.763	1.02	0.01	0.02
40.026	61.319	2.036	5326.5	3265.7	35.922	3.471	2.60		Clay	71.1			57.96	0.89	n.a.	n.a.	0.83	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	59.074	2.388	5348.7	3277.6	34.415	4.234	2.67		Clay	76.9			55.84	0.89	n.a.	n.a.	0.83	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	65.251	2.171	5370.8	3289.5	47.429	3.470	2.51		Sand	64.1	214.13		214.13	0.89	190.60	294.54	0.83	0.746	0.868	##########	########	394274.81	0.00	0.00
40.518	83.528	2.590	5392.9	3301.4	61.165	3.204	2.41		Sand	55.9	214.13		214.13	0.89	190.42	290.44	0.83	0.746	0.867	67847.312	########	173491.85	0.00	0.00
40.682	108.470	3.835	5415.1	3313.3	79.886	3.626	2.37		Sand	52.7	214.13		214.13	0.89	190.24	288.38	0.83	0.745	0.865	45630.013	86881.464	116617.92	0.00	0.00
40.846	136.248	3.884	5437.2	3325.2	100.679	2.909	2.23		Sand	41.7	214.13		214.13	0.89	190.06	279.54	0.82	0.744	0.864	9184.584	17466.089	23460.94	0.00	0.00
41.010	160.600	3.511	5459.4	3337.1	118.819	2.224	2.10		Sand	30.9	214.13		214.13	0.89	189.88	265.18	0.82	0.744	0.863	951.412	1807.032	2429.01	0.00	0.00
41.175	179.732	3.279	5481.6	3349.1	132.972	1.853	2.01		Sand	23.5	214.13		214.13	0.88	189.17	248.58	0.82	0.743	0.862	110.200	209.044	281.20	0.00	0.00
41.339	204.251	3.070	5503.8	3361.0	151.116	1.524	1.91		Sand	15.5	214.13		214.13	0.87	185.85	218.15	0.82	0.743	0.861	6.195	11.737	15.80	0.00	0.00
41.503	226.547	3.206	5525.9	3372.9	167.532	1.433	1.86		Sand	11.5			214.13	0.86	183.56	199.33	0.82	0.742	0.878	1.820	3.518	4.74	0.00	0.00
41.667	250.089	3.707	5548.0	3384.8	184.822	1.499	1.84		Sand	10.4			236.38	0.87	204.56	216.83	0.82	0.742	0.859	5.616	10.615	14.31	0.00	0.00
41.831	254.797	2.441	5570.2	3396.7	188.002	0.969	1.70		Sand	0.0			240.83	0.86	206.95	206.95	0.82	0.741	0.865	2.860	5.441	7.34	0.00	0.00
41.995	263.444	3.116	5592.3	3408.6	194.105	1.195	1.76		Sand	3.4			249.00	0.86	214.75	214.76	0.82	0.741	0.857	4.831	9.109	12.30	0.00	0.00
42.159	271.691	2.419	5614.5	3420.5	199.889	0.900	1.66		Sand	0.0			256.80	0.87	222.23	222.23	0.82	0.740	0.856	8.496	15.998	21.62	0.00	0.00
42.323	273.313	1.604	5636.6	3432.4	200.738	0.593	1.53		Sand	0.0			258.33	0.87	223.49	223.49	0.82	0.740	0.855	9.405	17.688	23.92	0.00	0.00
42.487	254.834	1.296	5658.7	3444.4	186.692	0.514	1.52		Sand	0.0			240.86	0.85	205.92	205.92	0.82	0.739	0.863	2.682	5.090	6.89	0.00	0.00
42.651	226.571	1.183	5680.9	3456.3	165.460	0.529	1.57		Sand	0.0			214.15	0.84	179.68	179.68	0.81	0.738	0.896	0.717	1.340	1.81	0.00	0.00
42.815	201.194	1.373	5703.0	3468.2	146.433	0.692	1.68		Sand	0.0			190.16	0.82	156.64	156.64	0.81	0.738	0.916	0.339	0.544	0.74	0.02	0.03
42.979	186.567	1.228	5725.2	3480.1	135.393	0.668	1.70		Sand	0.0			176.34	0.81	143.51	143.51	0.81	0.737	0.925	0.251	0.371	0.50	0.02	0.04
43.143	177.296	1.416	5747.3	3492.0	128.333	0.812	1.77		Sand	4.5			167.58	0.81	135.21	135.29	0.81	0.737	0.929	0.215	0.303	0.41	0.02	0.05
43.307	168.613	2.099	5769.4	3503.9	121.729	1.267	1.91		Sand	16.2			159.37	0.82	131.19	160.86	0.81	0.736	0.911	0.380	0.625	0.85	0.01	0.02
43.471	169.232	2.561	5791.6	3515.8	121.968	1.540	1.97		Sand	20.9			159.95	0.83	133.13	177.02	0.81	0.736	0.896	0.647	1.182	1.61	0.00	0.00
43.635	178.878	2.827	5813.7	3527.7	128.815	1.607	1.97		Sand	20.6			169.07	0.84	141.46	185.84	0.81	0.735	0.885	0.929	1.801	2.45	0.00	0.00
43.799	210.233	2.163	5835.9	3539.6	151.504	1.043	1.79		Sand	6.0			198.71	0.82	163.35	164.13	0.81	0.734	0.907	0.418	0.701	0.95	0.01	0.02
43.963	221.043	1.927	5858.0	3551.5	159.129	0.883	1.72		Sand	0.8			208.93	0.83	172.69	172.69	0.81	0.734	0.898	0.552	0.978	1.33	0.00	0.00
44.127	223.116	2.124	5880.1	3563.4	160.365	0.965	1.75		Sand	2.7			210.88	0.83	174.31	174.31	0.81	0.733	0.896	0.585	1.047	1.43	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.82

Total Settlement:	1.08	(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)
44.291	206.180	2.438	5902.3	3575.3	147.775	1.200	1.84		Sand	10.0			194.88	0.82	160.33	169.88	0.81	0.733	0.899	0.501	0.871	1.19	0.01	0.01
44.455	201.661	1.830	5924.4	3587.2	144.241	0.921	1.77		Sand	4.3			190.61	0.81	154.69	154.74	0.80	0.732	0.912	0.323	0.509	0.69	0.02	0.04
44.619	201.462	1.864	5946.6	3599.1	143.850	0.939	1.77		Sand	4.9			190.42	0.81	154.29	154.44	0.80	0.732	0.912	0.321	0.504	0.69	0.02	0.04
44.783	200.671	1.745	5968.7	3611.0	143.032	0.883	1.76		Sand	3.6			189.67	0.81	153.34	153.35	0.80	0.731	0.912	0.312	0.487	0.67	0.02	0.04
44.948	197.368	1.923	5991.0	3623.0	140.401	0.989	1.80		Sand	6.7			186.55	0.81	150.42	151.85	0.80	0.730	0.913	0.301	0.465	0.64	0.02	0.04
45.112	195.954	1.191	6013.1	3634.9	139.144	0.617	1.67		Sand	0.0			185.21	0.80	148.74	148.74	0.80	0.730	0.914	0.280	0.424	0.58	0.02	0.04
45.276	201.796	1.328	6035.3	3646.8	143.114	0.668	1.68		Sand	0.0			190.73	0.81	153.64	153.64	0.80	0.729	0.910	0.315	0.490	0.67	0.02	0.04
45.440	209.017	1.479	6057.4	3658.7	148.064	0.718	1.69		Sand	0.0			197.56	0.81	159.78	159.78	0.80	0.729	0.904	0.369	0.597	0.82	0.01	0.02
45.604	216.379	1.491	6079.5	3670.7	153.099	0.699	1.67		Sand	0.0			204.52	0.81	166.09	166.09	0.80	0.728	0.898	0.444	0.748	1.03	0.01	0.02
45.768	208.439	1.514	6101.7	3682.6	147.154	0.737	1.70		Sand	0.0			197.01	0.81	158.81	158.81	0.80	0.727	0.904	0.359	0.577	0.79	0.01	0.03
45.932	166.805	1.696	6123.8	3694.5	117.128	1.036	1.87		Sand	12.4			157.66	0.79	124.90	141.27	0.80	0.727	0.917	0.240	0.347	0.48	0.02	0.04
46.096	109.383	2.062	6146.0	3706.4	75.923	1.940	2.19		Sand	38.3			103.39	0.79	81.87	142.19	0.80	0.726	0.916	0.244	0.355	0.49	0.02	0.04
46.260	73.604	1.342	6168.1	3718.3	50.282	1.903	2.32		Sand	48.5			69.57	0.77	53.35	112.82	0.80	0.726	0.934	0.157	0.196	0.27	0.03	0.06
46.424	130.564	2.110	6190.2	3730.2	90.743	1.655	2.09		Sand	30.0			123.41	0.80	98.53	153.77	0.79	0.725	0.906	0.316	0.490	0.68	0.02	0.04
46.588	230.048	2.372	6212.4	3742.1	161.298	1.045	1.77		Sand	4.5			217.44	0.81	176.94	177.03	0.79	0.724	0.883	0.647	1.165	1.61	0.00	0.00
46.752	321.020	2.564	6234.5	3754.0	225.590	0.807	1.59		Sand	0.0			303.42	0.86	260.83	260.83	0.79	0.724	0.828	517.104	941.971	1301.43	0.00	0.00
46.916	346.638	2.849	6256.7	3765.9	243.375	0.829	1.57		Sand	0.0			327.64	0.86	281.41	281.41	0.79	0.723	0.827	12715.397	23136.129	31991.75	0.00	0.00
47.080	335.775	2.843	6278.8	3777.8	235.299	0.855	1.59		Sand	0.0			317.37	0.86	272.37	272.37	0.79	0.723	0.826	2815.218	5116.527	7080.88	0.00	0.00
47.244	327.534	2.780	6300.9	3789.7	229.101	0.857	1.60		Sand	0.0			309.58	0.86	265.46	265.46	0.79	0.722	0.825	991.252	1799.496	2492.46	0.00	0.00
47.408	322.922	2.858	6323.1	3801.6	225.482	0.894	1.62		Sand	0.0			305.22	0.86	261.51	261.51	0.79	0.721	0.824	567.169	1028.451	1425.70	0.00	0.00
47.572	325.816	3.487	6345.2	3813.5	227.160	1.081	1.68		Sand	0.0			307.95	0.86	263.63	263.63	0.79	0.721	0.823	763.061	1382.088	1917.56	0.00	0.00
47.736	311.906	2.664	6367.4	3825.4	217.020	0.863	1.62		Sand	0.0			294.81	0.85	251.80	251.80	0.79	0.720	0.822	161.619	292.398	406.03	0.00	0.00
47.900	293.307	2.573	6389.5	3837.3	203.621	0.887	1.65		Sand	0.0			277.23	0.84	233.66	233.66	0.79	0.720	0.821	22.984	41.536	57.73	0.00	0.00
48.064	268.155	1.609	6411.6	3849.2	185.672	0.607	1.57		Sand	0.0			253.45	0.83	209.68	209.68	0.79	0.719	0.823	3.412	6.180	8.60	0.00	0.00
48.228	253.012	1.388	6433.8	3861.2	174.782	0.556	1.56		Sand	0.0			239.14	0.82	195.43	195.43	0.78	0.718	0.850	1.474	2.757	3.84	0.00	0.00
48.392	245.336	1.018	6455.9	3873.1	169.143	0.420	1.50		Sand	0.0			231.89	0.81	188.16	188.16	0.78	0.718	0.861	1.032	1.954	2.72	0.00	0.00
48.556	244.573	0.567	6478.1	3885.0	168.344	0.235	1.38		Sand	0.0			231.17	0.81	187.23	187.23	0.78	0.717	0.861	0.989	1.873	2.61	0.00	0.00
48.720	249.715	0.616	6500.2	3896.9	171.660	0.250	1.38		Sand	0.0			236.03	0.81	191.69	191.69	0.78	0.716	0.854	1.220	2.292	3.20	0.00	0.00
48.885	256.240	0.515	6522.5	3908.9	175.927	0.204	1.33		Sand	0.0			242.19	0.82	197.43	197.43	0.78	0.716	0.843	1.640	3.043	4.25	0.00	0.00
49.049	263.798	0.672	6544.6	3920.8	180.900	0.258	1.37		Sand	0.0			249.34	0.82	204.17	204.17	0.78	0.715	0.830	2.411	4.400	6.15	0.00	0.00
49.213	273.227	1.050	6566.8	3932.7	187.155	0.389	1.45		Sand	0.0			258.25	0.82	212.71	212.71	0.78	0.715	0.814	4.186	7.497	10.49	0.00	0.00
49.377	282.884	1.175	6588.9	3944.6	193.550	0.420	1.45		Sand	0.0			267.38	0.83	221.55	221.55	0.78	0.714	0.813	8.049	14.399	20.17	0.00	0.00
49.541	288.596	1.828	6611.0	3956.5	197.199	0.641	1.56		Sand	0.0			272.78	0.83	226.71	226.71	0.78	0.713	0.812	12.306	21.990	30.83	0.00	0.00
49.705	288.549	2.076	6633.2	3968.4	196.863	0.728	1.60		Sand	0.0			272.73	0.83	226.42	226.42	0.78	0.713	0.811	12.007	21.433	30.07	0.00	0.00
49.869	299.772	2.067	6655.3	3980.3	204.295	0.697	1.57		Sand	0.0			283.34	0.84	236.88	236.88	0.78	0.712	0.810	31.390	55.968	78.60	0.00	0.00
50.033	315.913	1.604	6677.5	3992.2	215.090	0.513	1.47		Sand	0.0			298.59	0.84	252.23	252.23	0.77	0.711	0.810	170.318	303.340	426.37	0.00	0.00
50.197	320.920	1.604	6699.6	4004.1	218.202	0.505	1.46		Sand	0.0			303.33	0.85	256.35	256.35	0.77	0.711	0.809	285.439	507.812	714.40	0.00	0.00
50.361	313.914	1.613	6721.7	4016.0	213.064	0.519	1.48		Sand	0.0			296.71	0.84	249.80	249.80	0.77	0.710	0.808	127.214	226.071	318.32	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
0.328	67.321	0.142	44.3	44.3	439.720	0.211	0.99		Unsaturated	0.0			63.63	1.70	108.17	108.17	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.492	99.699	0.180	66.4	66.4	531.703	0.181	0.88		Unsaturated	0.0			94.23	1.70	160.20	160.20	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.656	122.419	0.155	88.6	88.6	565.386	0.127	0.79		Unsaturated	0.0			115.71	1.70	196.70	196.70	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	127.355	0.145	110.7	110.7	526.048	0.114	0.80		Unsaturated	0.0			120.37	1.70	204.63	204.63	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.984	113.805	0.213	132.8	132.8	429.058	0.187	0.97		Unsaturated	0.0			107.57	1.70	182.86	182.86	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.148	86.449	0.371	155.0	155.0	301.651	0.430	1.31		Unsaturated	0.0			81.71	1.70	138.91	138.91	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.312	56.531	0.616	177.1	177.1	184.393	1.091	1.74		Unsaturated	2.3			53.43	1.70	90.83	90.83	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.476	37.690	0.766	199.3	199.3	115.781	2.038	2.08		Unsaturated	29.2			35.62	1.70	60.56	107.16	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	28.923	0.825	221.4	221.4	84.190	2.863	2.28		Unsaturated	45.4			27.34	1.70	46.47	102.69	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.804	25.333	0.740	243.5	243.5	70.239	2.935	2.34		Unsaturated	50.3			23.94	1.70	40.71	97.63	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.969	23.983	0.664	265.8	265.8	63.602	2.784	2.36		Unsaturated	51.4			22.67	1.70	38.54	95.31	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.133	23.131	0.671	288.0	288.0	58.897	2.919	2.39		Unsaturated	54.5			21.86	1.70	37.17	94.65	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.297	22.412	0.685	310.1	310.1	54.953	3.078	2.43		Unsaturated	57.5			21.18	1.70	36.01	94.12	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.461	21.651	0.648	332.2	332.2	51.249	3.016	2.45		Unsaturated	58.7			20.46	1.70	34.79	92.91	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.625	21.031	0.626	354.4	354.4	48.164	3.002	2.46		Unsaturated	60.2			19.88	1.70	33.79	92.03	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.789	20.667	0.617	376.5	376.5	45.886	3.013	2.48		Unsaturated	61.5			19.53	1.70	33.21	91.62	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.953	20.893	0.594	398.7	398.7	45.062	2.870	2.47		Unsaturated	60.8			19.75	1.70	33.57	91.91	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.117	21.590	0.582	420.8	420.8	45.314	2.722	2.46		Unsaturated	59.4			20.41	1.70	34.69	92.98	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.281	22.899	0.571	442.9	442.9	46.849	2.518	2.42		Unsaturated	56.7			21.64	1.70	36.79	94.89	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.445	25.169	0.585	465.1	465.1	50.274	2.346	2.38		Unsaturated	53.3			23.79	1.70	40.44	98.40	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.609	27.476	0.616	487.2	487.2	53.641	2.262	2.35		Unsaturated	50.8			25.97	1.70	44.15	102.16	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.773	29.737	0.681	509.4	509.4	56.797	2.310	2.33		Unsaturated	49.8			28.11	1.70	47.78	106.35	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.937	31.313	0.774	531.5	531.5	58.553	2.493	2.35		Unsaturated	50.8			29.60	1.70	50.31	109.99	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.101	32.917	0.877	553.6	553.6	60.313	2.687	2.36		Unsaturated	51.9			31.11	1.70	52.89	113.68	1.00	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.265	33.442	0.975	575.8	575.8	60.074	2.941	2.39		Unsaturated	54.2			31.61	1.70	53.73	115.62	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.429	32.586	1.032	597.9	597.9	57.409	3.196	2.43		Unsaturated	57.4			30.80	1.70	52.36	114.95	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.593	30.052	1.098	620.1	620.1	51.931	3.692	2.50		Unsaturated	63.4			28.40	1.70	48.29	111.45	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.757	27.520	1.059	642.2	642.2	46.665	3.894	2.55		Unsaturated	67.3			26.01	1.70	44.22	107.14	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.921	25.793	0.724	664.3	664.3	42.949	2.844	2.49		Unsaturated	61.8			24.38	1.70	41.44	102.27	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.085	24.972	0.741	686.5	686.5	40.870	3.009	2.52	plastic	Clay	64.4			23.60	1.35	n.a.	n.a.	0.99	0.533	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.249	23.235	0.833	708.6	708.6	46.511	3.641	2.53	plastic	Clay	65.7			21.96	1.33	n.a.	n.a.	0.99	0.540	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.413	21.120	0.920	730.8	730.8	41.290	4.433	2.63	plastic	Clay	73.5			19.96	1.32	n.a.	n.a.	0.99	0.548	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.577	19.891	0.860	752.9	752.9	38.021	4.407	2.65	plastic	Clay	75.4			18.80	1.31	n.a.	n.a.	0.99	0.555	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.741	20.944	0.640	775.0	775.0	39.246	3.113	2.54	plastic	Clay	66.3			19.80	1.30	n.a.	n.a.	0.99	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.906	21.054	0.457	797.3	797.3	31.805	2.213	2.51	plastic	Clay	64.1			19.90	1.29	n.a.	n.a.	0.99	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.070	18.244	0.328	819.0	814.6	27.168	1.839	2.52	plastic	Clay	40.0			17.24	1.29	n.a.	n.a.	0.99	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.234	13.919	0.252	840.0	825.4	24.662	1.867	2.56	plastic	Clay	40.0			13.16	1.28	n.a.	n.a.	0.99	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.398	10.389	0.195	860.9	836.1	18.030	1.958	2.68	plastic	Clay	40.0			9.82	1.28	n.a.	n.a.	0.99	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.562	9.274	0.186	881.9	846.9	20.860	2.106	2.65		Clay	40.0			8.77	1.27	n.a.	n.a.	0.99	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.726	8.702	0.245	902.9	857.6	19.240	2.970	2.76		Clay	84.2			8.22	1.27	n.a.	n.a.	0.99	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.890	9.041	0.325	923.9	868.4	19.759	3.788	2.82		Clay	88.7			8.55	1.26	n.a.	n.a.	0.99	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.054	9.529	0.364	944.9	879.1	20.603	4.019	2.82		Clay	88.9			9.01	1.26	n.a.	n.a.	0.99	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.218	10.150	0.380	965.9	889.9	21.726	3.931	2.80		Clay	87.0			9.59	1.26	n.a.	n.a.	0.99	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.382	10.287	0.355	986.9	900.7	21.748	3.625	2.78		Clay	85.2			9.72	1.25	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.546	10.508	0.341	1007.9	911.4	21.953	3.409	2.76		Clay	83.6			9.93	1.25	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.710	10.787	0.309	1028.9	922.2	22.279	3.008	2.72		Clay	80.4			10.20	1.24	n.a.	n.a.	0.98	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.874	11.408	0.314	1049.9	932.9	23.331	2.885	2.69		Clay	78.3			10.78	1.24	n.a.	n.a.	0.98	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.038	11.226	0.312	1070.9	943.7	22.657	2.918	2.70		Clay	79.3			10.61	1.24	n.a.	n.a.	0.98	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.202	9.853	0.285	1091.9	954.5	19.502	3.062	2.77		Clay	84.5			9.31	1.23	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.366	7.469	0.258	1112.8	965.2	14.323	3.732	2.93		Clay	97.1			7.06	1.23	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	5.187	0.211	1133.8	976.0	9.468	4.567	3.12		Clay	100.0			4.90	1.23	n.a.	n.a.	0.98	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.694	3.641	0.170	1154.8	986.7	6.210	5.549	3.32		Clay	100.0			3.44	1.22	n.a.	n.a.	0.98	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.858	2.937	0.115	1175.8	997.5	4.710	4.896	3.39		Clay	100.0			2.78	1.22	n.a.	n.a.	0.98	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.022	3.463	0.110	1196.8	1008.2	5.682	3.840	3.26		Clay	100.0			3.27	1.22	n.a.	n.a.	0.98	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.186	5.104	0.151	1217.8	1019.0	8.823	3.359	3.07		Clay	100.0			4.82	1.21	n.a.	n.a.	0.98	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	7.161	0.202	1238.8	1029.8	12.705	3.088	2.92		Clay	96.5			6.77	1.21	n.a.	n.a.	0.98	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.514	8.799	0.252	1259.8	1040.5	15.702	3.085	2.84		Clay	90.6			8.32	1.21	n.a.	n.a.	0.98	0.672	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.678	9.411	0.317	1280.8	1051.3	16.686	3.614	2.87		Clay	92.3			8.90	1.20	n.a.	n.a.	0.98	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.843	9.333	0.314	1301.9	1062.1	16.349	3.617	2.87		Clay	92.8			8.82	1.20	n.a.	n.a.	0.98	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.007	9.527	0.299	1322.9	1072.9	16.527	3.373	2.85		Clay	91.0			9.00	1.20	n.a.	n.a.	0.97	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	9.548	0.305	1343.9	1083.6	16.382	3.436	2.86		Clay	91.7			9.02	1.19	n.a.	n.a.	0.97	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	9.077	0.314	1364.9	1094.4	15.341	3.741	2.90		Clay	95.3			8.58	1.19	n.a.	n.a.	0.97	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	7.825	0.317	1385.9	1105.1	12.907	4.445	3.01		Clay	100.0			7.40	1.19	n.a.	n.a.	0.97	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	6.869	0.271	1406.9	1115.9	11.050	4.395	3.06		Clay	100.0			6.49	1.18	n.a.	n.a.	0.97	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	6.802	0.241	1427.9	1126.7	10.807	3.959	3.04		Clay	100.0			6.43	1.18	n.a.	n.a.	0.97	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	7.159	0.219	1448.8	1137.4	11.314	3.403	2.98		Clay	100.0			6.77	1.18	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	7.809	0.219	1469.8	1148.2	12.322	3.096	2.93		Clay	97.4			7.38	1.18	n.a.	n.a.	0.97	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
11.319	8.591	0.278	1490.8	1158.9	13.539	3.543	2.93		Clay	97.6			8.12	1.17	n.a.	n.a.	0.97	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	9.287	0.329	1511.8	1169.7	14.587	3.856	2.93		Clay	97.3			8.78	1.17	n.a.	n.a.	0.97	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	9.701	0.341	1532.8	1180.4	15.138	3.817	2.91		Clay	96.1			9.17	1.17	n.a.	n.a.	0.97	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	9.513	0.316	1553.8	1191.2	14.668	3.617	2.91		Clay	95.8			8.99	1.16	n.a.	n.a.	0.97	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	8.904	0.212	1574.8	1202.0	13.506	2.612	2.86		Clay	91.4			8.42	1.16	n.a.	n.a.	0.97	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	8.577	0.188	1595.8	1212.7	12.829	2.417	2.85		Clay	91.4			8.11	1.16	n.a.	n.a.	0.97	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	8.816	0.181	1616.8	1223.5	13.090	2.260	2.83		Clay	89.5			8.33	1.16	n.a.	n.a.	0.97	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	9.132	0.211	1637.8	1234.2	13.471	2.538	2.85		Clay	90.9			8.63	1.15	n.a.	n.a.	0.97	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	9.194	0.216	1658.8	1245.0	13.437	2.582	2.85		Clay	91.3			8.69	1.15	n.a.	n.a.	0.96	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	9.201	0.223	1679.8	1255.8	13.317	2.667	2.87		Clay	92.2			8.70	1.15	n.a.	n.a.	0.96	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	9.283	0.227	1700.8	1266.5	13.316	2.692	2.87		Clay	92.4			8.77	1.15	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	9.367	0.253	1721.7	1277.3	13.319	2.974	2.89		Clay	94.4			8.85	1.14	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	9.244	0.214	1742.7	1288.0	13.001	2.556	2.86		Clay	92.1			8.74	1.14	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	9.236	0.231	1763.7	1298.8	12.865	2.765	2.89		Clay	93.9			8.73	1.14	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	9.302	0.222	1784.7	1309.5	12.844	2.640	2.88		Clay	93.1			8.79	1.13	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	9.519	0.232	1805.8	1320.4	13.051	2.693	2.88		Clay	93.0			9.00	1.13	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	9.837	0.230	1826.8	1331.1	13.408	2.577	2.85		Clay	91.4			9.30	1.13	n.a.	n.a.	0.96	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	9.998	0.192	1847.8	1341.9	13.524	2.116	2.80		Clay	87.3			9.45	1.13	n.a.	n.a.	0.96	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	9.933	0.190	1868.8	1352.6	13.305	2.111	2.81		Clay	87.7			9.39	1.13	n.a.	n.a.	0.96	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	9.704	0.162	1889.8	1363.4	12.849	1.850	2.79		Clay	86.2			9.17	1.12	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	9.661	0.121	1910.8	1374.2	12.670	1.390	2.73		Clay	81.5			9.13	1.12	n.a.	n.a.	0.96	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	9.986	0.163	1931.8	1384.9	13.026	1.807	2.78		Clay	85.4			9.44	1.12	n.a.	n.a.	0.96	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	10.604	0.120	1952.8	1395.7	13.796	1.246	2.68		Clay	77.1			10.02	1.12	n.a.	n.a.	0.96	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	12.214	0.285	1973.8	1406.4	15.965	2.538	2.79		Clay	86.1			11.54	1.11	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	13.206	0.348	1994.8	1417.2	17.229	2.850	2.79		Clay	86.4			12.48	1.11	n.a.	n.a.	0.95	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	13.690	0.382	2015.8	1428.0	17.763	3.012	2.80		Clay	86.7			12.94	1.11	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	13.677	0.278	2036.8	1438.7	17.597	2.196	2.72		Clay	80.4			12.93	1.11	n.a.	n.a.	0.95	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	13.494	0.305	2057.7	1449.5	17.200	2.447	2.75		Clay	83.3			12.75	1.10	n.a.	n.a.	0.95	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	12.952	0.193	2078.7	1460.2	16.316	1.620	2.67		Clay	76.8			12.24	1.10	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	11.818	0.163	2099.7	1471.0	14.641	1.514	2.70		Clay	78.7			11.17	1.10	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	12.758	0.185	2120.7	1481.7	15.789	1.582	2.68		Clay	77.3			12.06	1.10	n.a.	n.a.	0.95	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	16.314	0.281	2141.7	1492.5	20.426	1.843	2.62		Clay	72.7			15.42	1.10	n.a.	n.a.	0.95	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	21.906	0.577	2162.7	1503.3	27.706	2.771	2.62		Clay	72.8			20.71	1.09	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	26.147	0.773	2183.7	1514.0	29.935	3.085	2.63		Mixed	41.0		1.8	44.48	1.18	52.27	107.46	0.95	0.761	1.038	0.148	0.200	0.26	0.03	0.06
16.896	26.139	0.739	2204.7	1524.8	29.765	2.952	2.62		Mixed	41.0		1.8	44.47	1.17	52.09	107.23	0.95	0.762	1.037	0.148	0.199	0.26	0.03	0.06
17.060	24.778	0.769	2225.7	1535.5	30.823	3.250	2.63		Clay	41.0			23.42	1.09	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	35.104	0.968	2246.7	1546.3	37.571	2.849	2.53		Sand	41.0	49.97	1.6	79.95	1.13	90.50	155.02	0.95	0.764	1.052	0.325	0.592	0.78	0.01	0.03
17.388	47.171	1.140	2267.7	1557.1	50.726	2.476	2.39		Sand	41.0	49.97	1.6	79.95	1.13	90.27	154.73	0.94	0.765	1.051	0.323	0.586	0.77	0.02	0.03
17.552	52.866	1.582	2288.7	1567.8	56.793	3.059	2.42		Sand	41.0		1.6	79.95	1.13	90.03	154.43	0.94	0.766	1.050	0.321	0.580	0.76	0.02	0.03
17.717	44.726	1.469	2309.8	1578.6	47.679	3.371	2.50		Sand	41.0	49.97	1.6	79.95	1.12	89.80	154.15	0.94	0.767	1.049	0.318	0.574	0.75	0.02	0.03
17.881	36.813	1.330	2330.8	1589.4	38.876	3.731	2.60		Sand	41.0	49.97	1.6	79.95	1.12	89.57	153.86	0.94	0.768	1.047	0.316	0.568	0.74	0.02	0.03
18.045	35.640	1.411	2351.8	1600.2	39.612	4.094	2.62		Mixed	41.0	49.97	1.6	79.95	1.12	89.34	153.58	0.94	0.769	1.046	0.314	0.562	0.73	0.02	0.03
18.209	36.382	1.434	2372.8	1610.9	40.264	4.074	2.61		Mixed	41.0	49.97	1.6	79.95	1.11	89.12	153.30	0.94	0.769	1.045	0.312	0.557	0.72	0.02	0.03
18.373	34.867	1.427	2393.7	1621.7	41.525	4.238	2.62		Clay	72.2			32.96	1.07	n.a.	n.a.	0.94	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	29.074	1.254	2414.7	1632.4	34.141	4.500	2.69		Clay	78.6			27.48	1.07	n.a.	n.a.	0.94	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	20.586	0.643	2435.7	1643.2	23.574	3.320	2.73		Clay	81.1			19.46	1.07	n.a.	n.a.	0.94	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	13.906	0.456	2456.7	1653.9	15.330	3.597	2.89		Clay	94.5			13.14	1.07	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	10.130	0.236	2477.7	1664.7	10.682	2.654	2.94		Clay	98.5			9.57	1.07	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	9.254	0.177	2498.7	1675.5	9.555	2.211	2.94		Clay	98.2			8.75	1.06	n.a.	n.a.	0.94	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	10.536	0.196	2519.7	1686.2	11.002	2.113	2.88		Clay	93.3			9.96	1.06	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	13.149	0.209	2540.7	1697.0	14.000	1.759	2.75		Clay	82.8			12.43	1.06	n.a.	n.a.	0.93	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	14.359	0.451	2561.7	1707.7	15.316	3.448	2.88		Clay	93.6			13.57	1.06	n.a.	n.a.	0.93	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	12.901	0.419	2582.7	1718.5	13.511	3.609	2.94		Clay	98.0			12.19	1.06	n.a.	n.a.	0.93	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	9.978	0.229	2603.7	1729.3	10.035	2.639	2.96		Clay	100.0			9.43	1.05	n.a.	n.a.	0.93	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	8.583	0.176	2624.7	1740.0	8.357	2.421	3.01		Clay	100.0			8.11	1.05	n.a.	n.a.	0.93	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	8.224	0.155	2645.6	1750.8	7.884	2.246	3.02		Clay	100.0			7.77	1.05	n.a.	n.a.	0.93	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	8.320	0.137	2666.6	1761.5	7.933	1.961	2.98		Clay	100.0			7.86	1.05	n.a.	n.a.	0.93	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	8.700	0.169	2687.6	1772.3	8.301	2.297	3.00		Clay	100.0			8.22	1.05	n.a.	n.a.	0.93	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	9.980	0.235	2708.6	1783.0	9.675	2.724	2.99		Clay	100.0			9.43	1.05	n.a.	n.a.	0.93	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	15.417	0.415	2729.6	1793.8	15.667	2.953	2.83		Clay	89.7			14.57	1.04	n.a.	n.a.	0.93	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	22.282	0.688	2750.6	1804.6	23.171	3.291	2.73		Clay	81.3			21.06	1.04	n.a.	n.a.	0.93	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	26.144	0.524	2771.6	1815.3	25.265	2.116	2.58		Sand	69.5		1.8	44.48	1.08	47.82	112.26	0.93	0.782	1.018	0.156	0.211	0.27	0.03	0.06
21.490	22.706	0.375	2792.7	1826.1	21.681	1.760	2.59		Sand	70.1	24.71	1.8	44.48	1.07	47.68	112.21	0.93	0.782	1.017	0.156	0.211	0.27	0.03	0.06
21.654	16.759	0.295	2813.7	1836.9	16.715	1.922	2.70		Clay	79.3			15.84	1.04	n.a.	n.a.	0.92	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	13.549	0.320	2834.7	1847.7	13.132	2.638	2.87		Clay	92.4			12.81	1.04	n.a.	n.a.	0.92	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	14.443	0.378	2855.7	1858.4	14.007	2.904	2.87		Clay	92.5			13.65	1.03	n.a.	n.a.	0.92	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	14.742	0.400	2876.7	1869.2	14.235	3.007	2.87		Clay	92.8			13.93	1.03	n.a.	n.a.	0.92	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
