CORNERSTONE
EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**Concourse San Jose**
Location	**1953 – 1965 Concourse Drive** **San Jose, California**
Client	**Overton Moore Properties**
Client Address	**19700 S. Vermont Avenue, Suite 101** **Torrance, California 90502**
Project Number	**681-4-1**
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SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of Overton Moore Properties for the Concourse 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, "Overton Moore Properties, San Jose, Concourse Dr., Alternate 1," prepared by HPA Architecture, dated August 8, 2020.

1.1 PROJECT DESCRIPTION

The project will consist of redeveloping the approximately 7-acre site for a new commercial/industrial warehouse/distribution facility. The new building will total about 103,000 square feet including about 2,500 square feet of office (mezzanine) in plan. We anticipate the building will be single-story with interior clear height of 36 to 38 feet and consist of concrete tilt-up construction. Loading docks will be located along the southeast side of the building. Appurtenant trailer parking, utilities, landscaping, stormwater management areas, and other improvements necessary for overall site development will also be planned.

Building loads are expected to be typical of this type of construction. Site grading with cuts and fills on the order of 2 to 5 feet are estimated.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated August 11, 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 five borings drilled on August 27, 2020 and September 3, 2020 with track-mounted, hollow-stem auger drilling equipment and six Cone Penetration Tests (CPTs) advanced on August 20, 2020. The borings were drilled to depths of approximately 25 to 31½ feet; the CPTs were advanced to depths of approximately 50 to 150 feet. Seismic shear wave velocity measurements were collected from CPT-3. Borings EB-1, EB-2, EB-4, and EB-5 were advanced adjacent to CPT-1, CPT-6, 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 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, triaxial compression tests, consolidation tests, and corrosivity testing. Details regarding our laboratory program are included in Appendix B.

1.5 CORROSION EVALUATION

Two samples from our borings at depths of 3½ and 5½ feet was tested for saturated resistivity, pH, and soluble sulfates and chlorides. Based on our site screening, the on-site soils can be characterized as moderately corrosive to buried metal, and non-corrosive to buried concrete. Please refer to Section 3.4 for additional recommendations.

1.6 ENVIRONMENTAL SERVICES

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

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located within the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range. Alluvial soil thicknesses in the area range from about 500 to 700 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, the U.S. Geological Survey's Working Group on California Earthquake Probabilities 2015 revises earlier estimates from their 2008 (2008, UCERF2) publication. Compared to the previous assessment issued in 2008, the estimated rate of earthquakes around magnitude 6.7 (the size of the destructive 1994 Northridge earthquake) has gone down by about 30 percent. The expected frequency of such events statewide has dropped from an average of one per 4.8 years to about one per 6.3 years. However, in the new study, the estimate for the likelihood that California will experience a magnitude 8 or larger earthquake in the next 30 years has increased from about 4.7 percent for UCERF2 to about 7.0 percent for UCERF3.

UCERF3 estimates that each region of California will experience a magnitude 6.7 or larger earthquake in the next 30 years. Additionally, there is a 63 percent chance of at least one magnitude 6.7 or greater earthquake occurring in the Bay Area region between 2007 and 2036.

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 (Total Length)	3.6	5.8
Calaveras	5.8	9.3
Hayward (Southeast Extension)	6.5	10.4
San Andreas (1906)	14.7	23.6

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 SURFACE DESCRIPTION

The site is bounded by commercial development to the north, east and west and by Concourse Drive to the south. The site is currently occupied by a commercial office building that occupies most of the site. The existing building is surrounded by asphalt concrete pavement including drive isles. The site is relatively level, but graded to drain to storm drainage facilities.

Surface pavements generally consisted of 2½ to 6 inches of asphalt concrete over 4 to 8½ inches of aggregate base. Based on visual observations, the existing pavements are in fair to poor condition.

3.2 SUBSURFACE CONDITIONS

Below the surface pavements, our explorations encountered undocumented fill at Boring EB-1, EB-4 , and EB-5 to depths of about 2 to 3½ feet below the existing ground surface. The fill consisted of clay with variable amounts of sand and silty sand. Beneath the fill, our borings encountered soft to very stiff lean clay with variable amounts of sand interbedded with loose silty sand, medium stiff sandy silt, loose to medium dense clayey sand, and loose medium dense poorly graded sand to 31½ feet below ground surface. Our CPT data generally correlates to our borings and subsurface conditions to the maximum depth explored of 150 feet below the current ground surface.

3.2.1 Plasticity/Expansion Potential

We performed one Plasticity Index (PI) tests on representative samples. Test results were used to evaluate expansion potential of surficial soils. The results of the surficial PI test indicated a PI of 18, indicating moderate expansion potential to wetting and drying cycles.

3.2.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 6 to 32 percent moisture. In our opinion, we estimate this corresponds to about near optimum to 10 percent above the estimated optimum moisture content.

3.3 GROUNDWATER

Groundwater was encountered in our borings at depths ranging from 9½ to 18 feet below existing grades. Groundwater was estimated at depths of approximately 5 to 33 feet below current grades based on pore pressure dissipation tests at our CPT's. 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 in the vicinity are mapped at a depth of approximately 10 feet below existing site grades (CGS, Milpitas 7.5-Minute Quadrangle, 2001). 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 10 feet be used for design and evaluation of liquefaction potential.

Table 2: Depth to Groundwater

Boring/CPT Number	Date Drilled	Depth to Groundwater (feet)	Depth of Boring/CPT (feet)
EB-1	8/27/20	9½	31½
EB-2	9/3/20	13	25
EB-3	8/27/20	12	25
EB-4	9/3/20	14	25
EB-5	8/27/20	18	30
CPT-1	8/20/20	33	50.4
CPT-2	8/20/20	8.4	50.7
CPT-3	8/20/20	6.6	150.7
CPT-4	8/20/20	Not Measured	51.0
CPT-5	8/20/20	26.9	50.5
CPT-6	8/20/20	5	50.8

3.4 CORROSION SCREENING

We tested two samples collected at depths of 3½ and 5½ feet for resistivity, pH, soluble sulfates, and chlorides. The laboratory test results are summarized in Table 3A.

Table 3A: Summary of Corrosion Test Results

Sample Location	Depth (feet)	Soil pH[1]	Resistivity[2] (ohm-cm)	Chloride[3] (mg/kg)	Sulfate[4,5] (mg/kg)
EB-3	3½	7.8	2,826	14	404
EB-4	5½	8.1	2,446	30	92

Notes:
[1] ASTM G51
[2] ASTM G57 - 100% saturation
[3] ASTM D3427/Cal 422 Modified
[4] ASTM D3427/Cal 417 Modified
[5] 1 mg/kg = 0.0001 % by dry weight

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

3.5.1 Preliminary Soil Corrosion Screening

Based on the laboratory test results summarized in Table 3A and published correlations between resistivity and corrosion potential, the soils may be considered moderately corrosive to buried metallic improvements (Chaker and Palmer, 1989).

In accordance with the 2016 CBC Section 1904A.1, alternative cementitious materials for different exposure categories and classes shall be determined in accordance with ACI 318-14 Table 19.3.1.1, Table R19.3.1, and Table 19.3.2.1. Based on the laboratory sulfate test results, a cement type restriction is (not) 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 318-14, Table 19.3.1.1 below in Table 3B.

Table 3B: ACI 318-14 Table 19.3.1.1 Exposure Categories and Classes

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

1 (F0) “Concrete not exposed to freezing-and-thawing cycles” (ACI 318-14)
2 (S0) “Water soluble sulfate in soil, percent by mass” is less than 0.10 (ACI 318-14)
3 (W1) “Concrete in contact with water and low permeability is required” (ACI 318-14)
4 (C1) “Concrete exposed to moisture but not to an external source of chlorides” (ACI 318-14)

In addition, ACI 318-14, Table 19.3.2.1 provides requirements for concrete by exposure class. Table 3C below indicates different requirements that we recommend be followed for the concrete design.

Table 3C: ACI 318-14 Table 19.3.2.1 Requirements for Concrete by Exposure Class

Exposure Class	Maximum water:cement ratio	Minimum Compressive Strength (psi)	Maximum Water-Soluble Chloride Ion Content (% wt)
F0	N/A	2,500	N/A
S0 (soil)	N/A	2,500	N/A
W1	0.50	4,000	N/A
C1	N/A	2,500	0.30 (0.06)[1]

1 Maximum water-soluble chloride ion content for non-pre-stressed concrete,

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. Based on review of geologic maps as summarized 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 0.908g.

4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, Milpitas Quadrangle, 2004). 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 10 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.

The results of our CPT analyses (CPT-1 through CPT-6) are presented on Figures 4A through 4F 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 of up to about ½ inch based on the Yoshimine (2006) method. As discussed in SP 117A, differential movement for level ground sites over deep soil sites will be up to about two-thirds of the total settlement between independent foundation elements. In our opinion, differential settlements are anticipated to be on the order of ¼ inch over a horizontal distance of 50 to 60 feet.

4.3.4 Ground Rupture Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground rupture or sand boils. For ground rupture to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) indicates that the 10-foot thick layer of non-liquefiable cap is sufficient to prevent ground rupture; therefore the above total settlement estimates are reasonable.

4.4 LATERAL SPREADING

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

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

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose to medium dense unsaturated sandy soils can settle during strong seismic shaking. We evaluated the potential for seismic compaction of the loose unsaturated sands based on the work by Pradell (1998). Our analyses indicate that loose unsaturated sands could experience up to 1 inch of seismic settlement during a design earthquake.

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 9 miles inland from the San Francisco Bay shoreline, and is approximately 50 to 52 feet above mean sea level. Additionally, the site is also located outside of the tsunami inundation area, according to the Tsunami Inundation Maps for Emergency Planning by the California Geologic Survey. Therefore, the potential for inundation due to tsunami or seiche is considered low.

4.7 FLOODING

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

SECTION 5: CONCLUSIONS

5.1 SUMMARY

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

- Presence of undocumented fill and low strength soil
- Potential for liquefaction-induced and seismic settlements
- Presence of moderately expansive soils
- Shallow groundwater
- Soil corrosion potential

5.1.1 Presence of Undocumented Fill and Low Strength Soil

The site is currently developed. Potential issues that are often associated with redeveloping sites include demolition of existing improvements, abandonment of existing utilities, and undocumented fill. As previously discussed, undocumented fill was encountered in borings EB-1, EB-4, and EB-5 to depths ranging from 2 to 3½ feet below existing ground surface. The fill consisted of clay with variable amounts of sand and silty sand. Undocumented fills are expected to vary in thickness and consistency across the site. Additionally, medium stiff native clays with a low bearing capacity were encountered in EB-3 to depths of approximately 6 feet below existing ground surface. Due to the undocumented fill and medium stiff native clays, we recommend overexcavation to a minimum depth of 4 feet within the proposed building pad to remove all undocumented fill and improve the bearing capacity of low strength soils. Detailed grading recommendations are presented in Section 6.3 below.

5.1.2 Potential for Liquefaction-Induced and Seismic Settlements

As discussed, our liquefaction analysis indicates that there is a potential for liquefaction of localized sand layers during a significant seismic event. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is low, our analysis indicates that liquefaction-induced settlement up to ½ inch could occur. Additionally, our analyses indicate that loose unsaturated sands could experience up to 1 inch of seismic settlement during a design earthquake, resulting in differential settlement up to ¾ inch. Foundations should be designed to tolerate total and differential settlement due to static loads and liquefaction-induced settlement. Detailed foundation recommendations are presented in the “Foundations” section.

5.1.3 Expansive Soils

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

5.1.4 Shallow Groundwater

Shallow groundwater was measured at depths ranging from approximately 9½ to 18 feet below the existing ground surface. Our experience with similar sites in the vicinity indicates that shallow groundwater could significantly impact grading and underground construction. These impacts typically consist of potentially wet and unstable pavement subgrade, 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.

5.1.5 Soil Corrosion Potential

The laboratory test results indicate that the corrosion potential for buried metallic structures, such as metal pipes, is considered moderately corrosive. Based on the laboratory 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.

5.2 PLANS AND SPECIFICATIONS REVIEW

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

5.3 CONSTRUCTION OBSERVATION AND TESTING

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

SECTION 6: EARTHWORK

6.1 SITE DEMOLITION

All existing improvements not to be reused for the current development, including all foundations, flatwork, pavements, utilities, and other improvements should be demolished and removed from the site. Recommendations in this section apply to the removal of these improvements, which 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.

6.1.1 Demolition of Existing Slabs, Foundations and Pavements

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

Special care should be taken during the demolition and removal of existing 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.

6.1.2 Abandonment of Existing Utilities

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

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

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

6.2 SITE CLEARING AND PREPARATION

6.2.1 Site Stripping

The site should be stripped of all surface vegetation, and surface and subsurface improvements to be removed within the proposed development area. Demolition of existing improvements is discussed in the prior paragraphs. 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 3 to 6 inches below existing grade in localized landscape areas.

6.2.2 Tree and Shrub Removal

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

6.3 REMOVAL OF EXISTING FILLS

All fills and low strength soil should be completely removed and overexcavated to a minimum depth of 4 feet from within building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater. Provided the fills meet the “Material for Fill” requirements below, the fills may be reused when backfilling the excavations. Based on review of the samples collected from our borings, it appears that the fill may be reused. If materials are encountered that do not meet the requirements, such as debris, wood, trash, those materials should be screened out of the remaining material and be removed from the site. Backfill of excavations should be placed in lifts and compacted in accordance with the “Compaction” section below.

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

6.4 TEMPORARY CUT AND FILL SLOPES

The contractor is responsible for maintaining all temporary slopes and providing temporary shoring where required. Temporary shoring, bracing, and cuts/fills should be performed in accordance with the strictest government safety standards. On a preliminary basis, the upper 10 feet at the site may be classified as OSHA Site 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 in accordance with the OSHA soil classification.

6.5 SUBGRADE PREPARATION

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

6.6 SUBGRADE STABILIZATION MEASURES

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

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

6.6.1 Scarification and Drying

The subgrade may be scarified to a depth of 12 to 18 inches and allowed to dry to near optimum conditions, if sufficient dry weather is anticipated to allow sufficient drying. More than one round of scarification may be needed to break up the soil clods.

6.6.2 Removal and Replacement

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

6.6.3 Chemical Treatment

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

6.7 MATERIAL FOR FILL

6.7.1 Re-Use of On-site Soils

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

6.7.2 Re-Use of On-Site Site Improvements

We anticipate that significant quantities of asphalt concrete (AC) grindings and aggregate base (AB) and Portland Cement Concrete (PCC) 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 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.

6.7.3 Potential Import Sources

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

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

6.7.4 Non-Expansive Fill Using Chemical 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 further evaluate the optimum percentage of quicklime required.

6.8 COMPACTION REQUIREMENTS

All fills, and subgrade areas where fill, slabs-on-grade, and pavements are planned, should be placed in loose lifts 8 inches thick or less and compacted in accordance with ASTM D1557 (latest version) requirements as shown in the table below. In general, clayey soils should be compacted with sheepsfoot equipment and sandy/gravelly soils with vibratory equipment; open-graded materials such as crushed rock should be placed in lifts no thicker than 18 inches 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 4: Compaction Requirements

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

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

6.8.1 Construction Moisture Conditioning

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

6.9 TRENCH BACKFILL

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

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

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

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

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

6.10 SITE DRAINAGE

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

6.11 LOW-IMPACT DEVELOPMENT (LID) IMPROVEMENTS

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

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

- The near-surface soils at the site are clayey, and categorized as Hydrologic Soil Group D, and is 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 10 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.

6.11.1 Storm Water Treatment Design Considerations

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

6.11.1.1 General Bioswale Design Guidelines

- If possible, avoid placing bioswales or basins within 10 feet of the building perimeter or within 5 feet of exterior flatwork or pavements. If bioswales must be constructed within these setbacks, the side(s) and bottom of the trench excavation should be lined with 10-mil visqueen to reduce water infiltration into the surrounding expansive clay.
- Bioswales constructed within 3 feet of proposed buildings may be within the foundation zone of influence for perimeter wall loads. Therefore, where bioswales will parallel foundations and will extend below the “foundation plane of influence,” an imaginary 1:1 plane projected down from the bottom edge of the foundation, the foundation will need to be deepened so that the bottom edge of the bioswale filter material is above the foundation plane of influence.
- The bottom of bioswale or detention areas should include a perforated drain placed at a low point, such as a shallow trench or sloped bottom, to reduce water infiltration into the surrounding soils near structural improvements, and to address the low infiltration capacity of the on-site clay soils.

6.11.1.2 Bioswale Infiltration Material

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

- Compaction requirements for bioswale filter material in non-landscaped areas or in pervious pavement areas, if any, should be indicated on the plans and specifications to satisfy the anticipated use of the infiltration area.

- If required, infiltration (percolation) testing should be performed on representative samples of potential bioswale materials prior to construction to check for general conformance with the specified infiltration rates.

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

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

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

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

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

6.11.1.3 Bioswale Construction Adjacent to Pavements

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

- Improvements should be setback from the vertical edge of a 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 vertical bioswale cut should be designed to resist lateral earth pressures in accordance with the recommendations in the "Retaining Walls" section of this report, or concrete curbs or edge restraint should be adequately keyed into the native soil or engineered to reduce the potential for rotation or lateral movement of the curbs.

6.12 LANDSCAPE CONSIDERATIONS

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

- Using drip irrigation
- Avoiding open planting within 3 feet of the building perimeter or near the top of existing slopes
- Regulating the amount of water distributed to lawns or planter areas by using irrigation timers
- Selecting landscaping that requires little or no watering, especially near foundations.

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

SECTION 7: 2019 CBC SEISMIC DESIGN CRITERIA

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

7.1 SITE LOCATION AND PROVIDED DATA FOR 2019 CBC SEISMIC DESIGN

The project is located at latitude 37.398158° and longitude -121.894365°, which is based on Google Earth (WGS84) coordinates at the center of the site at 1953 – 1965 Concourse Drive in San Jose, California. We have assumed that a Seismic Importance Factor (I_e) of 1.00 has been assigned to the structure in accordance with Table 1.5-2 of ASCE 7-16 for structures classified as Risk Category II. The building period has not been provided by the project structural engineer.

7.2 SITE CLASSIFICATION – CHAPTER 20 OF ASCE 7-16

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

As discussed in Section 3, our explorations generally encountered soft to very stiff lean clay and loose to medium dense sands to a depth of 150 feet, the maximum depth explored. 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 769 feet per second (or 234 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 234 m/s (769 ft/s).

7.3 CODE-BASED SEISMIC DESIGN PARAMETERS

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

The mapped acceleration parameters were adjusted for local site conditions based on the average soil conditions for the upper 100 feet (30 meters) of the soil profile. Code-based MCE_R spectral response acceleration parameters adjusted for site effects (S_{MS} and S_{M1}) and design spectral response acceleration parameters (S_{DS} and S_{D1}) are presented in Table 5.

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 site-specific seismic parameters determined by performing a Ground Motion Hazard Analysis per Section 21.2 of ASCE 7-16 are are presented in Table 8, Section 7.5. The values in Table 5 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 5 are only used to determine Seismic Design Category and comparison with minimum code requirements in our site-specific ground motion hazard analysis (Section 7.4 to follow).

Table 5: Site Class D: 2019 CBC Site Categorization and Site Coefficients

Classification/Coefficient	Design Value
Site Class	D
Site Latitude	37.398158°
Site Longitude	-121.894365°
Risk Category	II*
0.2-second Period Mapped Spectral Acceleration[1], S_S	1.772
1-second Period Mapped Spectral Acceleration[1], S_1	0.673
Short-Period Site Coefficient – Fa	1
Long-Period Site Coefficient – Fv	* null
0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects - S_{MS}	1.772
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects – S_{M1}	* null
0.2-second Period, Design Earthquake Spectral Response Acceleration – S_{DS}	1.181
1-second Period, Design Earthquake Spectral Response Acceleration – S_{D1}	* null
Long-Period Transition – T_L	12
Mapped MCEG Peak Ground Acceleration – PGA	0.745
Site Coefficient – F_{PGA}	1.1
MCEG Mapped Adjusted for Site Effects – PGA_M	0.820

**Assumed, to be confirmed by Structural Engineer*

7.4 SITE-SPECIFIC GROUND MOTION HAZARD ANALYSIS

Following Section 11.4.8 of ASCE 7-16, we performed a ground motion hazards analysis (GMHA) in accordance with Chapter 21, Section 21.2 of ASCE 7-16. Following the methodology outlined in Section 21.2, 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, Business 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-Bozognia (2013), Chiou-Youngs (2013), and Abrahamson-Silva (2013). Rotation factors (scale factors) were determined as specified in ASCE 7-16 Chapter 21, Section 21.2, to calculate the maximum rotated component of ground motions (ASCE, 2016).

7.4.1 Probabilistic MCE_R

We performed a probabilistic seismic hazard analysis (PSHA) in accordance with ASCE 7-16 Section 21.2.1. The probabilistic MCE acceleration response spectrum is defined as the 5 percent damped acceleration response spectrum having a 2 percent probability of exceedance in a 50 year period (2,475-year return period). The probabilistic MCE spectrum was multiplied by Risk Coefficients (C_R) to determine the probabilistic MCE_R. We used Risk Coefficients (C_{RS} and C_{R1}) of 0.941 and 0.919, 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 6, Column 3.

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

7.4.2 Deterministic MCE_R

We performed deterministic seismic hazard analyses in accordance with ASCE 7-16 Section 21.2.2 and ASCE 7-16 Supplement No. 1. The deterministic MCE_R acceleration response spectrum is calculated as the largest 84th percentile ground motion in the direction of maximum horizontal response for each period for characteristic earthquakes on all known active faults within the region. The largest deterministic ground motion resulted from a M_w 7.58 earthquake on the Hayward Fault (RC+HN+HS+HE segments), located at a distance of approximately 5.77 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 6, 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 2.327 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 6, Column 5. The deterministic MCE_R is presented graphically on Figure 5 (blue line).

7.4.3 Site-Specific MCE_R

The site-specific MCE_R is defined by ASCE 7-16 Section 21.2.3 as the lesser of the deterministic and probabilistic MCE_R's at each period. The site-specific MCE_R spectrum was calculated by taking the lesser of the deterministic MCE_R and the probabilistic MCE_R. Spectral ordinates for the site-specific MCE$_R$ for Site Class D are tabulated in Table 6, Column 7 and shown graphically on Figure 5 and 6 (dashed black line), respectively.

Table 6: 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	0.473	0.941	1.100	0.998	1.094	0.998
0.050	0.659	0.941	1.100	1.022	1.464	1.022
0.100	0.846	0.941	1.100	1.477	1.834	1.477
0.150	1.032	0.941	1.100	1.815	2.116	1.815
0.190	1.181	0.941	1.100	1.959	2.341	1.959
0.200	1.181	0.941	1.100	1.995	2.398	1.995
0.250	1.181	0.940	1.113	2.131	2.597	2.131
0.300	1.181	0.938	1.125	2.207	2.797	2.207
0.400	1.181	0.936	1.150	2.308	2.864	2.308
0.500	1.181	0.933	1.175	2.327	2.931	2.327
0.750	1.181	0.926	1.238	2.019	2.588	2.019
0.949	1.181	0.920	1.287	1.842	2.341	1.842
1.000	1.122	0.919	1.300	1.797	2.277	1.797
2.000	0.561	0.919	1.350	1.034	1.306	1.034
3.000	0.374	0.919	1.400	0.711	0.878	0.711
4.000	0.280	0.919	1.450	0.507	0.626	0.507
5.000	0.224	0.919	1.500	0.390	0.479	0.390

7.4.4 Design Response Spectrum

The Design Response Spectrum (DRS) is defined in ASCE 7-16 Section 21.3 as two-thirds of the site-specific MCE$_R$, but not less than 80% of the general design response spectrum. Spectral accelerations corresponding to two-thirds of the MCE$_R$ are tabulated in Table 7, Column 2. Ordinates corresponding to 80% of the general Site Class D response spectrum are tabulated below in Table 7, Column 3. Ordinates of the site-specific DRS are tabulated in Table 7, Column 4. Development of the site-specific DRS is presented graphically on Figure 6 (dashed black line).

Table 7: 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	0.666	0.378	0.666
0.050	0.681	0.527	0.681
0.100	0.985	0.677	0.985
0.150	1.210	0.826	1.210
0.190	1.306	0.945	1.306
0.200	1.330	0.945	1.330
0.250	1.420	0.945	1.420
0.300	1.471	0.945	1.471
0.400	1.538	0.945	1.538
0.500	1.551	0.945	1.551
0.750	1.346	0.945	1.346
0.949	1.228	0.945	1.228
1.000	1.198	0.897	1.198
2.000	0.689	0.449	0.689
3.000	0.474	0.299	0.474
4.000	0.338	0.224	0.338
5.000	0.260	0.179	0.260

7.5 DESIGN ACCELERATION PARAMETERS

Design acceleration parameters (S_{DS} and S_{D1}) were determined in accordance with Section 21.4 of ASCE 7-16. S_{DS} is defined as the design spectral acceleration at 90% of the maximum spectral acceleration, S_a, obtained from the site-specific spectrum, at any period within the range from 0.2 and 5 seconds, inclusive. S_{D1} is defined as maximum value of the product, TS_a, for periods from 1 to 2 seconds for sites with $v_{s,30}$ > 1,200 ft/s ($v_{s,30}$ > 365.76 m/s) and for periods from 1 to 5 seconds for sites with $v_{s,30} \leq$ 1,200 ft/s ($v_{s,30} \leq$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 5. Site-specific design acceleration parameters are summarized in Table 8.

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 7, Column 4.

Table 8: Site-Specific Design Acceleration Parameters

Parameter	Value
S_{DS}	1.396
S_{D1}	1.422
S_{MS}	2.094
S_{M1}	2.133

7.6 SITE-SPECIFIC MCE$_G$ PEAK GROUND ACCELERATION

We calculated the Site-Specific MCE$_G$ Peak Ground Acceleration (PGA$_M$) in accordance with ASCE 7-16 Section 21.5. The Site-Specific PGA$_M$ is calculated as the lesser of probabilistic and deterministic geometric mean PGA. The 2% in 50-year probabilistic geometric mean PGA is 1.057g. The deterministic PGA is considered the greater of the largest 84th percentile deterministic geometric mean PGA (0.908g) 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 0.908g. 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 0.82g; 80% of PGA$_M$ is 0.656g. Therefore, the Site-Specific PGA$_M$ for the site is 0.908g.

SECTION 8: FOUNDATIONS

8.1 SUMMARY OF RECOMMENDATIONS

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

8.2 SHALLOW FOUNDATIONS

8.2.1 Spread Footings

Spread footings should bear entirely 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. The deeper footing embedment is due to the presence of moderately expansive soils, and is intended to embed the footing below the zone of significant seasonal moisture fluctuation, reducing the potential for differential movement.

Footings constructed to the above dimensions and in accordance with the “Earthwork” recommendations of this report are capable of supporting maximum allowable bearing pressures of 2,000 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 assumed the typical loading in the following table.

Table 9: Assumed Structural Loading

Foundation Area	Range of Assumed Loads
Interior Isolated Column Footing	100 to 150 kips
Exterior Isolated Column Footing	50 to 75 kips
Perimeter Strip Footing	4 to 6 kips per lineal foot

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

Approximately ¼-inch of the total settlement discussed above is due to primary consolidation of saturated clay layers. The time to the achieve about 85 to 90 percent of the primary consolidation is anticipated to take several months to a year after all the dead and live loads are in place based on the encountered alluvial conditions. The contractor should take this into consideration when scheduling the construction of sensitive finishes.

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 0.35 applied to the footing dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 350 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 12 inches of soil should be neglected when determining passive pressure capacity.

8.2.4 Spread Footing Construction Considerations

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

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

SECTION 9: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

9.1 INTERIOR SLABS-ON-GRADE

As the Plasticity Index (PI) of the surficial soils ranges up to 18, the proposed slabs-on-grade should be supported on at least 6 inches of non-expansive fill (NEF) to reduce the potential for slab damage due to soil heave. The NEF layer should be constructed over subgrade prepared in accordance with the recommendations in the "Earthwork" section of this report. If moisture-sensitive floor coverings are planned, the recommendations in the "Interior Slabs Moisture Protection Considerations" section below may be incorporated in the project design if desired. If significant time elapses between initial subgrade preparation and NEF construction, the subgrade should be proof-rolled to confirm subgrade stability, and if the soil has been allowed to dry out, the subgrade should be re-moisture conditioned to at least 2 percent over the optimum moisture content.

The structural engineer should determine the appropriate slab reinforcement for the loading requirements and considering the expansion potential of the underlying soils. For unreinforced concrete slabs, ACI 302.1R recommends limiting control joint spacing to 24 to 36 times the slab thickness in each direction, or a maximum of 18 feet.

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

9.3 INTERIOR SLABS MOISTURE PROTECTION CONSIDERATIONS

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

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

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

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

- The concrete water:cement ratio should be 0.45 or less. Mid-range plasticizers may be used to increase concrete workability and facilitate pumping and placement.

- Water should not be added after initial batching unless the slump is less than specified and/or the resulting water:cement ratio will not exceed 0.45.

- Polishing the concrete surface with metal trowels is not recommended.

- Where floor coverings are planned, all concrete surfaces should be properly cured.

- Water vapor emission levels and concrete pH should be determined in accordance with ASTM F1869-98 and F710-98 requirements and evaluated against the floor covering manufacturer’s requirements prior to installation.

9.4 EXTERIOR FLATWORK

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

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

Table 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
6.5	4.0	4.0	8.0
7.0	4.0	4.5	8.5
7.5	4.5	5.0	9.5
8.0	5.0	5.0	10.0
8.5	5.0	6.5	11.5
9.0	5.5	6.5	12.0
9.5	6.0	7.0	13.0
10.0	6.5	7.5	14.0
10.5	6.5	8.5	15.0
11.0	7.0	8.5	15.5

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

10.2.1 Stress Pads for Trash Enclosures

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

10.3 PAVEMENT CUTOFF

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

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

SECTION 11: RETAINING WALLS

11.1 STATIC LATERAL EARTH PRESSURES

The structural design of any site retaining wall should include resistance to lateral earth pressures that develop from the soil behind the wall, any undrained water pressure, and surcharge loads acting behind the wall. Provided a drainage system is constructed behind the wall to prevent the build-up of hydrostatic pressures as discussed in the section below, we recommend that the walls with level backfill be designed for the following pressures:

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. At this time, we are not aware of any retaining walls for the project. However, minor landscaping walls (i.e. walls 6 feet or less in height) may be proposed. In our opinion, design of these walls for seismic lateral earth pressures in addition to static earth pressures is not warranted.

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 should be compacted to at least 95 percent relative compaction using light compaction equipment. Where no surface improvements are planned, backfill should be compacted to at least 90 percent. 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 Overton Moore Properties specifically to support the design of the Concourse Drive 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.

Overton Moore Properties may have provided Cornerstone with plans, reports and other documents prepared by others. Overton Moore Properties 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

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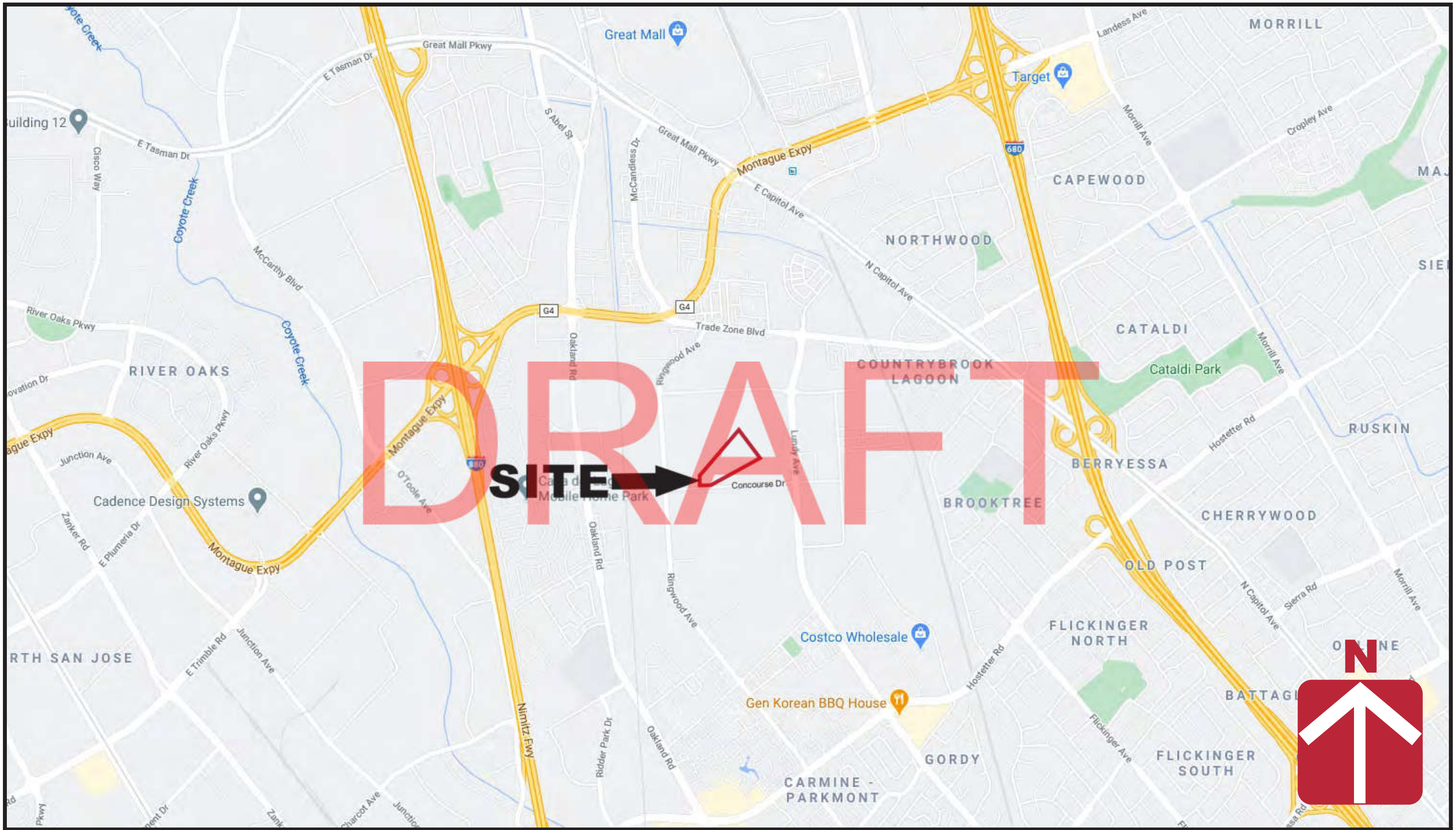

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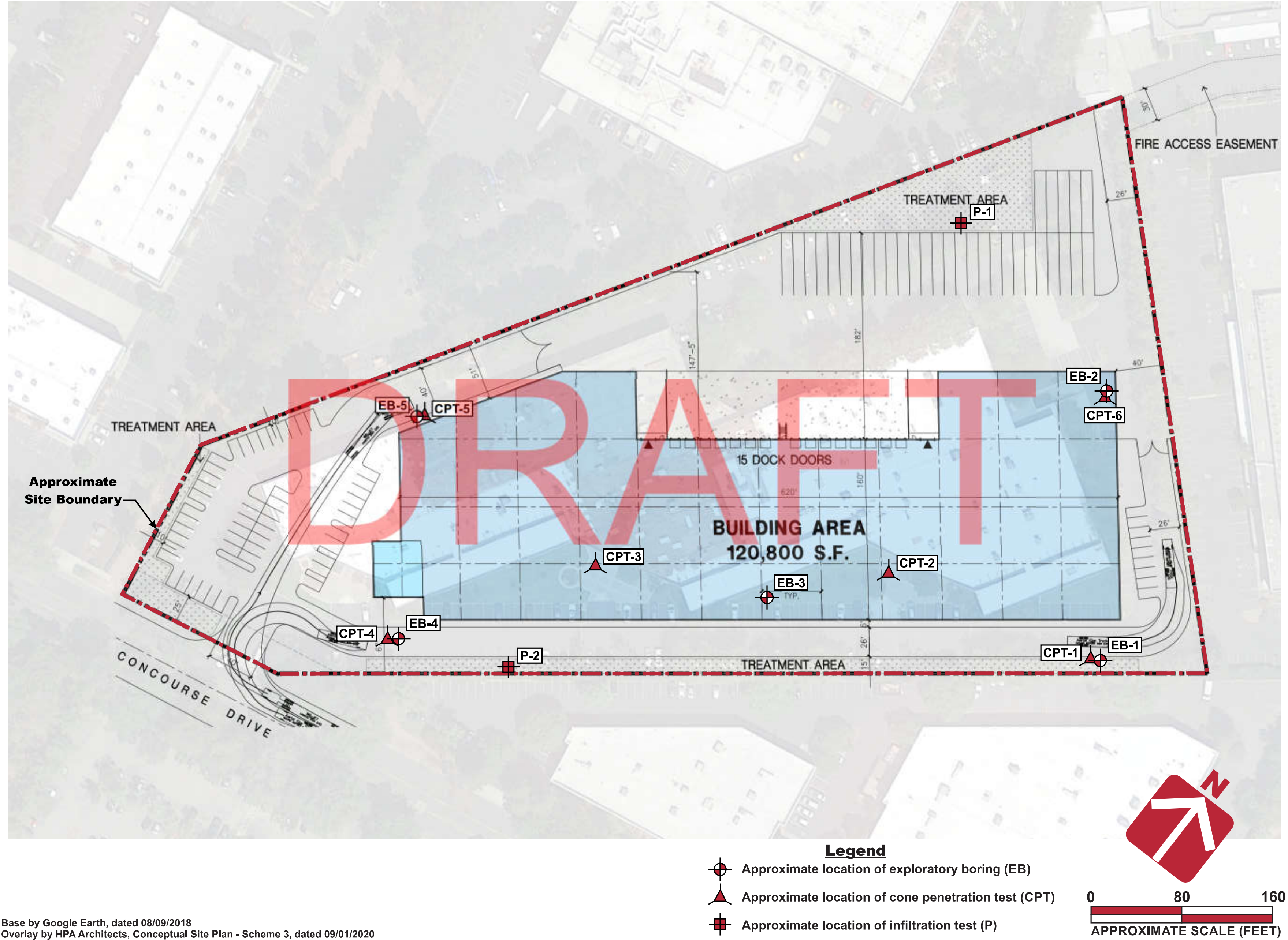
Vicinity Map