22.310	14.061	0.409	2897.7	1879.9	13.418	3.243	2.91		Clay	96.0			13.29	1.03	n.a.	n.a.	0.92	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	12.227	0.471	2918.7	1890.7	11.390	4.374	3.05		Clay	100.0			11.56	1.03	n.a.	n.a.	0.92	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	11.313	0.404	2939.7	1901.5	10.353	4.104	3.06		Clay	100.0			10.69	1.03	n.a.	n.a.	0.92	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	11.053	0.362	2960.7	1912.2	10.012	3.782	3.05		Clay	100.0			10.45	1.03	n.a.	n.a.	0.92	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	10.814	0.307	2981.6	1923.0	9.697	3.293	3.03		Clay	100.0			10.22	1.03	n.a.	n.a.	0.92	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	10.726	0.316	3002.6	1933.7	9.541	3.426	3.05		Clay	100.0			10.14	1.02	n.a.	n.a.	0.92	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	10.558	0.348	3023.6	1944.5	9.304	3.847	3.08		Clay	100.0			9.98	1.02	n.a.	n.a.	0.92	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	10.407	0.359	3044.6	1955.2	9.088	4.041	3.11		Clay	100.0			9.84	1.02	n.a.	n.a.	0.92	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	9.961	0.348	3065.6	1966.0	8.574	4.129	3.13		Clay	100.0			9.41	1.02	n.a.	n.a.	0.92	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	9.187	0.311	3086.6	1976.8	7.734	4.069	3.16		Clay	100.0			8.68	1.02	n.a.	n.a.	0.91	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	8.408	0.248	3107.6	1987.5	6.897	3.618	3.18		Clay	100.0			7.95	1.02	n.a.	n.a.	0.91	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	7.787	0.203	3128.6	1998.3	6.228	3.262	3.19		Clay	100.0			7.36	1.02	n.a.	n.a.	0.91	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	7.455	0.157	3149.6	2009.0	5.854	2.670	3.16		Clay	100.0			7.05	1.01	n.a.	n.a.	0.91	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	7.438	0.145	3170.6	2019.8	5.795	2.477	3.15		Clay	100.0			7.03	1.01	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	7.800	0.142	3191.6	2030.6	6.111	2.289	3.11		Clay	100.0			7.37	1.01	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	8.294	0.154	3212.6	2041.3	6.552	2.303	3.09		Clay	100.0			7.84	1.01	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	8.865	0.147	3233.6	2052.1	7.064	2.028	3.03		Clay	100.0			8.38	1.01	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	10.270	0.242	3254.5	2062.8	8.379	2.800	3.04		Clay	100.0			9.71	1.01	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	11.546	0.357	3275.5	2073.6	9.557	3.603	3.06		Clay	100.0			10.91	1.01	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	12.483	0.394	3296.7	2084.4	10.396	3.636	3.03		Clay	100.0			11.80	1.00	n.a.	n.a.	0.91	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	12.312	0.401	3317.6	2095.2	10.169	3.764	3.05		Clay	100.0			11.64	1.00	n.a.	n.a.	0.91	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	12.068	0.324	3338.6	2105.9	9.876	3.116	3.01		Clay	100.0			11.41	1.00	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	11.645	0.202	3359.6	2116.7	9.416	2.027	2.93		Clay	97.1			11.01	1.00	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	10.957	0.107	3380.6	2127.4	8.712	1.155	2.84		Clay	89.9			10.36	1.00	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	10.874	0.137	3401.6	2138.2	8.580	1.493	2.89		Clay	94.6			10.28	1.00	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	11.454	0.147	3422.6	2149.0	9.067	1.509	2.88		Clay	93.0			10.83	1.00	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	12.479	0.161	3443.6	2159.7	9.962	1.497	2.84		Clay	90.1			11.79	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	12.974	0.213	3464.6	2170.5	10.359	1.895	2.88		Clay	93.0			12.26	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	13.486	0.219	3485.6	2181.2	10.767	1.865	2.86		Clay	91.6			12.75	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	13.985	0.255	3506.6	2192.0	11.160	2.085	2.87		Clay	92.6			13.22	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.231	14.309	0.267	3527.6	2202.8	11.390	2.128	2.87		Clay	92.4			13.52	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	14.649	0.267	3548.6	2213.5	11.633	2.074	2.85		Clay	91.3			13.85	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	15.503	0.300	3569.6	2224.3	12.335	2.187	2.84		Clay	90.6			14.65	0.99	n.a.	n.a.	0.90	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	16.667	0.371	3590.5	2235.0	13.308	2.495	2.85		Clay	90.9			15.75	0.99	n.a.	n.a.	0.89	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	17.450	0.441	3611.5	2245.8	13.932	2.819	2.86		Clay	92.1			16.49	0.98	n.a.	n.a.	0.89	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	17.396	0.444	3632.5	2256.5	13.808	2.850	2.87		Clay	92.5			16.44	0.98	n.a.	n.a.	0.89	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	16.890	0.389	3653.5	2267.3	13.287	2.582	2.86		Clay	91.7			15.96	0.98	n.a.	n.a.	0.89	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	16.185	0.341	3674.5	2278.1	12.596	2.377	2.86		Clay	91.6			15.30	0.98	n.a.	n.a.	0.89	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	15.325	0.214	3695.5	2288.8	11.777	1.588	2.79		Clay	86.1			14.48	0.98	n.a.	n.a.	0.89	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	14.935	0.215	3716.5	2299.6	11.373	1.644	2.81		Clay	87.7			14.12	0.98	n.a.	n.a.	0.89	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	14.480	0.236	3737.5	2310.3	10.917	1.871	2.85		Clay	91.3			13.69	0.98	n.a.	n.a.	0.89	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	14.217	0.221	3758.5	2321.1	10.631	1.791	2.85		Clay	91.3			13.44	0.98	n.a.	n.a.	0.89	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	13.713	0.210	3779.5	2331.9	10.141	1.776	2.87		Clay	92.5			12.96	0.97	n.a.	n.a.	0.89	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	13.390	0.183	3800.6	2342.7	9.809	1.593	2.86		Clay	91.6			12.66	0.97	n.a.	n.a.	0.89	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	13.325	0.188	3821.6	2353.4	9.700	1.647	2.87		Clay	92.5			12.59	0.97	n.a.	n.a.	0.89	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	13.124	0.159	3842.6	2364.2	9.477	1.419	2.85		Clay	90.7			12.40	0.97	n.a.	n.a.	0.88	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	12.806	0.144	3863.6	2375.0	9.157	1.324	2.84		Clay	90.6			12.10	0.97	n.a.	n.a.	0.88	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	12.535	0.191	3884.6	2385.7	8.880	1.803	2.92		Clay	96.7			11.85	0.97	n.a.	n.a.	0.88	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	14.259	0.264	3905.6	2396.5	10.270	2.145	2.91		Clay	95.6			13.48	0.97	n.a.	n.a.	0.88	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	17.021	0.326	3926.5	2407.2	12.510	2.165	2.84		Clay	90.0			16.09	0.97	n.a.	n.a.	0.88	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	19.111	0.434	3947.5	2418.0	14.175	2.532	2.83		Clay	89.4			18.06	0.97	n.a.	n.a.	0.88	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	20.132	0.593	3968.5	2428.7	14.944	3.268	2.88		Clay	93.2			19.03	0.96	n.a.	n.a.	0.88	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	20.009	0.629	3989.5	2439.5	14.769	3.492	2.90		Clay	94.9			18.91	0.96	n.a.	n.a.	0.88	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	29.702	0.832	4010.5	2450.3	22.607	3.004	2.71		Clay	80.0			28.07	0.96	n.a.	n.a.	0.88	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	54.619	1.367	4031.5	2461.0	46.103	2.599	2.44		Sand	57.9	127.79	1.25	159.74	0.96	153.23	243.99	0.88	0.786	0.955	65.752	138.099	175.67	0.00	0.00
31.332	81.095	2.266	4052.5	2471.8	69.147	2.866	2.34		Sand	50.1	127.79	1.25	159.74	0.96	152.93	239.51	0.88	0.786	0.953	40.889	85.762	109.12	0.00	0.00
31.496	113.940	3.124	4073.5	2482.5	97.649	2.792	2.23		Sand	41.3	127.79	1.25	159.74	0.95	152.54	232.46	0.87	0.786	0.952	20.548	43.039	54.78	0.00	0.00
31.660	125.575	2.632	4094.5	2493.3	107.560	2.131	2.11		Sand	32.1	127.79	1.25	159.74	0.95	152.01	221.29	0.87	0.785	0.951	7.890	16.504	21.01	0.00	0.00
31.824	135.207	2.753	4115.5	2504.1	115.688	2.068	2.08		Sand	29.6		1.25	159.74	0.95	151.68	217.06	0.87	0.785	0.949	5.711	11.929	15.19	0.00	0.00
31.988	118.530	2.925	4136.5	2514.8	100.972	2.512	2.18		Sand	37.8		1.25	140.04	0.95	132.42	204.19	0.87	0.785	0.952	2.412	5.054	6.44	0.00	0.00
32.152	95.525	2.060	4157.5	2525.6	80.845	2.204	2.21		Sand	39.8		1.25	112.86	0.94	105.76	173.05	0.87	0.785	0.965	0.559	1.067	1.36	0.00	0.00
32.316	76.713	1.795	4178.4	2536.3	64.424	2.405	2.31		Sand	47.6		1.25	90.63	0.93	84.28	151.37	0.87	0.784	0.971	0.298	0.487	0.62	0.02	0.04
32.480	82.569	1.838	4199.4	2547.1	69.323	2.284	2.27		Sand	44.5		1.25	97.55	0.93	90.73	157.69	0.87	0.784	0.968	0.349	0.595	0.76	0.01	0.03
32.644	100.710	2.268	4220.4	2557.8	84.764	2.300	2.21		Sand	39.7		1.25	118.99	0.93	111.18	179.69	0.87	0.784	0.960	0.717	1.435	1.83	0.00	0.00
32.808	118.030	2.819	4241.4	2568.6	99.436	2.432	2.18		Sand	37.3		1.25	139.45	0.94	130.88	201.81	0.87	0.784	0.948	2.096	4.372	5.58	0.00	0.00
32.972	131.472	2.394	4262.4	2579.4	110.726	1.851	2.06		Sand	27.8		1.25	155.33	0.94	145.78	206.95	0.87	0.783	0.943	2.860	5.937	7.58	0.00	0.00
33.136	138.341	2.039	4283.4	2590.1	116.356	1.497	1.98		Sand	21.4		1.25	163.45	0.94	152.95	200.95	0.87	0.783	0.946	1.994	4.152	5.30	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
33.301	122.231	1.129	4304.5	2600.9	102.370	0.940	1.89		Sand	13.8	130.76	1.25	163.45	0.93	151.59	174.66	0.87	0.783	0.959	0.592	1.137	1.45	0.00	0.00
33.465	84.667	0.705	4325.5	2611.7	70.192	0.855	1.99		Sand	22.3	130.76	1.25	163.45	0.93	152.62	202.93	0.86	0.783	0.943	2.238	4.641	5.93	0.00	0.00
33.629	47.658	0.846	4346.5	2622.5	38.617	1.860	2.40		Sand	55.1	130.76	1.25	163.45	0.94	154.07	243.71	0.86	0.782	0.936	63.765	131.252	167.79	0.00	0.00
33.793	28.072	0.796	4367.5	2633.2	19.663	3.075	2.77		Clay	84.3			26.53	0.94	n.a.	n.a.	0.86	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	19.119	0.502	4388.5	2644.0	12.802	2.966	2.91		Clay	95.5			18.07	0.94	n.a.	n.a.	0.86	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	16.376	0.372	4409.5	2654.7	10.676	2.625	2.94		Clay	98.3			15.48	0.94	n.a.	n.a.	0.86	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	15.665	0.310	4430.5	2665.5	10.092	2.305	2.93		Clay	97.4			14.81	0.94	n.a.	n.a.	0.86	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	15.007	0.329	4451.5	2676.3	9.552	2.574	2.98		Clay	100.0			14.18	0.94	n.a.	n.a.	0.86	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	13.158	0.309	4472.5	2687.0	8.129	2.829	3.06		Clay	100.0			12.44	0.94	n.a.	n.a.	0.86	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	11.865	0.250	4493.5	2697.8	7.131	2.599	3.09		Clay	100.0			11.21	0.94	n.a.	n.a.	0.86	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	11.025	0.144	4514.4	2708.5	6.474	1.642	3.02		Clay	100.0			10.42	0.94	n.a.	n.a.	0.86	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	11.113	0.153	4535.4	2719.3	6.506	1.730	3.03		Clay	100.0			10.50	0.94	n.a.	n.a.	0.86	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	11.590	0.173	4556.4	2730.0	6.822	1.858	3.03		Clay	100.0			10.95	0.93	n.a.	n.a.	0.85	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	12.277	0.165	4577.4	2740.8	7.289	1.652	2.98		Clay	100.0			11.60	0.93	n.a.	n.a.	0.85	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	13.162	0.213	4598.4	2751.6	7.896	1.961	2.98		Clay	100.0			12.44	0.93	n.a.	n.a.	0.85	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	15.688	0.274	4619.4	2762.3	9.686	2.048	2.92		Clay	96.4			14.83	0.93	n.a.	n.a.	0.85	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	19.881	0.423	4640.4	2773.1	12.665	2.409	2.86		Clay	91.7			18.79	0.93	n.a.	n.a.	0.85	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	24.518	0.645	4661.4	2783.8	15.940	2.907	2.82		Clay	88.9			23.17	0.93	n.a.	n.a.	0.85	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	28.455	0.817	4682.4	2794.6	18.689	3.129	2.79		Clay	86.1			26.90	0.93	n.a.	n.a.	0.85	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	33.215	1.066	4703.4	2805.4	22.003	3.454	2.76		Clay	83.8			31.39	0.93	n.a.	n.a.	0.85	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	43.404	1.354	4724.4	2816.1	29.148	3.299	2.65		Clay	75.3			41.02	0.93	n.a.	n.a.	0.85	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	58.008	1.466	4745.4	2826.9	45.496	2.635	2.44		Sand	58.6	69.73	1.78	124.12	0.91	112.48	192.18	0.85	0.775	0.930	1.250	2.559	3.30	0.00	0.00
36.909	73.770	1.027	4766.4	2837.6	58.266	1.439	2.19		Sand	38.4		1.78	124.11	0.90	111.72	179.17	0.85	0.775	0.938	0.702	1.369	1.77	0.00	0.00
37.073	73.054	0.711	4787.3	2848.4	57.564	1.006	2.10		Sand	31.2	69.73	1.78	124.12	0.90	111.16	170.57	0.84	0.775	0.943	0.513	0.939	1.21	0.01	0.01
37.238	58.048	0.650	4808.5	2859.2	45.244	1.168	2.22		Sand	41.0	69.73	1.78	124.12	0.90	111.52	181.16	0.84	0.774	0.936	0.761	1.502	1.94	0.00	0.00
37.402	36.478	0.633	4829.5	2870.0	27.645	1.858	2.52		Sand	64.3	69.73	1.78	124.12	0.90	111.96	193.54	0.84	0.774	0.926	1.338	2.725	3.52	0.00	0.00
37.566	23.859	0.535	4850.4	2880.7	14.881	2.496	2.81		Clay	87.8			22.55	0.92	n.a.	n.a.	0.84	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	19.858	0.310	4871.4	2891.5	12.051	1.779	2.81		Clay	87.4			18.77	0.92	n.a.	n.a.	0.84	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	17.122	0.266	4892.4	2902.2	10.113	1.813	2.87		Clay	93.0			16.18	0.92	n.a.	n.a.	0.84	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	15.109	0.300	4913.4	2913.0	8.687	2.371	2.99		Clay	100.0			14.28	0.92	n.a.	n.a.	0.84	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.222	13.211	0.253	4934.4	2923.8	7.349	2.355	3.05		Clay	100.0			12.49	0.92	n.a.	n.a.	0.84	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	13.140	0.201	4955.4	2934.5	7.267	1.885	3.01		Clay	100.0			12.42	0.92	n.a.	n.a.	0.84	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	13.587	0.248	4976.4	2945.3	7.537	2.234	3.03		Clay	100.0			12.84	0.92	n.a.	n.a.	0.84	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	13.918	0.220	4997.4	2956.0	7.726	1.927	2.99		Clay	100.0			13.16	0.92	n.a.	n.a.	0.84	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	13.717	0.241	5018.4	2966.8	7.555	2.150	3.02		Clay	100.0			12.97	0.91	n.a.	n.a.	0.84	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	17.050	0.180	5039.4	2977.6	9.760	1.239	2.81		Clay	87.5			16.12	0.91	n.a.	n.a.	0.83	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	20.530	0.263	5060.4	2988.3	12.047	1.461	2.76		Clay	83.9			19.40	0.91	n.a.	n.a.	0.83	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	26.341	0.441	5081.4	2999.1	15.872	1.853	2.71		Clay	80.1			24.90	0.91	n.a.	n.a.	0.83	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	48.986	1.244	5102.4	3009.8	36.800	2.679	2.52		Sand	64.5	138.48	1.32	182.79	0.91	166.57	263.80	0.83	0.768	0.894	781.048	1536.670	2000.69	0.00	0.00
39.698	76.623	1.861	5123.3	3020.6	58.589	2.513	2.35		Sand	51.0	138.48	1.32	182.79	0.91	166.41	257.11	0.83	0.768	0.893	314.999	619.001	806.41	0.00	0.00
39.862	112.185	1.725	5144.3	3031.3	86.560	1.574	2.09		Sand	30.0	138.48	1.32	182.79	0.90	164.85	233.54	0.83	0.767	0.892	22.724	44.601	58.14	0.00	0.00
40.026	127.440	2.120	5165.3	3042.1	98.424	1.698	2.07		Sand	28.6	138.48	1.32	182.79	0.90	164.48	230.61	0.83	0.767	0.891	17.340	33.993	44.34	0.00	0.00
40.190	138.171	1.779	5186.3	3052.9	106.686	1.312	1.97		Sand	20.4	138.48	1.32	182.79	0.89	162.72	209.29	0.83	0.766	0.892	3.324	6.525	8.52	0.00	0.00
40.354	146.516	1.647	5207.3	3063.6	113.045	1.144	1.91		Sand	15.7		1.32	182.80	0.88	161.16	191.87	0.83	0.766	0.911	1.231	2.468	3.22	0.00	0.00
40.518	170.678	1.663	5228.3	3074.4	131.786	0.990	1.82		Sand	8.3		1.32	212.94	0.88	187.57	192.47	0.83	0.765	0.910	1.268	2.538	3.32	0.00	0.00
40.682	207.942	1.135	5249.3	3085.1	160.716	0.553	1.59		Sand	0.0		1.32	259.44	0.90	232.71	232.71	0.83	0.765	0.887	21.019	41.010	53.63	0.00	0.00
40.846	247.469	2.548	5270.3	3095.9	191.316	1.041	1.72		Sand	0.2		1.32	308.75	0.90	279.26	279.26	0.82	0.764	0.886	8749.832	17051.994	22312.89	0.00	0.00
41.010	267.399	2.035	5291.3	3106.7	206.522	0.769	1.60		Sand	0.0		1.32	333.62	0.90	301.47	301.47	0.82	0.764	0.885	##########	########	1719166.70	0.00	0.00
41.175	256.785	2.184	5312.4	3117.5	197.890	0.859	1.65		Sand	0.0		1.32	320.37	0.90	289.24	289.24	0.82	0.763	0.884	53792.634	########	137032.38	0.00	0.00
41.339	209.980	2.144	5333.4	3128.2	161.157	1.034	1.77		Sand	4.3	242.71	1.32	320.38	0.90	288.98	289.05	0.82	0.763	0.883	51824.404	########	131950.83	0.00	0.00
41.503	142.770	1.977	5354.4	3139.0	108.716	1.411	1.98		Sand	21.6	242.71	1.32	320.38	0.90	288.72	357.65	0.82	0.762	0.882	##########	########	##########	0.00	0.00
41.667	81.144	1.521	5375.4	3149.8	60.780	1.939	2.26		Sand	43.9	242.71	1.32	320.38	0.90	288.46	404.87	0.82	0.762	0.881	##########	########	##########	0.00	0.00
41.831	40.486	1.035	5396.4	3160.5	23.912	2.739	2.67		Clay	76.5			38.27	0.90	n.a.	n.a.	0.82	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	23.003	0.661	5417.4	3171.3	12.799	3.257	2.93		Clay	97.4			21.74	0.90	n.a.	n.a.	0.82	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	16.964	0.296	5438.4	3182.0	8.953	2.078	2.95		Clay	99.0			16.03	0.90	n.a.	n.a.	0.82	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	17.389	0.195	5459.3	3192.8	9.183	1.330	2.84		Clay	90.6			16.44	0.90	n.a.	n.a.	0.82	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	17.532	0.178	5480.3	3203.5	9.235	1.203	2.82		Clay	88.8			16.57	0.90	n.a.	n.a.	0.82	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	17.940	0.189	5501.3	3214.3	9.451	1.244	2.82		Clay	88.6			16.96	0.90	n.a.	n.a.	0.81	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	17.722	0.205	5522.3	3225.1	9.278	1.370	2.85		Clay	90.7			16.75	0.89	n.a.	n.a.	0.81	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	19.570	0.221	5543.3	3235.8	10.383	1.316	2.80		Clay	86.6			18.50	0.89	n.a.	n.a.	0.81	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	22.063	0.272	5564.3	3246.6	11.878	1.411	2.76		Clay	83.7			20.85	0.89	n.a.	n.a.	0.81	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	23.580	0.288	5585.3	3257.3	12.763	1.385	2.73		Clay	81.2			22.29	0.89	n.a.	n.a.	0.81	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	23.799	0.399	5606.3	3268.1	12.849	1.900	2.80		Clay	86.7			22.49	0.89	n.a.	n.a.	0.81	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	22.558	0.417	5627.3	3278.9	12.043	2.112	2.85		Clay	90.6			21.32	0.89	n.a.	n.a.	0.81	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	20.967	0.380	5648.3	3289.6	11.030	2.094	2.88		Clay	93.0			19.82	0.89	n.a.	n.a.	0.81	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	18.923	0.335	5669.3	3300.4	9.749	2.082	2.92		Clay	96.5			17.89	0.89	n.a.	n.a.	0.81	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	17.689	0.259	5690.3	3311.1	8.966	1.745	2.91		Clay	95.9			16.72	0.89	n.a.	n.a.	0.81	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
44.291	17.277	0.203	5711.2	3321.9	8.683	1.408	2.88		Clay	93.2			16.33	0.89	n.a.	n.a.	0.81	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	17.820	0.166	5732.2	3332.6	8.974	1.110	2.82		Clay	88.4			16.84	0.89	n.a.	n.a.	0.80	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	18.190	0.189	5753.2	3343.4	9.160	1.234	2.83		Clay	89.4			17.19	0.89	n.a.	n.a.	0.80	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	21.806	0.231	5774.2	3354.2	11.281	1.221	2.75		Clay	82.9			20.61	0.89	n.a.	n.a.	0.80	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	28.150	0.659	5795.3	3365.0	15.009	2.610	2.82		Clay	88.4			26.61	0.88	n.a.	n.a.	0.80	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	75.490	1.365	5816.3	3375.7	54.314	1.881	2.29		Sand	46.2	201.8		201.80	0.88	178.40	268.92	0.80	0.750	0.860	1654.814	3130.447	4171.45	0.00	0.00
45.276	147.452	1.233	5837.3	3386.5	107.985	0.853	1.84		Sand	10.3	201.8		201.80	0.85	170.76	181.37	0.80	0.750	0.899	0.768	1.458	1.94	0.00	0.00
45.440	205.575	1.873	5858.3	3397.3	151.163	0.924	1.75		Sand	3.2	201.8		201.80	0.84	169.12	169.12	0.80	0.749	0.910	0.489	0.854	1.14	0.01	0.01
45.604	213.508	3.390	5879.3	3408.0	156.825	1.610	1.91		Sand	16.1			201.80	0.86	173.17	206.45	0.80	0.749	0.865	2.772	5.273	7.04	0.00	0.00
45.768	214.359	3.621	5900.3	3418.8	157.203	1.713	1.93		Sand	17.6			202.61	0.86	174.45	213.56	0.80	0.748	0.856	4.439	8.361	11.18	0.00	0.00
45.932	249.701	4.763	5921.3	3429.5	183.187	1.930	1.93		Sand	17.4			236.01	0.88	207.23	249.13	0.80	0.748	0.855	117.483	221.020	295.63	0.00	0.00
46.096	298.035	3.161	5942.3	3440.3	218.721	1.071	1.69		Sand	0.0			281.70	0.88	246.82	246.82	0.80	0.747	0.854	90.091	169.300	226.63	0.00	0.00
46.260	323.109	2.317	5963.3	3451.1	236.929	0.724	1.54		Sand	0.0			305.40	0.88	268.42	268.42	0.80	0.746	0.853	1534.110	2879.768	3857.83	0.00	0.00
46.424	315.201	2.130	5984.3	3461.8	230.710	0.682	1.53		Sand	0.0			297.92	0.88	261.64	261.64	0.79	0.746	0.852	577.540	1082.948	1451.87	0.00	0.00
46.588	301.908	1.662	6005.3	3472.6	220.536	0.556	1.48		Sand	0.0			285.36	0.88	249.82	249.82	0.79	0.745	0.851	127.419	238.663	320.21	0.00	0.00
46.752	290.994	1.458	6026.3	3483.3	212.148	0.506	1.47		Sand	0.0			275.04	0.87	239.12	239.12	0.79	0.745	0.850	39.287	73.506	98.70	0.00	0.00
46.916	290.031	1.165	6047.2	3494.1	211.105	0.406	1.41		Sand	0.0			274.13	0.87	237.96	237.96	0.79	0.744	0.850	34.936	65.294	87.74	0.00	0.00
47.080	285.424	1.614	6068.2	3504.8	207.389	0.572	1.51		Sand	0.0			269.78	0.86	233.33	233.33	0.79	0.744	0.849	22.283	41.601	55.95	0.00	0.00
47.244	276.956	1.922	6089.2	3515.6	200.855	0.702	1.58		Sand	0.0			261.77	0.86	225.07	225.07	0.79	0.743	0.848	10.715	19.982	26.89	0.00	0.00
47.408	261.658	1.947	6110.2	3526.4	189.340	0.753	1.62		Sand	0.0			247.31	0.85	210.47	210.47	0.79	0.742	0.848	3.595	6.704	9.03	0.00	0.00
47.572	263.647	2.106	6131.2	3537.1	190.498	0.808	1.64		Sand	0.0			249.19	0.85	212.09	212.09	0.79	0.742	0.846	4.011	7.465	10.06	0.00	0.00
47.736	294.839	1.202	6152.2	3547.9	212.970	0.412	1.41		Sand	0.0			278.68	0.87	241.35	241.35	0.79	0.741	0.845	49.545	92.100	124.25	0.00	0.00
47.900	335.175	1.758	6173.2	3558.6	242.038	0.529	1.44		Sand	0.0			316.80	0.87	276.20	276.20	0.79	0.741	0.844	5228.346	9708.508	13108.13	0.00	0.00
48.064	362.018	2.329	6194.2	3569.4	261.200	0.649	1.47		Sand	0.0			342.17	0.87	298.08	298.08	0.79	0.740	0.843	##########	########	809700.04	0.00	0.00
48.228	355.921	1.176	6215.2	3580.2	256.369	0.333	1.30		Sand	0.0			336.41	0.87	292.83	292.83	0.78	0.739	0.842	##########	########	273062.43	0.00	0.00
48.392	315.088	1.047	6236.2	3590.9	226.351	0.336	1.34		Sand	0.0			297.81	0.87	259.03	259.03	0.78	0.739	0.841	405.482	750.523	1015.77	0.00	0.00
48.556	246.849	1.385	6257.2	3601.7	176.568	0.568	1.56		Sand	0.0			233.32	0.84	195.13	195.13	0.78	0.738	0.868	1.452	2.771	3.75	0.00	0.00
48.720	163.157	2.265	6278.2	3612.4	115.755	1.415	1.96		Sand	20.1	233.32		233.32	0.87	202.60	253.89	0.78	0.738	0.840	208.916	385.867	523.08	0.00	0.00
48.885	95.957	1.997	6299.3	3623.3	67.036	2.152	2.26		Sand	43.9	233.32		233.32	0.87	202.45	297.15	0.78	0.737	0.839	##########	########	664140.40	0.00	0.00
49.049	55.292	1.693	6320.3	3634.0	28.691	3.248	2.65		Clay	75.4			52.26	0.87	n.a.	n.a.	0.78	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.213	40.066	0.908	6341.3	3644.8	20.246	2.461	2.70		Clay	78.8			37.87	0.87	n.a.	n.a.	0.78	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	41.986	1.018	6362.3	3655.5	21.231	2.623	2.70		Clay	78.8			39.68	0.87	n.a.	n.a.	0.78	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	54.309	1.888	6383.2	3666.3	27.885	3.693	2.70		Clay	79.1			51.33	0.87	n.a.	n.a.	0.78	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	77.470	1.878	6404.2	3677.0	53.250	2.529	2.38		Sand	53.6	95.33	1.72	163.97	0.85	138.98	223.75	0.78	0.734	0.834	9.607	17.631	24.02	0.00	0.00
49.869	99.110	1.888	6425.2	3687.8	68.659	1.969	2.23		Sand	41.2	95.33	1.72	163.97	0.84	137.95	214.20	0.78	0.733	0.833	4.645	8.516	11.61	0.00	0.00
50.033	100.857	1.644	6446.2	3698.6	69.800	1.684	2.18		Sand	37.1		1.72	163.96	0.84	137.37	209.59	0.77	0.733	0.835	3.392	6.233	8.50	0.00	0.00
50.197	93.142	2.409	6467.2	3709.3	64.184	2.679	2.34		Sand	50.3		1.72	151.42	0.83	126.42	206.06	0.77	0.732	0.841	2.706	5.008	6.84	0.00	0.00
50.361	80.097	2.855	6488.2	3720.1	54.784	3.715	2.49		Sand	62.2		1.72	130.21	0.82	107.00	186.49	0.77	0.732	0.872	0.956	1.835	2.51	0.00	0.00
50.525	71.645	2.789	6509.2	3730.8	36.662	4.078	2.64		Clay	74.4			67.72	0.86	n.a.	n.a.	0.77	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.689	100.244	2.135	6530.2	3741.6	68.932	2.202	2.26		Sand	43.7			94.75	0.78	74.32	136.68	0.77	0.730	0.919	0.221	0.310	0.42	0.02	0.00
50.853	196.429	3.084	6551.2	3752.4	137.095	1.597	1.95		Sand	19.0			185.66	0.82	153.04	194.19	0.77	0.730	0.859	1.383	2.613	3.58	0.00	0.00
51.017	310.231	3.416	6572.2	3763.1	217.550	1.113	1.70		Sand	0.0			293.22	0.86	251.50	251.50	0.77	0.729	0.827	155.780	283.524	388.82	0.00	0.00
51.181	358.575	4.203	6593.2	3773.9	251.447	1.183	1.68		Sand	0.0			338.92	0.86	290.94	290.94	0.77	0.729	0.826	74870.597	########	186838.40	0.00	0.00
51.345	344.979	3.840	6614.2	3784.6	241.474	1.124	1.67		Sand	0.0			326.07	0.86	279.70	279.70	0.77	0.728	0.826	9436.142	17138.507	23543.29	0.00	0.00
51.509	318.368	1.339	6635.2	3795.4	222.343	0.425	1.41		Sand	0.0			300.91	0.86	257.93	257.93	0.77	0.727	0.825	350.534	636.005	874.43	0.00	0.00
51.673	297.778	1.521	6656.1	3806.1	207.511	0.517	1.48		Sand	0.0			281.45	0.85	238.59	238.59	0.77	0.727	0.824	37.239	67.497	92.88	0.00	0.00
51.837	275.745	2.094	6677.1	3816.9	191.705	0.769	1.62		Sand	0.0			260.63	0.83	217.46	217.46	0.77	0.726	0.823	5.882	10.650	14.67	0.00	0.00
52.001	264.503	2.691	6698.1	3827.7	183.528	1.030	1.72		Sand	1.0			250.00	0.83	206.73	206.73	0.76	0.725	0.831	2.821	5.159	7.11	0.00	0.00
52.165	280.894	3.367	6719.1	3838.4	194.766	1.213	1.76		Sand	3.7			265.50	0.84	221.86	221.87	0.76	0.725	0.821	8.260	14.926	20.59	0.00	0.00
52.329	327.645	4.582	6740.1	3849.2	227.249	1.413	1.77		Sand	4.2			309.68	0.85	264.46	264.52	0.76	0.724	0.821	865.795	1562.847	2157.89	0.00	0.00
52.493	344.286	3.818	6761.1	3859.9	238.570	1.120	1.67		Sand	0.0			325.41	0.85	277.69	277.69	0.76	0.724	0.820	6702.217	12085.826	16701.75	0.00	0.00
52.657	353.277	3.092	6782.1	3870.7	244.514	0.884	1.59		Sand	0.0			333.91	0.85	284.73	284.73	0.76	0.723	0.819	23066.851	41553.109	57472.80	0.00	0.00
52.822	321.858	2.987	6803.2	3881.5	222.239	0.938	1.64		Sand	0.0			304.21	0.85	259.22	259.22	0.76	0.722	0.818	415.818	748.298	1035.88	0.00	0.00
52.986	294.607	2.141	6824.2	3892.3	202.934	0.735	1.59		Sand	0.0			278.46	0.84	233.75	233.75	0.76	0.722	0.817	23.192	41.694	57.77	0.00	0.00
53.150	261.182	1.819	6845.2	3903.0	179.385	0.706	1.62		Sand	0.0			246.86	0.82	202.11	202.11	0.76	0.721	0.835	2.133	3.918	5.43	0.00	0.00
53.314	238.749	1.341	6866.2	3913.8	163.540	0.570	1.59		Sand	0.0			225.66	0.80	181.38	181.38	0.76	0.721	0.868	0.768	1.408	1.95	0.00	0.00
53.478	240.670	1.400	6887.2	3924.6	164.642	0.590	1.60		Sand	0.0			227.48	0.80	182.91	182.91	0.76	0.720	0.865	0.818	1.514	2.10	0.00	0.00
53.642	258.948	1.761	6908.2	3935.3	177.077	0.689	1.62		Sand	0.0			244.75	0.81	199.40	199.40	0.76	0.719	0.838	1.827	3.368	4.68	0.00	0.00
53.806	287.208	1.299	6929.2	3946.1	196.388	0.458	1.47		Sand	0.0			271.46	0.83	225.61	225.61	0.76	0.719	0.813	11.207	20.046	27.90	0.00	0.00
53.970	309.818	1.189	6950.2	3956.8	211.742	0.388	1.40		Sand	0.0			292.83	0.84	247.04	247.04	0.75	0.718	0.812	92.378	165.070	229.90	0.00	0.00
54.134	315.818	1.434	6971.2	3967.6	215.589	0.459	1.44		Sand	0.0			298.50	0.85	252.64	252.64	0.75	0.717	0.811	179.129	319.764	445.74	0.00	0.00
54.298	313.833	1.726	6992.1	3978.3	213.921	0.556	1.49		Sand	0.0			296.63	0.84	250.49	250.49	0.75	0.717	0.811	138.096	246.269	343.59	0.00	0.00
54.462	304.888	1.533	7013.1	3989.1	207.468	0.509	1.48		Sand	0.0			288.17	0.84	241.62	241.62	0.75	0.716	0.810	50.952	90.773	126.76	0.00	0.00
54.626	295.930	1.943	7034.1	3999.9	201.023	0.664	1.56		Sand	0.0			279.71	0.83	232.81	232.81	0.75	0.715	0.809	21.215	37.757	52.77	0.00	0.00
54.790	278.460	1.475	7055.1	4010.6	188.752	0.536	1.53		Sand	0.0			263.19	0.82	216.04	216.04	0.75	0.715	0.808	5.300	9.423	13.18	0.00	0.00
54.954	280.081	1.005	7076.1	4021.4	189.604	0.363	1.42		Sand	0.0			264.73	0.82	217.35	217.35	0.75	0.714	0.807	5.834	10.363	14.51	0.00	0.00
55.118	285.633	1.023	7097.1	4032.1	193.145	0.363	1.42		Sand	0.0			269.97	0.82	222.37	222.37	0.75	0.714	0.807	8.591	15.245	21.36	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
55.282	299.302	1.127	7118.1	4042.9	202.227	0.381	1.41		Sand	0.0			282.89	0.83	235.16	235.16	0.75	0.713	0.806	26.521	47.014	65.94	0.00	0.00
55.446	305.858	1.441	7139.1	4053.7	206.429	0.477	1.46		Sand	0.0			289.09	0.83	241.24	241.24	0.75	0.712	0.805	48.957	86.699	121.71	0.00	0.00
55.610	317.516	2.015	7160.1	4064.4	214.099	0.642	1.53		Sand	0.0			300.11	0.84	252.32	252.32	0.75	0.712	0.804	172.232	304.712	428.14	0.00	0.00
55.774	291.356	3.122	7181.1	4075.2	195.992	1.085	1.72		Sand	0.7			275.38	0.82	226.92	226.92	0.74	0.711	0.803	12.535	22.155	31.16	0.00	0.00
55.938	245.304	2.729	7202.1	4085.9	164.403	1.129	1.79		Sand	5.9			231.86	0.79	184.13	184.87	0.74	0.710	0.854	0.890	1.651	2.32	0.00	0.00
56.102	252.069	2.634	7223.1	4096.7	168.775	1.060	1.76		Sand	3.7			238.25	0.80	189.92	189.93	0.74	0.710	0.845	1.121	2.084	2.94	0.00	0.00
56.266	340.474	3.312	7244.0	4107.4	228.520	0.983	1.64		Sand	0.0			321.81	0.84	270.15	270.15	0.74	0.709	0.801	1993.904	3513.734	4954.63	0.00	0.00
56.430	418.698	3.392	7265.0	4118.2	281.213	0.817	1.52		Sand	0.0			395.74	0.84	331.99	331.99	0.74	0.709	0.800	#########	########	#########	0.00	0.00
56.594	403.873	3.353	7286.0	4129.0	270.808	0.838	1.54		Sand	0.0			381.73	0.84	320.01	320.01	0.74	0.708	0.799	#########	########	#########	0.00	0.00
56.759	342.720	3.723	7307.2	4139.8	229.123	1.098	1.68		Sand	0.0			323.93	0.84	271.37	271.37	0.74	0.707	0.799	2407.862	4230.764	5981.73	0.00	0.00
56.923	303.975	3.834	7328.1	4150.5	202.670	1.277	1.76		Sand	4.1			287.31	0.83	237.49	237.53	0.74	0.707	0.798	33.480	58.770	83.17	0.00	0.00
57.087	305.745	3.280	7349.1	4161.3	203.594	1.086	1.71		Sand	0.0			288.98	0.83	238.97	238.97	0.74	0.706	0.797	38.711	67.886	96.15	0.00	0.00
57.251	325.596	4.479	7370.1	4172.1	216.687	1.391	1.77		Sand	4.9			307.75	0.84	257.28	257.48	0.74	0.705	0.796	330.619	579.223	821.15	0.00	0.00
57.415	362.048	6.044	7391.1	4182.8	240.906	1.687	1.81		Sand	7.8			342.20	0.84	285.89	290.59	0.74	0.705	0.796	69961.045	########	173747.86	0.00	0.00
57.579	379.026	8.719	7412.1	4193.6	251.989	2.323	1.91		Sand	16.0			358.25	0.83	299.10	344.15	0.74	0.704	0.795	#########	########	#########	0.00	0.00
57.743	370.719	6.193	7433.1	4204.3	246.089	1.687	1.81		Sand	7.4			350.40	0.83	292.34	295.94	0.73	0.703	0.794	#########	########	510757.56	0.00	0.00
57.907	352.130	5.358	7454.1	4215.1	233.319	1.538	1.79		Sand	6.0			332.83	0.83	277.50	278.46	0.73	0.703	0.793	7639.453	13332.097	18968.70	0.00	0.00
58.071	340.443	4.551	7475.1	4225.9	225.198	1.352	1.75		Sand	3.3			321.78	0.83	268.11	268.11	0.73	0.702	0.792	1463.855	2552.204	3634.51	0.00	0.00
58.235	330.564	3.310	7496.1	4236.6	218.306	1.013	1.67		Sand	0.0			312.44	0.83	260.15	260.15	0.73	0.702	0.792	471.452	821.176	1170.47	0.00	0.00
58.399	308.632	2.066	7517.1	4247.4	203.391	0.678	1.57		Sand	0.0			291.71	0.82	240.06	240.06	0.73	0.701	0.791	43.267	75.291	107.41	0.00	0.00
58.563	294.830	2.084	7538.1	4258.1	193.931	0.716	1.60		Sand	0.0			278.67	0.81	226.61	226.61	0.73	0.700	0.790	12.204	21.216	30.29	0.00	0.00
58.727	301.368	2.126	7559.1	4268.9	198.030	0.714	1.59		Sand	0.0			284.85	0.82	232.65	232.65	0.73	0.700	0.789	20.901	36.300	51.88	0.00	0.00
58.891	317.907	1.982	7580.0	4279.6	208.766	0.631	1.54		Sand	0.0			300.48	0.83	248.42	248.42	0.73	0.699	0.789	108.257	187.840	268.71	0.00	0.00
59.055	333.914	2.303	7601.0	4290.4	219.122	0.698	1.55		Sand	0.0			315.61	0.83	261.91	261.91	0.73	0.698	0.788	600.091	1040.243	1489.44	0.00	0.00
59.219	333.697	3.503	7622.0	4301.2	218.697	1.062	1.68		Sand	0.0			315.40	0.83	261.57	261.57	0.73	0.698	0.787	572.324	991.164	1420.46	0.00	0.00
59.383	315.617	4.048	7643.0	4311.9	206.446	1.298	1.76		Sand	4.1			298.31	0.82	245.57	245.62	0.73	0.697	0.786	78.667	136.108	195.24	0.00	0.00
59.547	299.910	3.268	7664.0	4322.7	195.795	1.104	1.73		Sand	1.2			283.47	0.81	230.20	230.20	0.73	0.697	0.786	16.718	28.897	41.49	0.00	0.00
59.711	278.290	3.107	7685.0	4333.4	181.265	1.132	1.76		Sand	3.6			263.03	0.80	209.57	209.58	0.73	0.696	0.788	3.389	5.879	8.45	0.00	0.00
59.875	273.496	1.758	7706.0	4344.2	177.872	0.652	1.60		Sand	0.0			258.50	0.79	204.90	204.90	0.72	0.695	0.800	2.520	4.432	6.38	0.00	0.00
60.039	260.008	1.928	7727.0	4355.0	168.758	0.753	1.66		Sand	0.0			245.75	0.78	192.28	192.28	0.72	0.695	0.826	1.256	2.284	3.29	0.00	0.00
60.203	255.259	2.042	7748.0	4365.7	165.418	0.812	1.69		Sand	0.0			241.27	0.78	187.76	187.76	0.72	0.694	0.834	1.013	1.858	2.68	0.00	0.00
60.367	250.343	2.284	7769.0	4376.5	161.977	0.927	1.73		Sand	1.5			236.62	0.77	183.12	183.12	0.72	0.693	0.841	0.825	1.488	2.15	0.00	0.00
60.531	265.185	2.457	7790.0	4387.2	171.514	0.940	1.72		Sand	0.4			250.65	0.78	196.43	196.43	0.72	0.693	0.816	1.554	2.790	4.03	0.00	0.00
60.696	294.649	2.128	7811.1	4398.1	190.613	0.732	1.61		Sand	0.0			278.50	0.80	223.74	223.74	0.72	0.692	0.781	9.605	16.493	23.83	0.00	0.00
60.860	329.846	2.417	7832.1	4408.8	213.420	0.742	1.58		Sand	0.0			311.76	0.82	256.87	256.87	0.72	0.691	0.780	305.330	523.796	757.53	0.00	0.00
61.024	363.538	3.274	7853.1	4419.6	235.188	0.910	1.61		Sand	0.0			343.61	0.82	282.93	282.93	0.72	0.691	0.779	16643.656	28525.553	41292.25	0.00	0.00
61.188	397.701	3.898	7874.1	4430.3	257.211	0.990	1.61		Sand	0.0			375.90	0.82	309.32	309.32	0.72	0.690	0.778	#########	########	#########	0.00	0.00
61.352	438.457	3.801	7895.1	4441.1	283.483	0.875	1.54		Sand	0.0			414.42	0.82	340.80	340.80	0.72	0.690	0.778	#########	########	#########	0.00	0.00
61.516	476.340	2.991	7916.0	4451.8	307.819	0.633	1.42		Sand	0.0			450.23	0.82	370.01	370.01	0.72	0.689	0.777	#########	########	#########	0.00	0.00
61.680	513.998	3.254	7937.0	4462.6	331.950	0.638	1.40		Sand	0.0			485.82	0.82	399.00	399.00	0.72	0.688	0.776	#########	########	#########	0.00	0.00
61.844	535.356	1.808	7958.0	4473.4	345.428	0.340	1.20		Sand	0.0			506.01	0.82	415.32	415.32	0.71	0.688	0.775	#########	########	#########	0.00	0.00
62.008	532.855	2.187	7979.0	4484.1	343.383	0.414	1.25		Sand	0.0			503.64	0.82	413.12	413.12	0.71	0.687	0.775	#########	########	#########	0.00	0.00
62.172	518.754	2.571	8000.0	4494.9	333.820	0.499	1.32		Sand	0.0			490.32	0.82	401.93	401.93	0.71	0.686	0.774	#########	########	#########	0.00	0.00
62.336	501.495	3.691	8021.0	4505.6	322.236	0.742	1.45		Sand	0.0			474.00	0.82	388.31	388.31	0.71	0.686	0.773	#########	########	#########	0.00	0.00
62.500	486.757	3.563	8042.0	4516.4	312.310	0.738	1.46		Sand	0.0			460.07	0.82	376.67	376.67	0.71	0.685	0.773	#########	########	#########	0.00	0.00
62.664	457.121	2.511	8063.0	4527.2	292.781	0.554	1.39		Sand	0.0			432.06	0.82	353.51	353.51	0.71	0.685	0.772	#########	########	#########	0.00	0.00
62.828	419.747	2.782	8084.0	4537.9	268.305	0.669	1.48		Sand	0.0			396.74	0.82	324.40	324.40	0.71	0.684	0.771	#########	########	#########	0.00	0.00
62.992	397.826	2.777	8105.0	4548.7	253.849	0.705	1.51		Sand	0.0			376.02	0.82	307.27	307.27	0.71	0.683	0.770	#########	########	6288422.80	0.00	0.00
63.156	383.683	2.915	8126.0	4559.4	244.436	0.768	1.55		Sand	0.0			362.65	0.82	296.16	296.16	0.71	0.683	0.770	#########	########	534653.14	0.00	0.00
63.320	381.818	2.890	8147.0	4570.2	242.942	0.765	1.55		Sand	0.0			360.89	0.82	294.54	294.54	0.71	0.682	0.769	#########	########	382345.37	0.00	0.00
63.484	380.773	3.002	8168.0	4581.0	241.979	0.797	1.56		Sand	0.0			359.90	0.82	293.55	293.55	0.71	0.681	0.768	#########	########	312660.64	0.00	0.00
63.648	392.327	2.510	8188.9	4591.7	249.102	0.647	1.49		Sand	0.0			370.82	0.82	302.27	302.27	0.71	0.681	0.768	#########	########	1997856.88	0.00	0.00
63.812	401.131	2.041	8209.9	4602.5	254.446	0.514	1.41		Sand	0.0			379.14	0.81	308.86	308.86	0.71	0.680	0.767	#########	########	9183381.21	0.00	0.00
63.976	407.392	1.686	8230.9	4613.2	258.150	0.418	1.35		Sand	0.0			385.06	0.81	313.49	313.49	0.70	0.680	0.766	#########	########	#########	0.00	0.00
64.140	386.533	1.979	8251.9	4624.0	244.506	0.518	1.43		Sand	0.0			365.34	0.81	297.26	297.26	0.70	0.679	0.765	#########	########	672781.54	0.00	0.00
64.304	353.207	1.834	8272.9	4634.7	222.932	0.525	1.46		Sand	0.0			333.84	0.81	271.46	271.46	0.70	0.678	0.765	2443.309	4110.929	6060.76	0.00	0.00
64.469	329.299	1.461	8294.0	4645.6	207.415	0.449	1.45		Sand	0.0			311.25	0.81	252.63	252.63	0.70	0.678	0.764	178.712	300.413	443.31	0.00	0.00
64.633	335.373	1.722	8315.0	4656.3	211.038	0.520	1.48		Sand	0.0			316.99	0.81	257.44	257.44	0.70	0.677	0.763	328.742	552.109	815.48	0.00	0.00
64.797	350.486	1.903	8336.0	4667.1	220.407	0.549	1.48		Sand	0.0			331.27	0.81	268.88	268.88	0.70	0.676	0.763	1643.016	2756.874	4075.68	0.00	0.00
64.961	336.144	1.042	8357.0	4677.8	211.029	0.314	1.35		Sand	0.0			317.72	0.81	257.72	257.72	0.70	0.676	0.762	340.931	571.543	845.73	0.00	0.00
65.125	290.620	1.691	8378.0	4688.6	181.874	0.590	1.56		Sand	0.0			274.69	0.78	214.54	214.54	0.70	0.675	0.761	4.756	7.966	11.80	0.00	0.00
65.289	244.713	2.038	8399.0	4699.4	152.543	0.847	1.72		Sand	0.9			231.30	0.75	172.41	172.41	0.70	0.675	0.843	0.547	0.907	1.35	0.00	0.00
65.453	224.891	2.239	8420.0	4710.1	139.805	1.015	1.81		Sand	7.4			212.56	0.73	155.55	158.07	0.70	0.674	0.863	0.352	0.537	0.80	0.01	0.00
65.617	231.446	2.245	8441.0	4720.9	143.786	0.988	1.79		Sand	6.1			218.76	0.73	160.61	161.40	0.70	0.673	0.858	0.386	0.600	0.89	0.01	0.00
65.781	247.584	3.027	8462.0	4731.6	153.817	1.244	1.84		Sand	10.0			234.01	0.76	176.88	186.62	0.70	0.673	0.818	0.962	1.729	2.57	0.00	0.00
65.945	250.915	2.450	8483.0	4742.4	155.738	0.993	1.76		Sand	4.2			237.16	0.75	177.20	177.23	0.70	0.672	0.834	0.652	1.111	1.65	0.00	0.00
66.109	250.839	2.102	8504.0	4753.2	155.508	0.852	1.72		Sand	0.6			237.09	0.75	176.94	176.94	0.69	0.671	0.834	0.644	1.096	1.63	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
66.273	261.245	1.992	8524.9	4763.9	161.880	0.775	1.68		Sand	0.0			246.92	0.75	186.09	186.09	0.69	0.671	0.817	0.939	1.684	2.51	0.00	0.00
66.437	291.209	1.773	8545.9	4774.7	180.545	0.618	1.58		Sand	0.0			275.24	0.78	213.54	213.54	0.69	0.670	0.756	4.434	7.373	11.00	0.00	0.00
66.601	324.637	1.697	8566.9	4785.4	201.345	0.530	1.50		Sand	0.0			306.84	0.80	245.47	245.47	0.69	0.670	0.755	77.357	128.522	191.92	0.00	0.00
66.765	345.484	2.409	8587.9	4796.2	214.201	0.706	1.56		Sand	0.0			326.54	0.81	263.14	263.14	0.69	0.669	0.755	711.804	1181.543	1766.04	0.00	0.00
66.929	355.888	2.578	8608.9	4806.9	220.478	0.733	1.56		Sand	0.0			336.38	0.81	270.90	270.90	0.69	0.668	0.754	2239.850	3714.675	5557.36	0.00	0.00
67.093	365.344	2.825	8629.9	4817.7	226.149	0.782	1.58		Sand	0.0			345.32	0.80	277.94	277.94	0.69	0.668	0.753	6987.786	11578.568	17337.99	0.00	0.00
67.257	380.062	3.790	8650.9	4828.5	235.099	1.009	1.64		Sand	0.0			359.23	0.80	288.96	288.96	0.69	0.667	0.753	50994.925	84422.101	126530.79	0.00	0.00
67.421	394.846	4.057	8671.9	4839.2	244.071	1.039	1.64		Sand	0.0			373.20	0.80	300.03	300.03	0.69	0.667	0.752	#########	########	1218734.59	0.00	0.00
67.585	403.406	3.323	8692.9	4850.0	249.138	0.833	1.57		Sand	0.0			381.29	0.80	306.35	306.35	0.69	0.666	0.751	#########	########	5072161.61	0.00	0.00
67.749	396.852	2.623	8713.9	4860.7	244.768	0.668	1.50		Sand	0.0			375.10	0.80	301.20	301.20	0.69	0.665	0.751	#########	########	1575484.31	0.00	0.00
67.913	366.294	2.316	8734.9	4871.5	225.456	0.640	1.52		Sand	0.0			346.21	0.80	277.84	277.84	0.69	0.665	0.750	6879.747	11349.132	17072.02	0.00	0.00
68.077	318.833	2.137	8755.9	4882.3	195.668	0.680	1.58		Sand	0.0			301.35	0.79	238.04	238.04	0.69	0.664	0.749	35.247	58.094	87.47	0.00	0.00
68.241	267.736	2.062	8776.8	4893.0	163.687	0.783	1.68		Sand	0.0			253.06	0.75	189.76	189.76	0.68	0.664	0.804	1.112	1.965	2.96	0.00	0.00
68.406	227.338	2.415	8798.0	4903.8	138.417	1.083	1.83		Sand	9.2			214.88	0.72	155.70	162.50	0.68	0.663	0.850	0.399	0.618	0.93	0.01	0.00
68.570	193.570	2.700	8819.0	4914.6	117.316	1.427	1.96		Sand	20.0			182.96	0.74	134.83	176.53	0.68	0.662	0.828	0.635	1.068	1.61	0.00	0.00
68.734	167.683	1.304	8840.0	4925.4	101.144	0.799	1.85		Sand	10.6			158.49	0.68	107.21	116.98	0.68	0.662	0.897	0.165	0.202	0.30	0.03	0.00
68.898	151.346	1.381	8860.9	4936.1	90.918	0.940	1.93		Sand	17.0			143.05	0.69	98.29	127.25	0.68	0.661	0.888	0.189	0.243	0.37	0.02	0.00
69.062	143.644	1.960	8881.9	4946.9	86.051	1.408	2.06		Sand	27.5			135.77	0.71	96.02	147.21	0.68	0.661	0.867	0.271	0.385	0.58	0.02	0.00
69.226	154.757	2.760	8902.9	4957.6	92.813	1.836	2.11		Sand	31.9			146.27	0.72	105.92	165.23	0.68	0.660	0.844	0.432	0.680	1.03	0.01	0.00
69.390	187.235	3.183	8923.9	4968.4	112.740	1.742	2.04		Sand	25.9			176.97	0.74	131.47	186.32	0.68	0.659	0.807	0.949	1.684	2.55	0.00	0.00
69.554	238.848	3.170	8944.9	4979.1	144.413	1.353	1.88		Sand	13.6			225.75	0.75	168.71	191.97	0.68	0.659	0.795	1.237	2.162	3.28	0.00	0.00
69.718	280.479	2.997	8965.9	4989.9	169.875	1.086	1.76		Sand	4.2			265.10	0.75	199.78	199.83	0.68	0.658	0.775	1.871	3.190	4.85	0.00	0.00
69.882	310.960	3.205	8986.9	5000.7	188.426	1.046	1.72		Sand	0.7			293.91	0.78	228.32	228.32	0.68	0.658	0.742	14.146	23.091	35.11	0.00	0.00
70.046	329.088	1.194	9007.9	5011.4	199.351	0.368	1.41		Sand	0.0			311.05	0.79	245.79	245.79	0.68	0.657	0.741	80.204	130.810	199.10	0.00	0.00
70.210	345.077	1.600	9028.9	5022.2	208.941	0.470	1.46		Sand	0.0			326.16	0.80	259.66	259.66	0.68	0.656	0.741	440.941	718.530	1094.65	0.00	0.00
70.374	359.912	2.189	9049.9	5032.9	217.803	0.616	1.52		Sand	0.0			340.18	0.80	270.67	270.67	0.68	0.656	0.740	2159.059	3515.220	5360.10	0.00	0.00
70.538	373.445	2.981	9070.9	5043.7	225.849	0.808	1.59		Sand	0.0			352.97	0.80	280.68	280.68	0.67	0.655	0.739	11195.348	18211.660	27794.60	0.00	0.00
70.702	399.281	3.294	9091.9	5054.5	241.402	0.834	1.58		Sand	0.0			377.39	0.79	299.93	299.93	0.67	0.655	0.739	#########	########	1194952.64	0.00	0.00
70.866	429.747	3.556	9112.8	5065.2	259.751	0.836	1.56		Sand	0.0			406.19	0.79	322.64	322.64	0.67	0.654	0.738	#########	########	##########	0.00	0.00
71.030	461.398	4.398	9133.8	5076.0	278.784	0.963	1.58		Sand	0.0			436.10	0.79	346.21	346.21	0.67	0.653	0.738	#########	########	##########	0.00	0.00
71.194	479.863	4.486	9154.8	5086.7	289.739	0.944	1.56		Sand	0.0			453.56	0.79	359.86	359.86	0.67	0.653	0.737	#########	########	##########	0.00	0.00
71.358	479.202	4.709	9175.8	5097.5	289.025	0.992	1.58		Sand	0.0			452.93	0.79	359.17	359.17	0.67	0.652	0.736	#########	########	##########	0.00	0.00
71.522	453.353	4.707	9196.8	5108.2	272.989	1.049	1.62		Sand	0.0			428.50	0.79	339.60	339.60	0.67	0.652	0.736	#########	########	##########	0.00	0.00
71.686	401.568	4.510	9217.8	5119.0	241.227	1.136	1.68		Sand	0.0			379.55	0.79	300.64	300.64	0.67	0.651	0.735	#########	########	1395517.22	0.00	0.00
71.850	334.802	3.868	9238.8	5129.8	200.437	1.171	1.74		Sand	2.1			316.45	0.79	249.37	249.37	0.67	0.651	0.734	120.846	195.232	300.10	0.00	0.00
72.014	284.620	4.436	9259.8	5140.5	169.790	1.584	1.89		Sand	13.8			269.02	0.78	208.99	236.02	0.67	0.650	0.734	28.847	46.564	71.64	0.00	0.00
72.178	278.049	4.882	9280.8	5151.3	165.625	1.786	1.93		Sand	17.5			262.81	0.79	206.83	249.23	0.67	0.649	0.733	118.971	191.874	295.47	0.00	0.00
72.343	303.666	2.738	9301.9	5162.1	180.947	0.916	1.69		Sand	0.0			287.02	0.76	218.54	218.54	0.67	0.649	0.732	6.381	10.283	15.85	0.00	0.00
72.507	325.316	1.982	9322.9	5172.9	193.840	0.618	1.56		Sand	0.0			307.48	0.78	239.26	239.26	0.67	0.648	0.732	39.867	64.188	99.02	0.00	0.00
72.671	319.834	1.602	9343.9	5183.6	190.322	0.508	1.51		Sand	0.0			302.30	0.77	233.72	233.72	0.67	0.648	0.731	23.122	37.196	57.43	0.00	0.00
72.835	294.453	1.710	9364.9	5194.4	174.807	0.590	1.58		Sand	0.0			278.31	0.75	209.30	209.30	0.66	0.647	0.736	3.326	5.386	8.32	0.00	0.00
72.999	259.816	2.311	9385.9	5205.1	153.747	0.906	1.74		Sand	2.3			245.57	0.72	177.47	177.47	0.66	0.647	0.814	0.658	1.097	1.70	0.00	0.00
73.163	203.897	3.323	9406.9	5215.9	119.918	1.668	2.00		Sand	23.3			192.72	0.74	141.97	193.17	0.66	0.646	0.781	1.313	2.255	3.49	0.00	0.00
73.327	140.089	3.409	9427.9	5226.7	81.414	2.518	2.25		Sand	42.9			132.41	0.70	93.28	159.86	0.66	0.645	0.842	0.370	0.558	0.86	0.01	0.00
73.491	83.817	2.908	9448.8	5237.4	30.203	3.677	2.67		Clay	76.9			79.22	0.79	n.a.	n.a.	0.66	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.655	56.485	2.109	9469.8	5248.2	19.721	4.075	2.84		Clay	90.4			53.39	0.79	n.a.	n.a.	0.66	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.819	49.598	1.241	9490.8	5258.9	17.058	2.767	2.79		Clay	86.0			46.88	0.79	n.a.	n.a.	0.66	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.983	51.222	1.210	9511.8	5269.7	17.635	2.604	2.76		Clay	83.8			48.41	0.79	n.a.	n.a.	0.66	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.147	51.442	1.159	9532.8	5280.4	17.679	2.483	2.75		Clay	82.8			48.62	0.79	n.a.	n.a.	0.66	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.311	47.169	1.150	9553.8	5291.2	16.024	2.713	2.80		Clay	87.4			44.58	0.79	n.a.	n.a.	0.66	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.475	42.133	1.073	9574.8	5302.0	14.087	2.873	2.86		Clay	92.2			39.82	0.78	n.a.	n.a.	0.66	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.639	39.639	0.857	9595.8	5312.7	13.116	2.460	2.85		Clay	91.1			37.47	0.78	n.a.	n.a.	0.66	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.803	37.776	0.721	9616.8	5323.5	12.386	2.187	2.84		Clay	90.5			35.71	0.78	n.a.	n.a.	0.66	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.967	36.175	0.659	9637.8	5334.2	11.757	2.102	2.85		Clay	91.2			34.19	0.78	n.a.	n.a.	0.66	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.131	37.854	0.775	9658.8	5345.0	12.357	2.347	2.86		Clay	91.9			35.78	0.78	n.a.	n.a.	0.66	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.295	39.231	0.799	9679.8	5355.8	12.843	2.323	2.84		Clay	90.6			37.08	0.78	n.a.	n.a.	0.65	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.459	39.470	0.918	9700.8	5366.5	12.902	2.652	2.88		Clay	93.0			37.31	0.78	n.a.	n.a.	0.65	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.623	36.174	0.731	9721.7	5377.3	11.646	2.334	2.88		Clay	93.5			34.19	0.78	n.a.	n.a.	0.65	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.787	33.199	0.575	9742.7	5388.0	10.515	2.030	2.89		Clay	93.8			31.38	0.78	n.a.	n.a.	0.65	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.951	31.288	0.473	9763.7	5398.8	9.782	1.791	2.88		Clay	93.7			29.57	0.78	n.a.	n.a.	0.65	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.115	31.618	0.431	9784.7	5409.5	9.881	1.613	2.86		Clay	91.6			29.88	0.78	n.a.	n.a.	0.65	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.280	31.882	0.402	9805.8	5420.4	9.955	1.490	2.84		Clay	90.0			30.13	0.78	n.a.	n.a.	0.65	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.444	33.794	0.431	9826.8	5431.1	10.635	1.492	2.81		Clay	88.0			31.94	0.78	n.a.	n.a.	0.65	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.608	34.520	0.423	9847.8	5441.9	10.877	1.429	2.80		Clay	86.6			32.63	0.78	n.a.	n.a.	0.65	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.772	36.187	0.545	9868.8	5452.6	11.463	1.744	2.82		Clay	88.5			34.20	0.78	n.a.	n.a.	0.65	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.936	34.577	0.573	9889.8	5463.4	10.847	1.934	2.86		Clay	92.0			32.68	0.78	n.a.	n.a.	0.65	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.100	33.456	0.492	9910.8	5474.2	10.413	1.726	2.85		Clay	91.2			31.62	0.78	n.a.	n.a.	0.65	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
77.264	31.337	0.484	9931.8	5484.9	9.616	1.835	2.90		Clay	94.7			29.62	0.78	n.a.	n.a.	0.65	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.428	33.841	0.412	9952.8	5495.7	10.504	1.427	2.81		Clay	87.6			31.99	0.78	n.a.	n.a.	0.65	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.592	33.248	0.459	9973.8	5506.4	10.265	1.624	2.84		Clay	90.6			31.43	0.78	n.a.	n.a.	0.65	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.756	35.996	0.431	9994.8	5517.2	11.237	1.390	2.78		Clay	85.2			34.02	0.78	n.a.	n.a.	0.65	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.920	38.784	0.745	10015.8	5528.0	12.220	2.206	2.85		Clay	91.0			36.66	0.78	n.a.	n.a.	0.64	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.084	48.308	1.358	10036.8	5538.7	15.632	3.137	2.85		Clay	91.1			45.66	0.78	n.a.	n.a.	0.64	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.248	58.311	1.949	10057.7	5549.5	19.203	3.658	2.82		Clay	88.7			55.11	0.78	n.a.	n.a.	0.64	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.412	65.022	2.632	10078.7	5560.2	21.576	4.388	2.83		Clay	89.7			61.46	0.78	n.a.	n.a.	0.64	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.576	60.567	2.815	10099.7	5571.0	19.931	5.071	2.90		Clay	95.1			57.25	0.77	n.a.	n.a.	0.64	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.740	50.261	1.946	10120.7	5581.7	16.196	4.305	2.92		Clay	96.9			47.51	0.77	n.a.	n.a.	0.64	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.904	39.086	1.068	10141.7	5592.5	12.165	3.140	2.94		Clay	98.1			36.94	0.77	n.a.	n.a.	0.64	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.068	34.939	0.885	10162.7	5603.3	10.657	2.964	2.97		Clay	100.0			33.02	0.77	n.a.	n.a.	0.64	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.232	33.392	0.842	10183.7	5614.0	10.082	2.975	2.99		Clay	100.0			31.56	0.77	n.a.	n.a.	0.64	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.396	34.093	0.755	10204.7	5624.8	10.308	2.604	2.95		Clay	99.1			32.22	0.77	n.a.	n.a.	0.64	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.560	32.826	0.602	10225.7	5635.5	9.835	2.172	2.93		Clay	97.1			31.03	0.77	n.a.	n.a.	0.64	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.724	33.139	0.589	10246.7	5646.3	9.924	2.102	2.92		Clay	96.2			31.32	0.77	n.a.	n.a.	0.64	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.888	32.501	0.576	10267.7	5657.1	9.675	2.105	2.92		Clay	97.0			30.72	0.77	n.a.	n.a.	0.64	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.052	33.451	0.634	10288.7	5667.8	9.989	2.240	2.93		Clay	97.2			31.62	0.77	n.a.	n.a.	0.64	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.217	31.689	0.651	10309.8	5678.6	9.345	2.453	2.97		Clay	100.0			29.95	0.77	n.a.	n.a.	0.64	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.381	31.563	0.588	10330.8	5689.4	9.280	2.227	2.95		Clay	99.2			29.83	0.77	n.a.	n.a.	0.64	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.545	30.573	0.573	10351.8	5700.2	8.911	2.256	2.97		Clay	100.0			28.90	0.77	n.a.	n.a.	0.63	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.709	29.507	0.578	10372.8	5710.9	8.517	2.377	3.00		Clay	100.0			27.89	0.77	n.a.	n.a.	0.63	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.873	28.462	0.610	10393.7	5721.7	8.132	2.622	3.04		Clay	100.0			26.90	0.77	n.a.	n.a.	0.63	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.037	27.905	0.569	10414.7	5732.4	7.919	2.507	3.04		Clay	100.0			26.38	0.77	n.a.	n.a.	0.63	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.201	28.544	0.602	10435.7	5743.2	8.123	2.581	3.04		Clay	100.0			26.98	0.77	n.a.	n.a.	0.63	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.365	29.184	0.647	10456.7	5753.9	8.327	2.701	3.04		Clay	100.0			27.58	0.77	n.a.	n.a.	0.63	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.529	30.397	0.545	10477.7	5764.7	8.728	2.166	2.97		Clay	100.0			28.73	0.77	n.a.	n.a.	0.63	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.693	35.010	0.712	10498.7	5775.5	10.306	2.392	2.93		Clay	97.5			33.09	0.77	n.a.	n.a.	0.63	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.857	38.371	1.199	10519.7	5786.2	11.445	3.621	3.00		Clay	100.0			36.27	0.77	n.a.	n.a.	0.63	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.021	61.993	1.804	10540.7	5797.0	19.570	3.180	2.78		Clay	85.2			58.59	0.77	n.a.	n.a.	0.63	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.185	121.342	3.313	10561.7	5807.7	66.215	2.855	2.35		Sand	51.1			114.69	0.66	75.26	141.69	0.63	0.617	0.850	0.242	0.325	0.53	0.02	0.00
82.349	205.559	2.671	10582.7	5818.5	114.150	1.334	1.95		Sand	19.0			194.29	0.69	133.95	172.82	0.63	0.616	0.801	0.554	0.877	1.42	0.00	0.00
82.513	267.926	2.248	10603.7	5829.3	149.555	0.856	1.73		Sand	1.7			253.24	0.69	175.05	175.05	0.63	0.616	0.796	0.601	0.961	1.56	0.00	0.00
82.677	297.720	2.131	10624.7	5840.0	166.362	0.729	1.65		Sand	0.0			281.40	0.72	201.91	201.91	0.63	0.615	0.727	2.108	3.372	5.48	0.00	0.00
82.841	305.640	1.715	10645.6	5850.8	170.705	0.571	1.58		Sand	0.0			288.88	0.72	209.16	209.16	0.63	0.615	0.701	3.297	5.088	8.28	0.00	0.00
83.005	310.601	1.521	10666.6	5861.5	173.359	0.498	1.54		Sand	0.0			293.57	0.73	213.69	213.69	0.63	0.614	0.694	4.479	6.843	11.14	0.00	0.00
83.169	303.574	1.806	10687.6	5872.3	169.208	0.606	1.60		Sand	0.0			286.93	0.72	206.88	206.88	0.63	0.614	0.709	2.848	4.441	7.23	0.00	0.00
83.333	268.241	2.383	10708.6	5883.0	149.018	0.906	1.75		Sand	3.1			253.54	0.69	174.54	174.54	0.63	0.613	0.795	0.590	0.938	1.53	0.00	0.00
83.497	202.106	3.781	10729.6	5893.8	111.422	1.922	2.07		Sand	28.6			191.03	0.71	135.58	196.15	0.62	0.613	0.742	1.532	2.502	4.08	0.00	0.00
83.661	128.147	3.053	10750.6	5904.6	69.467	2.487	2.29		Sand	46.5			121.12	0.65	79.33	144.56	0.62	0.612	0.843	0.256	0.348	0.57	0.02	0.00
83.825	73.236	2.759	10771.6	5915.3	22.941	4.066	2.79		Clay	86.4			69.22	0.76	n.a.	n.a.	0.62	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.990	53.470	1.387	10792.7	5926.1	16.224	2.885	2.82		Clay	88.3			50.54	0.76	n.a.	n.a.	0.62	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.154	43.827	0.982	10813.7	5936.9	12.943	2.556	2.87		Clay	92.2			41.42	0.76	n.a.	n.a.	0.62	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.318	40.104	0.838	10834.7	5947.7	11.664	2.416	2.89		Clay	94.1			37.91	0.76	n.a.	n.a.	0.62	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.482	36.238	0.741	10855.7	5958.4	10.342	2.405	2.93		Clay	97.5			34.25	0.76	n.a.	n.a.	0.62	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.646	34.821	0.591	10876.7	5969.2	9.845	2.011	2.91		Clay	95.6			32.91	0.76	n.a.	n.a.	0.62	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.810	35.060	0.478	10897.7	5979.9	9.904	1.614	2.86		Clay	91.5			33.14	0.76	n.a.	n.a.	0.62	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.974	36.964	1.029	10918.7	5990.7	10.518	3.266	3.00		Clay	100.0			34.94	0.76	n.a.	n.a.	0.62	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.138	39.844	0.723	10939.7	6001.5	11.455	2.103	2.86		Clay	92.0			37.66	0.76	n.a.	n.a.	0.62	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.302	36.116	0.955	10960.7	6012.2	10.191	3.117	3.00		Clay	100.0			34.14	0.76	n.a.	n.a.	0.62	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.466	37.679	0.902	10981.6	6023.0	10.688	2.802	2.96		Clay	99.5			35.61	0.76	n.a.	n.a.	0.62	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.630	50.571	1.349	11002.6	6033.7	14.939	2.993	2.85		Clay	91.3			47.80	0.76	n.a.	n.a.	0.62	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.794	77.102	1.903	11023.6	6044.5	23.688	2.658	2.66		Clay	76.1			72.88	0.76	n.a.	n.a.	0.62	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.958	84.402	1.646	11044.6	6055.2	44.073	2.087	2.39		Sand	54.1			79.78	0.60	48.17	108.49	0.62	0.606	0.881	0.150	0.172	0.28	0.03	0.00
86.122	83.198	1.996	11065.6	6066.0	25.607	2.570	2.63		Clay	73.3			78.64	0.76	n.a.	n.a.	0.62	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.286	107.543	2.251	11086.6	6076.8	56.890	2.207	2.32		Sand	48.7			101.65	0.62	63.51	125.73	0.62	0.605	0.862	0.185	0.228	0.38	0.03	0.00
86.450	180.549	1.924	11107.6	6087.5	97.516	1.099	1.95		Sand	18.6			170.65	0.65	110.52	145.27	0.62	0.605	0.838	0.260	0.352	0.58	0.02	0.00
86.614	235.473	1.893	11128.6	6098.3	128.004	0.823	1.77		Sand	4.9			222.56	0.65	143.66	143.81	0.61	0.604	0.840	0.253	0.339	0.56	0.02	0.00
86.778	245.092	3.070	11149.6	6109.0	133.236	1.282	1.89		Sand	14.2			231.66	0.69	159.82	184.95	0.61	0.604	0.764	0.893	1.483	2.46	0.00	0.00
86.942	190.713	2.668	11170.6	6119.8	102.890	1.441	2.01		Sand	23.5			180.26	0.67	121.38	169.68	0.61	0.603	0.797	0.498	0.765	1.27	0.00	0.00