Concourse Tech Park
1965 Concourse Drive
San Jose, CA

Project Number	681-4-1
Figure Number	Figure 1
Date	September 2020
Drawn By	RRN



Legend

- ⊕ Approximate location of exploratory boring (EB)
- ▲ Approximate location of cone penetration test (CPT)
- ⊞ Approximate location of infiltration test (P)

Base by Google Earth, dated 08/09/2018
Overlay by HPA Architects, Conceptual Site Plan - Scheme 3, dated 09/01/2020

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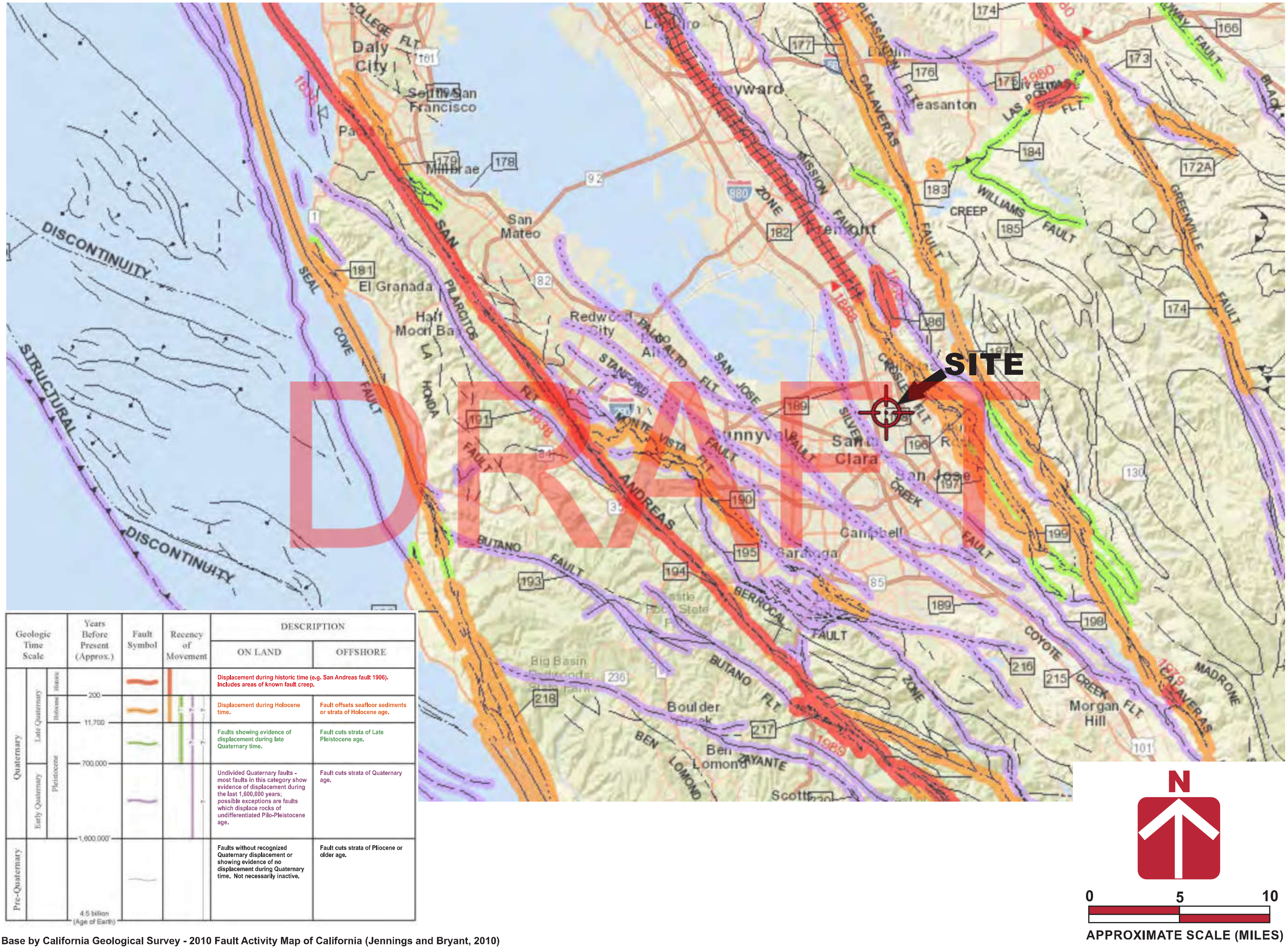
Site Plan

Concourse Tech Park
1965 Concourse Drive
San Jose, CA

Project Number	681-4-1
Figure Number	Figure 2
Date	September 2020
Drawn By	RRN



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

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

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Regional Fault Map

Concourse Tech Park
1965 Concourse Drive
San Jose, CA

Project Number	681-4-1
Figure Number	Figure 3
Date	September 2020
Drawn By	RRN

CORNERSTONE
EARTH GROUP

FIGURE **4A**

CPT NO. **1**

PROJECT/CPT DATA

Project Title	**1965 Concourse Drive**
Project No.	**681-4-1**
Project Manager	**RSM**

SEISMIC PARAMETERS

Controlling Fault	**Hayward**	
Earthquake Magnitude (Mw)	**7.58**	
PGA (Amax)	**0.908**	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	**10**
Design Water Depth (feet)	**10**
Ave. Unit Weight Above GW (pcf)	**121**
Ave. Unit Weight Below GW (pcf)	**121**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 **FEET**

0.01 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.33 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.3 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 1000.0

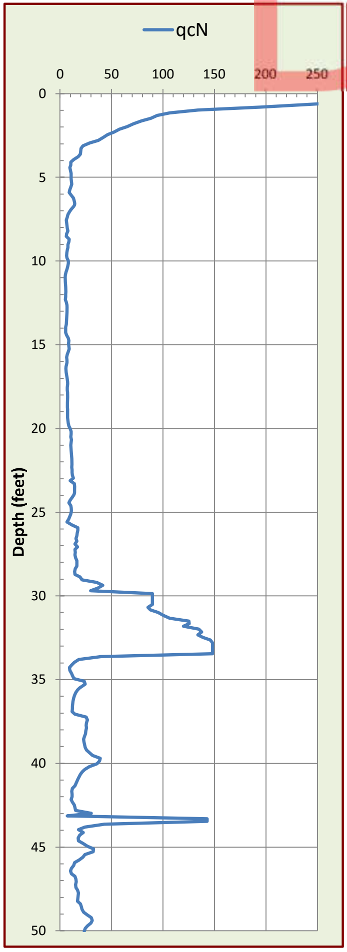
LDI[1]**Corrected for Distance** 0.00 (4 < L/H < 40)

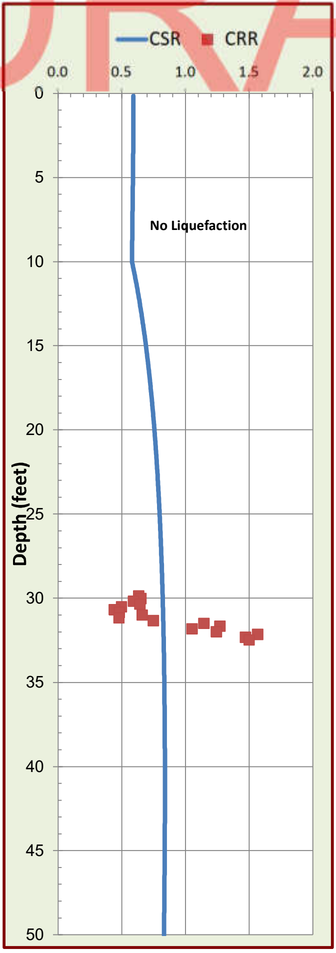
EXPECTED RANGE OF DISPLACEMENT

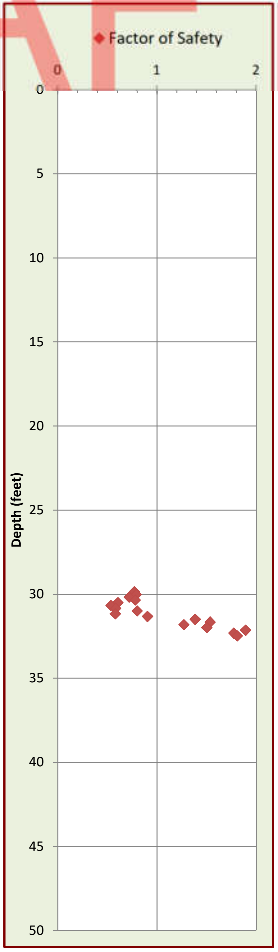
0.0 **to** **0.0** **feet**

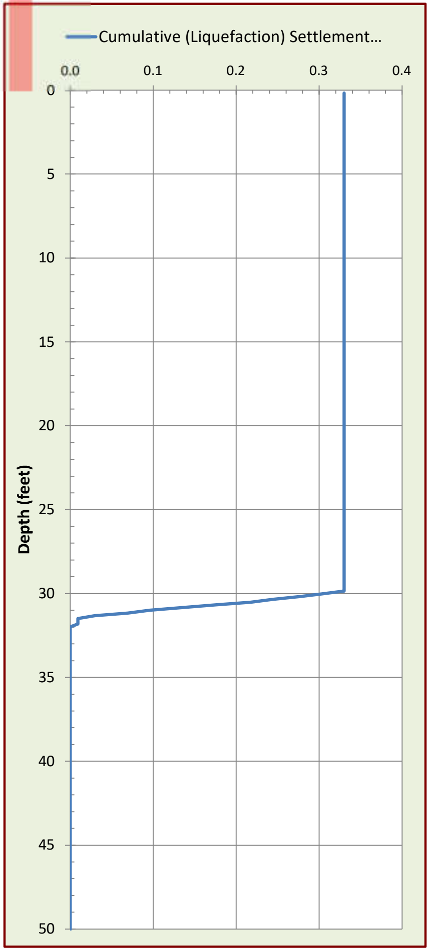
[1]Not Valid for L/H Values < 4 and > 40.

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









CORNERSTONE EARTH GROUP

FIGURE 4B

CPT NO. 2

PROJECT/CPT DATA

Project Title **1965 Concourse Drive**

Project No. **681-4-1**

Project Manager **RSM**

SEISMIC PARAMETERS

Controlling Fault **Hayward**

Earthquake Magnitude (Mw) **7.58**

PGA (Amax) **0.908** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet) **8.4**

Design Water Depth (feet) **10**

Ave. Unit Weight Above GW (pcf) **121**

Ave. Unit Weight Below GW (pcf) **121**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 **FEET**

0.00 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.12 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.1 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 1000.0

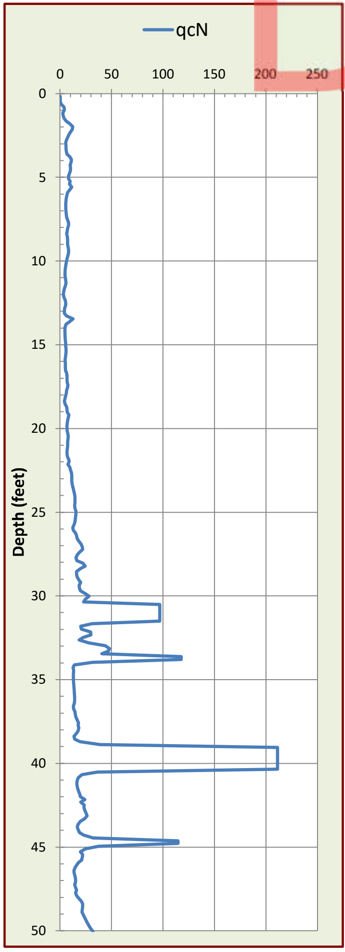
LDI[1]**Corrected for Distance** 0.00 (4 < L/H < 40)

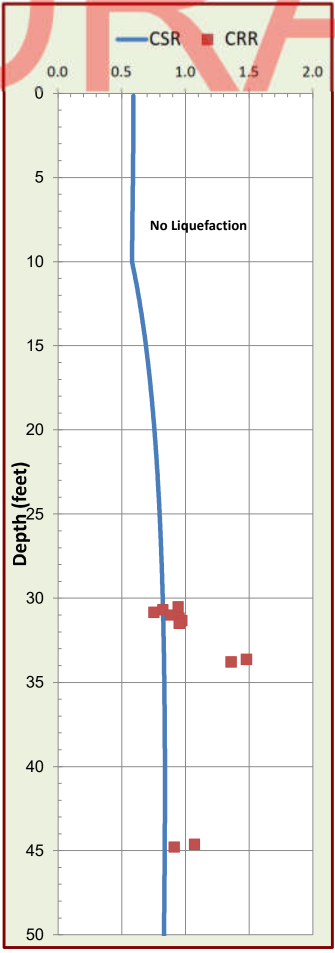
EXPECTED RANGE OF DISPLACEMENT

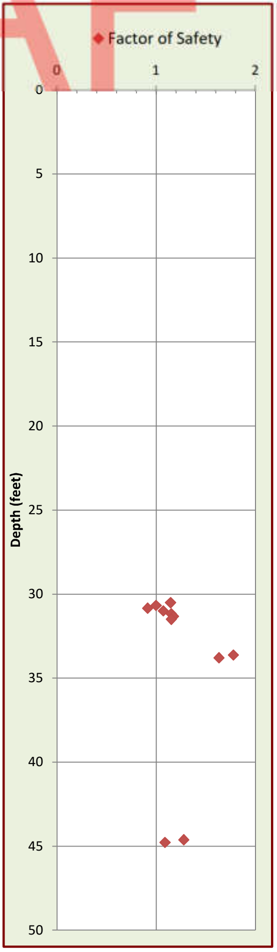
0.0 **to** **0.0** **feet**

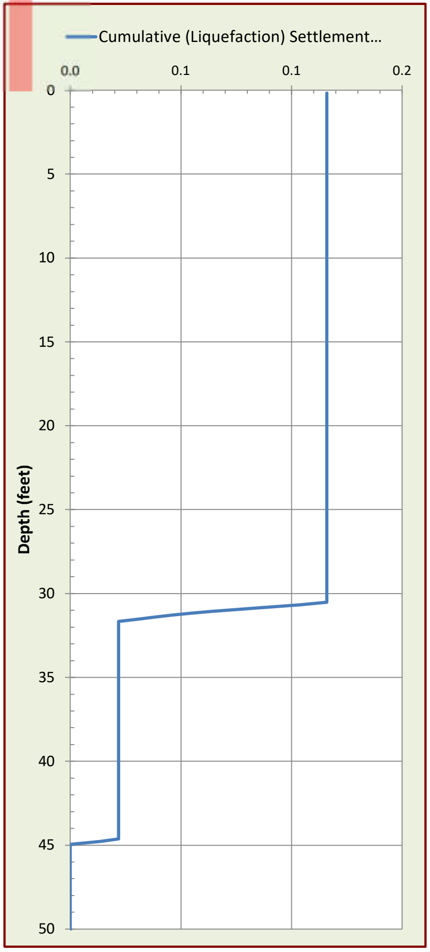
[1] Not Valid for L/H Values < 4 and > 40.

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









CORNERSTONE EARTH GROUP

FIGURE **4C**

CPT NO. **3**

PROJECT/CPT DATA

Project Title **1965 Concourse Drive**

Project No. **681-4-1**

Project Manager **RSM**

SEISMIC PARAMETERS

Controlling Fault **Hayward**

Earthquake Magnitude (Mw) **7.58**

PGA (Amax) **0.908** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	6.6
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	121
Ave. Unit Weight Below GW (pcf)	121

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 **FEET**

0.01 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.25 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.3 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 1000.0

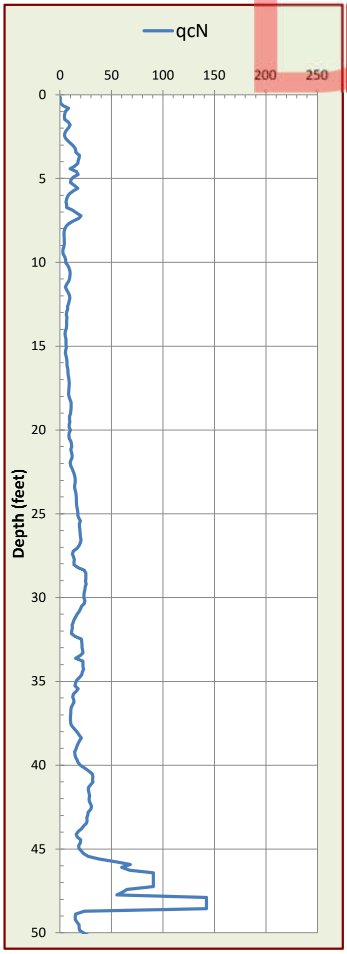
LDI[1] **Corrected for Distance** 0.00 (4 < L/H < 40)

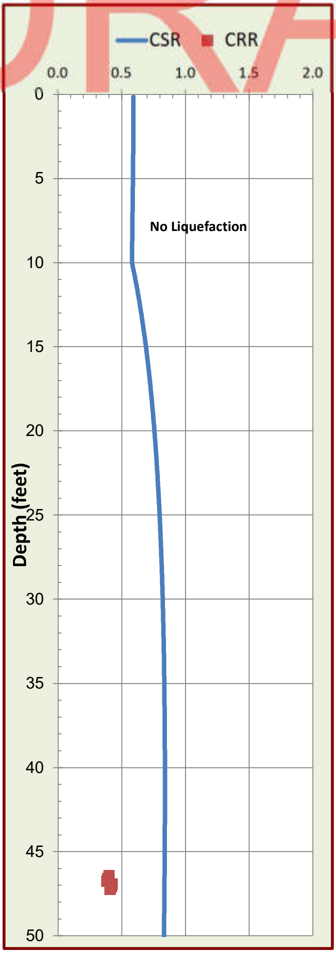
EXPECTED RANGE OF DISPLACEMENT

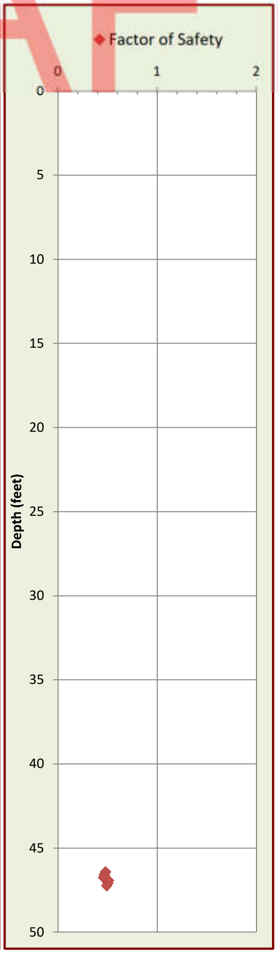
0.0 **to** 0.0 **feet**

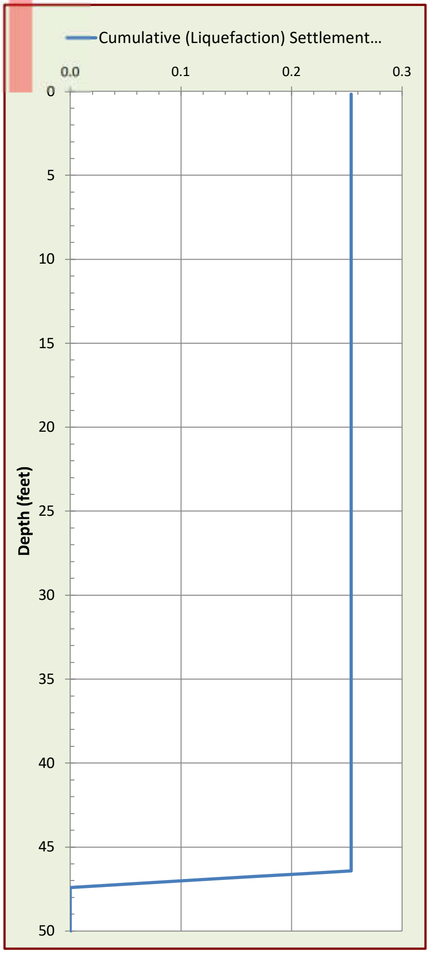
[1] Not Valid for L/H Values < 4 and > 40.

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









CORNERSTONE EARTH GROUP

FIGURE **4D**

CPT NO. **4**

PROJECT/CPT DATA

Project Title **1965 Concourse Drive**

Project No. **681-4-1**

Project Manager **RSM**

SEISMIC PARAMETERS

Controlling Fault **Hayward**

Earthquake Magnitude (Mw) **7.58**

PGA (Amax) **0.908** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet) **10**

Design Water Depth (feet) **10**

Ave. Unit Weight Above GW (pcf) **121**

Ave. Unit Weight Below GW (pcf) **121**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 **FEET**

1.14 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.00 **(Inches)**

TOTAL SEISMIC SETTLEMENT 1.1 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 **L/H** 1000.0

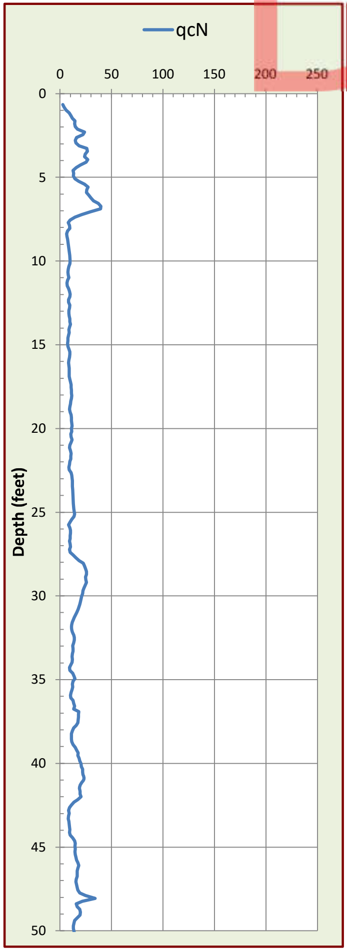
LDI[1]**Corrected for Distance** 0.00 (4 < L/H < 40)

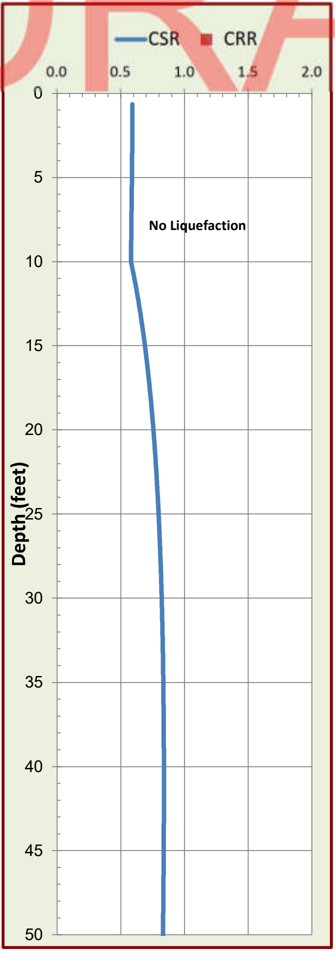
EXPECTED RANGE OF DISPLACEMENT

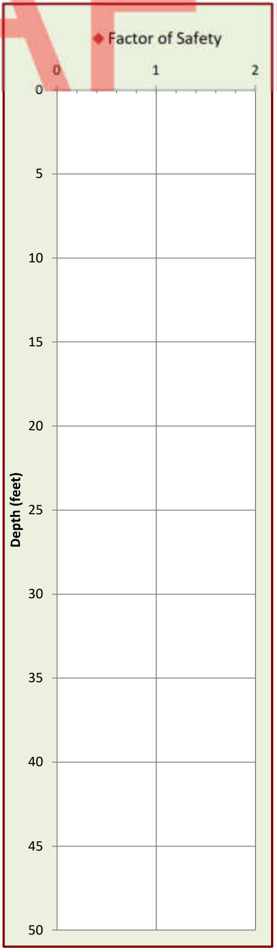
0.0 **to** 0.0 **feet**

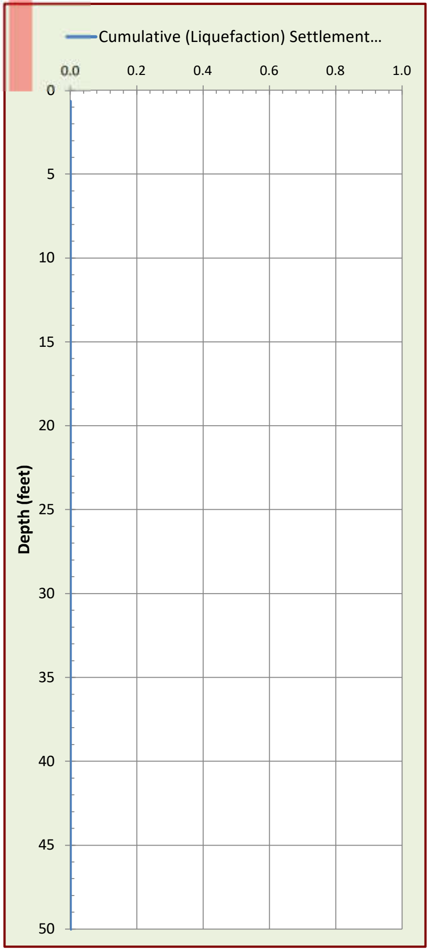
[1] Not Valid for L/H Values < 4 and > 40.

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









CORNERSTONE EARTH GROUP

FIGURE 4E

CPT NO. 5

PROJECT/CPT DATA

Project Title	**1965 Concourse Drive**
Project No.	**681-4-1**
Project Manager	**RSM**

SEISMIC PARAMETERS

Controlling Fault	**Hayward**	
Earthquake Magnitude (Mw)	**7.58**	
PGA (Amax)	**0.908**	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	**26.9**
Design Water Depth (feet)	**10**
Ave. Unit Weight Above GW (pcf)	**121**
Ave. Unit Weight Below GW (pcf)	**121**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 **FEET**

0.57 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.40 **(Inches)**

TOTAL SEISMIC SETTLEMENT 1.0 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI^2 0.00 **L/H** 1000.0

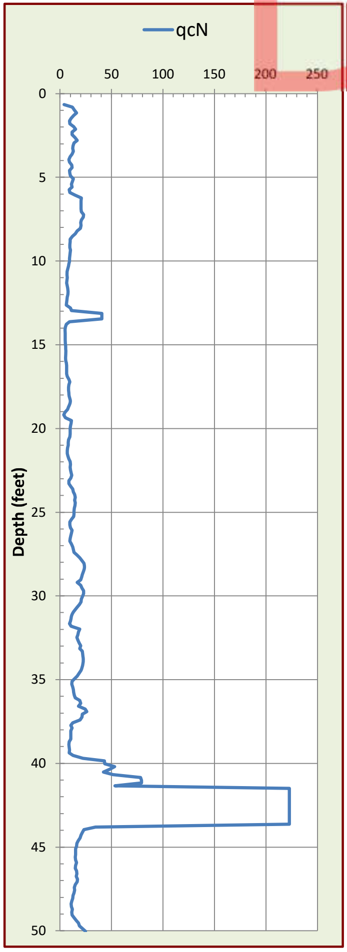
LDI^1**Corrected for Distance** 0.00 (4 < L/H < 40)

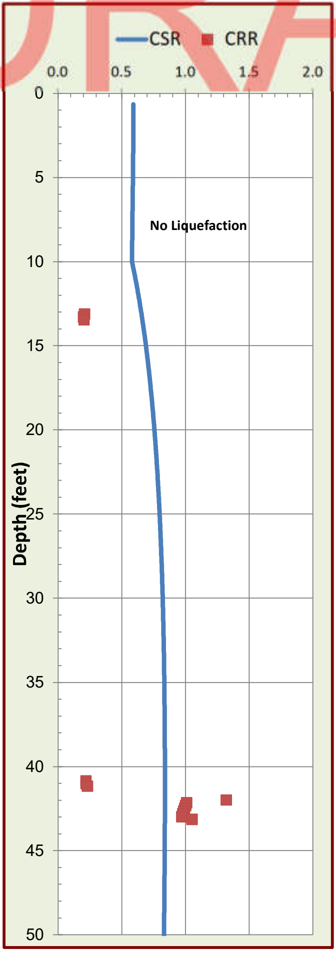
EXPECTED RANGE OF DISPLACEMENT

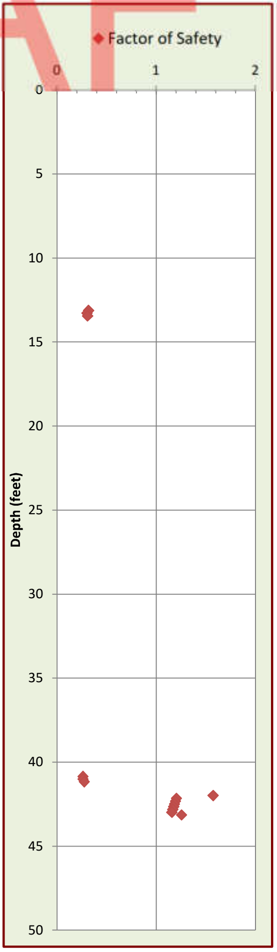
0.0 **to** 0.0 **feet**

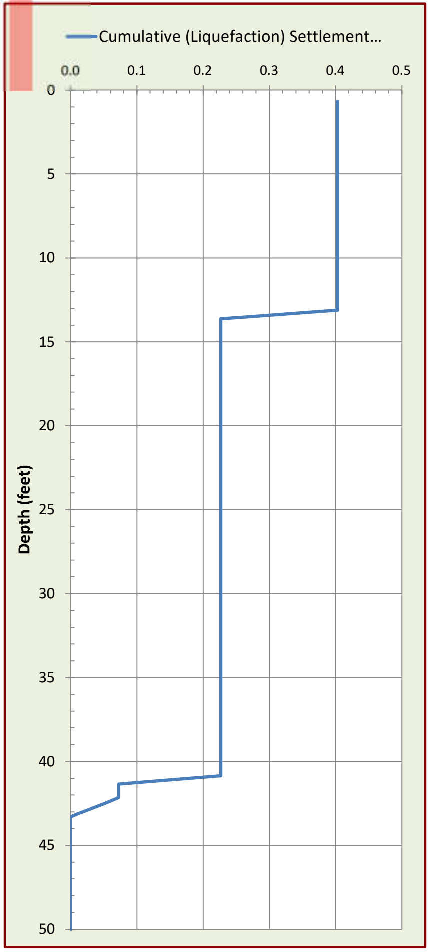
^{1}Not Valid for L/H Values < 4 and > 40.

^{2}LDI Values Only Summed to 2H Below Grade.









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EARTH GROUP

FIGURE 4E

CPT NO. 6

PROJECT/CPT DATA

Project Title: **1965 Concourse Drive**
Project No.: **681-4-1**
Project Manager: **RSM**

SEISMIC PARAMETERS

Controlling Fault: **Hayward**
Earthquake Magnitude (Mw): **7.58**
PGA (Amax): **0.908** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet): **5**
Design Water Depth (feet): **10**
Ave. Unit Weight Above GW (pcf): **121**
Ave. Unit Weight Below GW (pcf): **121**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 **FEET**
0.00 **(Inches)**
LIQUEFACTION SETTLEMENT FROM 50 **FEET**
0.47 **(Inches)**

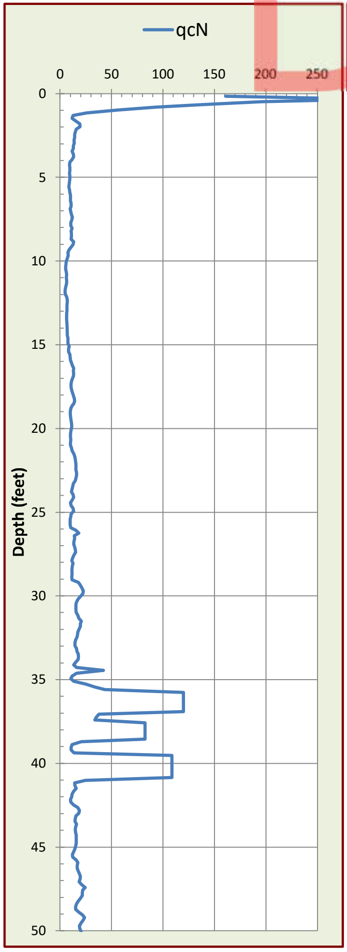
TOTAL SEISMIC SETTLEMENT 0.5 **INCHES**

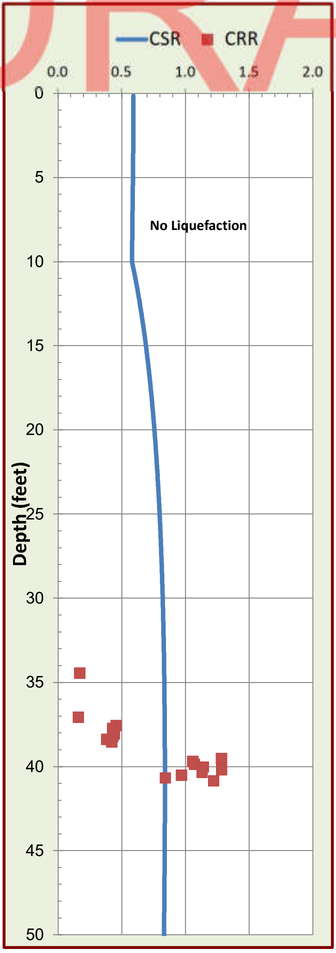
POTENTIAL LATERAL DISPLACEMENT

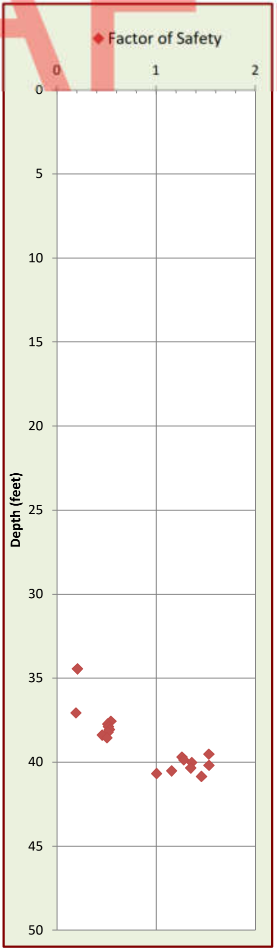
LDI^2 0.00 **L/H** 1000.0
LDI^1**Corrected for Distance** 0.00 (4 < L/H < 40)

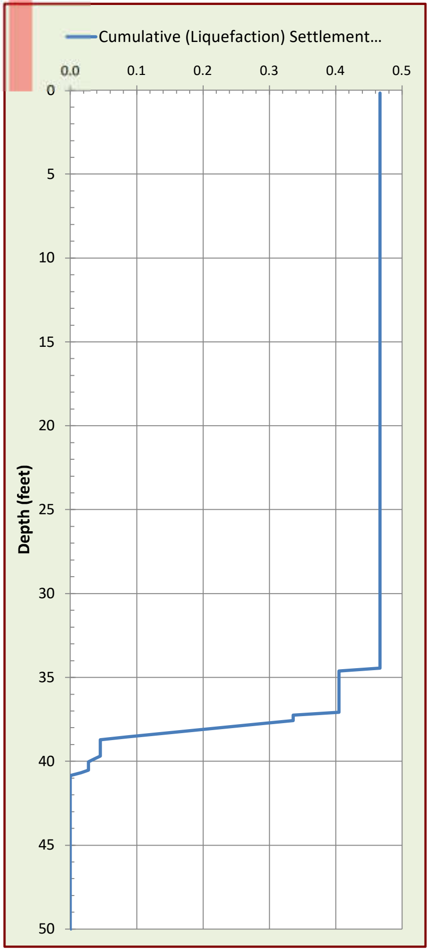
EXPECTED RANGE OF DISPLACEMENT
0.0 **to** 0.0 **feet**

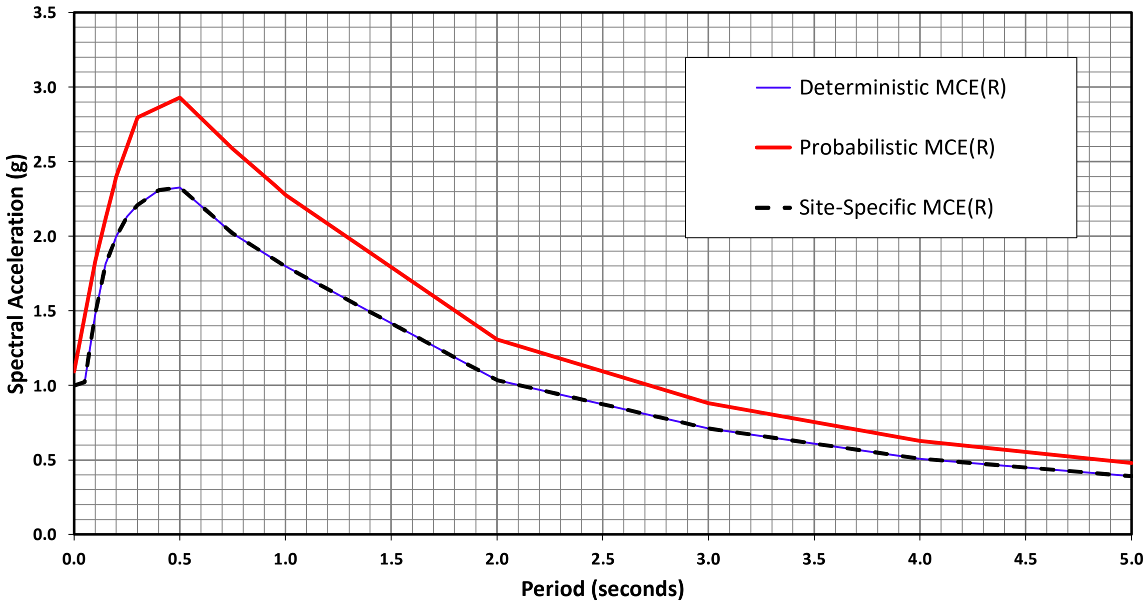
[1] Not Valid for L/H Values < 4 and > 40.
[2] LDI Values Only Summed to 2H Below Grade.