87.106	132.109	2.104	11191.6	6130.6	70.252	1.663	2.17		Sand	36.6			124.87	0.64	79.57	137.98	0.61	0.603	0.847	0.226	0.294	0.49	0.02	0.00
87.270	79.309	1.427	11212.6	6141.3	40.891	1.936	2.39		Sand	54.4			74.96	0.59	44.49	103.94	0.61	0.602	0.883	0.143	0.162	0.27	0.03	0.00
87.434	50.808	0.987	11233.6	6152.1	14.691	2.184	2.78		Clay	85.5			48.02	0.75	n.a.	n.a.	0.61	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.598	40.626	0.605	11254.5	6162.8	11.358	1.729	2.82		Clay	88.6			38.40	0.75	n.a.	n.a.	0.61	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.762	37.855	0.549	11275.5	6173.6	10.437	1.704	2.85		Clay	90.9			35.78	0.75	n.a.	n.a.	0.61	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.927	39.885	0.812	11296.7	6184.4	11.072	2.372	2.90		Clay	95.3			37.70	0.75	n.a.	n.a.	0.61	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.091	40.607	0.745	11317.6	6195.2	11.282	2.132	2.87		Clay	92.7			38.38	0.75	n.a.	n.a.	0.61	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
88.255	38.156	0.672	11338.6	6205.9	10.470	2.069	2.89		Clay	94.3			36.06	0.75	n.a.	n.a.	0.61	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.419	35.320	0.549	11359.6	6216.7	9.536	1.852	2.90		Clay	95.1			33.38	0.75	n.a.	n.a.	0.61	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.583	34.602	0.542	11380.6	6227.4	9.285	1.875	2.91		Clay	96.1			32.71	0.75	n.a.	n.a.	0.61	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.747	35.784	0.749	11401.6	6238.2	9.645	2.490	2.96		Clay	100.0			33.82	0.75	n.a.	n.a.	0.61	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.911	37.962	0.653	11422.6	6249.0	10.322	2.025	2.89		Clay	94.3			35.88	0.75	n.a.	n.a.	0.61	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.075	37.626	0.586	11443.6	6259.7	10.193	1.837	2.87		Clay	93.0			35.56	0.75	n.a.	n.a.	0.61	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.239	36.424	0.401	11464.6	6270.5	9.789	1.307	2.82		Clay	88.3			34.43	0.75	n.a.	n.a.	0.61	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.403	33.037	0.406	11485.6	6281.2	8.691	1.487	2.89		Clay	94.1			31.23	0.75	n.a.	n.a.	0.61	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.567	31.936	0.484	11506.6	6292.0	8.323	1.849	2.95		Clay	99.1			30.19	0.75	n.a.	n.a.	0.61	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.731	34.940	0.349	11527.6	6302.8	9.258	1.196	2.82		Clay	88.6			33.02	0.75	n.a.	n.a.	0.61	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.895	35.627	0.373	11548.6	6313.5	9.457	1.249	2.82		Clay	88.6			33.67	0.75	n.a.	n.a.	0.60	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.059	36.315	0.076	11569.6	6324.3	16.692	0.249	2.33		Sand	49.4			34.32	0.53	18.25	68.89	0.60	0.595	0.909	0.106	0.111	0.19	0.05	0.00
90.223	33.685	0.915	11590.5	6335.0	8.805	3.281	3.06		Clay	100.0			31.84	0.75	n.a.	n.a.	0.60	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.387	36.698	1.302	11611.5	6345.8	9.736	4.215	3.09		Clay	100.0			34.69	0.75	n.a.	n.a.	0.60	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.551	53.107	1.365	11632.5	6356.5	14.879	2.886	2.85		Clay	90.7			50.20	0.75	n.a.	n.a.	0.60	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.715	74.663	1.620	11653.5	6367.3	21.622	2.353	2.66		Clay	76.0			70.57	0.75	n.a.	n.a.	0.60	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.879	84.172	1.871	11674.5	6378.1	24.564	2.388	2.62		Clay	72.8			79.56	0.75	n.a.	n.a.	0.60	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.043	74.113	1.353	11695.5	6388.8	21.370	1.982	2.62		Clay	72.9			70.05	0.75	n.a.	n.a.	0.60	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.207	54.818	1.122	11716.5	6399.6	15.301	2.292	2.78		Clay	85.3			51.81	0.75	n.a.	n.a.	0.60	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.371	42.499	0.892	11737.5	6410.3	11.428	2.435	2.90		Clay	94.8			40.17	0.75	n.a.	n.a.	0.60	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.535	37.161	0.684	11758.5	6421.1	9.743	2.187	2.93		Clay	97.5			35.12	0.75	n.a.	n.a.	0.60	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.699	37.744	0.778	11779.5	6431.9	9.905	2.442	2.95		Clay	99.1			35.67	0.75	n.a.	n.a.	0.60	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.864	41.558	0.920	11800.6	6442.7	11.069	2.580	2.92		Clay	96.9			39.28	0.75	n.a.	n.a.	0.60	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.028	43.216	0.965	11821.6	6453.4	11.561	2.587	2.91		Clay	95.7			40.85	0.75	n.a.	n.a.	0.60	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.192	42.180	0.775	11842.6	6464.2	11.218	2.137	2.87		Clay	92.9			39.87	0.74	n.a.	n.a.	0.60	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.356	38.885	0.968	11863.6	6475.0	10.179	2.937	2.99		Clay	100.0			36.75	0.74	n.a.	n.a.	0.60	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.520	55.192	1.332	11884.6	6485.7	15.187	2.705	2.82		Clay	88.8			52.17	0.74	n.a.	n.a.	0.60	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.684	102.035	2.801	11905.6	6496.5	29.580	2.915	2.61		Clay	72.1			96.44	0.74	n.a.	n.a.	0.60	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.848	201.217	3.529	11926.5	6507.2	105.238	1.807	2.07		Sand	28.5			190.19	0.68	128.95	187.96	0.60	0.589	0.742	1.022	1.668	2.83	0.00	0.00
93.012	312.398	2.129	11947.5	6518.0	165.021	0.695	1.64		Sand	0.0			295.27	0.70	205.47	205.47	0.60	0.589	0.684	2.608	3.928	6.67	0.00	0.00
93.176	393.774	2.081	11968.5	6528.7	208.667	0.537	1.49		Sand	0.0			372.19	0.74	276.48	276.48	0.60	0.588	0.662	5479.662	7980.505	13568.16	0.00	0.00
93.340	412.061	2.147	11989.5	6539.5	218.322	0.529	1.47		Sand	0.0			389.47	0.74	289.20	289.20	0.60	0.588	0.661	53345.164	77633.201	132069.80	0.00	0.00
93.504	402.616	1.856	12010.5	6550.3	213.063	0.468	1.45		Sand	0.0			380.54	0.74	282.45	282.45	0.60	0.587	0.661	15271.054	22207.393	37802.26	0.00	0.00
93.668	396.531	2.695	12031.5	6561.0	209.616	0.690	1.56		Sand	0.0			374.79	0.74	278.06	278.06	0.59	0.587	0.661	7131.263	10362.665	17650.39	0.00	0.00
93.832	389.593	2.050	12052.5	6571.8	205.718	0.534	1.50		Sand	0.0			368.24	0.74	273.07	273.07	0.59	0.587	0.660	3149.527	4573.272	7794.20	0.00	0.00
93.996	360.394	2.566	12073.5	6582.5	189.896	0.724	1.61		Sand	0.0			340.64	0.74	251.79	251.79	0.59	0.586	0.660	161.398	234.183	399.36	0.00	0.00
94.160	281.432	3.284	12094.5	6593.3	147.455	1.193	1.84		Sand	10.0			266.00	0.68	180.08	189.87	0.59	0.586	0.733	1.117	1.803	3.08	0.00	0.00
94.324	189.345	3.733	12115.5	6604.1	98.062	2.037	2.13		Sand	33.1			178.97	0.67	119.91	183.71	0.59	0.586	0.750	0.847	1.367	2.33	0.00	0.00
94.488	108.127	2.877	12136.5	6614.8	54.559	2.819	2.41		Sand	55.5			102.20	0.60	61.52	126.03	0.59	0.585	0.851	0.186	0.227	0.39	0.03	0.00
94.652	70.936	2.076	12157.5	6625.6	19.578	3.201	2.78		Clay	85.3			67.05	0.74	n.a.	n.a.	0.59	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.816	61.145	1.276	12178.4	6636.3	16.592	2.318	2.75		Clay	83.2			57.79	0.74	n.a.	n.a.	0.59	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.980	58.409	1.255	12199.4	6647.1	15.739	2.399	2.78		Clay	85.4			55.21	0.74	n.a.	n.a.	0.59	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.144	61.539	1.461	12220.4	6657.8	16.651	2.636	2.78		Clay	85.7			58.17	0.74	n.a.	n.a.	0.59	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.308	58.556	1.171	12241.4	6668.6	15.726	2.233	2.76		Clay	84.0			55.35	0.74	n.a.	n.a.	0.59	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.472	52.933	1.034	12262.4	6679.4	14.014	2.209	2.80		Clay	87.1			50.03	0.74	n.a.	n.a.	0.59	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.636	46.567	0.737	12283.4	6690.1	12.085	1.823	2.81		Clay	87.8			44.01	0.74	n.a.	n.a.	0.59	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.801	43.816	0.638	12304.5	6700.9	11.241	1.694	2.82		Clay	88.6			41.41	0.74	n.a.	n.a.	0.59	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.965	46.244	0.627	12325.5	6711.7	11.944	1.564	2.78		Clay	85.4			43.71	0.74	n.a.	n.a.	0.59	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.129	43.700	0.593	12346.5	6722.5	11.165	1.580	2.81		Clay	87.6			41.30	0.74	n.a.	n.a.	0.59	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.293	41.808	0.522	12367.5	6733.2	10.582	1.465	2.81		Clay	87.9			39.52	0.74	n.a.	n.a.	0.59	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.457	37.704	0.571	12388.5	6744.0	9.345	1.812	2.90		Clay	95.3			35.64	0.74	n.a.	n.a.	0.59	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.621	35.738	0.563	12409.5	6754.7	8.744	1.906	2.94		Clay	98.2			33.78	0.74	n.a.	n.a.	0.59	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.785	34.927	0.552	12430.5	6765.5	8.488	1.923	2.95		Clay	99.2			33.01	0.74	n.a.	n.a.	0.59	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.949	35.096	0.515	12451.5	6776.3	8.521	1.784	2.93		Clay	97.8			33.17	0.74	n.a.	n.a.	0.59	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.113	35.689	0.515	12472.5	6787.0	8.679	1.749	2.92		Clay	96.9			33.73	0.74	n.a.	n.a.	0.59	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.277	35.229	0.556	12493.5	6797.8	8.527	1.918	2.95		Clay	99.1			33.30	0.73	n.a.	n.a.	0.59	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.441	36.124	0.494	12514.4	6808.5	8.773	1.654	2.91		Clay	95.6			34.14	0.73	n.a.	n.a.	0.59	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.605	36.463	0.475	12535.4	6819.3	8.856	1.573	2.89		Clay	94.5			34.46	0.73	n.a.	n.a.	0.59	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.769	37.334	0.523	12556.4	6830.0	9.094	1.684	2.90		Clay	94.8			35.29	0.73	n.a.	n.a.	0.59	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.933	38.451	0.521	12577.4	6840.8	9.403	1.620	2.88		Clay	93.2			36.34	0.73	n.a.	n.a.	0.58	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.097	39.658	0.538	12598.4	6851.6	9.738	1.613	2.86		Clay	92.0			37.48	0.73	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.261	40.140	0.621	12619.4	6862.3	9.860	1.836	2.89		Clay	93.9			37.94	0.73	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.425	39.852	0.661	12640.4	6873.1	9.757	1.971	2.91		Clay	95.5			37.67	0.73	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.589	39.884	0.695	12661.4	6883.8	9.748	2.071	2.92		Clay	96.5			37.70	0.73	n.a.	n.a.	0.58	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.753	40.201	0.738	12682.4	6894.6	9.822	2.180	2.93		Clay	97.2			38.00	0.73	n.a.	n.a.	0.58	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.917	39.927	0.704	12703.4	6905.4	9.724	2.097	2.92		Clay	96.8			37.74	0.73	n.a.	n.a.	0.58	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.081	38.974	0.693	12724.4	6916.1	9.431	2.125	2.94		Clay	97.9			36.84	0.73	n.a.	n.a.	0.58	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
99.245	37.838	0.713	12745.4	6926.9	9.085	2.266	2.96		Clay	100.0			35.76	0.73	n.a.	n.a.	0.58	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.409	37.091	0.628	12766.4	6937.6	8.853	2.045	2.95		Clay	99.1			35.06	0.73	n.a.	n.a.	0.58	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.573	36.268	0.611	12787.3	6948.4	8.599	2.045	2.96		Clay	99.9			34.28	0.73	n.a.	n.a.	0.58	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.738	35.342	0.560	12808.5	6959.2	8.316	1.935	2.96		Clay	100.0			33.40	0.73	n.a.	n.a.	0.58	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.902	34.351	0.710	12829.5	6970.0	8.016	2.541	3.04		Clay	100.0			32.47	0.73	n.a.	n.a.	0.58	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.066	34.654	0.654	12850.4	6980.7	8.088	2.317	3.01		Clay	100.0			32.75	0.73	n.a.	n.a.	0.58	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.230	35.632	0.577	12871.4	6991.5	8.352	1.976	2.96		Clay	100.0			33.68	0.73	n.a.	n.a.	0.58	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.394	36.394	0.550	12892.4	7002.2	8.554	1.837	2.94		Clay	98.2			34.40	0.73	n.a.	n.a.	0.58	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.558	37.430	0.545	12913.4	7013.0	8.833	1.760	2.92		Clay	96.5			35.38	0.73	n.a.	n.a.	0.58	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.722	38.934	0.546	12934.4	7023.8	9.245	1.682	2.89		Clay	94.3			36.80	0.73	n.a.	n.a.	0.58	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.886	39.379	0.512	12955.4	7034.5	9.354	1.556	2.87		Clay	92.6			37.22	0.73	n.a.	n.a.	0.58	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.050	37.762	0.423	12976.4	7045.3	8.878	1.353	2.86		Clay	91.9			35.69	0.73	n.a.	n.a.	0.58	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.214	35.590	0.398	12997.4	7056.0	8.246	1.368	2.89		Clay	94.3			33.64	0.73	n.a.	n.a.	0.58	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.378	34.884	0.365	13018.4	7066.8	8.030	1.286	2.89		Clay	94.1			32.97	0.73	n.a.	n.a.	0.58	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.542	35.259	0.367	13039.4	7077.6	8.121	1.277	2.88		Clay	93.7			33.33	0.73	n.a.	n.a.	0.58	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.706	35.437	0.411	13060.4	7088.3	8.156	1.422	2.90		Clay	95.3			33.49	0.73	n.a.	n.a.	0.58	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
101.870	35.529	0.425	13081.4	7099.1	8.167	1.466	2.91		Clay	95.8			33.58	0.73	n.a.	n.a.	0.58	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.034	35.544	0.448	13102.4	7109.8	8.156	1.545	2.92		Clay	96.7			33.60	0.73	n.a.	n.a.	0.58	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.198	35.409	0.454	13123.3	7120.6	8.103	1.574	2.93		Clay	97.2			33.47	0.73	n.a.	n.a.	0.58	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.362	34.385	0.423	13144.3	7131.3	7.800	1.521	2.93		Clay	97.8			32.50	0.73	n.a.	n.a.	0.58	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.526	33.342	0.394	13165.3	7142.1	7.493	1.472	2.94		Clay	98.5			31.51	0.73	n.a.	n.a.	0.58	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.690	34.301	0.335	13186.3	7152.9	7.747	1.209	2.89		Clay	94.3			32.42	0.73	n.a.	n.a.	0.58	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
102.854	34.809	0.324	13207.3	7163.6	7.875	1.149	2.87		Clay	93.0			32.90	0.72	n.a.	n.a.	0.58	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.018	35.090	0.328	13228.3	7174.4	7.938	1.152	2.87		Clay	92.8			33.17	0.72	n.a.	n.a.	0.58	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.182	34.696	0.404	13249.3	7185.1	7.814	1.439	2.92		Clay	96.8			32.79	0.72	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.346	37.796	0.398	13270.3	7195.9	8.661	1.277	2.86		Clay	91.7			35.72	0.72	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.510	39.711	0.439	13291.3	7206.7	9.176	1.328	2.84		Clay	90.6			37.53	0.72	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.675	40.449	0.519	13312.4	7217.5	9.364	1.536	2.87		Clay	92.4			38.23	0.72	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
103.839	38.784	0.590	13333.4	7228.2	8.887	1.837	2.93		Clay	97.1			36.66	0.72	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.003	38.364	0.602	13354.4	7239.0	8.754	1.900	2.94		Clay	98.1			36.26	0.72	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.167	39.940	0.624	13375.4	7249.8	9.173	1.877	2.92		Clay	96.5			37.75	0.72	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.331	42.059	0.689	13396.4	7260.5	9.741	1.948	2.90		Clay	95.4			39.75	0.72	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.495	43.819	0.648	13417.4	7271.3	10.207	1.746	2.86		Clay	92.0			41.42	0.72	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.659	42.582	0.284	13438.4	7282.0	9.850	0.792	2.72		Clay	80.4			40.25	0.72	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.823	39.648	0.291	13459.3	7292.8	9.028	0.884	2.77		Clay	84.7			37.47	0.72	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
104.987	36.881	1.061	13480.3	7303.5	8.254	3.520	3.10		Clay	100.0			34.86	0.72	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.151	38.582	0.987	13501.3	7314.3	8.704	3.101	3.05		Clay	100.0			36.47	0.72	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.315	40.310	0.880	13522.3	7325.1	9.160	2.623	3.00		Clay	100.0			38.10	0.72	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.479	41.047	0.764	13543.3	7335.8	9.345	2.229	2.95		Clay	99.0			38.80	0.72	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.643	37.351	0.491	13564.3	7346.6	8.322	1.606	2.92		Clay	96.7			35.30	0.72	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.807	35.741	0.477	13585.3	7357.3	7.869	1.648	2.95		Clay	98.8			33.78	0.72	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
105.971	35.721	0.455	13606.3	7368.1	7.849	1.573	2.94		Clay	98.1			33.76	0.72	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.135	36.707	0.483	13627.3	7378.9	8.102	1.616	2.93		Clay	97.6			34.69	0.72	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.299	36.673	0.494	13648.3	7389.6	8.079	1.655	2.94		Clay	98.1			34.66	0.72	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.463	35.720	0.535	13669.3	7400.4	7.806	1.852	2.98		Clay	100.0			33.76	0.72	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.627	34.692	0.544	13690.3	7411.1	7.515	1.954	3.00		Clay	100.0			32.79	0.72	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.791	33.970	0.571	13711.2	7421.9	7.307	2.106	3.03		Clay	100.0			32.11	0.72	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
106.955	34.139	0.547	13732.2	7432.6	7.339	2.006	3.02		Clay	100.0			32.27	0.72	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.119	34.550	0.570	13753.2	7443.4	7.436	2.060	3.02		Clay	100.0			32.66	0.72	n.a.	n.a.	0.57	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.283	34.599	0.578	13774.2	7454.2	7.435	2.086	3.02		Clay	100.0			32.70	0.72	n.a.	n.a.	0.57	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.448	33.902	0.550	13795.3	7465.0	7.235	2.037	3.03		Clay	100.0			32.04	0.72	n.a.	n.a.	0.57	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.612	33.218	0.492	13816.3	7475.7	7.039	1.870	3.02		Clay	100.0			31.40	0.72	n.a.	n.a.	0.57	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.776	32.914	0.427	13837.3	7486.5	6.945	1.643	2.99		Clay	100.0			31.11	0.72	n.a.	n.a.	0.57	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
107.940	33.172	0.447	13858.3	7497.3	7.001	1.703	3.00		Clay	100.0			31.35	0.72	n.a.	n.a.	0.57	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.104	34.140	0.563	13879.3	7508.0	7.246	2.070	3.03		Clay	100.0			32.27	0.72	n.a.	n.a.	0.57	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.268	36.106	0.878	13900.3	7518.8	7.755	3.011	3.09		Clay	100.0			34.13	0.72	n.a.	n.a.	0.57	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.432	39.529	1.032	13921.3	7529.5	8.651	3.169	3.06		Clay	100.0			37.36	0.72	n.a.	n.a.	0.57	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.596	47.249	1.411	13942.3	7540.3	10.683	3.503	3.01		Clay	100.0			44.66	0.72	n.a.	n.a.	0.57	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.760	51.271	1.350	13963.3	7551.1	11.731	3.048	2.94		Clay	98.5			48.46	0.71	n.a.	n.a.	0.57	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.924	49.732	0.770	13984.3	7561.8	11.304	1.802	2.83		Clay	89.5			47.01	0.71	n.a.	n.a.	0.57	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.088	41.754	0.560	14005.3	7572.6	9.178	1.611	2.88		Clay	93.8			39.47	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.252	36.639	0.506	14026.3	7583.3	7.813	1.708	2.96		Clay	99.7			34.63	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.416	35.995	0.506	14047.2	7594.1	7.630	1.747	2.97		Clay	100.0			34.02	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.580	37.203	0.525	14068.2	7604.8	7.934	1.740	2.96		Clay	99.5			35.16	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.744	37.390	0.560	14089.2	7615.6	7.969	1.845	2.97		Clay	100.0			35.34	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
109.908	36.869	0.649	14110.2	7626.4	7.819	2.177	3.01		Clay	100.0			34.85	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.072	35.736	0.677	14131.2	7637.1	7.508	2.361	3.04		Clay	100.0			33.78	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
110.236	35.668	0.717	14152.2	7647.9	7.477	2.508	3.06		Clay	100.0			33.71	0.71	n.a.	n.a.	0.57	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.400	36.094	0.672	14173.2	7658.6	7.575	2.317	3.04		Clay	100.0			34.12	0.71	n.a.	n.a.	0.57	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.564	36.608	0.690	14194.2	7669.4	7.696	2.338	3.03		Clay	100.0			34.60	0.71	n.a.	n.a.	0.57	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.728	37.511	0.697	14215.2	7680.2	7.917	2.293	3.02		Clay	100.0			35.45	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
110.892	38.143	0.745	14236.2	7690.9	8.068	2.401	3.02		Clay	100.0			36.05	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.056	39.293	0.684	14257.2	7701.7	8.353	2.127	2.98		Clay	100.0			37.14	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.220	40.065	0.728	14278.2	7712.4	8.538	2.211	2.98		Clay	100.0			37.87	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.385	40.743	0.712	14299.3	7723.3	8.699	2.119	2.97		Clay	100.0			38.51	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.549	40.544	0.624	14320.3	7734.0	8.633	1.869	2.94		Clay	98.2			38.32	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.713	39.740	0.576	14341.3	7744.8	8.411	1.769	2.94		Clay	98.0			37.56	0.71	n.a.	n.a.	0.56	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
111.877	39.903	0.693	14362.3	7755.5	8.438	2.118	2.98		Clay	100.0			37.72	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.041	41.744	0.774	14383.2	7766.3	8.898	2.240	2.97		Clay	100.0			39.46	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.205	49.449	1.235	14404.2	7777.0	10.865	2.923	2.96		Clay	99.9			46.74	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.369	64.457	2.040	14425.2	7787.8	14.701	3.564	2.91		Clay	95.4			60.92	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.533	85.558	2.752	14446.2	7798.6	20.090	3.513	2.80		Clay	86.6			80.87	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.697	100.195	3.178	14467.2	7809.3	23.808	3.419	2.73		Clay	81.5			94.70	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
112.861	106.045	3.034	14488.2	7820.1	25.269	3.071	2.68		Clay	77.5			100.23	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
113.025	90.584	1.898	14509.2	7830.8	21.282	2.278	2.66		Clay	75.8			85.62	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
113.189	68.950	1.479	14530.2	7841.6	15.733	2.398	2.78		Clay	85.4			65.17	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
113.353	45.883	1.145	14551.2	7852.4	9.833	2.966	3.00		Clay	100.0			43.37	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
113.517	36.727	0.698	14572.2	7863.1	7.488	2.371	3.05		Clay	100.0			34.71	0.71	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
113.681	34.643	0.518	14593.2	7873.9	6.946	1.894	3.02		Clay	100.0			32.74	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
113.845	35.244	0.581	14614.2	7884.6	7.086	2.080	3.04		Clay	100.0			33.31	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.009	36.347	0.588	14635.2	7895.4	7.354	2.026	3.02		Clay	100.0			34.35	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.173	37.409	0.596	14656.1	7906.1	7.610	1.981	3.00		Clay	100.0			35.36	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.337	38.091	0.626	14677.1	7916.9	7.769	2.036	3.00		Clay	100.0			36.00	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.501	38.301	0.645	14698.1	7927.7	7.809	2.084	3.00		Clay	100.0			36.20	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.665	37.701	0.564	14719.1	7938.4	7.644	1.859	2.98		Clay	100.0			35.63	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.829	36.489	0.569	14740.1	7949.2	7.326	1.954	3.01		Clay	100.0			34.49	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.993	36.447	1.216	14761.1	7959.9	7.303	4.184	3.19		Clay	100.0			34.45	0.71	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.157	44.696	1.251	14782.1	7970.7	9.361	3.353	3.05		Clay	100.0			42.25	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.322	52.914	1.309	14803.2	7981.5	11.404	2.876	2.94		Clay	98.2			50.01	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.486	56.897	1.400	14824.2	7992.3	12.383	2.829	2.91		Clay	95.5			53.78	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.650	51.816	1.254	14845.2	8003.0	11.094	2.825	2.94		Clay	98.6			48.98	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.814	47.590	1.287	14866.2	8013.8	10.022	3.205	3.01		Clay	100.0			44.98	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.978	46.346	1.032	14887.2	8024.6	9.696	2.653	2.98		Clay	100.0			43.81	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.142	45.260	0.953	14908.2	8035.3	9.410	2.521	2.98		Clay	100.0			42.78	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.306	43.118	0.811	14929.2	8046.1	8.862	2.275	2.97		Clay	100.0			40.75	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.470	41.102	0.721	14950.2	8056.8	8.347	2.144	2.98		Clay	100.0			38.85	0.70	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.634	40.348	0.672	14971.2	8067.6	8.147	2.045	2.98		Clay	100.0			38.14	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.798	39.369	0.646	14992.1	8078.3	7.891	2.027	2.99		Clay	100.0			37.21	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.962	37.913	0.734	15013.1	8089.1	7.518	2.414	3.05		Clay	100.0			35.83	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.126	36.341	0.624	15034.1	8099.9	7.117	2.165	3.04		Clay	100.0			34.35	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.290	35.521	0.616	15055.1	8110.6	6.903	2.201	3.06		Clay	100.0			33.57	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.454	34.957	0.565	15076.1	8121.4	6.752	2.061	3.05		Clay	100.0			33.04	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.618	35.173	0.653	15097.1	8132.1	6.794	2.364	3.08		Clay	100.0			33.24	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.782	41.810	1.091	15118.1	8142.9	8.412	3.185	3.07		Clay	100.0			39.52	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.946	56.374	1.545	15139.1	8153.7	11.971	3.166	2.95		Clay	98.7			53.28	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.110	64.548	1.384	15160.1	8164.4	13.955	2.429	2.83		Clay	89.1			61.01	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.274	71.109	1.919	15181.1	8175.2	15.539	3.021	2.84		Clay	90.4			67.21	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.438	90.804	2.328	15202.1	8185.9	20.328	2.798	2.73		Clay	81.4			85.83	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.602	104.785	2.838	15223.1	8196.7	23.710	2.921	2.69		Clay	78.1			99.04	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.766	99.082	2.455	15244.0	8207.4	22.287	2.684	2.69		Clay	78.0			93.65	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.930	67.593	1.993	15265.0	8218.2	14.592	3.324	2.89		Clay	94.2			63.89	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.094	53.491	1.829	15286.0	8229.0	11.143	3.989	3.03		Clay	100.0			50.56	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.259	60.472	2.058	15307.2	8239.8	12.820	3.896	2.98		Clay	100.0			57.16	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.423	84.041	2.891	15328.1	8250.5	18.514	3.785	2.84		Clay	90.5			79.43	0.70	n.a.	n.a.	0.56	0.559	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.587	136.840	3.262	15349.1	8261.3	61.787	2.525	2.33		Sand	49.8			129.34	0.56	72.59	137.72	0.56	0.559	0.804	0.225	0.278	0.50	0.02	0.00
119.751	204.710	3.884	15370.1	8272.1	94.186	1.971	2.13		Sand	33.3			193.49	0.62	119.77	183.75	0.56	0.559	0.700	0.848	1.279	2.29	0.00	0.00
119.915	277.208	2.983	15391.1	8282.8	128.754	1.107	1.86		Sand	11.6			262.01	0.61	158.97	173.83	0.56	0.559	0.728	0.575	0.833	1.49	0.00	0.00
120.079	310.307	2.813	15412.1	8293.6	144.468	0.930	1.77		Sand	4.5			293.30	0.61	180.14	180.22	0.56	0.559	0.710	0.733	1.089	1.95	0.00	0.00
120.243	331.950	2.740	15433.1	8304.3	154.695	0.845	1.72		Sand	0.5			313.75	0.64	199.93	199.93	0.56	0.559	0.641	1.882	2.654	4.74	0.00	0.00
120.407	335.169	2.747	15454.1	8315.1	156.125	0.839	1.71		Sand	0.1			316.79	0.64	202.85	202.85	0.56	0.559	0.628	2.227	3.078	5.50	0.00	0.00
120.571	347.086	3.532	15475.1	8325.9	161.698	1.041	1.77		Sand	4.4			328.06	0.65	214.29	214.36	0.56	0.559	0.589	4.696	6.085	10.88	0.00	0.00