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

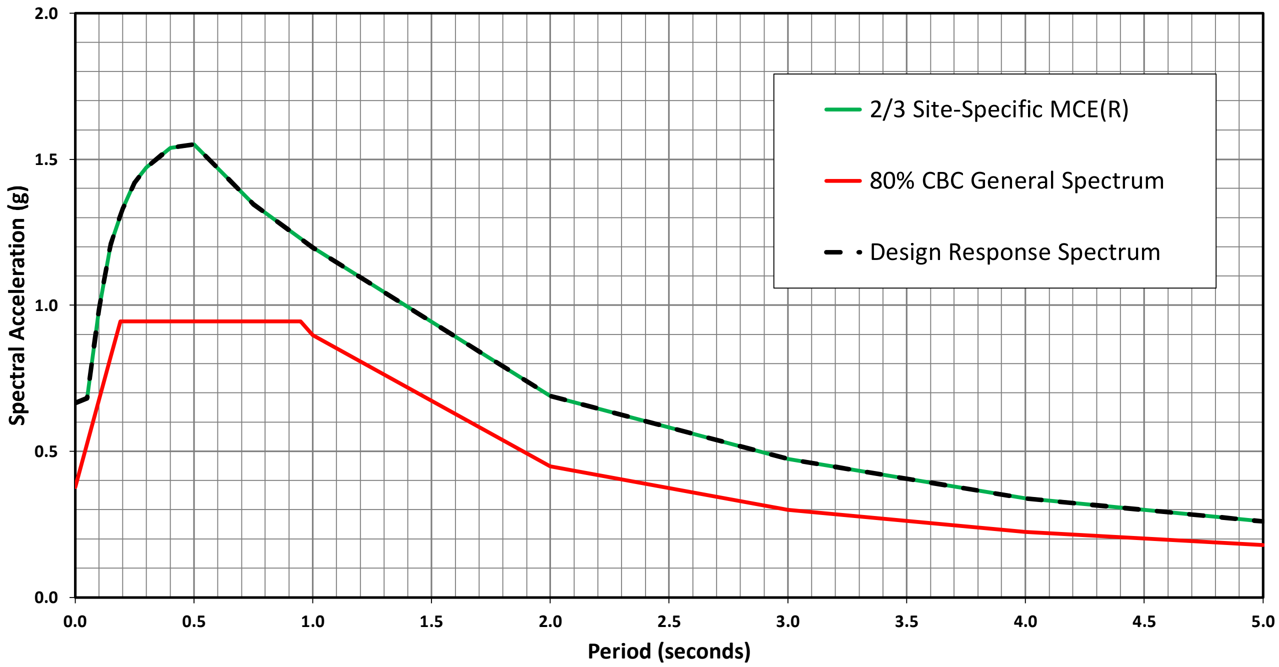
- Deterministic MCE_R – maximum 84th percentile deterministic, or
- Probabilistic MCE_R – defined as the 2,475–year ground motion.

Site-Specific MCE_R	
Period (Seconds)	Spectral Acceleration (g)
0.00	0.998
0.05	1.022
0.10	1.477
0.15	1.815
0.19	1.959
0.20	1.995
0.25	2.131
0.30	2.207
0.40	2.308
0.50	2.327
0.75	2.019
0.95	1.842
1.00	1.797
2.00	1.034
3.00	0.711
4.00	0.507
5.00	0.390

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	MCE_R RESPONSE SPECTRA	FIGURE 5	
	Concourse San Jose GI 1953 - 1965 Concourse Drive San Jose, CA	PROJECT NO. 681-4-1	
		September 14, 2020	RSM



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

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

Design Response Spectra	
Period (Seconds)	Spectral Acceleration (g)
0.00	0.666
0.05	0.681
0.10	0.985
0.15	1.210
0.19	1.306
0.20	1.330
0.25	1.420
0.30	1.471
0.40	1.538
0.50	1.551
0.75	1.346
0.95	1.228
1.00	1.198
2.00	0.689
3.00	0.474
4.00	0.338
5.00	0.260

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	234
Site Latitude (degrees)	37.398158
Site Longitude (degrees)	-121.894365
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	0.91

[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}	1.396
S_{D1}	1.422
S_{MS}	2.094
S_{M1}	2.133

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

Concourse San Jose GI
1953 - 1965 Concourse Drive
San Jose, CA

FIGURE 6

PROJECT NO. 681-4-1

September 14, 2020 | RSM

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using track-mounted, hollow-stem auger drilling equipment and 20-ton truck-mounted Cone Penetration Test equipment. Five 6½-inch-diameter exploratory borings were drilled on August 27, 2020 and September 3, 2020 to depths of approximately 25 to 31½ feet. Six CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on August 20, 2020, to depths ranging from approximately 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 and, are included as part of this appendix.

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

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

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

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

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

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-10)

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

OTHER MATERIAL SYMBOLS

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

SAMPLER TYPES

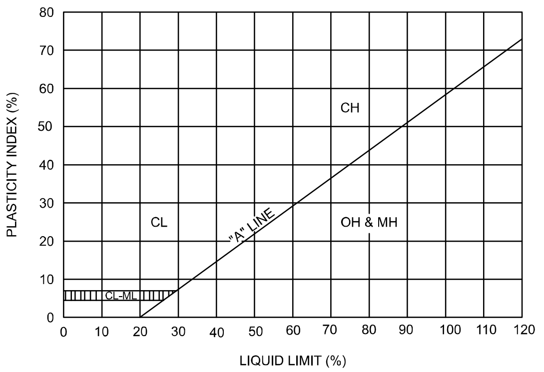
- SPT
- Modified California (2.5" I.D.)
- Rock Core
- Shelby Tube
- No Recovery
- Grab Sample

ADDITIONAL TESTS

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

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

PLASTICITY CHART



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

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

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

CORNERSTONE
EARTH GROUP

LEGEND TO SOIL DESCRIPTIONS

Figure Number
A-1

BORING NUMBER EB-1

PAGE 1 OF 2

CORNERSTONE EARTH GROUP

PROJECT NAME Concourse Tech Park
PROJECT NUMBER 681-4-1
PROJECT LOCATION San Jose, CA
GROUND ELEVATION
BORING DEPTH 31.5 ft.
LATITUDE 37.398035°
LONGITUDE -121.893104°
GROUND WATER LEVELS:
▽ **AT TIME OF DRILLING** 9.5 ft.
▼ **AT END OF DRILLING** 9.5 ft.

DATE STARTED 8/27/20
DATE COMPLETED 8/27/20
DRILLING CONTRACTOR Cuesta Geoservices
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
LOGGED BY BCG
NOTES

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ELEVATION (ft) | DEPTH (ft) | SYMBOL

DESCRIPTION

2½ inches asphalt concrete over 5 inches aggregate base

Sandy Lean Clay (CL) [Fill]
hard, moist, gray and brown mottled, fine to medium sand, trace fine gravel, low plasticity

Lean Clay with Sand (CL)
very stiff, moist, dark gray with brown mottles, fine sand, low to moderate plasticity

becomes stiff

Sandy Lean Clay (CL)
medium stiff, moist, gray brown, fine to coarse sand, low plasticity

Lean Clay with Sand (CL)
medium stiff, moist, gray brown, fine to medium sand, trace gravel, moderate plasticity

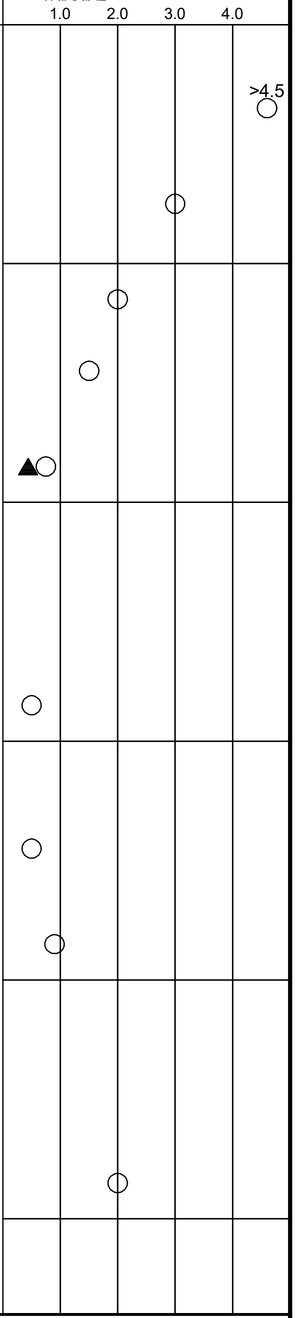
Lean Clay (CL)
very stiff, moist, gray, some fine sand, moderate plasticity

Continued Next Page

Depth scale (ft): 0, 5, 10, 15, 20, 25

N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
16	MC-1B	117	11		
13	MC-2B	107	19		
9	MC-3B	105	22		
9	MC-4B	106	23		
	ST-5	91	32		
5	MC-6B	99	27		
	ST-7	94	27		
5	MC-8B	95	28		
11	MC-9B	102	24		

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



BORING NUMBER EB-1

PROJECT NAME Concourse Tech Park

PROJECT NUMBER 681-4-1

PROJECT LOCATION San Jose, CA

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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
		▨	**Sandy Lean Clay (CL)** stiff, moist, gray, fine to coarse sand, some fine subrounded gravel, low plasticity							
		▨	**Clayey Sand with Gravel (SC)** loose to medium dense, moist, gray brown, fine to coarse sand, fine to coarse subangular to subrounded gravel	7	MC-10B	117	17			○
	30	▨		13	SPT-11		14		21	
			Bottom of Boring at 31.5 feet.							
	35									
	40									
	45									
	50									
	55									

CORNERSTONE EARTH GROUP

BORING NUMBER EB-2

PAGE 1 OF 1

PROJECT NAME Concourse Tech Park
PROJECT NUMBER 681-4-1
PROJECT LOCATION San Jose, CA
DATE STARTED 9/3/20 **DATE COMPLETED** 9/3/20
GROUND ELEVATION **BORING DEPTH** 25 ft.
DRILLING CONTRACTOR Cuesta Geoservices
LATITUDE 37.398594° **LONGITUDE** -121.893502°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
▽ **AT TIME OF DRILLING** 13 ft.
▼ **AT END OF DRILLING** 13 ft.
LOGGED BY BCG
NOTES

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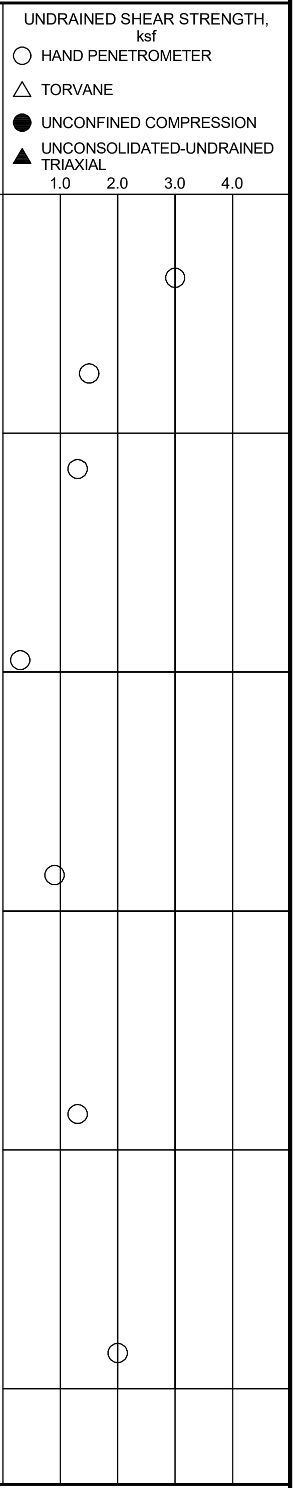
DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
3 inches asphalt concrete over 5 inches aggregate base						
Lean Clay (CL) very stiff, moist, dark gray brown, some fine sand, moderate plasticity	11	MC-1B	102	23		
Lean Clay with Sand (CL) stiff, moist, gray with brown mottles, fine to medium sand, low to moderate plasticity	8	MC-2B	101	22		
	8	MC-3B	100	22		
Silty Sand (SM) loose, moist, gray brown, fine to medium sand		4B	91	25		29
	2	MC				
Sandy Lean Clay (CL) soft, moist, gray brown, fine to medium sand, low plasticity		4C	93	27		
Lean Clay with Sand (CL) medium stiff, moist, gray with brown mottles, fine to medium sand, moderate plasticity	7	MC-5B	96	30		
Lean Clay (CL) stiff, moist, gray, some fine sand, moderate plasticity	8	MC-6B	97	26		
	15	MC-7B	99	26		
Bottom of Boring at 25.0 feet.						



CORNERSTONE EARTH GROUP

BORING NUMBER EB-3

PAGE 1 OF 1

PROJECT NAME Concourse Tech Park
PROJECT NUMBER 681-4-1
PROJECT LOCATION San Jose, CA
DATE STARTED 8/27/20 **DATE COMPLETED** 8/27/20
GROUND ELEVATION **BORING DEPTH** 25 ft.
DRILLING CONTRACTOR Cuesta Geoservices
LATITUDE 37.397749° **LONGITUDE** -121.894049°
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** 9 ft.

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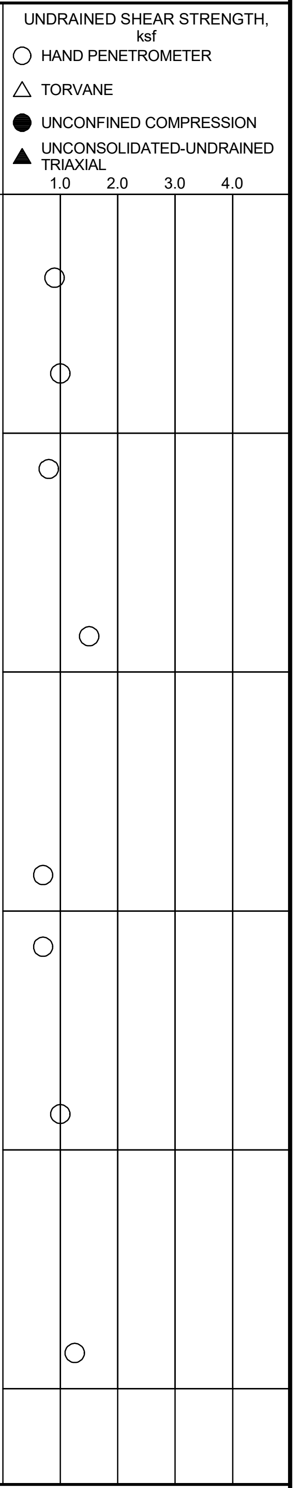
DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
0	6 inches topsoil						
	Lean Clay with Sand (CL) medium stiff, moist, dark gray with brown mottles, fine sand, moderate plasticity	6	MC-1B	108	21		
	color changes to gray with brown mottles	7	MC-2B	106	20		
5		7	MC-3B	113	17		
	Clayey Sand (SC) loose, moist, gray brown, fine to coarse sand, some fine to coarse subangular to subrounded gravel	2	NR				
	Lean Clay with Sand (CL) stiff, moist, gray brown, fine sand, low to moderate plasticity	7	MC-4B	106	24		
10							
		6	MC-5B	99	27		
15	**Sandy Silt (ML)** medium stiff, moist, gray brown, fine sand, low plasticity	2	SPT-6		32		
	Lean Clay with Sand (CL) medium stiff, moist, gray with brown mottles, fine sand, low to moderate plasticity						
20		7	MC-7B	97	27		
	Lean Clay (CL) stiff, moist, gray, some fine sand, moderate plasticity	10	MC-8B	94	30		
25	Bottom of Boring at 25.0 feet.						



CORNERSTONE EARTH GROUP

BORING NUMBER EB-4

PAGE 1 OF 1

PROJECT NAME Concourse Tech Park
PROJECT NUMBER 681-4-1
PROJECT LOCATION San Jose, CA
DATE STARTED 9/3/20 **DATE COMPLETED** 9/3/20
GROUND ELEVATION ______ **BORING DEPTH** 25 ft.
DRILLING CONTRACTOR Cuesta Geoservices
LATITUDE 37.397191° **LONGITUDE** -121.894917°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** 14 ft.
NOTES ______
▼ **AT END OF DRILLING** 14 ft.

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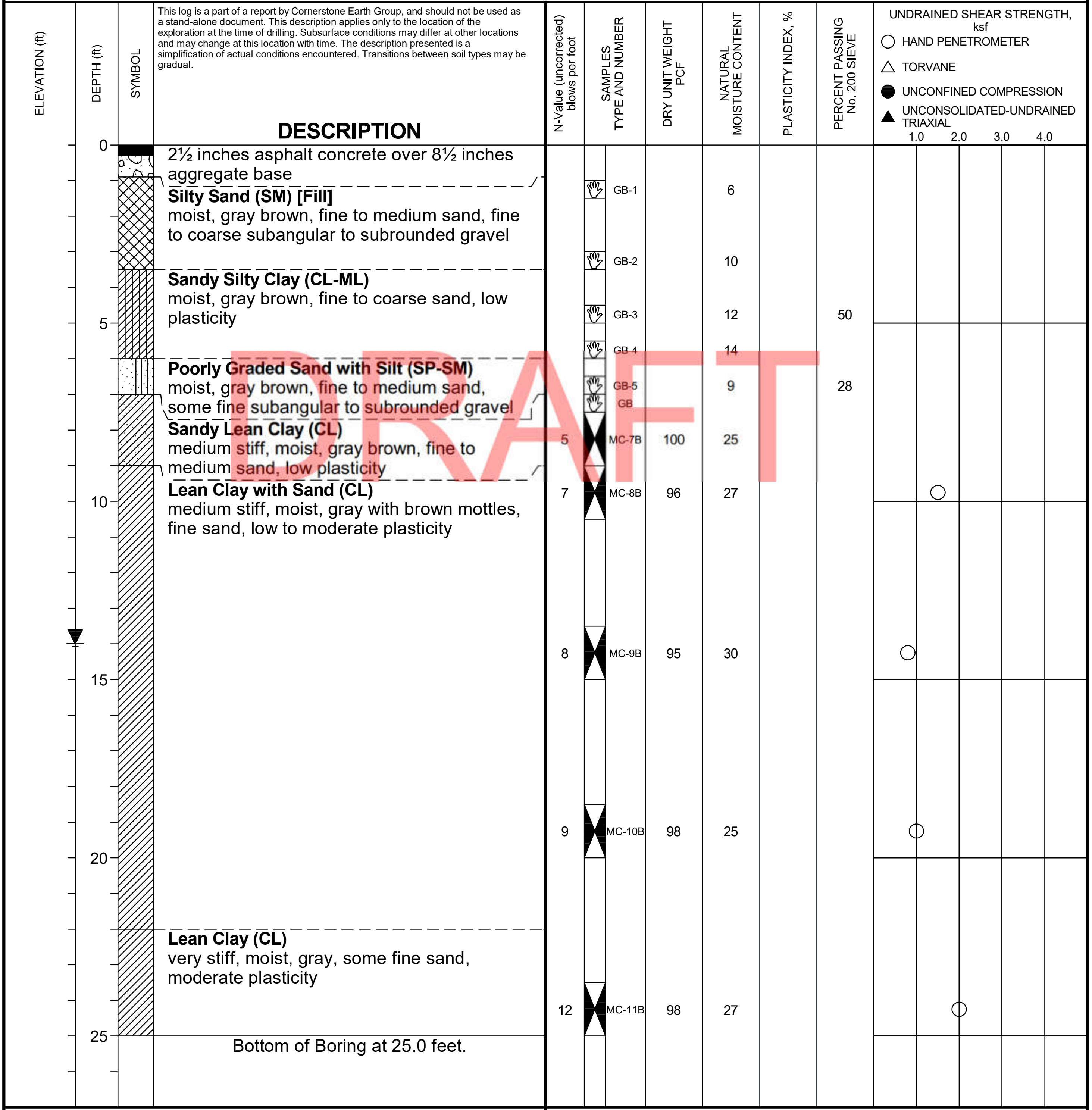

DESCRIPTION

2½ inches asphalt concrete over 8½ inches aggregate base

Silty Sand (SM) [Fill]
moist, gray brown, fine to medium sand, fine to coarse subangular to subrounded gravel

Sandy Silty Clay (CL-ML)
moist, gray brown, fine to coarse sand, low plasticity

Poorly Graded Sand with Silt (SP-SM)
moist, gray brown, fine to medium sand, some fine subangular to subrounded gravel

Sandy Lean Clay (CL)
medium stiff, moist, gray brown, fine to medium sand, low plasticity

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

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

Bottom of Boring at 25.0 feet.

N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	GB-1		6		
	GB-2		10		
	GB-3		12		50
	GB-4		14		
	GB-5		9		28
	GB				
5	MC-7B	100	25		
7	MC-8B	96	27		
8	MC-9B	95	30		
9	MC-10B	98	25		
12	MC-11B	98	27		

BORING NUMBER EB-5

PAGE 1 OF 2

CORNERSTONE EARTH GROUP

PROJECT NAME Concourse Tech Park
PROJECT NUMBER 681-4-1
PROJECT LOCATION San Jose, CA
DATE STARTED 8/27/20 **DATE COMPLETED** 8/27/20
GROUND ELEVATION **BORING DEPTH** 30 ft.
DRILLING CONTRACTOR Cuesta Geoservices
LATITUDE 37.397676° **LONGITUDE** -121.895230°
DRILLING METHOD MPP LAD Track Rig, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** 18 ft.
NOTES
▼ **AT END OF DRILLING** 18 ft.

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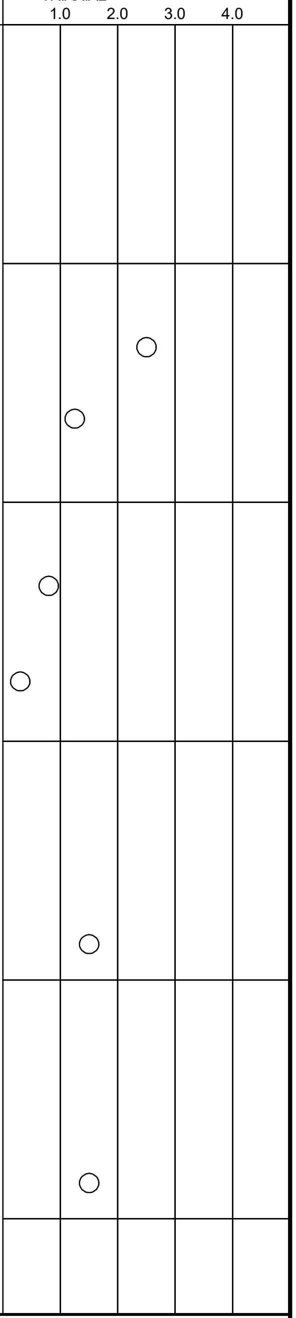
ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0	6 inches asphalt concrete over 4 inches aggregate base						
		Sandy Lean Clay (CL) [Fill] moist, gray, fine to medium sand, some fine gravel, low to moderate plastcity		GB-1 GB-2		16 15	 18	
	5	**Sandy Lean Clay (CL)** moist, dark gray with brown mottles, fine sand, low plasticity Liquid Limit = 34, Plastic Limit = 16		GB-3		13		
		Sandy Silty Clay (CL-ML) very stiff, moist, gray with brown mottles, fine sand, low plasticity	12	MC-4B	104	17		
		becomes medium stiff	4	MC-5B	98	17		
	10	**Lean Clay with Sand (CL)** medium stiff, moist, gray with brown mottles, fine sand, low plasticity	7	MC-6B	94	28		
		becomes soft		ST-7	88	33		
	15							
		Lean Clay (CL) stiff, moist, gray, some fine sand, moderate plasticity	6	MC-8B	97	28		
	20							
	25		12	MC-9B	99	27		

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



Continued Next Page

CORNERSTONE EARTH GROUP

BORING NUMBER EB-5

PROJECT NAME Concourse Tech Park
PROJECT NUMBER 681-4-1
PROJECT LOCATION San Jose, CA

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

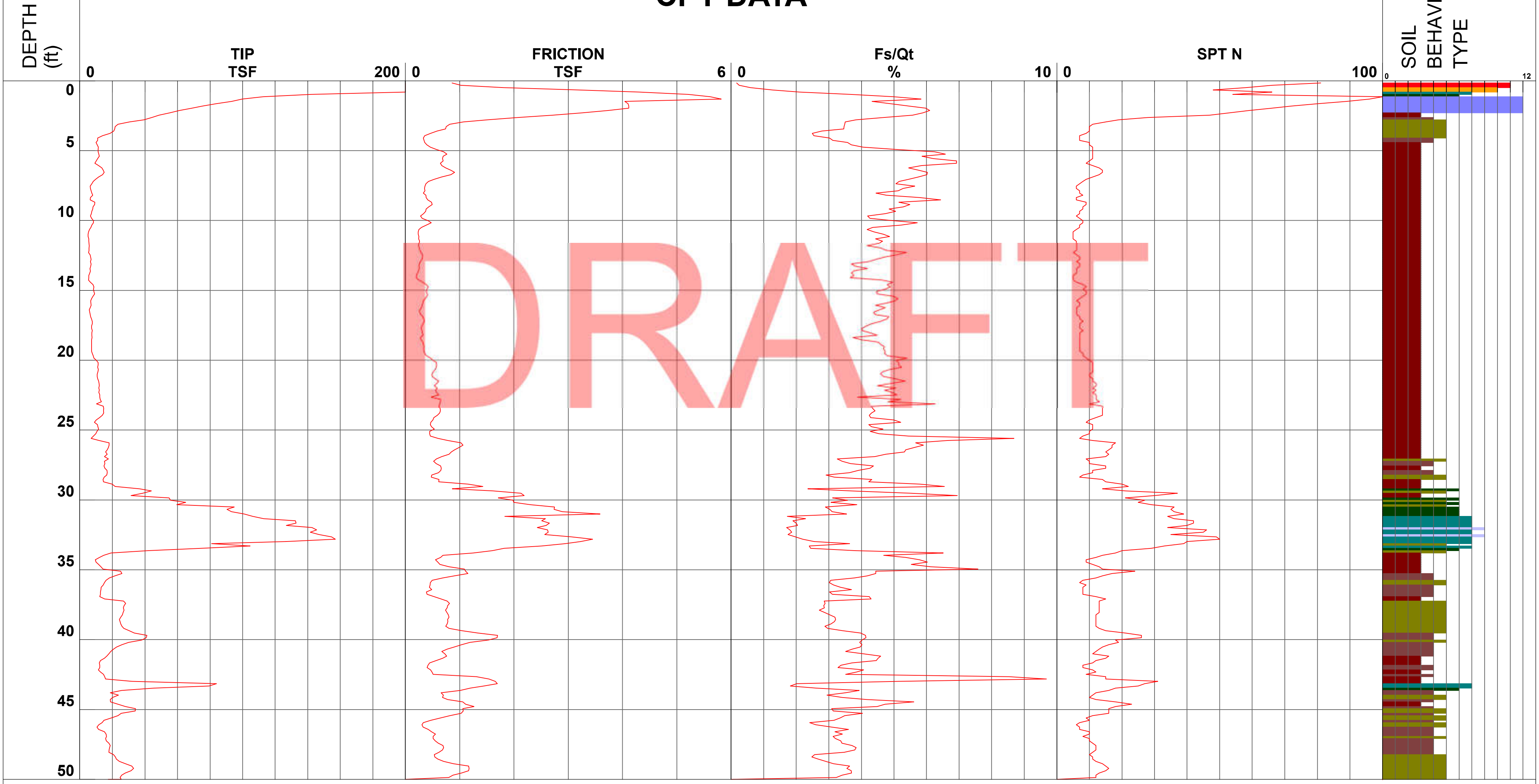
ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf 1.0 2.0 3.0 4.0
		▨	**Lean Clay with Sand (CL)** very stiff, moist, gray with brown mottles, fine sand, moderate plasticity	18	MC-10B	113	19			○
	30		Bottom of Boring at 30.0 feet.							
	35									
	40									
	45									
	50									
	55									

Cornerstone Earth Group

Project	1953-1965 Concourse Drive	Operator	JM-AJ	Filename	SDF(158).cpt
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-01	Date and Time	8/20/2020 12:54:42 PM	Maximum Depth	50.36 ft
EST GW Depth During Test		7.00 ft			

Net Area Ratio .8

CPT DATA



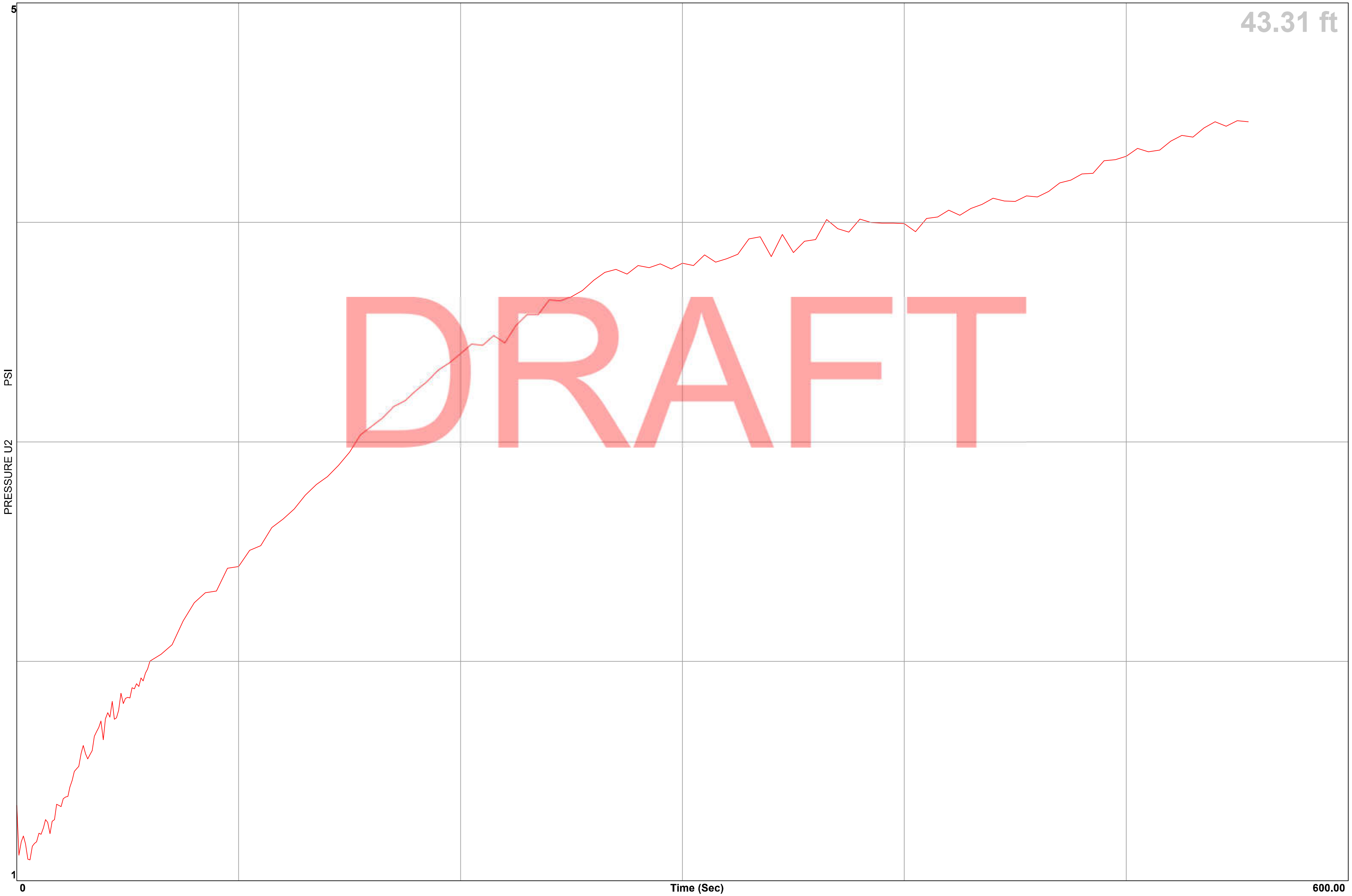
■ 1 - sensitive fine grained	■ 4 - silty clay to clay	■ 7 - silty sand to sandy silt	■ 10 - gravelly sand to sand
■ 2 - organic material	■ 5 - clayey silt to silty clay	■ 8 - sand to silty sand	■ 11 - very stiff fine grained (*)
■ 3 - clay	■ 6 - sandy silt to clayey silt	■ 9 - sand	■ 12 - sand to clayey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

Cone Size 15cm squared

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

Cornerstone Earth Group

Location	1953-1965 Concourse Drive	Operator	JM-AJ	GPS	
Job Number	681-4-1	Cone Number	DDG1530		
Hole Number	CPT-01	Date and Time	8/20/2020 12:54:42 PM		
Equilized Pressure	4.4	EST GW Depth During Test	33.0		

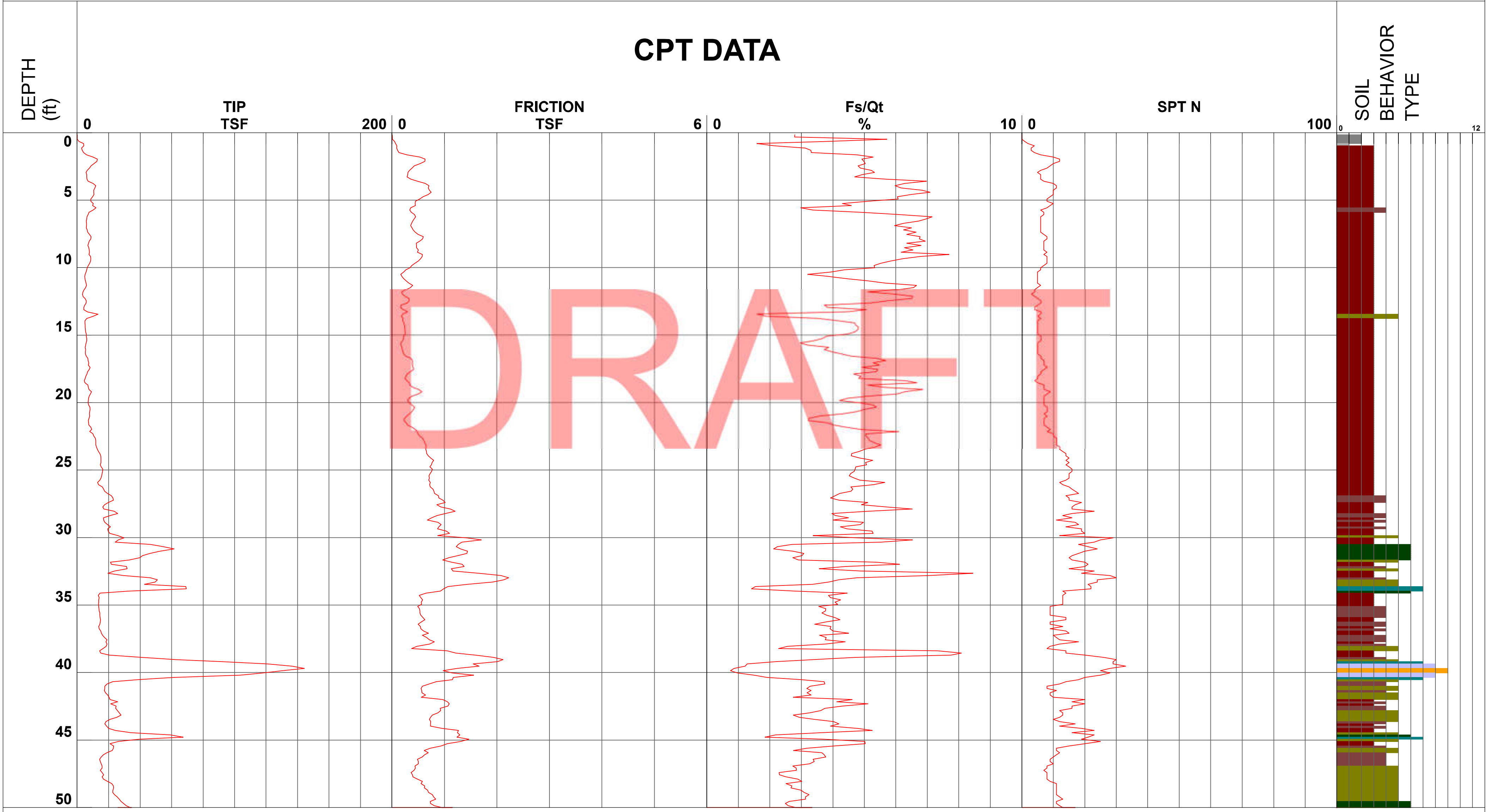


Cornerstone Earth Group

Project	1953-1965 Concourse Drive	Operator	JM-AJ	Filename	SDF(157).cpt
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-02	Date and Time	8/20/2020 12:07:45 PM	Maximum Depth	50.69 ft
EST GW Depth During Test		8.40 ft			

Net Area Ratio .8

CPT DATA



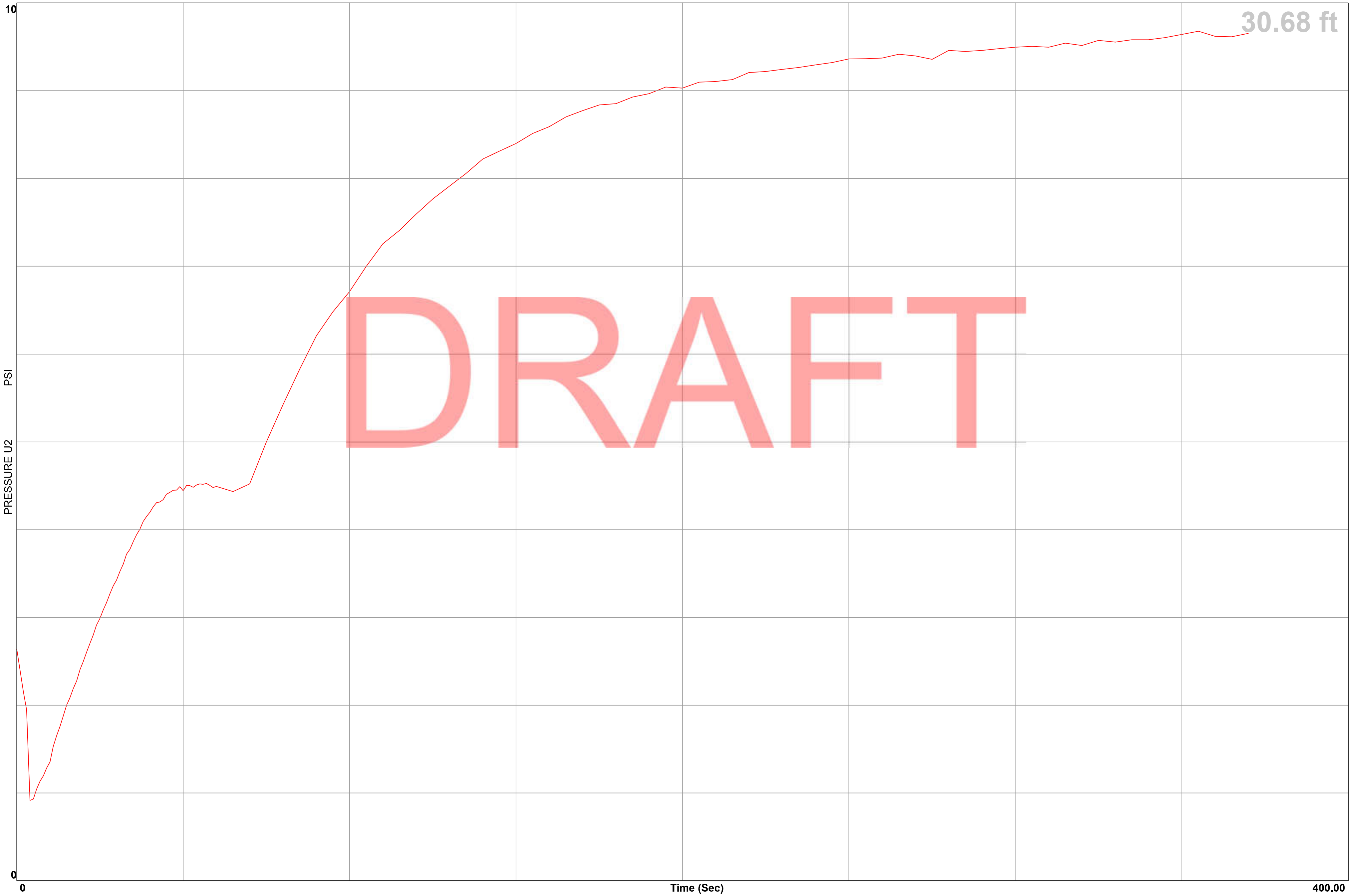
■ 1 - sensitive fine grained	🟫 4 - silty clay to clay	🟦 7 - silty sand to sandy silt	🟥 10 - gravelly sand to sand
■ 2 - organic material	🟨 5 - clayey silt to silty clay	■ 8 - sand to silty sand	🟪 11 - very stiff fine grained (*)
🟥 3 - clay	🟩 6 - sandy silt to clayey silt	🟧 9 - sand	🟦 12 - sand to clayey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

Cone Size 15cm squared

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

Cornerstone Earth Group

Location	1953-1965 Concourse Drive	Operator	JM-AJ		
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-02	Date and Time	8/20/2020 12:07:45 PM		
Equilized Pressure	9.6	EST GW Depth During Test	8.4		



Cornerstone Earth Group

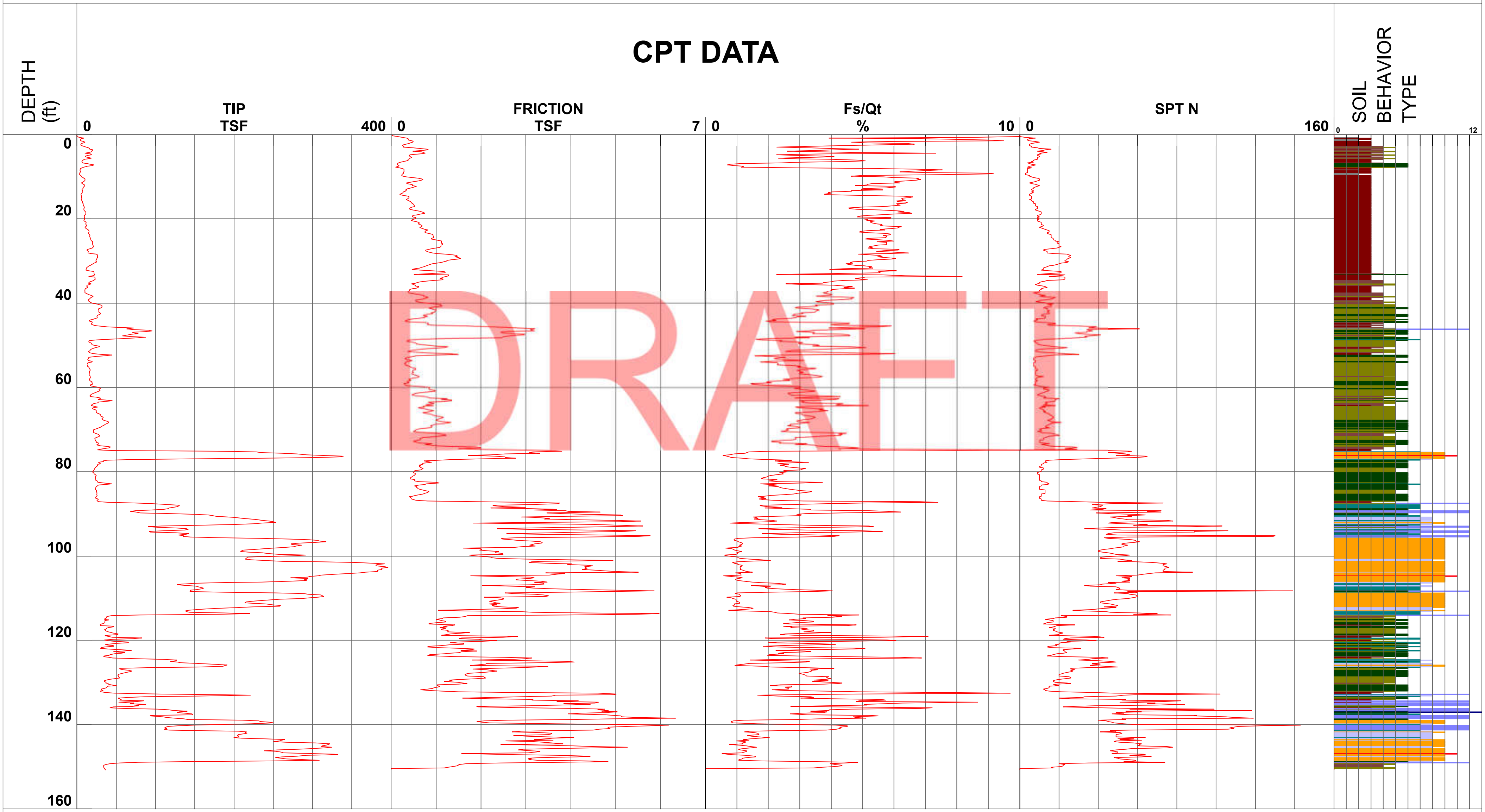
Project 1953-1965 Concourse Drive
Job Number 681-4-1
Hole Number CPT-03
EST GW Depth During Test 6.60 ft

Operator JM-AJ
Cone Number DDG1530
Date and Time 8/20/2020 8:16:08 AM

Filename SDF(156).cpt
GPS
Maximum Depth 150.75 ft

Net Area Ratio .8

CPT DATA



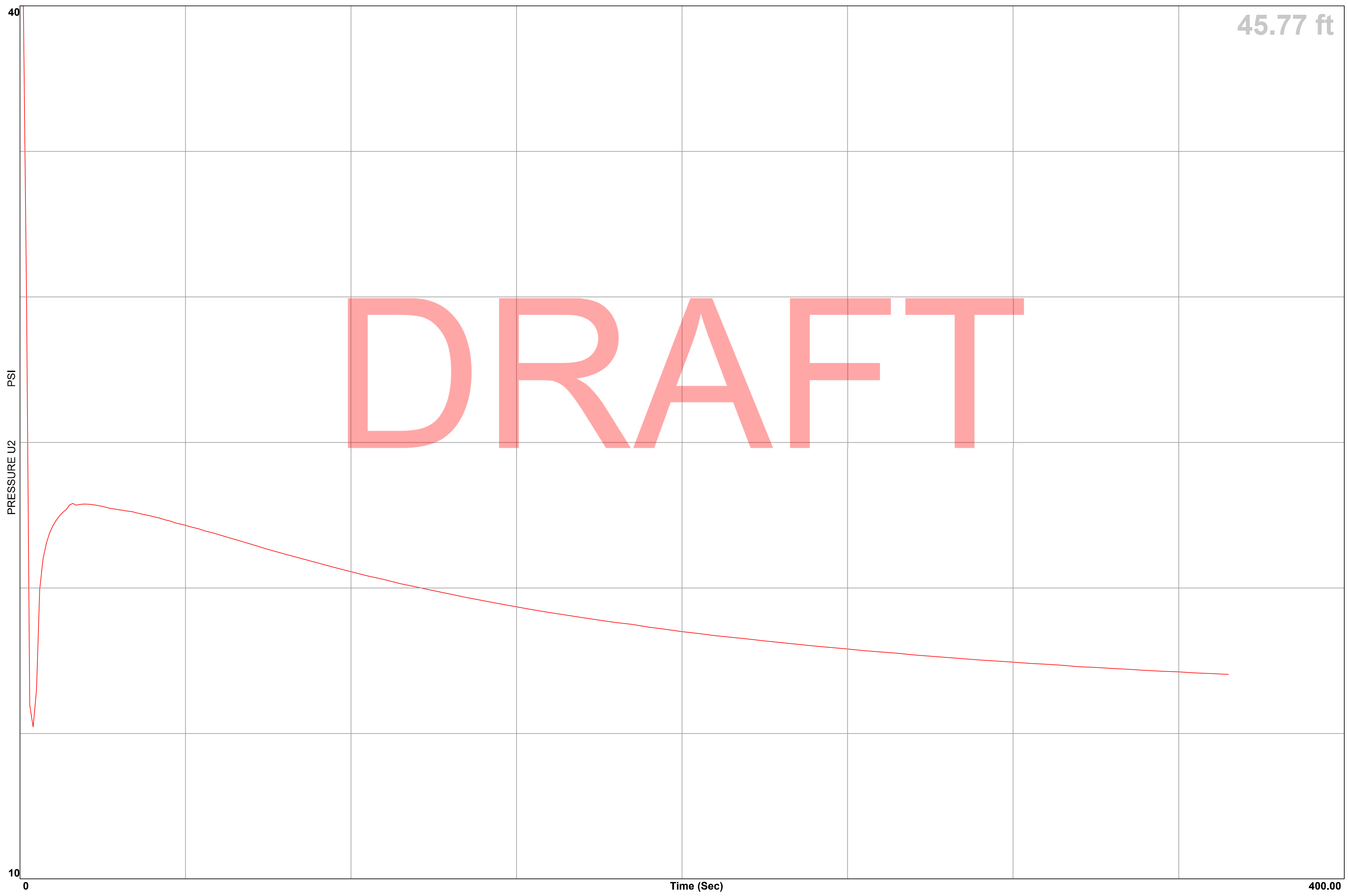
- 🟩 1 - sensitive fine grained
- 🟩 2 - organic material
- 🟥 3 - clay
- 🟥 4 - silty clay to clay
- 🟩 5 - clayey silt to silty clay
- 🟩 6 - sandy silt to clayey silt
- 🟩 7 - silty sand to sandy silt
- 🟦 8 - sand to silty sand
- 🟧 9 - sand
- 🟥 10 - gravelly sand to sand
- 🟦 11 - very stiff fine grained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

Cone Size 15cm squared

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

Cornerstone Earth Group

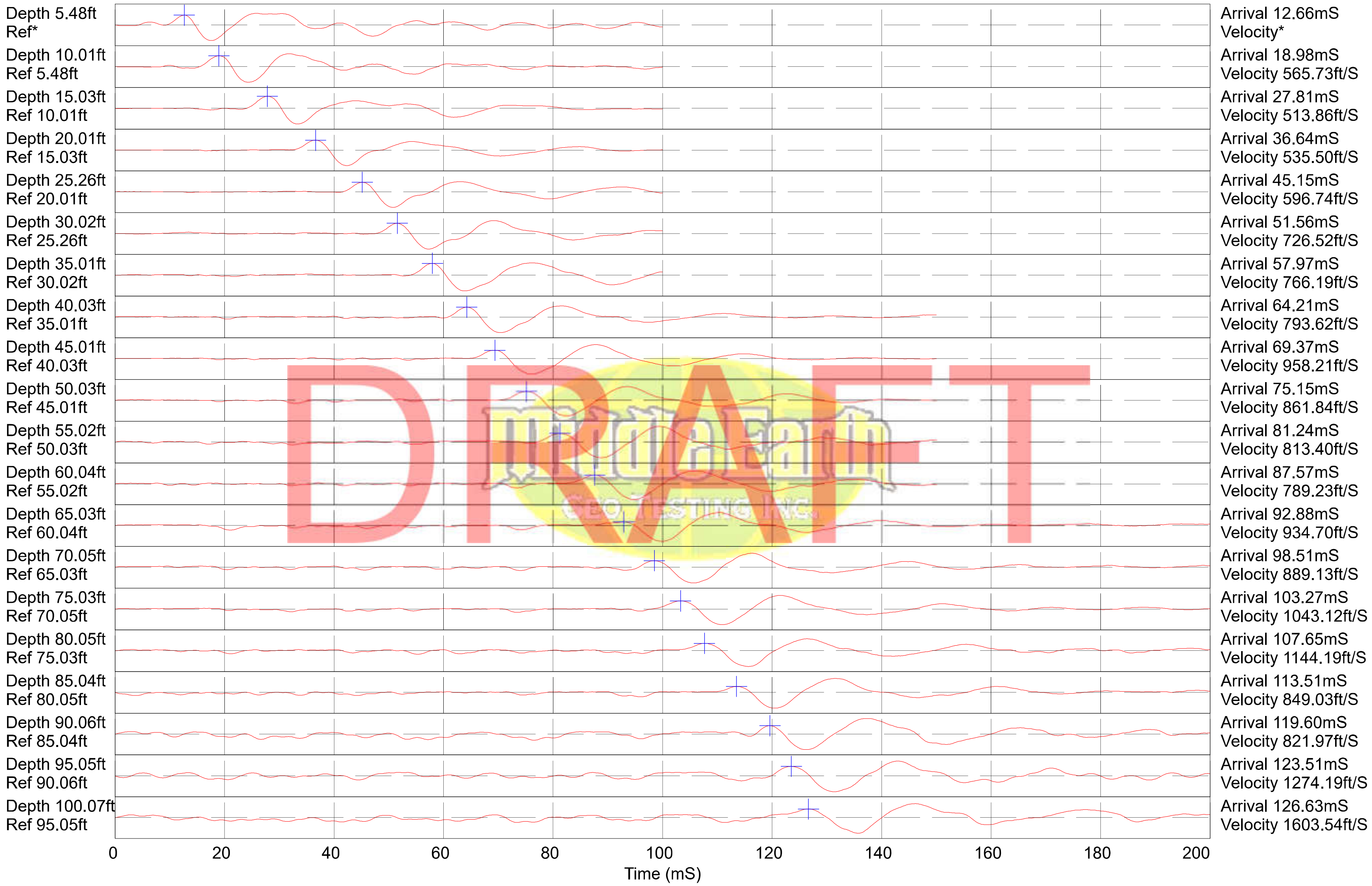
Location	1953-1965 Concourse Drive	Operator	JM-AJ		
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-03	Date and Time	8/20/2020 8:16:08 AM		
Equilized Pressure	16.9	EST GW Depth During Test	6.6		



CPT-03

Cornerstone Earth Group

1953-1965 Concourse Drive



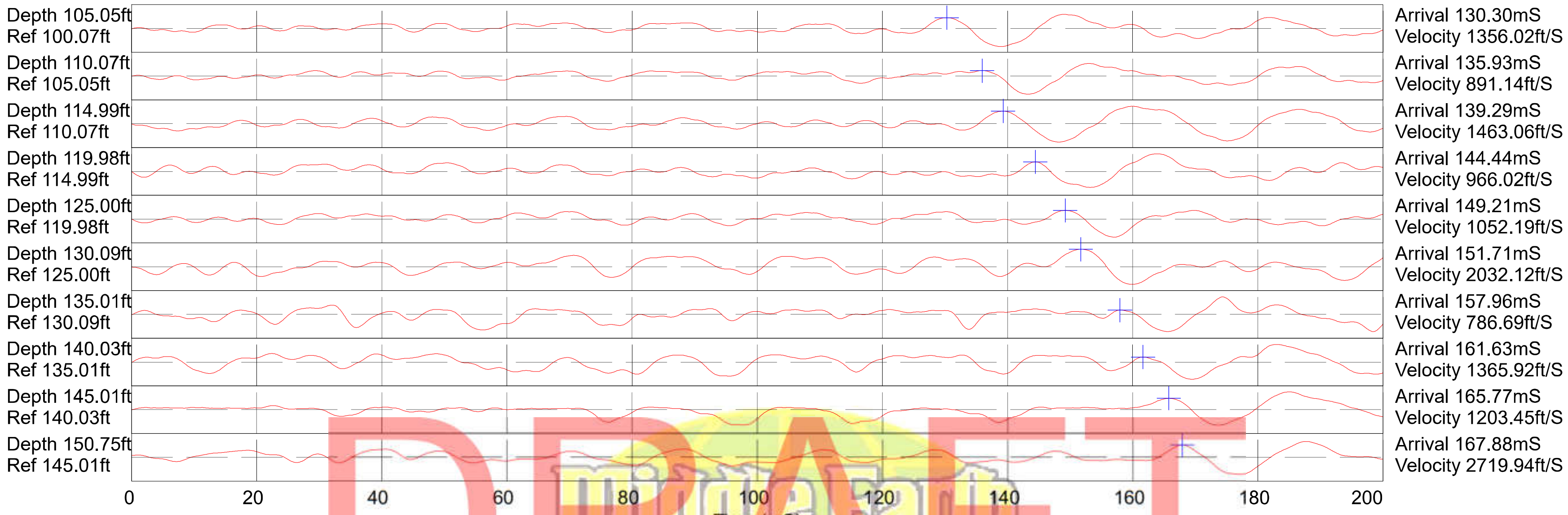
Hammer to Rod String Distance (ft): 5.83
* = Not Determined

COMMENT:

CPT-03

Cornerstone Earth Group

1953-1965 Concourse Drive



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

COMMENT:

Cornerstone Earth Group

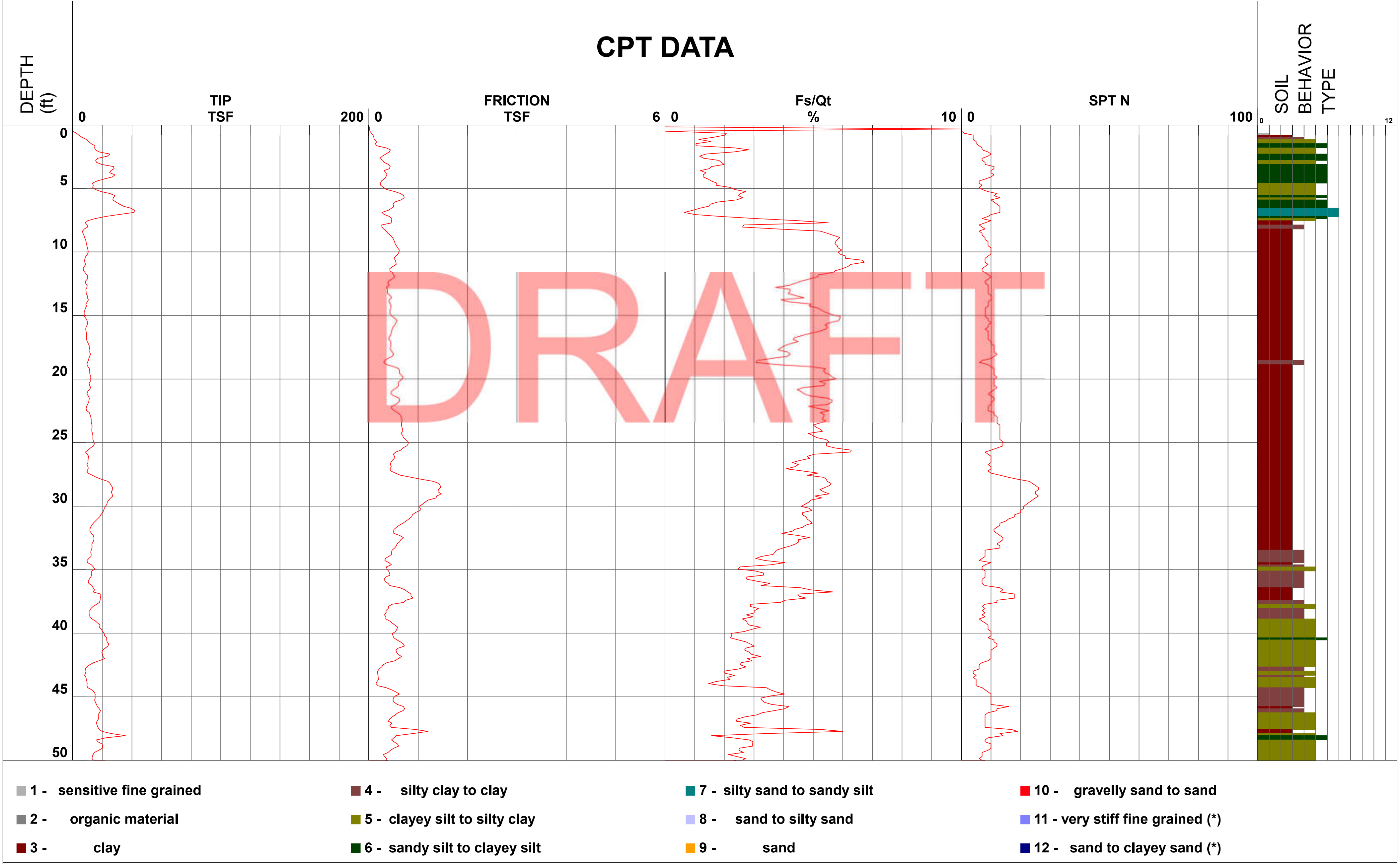
Project 1953-1965 Concourse Drive
Job Number 681-4-1
Hole Number CPT-04
EST GW Depth During Test 7.00 ft

Operator JM-AJ
Cone Number DDG1530
Date and Time 8/20/2020 4:40:50 PM

Filename SDF(161).cpt
GPS
Maximum Depth 51.02 ft

Net Area Ratio .8

CPT DATA



Cone Size 15cm squared

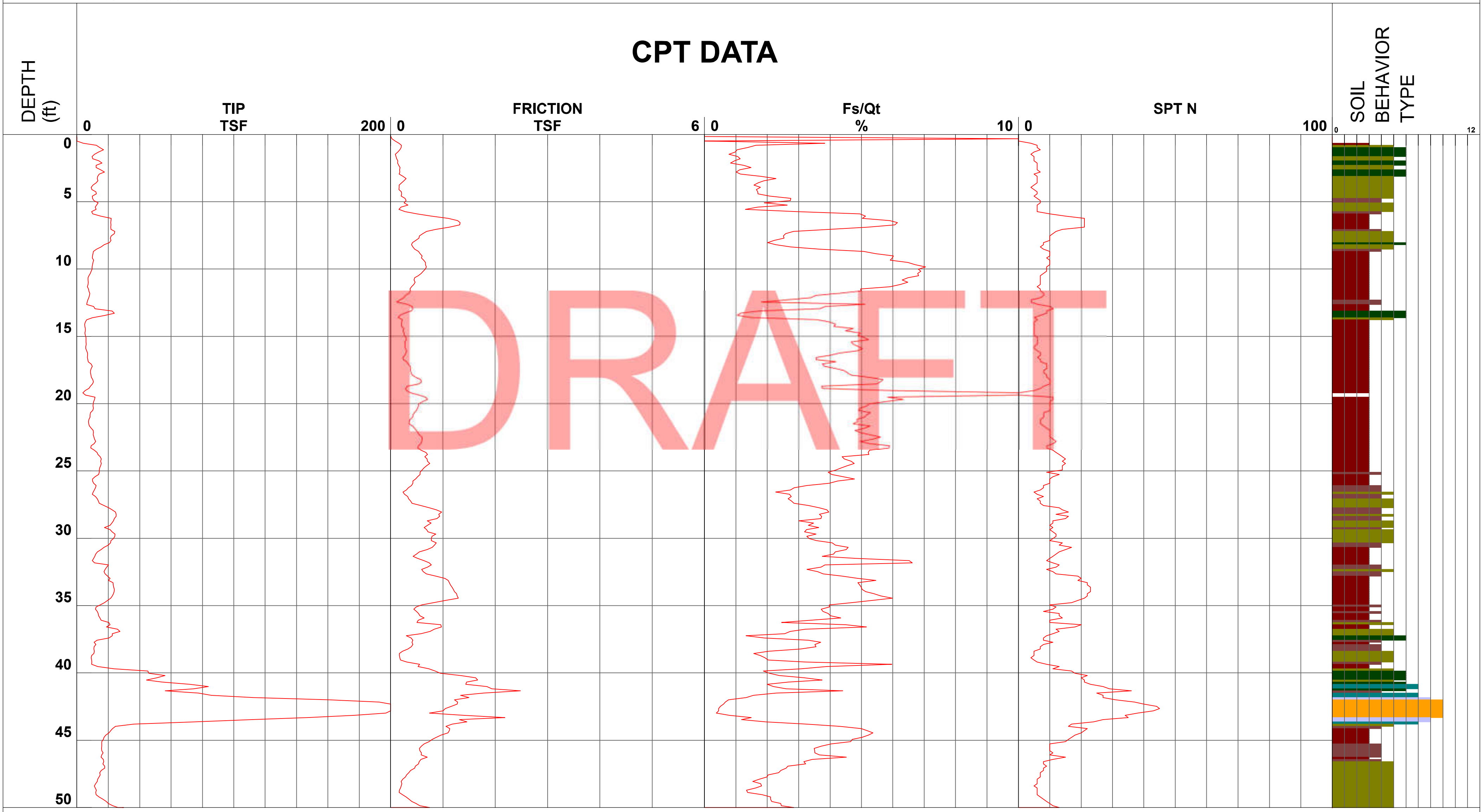
S*Soil behavior type and SPT based on data from UBC-1983

Cornerstone Earth Group

Project	1953-1965 Concourse Drive	Operator	JM-AJ	Filename	SDF(160).cpt
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-05	Date and Time	8/20/2020 3:29:54 PM	Maximum Depth	50.52 ft
EST GW Depth During Test		7.00 ft			

Net Area Ratio .8

CPT DATA



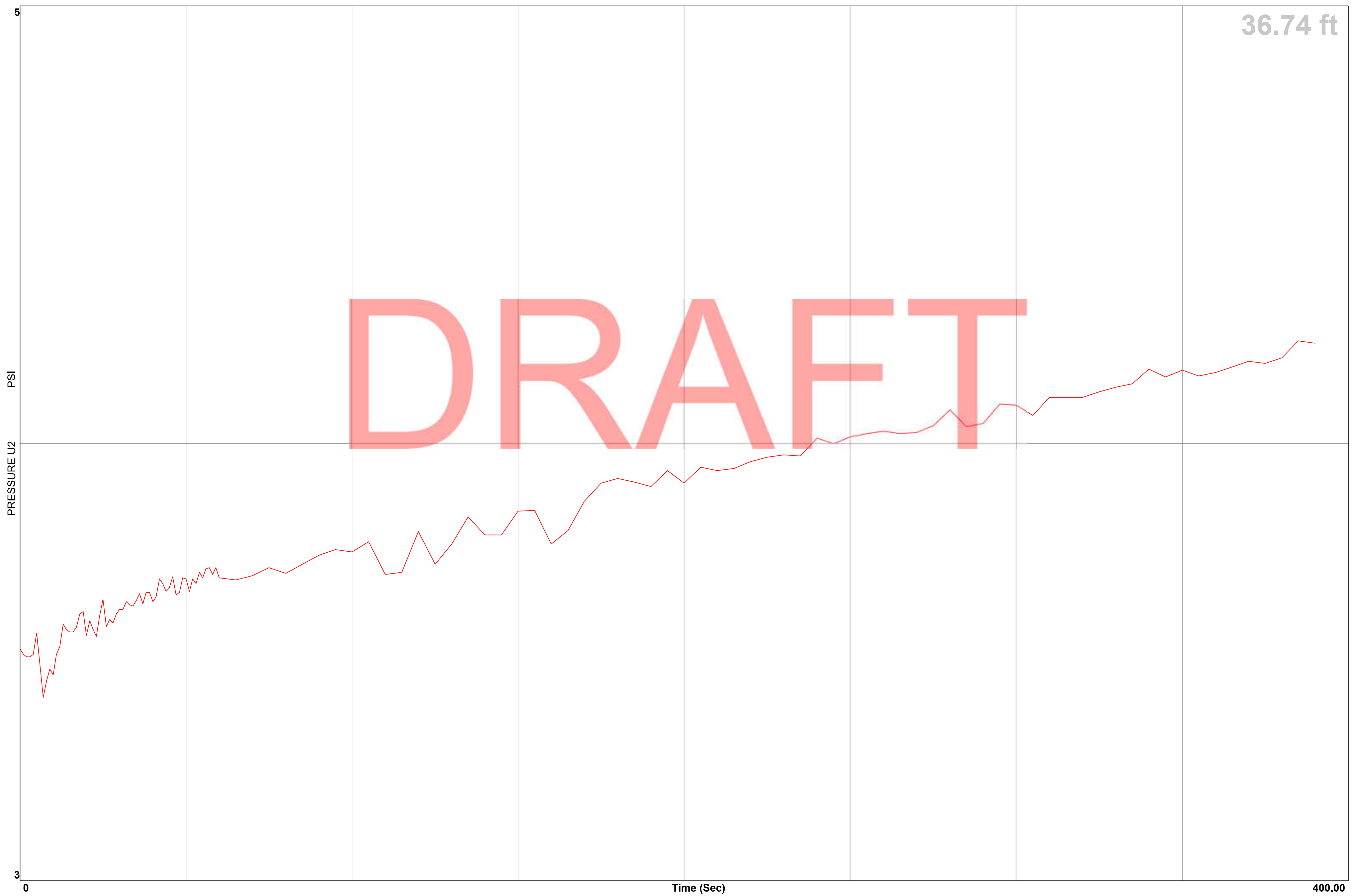
■ 1 - sensitive fine grained	■ 4 - silty clay to clay	■ 7 - silty sand to sandy silt	■ 10 - gravelly sand to sand
■ 2 - organic material	■ 5 - clayey silt to silty clay	■ 8 - sand to silty sand	■ 11 - very stiff fine grained (*)
■ 3 - clay	■ 6 - sandy silt to clayey silt	■ 9 - sand	■ 12 - sand to clayey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

Cone Size 15cm squared

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

Cornerstone Earth Group

Location	1953-1965 Concourse Drive	Operator	JM-AJ		
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-05	Date and Time	8/20/2020 3:29:54 PM		
Equilized Pressure	4.2	EST GW Depth During Test	26.9		