120.735	350.525	4.333	15496.1	8336.6	163.226	1.264	1.82		Sand	8.9			331.31	0.67	221.76	229.01	0.56	0.559	0.589	15.023	19.456	34.77	0.00	0.00
120.899	350.169	5.647	15517.1	8347.4	162.946	1.649	1.91		Sand	15.8			330.97	0.70	230.43	268.08	0.56	0.560	0.588	1456.662	1885.217	3369.26	0.00	0.00
121.063	349.944	6.119	15538.1	8358.1	162.729	1.788	1.94		Sand	18.0			330.76	0.70	230.21	276.99	0.56	0.560	0.588	5963.961	7713.507	13784.69	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
121.227	352.194	6.020	15559.1	8368.9	163.689	1.748	1.93		Sand	17.2			332.89	0.70	231.61	275.52	0.56	0.560	0.588	4676.036	6043.795	10800.02	0.00	0.00
121.391	344.340	4.261	15580.0	8379.6	159.849	1.266	1.83		Sand	9.5			325.46	0.66	216.11	225.12	0.56	0.560	0.587	10.758	13.895	24.83	0.00	0.00
121.555	293.111	3.392	15601.0	8390.4	135.425	1.189	1.86		Sand	12.0			277.04	0.62	172.64	189.82	0.56	0.560	0.677	1.115	1.661	2.97	0.00	0.00
121.719	225.941	2.680	15622.0	8401.2	103.471	1.229	1.96		Sand	19.6			213.55	0.59	126.97	166.54	0.56	0.560	0.744	0.450	0.630	1.13	0.01	0.00
121.883	157.507	3.526	15643.0	8411.9	70.958	2.356	2.27		Sand	44.7			148.87	0.57	85.59	151.34	0.56	0.560	0.777	0.298	0.389	0.70	0.02	0.00
122.047	113.700	3.650	15664.0	8422.7	25.139	3.448	2.72		Clay	80.2			107.47	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.211	77.190	2.627	15685.0	8433.4	16.446	3.788	2.88		Clay	93.7			72.96	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.375	116.140	1.782	15706.0	8444.2	51.235	1.646	2.27		Sand	44.8			109.77	0.53	57.80	116.57	0.56	0.560	0.832	0.164	0.186	0.33	0.03	0.00
122.539	119.965	1.824	15727.0	8455.0	53.006	1.627	2.26		Sand	43.6			113.39	0.53	60.01	118.69	0.56	0.560	0.829	0.168	0.192	0.34	0.03	0.00
122.703	136.861	3.273	15748.0	8465.7	60.952	2.537	2.34		Sand	50.2			129.36	0.55	71.69	136.79	0.56	0.560	0.802	0.221	0.271	0.48	0.02	0.00
122.867	99.438	3.019	15769.0	8476.5	21.602	3.298	2.75		Clay	83.3			93.99	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.031	126.528	4.839	15790.0	8487.2	27.956	4.079	2.73		Clay	81.3			119.59	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.196	148.471	6.224	15811.1	8498.1	33.082	4.428	2.70		Clay	79.0			140.33	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.360	157.191	6.803	15832.1	8508.8	35.087	4.557	2.69		Clay	78.2			148.57	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.524	138.895	6.036	15853.1	8519.6	30.745	4.609	2.73		Clay	81.8			131.28	0.69	n.a.	n.a.	0.56	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.688	115.770	4.385	15874.1	8530.3	25.282	4.066	2.76		Clay	83.8			109.42	0.69	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.852	99.488	3.552	15895.1	8541.1	21.435	3.880	2.80		Clay	87.1			94.03	0.69	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.016	91.587	3.172	15916.0	8551.8	19.558	3.793	2.83		Clay	89.0			86.57	0.69	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.180	83.980	3.051	15937.0	8562.6	17.754	4.014	2.87		Clay	92.9			79.38	0.69	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.344	80.286	2.894	15958.0	8573.4	16.868	4.002	2.89		Clay	94.2			75.88	0.69	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.508	127.908	4.244	15979.0	8584.1	27.940	3.539	2.69		Clay	78.0			120.90	0.69	n.a.	n.a.	0.56	0.561	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.672	244.498	5.292	16000.0	8594.9	110.912	2.238	2.12		Sand	32.6			231.09	0.65	151.25	221.13	0.56	0.561	0.580	7.789	9.930	17.70	0.00	0.00
124.836	377.157	3.034	16021.0	8605.6	173.013	0.822	1.67		Sand	0.0			356.48	0.68	241.24	241.24	0.56	0.561	0.579	48.969	62.391	111.19	0.00	0.00
125.000	447.698	3.790	16042.0	8616.4	205.941	0.862	1.63		Sand	0.0			423.16	0.69	292.16	292.16	0.56	0.561	0.579	95274.422	########	216151.30	0.00	0.00
125.164	441.812	3.106	16063.0	8627.2	203.052	0.716	1.58		Sand	0.0			417.59	0.69	288.22	288.22	0.56	0.561	0.578	44249.372	56304.855	100306.49	0.00	0.00
125.328	408.573	3.320	16084.0	8637.9	187.372	0.829	1.65		Sand	0.0			386.17	0.69	266.45	266.45	0.56	0.561	0.578	1144.979	1455.980	2593.33	0.00	0.00
125.492	381.709	3.839	16105.0	8648.7	174.691	1.027	1.74		Sand	2.1			360.78	0.68	245.51	245.51	0.56	0.562	0.578	77.716	98.761	175.88	0.00	0.00
125.656	366.617	4.680	16126.0	8659.4	167.526	1.305	1.83		Sand	9.1			346.52	0.68	234.72	242.87	0.56	0.562	0.577	58.209	73.924	131.62	0.00	0.00
125.820	369.037	4.730	16147.0	8670.2	168.547	1.310	1.83		Sand	9.1			348.81	0.68	237.03	245.07	0.56	0.562	0.577	74.036	93.964	167.27	0.00	0.00
125.984	401.338	4.014	16168.0	8681.0	183.511	1.021	1.72		Sand	0.8			379.34	0.69	261.39	261.39	0.56	0.562	0.577	558.119	707.885	1259.86	0.00	0.00
126.148	436.680	2.477	16188.9	8691.7	199.874	0.578	1.53		Sand	0.0			412.74	0.69	284.31	284.31	0.56	0.562	0.576	21374.260	27092.392	48207.73	0.00	0.00
126.312	463.773	2.499	16209.9	8702.5	212.373	0.548	1.49		Sand	0.0			438.35	0.69	301.86	301.86	0.56	0.562	0.576	#########	########	1654403.84	0.00	0.00
126.476	465.047	3.967	16230.9	8713.2	212.830	0.868	1.63		Sand	0.0			439.55	0.69	302.59	302.59	0.56	0.562	0.575	#########	########	1945496.63	0.00	0.00
126.640	459.622	5.087	16251.9	8724.0	210.169	1.127	1.71		Sand	0.0			434.43	0.69	298.96	298.96	0.56	0.562	0.575	#########	########	876743.69	0.00	0.00
126.804	460.732	5.373	16272.9	8734.7	210.551	1.187	1.73		Sand	1.3			435.47	0.69	299.58	299.58	0.56	0.562	0.575	#########	########	1002422.17	0.00	0.00
126.969	468.167	4.439	16294.0	8745.6	213.872	0.965	1.66		Sand	0.0			442.50	0.69	304.32	304.32	0.56	0.563	0.574	#########	########	2870690.70	0.00	0.00
127.133	465.820	4.309	16315.0	8756.3	212.646	0.942	1.65		Sand	0.0			440.28	0.69	302.69	302.69	0.56	0.563	0.574	#########	########	1986487.93	0.00	0.00
127.297	441.976	3.544	16336.0	8767.1	201.438	0.817	1.63		Sand	0.0			417.75	0.69	287.11	287.11	0.56	0.563	0.574	35836.482	45219.384	80334.45	0.00	0.00
127.461	386.715	1.382	16357.0	8777.8	175.665	0.365	1.45		Sand	0.0			365.52	0.68	249.21	249.21	0.56	0.563	0.573	118.692	149.672	265.83	0.00	0.00
127.625	300.742	1.602	16378.0	8788.6	135.680	0.548	1.65		Sand	0.0			284.26	0.58	165.94	165.94	0.56	0.563	0.737	0.442	0.610	1.08	0.01	0.00
127.789	205.173	2.835	16399.0	8799.4	91.297	1.439	2.04		Sand	26.5			193.93	0.58	113.13	165.85	0.56	0.563	0.737	0.441	0.608	1.08	0.01	0.00
127.953	121.912	2.448	16420.0	8810.1	52.668	2.153	2.34		Sand	50.1			115.23	0.52	60.49	122.55	0.56	0.563	0.819	0.177	0.204	0.36	0.03	0.00
128.117	75.035	1.906	16441.0	8820.9	15.149	2.853	2.84		Clay	90.0			70.92	0.69	n.a.	n.a.	0.56	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.281	53.737	1.450	16462.0	8831.6	10.305	3.186	3.00		Clay	100.0			50.79	0.69	n.a.	n.a.	0.56	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.445	49.080	0.447	16483.0	8842.4	9.237	1.095	2.80		Clay	87.3			46.39	0.69	n.a.	n.a.	0.56	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.609	49.525	0.348	16504.0	8853.2	9.324	0.843	2.75		Clay	83.0			46.81	0.69	n.a.	n.a.	0.56	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.773	50.986	0.467	16524.9	8863.9	9.640	1.093	2.79		Clay	85.9			48.19	0.69	n.a.	n.a.	0.56	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.937	51.562	0.474	16545.9	8874.7	9.756	1.095	2.78		Clay	85.6			48.74	0.69	n.a.	n.a.	0.56	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.101	50.434	0.491	16566.9	8885.4	9.488	1.165	2.81		Clay	87.4			47.67	0.68	n.a.	n.a.	0.56	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.265	46.386	0.535	16587.9	8896.2	8.564	1.404	2.88		Clay	93.6			43.84	0.68	n.a.	n.a.	0.56	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.429	42.868	0.485	16608.9	8906.9	7.761	1.403	2.92		Clay	96.6			40.52	0.68	n.a.	n.a.	0.56	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.593	40.885	0.470	16629.9	8917.7	7.305	1.443	2.95		Clay	98.9			38.64	0.68	n.a.	n.a.	0.56	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.757	40.316	0.499	16650.9	8928.5	7.166	1.560	2.97		Clay	100.0			38.11	0.68	n.a.	n.a.	0.56	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.921	41.154	0.615	16671.9	8939.2	7.342	1.874	3.00		Clay	100.0			38.90	0.68	n.a.	n.a.	0.56	0.565	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.085	48.945	1.029	16692.9	8950.0	9.072	2.535	2.99		Clay	100.0			46.26	0.68	n.a.	n.a.	0.56	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.249	52.651	1.236	16713.9	8960.7	9.886	2.790	2.98		Clay	100.0			49.76	0.68	n.a.	n.a.	0.56	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.413	51.876	0.996	16734.9	8971.5	9.699	2.289	2.94		Clay	98.4			49.03	0.68	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.577	42.834	0.678	16755.9	8982.3	7.672	1.968	3.00		Clay	100.0			40.49	0.68	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.741	37.919	0.385	16776.8	8993.0	6.567	1.304	2.97		Clay	100.0			35.84	0.68	n.a.	n.a.	0.57	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.906	36.801	0.343	16798.0	9003.8	6.309	1.208	2.97		Clay	100.0			34.78	0.68	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.070	36.193	0.369	16819.0	9014.6	6.164	1.328	3.00		Clay	100.0			34.21	0.68	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.234	36.167	0.403	16840.0	9025.4	6.149	1.452	3.02		Clay	100.0			34.18	0.68	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.398	36.436	0.488	16860.9	9036.1	6.199	1.743	3.05		Clay	100.0			34.44	0.68	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.562	37.713	0.482	16881.9	9046.9	6.471	1.647	3.02		Clay	100.0			35.65	0.68	n.a.	n.a.	0.57	0.567	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.726	39.805	0.470	16902.9	9057.6	6.923	1.499	2.98		Clay	100.0			37.62	0.68	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.890	43.129	0.615	16923.9	9068.4	7.646	1.774	2.97		Clay	100.0			40.76	0.68	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.054	49.072	0.854	16944.9	9079.1	8.943	2.103	2.95		Clay	99.3			46.38	0.68	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
132.218	63.223	1.467	16965.9	9089.9	12.044	2.680	2.90		Clay	95.2			59.76	0.68	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.382	93.597	2.982	16986.9	9100.7	18.703	3.504	2.82		Clay	88.5			88.47	0.68	n.a.	n.a.	0.57	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.546	116.087	3.977	17007.9	9111.4	23.615	3.697	2.76		Clay	83.4			109.72	0.68	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.710	117.514	3.714	17028.9	9122.2	23.898	3.407	2.73		Clay	81.3			111.07	0.68	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.874	89.991	2.212	17049.9	9132.9	17.840	2.715	2.77		Clay	84.4			85.06	0.68	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.038	63.827	1.898	17070.9	9143.7	12.094	3.433	2.96		Clay	100.0			60.33	0.68	n.a.	n.a.	0.57	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.202	50.492	1.446	17091.9	9154.5	9.164	3.447	3.06		Clay	100.0			47.72	0.68	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.366	45.732	1.119	17112.8	9165.2	8.112	3.010	3.07		Clay	100.0			43.22	0.68	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.530	44.274	0.918	17133.8	9176.0	7.783	2.571	3.05		Clay	100.0			41.85	0.68	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.694	41.388	0.901	17154.8	9186.7	7.143	2.746	3.10		Clay	100.0			39.12	0.68	n.a.	n.a.	0.57	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.858	41.003	0.762	17175.8	9197.5	7.049	2.351	3.07		Clay	100.0			38.76	0.68	n.a.	n.a.	0.57	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.022	41.628	0.627	17196.8	9208.2	7.174	1.898	3.01		Clay	100.0			39.35	0.68	n.a.	n.a.	0.57	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.186	42.985	0.603	17217.8	9219.0	7.458	1.754	2.98		Clay	100.0			40.63	0.68	n.a.	n.a.	0.57	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.350	44.474	0.614	17238.8	9229.8	7.769	1.712	2.96		Clay	99.9			42.04	0.68	n.a.	n.a.	0.57	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.514	45.536	0.656	17259.8	9240.5	7.988	1.777	2.96		Clay	99.7			43.04	0.68	n.a.	n.a.	0.57	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.678	46.673	0.690	17280.8	9251.3	8.222	1.814	2.95		Clay	99.2			44.11	0.68	n.a.	n.a.	0.57	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.843	47.928	0.776	17301.9	9262.1	8.481	1.976	2.96		Clay	99.7			45.30	0.68	n.a.	n.a.	0.57	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.007	49.115	0.828	17322.9	9272.9	8.725	2.047	2.96		Clay	99.5			46.42	0.68	n.a.	n.a.	0.57	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.171	53.443	1.030	17343.9	9283.6	9.645	2.301	2.95		Clay	98.7			50.51	0.68	n.a.	n.a.	0.57	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.335	56.456	1.190	17364.9	9294.4	10.280	2.491	2.94		Clay	98.3			53.36	0.68	n.a.	n.a.	0.57	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.499	58.157	1.402	17385.9	9305.1	10.632	2.834	2.96		Clay	99.9			54.97	0.68	n.a.	n.a.	0.57	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.663	57.803	1.662	17406.9	9315.9	10.541	3.385	3.01		Clay	100.0			54.63	0.68	n.a.	n.a.	0.57	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.827	61.483	1.954	17427.9	9326.7	11.316	3.703	3.01		Clay	100.0			58.11	0.68	n.a.	n.a.	0.57	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.991	63.513	1.684	17448.8	9337.4	11.735	3.074	2.95		Clay	98.7			60.03	0.68	n.a.	n.a.	0.57	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.155	58.393	1.076	17469.8	9348.2	10.624	2.167	2.90		Clay	94.8			55.19	0.68	n.a.	n.a.	0.57	0.574	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.319	47.550	0.648	17490.8	9358.9	8.293	1.670	2.93		Clay	97.5			44.94	0.68	n.a.	n.a.	0.57	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.483	40.647	0.712	17511.8	9369.7	6.807	2.233	3.07		Clay	100.0			38.42	0.68	n.a.	n.a.	0.57	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.647	43.584	0.857	17532.8	9380.4	7.423	2.461	3.06		Clay	100.0			41.19	0.68	n.a.	n.a.	0.57	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.811	51.837	1.206	17553.8	9391.2	9.170	2.801	3.01		Clay	100.0			49.00	0.67	n.a.	n.a.	0.57	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.975	58.174	1.418	17574.8	9402.0	10.506	2.871	2.97		Clay	100.0			54.98	0.67	n.a.	n.a.	0.57	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.139	56.058	1.381	17595.8	9412.7	10.042	2.922	2.99		Clay	100.0			52.98	0.67	n.a.	n.a.	0.57	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.303	50.945	1.292	17616.8	9423.5	8.943	3.066	3.04		Clay	100.0			48.15	0.67	n.a.	n.a.	0.57	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.467	46.799	1.300	17637.8	9434.2	8.052	3.423	3.11		Clay	100.0			44.23	0.67	n.a.	n.a.	0.57	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.631	48.317	1.188	17658.8	9445.0	8.362	3.009	3.06		Clay	100.0			45.67	0.67	n.a.	n.a.	0.57	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.795	49.670	1.185	17679.8	9455.8	8.636	2.902	3.04		Clay	100.0			46.95	0.67	n.a.	n.a.	0.58	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.959	47.749	1.042	17700.8	9466.5	8.218	2.679	3.04		Clay	100.0			45.13	0.67	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.123	42.953	0.852	17721.7	9477.3	7.195	2.499	3.07		Clay	100.0			40.60	0.67	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.287	39.048	0.715	17742.7	9488.0	6.361	2.369	3.11		Clay	100.0			36.91	0.67	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.451	41.792	0.576	17763.7	9498.8	6.929	1.750	3.01		Clay	100.0			39.50	0.67	n.a.	n.a.	0.58	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.615	47.693	0.580	17784.7	9509.5	8.160	1.495	2.91		Clay	96.1			45.08	0.67	n.a.	n.a.	0.58	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.780	52.954	0.794	17805.8	9520.4	9.254	1.802	2.91		Clay	95.5			50.05	0.67	n.a.	n.a.	0.58	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.944	53.076	1.018	17826.8	9531.1	9.267	2.305	2.96		Clay	99.9			50.17	0.67	n.a.	n.a.	0.58	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
139.108	50.267	1.350	17847.8	9541.9	8.666	3.265	3.07		Clay	100.0			47.51	0.67	n.a.	n.a.	0.58	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
139.272	46.369	1.312	17868.8	9552.6	7.838	3.505	3.12		Clay	100.0			43.83	0.67	n.a.	n.a.	0.58	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
139.436	43.080	1.239	17889.8	9563.4	7.139	3.630	3.16		Clay	100.0			40.72	0.67	n.a.	n.a.	0.58	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
139.600	40.208	0.997	17910.8	9574.2	6.529	3.190	3.17		Clay	100.0			38.00	0.67	n.a.	n.a.	0.58	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
139.764	37.869	0.827	17931.8	9584.9	6.031	2.861	3.17		Clay	100.0			35.79	0.67	n.a.	n.a.	0.58	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
139.928	36.453	0.659	17952.8	9595.7	5.727	2.398	3.15		Clay	100.0			34.45	0.67	n.a.	n.a.	0.58	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.092	36.010	0.684	17973.8	9606.4	5.626	2.531	3.17		Clay	100.0			34.04	0.67	n.a.	n.a.	0.58	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.256	36.697	0.749	17994.8	9617.2	5.760	2.704	3.17		Clay	100.0			34.69	0.67	n.a.	n.a.	0.58	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.420	36.256	0.773	18015.8	9628.0	5.660	2.837	3.19		Clay	100.0			34.27	0.67	n.a.	n.a.	0.58	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.584	35.091	0.725	18036.8	9638.7	5.410	2.781	3.20		Clay	100.0			33.17	0.67	n.a.	n.a.	0.58	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.748	33.464	0.717	18057.7	9649.5	5.065	2.934	3.24		Clay	100.0			31.63	0.67	n.a.	n.a.	0.58	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.912	33.133	0.542	18078.7	9660.2	4.988	2.250	3.19		Clay	100.0			31.32	0.67	n.a.	n.a.	0.58	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.076	33.218	0.506	18099.7	9671.0	4.998	2.094	3.17		Clay	100.0			31.40	0.67	n.a.	n.a.	0.58	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.240	33.476	0.546	18120.7	9681.7	5.044	2.236	3.18		Clay	100.0			31.64	0.67	n.a.	n.a.	0.58	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.404	34.093	0.537	18141.7	9692.5	5.163	2.146	3.16		Clay	100.0			32.22	0.67	n.a.	n.a.	0.58	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.568	35.225	0.544	18162.7	9703.3	5.389	2.081	3.14		Clay	100.0			33.29	0.67	n.a.	n.a.	0.58	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.732	36.767	0.546	18183.7	9714.0	5.698	1.973	3.11		Clay	100.0			34.75	0.67	n.a.	n.a.	0.58	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.896	37.912	0.603	18204.7	9724.8	5.925	2.093	3.11		Clay	100.0			35.83	0.67	n.a.	n.a.	0.58	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
142.060	38.488	0.604	18225.7	9735.5	6.035	2.056	3.10		Clay	100.0			36.38	0.67	n.a.	n.a.	0.58	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
142.224	39.494	0.658	18246.7	9746.3	6.232	2.167	3.09		Clay	100.0			37.33	0.67	n.a.	n.a.	0.58	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
142.388	42.717	0.703	18267.7	9757.1	6.884	2.093	3.05		Clay	100.0			40.38	0.67	n.a.	n.a.	0.58	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
142.552	47.705	0.854	18288.7	9767.8	7.895	2.215	3.01		Clay	100.0			45.09	0.67	n.a.	n.a.	0.58	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
142.717	53.419	1.119	18309.8	9778.6	9.053	2.528	2.99		Clay	100.0			50.49	0.67	n.a.	n.a.	0.59	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
142.881	58.865	1.398	18330.8	9789.4	10.154	2.813	2.98		Clay	100.0			55.64	0.67	n.a.	n.a.	0.59	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
143.045	64.224	1.594	18351.8	9800.2	11.234	2.896	2.95		Clay	98.7			60.70	0.67	n.a.	n.a.	0.59	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.82

Total Settlement: 0.54 (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)
143.209	67.314	1.667	18372.8	9810.9	11.850	2.868	2.93		Clay	97.0			63.62	0.67	n.a.	n.a.	0.59	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
143.373	66.200	1.623	18393.7	9821.7	11.608	2.847	2.93		Clay	97.5			62.57	0.67	n.a.	n.a.	0.59	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
143.537	61.553	1.360	18414.7	9832.4	10.648	2.598	2.94		Clay	98.1			58.18	0.67	n.a.	n.a.	0.59	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
143.701	58.910	1.207	18435.7	9843.2	10.097	2.429	2.94		Clay	98.4			55.68	0.67	n.a.	n.a.	0.59	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
143.865	57.467	1.215	18456.7	9853.9	9.791	2.519	2.96		Clay	100.0			54.32	0.67	n.a.	n.a.	0.59	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
144.029	57.951	1.188	18477.7	9864.7	9.876	2.439	2.95		Clay	99.1			54.77	0.67	n.a.	n.a.	0.59	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
144.193	56.285	1.149	18498.7	9875.5	9.526	2.443	2.96		Clay	100.0			53.20	0.67	n.a.	n.a.	0.59	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
144.357	55.159	1.355	18519.7	9886.2	9.285	2.952	3.02		Clay	100.0			52.14	0.67	n.a.	n.a.	0.59	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
144.521	55.907	1.469	18540.7	9897.0	9.424	3.150	3.03		Clay	100.0			52.84	0.67	n.a.	n.a.	0.59	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
144.685	63.071	1.748	18561.7	9907.7	10.858	3.250	2.99		Clay	100.0			59.61	0.67	n.a.	n.a.	0.59	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
144.849	79.944	4.218	18582.7	9918.5	14.247	5.970	3.06		Clay	100.0			75.56	0.67	n.a.	n.a.	0.59	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.013	111.495	4.637	18603.7	9929.3	20.584	4.537	2.86		Clay	91.7			105.38	0.67	n.a.	n.a.	0.59	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.177	144.380	5.718	18624.7	9940.0	27.177	4.233	2.75		Clay	82.9			136.47	0.66	n.a.	n.a.	0.59	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.341	164.979	6.596	18645.6	9950.8	31.285	4.238	2.70		Clay	79.3			155.93	0.66	n.a.	n.a.	0.59	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.505	161.269	7.269	18666.6	9961.5	30.504	4.784	2.75		Clay	82.8			152.43	0.66	n.a.	n.a.	0.59	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.669	146.511	7.714	18687.6	9972.3	27.510	5.624	2.83		Clay	89.3			138.48	0.66	n.a.	n.a.	0.59	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.833	121.162	6.202	18708.6	9983.0	22.400	5.547	2.89		Clay	94.2			114.52	0.66	n.a.	n.a.	0.59	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
145.997	93.356	4.434	18729.6	9993.8	16.809	5.279	2.97		Clay	100.0			88.24	0.66	n.a.	n.a.	0.59	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
146.161	67.139	3.135	18750.6	10004.6	11.547	5.427	3.10		Clay	100.0			63.46	0.66	n.a.	n.a.	0.59	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
146.325	53.574	1.848	18771.6	10015.3	8.824	4.182	3.12		Clay	100.0			50.64	0.66	n.a.	n.a.	0.59	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
146.490	49.869	1.333	18792.7	10026.1	8.073	3.294	3.10		Clay	100.0			47.14	0.66	n.a.	n.a.	0.59	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
146.654	48.776	1.299	18813.7	10036.9	7.845	3.300	3.11		Clay	100.0			46.10	0.66	n.a.	n.a.	0.59	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
146.818	49.504	1.349	18834.7	10047.7	7.979	3.365	3.11		Clay	100.0			46.79	0.66	n.a.	n.a.	0.60	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
146.982	59.000	1.382	18855.7	10058.4	9.857	2.788	2.98		Clay	100.0			55.77	0.66	n.a.	n.a.	0.60	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
147.146	69.163	2.063	18876.7	10069.2	11.863	3.454	2.97		Clay	100.0			65.37	0.66	n.a.	n.a.	0.60	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
147.310	93.705	2.193	18897.7	10079.9	16.718	2.603	2.78		Clay	85.3			88.57	0.66	n.a.	n.a.	0.60	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
147.474	112.059	2.843	18918.7	10090.7	20.336	2.771	2.73		Clay	81.2			105.92	0.66	n.a.	n.a.	0.60	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
147.638	145.625	4.451	18939.7	10101.5	26.958	3.269	2.68		Clay	77.2			137.64	0.66	n.a.	n.a.	0.60	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
147.802	157.913	4.472	18960.7	10112.2	29.357	3.013	2.63		Clay	73.1			149.26	0.66	n.a.	n.a.	0.60	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
147.966	166.059	4.849	18981.6	10123.0	30.933	3.097	2.62		Clay	72.3			156.96	0.66	n.a.	n.a.	0.60	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.130	137.230	4.824	19002.6	10133.7	25.209	3.777	2.74		Clay	82.2			129.71	0.66	n.a.	n.a.	0.60	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.294	112.736	4.109	19023.6	10144.5	20.351	3.981	2.83		Clay	89.0			106.56	0.66	n.a.	n.a.	0.60	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.458	82.246	2.973	19044.6	10155.2	14.322	4.088	2.95		Clay	99.1			77.74	0.66	n.a.	n.a.	0.60	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.622	70.634	2.146	19065.6	10166.0	12.021	3.512	2.97		Clay	100.0			66.76	0.66	n.a.	n.a.	0.60	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.786	61.015	1.368	19086.6	10176.8	10.116	2.658	2.96		Clay	100.0			57.67	0.66	n.a.	n.a.	0.60	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.950	60.333	1.241	19107.6	10187.5	9.969	2.444	2.95		Clay	98.9			57.03	0.66	n.a.	n.a.	0.60	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.114	63.459	1.610	19128.6	10198.3	10.569	2.987	2.98		Clay	100.0			59.98	0.66	n.a.	n.a.	0.60	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.278	64.649	1.763	19149.6	10209.0	10.789	3.201	2.99		Clay	100.0			61.10	0.66	n.a.	n.a.	0.60	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.442	64.782	1.952	19170.6	10219.8	10.802	3.536	3.01		Clay	100.0			61.23	0.66	n.a.	n.a.	0.60	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.606	62.072	1.933	19191.6	10230.6	10.259	3.684	3.04		Clay	100.0			58.67	0.66	n.a.	n.a.	0.60	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.770	61.433	1.578	19212.6	10241.3	10.121	3.045	3.00		Clay	100.0			58.07	0.66	n.a.	n.a.	0.60	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.934	61.452	1.684	19233.6	10252.1	10.112	3.249	3.01		Clay	100.0			58.08	0.66	n.a.	n.a.	0.60	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
150.098	64.080	2.006	19254.5	10262.8	10.612	3.684	3.03		Clay	100.0			60.57	0.66	n.a.	n.a.	0.60	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
150.262	66.717	2.104	19275.5	10273.6	11.112	3.686	3.01		Clay	100.0			63.06	0.66	n.a.	n.a.	0.61	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
150.427	68.640	2.064	19296.7	10284.4	11.472	3.499	2.99		Clay	100.0			64.88	0.66	n.a.	n.a.	0.61	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.82

Total Settlement: 0.77 (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)