Cornerstone Earth Group

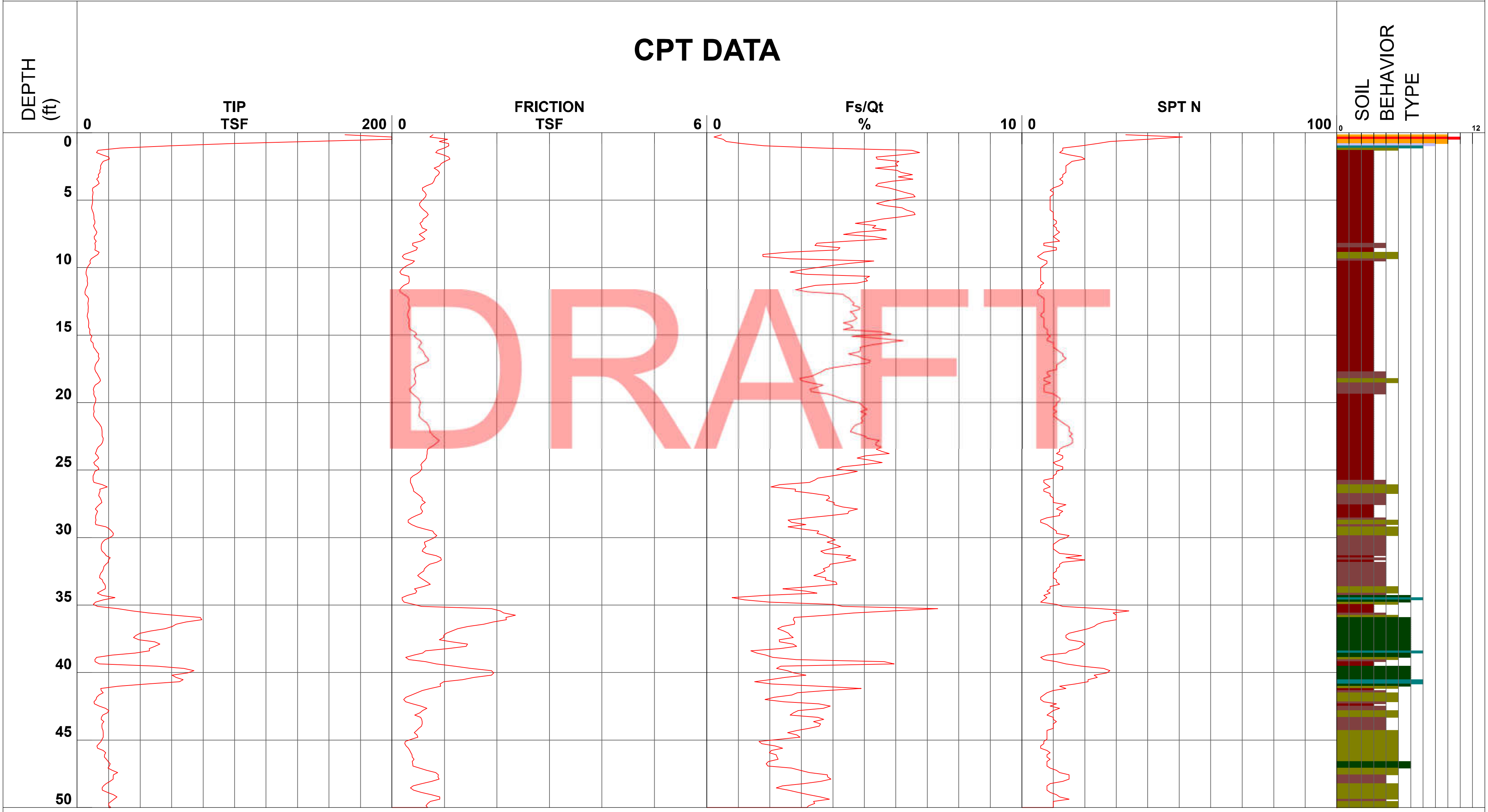
Project 1953-1965 Concourse Drive
Job Number 681-4-1
Hole Number CPT-06
EST GW Depth During Test 5.00 ft

Operator JM-AJ
Cone Number DDG1530
Date and Time 8/20/2020 1:46:59 PM

Filename SDF(159).cpt
GPS
Maximum Depth 50.85 ft

Net Area Ratio .8

CPT DATA



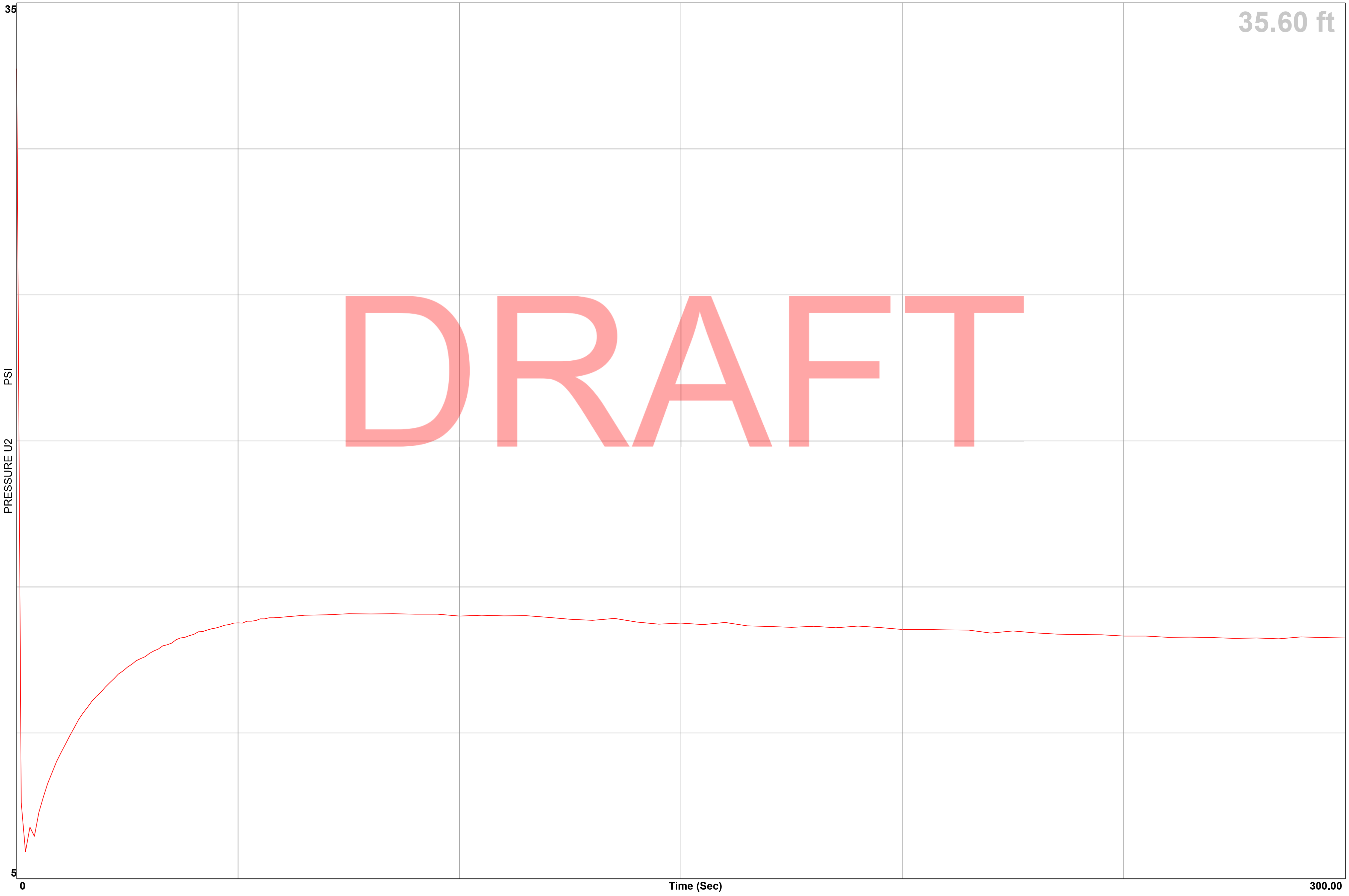
- 🟫 1 - sensitive fine grained
- 🟫 2 - organic material
- 🟥 3 - clay
- 🟫 4 - silty clay to clay
- 🟩 5 - clayey silt to silty clay
- 🟩 6 - sandy silt to clayey silt
- 🟦 7 - silty sand to sandy silt
- 🟪 8 - sand to silty sand
- 🟧 9 - sand
- 🟥 10 - gravelly sand to sand
- 🟪 11 - very stiff fine grained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

Cone Size 15cm squared

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

Cornerstone Earth Group

Location	1953-1965 Concourse Drive	Operator	JM-AJ		
Job Number	681-4-1	Cone Number	DDG1530	GPS	
Hole Number	CPT-06	Date and Time	8/20/2020 1:46:59 PM		
Equilized Pressure	13.2	EST GW Depth During Test	5.0		



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 47 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 36 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 four samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

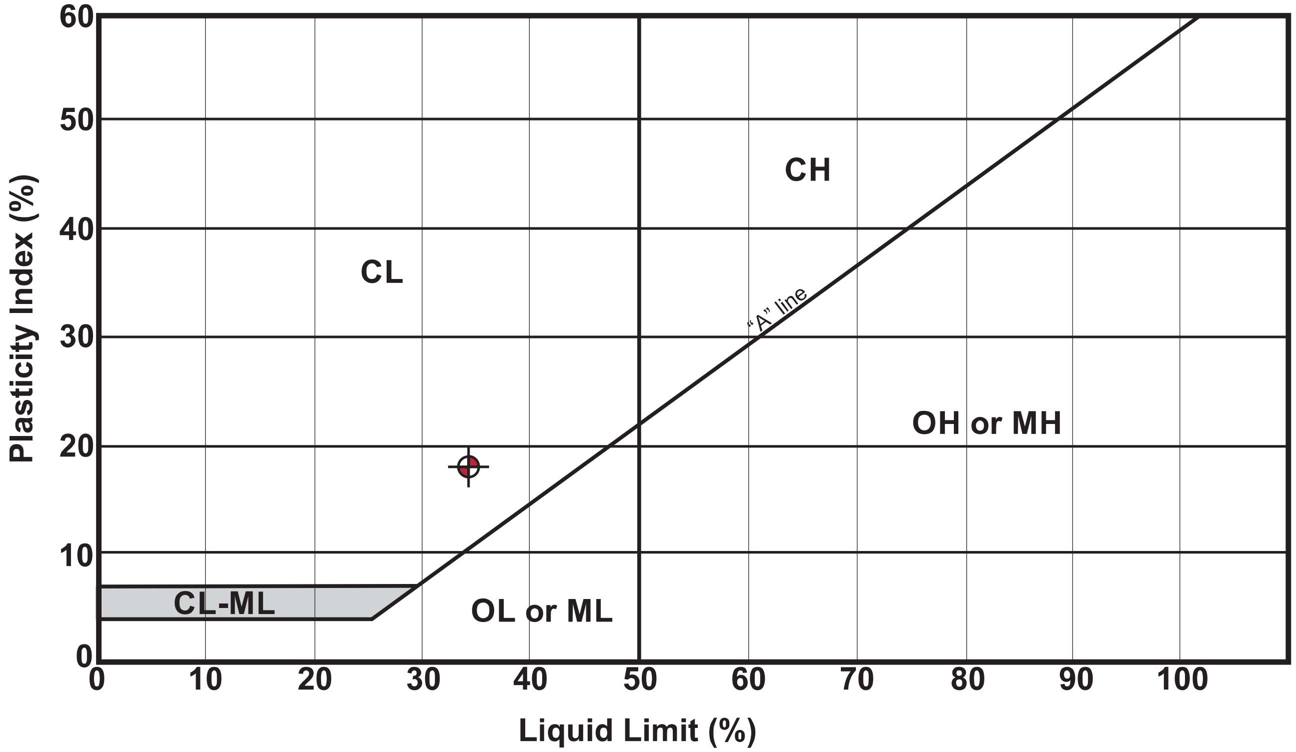
Plasticity Index: One Plasticity Index determination (ASTM D4318) was performed on a sample of the subsurface soil to measure the range of water contents over which this material exhibits plasticity. The Plasticity Index was used to classify the soil in accordance with the Unified Soil Classification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

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

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.

Corrosivity Testing: Two samples of the subsurface soils were tested for water soluble sulfate content (California Test Method No. 417-Modified), chloride content (ASTM D4327), pH (ASTM G51), and saturated resistivity (ASTM G57). Results of these tests are attached in this appendix.

Plasticity Index (ASTM D4318) Testing Summary



Symbol	Boring No.	Depth (ft)	Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Passing No. 200 (%)	Group Name (USCS - ASTM D2487)
⊕	EB-5	2.5	15	34	16	18	---	Sandy Lean Clay (CL)

CORNERSTONE
EARTH GROUP

Plasticity Index Testing Summary

Concourse Tech Park
1965 Concourse Drive
San Jose, CA

Project Number
681-4-1

Figure Number
Figure B1

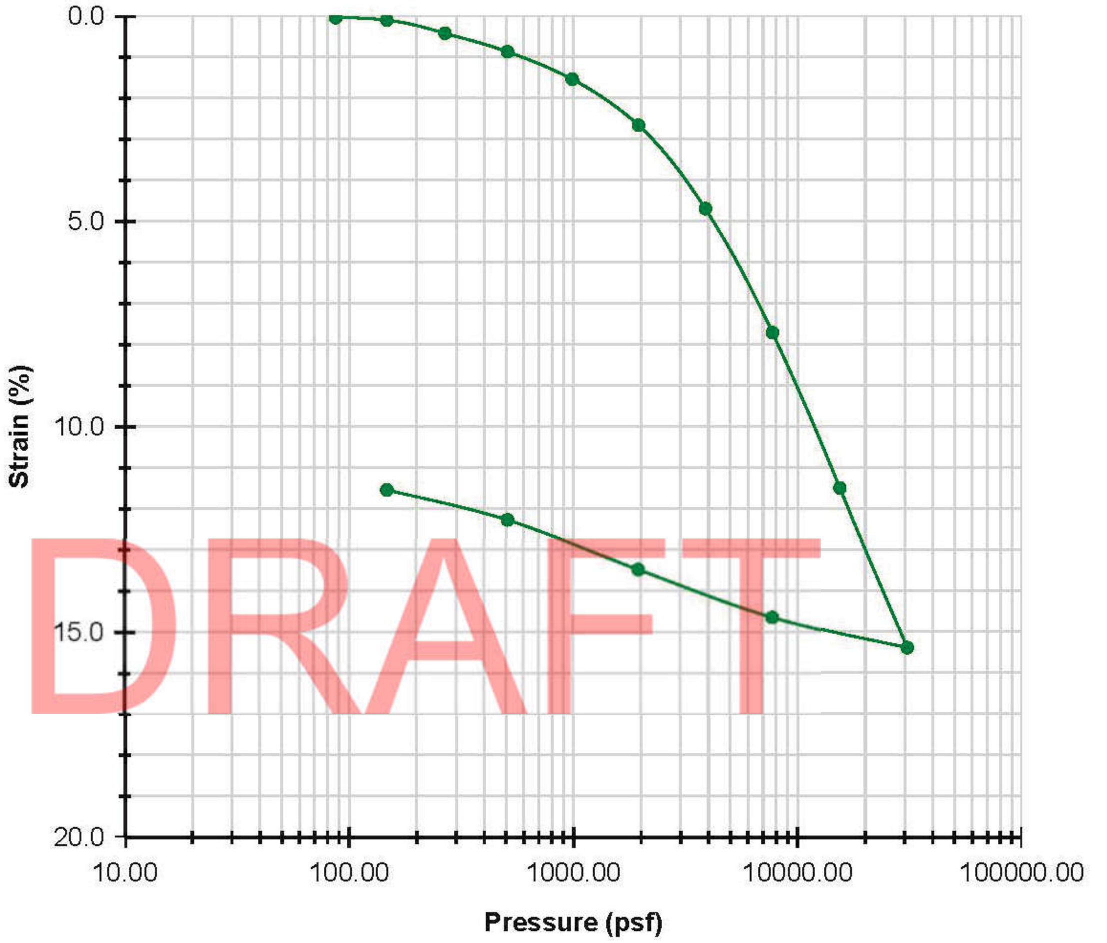
Date
September 2020

Drawn By
FLL

Consolidation Test ASTM D2435

Boring: EB-1 **Sample:** 7 **Depth:** 18.3’

Description: Lean Clay with Sand (CL)



	BEFORE	AFTER
Moisture (%)	26.7	22.6
Dry Density (pcf)	94.2	105.1
Saturation (%)	90.6	100.0
Void Ratio	0.80	0.62

—●— (A) Stress Strain Curve

CORNERSTONE EARTH GROUP

Strain-Log Curve - EB-1 @ 18.3’

Concourse Tech Park
1965 Concourse Drive
San Jose, CA

Project Number 681-4-1

Figure Number Figure B2

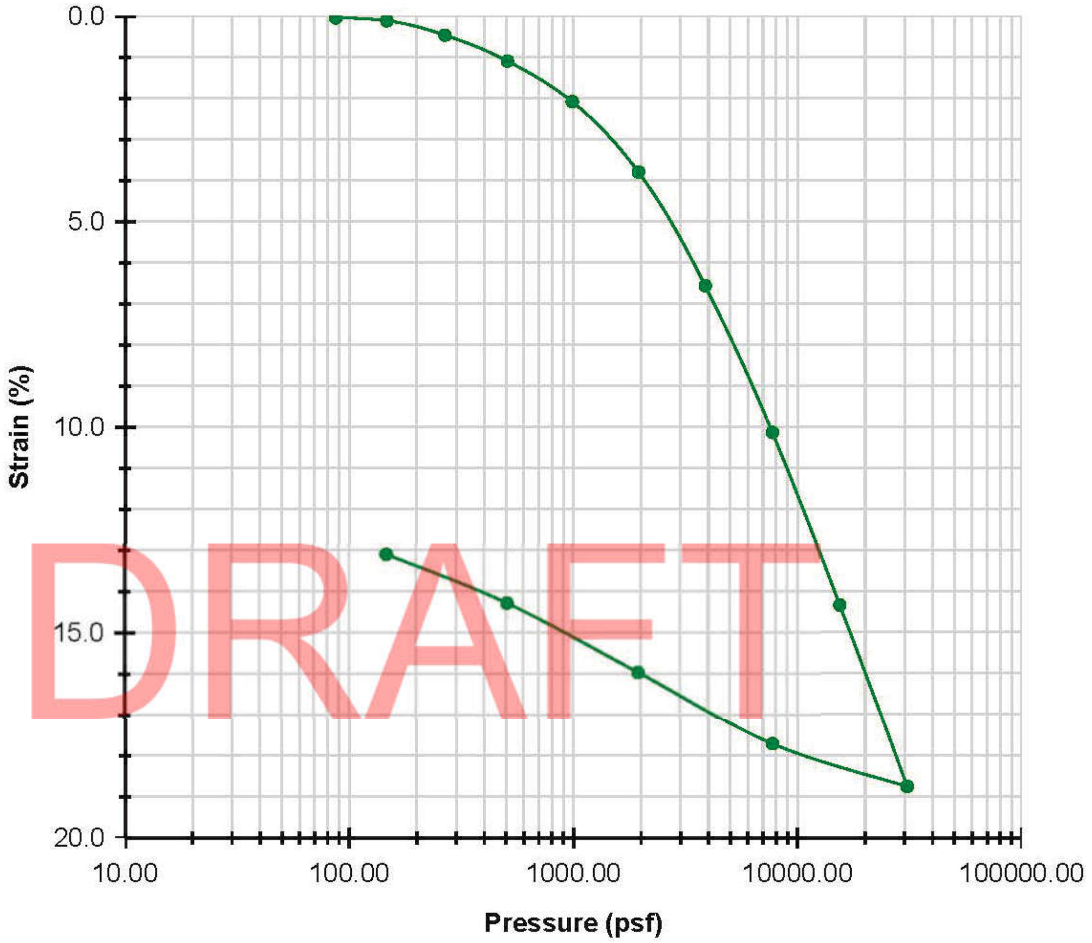
Date September 2020

Drawn By FLL

Consolidation Test ASTM D2435

Boring: EB-5 **Sample:** 7 **Depth:** 14.8’

Description: Lean Clay with Sand (CL)



	BEFORE	AFTER
Moisture (%)	32.8	26.5
Dry Density (pcf)	87.8	98.6
Saturation (%)	95.5	100.0
Void Ratio	0.93	0.72

—●— (A) Stress Strain Curve

CORNERSTONE EARTH GROUP

Strain-Log Curve - EB-5 @ 14.8’

Concourse Tech Park
1965 Concourse Drive
San Jose, CA

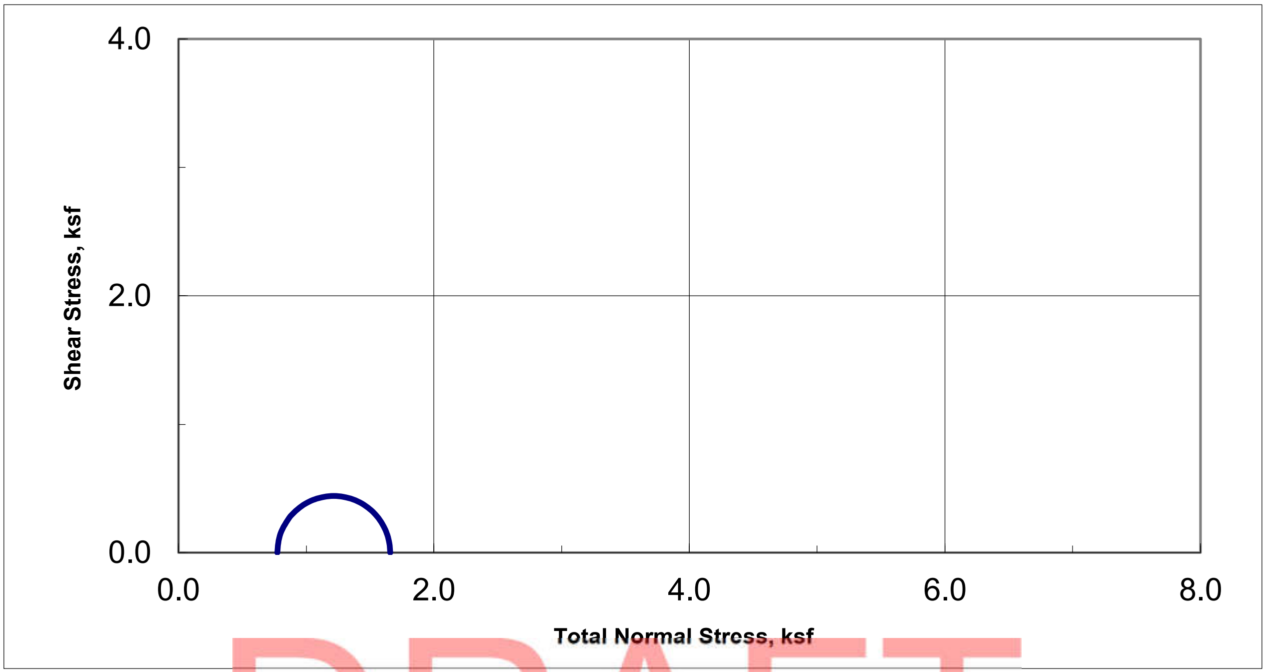
Project Number	681-4-1
Figure Number	Figure B3
Date	September 2020
Drawn By	FLL

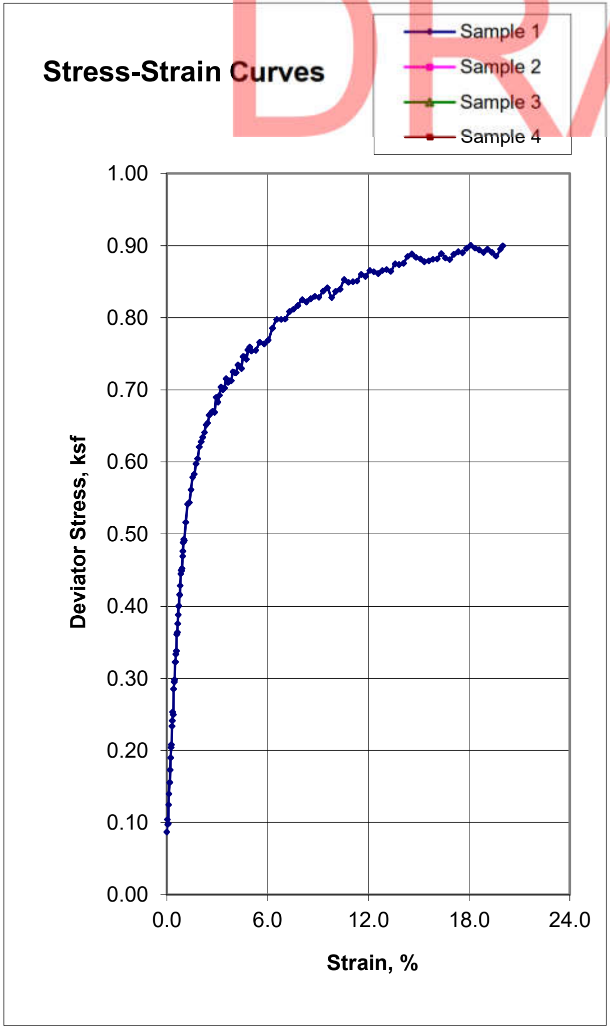
Cooper Testing Labs, Inc.
937 Commercial Street
Palo Alto, CA 94303

COOPER
TESTING LABORATORY

Unconsolidated-Undrained Triaxial Test

ASTM D2850





Sample Data				
	1	2	3	4
Moisture %	32.1			
Dry Den,pcf	91.0			
Void Ratio	0.886			
Saturation %	99.7			
Height in	5.92			
Diameter in	2.86			
Cell psi	5.4			
Strain %	15.00			
Deviator, ksf	0.884			
Rate %/min	1.00			
in/min	0.059			
Job No.:	**640-1422**			
Client:	**Cornerstone Earth Group**			
Project:	**681-4-1**			
Boring:	EB-1			
Sample:	5			
Depth ft:	8(Tip-7")			

Visual Soil Description

Sample #	
1	Yellowish Brown 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.

Corrositivity Tests Summary

CORNERSTONE
EARTH GROUP

Job Number 681-4-1

Job Name Concourse Tech Park

Location San Jose

Date Tested 9/4/2020

Tested By FL, BBA

Sample I.D.			Soil Visual Description	Moisture Content %	pH	Temp. at Testing C°	Resistivity (Ohm-cm) Corrected to 15.5 C°		Chloride Dry Wt. mg/kg	Sulfate Dry Wt. mg/kg
Boring	Sample No.	Depth, ft.					As Received	Saturated		
				ASTM D2216	ASTM G51		G57	ASTM G57	ASTM D4327	ASTM D4327
EB-3	2A	3.5	Gray Lean Clay with Sand (CL)	19.5	7.8	22.4	-	2,826	14	104
EB-4	4	5.5	Gray brown Sandy Silty Clay (CL-ML)	13.6	8.1	23.0	-	2,446	30	92

APPENDIX C: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.91

Total Settlement: 0.33 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	509.790	0.859	19.4	19.4	5037.355	0.169	0.50		Unsaturated	0.0			481.84	1.70	819.13	819.13	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	413.180	1.023	39.9	39.9	2842.764	0.248	0.61		Unsaturated	0.0			390.53	1.70	663.90	663.90	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	304.590	1.809	59.3	59.3	1719.708	0.594	1.02		Unsaturated	0.0			287.89	1.70	489.42	489.42	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	252.630	3.188	79.9	79.9	1228.920	1.262	1.37		Unsaturated	0.0			238.78	1.70	405.93	405.93	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	205.530	4.306	99.2	99.2	896.898	2.096	1.63		Unsaturated	0.0			194.26	1.70	330.25	330.25	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	141.940	5.212	118.6	118.6	566.487	3.674	1.92		Unsaturated	16.9			134.16	1.70	228.07	270.20	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	112.660	5.617	139.2	139.2	414.985	4.989	2.10		Unsaturated	30.9			106.48	1.70	181.02	254.56	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	99.820	5.817	158.5	158.5	344.442	5.832	2.19		Unsaturated	38.5			94.35	1.70	160.39	239.52	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	93.360	4.039	179.1	179.1	303.035	4.331	2.10		Unsaturated	31.3			88.24	1.70	150.01	217.68	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	83.650	4.101	198.4	198.4	257.874	4.908	2.18		Unsaturated	37.8			79.06	1.70	134.41	206.63	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	75.380	4.114	217.8	217.8	221.754	5.465	2.26		Unsaturated	43.6			71.25	1.70	121.12	195.13	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	68.870	4.115	238.4	238.4	193.608	5.985	2.32		Unsaturated	48.7			65.09	1.70	110.66	185.26	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	61.200	3.729	257.7	257.7	165.396	6.106	2.36		Unsaturated	52.1			57.84	1.70	98.34	171.43	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	55.350	3.259	278.3	278.3	143.893	5.902	2.38		Unsaturated	53.8			52.32	1.70	88.94	160.22	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	48.760	2.714	297.7	297.7	122.503	5.584	2.40		Unsaturated	55.3			46.09	1.70	78.35	147.37	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	44.310	2.073	317.0	317.0	107.814	4.695	2.38		Unsaturated	53.1			41.88	1.70	71.20	137.39	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	39.410	1.510	337.6	337.6	92.858	3.848	2.35		Unsaturated	50.9			37.25	1.70	63.32	126.49	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	30.500	1.067	357.0	357.0	69.778	3.520	2.40		Unsaturated	55.1			28.83	1.70	49.01	109.92	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	23.460	0.817	377.5	377.5	52.074	3.512	2.49		Unsaturated	62.1			22.17	1.70	37.70	97.52	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	21.710	0.752	396.9	396.9	46.948	3.497	2.52		Unsaturated	64.5			20.52	1.70	34.88	94.50	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	21.380	0.740	416.2	416.2	45.119	3.494	2.53		Unsaturated	65.5			20.21	1.70	34.35	94.04	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	20.920	0.583	436.8	436.8	43.066	2.818	2.48		Unsaturated	61.5			19.77	1.70	33.61	92.15	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	18.550	0.461	456.2	456.2	37.297	2.518	2.50		Unsaturated	62.7			17.53	1.70	29.81	87.55	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	14.090	0.358	476.7	476.7	37.160	2.581	2.50		Unsaturated	63.4			13.32	1.70	22.64	78.50	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	10.960	0.331	496.1	496.1	27.948	3.092	2.65		Unsaturated	75.0			10.36	1.70	17.61	74.18	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	10.950	0.342	516.7	516.7	27.113	3.201	2.67		Unsaturated	76.5			10.35	1.70	17.59	74.40	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	10.000	0.357	536.0	536.0	36.311	3.671	2.61		Unsaturated	72.1			9.45	1.70	16.07	71.73	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	10.640	0.393	555.4	555.4	37.315	3.789	2.61		Unsaturated	72.2			10.06	1.70	17.10	73.07	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	11.350	0.459	576.0	576.0	38.412	4.150	2.63		Unsaturated	73.7			10.73	1.70	18.24	74.78	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	11.210	0.570	595.3	595.3	36.660	5.227	2.72		Unsaturated	80.5			10.60	1.70	18.01	75.48	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	11.290	0.706	615.9	615.9	35.662	6.429	2.79		Unsaturated	86.3			10.67	1.70	18.14	76.37	1.00	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	11.640	0.766	635.3	635.3	35.647	6.761	2.81		Unsaturated	87.6			11.00	1.70	18.70	77.25	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	11.900	0.698	654.6	654.6	35.358	6.027	2.77		Unsaturated	84.9			11.25	1.70	19.12	77.48	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	11.020	0.684	675.2	675.2	31.643	6.402	2.83		Unsaturated	89.1			10.42	1.70	17.71	76.11	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	10.040	0.696	694.5	694.5	27.911	7.178	2.90		Unsaturated	95.0			9.49	1.70	16.13	74.63	0.99	0.587	1.097	n.a.	n.a.	n.a.	0.00	0.00
5.910	9.270	0.643	715.1	715.1	24.926	7.219	2.94		Unsaturated	97.9			8.76	1.70	14.90	73.27	0.99	0.586	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.070	11.450	0.671	734.5	734.5	30.179	6.051	2.82		Unsaturated	88.8			10.82	1.70	18.40	76.99	0.99	0.586	1.094	n.a.	n.a.	n.a.	0.00	0.00
6.230	13.650	0.743	753.8	753.8	35.215	5.599	2.75		Unsaturated	83.1			12.90	1.70	21.93	80.93	0.99	0.586	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.400	14.530	0.836	774.4	774.4	36.526	5.909	2.76		Unsaturated	83.6			13.73	1.70	23.35	82.83	0.99	0.586	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.560	15.080	0.908	793.8	793.8	36.996	6.185	2.77		Unsaturated	84.4			14.25	1.69	24.11	83.93	0.99	0.585	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.730	13.970	0.839	814.3	814.3	33.310	6.185	2.80		Unsaturated	87.0			13.20	1.68	22.15	81.68	0.99	0.585	1.088	n.a.	n.a.	n.a.	0.00	0.00
6.890	11.600	0.666	833.7	833.7	26.828	5.959	2.85		Unsaturated	91.4			10.96	1.67	18.36	77.20	0.99	0.585	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.050	9.650	0.525	853.1	853.1	21.625	5.694	2.91		Unsaturated	95.7			9.12	1.67	15.22	73.51	0.99	0.585	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.220	8.210	0.423	873.6	873.6	17.795	5.440	2.96		Unsaturated	99.7			7.76	1.66	12.86	70.76	0.99	0.584	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.380	7.450	0.376	893.0	893.0	15.686	5.373	3.00		Unsaturated	100.0			7.04	1.64	11.58	69.10	0.99	0.584	1.072	n.a.	n.a.	n.a.	0.00	0.00
7.550	6.370	0.358	913.6	913.6	12.946	6.059	3.09		Unsaturated	100.0			6.02	1.63	9.82	66.81	0.99	0.584	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.710	6.640	0.350	932.9	932.9	13.235	5.661	3.07		Unsaturated	100.0			6.28	1.61	10.11	67.18	0.99	0.584	1.067	n.a.	n.a.	n.a.	0.00	0.00
7.870	7.070	0.361	952.3	952.3	13.849	5.478	3.04		Unsaturated	100.0			6.68	1.59	10.62	67.85	0.99	0.583	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.040	7.480	0.332	972.8	972.8	14.378	4.743	2.99		Unsaturated	100.0			7.07	1.57	11.08	68.45	0.99	0.583	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.200	7.930	0.376	992.2	992.2	14.985	5.062	2.99		Unsaturated	100.0			7.50	1.55	11.60	69.13	0.99	0.583	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.370	6.630	0.382	1012.8	1012.8	12.093	6.240	3.12		Unsaturated	100.0			6.27	1.54	9.63	66.56	0.99	0.583	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.530	6.440	0.412	1032.1	1032.1	11.479	6.958	3.17		Unsaturated	100.0			6.09	1.52	9.27	66.07	0.99	0.582	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.690	9.390	0.479	1051.5	1051.5	16.860	5.400	2.97		Unsaturated	100.0			8.88	1.49	13.22	71.26	0.99	0.582	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.860	9.110	0.494	1072.1	1072.1	15.995	5.766	3.01		Unsaturated	100.0			8.61	1.48	12.70	70.58	0.99	0.582	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.020	8.200	0.428	1091.4	1091.4	14.026	5.589	3.04		Unsaturated	100.0			7.75	1.47	11.36	68.82	0.99	0.582	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.190	7.990	0.382	1112.0	1112.0	13.371	5.143	3.04		Unsaturated	100.0			7.55	1.45	10.96	68.29	0.98	0.581	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.350	7.530	0.375	1131.4	1131.4	12.312	5.383	3.08		Unsaturated	100.0			7.12	1.44	10.24	67.35	0.98	0.581	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.510	7.180	0.335	1150.7	1150.7	11.479	5.069	3.08		Unsaturated	100.0			6.79	1.43	9.68	66.62	0.98	0.581	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.680	6.730	0.278	1171.3	1171.3	10.492	4.516	3.08		Unsaturated	100.0			6.36	1.41	9.00	65.72	0.98	0.580	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.840	7.330	0.308	1190.6	1190.6	11.313	4.573	3.06		Unsaturated	100.0			6.93	1.40	9.69	66.63	0.98	0.580	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.010	8.480	0.415	1211.2	1210.6	13.009	5.268	3.05		Clay	100.0			8.02	1.16	n.a.	n.a.	0.98	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	8.450	0.475	1230.6	1220.0	12.844	6.061	3.10		Clay	100.0			7.99	1.16	n.a.	n.a.	0.98	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	7.560	0.388	1249.9	1229.3	11.283	5.590	3.12		Clay	100.0			7.15	1.15	n.a.	n.a.	0.98	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	6.940	0.297	1270.5	1239.3	10.175	4.704	3.11		Clay	100.0			6.56	1.15	n.a.	n.a.	0.98	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	6.100	0.250	1289.9	1248.7	8.737	4.574	3.15		Clay	100.0			5.77	1.15	n.a.	n.a.	0.98	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	5.490	0.235	1310.4	1258.6	7.683	4.861	3.21		Clay	100.0			5.19	1.15	n.a.	n.a.	0.98	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	5.200	0.237	1329.8	1268.0	7.153	5.219	3.26		Clay	100.0			4.91	1.14	n.a.	n.a.	0.98	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	5.270	0.249	1349.2	1277.4	7.195	5.421	3.26		Clay	100.0			4.98	1.14	n.a.	n.a.	0.98	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 1