0.328	5.218	0.118	40.7	40.7	35.435	2.270	2.48		Unsaturated	61.8			4.93	1.70	8.38	59.85	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.492	8.336	0.129	61.0	61.0	46.232	1.553	2.29		Unsaturated	46.3			7.88	1.70	13.39	61.54	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.656	47.406	0.134	81.3	81.3	228.334	0.283	1.30		Unsaturated	0.0			44.81	1.70	76.17	76.17	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	77.830	0.206	101.7	101.7	335.365	0.265	1.14		Unsaturated	0.0			73.56	1.70	125.06	125.06	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.984	100.882	0.298	122.0	122.0	396.839	0.296	1.11		Unsaturated	0.0			95.35	1.70	162.10	162.10	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.148	81.827	0.632	142.4	142.4	297.926	0.773	1.49		Unsaturated	0.0			77.34	1.70	131.48	131.48	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.312	64.915	0.810	162.7	162.7	221.001	1.249	1.73		Unsaturated	1.6			61.36	1.70	104.31	104.31	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.476	52.823	0.978	183.0	183.0	169.468	1.855	1.94		Unsaturated	18.0			49.93	1.70	84.88	114.98	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	43.881	1.063	203.4	203.4	133.478	2.428	2.09		Unsaturated	30.5			41.48	1.70	70.51	120.70	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.804	39.133	0.955	223.7	223.7	113.434	2.447	2.14		Unsaturated	34.4			36.99	1.70	62.88	115.50	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.969	33.746	0.960	244.2	244.2	93.559	2.855	2.25		Unsaturated	42.9			31.90	1.70	54.22	111.02	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.133	31.445	0.878	264.5	264.5	83.712	2.804	2.27		Unsaturated	45.0			29.72	1.70	50.53	107.57	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.297	29.381	0.751	284.8	284.8	75.325	2.569	2.28		Unsaturated	45.3			27.77	1.70	47.21	103.57	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.461	26.736	0.681	305.2	305.2	66.163	2.562	2.32		Unsaturated	48.4			25.27	1.70	42.96	99.69	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.625	24.193	0.649	325.5	325.5	57.910	2.701	2.38		Unsaturated	53.0			22.87	1.70	38.87	96.31	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.789	22.089	0.615	345.8	345.8	51.239	2.806	2.43		Unsaturated	57.0			20.88	1.70	35.49	93.31	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.953	20.490	0.613	366.2	366.2	46.140	3.019	2.48		Unsaturated	61.4			19.37	1.70	32.92	91.23	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.117	19.478	0.595	386.5	386.5	42.649	3.085	2.51		Unsaturated	63.9			18.41	1.70	31.30	89.75	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.281	18.541	0.579	406.8	406.8	39.528	3.157	2.54		Unsaturated	66.4			17.52	1.70	29.79	88.37	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.445	18.002	0.597	427.2	427.2	37.420	3.356	2.58		Unsaturated	69.2			17.02	1.70	28.93	87.82	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.609	16.655	0.603	447.5	447.5	46.077	3.670	2.54		Unsaturated	66.2			15.74	1.70	26.76	84.41	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.773	15.611	0.565	467.9	467.9	41.800	3.674	2.57		Unsaturated	68.6			14.76	1.70	25.08	82.74	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.937	14.708	0.514	488.2	488.2	38.164	3.554	2.59		Unsaturated	70.1			13.90	1.70	23.63	81.15	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.101	14.709	0.482	508.5	508.5	37.065	3.335	2.58		Unsaturated	69.3			13.90	1.70	23.63	81.01	1.00	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.265	14.841	0.508	528.9	528.9	36.366	3.485	2.60		Unsaturated	70.9			14.03	1.70	23.85	81.57	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.429	14.757	0.553	549.2	549.2	35.189	3.818	2.64		Unsaturated	73.9			13.95	1.70	23.71	81.90	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.593	14.398	0.550	569.5	569.5	33.430	3.897	2.66		Unsaturated	75.6			13.61	1.70	23.13	81.44	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.757	13.868	0.534	589.9	589.9	31.371	3.934	2.68		Unsaturated	77.5			13.11	1.70	22.28	80.62	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.921	13.223	0.494	610.2	610.2	29.156	3.824	2.70		Unsaturated	78.7			12.50	1.70	21.25	79.45	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.085	12.834	0.478	630.5	630.5	27.614	3.818	2.71	plastic	Clay	80.1			12.13	1.38	n.a.	n.a.	0.99	0.533	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.249	12.439	0.459	650.9	650.9	37.222	3.789	2.62		Clay	72.3			11.76	1.36	n.a.	n.a.	0.99	0.541	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.413	12.056	0.420	671.2	671.2	34.923	3.583	2.62		Clay	72.5			11.40	1.35	n.a.	n.a.	0.99	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.577	11.629	0.402	691.5	691.5	32.632	3.563	2.64		Clay	74.2			10.99	1.34	n.a.	n.a.	0.99	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.741	11.207	0.393	711.9	711.9	30.485	3.622	2.67		Clay	76.3			10.59	1.33	n.a.	n.a.	0.99	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
5.906	10.794	0.413	732.3	732.3	28.478	3.961	2.71		Clay	80.1			10.20	1.32	n.a.	n.a.	0.99	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.070	10.103	0.392	752.7	752.7	25.845	4.030	2.75		Clay	83.0			9.55	1.31	n.a.	n.a.	0.99	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.234	9.605	0.374	773.0	773.0	23.851	4.057	2.78		Clay	85.3			9.08	1.30	n.a.	n.a.	0.99	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.398	9.135	0.361	793.4	793.4	22.029	4.131	2.81		Clay	87.8			8.63	1.30	n.a.	n.a.	0.99	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.562	8.824	0.349	813.7	813.7	20.689	4.146	2.83		Clay	89.5			8.34	1.29	n.a.	n.a.	0.99	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.726	8.607	0.332	834.0	834.0	19.640	4.054	2.84		Clay	90.4			8.14	1.28	n.a.	n.a.	0.99	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
6.890	8.381	0.318	854.4	854.4	18.619	3.998	2.86		Clay	91.5			7.92	1.27	n.a.	n.a.	0.99	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.054	7.871	0.302	874.7	874.7	16.997	4.063	2.89		Clay	94.3			7.44	1.26	n.a.	n.a.	0.99	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.218	7.097	0.264	895.0	895.0	14.859	3.970	2.93		Clay	97.5			6.71	1.25	n.a.	n.a.	0.99	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.382	6.455	0.238	915.4	915.4	13.104	3.968	2.97		Clay	100.0			6.10	1.25	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.546	6.060	0.202	935.7	935.7	11.953	3.612	2.98		Clay	100.0			5.73	1.24	n.a.	n.a.	0.98	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.710	5.788	0.194	956.0	956.0	11.108	3.653	3.01		Clay	100.0			5.47	1.23	n.a.	n.a.	0.98	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.874	5.337	0.194	976.4	976.4	9.932	4.001	3.07		Clay	100.0			5.04	1.23	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.038	4.829	0.172	997.0	988.4	8.763	3.972	3.11		Clay	100.0			4.56	1.22	n.a.	n.a.	0.98	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.202	4.398	0.144	1017.7	998.8	7.788	3.703	3.14		Clay	100.0			4.16	1.22	n.a.	n.a.	0.98	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.366	5.134	0.126	1038.3	1009.2	9.145	2.730	3.01		Clay	100.0			4.85	1.22	n.a.	n.a.	0.98	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	6.328	0.169	1059.0	1019.7	11.373	2.915	2.94		Clay	98.5			5.98	1.21	n.a.	n.a.	0.98	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.694	6.577	0.145	1079.6	1030.1	11.722	2.402	2.89		Clay	93.8			6.22	1.21	n.a.	n.a.	0.98	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.858	6.046	0.150	1100.3	1040.5	10.564	2.729	2.95		Clay	99.3			5.71	1.21	n.a.	n.a.	0.98	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.022	6.387	0.153	1121.0	1051.0	11.088	2.626	2.93		Clay	97.2			6.04	1.20	n.a.	n.a.	0.98	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.186	8.343	0.211	1141.6	1061.4	14.645	2.715	2.84		Clay	89.9			7.89	1.20	n.a.	n.a.	0.98	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	10.142	0.287	1162.3	1071.8	17.840	3.002	2.79		Clay	86.5			9.59	1.20	n.a.	n.a.	0.98	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.514	10.734	0.354	1183.0	1082.3	18.743	3.490	2.82		Clay	88.4			10.15	1.19	n.a.	n.a.	0.98	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.678	10.721	0.340	1203.6	1092.7	18.522	3.360	2.81		Clay	87.9			10.13	1.19	n.a.	n.a.	0.98	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.843	10.579	0.298	1224.4	1103.2	18.069	2.990	2.79		Clay	86.0			10.00	1.19	n.a.	n.a.	0.98	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.007	10.581	0.277	1245.1	1113.6	17.885	2.782	2.77		Clay	84.8			10.00	1.18	n.a.	n.a.	0.97	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	10.819	0.290	1265.7	1124.0	18.124	2.847	2.77		Clay	84.9			10.23	1.18	n.a.	n.a.	0.97	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	11.604	0.288	1286.4	1134.5	19.323	2.628	2.73		Clay	81.5			10.97	1.18	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	12.871	0.327	1307.1	1144.9	21.342	2.676	2.70		Clay	79.1			12.17	1.18	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	13.894	0.375	1327.7	1155.3	22.903	2.834	2.69		Clay	78.4			13.13	1.17	n.a.	n.a.	0.97	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	14.436	0.401	1348.4	1165.8	23.610	2.914	2.69		Clay	78.2			13.64	1.17	n.a.	n.a.	0.97	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	14.334	0.393	1369.1	1176.2	23.210	2.879	2.69		Clay	78.4			13.55	1.17	n.a.	n.a.	0.97	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	14.597	0.428	1389.7	1186.6	23.432	3.079	2.71		Clay	79.6			13.80	1.16	n.a.	n.a.	0.97	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.82

Total Settlement: 0.77 (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)
11.319	14.576	0.423	1410.4	1197.0	23.175	3.050	2.71		Clay	79.7			13.78	1.16	n.a.	n.a.	0.97	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	14.594	0.438	1431.1	1207.5	22.988	3.156	2.72		Clay	80.6			13.79	1.16	n.a.	n.a.	0.97	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	14.292	0.437	1451.7	1217.9	22.278	3.221	2.74		Clay	81.9			13.51	1.16	n.a.	n.a.	0.97	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	14.132	0.439	1472.4	1228.3	21.811	3.277	2.75		Clay	82.9			13.36	1.15	n.a.	n.a.	0.97	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	13.641	0.414	1493.1	1238.8	20.818	3.211	2.76		Clay	83.7			12.89	1.15	n.a.	n.a.	0.97	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	12.659	0.422	1513.7	1249.2	19.056	3.546	2.82		Clay	88.3			11.97	1.15	n.a.	n.a.	0.97	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	11.479	0.422	1534.4	1259.6	17.008	3.940	2.88		Clay	93.6			10.85	1.15	n.a.	n.a.	0.97	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	10.458	0.382	1555.0	1270.1	15.244	3.946	2.92		Clay	96.6			9.88	1.14	n.a.	n.a.	0.97	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	9.595	0.362	1575.7	1280.5	13.756	4.110	2.97		Clay	100.0			9.07	1.14	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	8.761	0.342	1596.4	1290.9	12.337	4.295	3.02		Clay	100.0			8.28	1.14	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	8.211	0.295	1617.0	1301.4	11.377	3.985	3.02		Clay	100.0			7.76	1.14	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	8.124	0.291	1637.7	1311.8	11.138	3.983	3.03		Clay	100.0			7.68	1.13	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	8.179	0.307	1658.4	1322.2	11.117	4.177	3.04		Clay	100.0			7.73	1.13	n.a.	n.a.	0.96	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	8.252	0.300	1679.0	1332.6	11.124	4.047	3.04		Clay	100.0			7.80	1.13	n.a.	n.a.	0.96	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	8.495	0.327	1699.7	1343.1	11.385	4.277	3.04		Clay	100.0			8.03	1.13	n.a.	n.a.	0.96	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	8.823	0.299	1720.5	1353.6	11.766	3.755	3.00		Clay	100.0			8.34	1.13	n.a.	n.a.	0.96	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	9.172	0.275	1741.1	1364.0	12.172	3.313	2.95		Clay	99.2			8.67	1.12	n.a.	n.a.	0.96	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	9.625	0.262	1761.8	1374.4	12.724	2.996	2.91		Clay	95.9			9.10	1.12	n.a.	n.a.	0.96	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	10.504	0.245	1782.5	1384.9	13.883	2.549	2.84		Clay	90.2			9.93	1.12	n.a.	n.a.	0.96	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	11.790	0.275	1803.1	1395.3	15.607	2.526	2.80		Clay	86.6			11.14	1.12	n.a.	n.a.	0.96	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	12.465	0.323	1823.8	1405.7	16.437	2.796	2.80		Clay	87.3			11.78	1.11	n.a.	n.a.	0.96	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	12.631	0.480	1844.5	1416.2	16.536	4.099	2.90		Clay	95.3			11.94	1.11	n.a.	n.a.	0.96	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	11.985	0.470	1865.1	1426.6	15.495	4.252	2.94		Clay	97.8			11.33	1.11	n.a.	n.a.	0.96	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	11.819	0.435	1885.8	1437.0	15.137	4.000	2.93		Clay	97.1			11.17	1.11	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	12.381	0.298	1906.5	1447.4	15.790	2.608	2.80		Clay	87.0			11.70	1.11	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	13.775	0.354	1927.1	1457.9	17.576	2.763	2.78		Clay	85.2			13.02	1.10	n.a.	n.a.	0.95	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	14.364	0.415	1947.8	1468.3	18.239	3.099	2.79		Clay	86.5			13.58	1.10	n.a.	n.a.	0.95	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	14.036	0.371	1968.4	1478.7	17.653	2.843	2.78		Clay	85.6			13.27	1.10	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	12.936	0.293	1989.1	1489.2	16.038	2.454	2.78		Clay	85.3			12.23	1.10	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	12.061	0.222	2009.8	1499.6	14.745	2.008	2.76		Clay	83.8			11.40	1.10	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	11.574	0.187	2030.4	1510.0	13.985	1.771	2.75		Clay	82.9			10.94	1.09	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	11.700	0.186	2051.1	1520.5	14.041	1.742	2.74		Clay	82.5			11.06	1.09	n.a.	n.a.	0.95	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	12.642	0.226	2071.8	1530.9	15.163	1.947	2.74		Clay	82.4			11.95	1.09	n.a.	n.a.	0.95	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	13.760	0.261	2092.4	1541.3	16.497	2.053	2.72		Clay	81.0			13.01	1.09	n.a.	n.a.	0.95	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	14.570	0.255	2113.1	1551.7	17.417	1.887	2.68		Clay	77.8			13.77	1.09	n.a.	n.a.	0.95	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	15.468	0.295	2133.8	1562.2	18.437	2.048	2.68		Clay	77.7			14.62	1.08	n.a.	n.a.	0.95	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	17.266	0.435	2154.4	1572.6	20.588	2.687	2.71		Clay	80.2			16.32	1.08	n.a.	n.a.	0.95	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	18.952	0.425	2175.1	1583.0	22.570	2.379	2.65		Clay	75.1			17.91	1.08	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	19.433	0.461	2195.8	1593.5	23.013	2.514	2.66		Clay	75.7			18.37	1.08	n.a.	n.a.	0.94	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	16.952	0.337	2216.5	1604.0	19.756	2.127	2.67		Clay	76.5			16.02	1.08	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	14.062	0.280	2237.2	1614.4	16.035	2.163	2.75		Clay	82.8			13.29	1.07	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	11.664	0.235	2257.9	1624.8	12.968	2.231	2.83		Clay	89.5			11.02	1.07	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	11.177	0.221	2278.5	1635.3	12.277	2.202	2.85		Clay	90.8			10.56	1.07	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	11.537	0.219	2299.2	1645.7	12.624	2.108	2.83		Clay	89.2			10.90	1.07	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	12.387	0.194	2319.9	1656.1	13.558	1.728	2.75		Clay	83.4			11.71	1.07	n.a.	n.a.	0.94	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	13.650	0.220	2340.5	1666.5	14.977	1.763	2.72		Clay	80.8			12.90	1.07	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	14.383	0.272	2361.2	1677.0	15.746	2.060	2.74		Clay	82.4			13.59	1.06	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	16.229	0.316	2381.9	1687.4	17.824	2.101	2.70		Clay	79.2			15.34	1.06	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	17.334	0.311	2402.5	1697.8	19.004	1.928	2.66		Clay	75.7			16.38	1.06	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	19.010	0.380	2423.2	1708.3	20.838	2.135	2.65		Clay	75.1			17.97	1.06	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	23.546	0.510	2443.8	1718.7	24.407	2.285	2.61	plastic	Clay	72.1			22.26	1.06	n.a.	n.a.	0.93	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	33.413	0.822	2464.5	1729.1	33.648	2.554	2.53	plastic	Clay	65.8			31.58	1.05	n.a.	n.a.	0.93	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	37.405	1.242	2485.2	1739.6	37.697	3.435	2.58	plastic	Clay	69.6			35.35	1.05	n.a.	n.a.	0.93	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	33.141	1.186	2505.8	1750.0	36.444	3.719	2.62		Clay	72.3			31.32	1.05	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	21.605	0.937	2526.5	1760.4	23.110	4.606	2.83		Clay	89.0			20.42	1.05	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	14.916	0.498	2547.2	1770.8	15.408	3.650	2.90		Clay	94.7			14.10	1.05	n.a.	n.a.	0.93	0.794	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	11.936	0.390	2567.8	1781.3	11.960	3.661	2.98		Clay	100.0			11.28	1.05	n.a.	n.a.	0.93	0.794	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	33.033	0.661	2588.5	1791.7	32.601	2.083	2.49		Sand	62.1	102.51	1.56	159.92	1.04	167.09	263.56	0.93	0.795	1.050	755.193	1744.342	2194.46	0.00	0.00
20.833	70.507	0.830	2609.2	1802.1	70.876	1.199	2.08		Sand	29.1	102.51	1.56	159.92	1.05	167.42	235.06	0.93	0.795	1.048	26.270	60.577	76.16	0.00	0.00
20.997	104.075	0.647	2629.8	1812.6	104.942	0.630	1.77		Sand	4.7	102.51	1.56	159.92	1.06	169.41	169.53	0.93	0.796	1.030	0.496	0.983	1.23	0.00	0.01
21.161	108.456	0.692	2650.5	1823.0	109.092	0.646	1.76		Sand	4.1		1.56	159.92	1.06	169.06	169.10	0.93	0.796	1.028	0.489	0.964	1.21	0.01	0.01
21.325	92.981	0.787	2671.2	1833.4	93.057	0.859	1.89		Sand	14.5	102.51	1.56	159.92	1.05	167.83	194.56	0.93	0.797	1.035	1.409	3.210	4.03	0.00	0.00
21.490	75.036	0.549	2691.9	1843.9	74.612	0.745	1.93		Sand	17.8	102.51	1.56	159.92	1.05	167.15	206.06	0.93	0.797	1.039	2.706	6.184	7.76	0.00	0.00
21.654	54.799	0.510	2712.6	1854.4	53.959	0.954	2.11		Sand	31.9	102.51	1.56	159.92	1.04	165.98	238.03	0.92	0.798	1.040	35.210	80.528	100.94	0.00	0.00
21.818	33.999	0.229	2733.3	1864.8	32.855	0.702	2.23		Sand	41.0	102.51	1.56	159.92	1.03	165.47	248.33	0.92	0.798	1.038	107.045	244.428	306.22	0.00	0.00
21.982	17.913	0.197	2753.9	1875.2	16.603	1.191	2.60		Sand	70.7	102.51	1.56	159.92	1.03	165.09	264.03	0.92	0.799	1.036	807.412	1840.682	2304.82	0.00	0.00
22.146	10.736	0.171	2774.6	1885.6	9.916	1.829	2.88		Clay	93.7			10.15	1.03	n.a.	n.a.	0.92	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.82

Total Settlement: 0.77 (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)
22.310	8.051	0.054	2795.3	1896.1	7.018	0.812	2.86		Clay	91.5			7.61	1.03	n.a.	n.a.	0.92	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	7.201	0.039	2815.9	1906.5	6.077	0.673	2.88		Clay	93.7			6.81	1.03	n.a.	n.a.	0.92	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	7.418	0.072	2836.6	1916.9	6.260	1.200	2.97		Clay	100.0			7.01	1.03	n.a.	n.a.	0.92	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	7.720	0.073	2857.3	1927.4	6.528	1.160	2.95		Clay	99.0			7.30	1.02	n.a.	n.a.	0.92	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	7.690	0.073	2877.9	1937.8	6.452	1.168	2.96		Clay	99.4			7.27	1.02	n.a.	n.a.	0.92	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	7.205	0.085	2898.6	1948.2	5.909	1.477	3.04		Clay	100.0			6.81	1.02	n.a.	n.a.	0.92	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	7.055	0.090	2919.2	1958.7	5.713	1.608	3.07		Clay	100.0			6.67	1.02	n.a.	n.a.	0.92	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	8.033	0.205	2939.9	1969.1	6.666	3.124	3.15		Clay	100.0			7.59	1.02	n.a.	n.a.	0.92	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	8.747	0.207	2960.6	1979.5	7.342	2.849	3.10		Clay	100.0			8.27	1.02	n.a.	n.a.	0.92	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	9.648	0.199	2981.2	1989.9	8.199	2.440	3.02		Clay	100.0			9.12	1.02	n.a.	n.a.	0.91	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	9.485	0.244	3001.9	2000.4	7.983	3.056	3.08		Clay	100.0			8.97	1.01	n.a.	n.a.	0.91	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	9.432	0.305	3022.6	2010.8	7.878	3.851	3.14		Clay	100.0			8.91	1.01	n.a.	n.a.	0.91	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	8.789	0.295	3043.2	2021.2	7.191	4.059	3.19		Clay	100.0			8.31	1.01	n.a.	n.a.	0.91	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	8.443	0.281	3063.9	2031.7	6.803	4.066	3.21		Clay	100.0			7.98	1.01	n.a.	n.a.	0.91	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	8.382	0.191	3084.6	2042.1	6.699	2.793	3.13		Clay	100.0			7.92	1.01	n.a.	n.a.	0.91	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	8.436	0.192	3105.2	2052.5	6.707	2.789	3.12		Clay	100.0			7.97	1.01	n.a.	n.a.	0.91	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	8.241	0.210	3125.9	2063.0	6.474	3.145	3.17		Clay	100.0			7.79	1.01	n.a.	n.a.	0.91	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	7.888	0.164	3146.5	2073.4	6.091	2.597	3.14		Clay	100.0			7.46	1.01	n.a.	n.a.	0.91	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	7.612	0.165	3167.2	2083.8	5.786	2.737	3.17		Clay	100.0			7.19	1.00	n.a.	n.a.	0.91	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	7.443	0.147	3188.0	2094.3	5.586	2.513	3.17		Clay	100.0			7.03	1.00	n.a.	n.a.	0.91	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	7.444	0.137	3208.7	2104.7	5.549	2.346	3.16		Clay	100.0			7.04	1.00	n.a.	n.a.	0.91	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	7.436	0.126	3229.3	2115.2	5.504	2.164	3.14		Clay	100.0			7.03	1.00	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	7.475	0.115	3250.0	2125.6	5.504	1.966	3.12		Clay	100.0			7.07	1.00	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	7.602	0.138	3270.7	2136.0	5.587	2.313	3.15		Clay	100.0			7.19	1.00	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	7.747	0.134	3291.3	2146.5	5.685	2.196	3.13		Clay	100.0			7.32	1.00	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	8.006	0.137	3312.0	2156.9	5.888	2.157	3.12		Clay	100.0			7.57	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	8.247	0.144	3332.7	2167.3	6.073	2.188	3.11		Clay	100.0			7.79	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	8.345	0.148	3353.3	2177.8	6.124	2.219	3.11		Clay	100.0			7.89	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	8.253	0.153	3374.0	2188.2	6.001	2.330	3.12		Clay	100.0			7.80	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	8.145	0.169	3394.6	2198.6	5.865	2.621	3.16		Clay	100.0			7.70	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.231	8.052	0.184	3415.3	2209.1	5.744	2.900	3.19		Clay	100.0			7.61	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	7.887	0.182	3436.0	2219.5	5.559	2.950	3.21		Clay	100.0			7.45	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	7.637	0.167	3456.6	2229.9	5.299	2.826	3.21		Clay	100.0			7.22	0.99	n.a.	n.a.	0.90	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	7.502	0.140	3477.3	2240.3	5.145	2.429	3.19		Clay	100.0			7.09	0.99	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	7.559	0.107	3498.0	2250.8	5.163	1.842	3.13		Clay	100.0			7.14	0.98	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	7.687	0.108	3518.6	2261.2	5.243	1.822	3.12		Clay	100.0			7.27	0.98	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	8.291	0.097	3539.3	2271.6	5.742	1.487	3.05		Clay	100.0			7.84	0.98	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	9.306	0.157	3560.0	2282.1	6.596	2.086	3.07		Clay	100.0			8.80	0.98	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	10.382	0.214	3580.6	2292.5	7.495	2.491	3.06		Clay	100.0			9.81	0.98	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	10.796	0.256	3601.3	2302.9	7.812	2.846	3.07		Clay	100.0			10.20	0.98	n.a.	n.a.	0.89	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	10.636	0.262	3621.9	2313.4	7.630	2.969	3.09		Clay	100.0			10.05	0.98	n.a.	n.a.	0.89	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	10.230	0.232	3642.6	2323.8	7.237	2.759	3.09		Clay	100.0			9.67	0.98	n.a.	n.a.	0.89	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	10.205	0.210	3663.3	2334.2	7.174	2.508	3.08		Clay	100.0			9.65	0.97	n.a.	n.a.	0.89	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	10.334	0.190	3684.1	2344.7	7.244	2.237	3.05		Clay	100.0			9.77	0.97	n.a.	n.a.	0.89	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	10.701	0.207	3704.7	2355.1	7.514	2.339	3.04		Clay	100.0			10.11	0.97	n.a.	n.a.	0.89	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	10.582	0.211	3725.4	2365.6	7.372	2.420	3.06		Clay	100.0			10.00	0.97	n.a.	n.a.	0.88	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	9.873	0.216	3746.1	2376.0	6.734	2.700	3.12		Clay	100.0			9.33	0.97	n.a.	n.a.	0.88	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	8.810	0.206	3766.7	2386.4	5.805	2.974	3.19		Clay	100.0			8.33	0.97	n.a.	n.a.	0.88	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	7.798	0.163	3787.4	2396.9	4.927	2.761	3.24		Clay	100.0			7.37	0.97	n.a.	n.a.	0.88	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	7.181	0.133	3808.0	2407.3	4.384	2.520	3.26		Clay	100.0			6.79	0.97	n.a.	n.a.	0.88	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	6.804	0.118	3828.7	2417.7	4.045	2.413	3.28		Clay	100.0			6.43	0.97	n.a.	n.a.	0.88	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	6.731	0.117	3849.4	2428.2	3.959	2.434	3.29		Clay	100.0			6.36	0.96	n.a.	n.a.	0.88	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	6.920	0.125	3870.0	2438.6	4.088	2.508	3.29		Clay	100.0			6.54	0.96	n.a.	n.a.	0.88	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	7.109	0.126	3890.7	2449.0	4.217	2.440	3.27		Clay	100.0			6.72	0.96	n.a.	n.a.	0.88	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	7.590	0.136	3911.4	2459.4	4.582	2.414	3.23		Clay	100.0			7.17	0.96	n.a.	n.a.	0.88	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	8.476	0.149	3932.0	2469.9	5.272	2.289	3.17		Clay	100.0			8.01	0.96	n.a.	n.a.	0.88	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	9.477	0.206	3952.7	2480.3	6.048	2.746	3.16		Clay	100.0			8.96	0.96	n.a.	n.a.	0.87	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	10.183	0.211	3973.4	2490.7	6.581	2.574	3.11		Clay	100.0			9.62	0.96	n.a.	n.a.	0.87	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	10.031	0.227	3994.0	2501.2	6.424	2.825	3.14		Clay	100.0			9.48	0.96	n.a.	n.a.	0.87	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	9.773	0.213	4014.7	2511.6	6.184	2.743	3.15		Clay	100.0			9.24	0.96	n.a.	n.a.	0.87	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	9.457	0.203	4035.4	2522.0	5.899	2.729	3.17		Clay	100.0			8.94	0.95	n.a.	n.a.	0.87	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	9.658	0.198	4056.0	2532.5	6.026	2.595	3.15		Clay	100.0			9.13	0.95	n.a.	n.a.	0.87	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	9.609	0.194	4076.7	2542.9	5.954	2.563	3.15		Clay	100.0			9.08	0.95	n.a.	n.a.	0.87	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	9.338	0.173	4097.3	2553.3	5.710	2.373	3.15		Clay	100.0			8.83	0.95	n.a.	n.a.	0.87	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	8.932	0.160	4118.0	2563.7	5.362	2.328	3.17		Clay	100.0			8.44	0.95	n.a.	n.a.	0.87	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	8.922	0.143	4138.7	2574.2	5.324	2.087	3.15		Clay	100.0			8.43	0.95	n.a.	n.a.	0.87	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	9.074	0.124	4159.3	2584.6	5.412	1.773	3.11		Clay	100.0			8.58	0.95	n.a.	n.a.	0.87	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.82

Total Settlement: 0.77 (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)
33.301	9.197	0.116	4180.1	2595.1	5.477	1.632	3.08		Clay	100.0			8.69	0.95	n.a.	n.a.	0.87	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	9.132	0.112	4200.8	2605.5	5.397	1.593	3.09		Clay	100.0			8.63	0.95	n.a.	n.a.	0.86	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	9.084	0.100	4221.5	2616.0	5.331	1.434	3.07		Clay	100.0			8.59	0.95	n.a.	n.a.	0.86	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	9.173	0.110	4242.1	2626.4	5.370	1.560	3.08		Clay	100.0			8.67	0.94	n.a.	n.a.	0.86	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	9.353	0.166	4262.8	2636.8	5.478	2.299	3.16		Clay	100.0			8.84	0.94	n.a.	n.a.	0.86	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	10.461	0.176	4283.4	2647.3	6.285	2.116	3.09		Clay	100.0			9.89	0.94	n.a.	n.a.	0.86	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	13.329	0.361	4304.1	2657.7	8.411	3.230	3.08		Clay	100.0			12.60	0.94	n.a.	n.a.	0.86	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	16.676	0.568	4324.8	2668.1	10.879	3.914	3.03		Clay	100.0			15.76	0.94	n.a.	n.a.	0.86	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	17.518	0.601	4345.4	2678.5	11.458	3.917	3.02		Clay	100.0			16.56	0.94	n.a.	n.a.	0.86	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	15.508	0.545	4366.1	2689.0	9.911	4.090	3.08		Clay	100.0			14.66	0.94	n.a.	n.a.	0.86	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	14.192	0.494	4386.8	2699.4	8.890	4.117	3.12		Clay	100.0			13.41	0.94	n.a.	n.a.	0.86	0.794	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	31.703	0.786	4407.4	2709.8	21.772	2.664	2.69		Clay	78.5			29.97	0.94	n.a.	n.a.	0.86	0.794	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	80.110	1.033	4428.1	2720.3	64.935	1.326	2.13		Sand	33.6	167.02	1.55	258.88	0.94	242.28	333.53	0.85	0.794	0.925	#########	########	##########	0.00	0.00