PGA (A_{max}) 0.91

Total Settlement: 0.33 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.320	5.610	0.242	1369.7	1287.4	7.652	4.914	3.22		Clay	100.0			5.30	1.14	n.a.	n.a.	0.98	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	5.770	0.261	1389.1	1296.7	7.828	5.146	3.22		Clay	100.0			5.45	1.14	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	5.810	0.256	1409.7	1306.7	7.814	5.005	3.21		Clay	100.0			5.49	1.14	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	5.960	0.242	1429.0	1316.1	7.971	4.608	3.19		Clay	100.0			5.63	1.13	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	5.870	0.261	1449.6	1326.0	7.760	5.079	3.22		Clay	100.0			5.55	1.13	n.a.	n.a.	0.98	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	5.860	0.270	1468.9	1335.4	7.676	5.258	3.23		Clay	100.0			5.54	1.13	n.a.	n.a.	0.98	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	5.550	0.289	1488.3	1344.8	7.147	6.009	3.29		Clay	100.0			5.25	1.13	n.a.	n.a.	0.98	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	6.500	0.321	1508.9	1354.7	8.482	5.594	3.21		Clay	100.0			6.14	1.12	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	6.920	0.317	1528.2	1364.1	9.025	5.151	3.17		Clay	100.0			6.54	1.12	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	7.110	0.311	1548.8	1374.1	9.222	4.906	3.15		Clay	100.0			6.72	1.12	n.a.	n.a.	0.97	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	6.750	0.278	1568.2	1383.5	8.625	4.665	3.16		Clay	100.0			6.38	1.12	n.a.	n.a.	0.97	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	7.190	0.259	1587.5	1392.8	9.185	4.048	3.10		Clay	100.0			6.80	1.12	n.a.	n.a.	0.97	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	6.810	0.253	1608.1	1402.8	8.563	4.206	3.14		Clay	100.0			6.44	1.11	n.a.	n.a.	0.97	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	6.370	0.259	1627.5	1412.2	7.869	4.656	3.19		Clay	100.0			6.02	1.11	n.a.	n.a.	0.97	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	6.710	0.245	1648.0	1422.1	8.278	4.168	3.15		Clay	100.0			6.34	1.11	n.a.	n.a.	0.97	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.290	0.225	1667.4	1431.5	7.623	4.118	3.17		Clay	100.0			5.95	1.11	n.a.	n.a.	0.97	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	5.700	0.207	1686.7	1440.9	6.741	4.268	3.22		Clay	100.0			5.39	1.11	n.a.	n.a.	0.97	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	5.690	0.200	1707.3	1450.8	6.667	4.144	3.22		Clay	100.0			5.38	1.10	n.a.	n.a.	0.97	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	5.650	0.252	1726.7	1460.2	6.556	5.256	3.29		Clay	100.0			5.34	1.10	n.a.	n.a.	0.97	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	6.690	0.321	1747.2	1470.2	7.912	5.514	3.23		Clay	100.0			6.32	1.10	n.a.	n.a.	0.97	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	8.360	0.389	1766.6	1479.6	10.107	5.203	3.13		Clay	100.0			7.90	1.10	n.a.	n.a.	0.97	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	8.910	0.423	1786.0	1488.9	10.769	5.276	3.12		Clay	100.0			8.42	1.10	n.a.	n.a.	0.97	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	8.640	0.397	1806.5	1498.9	10.323	5.130	3.12		Clay	100.0			8.17	1.10	n.a.	n.a.	0.97	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	8.910	0.387	1825.9	1508.3	10.604	4.842	3.10		Clay	100.0			8.42	1.09	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	9.360	0.409	1846.5	1518.2	11.114	4.844	3.08		Clay	100.0			8.85	1.09	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.270	0.402	1865.8	1527.6	9.606	5.484	3.17		Clay	100.0			7.82	1.09	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	7.360	0.370	1885.2	1537.0	8.351	5.762	3.23		Clay	100.0			6.96	1.09	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	6.750	0.334	1905.8	1547.0	7.495	5.768	3.26		Clay	100.0			6.38	1.09	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	6.920	0.325	1925.1	1556.3	7.656	5.454	3.24		Clay	100.0			6.54	1.08	n.a.	n.a.	0.96	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	7.060	0.307	1945.7	1566.3	7.773	5.043	3.22		Clay	100.0			6.67	1.08	n.a.	n.a.	0.96	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	6.490	0.300	1965.0	1575.7	6.991	5.449	3.27		Clay	100.0			6.13	1.08	n.a.	n.a.	0.96	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	6.000	0.267	1984.4	1585.0	6.319	5.330	3.30		Clay	100.0			5.67	1.08	n.a.	n.a.	0.96	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	6.220	0.266	2005.0	1595.0	6.542	5.092	3.28		Clay	100.0			5.88	1.08	n.a.	n.a.	0.96	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	6.590	0.283	2024.3	1604.4	6.953	5.081	3.26		Clay	100.0			6.23	1.08	n.a.	n.a.	0.96	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	6.890	0.326	2044.9	1614.3	7.269	5.547	3.27		Clay	100.0			6.51	1.07	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	7.340	0.342	2064.3	1623.7	7.770	5.425	3.24		Clay	100.0			6.94	1.07	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	7.880	0.354	2083.6	1633.1	8.375	5.171	3.20		Clay	100.0			7.45	1.07	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	7.810	0.329	2104.2	1643.1	8.226	4.873	3.19		Clay	100.0			7.38	1.07	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	7.510	0.304	2123.6	1652.4	7.805	4.721	3.20		Clay	100.0			7.10	1.07	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	7.440	0.292	2144.1	1662.4	7.661	4.579	3.20		Clay	100.0			7.03	1.07	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	7.840	0.307	2163.5	1671.8	8.085	4.535	3.18		Clay	100.0			7.41	1.06	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	7.570	0.314	2182.8	1681.1	7.707	4.847	3.21		Clay	100.0			7.16	1.06	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	7.610	0.331	2203.4	1691.1	7.697	5.080	3.22		Clay	100.0			7.19	1.06	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	7.750	0.280	2222.8	1700.5	7.808	4.224	3.17		Clay	100.0			7.33	1.06	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	7.500	0.290	2243.3	1710.4	7.458	4.550	3.21		Clay	100.0			7.09	1.06	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	7.450	0.325	2262.7	1719.8	7.348	5.144	3.24		Clay	100.0			7.04	1.06	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	7.620	0.335	2282.1	1729.2	7.494	5.163	3.24		Clay	100.0			7.20	1.05	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	7.650	0.344	2302.6	1739.2	7.473	5.287	3.24		Clay	100.0			7.23	1.05	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	7.600	0.339	2322.0	1748.5	7.365	5.271	3.25		Clay	100.0			7.18	1.05	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	7.590	0.345	2342.6	1758.5	7.300	5.372	3.26		Clay	100.0			7.17	1.05	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	7.960	0.361	2361.9	1767.9	7.669	5.324	3.24		Clay	100.0			7.52	1.05	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	8.510	0.395	2382.5	1777.8	8.233	5.390	3.21		Clay	100.0			8.04	1.05	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	8.920	0.466	2401.9	1787.2	8.638	6.034	3.23		Clay	100.0			8.43	1.05	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	10.440	0.513	2421.2	1796.6	10.274	5.555	3.15		Clay	100.0			9.87	1.04	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	11.410	0.575	2441.8	1806.5	11.280	5.641	3.12		Clay	100.0			10.78	1.04	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	11.450	0.579	2461.1	1815.9	11.255	5.662	3.12		Clay	100.0			10.82	1.04	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	11.100	0.572	2481.7	1825.9	10.799	5.804	3.14		Clay	100.0			10.49	1.04	n.a.	n.a.	0.95	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	11.520	0.552	2501.1	1835.3	11.191	5.370	3.11		Clay	100.0			10.89	1.04	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	11.300	0.516	2520.4	1844.6	10.885	5.141	3.11		Clay	100.0			10.68	1.04	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.890	0.492	2541.0	1854.6	10.374	5.115	3.12		Clay	100.0			10.29	1.04	n.a.	n.a.	0.95	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	10.820	0.498	2560.4	1864.0	10.236	5.217	3.13		Clay	100.0			10.23	1.03	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	11.140	0.552	2580.9	1873.9	10.512	5.607	3.14		Clay	100.0			10.53	1.03	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	11.760	0.617	2600.3	1883.3	11.108	5.897	3.14		Clay	100.0			11.12	1.03	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	12.060	0.581	2619.7	1892.7	11.360	5.408	3.11		Clay	100.0			11.40	1.03	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	12.110	0.534	2640.2	1902.7	11.342	4.950	3.08		Clay	100.0			11.45	1.03	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	11.870	0.589	2659.6	1912.0	11.025	5.584	3.12		Clay	100.0			11.22	1.03	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	12.110	0.559	2680.2	1922.0	11.207	5.188	3.10		Clay	100.0			11.45	1.03	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 1

PGA (A_{max}) 0.91

Total Settlement: 0.33 (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	11.900	0.577	2699.5	1931.4	10.925	5.468	3.12		Clay	100.0			11.25	1.02	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	12.470	0.621	2718.9	1940.7	11.450	5.587	3.11		Clay	100.0			11.79	1.02	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	12.450	0.474	2739.4	1950.7	11.360	4.274	3.04		Clay	100.0			11.77	1.02	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	12.790	0.653	2758.8	1960.1	11.643	5.723	3.11		Clay	100.0			12.09	1.02	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	13.650	0.645	2779.4	1970.0	12.447	5.263	3.07		Clay	100.0			12.90	1.02	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	10.450	0.638	2798.7	1979.4	9.145	7.048	3.25		Clay	100.0			9.88	1.02	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	14.620	0.618	2818.1	1988.8	13.285	4.676	3.01		Clay	100.0			13.82	1.02	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	14.960	0.639	2838.7	1998.8	13.549	4.720	3.01		Clay	100.0			14.14	1.02	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	14.840	0.644	2858.0	2008.1	13.357	4.799	3.02		Clay	100.0			14.03	1.01	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	14.950	0.632	2878.6	2018.1	13.390	4.678	3.01		Clay	100.0			14.13	1.01	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	14.200	0.590	2898.0	2027.5	12.578	4.625	3.03		Clay	100.0			13.42	1.01	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	12.420	0.521	2917.3	2036.8	10.763	4.749	3.09		Clay	100.0			11.74	1.01	n.a.	n.a.	0.94	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	10.320	0.504	2937.9	2046.8	8.649	5.698	3.21		Clay	100.0			9.75	1.01	n.a.	n.a.	0.94	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	9.150	0.467	2957.2	2056.2	7.462	6.090	3.28		Clay	100.0			8.65	1.01	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	11.040	0.458	2977.8	2066.1	9.245	4.795	3.14		Clay	100.0			10.43	1.01	n.a.	n.a.	0.93	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	11.310	0.478	2997.2	2075.5	9.454	4.867	3.14		Clay	100.0			10.69	1.01	n.a.	n.a.	0.93	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	11.680	0.534	3016.5	2084.9	9.758	5.250	3.15		Clay	100.0			11.04	1.00	n.a.	n.a.	0.93	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	10.730	0.448	3037.1	2094.9	8.794	4.867	3.16		Clay	100.0			10.14	1.00	n.a.	n.a.	0.93	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	10.020	0.446	3056.5	2104.2	8.071	5.247	3.21		Clay	100.0			9.47	1.00	n.a.	n.a.	0.93	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	8.640	0.460	3077.0	2114.2	6.718	6.470	3.33		Clay	100.0			8.17	1.00	n.a.	n.a.	0.93	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	7.120	0.603	3096.4	2123.6	5.248	10.815	3.56		Clay	100.0			6.73	1.00	n.a.	n.a.	0.93	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	11.970	0.781	3115.8	2133.0	9.763	7.505	3.25		Clay	100.0			11.31	1.00	n.a.	n.a.	0.93	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	18.310	1.026	3136.3	2142.9	15.625	6.129	3.03		Clay	100.0			17.31	1.00	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	18.170	1.062	3155.7	2152.3	15.418	6.401	3.05		Clay	100.0			17.17	1.00	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	17.760	0.988	3176.3	2162.3	14.958	6.112	3.05		Clay	100.0			16.79	0.99	n.a.	n.a.	0.93	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	17.180	0.908	3195.6	2171.6	14.351	5.830	3.05		Clay	100.0			16.24	0.99	n.a.	n.a.	0.93	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	16.150	0.847	3215.0	2181.0	13.336	5.822	3.07		Clay	100.0			15.26	0.99	n.a.	n.a.	0.93	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	17.130	0.802	3235.5	2191.0	14.160	5.169	3.02		Clay	100.0			16.19	0.99	n.a.	n.a.	0.93	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	15.400	0.669	3254.9	2200.3	12.519	4.854	3.04		Clay	100.0			14.56	0.99	n.a.	n.a.	0.93	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	17.790	0.571	3275.5	2210.3	14.615	3.534	2.91		Clay	95.4			16.81	0.99	n.a.	n.a.	0.92	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	15.440	0.516	3294.8	2219.7	12.428	3.744	2.98		Clay	100.0			14.59	0.99	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	15.740	0.567	3315.4	2229.6	12.632	4.026	2.99		Clay	100.0			14.88	0.99	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	15.200	0.651	3334.8	2239.0	12.088	4.810	3.05		Clay	100.0			14.37	0.99	n.a.	n.a.	0.92	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	15.830	0.659	3354.1	2248.4	12.589	4.658	3.03		Clay	100.0			14.96	0.98	n.a.	n.a.	0.92	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	17.080	0.653	3374.7	2258.4	13.632	4.242	2.98		Clay	100.0			16.14	0.98	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	17.290	0.612	3394.1	2267.7	13.752	3.927	2.95		Clay	99.3			16.34	0.98	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	17.110	0.486	3414.6	2277.7	13.525	3.153	2.90		Clay	95.2			16.17	0.98	n.a.	n.a.	0.92	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	15.540	0.476	3434.0	2287.1	12.088	3.441	2.96		Clay	100.0			14.69	0.98	n.a.	n.a.	0.92	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	14.840	0.617	3453.3	2296.4	11.421	4.701	3.07		Clay	100.0			14.03	0.98	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	15.180	0.616	3473.9	2306.4	11.657	4.582	3.05		Clay	100.0			14.35	0.98	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	20.700	1.157	3493.3	2315.8	16.369	6.107	3.02		Clay	100.0			19.57	0.98	n.a.	n.a.	0.92	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	22.540	1.424	3513.8	2325.7	17.872	6.853	3.02		Clay	100.0			21.30	0.98	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	37.670	0.863	3533.2	2335.1	32.304	2.404	2.53	plastic	Clay	65.5			35.60	0.97	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	44.010	1.616	3552.6	2344.5	36.028	3.827	2.63		Clay	73.3			41.60	0.97	n.a.	n.a.	0.92	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	38.540	2.129	3573.1	2354.5	31.220	5.793	2.80		Clay	86.9			36.43	0.97	n.a.	n.a.	0.91	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	31.530	2.188	3592.5	2363.8	25.157	7.359	2.94		Clay	98.1			29.80	0.97	n.a.	n.a.	0.91	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	54.820	1.707	3613.1	2373.8	47.308	3.221	2.49		Sand	62.3	89.6		89.60	0.96	85.69	159.17	0.91	0.821	0.980	0.363	0.634	0.77	0.01	0.03
30.020	55.600	1.987	3632.4	2383.2	47.901	3.695	2.53		Sand	65.4	89.6		89.60	0.95	85.57	159.91	0.91	0.821	0.979	0.370	0.650	0.79	0.01	0.03
30.180	65.000	1.995	3651.8	2392.5	56.154	3.157	2.43		Sand	57.6	89.6		89.60	0.95	85.39	157.21	0.91	0.822	0.979	0.344	0.592	0.72	0.02	0.03
30.350	59.570	2.301	3672.4	2402.5	51.212	3.985	2.53		Sand	65.6	89.6		89.60	0.95	85.29	159.63	0.91	0.822	0.978	0.367	0.642	0.78	0.01	0.03
30.510	94.800	2.746	3691.7	2411.9	82.293	2.955	2.30		Sand	46.7			89.60	0.95	85.03	151.86	0.91	0.823	0.979	0.301	0.498	0.61	0.02	0.04
30.680	90.320	2.735	3712.3	2421.8	78.156	3.092	2.33		Sand	49.1			85.37	0.95	80.81	147.78	0.91	0.824	0.979	0.275	0.442	0.54	0.02	0.04
30.840	93.020	2.890	3731.6	2431.2	80.378	3.171	2.33		Sand	49.1			87.92	0.95	83.15	150.73	0.91	0.824	0.978	0.293	0.481	0.58	0.02	0.04
31.000	100.930	3.584	3751.0	2440.6	87.176	3.618	2.35		Sand	50.7			95.40	0.95	90.28	160.52	0.91	0.825	0.975	0.377	0.661	0.80	0.01	0.03
31.170	106.170	1.832	3771.6	2450.6	91.592	1.756	2.10		Sand	31.2			100.35	0.94	94.59	150.58	0.91	0.825	0.976	0.292	0.478	0.58	0.02	0.04
31.330	112.780	2.578	3790.9	2459.9	97.203	2.325	2.17		Sand	36.7			106.60	0.94	100.65	163.98	0.91	0.826	0.973	0.416	0.747	0.91	0.01	0.02
31.500	132.330	2.511	3811.5	2469.9	114.101	1.925	2.06		Sand	28.1			125.08	0.95	118.21	174.55	0.91	0.826	0.969	0.590	1.144	1.39	0.00	0.00
31.660	132.760	2.654	3830.9	2479.3	114.252	2.028	2.08		Sand	29.4			125.48	0.94	118.49	176.90	0.91	0.826	0.967	0.644	1.270	1.54	0.00	0.00
31.820	126.830	2.590	3850.2	2488.7	108.860	2.074	2.10		Sand	31.1			119.88	0.94	112.93	172.63	0.91	0.827	0.968	0.551	1.052	1.27	0.00	0.01
31.990	142.510	2.429	3870.8	2498.6	122.273	1.728	2.01		Sand	23.7			134.70	0.94	126.83	176.47	0.90	0.827	0.966	0.633	1.243	1.50	0.00	0.00
32.150	145.460	2.615	3890.2	2508.0	124.597	1.822	2.02		Sand	24.6			137.49	0.94	129.43	181.43	0.90	0.828	0.963	0.769	1.567	1.89	0.00	0.00
32.320	141.560	2.630	3910.7	2518.0	120.962	1.884	2.04		Sand	26.2			133.80	0.94	125.74	180.12	0.90	0.828	0.963	0.730	1.470	1.78	0.00	0.00
32.480	146.830	2.564	3930.1	2527.3	125.287	1.770	2.01		Sand	23.8			138.78	0.94	130.27	180.55	0.90	0.829	0.962	0.742	1.499	1.81	0.00	0.00
32.640	154.510	3.059	3949.4	2536.7	131.676	2.005	2.03		Sand	25.8			146.04	0.94	137.34	193.09	0.90	0.829	0.956	1.308	2.751	3.32	0.00	0.00
32.810	156.880	3.447	3970.0	2546.7	133.452	2.226	2.07		Sand	28.2			148.28	0.94	139.50	200.14	0.90	0.829	0.951	1.905	3.986	4.81	0.00	0.00
32.970	126.540	3.229	3989.4	2556.0	107.106	2.593	2.18		Sand	37.2	148.28		148.28	0.94	139.77	212.69	0.90	0.830	0.943	4.179	8.673	10.45	0.00	0.00
33.140	80.940	2.946	4009.9	2566.0	67.751	3.732	2.43		Sand	57.3	148.28		148.28	0.94	140.07	226.91	0.90	0.830	0.942	12.515	25.940	31.24	0.00	0.00

CPT No.	1	PGA (A_{max})	0.91	Total Settlement:	0.33	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'_{vc} = 1\text{ atm}}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.300	104.550	2.510	4029.3	2575.4	87.847	2.448	2.22		Sand	40.4	148.28		148.28	0.94	139.53	215.50	0.90	0.831	0.941	5.097	10.553	12.70	0.00	0.00
33.460	74.450	1.815	4048.7	2584.8	61.938	2.506	2.33		Sand	49.5	148.28		148.28	0.94	139.61	222.32	0.90	0.831	0.940	8.561	17.704	21.31	0.00	0.00
33.630	41.990	1.603	4069.2	2594.7	30.797	4.012	2.69		Clay	78.4			39.69	0.95	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	19.120	1.249	4088.6	2604.1	13.115	7.313	3.14		Clay	100.0			18.07	0.95	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	14.700	0.691	4109.2	2614.1	9.675	5.464	3.16		Clay	100.0			13.89	0.95	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	12.060	0.649	4128.5	2623.4	7.620	6.495	3.29		Clay	100.0			11.40	0.94	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	9.520	0.554	4147.9	2632.8	5.656	7.436	3.43		Clay	100.0			9.00	0.94	n.a.	n.a.	0.90	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	9.900	0.600	4168.5	2642.8	5.915	7.670	3.42		Clay	100.0			9.36	0.94	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	11.480	0.637	4187.8	2652.1	7.078	6.791	3.33		Clay	100.0			10.85	0.94	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	13.060	0.802	4208.4	2662.1	8.231	7.319	3.30		Clay	100.0			12.34	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	14.280	1.086	4227.7	2671.5	9.108	8.928	3.32		Clay	100.0			13.50	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	24.910	1.108	4247.1	2680.9	16.999	4.863	2.94		Clay	98.3			23.54	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	25.880	1.152	4267.7	2690.8	17.650	4.851	2.93		Clay	97.3			24.46	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	21.560	0.903	4287.0	2700.2	14.382	4.651	2.98		Clay	100.0			20.38	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	18.100	0.686	4307.6	2710.2	11.768	4.302	3.03		Clay	100.0			17.11	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	16.060	0.492	4327.0	2719.5	10.220	3.540	3.03		Clay	100.0			15.18	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	15.150	0.458	4347.5	2729.5	9.508	3.531	3.06		Clay	100.0			14.32	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	14.360	0.453	4366.9	2738.9	8.892	3.716	3.09		Clay	100.0			13.57	0.93	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	13.120	0.442	4386.3	2748.3	7.952	4.042	3.15		Clay	100.0			12.40	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	13.070	0.484	4406.8	2758.2	7.879	4.451	3.18		Clay	100.0			12.35	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	12.690	0.385	4426.2	2767.6	7.571	3.671	3.15		Clay	100.0			11.99	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	12.790	0.399	4446.8	2777.6	7.609	3.771	3.15		Clay	100.0			12.09	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	12.360	0.525	4466.1	2786.9	7.267	5.187	3.25		Clay	100.0			11.68	0.93	n.a.	n.a.	0.88	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	15.290	0.659	4485.5	2796.3	9.332	5.049	3.15		Clay	100.0			14.45	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	26.820	0.767	4506.0	2806.3	17.509	3.123	2.81		Clay	87.8			25.35	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	28.150	0.813	4525.4	2815.6	18.388	3.142	2.80		Clay	86.6			26.61	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	27.260	0.775	4546.0	2825.6	17.686	3.102	2.81		Clay	87.4			25.77	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	26.760	0.766	4565.3	2835.0	17.268	3.130	2.82		Clay	88.3			25.29	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	27.250	0.739	4584.7	2844.4	17.549	2.960	2.80		Clay	86.6			25.76	0.92	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	26.600	0.765	4605.3	2854.3	17.025	3.147	2.82		Clay	88.8			25.14	0.92	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	26.070	0.790	4624.6	2863.7	16.592	3.327	2.85		Clay	90.6			24.64	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	25.180	0.802	4645.2	2873.7	15.908	3.507	2.87		Clay	92.9			23.80	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	24.260	0.779	4664.6	2883.0	15.212	3.550	2.89		Clay	94.4			22.93	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	24.670	0.782	4683.9	2892.4	15.439	3.501	2.88		Clay	93.7			23.32	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	25.120	0.771	4704.5	2902.4	15.689	3.385	2.87		Clay	92.6			23.74	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	25.810	0.743	4723.8	2911.7	16.106	3.169	2.84		Clay	90.4			24.40	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	27.130	0.804	4744.4	2921.7	16.947	3.249	2.83		Clay	89.6			25.64	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	30.400	1.040	4763.8	2931.1	19.118	3.712	2.83		Clay	89.2			28.73	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	33.530	1.333	4783.1	2940.5	21.179	4.281	2.83		Clay	89.6			31.69	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	41.230	1.699	4803.7	2950.4	26.320	4.377	2.77		Clay	84.5			38.97	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	40.790	1.688	4823.1	2959.8	25.933	4.399	2.77		Clay	85.0			38.55	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	38.100	1.531	4843.6	2969.8	24.028	4.291	2.79		Clay	86.4			36.01	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	30.160	1.189	4863.0	2979.1	18.615	4.287	2.88		Clay	93.1			28.51	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	25.810	1.036	4882.4	2988.5	15.639	4.435	2.94		Clay	98.5			24.40	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	22.660	0.896	4902.9	2998.5	13.479	4.434	2.99		Clay	100.0			21.42	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	20.700	0.769	4922.3	3007.8	12.128	4.215	3.02		Clay	100.0			19.57	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	19.020	0.669	4942.9	3017.8	10.967	4.040	3.04		Clay	100.0			17.98	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	17.900	0.727	4962.2	3027.2	10.187	4.712	3.11		Clay	100.0			16.92	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	16.600	0.761	4981.6	3036.6	9.293	5.394	3.17		Clay	100.0			15.69	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	15.200	0.686	5002.1	3046.5	8.337	5.399	3.21		Clay	100.0			14.37	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	12.740	0.568	5021.5	3055.9	6.695	5.548	3.29		Clay	100.0			12.04	0.91	n.a.	n.a.	0.86	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	11.980	0.444	5042.1	3065.9	6.171	4.692	3.28		Clay	100.0			11.32	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	12.370	0.417	5061.4	3075.2	6.399	4.237	3.24		Clay	100.0			11.69	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	12.210	0.400	5080.8	3084.6	6.270	4.134	3.24		Clay	100.0			11.54	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	11.390	0.462	5101.4	3094.6	5.713	5.227	3.33		Clay	100.0			10.77	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	12.720	0.489	5120.7	3104.0	6.546	4.815	3.27		Clay	100.0			12.02	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	14.590	0.512	5141.3	3113.9	7.720	4.263	3.18		Clay	100.0			13.79	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	15.360	0.031	5160.7	3123.3	8.183	0.241	2.63		Clay	73.2			14.52	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	15.920	1.307	5180.0	3132.7	8.510	9.806	3.37		Clay	100.0			15.05	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	32.090	1.540	5200.6	3142.6	18.768	5.220	2.93		Clay	97.3			30.33	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	7.290	1.653	5219.9	3152.0	2.970	35.312	4.08		Clay	100.0			6.89	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	83.920	1.692	5240.5	3162.0	62.861	2.081	2.27		Sand	44.7		1.8	142.78	0.88	125.14	200.98	0.86	0.838	0.893	1.998	3.926	4.68	0.00	0.00
43.470	79.460	1.446	5259.9	3171.3	59.317	1.882	2.26		Sand	43.9	79.32	1.8	142.78	0.88	124.96	200.16	0.86	0.838	0.893	1.906	3.747	4.47	0.00	0.00
43.640	45.720	1.195	5280.4	3181.3	27.083	2.773	2.63		Clay	73.4			43.21	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	25.690	1.009	5299.8	3190.7	14.442	4.378	2.97		Clay	100.0			24.28	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	18.760	0.658	5319.2	3200.1	10.063	4.084	3.07		Clay	100.0			17.73	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	23.810	0.700	5339.7	3210.0	13.171	3.311	2.92		Clay	96.9			22.50	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.91

Total Settlement: 0.33 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	20.130	0.684	5359.1	3219.4	10.841	3.921	3.04		Clay	100.0			19.03	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	18.710	0.779	5379.7	3229.4	9.922	4.861	3.12		Clay	100.0			17.68	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	18.940	1.059	5399.0	3238.7	10.029	6.522	3.20		Clay	100.0			17.90	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	23.560	1.110	5418.4	3248.1	12.839	5.325	3.06		Clay	100.0			22.27	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	28.190	1.262	5439.0	3258.1	15.635	4.954	2.97		Clay	100.0			26.64	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	34.330	1.057	5458.3	3267.4	19.343	3.346	2.79		Clay	86.6			32.45	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	34.090	1.069	5478.9	3277.4	19.131	3.409	2.80		Clay	87.3			32.22	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	25.530	1.027	5498.2	3286.8	13.862	4.508	2.99		Clay	100.0			24.13	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	23.550	0.819	5517.6	3296.2	12.615	3.941	2.98		Clay	100.0			22.26	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	19.390	0.646	5538.2	3306.1	10.055	3.888	3.06		Clay	100.0			18.33	0.89	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	14.900	0.468	5557.5	3315.5	7.312	3.863	3.17		Clay	100.0			14.08	0.89	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	13.790	0.331	5578.1	3325.5	6.616	3.008	3.15		Clay	100.0			13.03	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	11.730	0.303	5597.5	3334.8	5.356	3.388	3.25		Clay	100.0			11.09	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	10.570	0.324	5616.8	3344.2	4.642	4.180	3.35		Clay	100.0			9.99	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	11.690	0.418	5637.4	3354.2	5.290	4.715	3.34		Clay	100.0			11.05	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	15.210	0.482	5656.8	3363.6	7.362	3.893	3.17		Clay	100.0			14.38	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	16.280	0.553	5677.3	3373.5	7.969	4.114	3.16		Clay	100.0			15.39	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	16.450	0.512	5696.7	3382.9	8.041	3.766	3.13		Clay	100.0			15.55	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	16.000	0.510	5716.0	3392.3	7.748	3.878	3.15		Clay	100.0			15.12	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	16.340	0.548	5736.6	3402.2	7.919	4.064	3.16		Clay	100.0			15.44	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	17.920	0.606	5756.0	3411.6	8.818	4.031	3.12		Clay	100.0			16.94	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	18.780	0.694	5776.5	3421.6	9.289	4.366	3.12		Clay	100.0			17.75	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	18.450	0.706	5795.9	3430.9	9.066	4.540	3.14		Clay	100.0			17.44	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	18.100	0.684	5815.3	3440.3	8.832	4.505	3.14		Clay	100.0			17.11	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	17.920	0.621	5835.8	3450.3	8.696	4.136	3.13		Clay	100.0			16.94	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	20.840	0.532	5855.2	3459.7	10.355	2.971	2.98		Clay	100.0			19.70	0.88	n.a.	n.a.	0.83	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	21.950	0.541	5875.8	3469.6	10.959	2.845	2.95		Clay	99.1			20.75	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	22.460	0.597	5895.1	3479.0	11.217	3.059	2.96		Clay	99.9			21.23	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	24.380	0.706	5914.5	3488.4	12.282	3.296	2.95		Clay	98.8			23.04	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	28.220	0.884	5935.1	3498.3	14.437	3.502	2.91		Clay	95.6			26.67	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	32.070	1.164	5954.4	3507.7	16.588	4.001	2.90		Clay	94.6			30.31	0.88	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	33.130	1.174	5975.0	3517.7	17.138	3.896	2.88		Clay	93.2			31.31	0.87	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	31.630	1.165	5994.3	3527.0	16.236	4.068	2.91		Clay	95.6			29.90	0.87	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	27.980	1.031	6013.7	3536.4	14.123	4.130	2.96		Clay	99.7			26.45	0.87	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	25.800	0.877	6034.3	3546.4	12.849	3.849	2.97		Clay	100.0			24.39	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	24.820	0.798	6053.6	3555.8	12.258	3.663	2.98		Clay	100.0			23.46	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.91