35.433	134.683	0.558	4448.8	2730.7	110.209	0.421	1.66		Sand	0.0	167.02	1.55	258.88	0.93	241.13	241.13	0.85	0.793	0.923	48.412	98.358	124.00	0.00	0.00
35.597	170.207	0.839	4469.4	2741.1	139.491	0.499	1.61		Sand	0.0	167.02	1.55	258.88	0.93	240.86	240.86	0.85	0.793	0.922	47.033	95.438	120.38	0.00	0.00
35.761	176.703	0.933	4490.1	2751.6	144.602	0.535	1.62		Sand	0.0		1.55	258.87	0.93	240.58	240.58	0.85	0.792	0.921	45.673	92.564	116.81	0.00	0.00
35.925	169.596	1.215	4510.8	2762.0	138.440	0.726	1.71		Sand	0.0	167.02	1.55	258.88	0.93	240.31	240.31	0.85	0.792	0.920	44.417	89.907	113.51	0.00	0.00
36.089	151.542	1.161	4531.4	2772.4	123.263	0.778	1.77		Sand	4.7	167.02	1.55	258.88	0.93	240.05	240.18	0.85	0.792	0.919	43.824	88.597	111.91	0.00	0.00
36.253	123.943	1.057	4552.1	2782.9	100.277	0.869	1.87		Sand	12.7	167.02	1.55	258.88	0.93	240.83	264.66	0.85	0.791	0.918	882.878	1782.702	2252.98	0.00	0.00
36.417	88.475	1.230	4572.7	2793.3	70.903	1.427	2.12		Sand	32.9	167.02	1.55	258.88	0.93	240.59	330.23	0.85	0.791	0.917	#########	########	##########	0.00	0.00
36.581	57.597	1.124	4593.4	2803.7	45.408	2.033	2.37		Sand	52.7	167.02	1.55	258.88	0.93	240.36	351.99	0.85	0.790	0.916	#########	########	##########	0.00	0.00
36.745	31.866	0.777	4614.1	2814.1	21.007	2.629	2.70		Clay	79.2			30.12	0.93	n.a.	n.a.	0.85	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	19.551	0.584	4634.7	2824.6	12.203	3.389	2.96		Clay	99.6			18.48	0.93	n.a.	n.a.	0.85	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	15.243	0.290	4655.4	2835.0	9.111	2.245	2.96		Clay	99.9			14.41	0.93	n.a.	n.a.	0.84	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	14.663	0.219	4676.2	2845.5	8.663	1.777	2.93		Clay	97.2			13.86	0.92	n.a.	n.a.	0.84	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	15.091	0.259	4696.9	2855.9	8.924	2.033	2.95		Clay	98.7			14.26	0.92	n.a.	n.a.	0.84	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	22.179	0.651	4717.5	2866.4	13.830	3.285	2.91		Clay	95.4			20.96	0.92	n.a.	n.a.	0.84	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	32.027	0.944	4738.2	2876.8	20.619	3.183	2.76		Clay	83.8			30.27	0.92	n.a.	n.a.	0.84	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	43.424	0.944	4758.8	2887.2	33.211	2.300	2.51		Sand	63.8	45.61	1.72	78.45	0.88	68.77	137.87	0.84	0.787	0.955	0.225	0.331	0.42	0.02	0.04
38.058	48.252	0.959	4779.5	2897.6	37.043	2.091	2.45		Sand	58.8		1.72	78.44	0.87	68.59	136.14	0.84	0.787	0.955	0.218	0.318	0.40	0.02	0.05
38.222	45.349	1.047	4800.2	2908.1	34.628	2.438	2.51		Sand	64.0	45.61	1.72	78.45	0.87	68.55	137.64	0.84	0.786	0.954	0.224	0.329	0.42	0.02	0.04
38.386	41.347	0.674	4820.8	2918.5	31.336	1.731	2.45		Sand	59.3	45.61	1.72	78.45	0.87	68.38	136.06	0.84	0.786	0.954	0.218	0.317	0.40	0.02	0.05
38.550	37.080	0.565	4841.5	2928.9	27.844	1.630	2.48		Sand	61.4	45.61	1.72	78.45	0.87	68.30	136.60	0.84	0.785	0.954	0.220	0.321	0.41	0.02	0.05
38.714	32.910	0.496	4862.2	2939.4	24.442	1.627	2.53		Sand	65.1	45.61	1.72	78.45	0.87	68.24	137.54	0.84	0.785	0.953	0.224	0.328	0.42	0.02	0.05
38.878	26.786	0.358	4882.8	2949.8	16.506	1.471	2.65		Clay	74.6			25.32	0.92	n.a.	n.a.	0.84	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	19.211	0.311	4903.5	2960.2	11.323	1.856	2.84		Clay	90.0			18.16	0.92	n.a.	n.a.	0.83	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	15.696	0.219	4924.2	2970.7	8.910	1.655	2.90		Clay	95.2			14.84	0.91	n.a.	n.a.	0.83	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	13.454	0.167	4944.8	2981.1	7.367	1.521	2.96		Clay	99.5			12.72	0.91	n.a.	n.a.	0.83	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	13.362	0.134	4965.5	2991.5	7.273	1.232	2.92		Clay	96.5			12.63	0.91	n.a.	n.a.	0.83	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	14.974	0.187	4986.1	3002.0	8.315	1.498	2.91		Clay	95.6			14.15	0.91	n.a.	n.a.	0.83	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	17.523	0.339	5006.8	3012.4	9.972	2.257	2.93		Clay	97.4			16.56	0.91	n.a.	n.a.	0.83	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	20.248	0.535	5027.5	3022.8	11.734	3.017	2.94		Clay	98.3			19.14	0.91	n.a.	n.a.	0.83	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	31.975	0.569	5048.1	3033.2	19.419	1.932	2.65		Clay	75.1			30.22	0.91	n.a.	n.a.	0.83	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	43.703	0.885	5068.8	3043.7	32.444	2.150	2.50		Sand	63.0	49.37	1.8	88.87	0.86	76.64	147.75	0.83	0.780	0.943	0.274	0.425	0.55	0.02	0.04
40.518	52.230	1.190	5089.5	3054.1	39.089	2.395	2.47		Sand	60.3		1.8	88.86	0.86	76.49	146.75	0.83	0.779	0.943	0.268	0.413	0.53	0.02	0.04
40.682	50.206	1.177	5110.1	3064.5	37.425	2.470	2.49		Sand	62.2	49.37	1.8	88.87	0.86	76.41	147.22	0.83	0.779	0.942	0.271	0.418	0.54	0.02	0.04
40.846	46.423	1.587	5130.8	3075.0	28.526	3.619	2.69		Clay	78.0			43.88	0.91	n.a.	n.a.	0.82	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	45.174	1.749	5151.5	3085.4	27.613	4.106	2.73		Clay	81.8			42.70	0.91	n.a.	n.a.	0.82	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	44.705	1.361	5172.3	3095.9	27.210	3.231	2.67		Clay	76.7			42.25	0.90	n.a.	n.a.	0.82	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	42.145	1.426	5192.9	3106.3	25.463	3.606	2.72		Clay	80.9			39.83	0.90	n.a.	n.a.	0.82	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	37.579	1.316	5213.6	3116.8	22.441	3.763	2.78		Clay	85.2			35.52	0.90	n.a.	n.a.	0.82	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	31.544	1.072	5234.2	3127.2	18.500	3.706	2.84		Clay	90.0			29.81	0.90	n.a.	n.a.	0.82	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	25.263	0.880	5254.9	3137.6	14.429	3.888	2.94		Clay	97.8			23.88	0.90	n.a.	n.a.	0.82	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	19.406	0.692	5275.6	3148.0	10.653	4.127	3.06		Clay	100.0			18.34	0.90	n.a.	n.a.	0.82	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	14.356	0.471	5296.2	3158.5	7.414	4.023	3.18		Clay	100.0			13.57	0.90	n.a.	n.a.	0.82	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	12.237	0.300	5316.9	3168.9	6.045	3.132	3.19		Clay	100.0			11.57	0.90	n.a.	n.a.	0.82	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	12.003	0.234	5337.6	3179.3	5.872	2.507	3.15		Clay	100.0			11.34	0.90	n.a.	n.a.	0.82	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	12.544	0.221	5358.2	3189.8	6.185	2.240	3.10		Clay	100.0			11.86	0.90	n.a.	n.a.	0.81	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	13.772	0.229	5378.9	3200.2	6.926	2.066	3.04		Clay	100.0			13.02	0.90	n.a.	n.a.	0.81	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	15.244	0.269	5399.6	3210.6	7.814	2.144	3.01		Clay	100.0			14.41	0.90	n.a.	n.a.	0.81	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	16.485	0.290	5420.2	3221.1	8.553	2.105	2.97		Clay	100.0			15.58	0.90	n.a.	n.a.	0.81	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	17.175	0.352	5440.9	3231.5	8.946	2.435	2.99		Clay	100.0			16.23	0.89	n.a.	n.a.	0.81	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	17.274	0.410	5461.5	3241.9	8.972	2.819	3.02		Clay	100.0			16.33	0.89	n.a.	n.a.	0.81	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	16.860	0.441	5482.2	3252.3	8.682	3.123	3.06		Clay	100.0			15.94	0.89	n.a.	n.a.	0.81	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	16.313	0.427	5502.9	3262.8	8.313	3.149	3.08		Clay	100.0			15.42	0.89	n.a.	n.a.	0.81	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	15.968	0.462	5523.5	3273.2	8.069	3.498	3.11		Clay	100.0			15.09	0.89	n.a.	n.a.	0.81	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	16.242	0.465	5544.2	3283.6	8.204	3.452	3.10		Clay	100.0			15.35	0.89	n.a.	n.a.	0.81	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.82

Total Settlement: 0.77 (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)
44.291	19.137	0.674	5564.9	3294.1	9.930	4.121	3.08		Clay	100.0			18.09	0.89	n.a.	n.a.	0.81	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	38.694	0.569	5585.5	3304.5	27.154	1.585	2.48		Sand	61.6	83.86		83.86	0.83	69.44	138.10	0.80	0.767	0.936	0.226	0.326	0.43	0.02	0.04
44.619	63.008	1.380	5606.2	3314.9	45.464	2.292	2.40		Sand	55.4	83.86		83.86	0.83	69.21	135.76	0.80	0.766	0.936	0.217	0.309	0.40	0.02	0.05
44.783	84.311	2.364	5626.9	3325.4	61.447	2.901	2.38		Sand	53.3	83.86		83.86	0.82	69.07	134.77	0.80	0.765	0.937	0.213	0.302	0.39	0.02	0.05
44.948	88.727	2.506	5647.6	3335.9	64.666	2.917	2.36		Sand	52.2			83.86	0.82	68.94	134.16	0.80	0.765	0.936	0.211	0.297	0.39	0.02	0.05
45.112	79.958	1.648	5668.3	3346.3	57.967	2.137	2.31		Sand	47.4			75.57	0.81	61.44	122.52	0.80	0.764	0.942	0.177	0.234	0.31	0.03	0.05
45.276	70.265	2.009	5689.0	3356.7	50.595	2.980	2.45		Sand	58.8			66.41	0.81	53.65	117.04	0.80	0.764	0.944	0.165	0.212	0.28	0.03	0.05
45.440	89.049	2.306	5709.6	3367.1	64.583	2.675	2.34		Sand	50.1			84.17	0.82	68.86	133.14	0.80	0.763	0.936	0.208	0.290	0.38	0.02	0.05
45.604	132.914	2.359	5730.3	3377.6	97.292	1.814	2.09		Sand	30.5			125.63	0.84	104.99	162.20	0.80	0.762	0.917	0.395	0.660	0.87	0.01	0.02
45.768	179.700	2.666	5751.0	3388.0	132.082	1.508	1.94		Sand	18.4			169.85	0.85	143.76	182.06	0.80	0.762	0.898	0.790	1.507	1.98	0.00	0.00
45.932	212.841	2.721	5771.6	3398.4	156.588	1.296	1.84		Sand	10.6			201.17	0.85	170.05	181.68	0.80	0.761	0.898	0.777	1.478	1.94	0.00	0.00
46.096	235.861	3.871	5792.3	3408.9	173.483	1.662	1.89		Sand	14.6			222.93	0.87	193.12	222.25	0.80	0.761	0.857	8.509	16.041	21.09	0.00	0.00
46.260	259.332	3.177	5813.0	3419.3	190.662	1.239	1.77		Sand	4.8			245.12	0.86	210.69	210.83	0.80	0.760	0.856	3.683	6.936	9.12	0.00	0.00
46.424	264.129	3.200	5833.6	3429.7	193.926	1.225	1.76		Sand	4.1			249.65	0.86	214.92	214.96	0.79	0.760	0.855	4.901	9.221	12.14	0.00	0.00
46.588	267.635	3.893	5854.3	3440.2	196.223	1.471	1.82		Sand	8.6			252.96	0.87	218.88	224.93	0.79	0.759	0.854	10.589	19.899	26.22	0.00	0.00
46.752	253.869	3.076	5875.0	3450.6	185.729	1.226	1.78		Sand	5.1			239.95	0.85	204.92	205.17	0.79	0.758	0.863	2.562	4.866	6.42	0.00	0.00
46.916	257.339	2.937	5895.6	3461.0	188.006	1.155	1.75		Sand	3.3			243.23	0.85	207.88	207.89	0.79	0.758	0.858	3.036	5.730	7.56	0.00	0.00
47.080	277.434	3.273	5916.3	3471.4	202.545	1.192	1.74		Sand	2.4			262.22	0.86	226.50	226.50	0.79	0.757	0.851	12.090	22.649	29.91	0.00	0.00
47.244	317.662	3.267	5936.9	3481.9	231.875	1.038	1.66		Sand	0.0			300.25	0.88	263.28	263.28	0.79	0.757	0.851	725.935	1358.436	1795.49	0.00	0.00
47.408	337.246	2.947	5957.6	3492.3	245.929	0.882	1.59		Sand	0.0			318.76	0.88	279.29	279.29	0.79	0.756	0.850	8795.492	16441.558	21748.65	0.00	0.00
47.572	334.123	2.123	5978.3	3502.7	243.261	0.641	1.49		Sand	0.0			315.81	0.88	276.49	276.49	0.79	0.755	0.849	5481.473	10235.820	13550.59	0.00	0.00
47.736	321.288	1.829	5998.9	3513.2	233.477	0.575	1.47		Sand	0.0			303.67	0.87	265.66	265.66	0.79	0.755	0.848	1019.752	1902.232	2520.27	0.00	0.00
47.900	314.770	2.313	6019.6	3523.6	228.349	0.742	1.56		Sand	0.0			297.51	0.87	260.06	260.06	0.79	0.754	0.847	465.845	868.069	1151.03	0.00	0.00
48.064	308.722	2.436	6040.3	3534.0	223.581	0.797	1.59		Sand	0.0			291.80	0.87	254.87	254.87	0.79	0.754	0.846	236.224	439.725	583.53	0.00	0.00
48.228	303.939	2.481	6060.9	3544.5	219.751	0.825	1.60		Sand	0.0			287.28	0.87	250.17	250.17	0.78	0.753	0.845	132.841	247.022	328.07	0.00	0.00
48.392	295.496	2.936	6081.6	3554.9	213.264	1.004	1.67		Sand	0.0			279.30	0.87	241.83	241.83	0.78	0.752	0.844	52.089	96.759	128.61	0.00	0.00
48.556	294.431	3.567	6102.3	3565.3	212.169	1.224	1.74		Sand	2.0			278.29	0.86	240.58	240.58	0.78	0.752	0.843	45.680	84.767	112.76	0.00	0.00
48.720	298.707	2.573	6122.9	3575.8	214.961	0.870	1.62		Sand	0.0			282.33	0.87	244.45	244.45	0.78	0.751	0.843	69.092	128.078	170.52	0.00	0.00
48.885	305.323	2.741	6143.7	3586.2	219.442	0.907	1.63		Sand	0.0			288.59	0.87	250.58	250.58	0.78	0.751	0.842	139.520	258.363	344.25	0.00	0.00
49.049	296.240	2.285	6164.4	3596.7	212.531	0.779	1.59		Sand	0.0			280.00	0.86	241.62	241.62	0.78	0.750	0.841	50.959	94.267	125.71	0.00	0.00
49.213	274.231	2.772	6185.0	3607.1	196.284	1.022	1.70		Sand	0.0			259.20	0.85	220.49	220.49	0.78	0.749	0.840	7.411	13.695	18.28	0.00	0.00
49.377	264.490	3.416	6205.7	3617.5	188.951	1.307	1.79		Sand	6.3			249.99	0.85	211.34	212.56	0.78	0.749	0.839	4.141	7.645	10.21	0.00	0.00
49.541	268.502	3.276	6226.4	3628.0	191.568	1.234	1.77		Sand	4.5			253.78	0.85	214.68	214.78	0.78	0.748	0.838	4.840	8.925	11.93	0.00	0.00
49.705	287.884	3.407	6247.0	3638.4	205.256	1.196	1.74		Sand	2.1			272.10	0.86	232.73	232.73	0.78	0.747	0.837	21.073	38.822	51.94	0.00	0.00
49.869	299.981	2.473	6267.7	3648.8	213.663	0.833	1.61		Sand	0.0			283.54	0.86	244.07	244.07	0.78	0.747	0.837	66.311	122.037	163.42	0.00	0.00
50.033	293.105	1.866	6288.4	3659.3	208.408	0.644	1.54		Sand	0.0			277.04	0.86	237.26	237.26	0.77	0.746	0.836	32.582	59.901	80.28	0.00	0.00
50.197	271.554	2.039	6309.0	3669.7	192.637	0.760	1.62		Sand	0.0			256.67	0.84	216.63	216.63	0.77	0.746	0.835	5.533	10.162	13.63	0.00	0.00
50.361	245.246	2.075	6329.7	3680.1	173.501	0.857	1.69		Sand	0.0			231.80	0.83	192.01	192.01	0.77	0.745	0.867	1.240	2.365	3.17	0.00	0.00
50.525	232.516	2.100	6350.4	3690.6	164.138	0.916	1.72		Sand	0.9			219.77	0.82	180.20	180.20	0.77	0.744	0.882	0.732	1.351	1.82	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.82

Total Settlement: 1.54 (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)
0.328	74.479	0.178	40.0	40.0	511.767	0.239	0.97		Unsaturated	0.0			70.40	1.70	119.67	119.67	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.492	134.977	0.394	60.0	60.0	757.309	0.292	0.90		Unsaturated	0.0			127.58	1.70	216.88	216.88	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.656	146.158	0.611	80.0	80.0	710.140	0.418	1.04		Unsaturated	0.0			138.15	1.70	234.85	234.85	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	154.061	0.728	100.0	100.0	669.479	0.473	1.10		Unsaturated	0.0			145.62	1.70	247.55	247.55	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.984	115.229	1.095	120.0	120.0	457.015	0.951	1.45		Unsaturated	0.0			108.91	1.70	185.15	185.15	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.148	84.840	1.002	140.1	140.1	311.432	1.182	1.62		Unsaturated	0.0			80.19	1.70	136.32	136.32	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.312	62.539	1.050	160.1	160.1	214.645	1.681	1.84		Unsaturated	10.2			59.11	1.70	100.49	108.74	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.476	51.324	1.058	180.1	180.1	166.000	2.065	1.98		Unsaturated	21.4			48.51	1.70	82.47	120.10	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	48.893	1.109	200.1	200.1	149.978	2.273	2.04		Unsaturated	26.2			46.21	1.70	78.56	124.37	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.804	47.641	1.265	220.1	220.1	139.300	2.661	2.11		Unsaturated	32.0			45.03	1.70	76.55	129.74	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.969	46.812	1.289	240.2	240.2	130.982	2.761	2.14		Unsaturated	34.4			44.25	1.70	75.22	130.55	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.133	46.105	1.233	260.2	260.2	123.913	2.682	2.15		Unsaturated	34.8			43.58	1.70	74.08	129.59	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.297	46.114	1.055	280.2	280.2	119.405	2.295	2.11		Unsaturated	31.6			43.59	1.70	74.10	126.23	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.461	46.602	1.093	300.2	300.2	116.557	2.353	2.12		Unsaturated	32.8			44.05	1.70	74.88	128.50	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.625	47.138	1.197	320.3	320.3	114.136	2.548	2.15		Unsaturated	35.3			44.55	1.70	75.74	132.09	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.789	47.561	1.347	340.3	340.3	111.702	2.842	2.20		Unsaturated	38.7			44.95	1.70	76.42	135.79	1.00	0.533	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.953	47.343	1.556	360.3	360.3	108.034	3.299	2.26		Unsaturated	43.4			44.75	1.70	76.07	138.65	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.117	46.382	1.694	380.3	380.3	102.989	3.667	2.30		Unsaturated	47.3			43.84	1.70	74.53	138.94	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.281	45.214	1.710	400.3	400.3	97.822	3.799	2.33		Unsaturated	49.4			42.74	1.70	72.65	137.61	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.445	44.404	1.667	420.3	420.3	93.726	3.772	2.34		Unsaturated	50.1			41.97	1.70	71.35	136.32	1.00	0.532	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.609	43.348	1.657	440.3	440.3	89.363	3.842	2.36		Unsaturated	51.7			40.97	1.70	69.65	134.85	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.773	41.446	1.650	460.3	460.3	83.524	4.003	2.39		Unsaturated	54.3			39.17	1.70	66.60	132.02	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.937	39.185	1.557	480.3	480.3	77.261	3.998	2.41		Unsaturated	56.0			37.04	1.70	62.96	128.03	1.00	0.531	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.101	36.378	1.260	500.3	500.3	70.225	3.488	2.40		Unsaturated	54.7			34.38	1.70	58.45	121.81	1.00	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.265	33.562	0.953	520.3	520.3	63.475	2.862	2.36		Unsaturated	52.2			31.72	1.70	53.93	115.11	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.429	27.807	0.532	540.3	540.3	51.505	1.932	2.31		Unsaturated	48.2			26.28	1.70	44.68	101.75	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.593	22.081	0.301	560.3	560.3	40.042	1.381	2.31		Unsaturated	47.8			20.87	1.70	35.48	89.99	0.99	0.530	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.757	17.467	0.192	580.4	580.4	31.000	1.118	2.35		Unsaturated	51.0			16.51	1.70	28.07	81.89	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.921	17.552	0.197	600.4	600.4	30.613	1.142	2.36		Unsaturated	51.8			16.59	1.70	28.20	82.34	0.99	0.529	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.085	19.992	0.226	620.4	620.4	34.357	1.148	2.32		Sand	48.5			18.90	1.70	32.12	86.06	0.99	0.533	1.100	0.122	0.160	0.30	0.04	0.07
5.249	24.400	0.329	640.4	640.4	41.372	1.366	2.30		Sand	46.7			23.06	1.70	39.21	94.18	0.99	0.542	1.100	0.130	0.177	0.33	0.03	0.07
5.413	29.985	0.369	660.4	660.4	50.173	1.244	2.20		Sand	39.4			28.34	1.70	48.18	101.31	0.99	0.550	1.100	0.139	0.194	0.35	0.03	0.06
5.577	36.371	0.409	680.4	680.4	60.057	1.135	2.12		Sand	32.5			34.38	1.70	58.44	108.21	0.99	0.557	1.100	0.149	0.214	0.38	0.03	0.06
5.741	42.803	0.435	700.4	700.4	69.744	1.025	2.04		Sand	26.2			40.46	1.69	68.20	112.13	0.99	0.565	1.100	0.156	0.228	0.40	0.03	0.06
5.906	48.190	0.487	720.5	720.5	77.472	1.018	2.00		Sand	23.1			45.55	1.65	75.25	115.30	0.99	0.572	1.100	0.161	0.240	0.42	0.03	0.05
6.070	52.418	0.521	740.5	740.5	83.157	1.001	1.97		Sand	20.8			49.54	1.63	80.56	116.79	0.99	0.579	1.100	0.164	0.247	0.43	0.03	0.05
6.234	52.371	0.516	760.5	760.5	81.966	0.992	1.98		Sand	21.0			49.50	1.61	79.60	116.15	0.99	0.585	1.100	0.163	0.244	0.42	0.03	0.05
6.398	45.769	0.414	780.6	780.6	70.619	0.912	2.01		Sand	23.4	49.5		49.50	1.58	78.18	119.22	0.99	0.592	1.100	0.170	0.257	0.44	0.03	0.05
6.562	33.639	0.326	800.6	800.6	51.076	0.981	2.14		Sand	34.1	49.5		49.50	1.53	75.66	130.77	0.99	0.598	1.100	0.200	0.324	0.54	0.02	0.05
6.726	21.472	0.250	820.6	820.6	31.967	1.187	2.35		Sand	51.3	49.5		49.50	1.49	73.72	139.82	0.99	0.604	1.100	0.234	0.400	0.66	0.02	0.04
6.890	13.536	0.194	840.6	840.6	19.669	1.479	2.58		Sand	69.6	49.5		49.50	1.46	72.48	144.12	0.99	0.610	1.100	0.254	0.448	0.73	0.02	0.04
7.054	9.856	0.179	861.0	857.7	21.980	1.899	2.60		Clay	71.2			9.32	1.27	n.a.	n.a.	0.99	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.218	8.270	0.173	882.3	868.7	18.023	2.210	2.71		Clay	79.9			7.82	1.26	n.a.	n.a.	0.99	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.382	8.066	0.127	903.7	879.8	17.308	1.668	2.66		Clay	75.6			7.62	1.26	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.546	8.854	0.121	925.0	890.9	14.532	1.442	2.69	plastic	Clay	78.1			8.37	1.26	n.a.	n.a.	0.98	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.710	9.745	0.141	946.3	902.0	15.918	1.521	2.67	plastic	Clay	76.3			9.21	1.25	n.a.	n.a.	0.98	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
7.874	9.864	0.117	967.6	913.1	15.967	1.247	2.62	plastic	Clay	72.7			9.32	1.25	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.038	9.190	0.160	988.9	924.2	18.818	1.840	2.65		Clay	75.0			8.69	1.24	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.202	8.429	0.176	1010.3	935.3	16.945	2.221	2.73		Clay	81.7			7.97	1.24	n.a.	n.a.	0.98	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.366	8.316	0.186	1031.6	946.3	16.485	2.385	2.76		Clay	83.9			7.86	1.24	n.a.	n.a.	0.98	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	8.818	0.172	1052.9	957.4	17.320	2.074	2.71		Clay	79.8			8.33	1.23	n.a.	n.a.	0.98	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.694	9.811	0.140	1074.2	968.5	15.148	1.510	2.68	plastic	Clay	77.7			9.27	1.23	n.a.	n.a.	0.98	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.858	10.591	0.167	1095.5	979.6	16.275	1.663	2.68	plastic	Clay	77.3			10.01	1.23	n.a.	n.a.	0.98	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.022	10.451	0.171	1116.9	990.7	19.971	1.729	2.61	plastic	Clay	72.1			9.88	1.22	n.a.	n.a.	0.98	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.186	9.844	0.213	1138.2	1001.8	18.517	2.297	2.71		Clay	79.9			9.30	1.22	n.a.	n.a.	0.98	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	9.514	0.250	1159.5	1012.9	17.642	2.798	2.78		Clay	85.3			8.99	1.21	n.a.	n.a.	0.98	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.514	9.867	0.300	1180.8	1023.9	18.119	3.234	2.81		Clay	87.6			9.33	1.21	n.a.	n.a.	0.98	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.678	10.702	0.321	1202.1	1035.0	19.518	3.178	2.78		Clay	85.2			10.12	1.21	n.a.	n.a.	0.98	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.843	11.104	0.338	1223.6	1046.2	20.058	3.221	2.77		Clay	84.8			10.50	1.20	n.a.	n.a.	0.98	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.007	11.618	0.361	1244.9	1057.3	20.800	3.283	2.77		Clay	84.2			10.98	1.20	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	11.009	0.383	1266.2	1068.4	19.424	3.691	2.82		Clay	88.6			10.41	1.20	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	9.862	0.385	1287.6	1079.4	17.080	4.177	2.90		Clay	94.8			9.32	1.19	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	8.131	0.359	1308.9	1090.5	13.712	4.802	3.01		Clay	100.0			7.69	1.19	n.a.	n.a.	0.97	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	6.871	0.280	1330.2	1101.6	11.267	4.512	3.06		Clay	100.0			6.49	1.19	n.a.	n.a.	0.97	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	6.453	0.230	1351.5	1112.7	10.384	3.981	3.05		Clay	100.0			6.10	1.18	n.a.	n.a.	0.97	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	6.612	0.182	1372.8	1123.8	10.546	3.071	2.98		Clay	100.0			6.25	1.18	n.a.	n.a.	0.97	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	7.460	0.280	1394.2	1134.9	11.918	4.140	3.02		Clay	100.0			7.05	1.18	n.a.	n.a.	0.97	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.82

Total Settlement: 1.54 (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)
11.319	8.439	0.271	1415.5	1146.0	13.493	3.505	2.93		Clay	97.5			7.98	1.18	n.a.	n.a.	0.97	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	8.976	0.239	1436.8	1157.1	14.274	2.894	2.86		Clay	91.9			8.48	1.17	n.a.	n.a.	0.97	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	8.778	0.226	1458.1	1168.1	13.781	2.808	2.87		Clay	92.3			8.30	1.17	n.a.	n.a.	0.97	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	8.026	0.198	1479.4	1179.2	12.358	2.717	2.90		Clay	94.7			7.59	1.17	n.a.	n.a.	0.97	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	7.369	0.155	1500.8	1190.3	11.121	2.342	2.90		Clay	94.9			6.97	1.16	n.a.	n.a.	0.97	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	6.995	0.108	1522.1	1201.4	10.378	1.732	2.85		Clay	91.4			6.61	1.16	n.a.	n.a.	0.97	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	7.267	0.107	1543.4	1212.5	10.714	1.647	2.83		Clay	89.5			6.87	1.16	n.a.	n.a.	0.97	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	7.860	0.132	1564.7	1223.6	11.569	1.865	2.83		Clay	89.5			7.43	1.16	n.a.	n.a.	0.97	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	8.349	0.136	1586.0	1234.7	12.240	1.800	2.80		Clay	87.2			7.89	1.15	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	8.542	0.141	1607.4	1245.7	12.424	1.822	2.80		Clay	86.9			8.07	1.15	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	8.962	0.136	1628.7	1256.8	12.965	1.669	2.76		Clay	84.1			8.47	1.15	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	9.703	0.149	1650.0	1267.9	14.004	1.678	2.74		Clay	81.9			9.17	1.14	n.a.	n.a.	0.96	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	10.482	0.188	1671.3	1279.0	15.084	1.949	2.74		Clay	82.5			9.91	1.14	n.a.	n.a.	0.96	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	10.665	0.186	1692.6	1290.1	15.222	1.894	2.73		Clay	81.7			10.08	1.14	n.a.	n.a.	0.96	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	10.266	0.141	1714.0	1301.2	14.462	1.499	2.70		Clay	78.9			9.70	1.14	n.a.	n.a.	0.96	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	9.766	0.114	1735.4	1312.3	13.561	1.281	2.69		Clay	78.1			9.23	1.13	n.a.	n.a.	0.96	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	9.418	0.083	1756.7	1323.4	12.905	0.972	2.65		Clay	75.0			8.90	1.13	n.a.	n.a.	0.96	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	9.486	0.076	1778.0	1334.5	12.884	0.884	2.63	plastic	Clay	73.6			8.97	1.13	n.a.	n.a.	0.96	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	9.951	0.091	1799.4	1345.6	13.453	1.005	2.64		Clay	74.3			9.41	1.13	n.a.	n.a.	0.96	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	10.453	0.099	1820.7	1356.7	14.068	1.037	2.63	plastic	Clay	73.4			9.88	1.12	n.a.	n.a.	0.96	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	10.663	0.103	1842.0	1367.8	14.245	1.057	2.63	plastic	Clay	73.3			10.08	1.12	n.a.	n.a.	0.96	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	10.353	0.105	1863.3	1378.8	13.666	1.114	2.66		Clay	75.5			9.79	1.12	n.a.	n.a.	0.96	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	9.583	0.086	1884.6	1389.9	12.433	0.995	2.67		Clay	76.6			9.06	1.12	n.a.	n.a.	0.96	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	8.835	0.070	1906.0	1401.0	11.252	0.888	2.69		Clay	77.9			8.35	1.11	n.a.	n.a.	0.95	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	8.516	0.102	1927.3	1412.1	10.697	1.351	2.79		Clay	86.2			8.05	1.11	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	9.470	0.089	1948.6	1423.2	11.939	1.048	2.70		Clay	78.6			8.95	1.11	n.a.	n.a.	0.95	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	12.372	0.218	1969.9	1434.3	15.878	1.914	2.72		Clay	80.7			11.69	1.11	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	17.445	0.388	1991.2	1445.4	22.762	2.359	2.65		Clay	74.7			16.49	1.11	n.a.	n.a.	0.95	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	24.573	0.685	2012.6	1456.5	28.931	2.907	2.62		Mixed	72.7	39.39	1.55	61.05	1.17	71.28	143.25	0.95	0.763	1.056	0.250	0.420	0.55	0.02	0.04
16.076	30.676	0.945	2033.9	1467.5	33.662	3.186	2.60		Sand	70.8	38.39	1.55	59.50	1.17	69.38	140.38	0.95	0.764	1.054	0.236	0.389	0.51	0.02	0.04
16.240	34.434	1.045	2055.2	1478.6	37.772	3.128	2.55		Sand	67.4	38.39	1.55	59.50	1.16	69.20	139.36	0.95	0.765	1.052	0.232	0.379	0.49	0.02	0.04
16.404	35.509	1.204	2076.5	1489.7	38.830	3.493	2.58		Sand	69.2	38.39	1.55	59.50	1.16	68.98	139.52	0.95	0.766	1.051	0.232	0.380	0.50	0.02	0.04
16.568	39.362	1.320	2097.8	1500.8	42.999	3.445	2.54		Sand	66.3	38.39	1.55	59.50	1.16	68.80	138.59	0.95	0.767	1.050	0.228	0.371	0.48	0.02	0.04
16.732	40.619	1.335	2119.2	1511.9	44.235	3.375	2.53		Sand	65.1		1.55	59.51	1.15	68.61	138.04	0.95	0.768	1.049	0.226	0.365	0.48	0.02	0.04
16.896	36.341	0.947	2140.5	1523.0	39.295	2.685	2.50		Sand	62.8	39.39	1.55	61.05	1.15	70.13	139.34	0.95	0.769	1.048	0.231	0.377	0.49	0.02	0.04
17.060	28.950	0.934	2161.8	1534.1	32.992	3.351	2.62		Mixed	72.4	39.39	1.55	61.05	1.14	69.84	141.33	0.95	0.770	1.048	0.240	0.396	0.51	0.02	0.04