Total Settlement: 0.12 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	0.040	0.001	19.4	19.4	3.132	3.628	3.47		Unsaturated	100.0			0.04	1.70	0.06	54.02	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	0.170	0.005	39.9	39.9	7.515	3.066	3.11		Unsaturated	100.0			0.16	1.70	0.27	54.29	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	0.150	0.009	59.3	59.3	4.060	7.395	3.54		Unsaturated	100.0			0.14	1.70	0.24	54.25	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	1.330	0.050	79.9	79.9	32.308	3.837	2.66		Unsaturated	76.1			1.26	1.70	2.14	54.29	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	4.160	0.066	99.2	99.2	33.086	1.601	2.42		Unsaturated	56.2			3.93	1.70	6.68	56.33	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	4.270	0.091	118.6	118.6	29.917	2.166	2.53		Unsaturated	65.3			4.04	1.70	6.86	58.63	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	2.850	0.089	139.2	139.2	17.662	3.201	2.81		Unsaturated	88.1			2.69	1.70	4.58	58.88	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	3.240	0.107	158.5	158.5	18.328	3.382	2.82		Unsaturated	88.3			3.06	1.70	5.21	59.72	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	4.050	0.134	179.1	179.1	21.086	3.386	2.77		Unsaturated	84.5			3.83	1.70	6.51	61.01	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	5.990	0.284	198.4	198.4	29.188	4.821	2.76		Unsaturated	84.1			5.66	1.70	9.62	65.03	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	10.070	0.530	217.8	217.8	46.243	5.325	2.65		Unsaturated	75.4			9.52	1.70	16.18	72.38	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	12.830	0.631	238.4	238.4	55.395	4.965	2.58		Unsaturated	69.3			12.13	1.70	20.62	77.11	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	12.600	0.627	257.7	257.7	51.460	5.029	2.60		Unsaturated	71.4			11.91	1.70	20.25	77.00	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	10.700	0.536	278.3	278.3	41.297	5.076	2.67		Unsaturated	76.8			10.11	1.70	17.19	73.92	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	8.910	0.425	297.7	297.7	32.684	4.853	2.73		Unsaturated	81.5			8.42	1.70	14.32	70.81	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	7.890	0.383	317.0	317.0	48.776	4.950	2.62		Unsaturated	72.2			7.46	1.70	12.68	67.36	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	6.470	0.336	337.6	337.6	37.331	5.328	2.72		Unsaturated	80.5			6.12	1.70	10.40	65.59	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	5.730	0.304	357.0	357.0	31.105	5.471	2.78		Unsaturated	85.6			5.42	1.70	9.21	64.65	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	6.100	0.300	377.5	377.5	31.316	5.072	2.76		Unsaturated	83.6			5.77	1.70	9.80	65.19	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	6.140	0.287	396.9	396.9	29.941	4.824	2.76		Unsaturated	83.5			5.80	1.70	9.87	65.27	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	6.290	0.358	416.2	416.2	29.223	5.881	2.82		Unsaturated	88.9			5.95	1.70	10.11	66.18	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	6.980	0.486	436.8	436.8	30.959	7.185	2.87		Unsaturated	92.5			6.60	1.70	11.22	67.98	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	10.130	0.635	456.2	456.2	43.413	6.411	2.73		Unsaturated	81.6			9.57	1.70	16.28	73.38	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	11.810	0.707	476.7	476.7	48.545	6.106	2.68		Unsaturated	77.7			11.16	1.70	18.98	76.36	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	11.260	0.695	496.1	496.1	44.394	6.307	2.72		Unsaturated	80.6			10.64	1.70	18.09	75.61	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	10.480	0.716	516.7	516.7	39.567	7.002	2.79		Unsaturated	86.0			9.91	1.70	16.84	74.64	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	10.510	0.745	536.0	536.0	38.214	7.272	2.81		Unsaturated	87.8			9.93	1.70	16.89	74.90	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	10.620	0.692	555.4	555.4	37.243	6.690	2.79		Unsaturated	86.3			10.04	1.70	17.06	74.96	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	9.790	0.594	576.0	576.0	32.995	6.253	2.81		Unsaturated	87.5			9.25	1.70	15.73	73.36	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	8.660	0.528	595.3	595.3	28.094	6.309	2.86		Unsaturated	91.6			8.19	1.70	13.91	71.42	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	8.680	0.446	615.9	615.9	27.187	5.322	2.82		Unsaturated	88.3			8.20	1.70	13.95	71.12	1.00	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	10.230	0.441	635.3	635.3	31.208	4.453	2.72		Unsaturated	80.6			9.67	1.70	16.44	73.45	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	9.760	0.448	654.6	654.6	28.819	4.744	2.76		Unsaturated	84.1			9.22	1.70	15.68	72.91	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	12.010	0.358	675.2	675.2	24.544	3.063	2.69		Unsaturated	78.2			11.35	1.70	19.30	76.85	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	10.020	0.338	694.5	694.5	27.854	3.491	2.68		Unsaturated	77.8			9.47	1.70	16.10	72.64	0.99	0.587	1.096	n.a.	n.a.	n.a.	0.00	0.00
5.910	7.550	0.370	715.1	715.1	20.116	5.143	2.90		Unsaturated	95.2			7.14	1.70	12.13	69.42	0.99	0.586	1.091	n.a.	n.a.	n.a.	0.00	0.00
6.070	7.020	0.429	734.5	734.5	18.116	6.450	3.00		Unsaturated	100.0			6.64	1.70	11.28	68.71	0.99	0.586	1.088	n.a.	n.a.	n.a.	0.00	0.00
6.230	6.290	0.450	753.8	753.8	15.688	7.614	3.10		Unsaturated	100.0			5.95	1.70	10.11	67.18	0.99	0.586	1.085	n.a.	n.a.	n.a.	0.00	0.00
6.400	6.070	0.422	774.4	774.4	14.677	7.419	3.11		Unsaturated	100.0			5.74	1.70	9.75	66.71	0.99	0.586	1.082	n.a.	n.a.	n.a.	0.00	0.00
6.560	5.830	0.392	793.8	793.8	13.690	7.209	3.12		Unsaturated	100.0			5.51	1.70	9.37	66.21	0.99	0.585	1.080	n.a.	n.a.	n.a.	0.00	0.00
6.730	6.020	0.375	814.3	814.3	13.785	6.681	3.10		Unsaturated	100.0			5.69	1.70	9.67	66.61	0.99	0.585	1.078	n.a.	n.a.	n.a.	0.00	0.00
6.890	5.970	0.356	833.7	833.7	13.322	6.404	3.10		Unsaturated	100.0			5.64	1.70	9.59	66.50	0.99	0.585	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.050	5.870	0.381	853.1	853.1	12.762	7.003	3.14		Unsaturated	100.0			5.55	1.70	9.43	66.29	0.99	0.585	1.074	n.a.	n.a.	n.a.	0.00	0.00
7.220	6.430	0.401	873.6	873.6	13.720	6.689	3.10		Unsaturated	100.0			6.08	1.67	10.17	67.26	0.99	0.584	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.380	6.650	0.441	893.0	893.0	13.894	7.107	3.12		Unsaturated	100.0			6.29	1.65	10.37	67.53	0.99	0.584	1.071	n.a.	n.a.	n.a.	0.00	0.00
7.550	7.820	0.495	913.6	913.6	16.120	6.725	3.05		Unsaturated	100.0			7.39	1.62	11.98	69.63	0.99	0.584	1.070	n.a.	n.a.	n.a.	0.00	0.00
7.710	8.820	0.596	932.9	932.9	17.909	7.135	3.04		Unsaturated	100.0			8.34	1.59	13.29	71.35	0.99	0.584	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.870	8.640	0.583	952.3	952.3	17.146	7.141	3.05		Unsaturated	100.0			8.17	1.58	12.89	70.82	0.99	0.583	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.040	7.630	0.529	972.8	972.8	14.686	7.400	3.11		Unsaturated	100.0			7.21	1.57	11.29	68.73	0.99	0.583	1.065	n.a.	n.a.	n.a.	0.00	0.00
8.200	7.310	0.463	992.2	992.2	13.735	6.801	3.11		Unsaturated	100.0			6.91	1.55	10.72	67.98	0.99	0.583	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.370	6.870	0.466	1012.8	1012.8	12.567	7.315	3.16		Unsaturated	100.0			6.49	1.54	9.97	67.00	0.99	0.583	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.530	7.430	0.465	1032.1	1024.0	13.504	6.721	3.11		Unsaturated	100.0			7.02	1.52	10.70	67.95	0.99	0.582	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.690	7.650	0.500	1051.5	1033.4	13.788	7.014	3.11		Unsaturated	100.0			7.23	1.51	10.95	68.28	0.99	0.582	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.860	7.860	0.484	1072.1	1043.4	14.039	6.604	3.09		Unsaturated	100.0			7.43	1.50	11.18	68.58	0.99	0.582	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.020	7.570	0.579	1091.4	1052.7	13.345	8.243	3.17		Unsaturated	100.0			7.16	1.50	10.72	67.98	0.99	0.582	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.190	8.490	0.574	1112.0	1062.7	14.932	7.233	3.10		Unsaturated	100.0			8.02	1.49	11.92	69.56	0.98	0.581	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.350	8.740	0.542	1131.4	1072.1	15.250	6.629	3.07		Unsaturated	100.0			8.26	1.48	12.20	69.92	0.98	0.581	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.510	8.620	0.502	1150.7	1081.4	14.878	6.236	3.06		Unsaturated	100.0			8.15	1.47	11.98	69.64	0.98	0.581	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.680	7.950	0.437	1171.3	1091.4	13.495	5.938	3.07		Unsaturated	100.0			7.51	1.47	11.02	68.37	0.98	0.580	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.840	7.110	0.376	1190.6	1100.8	11.836	5.770	3.11		Unsaturated	100.0			6.72	1.46	9.84	66.82	0.98	0.580	1.053	n.a.	n.a.	n.a.	0.00	0.00
10.010	6.460	0.343	1211.2	1110.7	10.541	5.850	3.15		Clay	100.0			6.11	1.19	n.a.	n.a.	0.98	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	6.130	0.267	1230.6	1120.1	9.847	4.833	3.12		Clay	100.0			5.79	1.18	n.a.	n.a.	0.98	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	5.710	0.223	1249.9	1129.5	9.004	4.389	3.13		Clay	100.0			5.40	1.18	n.a.	n.a.	0.98	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	5.210	0.166	1270.5	1139.5	8.030	3.624	3.12		Clay	100.0			4.92	1.18	n.a.	n.a.	0.98	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	4.930	0.188	1289.9	1148.8	7.460	4.387	3.20		Clay	100.0			4.66	1.17	n.a.	n.a.	0.98	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	5.040	0.221	1310.4	1158.8	7.568	5.036	3.23		Clay	100.0			4.76	1.17	n.a.	n.a.	0.98	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	5.320	0.270	1329.8	1168.2	7.970	5.809	3.25		Clay	100.0			5.03	1.17	n.a.	n.a.	0.98	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	5.700	0.321	1349.2	1177.6	8.535	6.382	3.25		Clay	100.0			5.39	1.17	n.a.	n.a.	0.98	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.91

Total Settlement: 0.12 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.320	6.000	0.397	1369.7	1187.5	8.952	7.462	3.27		Clay	100.0			5.67	1.16	n.a.	n.a.	0.98	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	5.380	0.351	1389.1	1196.9	7.829	7.489	3.32		Clay	100.0			5.09	1.16	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	4.390	0.264	1409.7	1206.9	6.107	7.158	3.39		Clay	100.0			4.15	1.16	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	3.770	0.191	1429.0	1216.2	5.025	6.261	3.43		Clay	100.0			3.56	1.16	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	3.450	0.204	1449.6	1226.2	4.445	7.467	3.51		Clay	100.0			3.26	1.15	n.a.	n.a.	0.98	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	3.910	0.253	1468.9	1235.6	5.140	7.977	3.48		Clay	100.0			3.70	1.15	n.a.	n.a.	0.98	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	5.090	0.329	1488.3	1244.9	6.982	7.559	3.36		Clay	100.0			4.81	1.15	n.a.	n.a.	0.98	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	5.780	0.330	1508.9	1254.9	8.009	6.574	3.28		Clay	100.0			5.46	1.15	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	5.740	0.296	1528.2	1264.3	7.872	5.955	3.26		Clay	100.0			5.43	1.15	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	4.840	0.179	1548.8	1274.2	6.381	4.400	3.25		Clay	100.0			4.57	1.14	n.a.	n.a.	0.97	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	4.330	0.165	1568.2	1283.6	5.525	4.639	3.32		Clay	100.0			4.09	1.14	n.a.	n.a.	0.97	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	4.320	0.217	1587.5	1293.0	5.454	6.143	3.39		Clay	100.0			4.08	1.14	n.a.	n.a.	0.97	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	6.770	0.302	1608.1	1303.0	9.158	5.054	3.16		Clay	100.0			6.40	1.14	n.a.	n.a.	0.97	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	13.290	0.211	1627.5	1312.3	19.014	1.692	2.63		Clay	73.1			12.56	1.13	n.a.	n.a.	0.97	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	9.750	0.184	1648.0	1322.3	13.501	2.056	2.80		Clay	86.8			9.22	1.13	n.a.	n.a.	0.97	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.040	0.213	1667.4	1331.7	7.819	4.097	3.16		Clay	100.0			5.71	1.13	n.a.	n.a.	0.97	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	4.960	0.206	1686.7	1341.0	6.139	5.014	3.30		Clay	100.0			4.69	1.13	n.a.	n.a.	0.97	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	4.940	0.233	1707.3	1351.0	6.049	5.690	3.34		Clay	100.0			4.67	1.13	n.a.	n.a.	0.97	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	5.010	0.238	1726.7	1360.4	6.096	5.730	3.33		Clay	100.0			4.74	1.12	n.a.	n.a.	0.97	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	5.150	0.249	1747.2	1370.3	6.241	5.818	3.33		Clay	100.0			4.87	1.12	n.a.	n.a.	0.97	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	5.190	0.250	1766.6	1379.7	6.243	5.796	3.33		Clay	100.0			4.91	1.12	n.a.	n.a.	0.97	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	5.380	0.254	1786.0	1389.1	6.460	5.656	3.31		Clay	100.0			5.09	1.12	n.a.	n.a.	0.97	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	5.720	0.256	1806.5	1399.1	6.886	5.323	3.27		Clay	100.0			5.41	1.12	n.a.	n.a.	0.97	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	5.830	0.222	1825.9	1408.4	6.982	4.509	3.23		Clay	100.0			5.51	1.11	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	6.050	0.223	1846.5	1418.4	7.229	4.340	3.20		Clay	100.0			5.72	1.11	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	6.110	0.209	1865.8	1427.8	7.252	4.029	3.18		Clay	100.0			5.78	1.11	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	5.730	0.170	1885.2	1437.1	6.662	3.545	3.18		Clay	100.0			5.42	1.11	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	5.390	0.173	1905.8	1447.1	6.132	3.892	3.24		Clay	100.0			5.09	1.11	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	5.030	0.195	1925.1	1456.5	5.585	4.787	3.32		Clay	100.0			4.75	1.10	n.a.	n.a.	0.96	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	5.360	0.199	1945.7	1466.4	5.983	4.543	3.28		Clay	100.0			5.07	1.10	n.a.	n.a.	0.96	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	5.310	0.210	1965.0	1475.8	5.864	4.860	3.31		Clay	100.0			5.02	1.10	n.a.	n.a.	0.96	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	5.310	0.227	1984.4	1485.2	5.814	5.250	3.33		Clay	100.0			5.02	1.10	n.a.	n.a.	0.96	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	5.820	0.267	2005.0	1495.2	6.444	5.534	3.31		Clay	100.0			5.50	1.10	n.a.	n.a.	0.96	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	6.780	0.366	2024.3	1504.5	7.667	6.349	3.28		Clay	100.0			6.41	1.09	n.a.	n.a.	0.96	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	6.920	0.392	2044.9	1514.5	7.788	6.654	3.29		Clay	100.0			6.54	1.09	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	7.410	0.391	2064.3	1523.9	8.371	6.132	3.24		Clay	100.0			7.00	1.09	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	7.140	0.391	2083.6	1533.3	7.955	6.413	3.27		Clay	100.0			6.75	1.09	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	8.200	0.404	2104.2	1543.2	9.264	5.658	3.19		Clay	100.0			7.75	1.09	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	7.630	0.414	2123.6	1552.6	8.461	6.300	3.25		Clay	100.0			7.21	1.09	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	6.680	0.359	2144.1	1562.6	7.178	6.398	3.31		Clay	100.0			6.31	1.08	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	6.300	0.293	2163.5	1571.9	6.639	5.611	3.30		Clay	100.0			5.95	1.08	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	5.610	0.273	2182.8	1581.3	5.715	6.051	3.37		Clay	100.0			5.30	1.08	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	5.140	0.247	2203.4	1591.3	5.076	6.126	3.42		Clay	100.0			4.86	1.08	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	4.550	0.286	2222.8	1600.6	4.297	8.311	3.55		Clay	100.0			4.30	1.08	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	5.030	0.335	2243.3	1610.6	4.853	8.561	3.52		Clay	100.0			4.75	1.07	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	6.800	0.347	2262.7	1620.0	6.998	6.116	3.30		Clay	100.0			6.43	1.07	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	7.070	0.398	2282.1	1629.4	7.278	6.704	3.32		Clay	100.0			6.68	1.07	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	7.510	0.514	2302.6	1639.3	7.758	8.080	3.34		Clay	100.0			7.10	1.07	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	9.140	0.573	2322.0	1648.7	9.679	7.180	3.24		Clay	100.0			8.64	1.07	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	8.420	0.508	2342.6	1658.7	8.740	7.007	3.26		Clay	100.0			7.96	1.07	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	7.580	0.389	2361.9	1668.0	7.673	6.084	3.27		Clay	100.0			7.16	1.06	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	7.330	0.326	2382.5	1678.0	7.317	5.314	3.25		Clay	100.0			6.93	1.06	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	7.130	0.300	2401.9	1687.4	7.028	5.056	3.25		Clay	100.0			6.74	1.06	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	6.920	0.334	2421.2	1696.7	6.730	5.854	3.31		Clay	100.0			6.54	1.06	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	7.230	0.380	2441.8	1706.7	7.042	6.330	3.31		Clay	100.0			6.83	1.06	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	8.150	0.437	2461.1	1716.1	8.064	6.321	3.26		Clay	100.0			7.70	1.06	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	8.240	0.411	2481.7	1726.0	8.110	5.865	3.24		Clay	100.0			7.79	1.06	n.a.	n.a.	0.95	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	8.040	0.382	2501.1	1735.4	7.825	5.625	3.24		Clay	100.0			7.60	1.05	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	7.810	0.336	2520.4	1744.8	7.508	5.127	3.23		Clay	100.0			7.38	1.05	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	7.950	0.284	2541.0	1754.8	7.613	4.246	3.18		Clay	100.0			7.51	1.05	n.a.	n.a.	0.95	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	7.540	0.243	2560.4	1764.1	7.097	3.880	3.18		Clay	100.0			7.13	1.05	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	7.160	0.230	2580.9	1774.1	6.617	3.917	3.21		Clay	100.0			6.77	1.05	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	7.250	0.277	2600.3	1783.5	6.672	4.659	3.25		Clay	100.0			6.85	1.05	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	7.410	0.297	2619.7	1792.9	6.805	4.865	3.25		Clay	100.0			7.00	1.04	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	8.750	0.386	2640.2	1802.8	8.243	5.191	3.20		Clay	100.0			8.27	1.04	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	9.240	0.451	2659.6	1812.2	8.730	5.698	3.21		Clay	100.0			8.73	1.04	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	7.940	0.482	2680.2	1822.2	7.244	7.305	3.34		Clay	100.0			7.50	1.04	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.91

Total Settlement: 0.12 (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	9.930	0.499	2699.5	1831.5	9.370	5.816	3.19		Clay	100.0			9.39	1.04	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	10.600	0.534	2718.9	1840.9	10.039	5.779	3.17		Clay	100.0			10.02	1.04	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	11.500	0.586	2739.4	1850.9	10.947	5.788	3.14		Clay	100.0			10.87	1.04	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	11.880	0.611	2758.8	1860.2	11.290	5.821	3.13		Clay	100.0			11.23	1.03	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	11.880	0.629	2779.4	1870.2	11.218	5.994	3.14		Clay	100.0			11.23	1.03	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	11.860	0.652	2798.7	1879.6	11.131	6.233	3.15		Clay	100.0			11.21	1.03	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	12.240	0.650	2818.1	1889.0	11.468	6.005	3.13		Clay	100.0			11.57	1.03	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.900	0.646	2838.7	1898.9	12.092	5.626	3.10		Clay	100.0			12.19	1.03	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	13.650	0.657	2858.0	1908.3	12.808	5.376	3.06		Clay	100.0			12.90	1.03	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	14.460	0.663	2878.6	1918.3	13.576	5.088	3.03		Clay	100.0			13.67	1.03	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	15.100	0.691	2898.0	1927.6	14.164	5.059	3.01		Clay	100.0			14.27	1.02	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	15.270	0.739	2917.3	1937.0	14.261	5.351	3.03		Clay	100.0			14.43	1.02	n.a.	n.a.	0.94	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	15.140	0.794	2937.9	1947.0	14.043	5.811	3.05		Clay	100.0			14.31	1.02	n.a.	n.a.	0.94	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	15.180	0.763	2957.2	1956.3	14.007	5.567	3.04		Clay	100.0			14.35	1.02	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	14.850	0.751	2977.8	1966.3	13.590	5.621	3.06		Clay	100.0			14.04	1.02	n.a.	n.a.	0.93	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	15.330	0.723	2997.2	1975.7	14.002	5.227	3.03		Clay	100.0			14.49	1.02	n.a.	n.a.	0.93	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	16.350	0.768	3016.5	1985.1	14.953	5.171	3.00		Clay	100.0			15.45	1.02	n.a.	n.a.	0.93	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	16.190	0.755	3037.1	1995.0	14.708	5.149	3.01		Clay	100.0			15.30	1.02	n.a.	n.a.	0.93	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	15.960	0.726	3056.5	2004.4	14.400	5.028	3.01		Clay	100.0			15.09	1.01	n.a.	n.a.	0.93	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	15.600	0.703	3077.0	2014.4	13.961	5.000	3.01		Clay	100.0			14.74	1.01	n.a.	n.a.	0.93	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	15.280	0.714	3096.4	2023.7	13.571	5.196	3.03		Clay	100.0			14.44	1.01	n.a.	n.a.	0.93	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	14.470	0.701	3115.8	2033.1	12.702	5.427	3.07		Clay	100.0			13.68	1.01	n.a.	n.a.	0.93	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	12.990	0.731	3136.3	2043.1	11.181	6.398	3.16		Clay	100.0			12.28	1.01	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	13.580	0.717	3155.7	2052.4	11.695	5.975	3.12		Clay	100.0			12.84	1.01	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	16.060	0.732	3176.3	2062.4	14.034	5.057	3.02		Clay	100.0			15.18	1.01	n.a.	n.a.	0.93	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	16.900	0.781	3195.6	2071.8	14.772	5.103	3.00		Clay	100.0			15.97	1.01	n.a.	n.a.	0.93	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	17.530	0.800	3215.0	2081.2	15.302	5.027	2.99		Clay	100.0			16.57	1.00	n.a.	n.a.	0.93	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	19.300	0.813	3235.5	2091.1	16.912	4.595	2.93		Clay	97.2			18.24	1.00	n.a.	n.a.	0.93	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	21.730	0.883	3254.9	2100.5	19.141	4.394	2.87		Clay	92.9			20.54	1.00	n.a.	n.a.	0.93	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	22.820	0.894	3275.5	2110.5	20.074	4.218	2.85		Clay	90.7			21.57	1.00	n.a.	n.a.	0.92	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	23.080	0.969	3294.8	2119.8	20.221	4.521	2.86		Clay	92.1			21.81	1.00	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	19.900	1.014	3315.4	2129.8	17.131	5.560	2.98		Clay	100.0			18.81	1.00	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	17.500	0.857	3334.8	2139.2	14.803	5.411	3.02		Clay	100.0			16.54	1.00	n.a.	n.a.	0.92	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	16.390	0.933	3354.1	2148.6	13.696	6.343	3.09		Clay	100.0			15.49	1.00	n.a.	n.a.	0.92	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	17.140	1.114	3374.7	2158.5	14.318	7.208	3.11		Clay	100.0			16.20	0.99	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	23.580	1.204	3394.1	2167.9	20.188	5.502	2.92		Clay	96.7			22.29	0.99	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	25.770	1.020	3414.6	2177.9	22.098	4.240	2.82		Clay	88.3			24.36	0.99	n.a.	n.a.	0.92	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	21.070	0.857	3434.0	2187.2	17.696	4.430	2.90		Clay	95.2			19.91	0.99	n.a.	n.a.	0.92	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	16.830	0.755	3453.3	2196.6	13.752	4.998	3.02		Clay	100.0			15.91	0.99	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	16.900	0.674	3473.9	2206.6	13.744	4.442	2.99		Clay	100.0			15.97	0.99	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	17.690	0.876	3493.3	2215.9	14.390	5.497	3.03		Clay	100.0			16.72	0.99	n.a.	n.a.	0.92	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	19.300	0.937	3513.8	2225.9	15.763	5.340	2.99		Clay	100.0			18.24	0.99	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	21.160	0.894	3533.2	2235.3	17.352	4.610	2.92		Clay	96.6			20.00	0.99	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	19.530	0.866	3552.6	2244.7	15.819	4.880	2.97		Clay	100.0			18.46	0.98	n.a.	n.a.	0.92	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	19.820	1.037	3573.1	2254.6	15.997	5.749	3.01		Clay	100.0			18.73	0.98	n.a.	n.a.	0.91	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	20.810	1.095	3592.5	2264.0	16.797	5.757	2.99		Clay	100.0			19.67	0.98	n.a.	n.a.	0.91	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	25.860	0.870	3613.1	2274.0	21.156	3.616	2.79		Clay	85.9			24.44	0.98	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	29.790	1.423	3632.4	2283.3	24.503	5.086	2.84		Clay	89.8			28.16	0.98	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	26.130	1.702	3651.8	2292.7	21.201	7.001	2.98		Clay	100.0			24.70	0.98	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	24.170	1.331	3672.4	2302.7	19.398	5.960	2.96		Clay	99.5			22.84	0.98	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	46.620	1.262	3691.7	2312.0	40.486	2.819	2.50		Sand	63.1	58.3	1.66	96.78	0.97	93.64	169.63	0.91	0.823	0.983	0.497	0.942	1.14	0.01	0.01
30.680	54.690	1.224	3712.3	2322.0	47.671	2.317	2.39		Sand	54.4	58.3	1.66	96.78	0.97	93.44	166.21	0.91	0.824	0.983	0.446	0.822	1.00	0.01	0.02
30.840	61.680	1.305	3731.6	2331.4	53.860	2.182	2.34		Sand	49.8		1.66	96.78	0.96	93.27	163.88	0.91	0.824	0.982	0.415	0.752	0.91	0.01	0.02
31.000	52.700	1.440	3751.0	2340.8	45.674	2.833	2.46		Sand	60.2	58.3	1.66	96.78	0.96	93.19	168.08	0.91	0.825	0.981	0.473	0.883	1.07	0.01	0.01
31.170	46.300	1.427	3771.6	2350.7	39.828	3.212	2.55		Sand	66.6	58.3	1.66	96.78	0.96	93.06	169.91	0.91	0.825	0.980	0.502	0.950	1.15	0.01	0.01
31.330	41.440	1.250	3790.9	2360.1	35.391	3.161	2.58		Sand	69.3	58.3	1.66	96.78	0.96	92.93	170.44	0.91	0.826	0.979	0.511	0.970	1.18	0.01	0.01
31.500	39.680	1.083	3811.5	2370.1	33.736	2.866	2.57		Sand	68.3	58.3	1.66	96.78	0.96	92.78	169.99	0.91	0.826	0.978	0.503	0.951	1.15	0.01	0.01
31.660	33.210	0.966	3830.9	2379.4	26.304	3.087	2.67		Clay	76.5			31.39	0.97	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	21.110	1.139	3850.2	2388.8	16.062	5.934	3.02		Clay	100.0			19.95	0.97	n.a.	n.a.	0.91	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	21.750	1.334	3870.8	2398.8	16.521	6.731	3.04		Clay	100.0			20.56	0.97	n.a.	n.a.	0.90	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	31.270	1.374	3890.2	2408.2	24.355	4.686	2.81		Clay	88.1			29.56	0.97	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	31.710	1.132	3910.7	2418.1	24.610	3.803	2.75		Clay	83.0			29.97	0.97	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	23.720	1.162	3930.1	2427.5	17.924	5.340	2.95		Clay	99.1			22.42	0.96	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	19.580	1.656	3949.4	2436.9	14.449	9.405	3.19		Clay	100.0			18.51	0.96	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	29.340	2.075	3970.0	2446.8	22.360	7.585	2.98		Clay	100.0			27.73	0.96	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	46.580	2.221	3989.4	2456.2	36.304	4.981	2.71		Clay	79.5			44.03	0.96	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	50.920	2.132	4009.9	2466.2	39.669	4.358	2.64		Clay	74.1			48.13	0.96	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.91

Total Settlement: 0.12 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'_{vc} = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.300	49.540	1.917	4029.3	2475.5	38.396	4.033	2.62		Clay	73.0			46.82	0.96	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	42.840	1.439	4048.7	2484.9	32.851	3.526	2.63		Clay	73.7			40.49	0.96	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	69.080	1.064	4069.2	2494.9	58.360	1.587	2.22		Sand	40.5	65.45	1.8	117.81	0.94	111.08	180.20	0.90	0.831	0.965	0.732	1.478	1.78	0.00	0.00
33.790	69.250	0.982	4088.6	2504.3	58.390	1.462	2.20		Sand	38.6		1.8	117.82	0.94	110.89	178.40	0.90	0.832	0.965	0.682	1.358	1.63	0.00	0.00
33.960	33.060	0.923	4109.2	2514.2	24.664	2.975	2.68		Clay	77.5			31.25	0.96	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	14.620	0.652	4128.5	2523.6	9.951	5.190	3.14		Clay	100.0			13.82	0.95	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	13.400	0.517	4147.9	2533.0	8.943	4.568	3.14		Clay	100.0			12.67	0.95	n.a.	n.a.	0.90	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	13.950	0.548	4168.5	2542.9	9.332	4.617	3.13		Clay	100.0			13.19	0.95	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	13.760	0.585	4187.8	2552.3	9.142	5.014	3.16		Clay	100.0			13.01	0.95	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	13.730	0.558	4208.4	2562.3	9.075	4.799	3.15		Clay	100.0			12.98	0.95	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	13.550	0.562	4227.7	2571.6	8.894	4.916	3.16		Clay	100.0			12.81	0.95	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	13.730	0.487	4247.1	2581.0	8.994	4.197	3.12		Clay	100.0			12.98	0.95	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	13.890	0.523	4267.7	2591.0	9.075	4.451	3.13		Clay	100.0			13.13	0.95	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	14.070	0.530	4287.0	2600.4	9.173	4.442	3.13		Clay	100.0			13.30	0.95	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	14.550	0.531	4307.6	2610.3	9.498	4.280	3.10		Clay	100.0			13.75	0.95	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	14.530	0.551	4327.0	2619.7	9.441	4.456	3.12		Clay	100.0			13.73	0.95	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	14.600	0.591	4347.5	2629.7	9.451	4.754	3.13		Clay	100.0			13.80	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	14.910	0.629	4366.9	2639.0	9.645	4.941	3.14		Clay	100.0			14.09	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	14.850	0.559	4386.3	2648.4	9.558	4.418	3.11		Clay	100.0			14.04	0.94	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	14.510	0.495	4406.8	2658.4	9.259	4.023	3.10		Clay	100.0			13.71	0.94	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	13.770	0.540	4426.2	2667.7	8.664	4.676	3.16		Clay	100.0			13.02	0.94	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	14.100	0.549	4446.8	2677.7	8.871	4.624	3.15		Clay	100.0			13.33	0.94	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	15.110	0.603	4466.1	2687.1	9.584	4.680	3.12		Clay	100.0			14.28	0.94	n.a.	n.a.	0.88	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	15.500	0.695	4485.5	2696.5	9.833	5.245	3.15		Clay	100.0			14.65	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	16.270	0.581	4506.0	2706.4	10.358	4.148	3.07		Clay	100.0			15.38	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	17.540	0.662	4525.4	2715.8	11.251	4.336	3.05		Clay	100.0			16.58	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	19.060	0.715	4546.0	2725.8	12.317	4.258	3.01		Clay	100.0			18.02	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	18.420	0.807	4565.3	2735.1	11.800	5.001	3.07		Clay	100.0			17.41	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	19.170	0.719	4584.7	2744.5	12.299	4.258	3.01		Clay	100.0			18.12	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	18.580	0.474	4605.3	2754.5	11.819	2.912	2.93		Clay	97.4			17.56	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	16.490	0.373	4624.6	2763.9	10.259	2.634	2.96		Clay	99.5			15.59	0.93	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	14.390	1.052	4645.2	2773.8	8.701	8.716	3.33		Clay	100.0			13.60	0.93	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	15.080	1.214	4664.6	2783.2	9.161	9.522	3.34		Clay	100.0			14.25	0.93	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	20.520	1.586	4683.9	2792.6	13.019	8.723	3.20		Clay	100.0			19.40	0.93	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	40.930	1.933	4704.5	2802.5	27.531	5.011	2.79		Clay	86.5			38.69	0.93	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	62.580	2.113	4723.8	2811.9	49.374	3.509	2.50		Sand	63.3	136.4	1.55	211.42	0.93	196.14	301.35	0.88	0.838	0.915	#########	########	1577853.56	0.00	0.00
39.210	91.820	2.012	4744.4	2821.9	73.211	2.249	2.25		Sand	42.8	136.4	1.55	211.42	0.93	195.96	287.96	0.87	0.838	0.914	42140.006	84701.633	101061.25	0.00	0.00
39.370	120.820	1.547	4763.8	2831.2	96.778	1.307	2.00		Sand	22.8	136.4	1.55	211.42	0.93	195.79	254.20	0.87	0.838	0.913	217.097	435.890	520.04	0.00	0.00
39.530	136.460	1.658	4783.1	2840.6	109.369	1.236	1.94		Sand	18.3	136.4	1.55	211.42	0.92	194.61	238.62	0.87	0.838	0.912	37.346	74.902	89.36	0.00	0.00
39.700	144.310	1.243	4803.7	2850.6	115.561	0.876	1.83		Sand	9.0		1.55	211.42	0.91	191.53	198.45	0.87	0.838	0.923	1.734	3.521	4.20	0.00	0.00
39.860	130.550	0.973	4823.1	2860.0	104.177	0.760	1.82		Sand	8.8	136.4	1.55	211.42	0.90	191.24	197.45	0.87	0.838	0.923	1.641	3.333	3.98	0.00	0.00
40.030	118.340	1.144	4843.6	2869.9	94.078	0.987	1.93		Sand	17.2	136.4	1.55	211.42	0.92	193.67	233.25	0.87	0.838	0.909	22.123	44.222	52.75	0.00	0.00
40.190	103.690	1.555	4863.0	2879.3	82.047	1.536	2.10		Sand	30.8	136.4	1.55	211.42	0.92	194.92	271.14	0.87	0.838	0.908	2322.417	4637.190	5530.75	0.00	0.00
40.350	61.330	1.169	4882.4	2888.7	47.638	1.986	2.35		Sand	50.9	136.4	1.55	211.42	0.92	194.75	292.93	0.87	0.838	0.907	#########	########	264685.20	0.00	0.00
40.520	38.290	1.153	4902.9	2898.6	24.728	3.216	2.70		Clay	79.1			36.19	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	22.600	0.843	4922.3	2908.0	13.851	4.186	2.97		Clay	100.0			21.36	0.92	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	18.970	0.711	4942.9	2918.0	11.308	4.306	3.05		Clay	100.0			17.93	0.92	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	17.650	0.580	4962.2	2927.3	10.364	3.821	3.05		Clay	100.0			16.68	0.92	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	17.550	0.557	4981.6	2936.7	10.256	3.698	3.04		Clay	100.0			16.59	0.92	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	17.210	0.569	5002.1	2946.7	9.983	3.870	3.06		Clay	100.0			16.27	0.92	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	17.990	0.572	5021.5	2956.1	10.473	3.695	3.03		Clay	100.0			17.00	0.92	n.a.	n.a.	0.86	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	19.410	0.642	5042.1	2966.0	11.388	3.800	3.01		Clay	100.0			18.35	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	20.370	0.558	5061.4	2975.4	11.991	3.130	2.94		Clay	98.4			19.25	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	20.960	0.966	5080.8	2984.8	12.342	5.246	3.07		Clay	100.0			19.81	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	25.680	1.059	5101.4	2994.7	15.447	4.577	2.96		Clay	99.5			24.27	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	21.350	1.091	5120.7	3004.1	12.509	5.809	3.09		Clay	100.0			20.18	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	24.730	1.067	5141.3	3014.1	14.704	4.814	2.99		Clay	100.0			23.37	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	24.510	0.918	5160.7	3023.5	14.506	4.186	2.95		Clay	99.3			23.17	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	25.670	0.929	5180.0	3032.8	15.220	4.024	2.93		Clay	97.1			24.26	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	26.800	0.875	5200.6	3042.8	15.906	3.615	2.88		Clay	93.6			25.33	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	27.970	0.766	5219.9	3052.2	16.618	3.020	2.82		Clay	88.6			26.44	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	25.130	0.736	5240.5	3062.1	14.702	3.271	2.88		Clay	93.6			23.75	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	20.910	0.714	5259.9	3071.5	11.903	3.904	3.00		Clay	100.0			19.76	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	18.400	0.740	5280.4	3081.5	10.229	4.694	3.10		Clay	100.0			17.39	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	17.570	0.735	5299.8	3090.8	9.654	4.928	3.14		Clay	100.0			16.61	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	18.730	0.733	5319.2	3100.2	10.367	4.563	3.09		Clay	100.0			17.70	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	20.020	0.955	5339.7	3110.2	11.157	5.503	3.12		Clay	100.0			18.92	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.91

Total Settlement: 0.12 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	24.140	1.266	5359.1	3119.6	13.759	5.897	3.07		Clay	100.0			22.82	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	34.180	1.245	5379.7	3129.5	20.125	3.954	2.83		Clay	89.2			32.31	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	59.390	1.291	5399.0	3138.9	43.994	2.277	2.41		Sand	56.1	63.62	1.8	114.52	0.87	99.14	174.17	0.85	0.837	0.921	0.582	1.070	1.28	0.00	0.01
44.780	67.310	1.239	5418.4	3148.3	50.058	1.918	2.32		Sand	48.8		1.8	114.52	0.86	98.81	170.35	0.85	0.837	0.924	0.509	0.911	1.09	0.01	0.01
44.950	39.600	1.467	5439.0	3158.2	23.355	3.978	2.78		Clay	85.4			37.43	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	26.160	1.310	5458.3	3167.6	14.794	5.591	3.03		Clay	100.0			24.73	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	20.980	1.053	5478.9	3177.6	11.481	5.770	3.12		Clay	100.0			19.83	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	23.220	0.936	5498.2	3186.9	12.847	4.572	3.02		Clay	100.0			21.95	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	22.990	0.730	5517.6	3196.3	12.659	3.608	2.96		Clay	99.8			21.73	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	22.420	0.615	5538.2	3206.3	12.258	3.131	2.94		Clay	97.8			21.19	0.90	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	18.910	0.690	5557.5	3215.7	10.033	4.274	3.09		Clay	100.0			17.87	0.90	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	16.780	0.623	5578.1	3225.6	8.675	4.451	3.15		Clay	100.0			15.86	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	15.310	0.576	5597.5	3235.0	7.735	4.605	3.20		Clay	100.0			14.47	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	14.360	0.483	5616.8	3244.4	7.121	4.180	3.20		Clay	100.0			13.57	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	14.730	0.500	5637.4	3254.3	7.320	4.199	3.19		Clay	100.0			13.92	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	15.320	0.499	5656.8	3263.7	7.655	3.995	3.16		Clay	100.0			14.48	0.89	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	15.960	0.434	5677.3	3273.7	8.016	3.310	3.10		Clay	100.0			15.09	0.89	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	15.850	0.448	5696.7	3283.0	7.920	3.443	3.11		Clay	100.0			14.98	0.89	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	14.780	0.419	5716.0	3292.4	7.242	3.512	3.15		Clay	100.0			13.97	0.89	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	15.970	0.365	5736.6	3302.4	7.935	2.784	3.06		Clay	100.0			15.09	0.89	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	16.970	0.390	5756.0	3311.8	8.510	2.765	3.04		Clay	100.0			16.04	0.89	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	15.930	0.398	5776.5	3321.7	7.852	3.054	3.09		Clay	100.0			15.06	0.89	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	16.800	0.483	5795.9	3331.1	8.347	3.475	3.10		Clay	100.0			15.88	0.89	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	19.300	0.581	5815.3	3340.5	9.814	3.542	3.04		Clay	100.0			18.24	0.89	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	22.040	0.552	5835.8	3350.4	11.415	2.888	2.94		Clay	98.2			20.83	0.89	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	23.120	0.622	5855.2	3359.8	12.020	3.082	2.94		Clay	98.1			21.85	0.89	n.a.	n.a.	0.83	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	23.190	0.618	5875.8	3369.8	12.020	3.050	2.94		Clay	97.8			21.92	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	22.760	0.678	5895.1	3379.2	11.726	3.423	2.97		Clay	100.0			21.51	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	22.630	0.697	5914.5	3388.5	11.611	3.544	2.99		Clay	100.0			21.39	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	23.820	0.771	5935.1	3398.5	12.272	3.697	2.98		Clay	100.0			22.51	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	25.450	0.795	5954.4	3407.9	13.189	3.536	2.94		Clay	98.3			24.05	0.88	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	26.740	0.834	5975.0	3417.8	13.899	3.512	2.92		Clay	96.7			25.27	0.88	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	28.070	0.732	5994.3	3427.2	14.632	2.919	2.86		Clay	91.4			26.53	0.88	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	29.600	0.735	6013.7	3436.6	15.477	2.765	2.82		Clay	88.7			27.98	0.88	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	31.310	0.808	6034.3	3446.5	16.418	2.854	2.81		Clay	87.7			29.59	0.88	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	33.700	0.948	6053.6	3455.9	17.751	3.089	2.80		Clay	87.2			31.85	0.88	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	34.540	1.151	6074.2	3465.9	18.179	3.654	2.84		Clay	90.2			32.65	0.88	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.91