17.224	30.058	1.195	2183.1	1545.1	37.494	4.125	2.64		Clay	74.1			28.41	1.09	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	40.587	1.259	2204.4	1556.2	43.518	3.189	2.51	plastic	Clay	64.2			38.36	1.08	n.a.	n.a.	0.94	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	52.918	0.923	2225.8	1567.3	56.894	1.782	2.26	plastic	Clay	43.7			50.02	1.08	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	52.781	1.437	2247.2	1578.5	56.531	2.782	2.39	plastic	Clay	54.3			49.89	1.08	n.a.	n.a.	0.94	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	39.302	0.796	2268.5	1589.6	41.623	2.086	2.41	plastic	Clay	55.6			37.15	1.08	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	21.625	0.577	2289.9	1600.6	25.590	2.817	2.65		Clay	75.3			20.44	1.08	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	9.977	0.330	2311.2	1611.7	10.947	3.741	3.02		Clay	100.0			9.43	1.07	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	7.744	0.103	2332.5	1622.8	8.107	1.566	2.93		Clay	97.1			7.32	1.07	n.a.	n.a.	0.94	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	8.081	0.104	2353.8	1633.9	8.451	1.506	2.90		Clay	95.2			7.64	1.07	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	9.368	0.139	2375.1	1645.0	9.946	1.699	2.87		Clay	92.3			8.85	1.07	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	12.453	0.246	2396.5	1656.1	13.592	2.186	2.81		Clay	87.7			11.77	1.07	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	16.204	0.295	2417.8	1667.2	17.989	1.967	2.68		Clay	77.6			15.32	1.06	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	20.441	0.372	2439.1	1678.2	21.368	1.935	2.62	plastic	Clay	72.4			19.32	1.06	n.a.	n.a.	0.94	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	19.747	0.855	2460.4	1689.3	21.922	4.617	2.84		Clay	90.5			18.66	1.06	n.a.	n.a.	0.94	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	18.623	0.806	2481.7	1700.4	20.445	4.637	2.87		Clay	92.4			17.60	1.06	n.a.	n.a.	0.93	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	14.961	0.752	2503.1	1711.5	16.020	5.485	3.00		Clay	100.0			14.14	1.06	n.a.	n.a.	0.93	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	13.105	0.568	2524.4	1722.6	13.750	4.796	3.01		Clay	100.0			12.39	1.06	n.a.	n.a.	0.93	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	9.943	0.322	2545.7	1733.7	10.002	3.714	3.05		Clay	100.0			9.40	1.05	n.a.	n.a.	0.93	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	8.488	0.239	2567.0	1744.8	8.258	3.317	3.09		Clay	100.0			8.02	1.05	n.a.	n.a.	0.93	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	8.029	0.194	2588.3	1755.9	7.671	2.881	3.08		Clay	100.0			7.59	1.05	n.a.	n.a.	0.93	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	9.350	0.277	2609.7	1766.9	9.106	3.443	3.06		Clay	100.0			8.84	1.05	n.a.	n.a.	0.93	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	10.085	0.356	2631.0	1778.0	9.864	4.060	3.08		Clay	100.0			9.53	1.05	n.a.	n.a.	0.93	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	11.787	0.479	2652.3	1789.1	11.694	4.579	3.05		Clay	100.0			11.14	1.05	n.a.	n.a.	0.93	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	18.026	0.535	2673.6	1800.2	18.542	3.206	2.80		Clay	86.8			17.04	1.04	n.a.	n.a.	0.93	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	26.048	0.577	2694.9	1811.3	26.031	2.336	2.60		Mixed	70.8	31.55	1.8	56.79	1.07	60.80	129.30	0.93	0.787	1.021	0.195	0.291	0.37	0.02	0.05
21.325	33.379	0.765	2716.3	1822.4	32.613	2.389	2.53		Sand	65.1		1.8	56.79	1.07	60.66	127.80	0.93	0.787	1.020	0.191	0.282	0.36	0.02	0.05
21.490	29.943	0.574	2737.7	1833.5	29.014	2.009	2.52		Sand	64.6	31.55	1.8	56.79	1.07	60.51	127.47	0.93	0.787	1.019	0.190	0.280	0.36	0.02	0.05
21.654	23.012	0.513	2759.0	1844.6	23.455	2.371	2.64		Clay	73.9			21.75	1.04	n.a.	n.a.	0.92	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	16.014	0.398	2780.3	1855.7	15.761	2.722	2.81		Clay	87.9			15.14	1.04	n.a.	n.a.	0.92	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	13.929	0.435	2801.7	1866.8	13.422	3.472	2.93		Clay	97.4			13.17	1.03	n.a.	n.a.	0.92	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	16.602	0.327	2823.0	1877.9	16.178	2.153	2.74		Clay	82.4			15.69	1.03	n.a.	n.a.	0.92	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.82

Total Settlement:	1.54	(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)
22.310	17.046	0.320	2844.3	1889.0	16.542	2.048	2.72		Clay	80.8			16.11	1.03	n.a.	n.a.	0.92	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	16.019	0.224	2865.6	1900.0	15.354	1.536	2.68		Clay	77.6			15.14	1.03	n.a.	n.a.	0.92	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	11.883	0.217	2886.9	1911.1	10.925	2.079	2.88		Clay	93.2			11.23	1.03	n.a.	n.a.	0.92	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	9.928	0.205	2908.3	1922.2	8.817	2.419	2.99		Clay	100.0			9.38	1.03	n.a.	n.a.	0.92	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	9.604	0.248	2929.6	1933.3	8.420	3.047	3.06		Clay	100.0			9.08	1.02	n.a.	n.a.	0.92	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	9.752	0.251	2950.9	1944.4	8.513	3.033	3.06		Clay	100.0			9.22	1.02	n.a.	n.a.	0.92	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	9.869	0.270	2972.2	1955.5	8.574	3.221	3.07		Clay	100.0			9.33	1.02	n.a.	n.a.	0.92	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	9.760	0.296	2993.5	1966.6	8.404	3.582	3.10		Clay	100.0			9.22	1.02	n.a.	n.a.	0.92	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	9.566	0.296	3014.9	1977.6	8.150	3.673	3.12		Clay	100.0			9.04	1.02	n.a.	n.a.	0.92	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	9.353	0.258	3036.2	1988.7	7.879	3.293	3.11		Clay	100.0			8.84	1.02	n.a.	n.a.	0.91	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	9.489	0.255	3057.5	1999.8	7.961	3.203	3.09		Clay	100.0			8.97	1.02	n.a.	n.a.	0.91	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	9.652	0.266	3078.8	2010.9	8.069	3.279	3.10		Clay	100.0			9.12	1.01	n.a.	n.a.	0.91	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	9.759	0.276	3100.1	2022.0	8.120	3.362	3.10		Clay	100.0			9.22	1.01	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	10.092	0.284	3121.5	2033.1	8.392	3.329	3.09		Clay	100.0			9.54	1.01	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	10.756	0.274	3142.8	2044.2	8.986	2.983	3.03		Clay	100.0			10.17	1.01	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	11.796	0.315	3164.1	2055.3	9.939	3.084	3.01		Clay	100.0			11.15	1.01	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	12.636	0.376	3185.4	2066.3	10.689	3.405	3.00		Clay	100.0			11.94	1.01	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	13.202	0.437	3206.7	2077.4	11.166	3.768	3.02		Clay	100.0			12.48	1.00	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	13.136	0.457	3228.1	2088.5	11.034	3.966	3.03		Clay	100.0			12.42	1.00	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	12.517	0.427	3249.5	2099.7	10.375	3.920	3.05		Clay	100.0			11.83	1.00	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	11.899	0.391	3270.8	2110.8	9.725	3.810	3.07		Clay	100.0			11.25	1.00	n.a.	n.a.	0.91	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	11.858	0.348	3292.2	2121.8	9.626	3.408	3.04		Clay	100.0			11.21	1.00	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	12.089	0.356	3313.5	2132.9	9.782	3.412	3.04		Clay	100.0			11.43	1.00	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	12.282	0.343	3334.8	2144.0	9.902	3.231	3.02		Clay	100.0			11.61	1.00	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	12.061	0.393	3356.1	2155.1	9.636	3.785	3.07		Clay	100.0			11.40	1.00	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	11.689	0.327	3377.4	2166.2	9.233	3.270	3.05		Clay	100.0			11.05	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	11.064	0.281	3398.8	2177.3	8.602	3.001	3.05		Clay	100.0			10.46	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	10.562	0.262	3420.1	2188.4	8.090	2.960	3.07		Clay	100.0			9.98	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	10.222	0.214	3441.4	2199.4	7.730	2.517	3.05		Clay	100.0			9.66	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	9.853	0.220	3462.7	2210.5	7.348	2.709	3.08		Clay	100.0			9.31	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.231	9.477	0.187	3484.0	2221.6	6.963	2.418	3.08		Clay	100.0			8.96	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	9.207	0.182	3505.4	2232.7	6.677	2.442	3.10		Clay	100.0			8.70	0.99	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	9.372	0.163	3526.7	2243.8	6.782	2.142	3.06		Clay	100.0			8.86	0.98	n.a.	n.a.	0.90	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	9.647	0.198	3548.0	2254.9	6.983	2.515	3.09		Clay	100.0			9.12	0.98	n.a.	n.a.	0.89	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	9.663	0.210	3569.3	2266.0	6.954	2.666	3.10		Clay	100.0			9.13	0.98	n.a.	n.a.	0.89	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	9.441	0.235	3590.6	2277.0	6.715	3.074	3.15		Clay	100.0			8.92	0.98	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	8.963	0.219	3612.0	2288.1	6.256	3.060	3.17		Clay	100.0			8.47	0.98	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	8.507	0.184	3633.3	2299.2	5.820	2.750	3.17		Clay	100.0			8.04	0.98	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	8.336	0.155	3654.6	2310.3	5.634	2.381	3.15		Clay	100.0			7.88	0.98	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	8.604	0.182	3675.9	2321.4	5.829	2.690	3.17		Clay	100.0			8.13	0.98	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	8.937	0.203	3697.2	2332.5	6.078	2.864	3.17		Clay	100.0			8.45	0.97	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	9.059	0.201	3718.6	2343.6	6.144	2.792	3.16		Clay	100.0			8.56	0.97	n.a.	n.a.	0.89	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	9.210	0.163	3739.9	2354.7	6.235	2.221	3.10		Clay	100.0			8.71	0.97	n.a.	n.a.	0.89	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	9.446	0.153	3761.3	2365.8	6.396	2.022	3.07		Clay	100.0			8.93	0.97	n.a.	n.a.	0.89	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	9.741	0.190	3782.6	2376.9	6.605	2.420	3.10		Clay	100.0			9.21	0.97	n.a.	n.a.	0.89	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	9.950	0.214	3804.0	2388.0	6.740	2.659	3.11		Clay	100.0			9.40	0.97	n.a.	n.a.	0.88	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	10.534	0.216	3825.3	2399.1	7.187	2.505	3.07		Clay	100.0			9.96	0.97	n.a.	n.a.	0.88	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	11.597	0.242	3846.6	2410.2	8.027	2.502	3.03		Clay	100.0			10.96	0.97	n.a.	n.a.	0.88	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	12.792	0.253	3867.9	2421.2	8.969	2.330	2.98		Clay	100.0			12.09	0.97	n.a.	n.a.	0.88	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	13.470	0.288	3889.2	2432.3	9.477	2.499	2.97		Clay	100.0			12.73	0.96	n.a.	n.a.	0.88	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	13.302	0.288	3910.6	2443.4	9.288	2.538	2.98		Clay	100.0			12.57	0.96	n.a.	n.a.	0.88	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	12.604	0.317	3931.9	2454.5	8.668	2.980	3.05		Clay	100.0			11.91	0.96	n.a.	n.a.	0.88	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	11.965	0.302	3953.2	2465.6	8.102	3.024	3.07		Clay	100.0			11.31	0.96	n.a.	n.a.	0.88	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	11.677	0.316	3974.5	2476.7	7.825	3.261	3.11		Clay	100.0			11.04	0.96	n.a.	n.a.	0.88	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	12.661	0.320	3995.8	2487.8	8.572	3.001	3.05		Clay	100.0			11.97	0.96	n.a.	n.a.	0.88	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	15.153	0.380	4017.2	2498.8	10.520	2.891	2.97		Clay	100.0			14.32	0.96	n.a.	n.a.	0.88	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	18.533	0.482	4038.5	2509.9	13.159	2.919	2.89		Clay	94.4			17.52	0.96	n.a.	n.a.	0.87	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	21.306	0.506	4059.8	2521.0	15.292	2.625	2.81		Clay	88.0			20.14	0.95	n.a.	n.a.	0.87	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	22.587	0.534	4081.1	2532.1	16.229	2.599	2.79		Clay	86.1			21.35	0.95	n.a.	n.a.	0.87	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	23.718	0.616	4102.4	2543.2	17.039	2.843	2.80		Clay	86.6			22.42	0.95	n.a.	n.a.	0.87	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	22.833	0.753	4123.8	2554.3	16.264	3.625	2.88		Clay	93.0			21.58	0.95	n.a.	n.a.	0.87	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	30.161	0.822	4145.1	2565.4	21.898	2.926	2.72		Clay	80.3			28.51	0.95	n.a.	n.a.	0.87	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	49.907	0.886	4166.4	2576.4	40.964	1.853	2.38		Sand	53.4	59.27	1.8	106.69	0.93	99.25	173.17	0.87	0.786	0.961	0.561	1.068	1.36	0.00	0.00
32.644	62.445	1.208	4187.7	2587.5	51.584	2.002	2.32		Sand	49.0	59.27	1.8	106.69	0.93	99.02	170.70	0.87	0.785	0.961	0.516	0.963	1.23	0.00	0.01
32.808	62.710	1.516	4209.0	2598.6	51.691	2.501	2.39		Sand	54.1		1.8	106.69	0.93	98.94	173.07	0.87	0.785	0.959	0.559	1.062	1.35	0.00	0.00
32.972	50.662	1.882	4230.4	2609.7	37.205	3.877	2.62		Clay	72.8			47.88	0.95	n.a.	n.a.	0.87	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	50.530	1.845	4251.7	2620.8	36.939	3.812	2.62		Clay	72.6			47.76	0.95	n.a.	n.a.	0.87	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.82

Total Settlement: 1.54 (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)
33.301	50.932	1.821	4273.1	2631.9	37.079	3.732	2.61		Clay	72.0			48.14	0.94	n.a.	n.a.	0.87	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	50.308	1.449	4294.5	2643.0	40.730	3.009	2.52	plastic	Clay	64.5			47.55	0.94	n.a.	n.a.	0.86	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	41.766	0.998	4315.8	2654.1	33.427	2.520	2.53	plastic	Clay	65.6			39.48	0.94	n.a.	n.a.	0.86	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	32.359	0.748	4337.1	2665.2	22.655	2.478	2.66		Clay	75.8			30.59	0.94	n.a.	n.a.	0.86	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	21.192	0.582	4358.4	2676.3	14.208	3.061	2.88		Clay	93.2			20.03	0.94	n.a.	n.a.	0.86	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	14.414	0.411	4379.7	2687.4	9.097	3.362	3.06		Clay	100.0			13.62	0.94	n.a.	n.a.	0.86	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	12.233	0.259	4401.1	2698.5	7.436	2.582	3.07		Clay	100.0			11.56	0.94	n.a.	n.a.	0.86	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	12.162	0.190	4422.4	2709.6	7.345	1.909	3.01		Clay	100.0			11.50	0.94	n.a.	n.a.	0.86	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	12.666	0.194	4443.7	2720.6	7.678	1.857	2.98		Clay	100.0			11.97	0.94	n.a.	n.a.	0.86	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	13.886	0.250	4465.0	2731.7	8.532	2.145	2.98		Clay	100.0			13.12	0.93	n.a.	n.a.	0.86	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	15.304	0.325	4486.3	2742.8	9.524	2.488	2.97		Clay	100.0			14.47	0.93	n.a.	n.a.	0.86	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	15.506	0.330	4507.7	2753.9	9.624	2.490	2.97		Clay	100.0			14.66	0.93	n.a.	n.a.	0.86	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	14.288	0.354	4529.0	2765.0	8.697	2.944	3.04		Clay	100.0			13.50	0.93	n.a.	n.a.	0.85	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	12.647	0.359	4550.3	2776.1	7.472	3.461	3.14		Clay	100.0			11.95	0.93	n.a.	n.a.	0.85	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	11.724	0.296	4571.6	2787.2	6.773	3.136	3.15		Clay	100.0			11.08	0.93	n.a.	n.a.	0.85	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	11.432	0.205	4592.9	2798.2	6.529	2.244	3.09		Clay	100.0			10.81	0.93	n.a.	n.a.	0.85	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	11.150	0.186	4614.3	2809.3	6.295	2.103	3.08		Clay	100.0			10.54	0.93	n.a.	n.a.	0.85	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	11.395	0.203	4635.6	2820.4	6.437	2.236	3.09		Clay	100.0			10.77	0.93	n.a.	n.a.	0.85	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	12.415	0.255	4656.9	2831.5	7.125	2.528	3.08		Clay	100.0			11.73	0.93	n.a.	n.a.	0.85	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	14.624	0.412	4678.2	2842.6	8.643	3.354	3.08		Clay	100.0			13.82	0.93	n.a.	n.a.	0.85	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	17.246	0.545	4699.5	2853.7	10.440	3.659	3.03		Clay	100.0			16.30	0.92	n.a.	n.a.	0.85	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	19.253	0.587	4720.9	2864.8	11.793	3.475	2.98		Clay	100.0			18.20	0.92	n.a.	n.a.	0.85	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	22.035	0.719	4742.2	2875.8	13.675	3.656	2.94		Clay	98.0			20.83	0.92	n.a.	n.a.	0.85	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	23.886	0.716	4763.5	2886.9	14.898	3.330	2.88		Clay	93.6			22.58	0.92	n.a.	n.a.	0.84	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	24.294	0.791	4784.9	2898.1	15.114	3.612	2.90		Clay	95.0			22.96	0.92	n.a.	n.a.	0.84	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	26.579	0.887	4806.3	2909.2	16.620	3.669	2.87		Clay	92.7			25.12	0.92	n.a.	n.a.	0.84	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	34.171	0.910	4827.6	2920.3	21.750	2.865	2.71		Clay	80.0			32.30	0.92	n.a.	n.a.	0.84	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	42.830	1.255	4848.9	2931.3	27.568	3.106	2.66		Clay	75.4			40.48	0.92	n.a.	n.a.	0.84	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	42.560	1.302	4870.2	2942.4	27.273	3.245	2.67		Clay	76.7			40.23	0.92	n.a.	n.a.	0.84	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	35.331	1.198	4891.5	2953.5	22.268	3.643	2.77		Clay	84.7			33.39	0.92	n.a.	n.a.	0.84	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.222	28.193	0.929	4912.9	2964.6	17.363	3.610	2.85		Clay	91.2			26.65	0.91	n.a.	n.a.	0.84	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	23.747	0.827	4934.2	2975.7	14.302	3.886	2.94		Clay	98.0			22.45	0.91	n.a.	n.a.	0.84	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	20.100	0.631	4955.5	2986.8	11.800	3.581	2.98		Clay	100.0			19.00	0.91	n.a.	n.a.	0.84	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	16.401	0.498	4976.8	2997.9	9.282	3.579	3.07		Clay	100.0			15.50	0.91	n.a.	n.a.	0.84	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	15.411	0.394	4998.1	3009.0	8.582	3.051	3.06		Clay	100.0			14.57	0.91	n.a.	n.a.	0.84	0.770	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	15.371	0.373	5019.5	3020.0	8.517	2.900	3.05		Clay	100.0			14.53	0.91	n.a.	n.a.	0.83	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	15.149	0.364	5040.8	3031.1	8.333	2.882	3.05		Clay	100.0			14.32	0.91	n.a.	n.a.	0.83	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	14.179	0.388	5062.1	3042.2	7.658	3.331	3.12		Clay	100.0			13.40	0.91	n.a.	n.a.	0.83	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	13.103	0.362	5083.4	3053.3	6.918	3.428	3.16		Clay	100.0			12.38	0.91	n.a.	n.a.	0.83	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	12.102	0.316	5104.7	3064.4	6.233	3.309	3.19		Clay	100.0			11.44	0.91	n.a.	n.a.	0.83	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	11.375	0.273	5126.1	3075.5	5.730	3.098	3.21		Clay	100.0			10.75	0.91	n.a.	n.a.	0.83	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	10.923	0.224	5147.4	3086.6	5.410	2.683	3.19		Clay	100.0			10.32	0.91	n.a.	n.a.	0.83	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	10.537	0.195	5168.7	3097.6	5.135	2.452	3.19		Clay	100.0			9.96	0.90	n.a.	n.a.	0.83	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	10.368	0.194	5190.0	3108.7	5.001	2.496	3.21		Clay	100.0			9.80	0.90	n.a.	n.a.	0.83	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	10.258	0.163	5211.3	3119.8	4.906	2.130	3.18		Clay	100.0			9.70	0.90	n.a.	n.a.	0.83	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	10.604	0.182	5232.7	3130.9	5.102	2.279	3.18		Clay	100.0			10.02	0.90	n.a.	n.a.	0.83	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	11.908	0.184	5254.0	3142.0	5.908	1.983	3.10		Clay	100.0			11.26	0.90	n.a.	n.a.	0.82	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	13.748	0.250	5275.3	3153.1	7.047	2.250	3.06		Clay	100.0			12.99	0.90	n.a.	n.a.	0.82	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	14.965	0.293	5296.8	3164.2	7.785	2.379	3.03		Clay	100.0			14.14	0.90	n.a.	n.a.	0.82	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	15.143	0.333	5318.1	3175.3	7.863	2.667	3.06		Clay	100.0			14.31	0.90	n.a.	n.a.	0.82	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	17.201	0.510	5339.4	3186.4	9.121	3.510	3.07		Clay	100.0			16.26	0.90	n.a.	n.a.	0.82	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	44.361	0.831	5360.7	3197.5	32.048	1.994	2.48		Sand	61.7	209.74		209.74	0.90	188.10	290.31	0.82	0.761	0.876	66146.266	########	167577.52	0.00	0.00
41.831	83.976	1.946	5382.0	3208.6	62.392	2.394	2.32		Sand	48.3	209.74		209.74	0.90	187.92	282.47	0.82	0.760	0.875	15336.057	29525.626	38834.56	0.00	0.00
41.995	120.631	3.068	5403.4	3219.7	90.363	2.602	2.23		Sand	41.3	209.74		209.74	0.90	187.75	276.30	0.82	0.760	0.874	5314.468	10219.539	13451.22	0.00	0.00
42.159	160.532	2.949	5424.7	3230.7	120.721	1.869	2.04		Sand	26.0	209.74		209.74	0.89	187.47	252.69	0.82	0.759	0.873	180.171	346.055	455.81	0.00	0.00
42.323	203.759	0.820	5446.0	3241.8	153.515	0.408	1.53		Sand	0.0	209.74		209.74	0.86	180.11	180.11	0.82	0.759	0.910	0.729	1.388	1.83	0.00	0.00
42.487	190.453	1.345	5467.3	3252.9	143.102	0.716	1.70		Sand	0.0	209.74		209.74	0.86	179.86	179.86	0.82	0.758	0.909	0.722	1.370	1.81	0.00	0.00
42.651	221.907	2.204	5488.6	3264.0	166.787	1.006	1.75		Sand	2.7			209.74	0.86	179.62	179.62	0.81	0.758	0.909	0.715	1.354	1.79	0.00	0.00
42.815	217.438	2.807	5510.0	3275.1	163.102	1.308	1.84		Sand	9.8			205.52	0.86	176.44	185.63	0.81	0.757	0.902	0.920	1.815	2.40	0.00	0.00
42.979	263.507	1.868	5531.3	3286.2	197.759	0.716	1.59		Sand	0.0			249.06	0.87	217.60	217.60	0.81	0.756	0.868	5.943	11.348	15.00	0.00	0.00
43.143	235.523	3.088	5552.6	3297.3	176.230	1.327	1.82		Sand	8.4			222.61	0.86	192.00	197.02	0.81	0.756	0.887	1.604	3.131	4.14	0.00	0.00
43.307	230.127	2.952	5573.9	3308.4	171.847	1.298	1.82		Sand	8.4			217.51	0.86	186.81	191.86	0.81	0.755	0.893	1.231	2.417	3.20	0.00	0.00
43.471	230.051	2.867	5595.2	3319.4	171.494	1.262	1.81		Sand	7.7			217.44	0.86	186.28	189.66	0.81	0.755	0.895	1.107	2.178	2.89	0.00	0.00
43.635	233.980	2.574	5616.6	3330.5	174.161	1.113	1.76		Sand	4.2			221.15	0.86	189.19	189.23	0.81	0.754	0.894	1.084	2.133	2.83	0.00	0.00
43.799	237.692	1.532	5637.9	3341.6	176.656	0.652	1.60		Sand	0.0			224.66	0.86	192.35	192.35	0.81	0.754	0.890	1.260	2.468	3.27	0.00	0.00
43.963	251.617	1.352	5659.2	3352.7	186.811	0.543	1.53		Sand	0.0			237.82	0.86	204.98	204.98	0.81	0.753	0.872	2.531	4.853	6.45	0.00	0.00
44.127	254.675	1.365	5680.5	3363.8	188.788	0.542	1.53		Sand	0.0			240.71	0.86	207.57	207.57	0.81	0.752	0.867	2.976	5.673	7.54	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.82

Total Settlement:	1.54	(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)
44.291	241.914	1.580	5701.8	3374.9	178.919	0.661	1.60		Sand	0.0			228.65	0.86	195.50	195.50	0.81	0.752	0.883	1.480	2.876	3.83	0.00	0.00
44.455	216.323	1.400	5723.2	3386.0	159.496	0.656	1.64		Sand	0.0			204.46	0.84	171.90	171.90	0.80	0.751	0.908	0.537	0.956	1.27	0.00	0.01
44.619	182.316	1.877	5744.5	3397.0	133.860	1.046	1.83		Sand	9.2			172.32	0.83	142.25	148.84	0.80	0.751	0.925	0.281	0.430	0.57	0.02	0.04
44.783	130.519	2.210	5765.8	3408.1	95.058	1.731	2.09		Sand	29.9			123.36	0.83	102.45	158.38	0.80	0.750	0.918	0.355	0.577	0.77	0.01	0.03
44.948	100.067	1.817	5787.2	3419.3	72.252	1.870	2.20		Sand	38.7			94.58	0.82	77.09	136.60	0.80	0.750	0.932	0.220	0.313	0.42	0.02	0.05
45.112	121.720	1.214	5808.6	3430.4	88.201	1.022	1.96		Sand	19.7			115.05	0.81	92.96	128.23	0.80	0.749	0.936	0.192	0.261	0.35	0.02	0.05
45.276	185.540	0.867	5829.9	3441.5	135.351	0.475	1.61		Sand	0.0			175.37	0.82	143.36	143.36	0.80	0.748	0.927	0.250	0.370	0.49	0.02	0.04
45.440	237.649	1.215	5851.2	3452.5	173.684	0.518	1.54		Sand	0.0			224.62	0.85	189.87	189.87	0.80	0.748	0.885	1.118	2.177	2.91	0.00	0.00
45.604	262.621	1.263	5872.5	3463.6	191.846	0.486	1.49		Sand	0.0			248.22	0.86	212.75	212.75	0.80	0.747	0.852	4.197	7.869	10.53	0.00	0.00
45.768	268.892	1.167	5893.8	3474.7	196.157	0.439	1.46		Sand	0.0			254.15	0.86	218.38	218.38	0.80	0.747	0.851	6.303	11.804	15.81	0.00	0.00
45.932	276.668	2.159	5915.2	3485.8	201.564	0.789	1.61		Sand	0.0			261.50	0.86	225.46	225.46	0.80	0.746	0.850	11.070	20.706	27.76	0.00	0.00
46.096	278.997	1.326	5936.5	3496.9	202.948	0.480	1.47		Sand	0.0			263.70	0.86	227.41	227.41	0.80	0.745	0.849	13.072	24.425	32.77	0.00	0.00
46.260	304.611	3.121	5957.8	3508.0	221.422	1.035	1.67		Sand	0.0			287.91	0.87	251.63	251.63	0.80	0.745	0.848	158.220	295.295	396.47	0.00	0.00
46.424	336.374	4.837	5979.1	3519.1	244.345	1.451	1.75		Sand	3.4			317.93	0.87	278.01	278.01	0.79	0.744	0.847	7077.358	13194.175	17729.09	0.00	0.00
46.588	334.100	6.022	6000.4	3530.1	242.289	1.819	1.84		Sand	9.8			315.78	0.87	275.90	287.78	0.79	0.744	0.846	40666.534	75729.371	101840.31	0.00	0.00
46.752	308.566	4.550	6021.8	3541.2	223.246	1.489	1.79		Sand	6.0			291.65	0.87	254.60	255.60	0.79	0.743	0.846	259.282	482.299	649.12	0.00	0.00
46.916	265.116	1.944	6043.1	3552.3	191.194	0.742	1.61		Sand	0.0			250.58	0.85	213.13	213.13	0.79	0.742	0.845	4.310	8.008	10.79	0.00	0.00
47.080	245.123	0.799	6064.4	3563.4	176.327	0.330	1.43		Sand	0.0			231.69	0.84	194.35	194.35	0.79	0.742	0.872	1.395	2.674	3.60	0.00	0.00
47.244	227.721	1.668	6085.7	3574.5	163.390	0.742	1.66		Sand	0.0			215.24	0.83	178.24	178.24	0.79	0.741	0.891	0.678	1.244	1.68	0.00	0.00
47.408	208.968	1.895	6107.0	3585.6	149.513	0.920	1.75		Sand	3.4			197.51	0.82	161.19	161.19	0.79	0.741	0.907	0.384	0.629	0.85	0.01	0.02
47.572	198.678	1.998	6128.4	3596.7	141.815	1.021	1.80		Sand	7.2			187.79	0.81	152.19	154.34	0.79	0.740	0.912	0.320	0.502	0.68	0.02	0.04
47.736	195.023	1.264	6149.7	3607.8	138.943	0.659	1.69		Sand	0.0			184.33	0.81	148.44	148.44	0.79	0.739	0.916	0.279	0.421	0.57	0.02	0.04
47.900	205.123	1.424	6171.0	3618.8	146.022	0.705	1.69		Sand	0.0			193.88	0.81	157.12	157.12	0.79	0.739	0.909	0.344	0.548	0.74	0.02	0.03
48.064	216.453	0.914	6192.3	3629.9	153.968	0.428	1.54		Sand	0.0			204.59	0.82	166.97	166.97	0.79	0.738	0.899	0.456	0.775	1.05	0.01	0.01
48.228	234.172	0.899	6213.6	3641.0	166.493	0.389	1.49		Sand	0.0			221.33	0.83	182.72	182.72	0.78	0.738	0.882	0.812	1.529	2.07	0.00	0.00
48.392	240.060	0.237	6235.0	3652.1	170.468	0.100	1.26		Sand	0.0			226.90	0.83	187.85	187.85	0.78	0.737	0.875	1.017	1.957	2.66	0.00	0.00
48.556	236.651	0.830	6256.3	3663.2	167.754	0.355	1.46		Sand	0.0			223.68	0.82	184.51	184.51	0.78	0.736	0.878	0.876	1.668	2.27	0.00	0.00
48.720	236.614	1.335	6277.6	3674.3	167.466	0.572	1.58		Sand	0.0			223.64	0.82	184.25	184.25	0.78	0.736	0.878	0.866	1.645	2.24	0.00	0.00
48.885	250.779	1.943	6299.1	3685.4	177.350	0.785	1.65		Sand	0.0			237.03	0.83	196.98	196.98	0.78	0.735	0.859	1.601	3.026	4.12	0.00	0.00
49.049	266.714	1.593	6320.4	3696.5	188.471	0.604	1.56		Sand	0.0			252.09	0.84	211.53	211.53	0.78	0.734	0.833	3.860	7.071	9.63	0.00	0.00
49.213	273.879	1.387	6341.7	3707.6	193.298	0.512	1.51		Sand	0.0			258.86	0.84	218.00	218.00	0.78	0.734	0.832	6.127	11.212	15.28	0.00	0.00
49.377	267.546	1.146	6363.0	3718.7	188.487	0.433	1.47		Sand	0.0			252.88	0.84	211.84	211.84	0.78	0.733	0.831	3.942	7.205	9.83	0.00	0.00
49.541	276.867	0.804	6384.3	3729.8	194.835	0.294	1.37		Sand	0.0			261.69	0.84	220.34	220.34	0.78	0.733	0.830	7.325	13.375	18.26	0.00	0.00
49.705	284.494	1.618	6405.7	3740.9	199.960	0.575	1.53		Sand	0.0			268.90	0.85	227.31	227.31	0.78	0.732	0.829	12.962	23.641	32.30	0.00	0.00
49.869	299.533	3.374	6427.0	3751.9	210.331	1.139	1.72		Sand	0.3			283.11	0.85	241.42	241.42	0.78	0.731	0.828	49.902	90.920	124.33	0.00	0.00
50.033	278.504	2.183	6448.3	3763.0	195.109	0.793	1.63		Sand	0.0			263.24	0.84	221.18	221.18	0.77	0.731	0.827	7.822	14.236	19.48	0.00	0.00
50.197	257.042	2.242	6469.6	3774.1	179.626	0.883	1.68		Sand	0.0			242.95	0.83	200.92	200.92	0.77	0.730	0.846	1.991	3.706	5.08	0.00	0.00
50.361	231.351	2.226	6490.9	3785.2	161.199	0.976	1.75		Sand	2.9			218.67	0.81	177.24	177.24	0.77	0.729	0.880	0.652	1.173	1.61	0.00	0.00