Total Settlement:	0.25	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'_{vc} = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	0.030	0.019	19.4	19.4	2.099	93.504	4.48		Unsaturated	100.0			0.03	1.70	0.05	54.00	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	0.030	0.040	39.9	39.9	0.503	394.619	5.36		Unsaturated	100.0			0.03	1.70	0.05	54.00	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	0.190	0.146	59.3	59.3	5.409	90.923	4.19		Unsaturated	100.0			0.18	1.70	0.31	54.33	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	3.010	0.253	79.9	79.9	74.382	8.522	2.68		Unsaturated	77.4			2.84	1.70	4.84	57.96	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	8.820	0.346	99.2	99.2	70.595	3.944	2.43		Unsaturated	57.7			8.34	1.70	14.17	66.29	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	5.630	0.374	118.6	118.6	39.580	6.705	2.77		Unsaturated	84.9			5.32	1.70	9.05	64.36	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	4.690	0.380	139.2	139.2	66.409	8.227	2.70		Unsaturated	78.8			4.43	1.70	7.54	61.65	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	4.280	0.391	158.5	158.5	53.003	9.315	2.80		Unsaturated	87.0			4.05	1.70	6.88	61.76	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	4.930	0.467	179.1	179.1	54.059	9.640	2.81		Unsaturated	87.5			4.66	1.70	7.92	63.18	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	8.450	0.489	198.4	198.4	41.377	5.857	2.72		Unsaturated	80.4			7.99	1.70	13.58	69.71	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	10.420	0.478	217.8	217.8	47.867	4.640	2.60		Unsaturated	71.0			9.85	1.70	16.74	72.42	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	8.670	0.430	238.4	238.4	37.265	5.030	2.70		Unsaturated	79.1			8.19	1.70	13.93	70.00	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	6.170	0.393	257.7	257.7	46.880	6.499	2.71		Unsaturated	80.2			5.83	1.70	9.91	64.92	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	5.000	0.329	278.3	278.3	34.932	6.772	2.81		Unsaturated	88.1			4.73	1.70	8.03	63.39	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	4.910	0.270	297.7	297.7	31.991	5.667	2.78		Unsaturated	85.8			4.64	1.70	7.89	62.95	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	5.590	0.249	317.0	317.0	34.266	4.592	2.70		Unsaturated	78.9			5.28	1.70	8.98	63.55	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	9.060	0.286	337.6	337.6	30.371	3.218	2.63		Unsaturated	73.7			8.56	1.70	14.56	70.02	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	11.690	0.265	357.0	357.0	26.491	2.299	2.59		Unsaturated	69.9			11.05	1.70	18.78	74.86	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	14.650	0.484	377.5	377.5	45.680	3.346	2.51		Unsaturated	64.1			13.85	1.70	23.54	79.83	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	16.070	0.630	396.9	396.9	48.410	3.972	2.55		Unsaturated	66.9			15.19	1.70	25.82	83.35	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	16.230	0.791	416.2	416.2	47.266	4.936	2.62		Unsaturated	72.9			15.34	1.70	26.08	84.81	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	20.040	0.827	436.8	436.8	56.534	4.173	2.52		Unsaturated	64.4			18.94	1.70	32.20	91.03	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	19.500	0.683	456.2	456.2	39.231	3.541	2.58		Unsaturated	69.3			18.43	1.70	31.33	90.94	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	18.410	0.478	476.7	476.7	36.185	2.630	2.52		Unsaturated	64.5			17.40	1.70	29.58	87.68	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	18.230	0.682	496.1	496.1	46.915	3.793	2.54		Unsaturated	66.5			17.23	1.70	29.29	87.75	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	15.100	0.717	516.7	516.7	37.636	4.829	2.69		Unsaturated	77.9			14.27	1.70	24.26	83.24	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	10.330	0.756	536.0	536.0	37.543	7.508	2.83		Unsaturated	89.1			9.76	1.70	16.60	74.66	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	17.000	0.652	555.4	555.4	40.314	3.900	2.60		Unsaturated	70.9			16.07	1.70	27.32	86.06	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	18.450	0.418	576.0	576.0	32.903	2.300	2.51		Unsaturated	64.0			17.44	1.70	29.65	87.66	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	13.690	0.400	595.3	595.3	30.754	2.983	2.61		Unsaturated	71.6			12.94	1.70	22.00	79.31	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	10.890	0.409	615.9	615.9	34.363	3.862	2.65		Unsaturated	74.7			10.29	1.70	17.50	74.00	1.00	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	10.520	0.429	635.3	635.3	32.121	4.201	2.69		Unsaturated	78.4			9.94	1.70	16.90	73.77	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	14.630	0.457	654.6	654.6	30.733	3.195	2.63		Unsaturated	73.2			13.83	1.70	23.51	81.53	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	18.080	0.419	675.2	675.2	29.688	2.362	2.56		Unsaturated	67.4			17.09	1.70	29.05	87.62	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	13.770	0.403	694.5	694.5	27.671	3.005	2.64		Unsaturated	74.6			13.02	1.70	22.13	79.97	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	9.520	0.377	715.1	715.1	25.625	4.118	2.76		Unsaturated	83.8			9.00	1.70	15.30	72.37	0.99	0.586	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.070	7.780	0.380	734.5	734.5	20.185	5.130	2.90		Unsaturated	95.0			7.35	1.70	12.50	69.89	0.99	0.586	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.230	6.840	0.348	753.8	753.8	17.147	5.381	2.97		Unsaturated	100.0			6.47	1.70	10.99	68.34	0.99	0.586	1.085	n.a.	n.a.	n.a.	0.00	0.00
6.400	6.150	0.275	774.4	774.4	14.883	4.777	2.98		Unsaturated	100.0			5.81	1.70	9.88	66.88	0.99	0.586	1.082	n.a.	n.a.	n.a.	0.00	0.00
6.560	6.850	0.208	793.8	793.8	16.260	3.222	2.84		Unsaturated	90.5			6.47	1.70	11.01	67.51	0.99	0.585	1.081	n.a.	n.a.	n.a.	0.00	0.00
6.730	6.800	0.164	814.3	806.2	15.859	2.572	2.79		Unsaturated	86.6			6.43	1.70	10.93	66.99	0.99	0.585	1.079	n.a.	n.a.	n.a.	0.00	0.00
6.890	12.690	0.143	833.7	815.6	18.685	1.168	2.55		Unsaturated	66.8			11.99	1.70	20.38	76.33	0.99	0.585	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.050	16.840	0.135	853.1	825.0	24.846	0.820	2.36		Unsaturated	52.1			15.92	1.67	26.60	80.42	0.99	0.585	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.220	21.540	0.151	873.6	834.9	31.754	0.716	2.24		Unsaturated	42.4			20.36	1.64	33.45	84.82	0.99	0.584	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.380	19.370	0.176	893.0	844.3	28.315	0.932	2.34		Unsaturated	50.4			18.31	1.64	29.95	84.04	0.99	0.584	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.550	12.950	0.158	913.6	854.3	18.584	1.264	2.57		Unsaturated	68.4			12.24	1.66	20.26	76.48	0.99	0.584	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.710	8.810	0.101	932.9	863.6	14.767	1.209	2.64		Unsaturated	74.5			8.33	1.67	13.95	69.36	0.99	0.584	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.870	6.380	0.187	952.3	873.0	13.525	3.159	2.90		Unsaturated	95.2			6.03	1.68	10.10	66.77	0.99	0.583	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.040	4.580	0.246	972.8	883.0	9.272	6.005	3.20		Unsaturated	100.0			4.33	1.68	7.27	63.46	0.99	0.583	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.200	4.350	0.288	992.2	892.4	8.638	7.476	3.29		Unsaturated	100.0			4.11	1.67	6.87	62.94	0.99	0.583	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.370	3.840	0.284	1012.8	902.3	7.389	8.522	3.38		Unsaturated	100.0			3.63	1.67	6.04	61.85	0.99	0.583	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.530	4.110	0.287	1032.1	911.7	7.884	7.972	3.34		Unsaturated	100.0			3.88	1.65	6.42	62.35	0.99	0.582	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.690	4.410	0.290	1051.5	921.1	8.434	7.461	3.29		Unsaturated	100.0			4.17	1.64	6.84	62.89	0.99	0.582	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.860	4.530	0.280	1072.1	931.0	8.580	6.998	3.27		Unsaturated	100.0			4.28	1.63	6.97	63.07	0.99	0.582	1.065	n.a.	n.a.	n.a.	0.00	0.00
9.020	3.910	0.273	1091.4	940.4	7.155	8.127	3.37		Unsaturated	100.0			3.70	1.62	6.00	61.80	0.99	0.582	1.064	n.a.	n.a.	n.a.	0.00	0.00
9.190	3.070	0.282	1112.0	950.4	5.291	11.197	3.56		Unsaturated	100.0			2.90	1.62	4.70	60.10	0.98	0.581	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.350	2.800	0.254	1131.4	959.8	4.656	11.346	3.61		Unsaturated	100.0			2.65	1.61	4.27	59.53	0.98	0.581	1.061	n.a.	n.a.	n.a.	0.00	0.00
9.510	3.110	0.239	1150.7	969.1	5.231	9.441	3.52		Unsaturated	100.0			2.94	1.60	4.71	60.11	0.98	0.581	1.060	n.a.	n.a.	n.a.	0.00	0.00
9.680	4.790	0.238	1171.3	979.1	8.588	5.651	3.21		Unsaturated	100.0			4.53	1.58	7.15	63.31	0.98	0.580	1.061	n.a.	n.a.	n.a.	0.00	0.00
9.840	5.600	0.258	1190.6	988.5	10.126	5.155	3.13		Unsaturated	100.0			5.29	1.57	8.29	64.79	0.98	0.580	1.061	n.a.	n.a.	n.a.	0.00	0.00
10.010	5.910	0.332	1211.2	998.4	10.626	6.255	3.17		Clay	100.0			5.59	1.22	n.a.	n.a.	0.98	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	7.760	0.459	1230.6	1007.8	14.179	6.430	3.08		Clay	100.0			7.33	1.22	n.a.	n.a.	0.98	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	8.930	0.601	1249.9	1017.2	16.330	7.233	3.07		Clay	100.0			8.44	1.21	n.a.	n.a.	0.98	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	10.140	0.679	1270.5	1027.1	18.507	7.141	3.03		Clay	100.0			9.58	1.21	n.a.	n.a.	0.98	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	10.370	0.708	1289.9	1036.5	18.765	7.279	3.03		Clay	100.0			9.80	1.21	n.a.	n.a.	0.98	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	10.080	0.673	1310.4	1046.5	18.012	7.141	3.03		Clay	100.0			9.53	1.20	n.a.	n.a.	0.98	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	9.600	0.610	1329.8	1055.9	16.925	6.831	3.04		Clay	100.0			9.07	1.20	n.a.	n.a.	0.98	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	8.540	0.513	1349.2	1065.2	14.768	6.516	3.07		Clay	100.0			8.07	1.20	n.a.	n.a.	0.98	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No.	3

PGA (A_{max})	0.91

Total Settlement:	0.25	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'_{vc}=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.320	6.700	0.402	1369.7	1075.2	11.189	6.678	3.17		Clay	100.0			6.33	1.20	n.a.	n.a.	0.98	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	5.560	0.342	1389.1	1084.6	8.972	7.021	3.26		Clay	100.0			5.26	1.19	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	6.680	0.352	1409.7	1094.5	10.918	5.893	3.14		Clay	100.0			6.31	1.19	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	8.370	0.430	1429.0	1103.9	13.870	5.612	3.05		Clay	100.0			7.91	1.19	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	9.520	0.487	1449.6	1113.9	15.792	5.531	3.00		Clay	100.0			9.00	1.18	n.a.	n.a.	0.98	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.960	0.472	1468.9	1123.2	16.427	5.116	2.97		Clay	100.0			9.41	1.18	n.a.	n.a.	0.98	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.370	0.561	1488.3	1132.6	15.232	6.503	3.06		Clay	100.0			8.86	1.18	n.a.	n.a.	0.98	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	8.570	0.515	1508.9	1142.6	13.681	6.586	3.10		Clay	100.0			8.10	1.18	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	7.820	0.446	1528.2	1152.0	12.250	6.321	3.12		Clay	100.0			7.39	1.17	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	7.750	0.387	1548.8	1161.9	12.007	5.549	3.09		Clay	100.0			7.33	1.17	n.a.	n.a.	0.97	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	6.690	0.327	1568.2	1171.3	10.084	5.542	3.15		Clay	100.0			6.32	1.17	n.a.	n.a.	0.97	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	6.310	0.352	1587.5	1180.7	9.344	6.381	3.22		Clay	100.0			5.96	1.17	n.a.	n.a.	0.97	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	7.100	0.325	1608.1	1190.6	10.576	5.167	3.12		Clay	100.0			6.71	1.16	n.a.	n.a.	0.97	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	6.860	0.315	1627.5	1200.0	10.077	5.208	3.14		Clay	100.0			6.48	1.16	n.a.	n.a.	0.97	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	6.770	0.269	1648.0	1210.0	9.828	4.517	3.11		Clay	100.0			6.40	1.16	n.a.	n.a.	0.97	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.910	0.267	1667.4	1219.3	9.966	4.386	3.09		Clay	100.0			6.53	1.16	n.a.	n.a.	0.97	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	6.300	0.247	1686.7	1228.7	8.882	4.519	3.14		Clay	100.0			5.95	1.15	n.a.	n.a.	0.97	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	5.350	0.199	1707.3	1238.7	7.260	4.415	3.21		Clay	100.0			5.06	1.15	n.a.	n.a.	0.97	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	5.140	0.193	1726.7	1248.1	6.853	4.518	3.23		Clay	100.0			4.86	1.15	n.a.	n.a.	0.97	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	5.500	0.259	1747.2	1258.0	7.355	5.603	3.26		Clay	100.0			5.20	1.15	n.a.	n.a.	0.97	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	6.120	0.379	1766.6	1267.4	8.264	7.237	3.29		Clay	100.0			5.78	1.14	n.a.	n.a.	0.97	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	6.180	0.399	1786.0	1276.8	8.282	7.552	3.30		Clay	100.0			5.84	1.14	n.a.	n.a.	0.97	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	6.180	0.394	1806.5	1286.7	8.202	7.471	3.30		Clay	100.0			5.84	1.14	n.a.	n.a.	0.97	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	6.290	0.385	1825.9	1296.1	8.297	7.160	3.29		Clay	100.0			5.95	1.14	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	5.910	0.363	1846.5	1306.1	7.636	7.269	3.32		Clay	100.0			5.59	1.14	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	5.510	0.337	1865.8	1315.5	6.959	7.363	3.36		Clay	100.0			5.21	1.13	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	5.990	0.372	1885.2	1324.8	7.620	7.374	3.33		Clay	100.0			5.66	1.13	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	6.700	0.399	1905.8	1334.8	8.611	6.943	3.27		Clay	100.0			6.33	1.13	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	7.140	0.430	1925.1	1344.2	9.191	6.967	3.25		Clay	100.0			6.75	1.13	n.a.	n.a.	0.96	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	7.040	0.446	1945.7	1354.1	8.961	7.353	3.27		Clay	100.0			6.65	1.12	n.a.	n.a.	0.96	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	7.300	0.459	1965.0	1363.5	9.267	7.262	3.26		Clay	100.0			6.90	1.12	n.a.	n.a.	0.96	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	8.050	0.483	1984.4	1372.9	10.282	6.841	3.20		Clay	100.0			7.61	1.12	n.a.	n.a.	0.96	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	8.100	0.489	2005.0	1382.8	10.265	6.886	3.21		Clay	100.0			7.66	1.12	n.a.	n.a.	0.96	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	8.390	0.513	2024.3	1392.2	10.599	6.951	3.20		Clay	100.0			7.93	1.12	n.a.	n.a.	0.96	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	8.730	0.509	2044.9	1402.2	10.994	6.603	3.17		Clay	100.0			8.25	1.11	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	9.300	0.519	2064.3	1411.6	11.715	6.281	3.14		Clay	100.0			8.79	1.11	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	9.510	0.469	2083.6	1420.9	11.919	5.537	3.10		Clay	100.0			8.99	1.11	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	9.420	0.423	2104.2	1430.9	11.696	5.050	3.08		Clay	100.0			8.90	1.11	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	9.050	0.408	2123.6	1440.3	11.093	5.101	3.10		Clay	100.0			8.55	1.11	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	8.800	0.416	2144.1	1450.2	10.658	5.379	3.13		Clay	100.0			8.32	1.10	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	8.850	0.481	2163.5	1459.6	10.644	6.196	3.16		Clay	100.0			8.36	1.10	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	9.470	0.559	2182.8	1469.0	11.407	6.667	3.16		Clay	100.0			8.95	1.10	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	10.420	0.647	2203.4	1478.9	12.601	6.948	3.14		Clay	100.0			9.85	1.10	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	11.400	0.687	2222.8	1488.3	13.826	6.677	3.10		Clay	100.0			10.78	1.10	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	11.440	0.734	2243.3	1498.3	13.774	7.117	3.12		Clay	100.0			10.81	1.10	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	11.470	0.745	2262.7	1507.7	13.715	7.206	3.12		Clay	100.0			10.84	1.09	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	11.110	0.660	2282.1	1517.0	13.143	6.616	3.11		Clay	100.0			10.50	1.09	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	10.500	0.570	2302.6	1527.0	12.245	6.094	3.11		Clay	100.0			9.92	1.09	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	9.610	0.489	2322.0	1536.4	10.999	5.792	3.14		Clay	100.0			9.08	1.09	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	9.700	0.470	2342.6	1546.3	11.031	5.505	3.12		Clay	100.0			9.17	1.09	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	10.100	0.479	2361.9	1555.7	11.466	5.365	3.10		Clay	100.0			9.55	1.08	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	9.480	0.549	2382.5	1565.7	10.588	6.628	3.19		Clay	100.0			8.96	1.08	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	9.470	0.546	2401.9	1575.1	10.500	6.605	3.19		Clay	100.0			8.95	1.08	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	10.520	0.523	2421.2	1584.4	11.751	5.613	3.10		Clay	100.0			9.94	1.08	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	9.370	0.475	2441.8	1594.4	10.222	5.833	3.16		Clay	100.0			8.86	1.08	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	8.890	0.446	2461.1	1603.8	9.552	5.828	3.18		Clay	100.0			8.40	1.08	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	9.240	0.487	2481.7	1613.7	9.914	6.086	3.18		Clay	100.0			8.73	1.07	n.a.	n.a.	0.95	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	10.850	0.558	2501.1	1623.1	11.829	5.808	3.11		Clay	100.0			10.26	1.07	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	11.770	0.609	2520.4	1632.5	12.876	5.794	3.08		Clay	100.0			11.12	1.07	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	11.970	0.628	2541.0	1642.4	13.029	5.867	3.08		Clay	100.0			11.31	1.07	n.a.	n.a.	0.95	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	11.180	0.602	2560.4	1651.8	11.987	6.078	3.12		Clay	100.0			10.57	1.07	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	11.490	0.636	2580.9	1661.8	12.275	6.233	3.12		Clay	100.0			10.86	1.07	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	12.360	0.676	2600.3	1671.2	13.236	6.113	3.09		Clay	100.0			11.68	1.06	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	12.380	0.692	2619.7	1680.5	13.175	6.247	3.10		Clay	100.0			11.70	1.06	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	11.040	0.678	2640.2	1690.5	11.499	6.976	3.17		Clay	100.0			10.43	1.06	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	10.490	0.636	2659.6	1699.9	10.778	6.946	3.19		Clay	100.0			9.91	1.06	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	11.040	0.665	2680.2	1709.8	11.346	6.851	3.17		Clay	100.0			10.43	1.06	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (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	12.170	0.705	2699.5	1719.2	12.587	6.513	3.12		Clay	100.0			11.50	1.06	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	13.670	0.748	2718.9	1728.6	14.244	6.079	3.06		Clay	100.0			12.92	1.05	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	14.550	0.819	2739.4	1738.5	15.162	6.212	3.05		Clay	100.0			13.75	1.05	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	15.220	0.773	2758.8	1747.9	15.837	5.585	3.00		Clay	100.0			14.39	1.05	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	15.670	0.764	2779.4	1757.9	16.247	5.349	2.98		Clay	100.0			14.81	1.05	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	15.580	0.749	2798.7	1767.3	16.048	5.282	2.98		Clay	100.0			14.73	1.05	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	15.090	0.768	2818.1	1776.6	15.401	5.611	3.01		Clay	100.0			14.26	1.05	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	14.790	0.831	2838.7	1786.6	14.968	6.217	3.05		Clay	100.0			13.98	1.05	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	15.480	0.895	2858.0	1796.0	15.647	6.373	3.05		Clay	100.0			14.63	1.04	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	16.190	0.935	2878.6	1805.9	16.336	6.339	3.03		Clay	100.0			15.30	1.04	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	16.840	0.935	2898.0	1815.3	16.957	6.072	3.01		Clay	100.0			15.92	1.04	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	16.560	0.936	2917.3	1824.7	16.552	6.199	3.02		Clay	100.0			15.65	1.04	n.a.	n.a.	0.94	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	16.650	0.941	2937.9	1834.6	16.549	6.200	3.02		Clay	100.0			15.74	1.04	n.a.	n.a.	0.94	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	16.900	0.951	2957.2	1844.0	16.726	6.165	3.01		Clay	100.0			15.97	1.04	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	17.560	0.896	2977.8	1854.0	17.337	5.574	2.97		Clay	100.0			16.60	1.04	n.a.	n.a.	0.93	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	17.880	0.890	2997.2	1863.4	17.583	5.431	2.96		Clay	99.9			16.90	1.03	n.a.	n.a.	0.93	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	18.130	0.974	3016.5	1872.7	17.751	5.857	2.98		Clay	100.0			17.14	1.03	n.a.	n.a.	0.93	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	18.380	1.047	3037.1	1882.7	17.912	6.211	2.99		Clay	100.0			17.37	1.03	n.a.	n.a.	0.93	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	19.250	1.128	3056.5	1892.1	18.733	6.364	2.99		Clay	100.0			18.19	1.03	n.a.	n.a.	0.93	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	20.840	1.112	3077.0	1902.0	20.296	5.760	2.93		Clay	97.6			19.70	1.03	n.a.	n.a.	0.93	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	19.920	1.124	3096.4	1911.4	19.223	6.117	2.97		Clay	100.0			18.83	1.03	n.a.	n.a.	0.93	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	19.800	1.111	3115.8	1920.8	18.994	6.088	2.97		Clay	100.0			18.71	1.03	n.a.	n.a.	0.93	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	20.420	1.149	3136.3	1930.8	19.528	6.096	2.96		Clay	99.9			19.30	1.02	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	20.370	1.148	3155.7	1940.1	19.372	6.108	2.96		Clay	100.0			19.25	1.02	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	20.560	1.105	3176.3	1950.1	19.457	5.822	2.95		Clay	98.9			19.43	1.02	n.a.	n.a.	0.93	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	21.310	1.114	3195.6	1959.5	20.120	5.650	2.93		Clay	97.4			20.14	1.02	n.a.	n.a.	0.93	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	21.530	1.100	3215.0	1968.8	20.238	5.519	2.92		Clay	96.7			20.35	1.02	n.a.	n.a.	0.93	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	20.790	1.081	3235.5	1978.8	19.378	5.636	2.94		Clay	98.3			19.65	1.02	n.a.	n.a.	0.93	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	19.580	0.994	3254.9	1988.2	18.059	5.536	2.96		Clay	99.7			18.51	1.02	n.a.	n.a.	0.93	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	17.100	0.902	3275.5	1998.1	15.477	5.836	3.02		Clay	100.0			16.16	1.02	n.a.	n.a.	0.92	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	13.740	0.836	3294.8	2007.5	12.047	6.917	3.15		Clay	100.0			12.99	1.01	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	12.710	0.772	3315.4	2017.5	10.957	6.985	3.19		Clay	100.0			12.01	1.01	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	13.610	0.765	3334.8	2026.9	11.784	6.409	3.14		Clay	100.0			12.86	1.01	n.a.	n.a.	0.92	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	14.690	0.794	3354.1	2036.2	12.781	6.103	3.10		Clay	100.0			13.88	1.01	n.a.	n.a.	0.92	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	14.150	0.837	3374.7	2046.2	12.181	6.714	3.14		Clay	100.0			13.37	1.01	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	14.300	0.919	3394.1	2055.6	12.262	7.294	3.16		Clay	100.0			13.52	1.01	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	18.740	1.042	3414.6	2065.5	16.492	6.116	3.02		Clay	100.0			17.71	1.01	n.a.	n.a.	0.92	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	24.860	1.199	3434.0	2074.9	22.308	5.181	2.87		Clay	92.7			23.50	1.01	n.a.	n.a.	0.92	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	26.390	1.363	3453.3	2084.3	23.666	5.526	2.87		Clay	92.7			24.94	1.00	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	26.640	1.463	3473.9	2094.2	23.782	5.875	2.89		Clay	94.0			25.18	1.00	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	26.500	1.476	3493.3	2103.6	23.534	5.962	2.90		Clay	94.6			25.05	1.00	n.a.	n.a.	0.92	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	26.200	1.419	3513.8	2113.6	23.130	5.805	2.89		Clay	94.4			24.76	1.00	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	26.710	1.498	3533.2	2123.0	23.499	6.007	2.90		Clay	94.9			25.25	1.00	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	25.850	1.542	3552.6	2132.3	22.580	6.404	2.93		Clay	97.4			24.43	1.00	n.a.	n.a.	0.92	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	25.530	1.488	3573.1	2142.3	22.166	6.268	2.93		Clay	97.4			24.13	1.00	n.a.	n.a.	0.91	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	24.970	1.345	3592.5	2151.7	21.540	5.805	2.92		Clay	96.3			23.60	1.00	n.a.	n.a.	0.91	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	24.520	1.246	3613.1	2161.6	21.015	5.484	2.91		Clay	95.5			23.18	0.99	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	24.510	1.235	3632.4	2171.0	20.906	5.442	2.91		Clay	95.5			23.17	0.99	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	25.600	1.176	3651.8	2180.4	21.807	4.947	2.86		Clay	92.2			24.20	0.99	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	24.850	1.117	3672.4	2190.4	21.014	4.855	2.87		Clay	92.7			23.49	0.99	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	22.250	1.017	3691.7	2199.7	18.552	4.985	2.92		Clay	96.6			21.03	0.99	n.a.	n.a.	0.91	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	20.970	0.913	3712.3	2209.7	17.300	4.774	2.93		Clay	97.4			19.82	0.99	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	19.460	0.865	3731.6	2219.1	15.857	4.914	2.97		Clay	100.0			18.39	0.99	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	17.470	0.809	3751.0	2228.4	13.996	5.189	3.02		Clay	100.0			16.51	0.99	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	15.910	0.780	3771.6	2238.4	12.531	5.560	3.08		Clay	100.0			15.04	0.99	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	14.270	0.731	3790.9	2247.8	11.010	5.911	3.14		Clay	100.0			13.49	0.98	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	13.320	0.671	3811.5	2257.7	10.111	5.877	3.17		Clay	100.0			12.59	0.98	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	12.390	0.637	3830.9	2267.1	9.240	6.078	3.21		Clay	100.0			11.71	0.98	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	12.510	0.527	3850.2	2276.5	9.299	4.978	3.15		Clay	100.0			11.82	0.98	n.a.	n.a.	0.91	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	12.120	0.463	3870.8	2286.5	8.909	4.545	3.14		Clay	100.0			11.46	0.98	n.a.	n.a.	0.90	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	11.700	0.640	3890.2	2295.8	8.498	6.562	3.26		Clay	100.0			11.06	0.98	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	15.490	0.908	3910.7	2305.8	11.740	6.710	3.15		Clay	100.0			14.64	0.98	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	21.880	1.167	3930.1	2315.2	17.204	5.858	2.99		Clay	100.0			20.68	0.98	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	22.390	1.210	3949.4	2324.5	17.565	5.925	2.99		Clay	100.0			21.16	0.98	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	22.440	1.193	3970.0	2334.5	17.524	5.832	2.98		Clay	100.0			21.21	0.97	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	22.530	0.827	3989.4	2343.9	17.522	4.027	2.88		Clay	93.3			21.29	0.97	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	23.340	0.510	4009.9	2353.8	18.128	2.389	2.73		Clay	81.3			22.06	0.97	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'_{vc}=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.300	23.610	1.277	4029.3	2363.2	18.276	5.915	2.97		Clay	100.0			22.32	0.97	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	20.870	1.277	4048.7	2372.6	15.886	6.775	3.06		Clay	100.0			19.73	0.97	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	15.880	1.234	4069.2	2382.6	11.622	8.913	3.24		Clay	100.0			15.01	0.97	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	23.650	1.163	4088.6	2391.9	18.065	5.381	2.95		Clay	99.0			22.35	0.97	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	23.610	1.142	4109.2	2401.9	17.949	5.298	2.95		Clay	98.8			22.32	0.97	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	23.610	1.086	4128.5	2411.3	17.871	5.041	2.94		Clay	97.8			22.32	0.97	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	24.200	1.158	4147.9	2420.6	18.281	5.235	2.94		Clay	98.1			22.87	0.97	n.a.	n.a.	0.90	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	22.980	1.146	4168.5	2430.6	17.194	5.484	2.97		Clay	100.0			21.72	0.96	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	22.100	0.942	4187.8	2440.0	16.399	4.706	2.94		Clay	98.5			20.89	0.96	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	19.660	0.782	4208.4	2449.9	14.332	4.455	2.97		Clay	100.0			18.58	0.96	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	16.860	0.654	4227.7	2459.3	11.992	4.433	3.03		Clay	100.0			15.94	0.96	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	16.010	0.580	4247.1	2468.7	11.250	4.180	3.04		Clay	100.0			15.13	0.96	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	15.200	0.542	4267.7	2478.7	10.543	4.150	3.06		Clay	100.0			14.37	0.96	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	18.590	0.454	4287.0	2488.0	13.220	2.763	2.88		Clay	93.2			17.57	0.96	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	16.460	0.495	4307.6	2498.0	11.454	3.463	2.98		Clay	100.0			15.56	0.96	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	13.690	0.532	4327.0	2507.4	9.194	4.615	3.14		Clay	100.0			12.94	0.96	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.940	0.542	4347.5	2517.3	8.554	5.033	3.18		Clay	100.0			12.23	0.96	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	13.930	0.614	4366.9	2526.7	9.298	5.226	3.16		Clay	100.0			13.17	0.95	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	14.370	0.599	4386.3	2536.1	9.603	4.919	3.14		Clay	100.0			13.58	0.95	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	12.560	0.563	4406.8	2546.1	8.135	5.434	3.22		Clay	100.0			11.87	0.95	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	11.350	0.464	4426.2	2555.4	7.151	5.075	3.25		Clay	100.0			10.73	0.95	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	11.070	0.416	4446.8	2565.4	6.897	4.703	3.24		Clay	100.0			10.46	0.95	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	10.940	0.412	4466.1	2574.8	6.763	4.730	3.25		Clay	100.0			10.34	0.95	n.a.	n.a.	0.88	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	10.700	0.397	4485.5	2584.1	6.546	4.695	3.26		Clay	100.0			10.11	0.95	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	10.900	0.392	4506.0	2594.1	6.667	4.538	3.24		Clay	100.0			10.30	0.95	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	10.620	0.381	4525.4	2603.5	6.420	4.561	3.26		Clay	100.0			10.04	0.95	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	11.320	0.395	4546.0	2613.4	6.923	4.368	3.22		Clay	100.0			10.70	0.95	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	12.950	0.464	4565.3	2622.8	8.134	4.353	3.16		Clay	100.0			12.24	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	15.430	0.584	4584.7	2632.2	9.982	4.448	3.10		Clay	100.0			14.58	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	17.910	0.674	4605.3	2642.2	11.814	4.317	3.03		Clay	100.0			16.93	0.94	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	19.970	0.727	4624.6	2651.5	13.319	4.116	2.98		Clay	100.0			18.88	0.94	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	21.750	0.728	4645.2	2661.5	14.599	3.749	2.92		Clay	96.7			20.56	0.94	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	20.000	0.792	4664.6	2670.9	13.230	4.481	3.00		Clay	100.0			18.90	0.94	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	18.500	0.824	4683.9	2680.2	12.057	5.098	3.07		Clay	100.0			17.49	0.94	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	17.320	0.767	4704.5	2690.2	11.128	5.127	3.10		Clay	100.0			16.37	0.94	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	16.270	0.725	4723.8	2699.6	10.304	5.211	3.13		Clay	100.0			15.38	0.94	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	14.970	0.616	4744.4	2709.5	9.299	4.890	3.15		Clay	100.0			14.15	0.94	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	15.190	0.544	4763.8	2718.9	9.421	4.248	3.11		Clay	100.0			14.36	0.94	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	16.050	0.551	4783.1	2728.3	10.012	4.030	3.07		Clay	100.0			15.17	0.94	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	17.560	0.582	4803.7	2738.3	11.071	3.840	3.02		Clay	100.0			16.60	0.93	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	18.600	0.683	4823.1	2747.6	11.784	4.222	3.03		Clay	100.0			17.58	0.93	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	21.160	0.801	4843.6	2757.6	13.590	4.276	2.98		Clay	100.0			20.00	0.93	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	25.920	1.002	4863.0	2767.0	16.978	4.265	2.91		Clay	95.4			24.50	0.93	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	29.420	1.110	4882.4	2776.4	19.435	4.114	2.85		Clay	91.0			27.81	0.93	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	32.960	1.098	4902.9	2786.3	21.899	3.599	2.77		Clay	84.8			31.15	0.93	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	33.580	1.136	4922.3	2795.7	22.262	3.652	2.77		Clay	84.7			31.74	0.93	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	33.440	1.055	4942.9	2805.7	22.076	3.406	2.76		Clay	83.4			31.61	0.93	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	33.670	0.932	4962.2	2815.0	22.159	2.987	2.72		Clay	80.4			31.82	0.93	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	31.510	0.850	4981.6	2824.4	20.549	2.928	2.74		Clay	82.1			29.78	0.93	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	29.100	0.871	5002.1	2834.4	18.769	3.276	2.80		Clay	86.9			27.50	0.93	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	28.990	0.958	5021.5	2843.7	18.623	3.618	2.83		Clay	89.3			27.40	0.92	n.a.	n.a.	0.86	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	29.710	1.006	5042.1	2853.7	19.055	3.701	2.83		Clay	89.2			28.08	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	30.310	0.995	5061.4	2863.1	19.405	3.582	2.81		Clay	88.0			28.65	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	29.870	0.974	5080.8	2872.5	19.029	3.564	2.82		Clay	88.4			28.23	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	30.050	0.974	5101.4	2882.4	19.081	3.540	2.81		Clay	88.2			28.40	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	31.600	0.897	5120.7	2891.8	20.084	3.088	2.76		Clay	83.8			29.87	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	32.290	0.933	5141.3	2901.8	20.484	3.138	2.76		Clay	83.6			30.52	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	31.580	0.826	5160.7	2911.1	19.923	2.847	2.74		Clay	82.3			29.85	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	28.780	0.750	5180.0	2920.5	17.935	2.862	2.78		Clay	85.3			27.20	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	28.320	0.713	5200.6	2930.5	17.553	2.770	2.78		Clay	85.2			26.77	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	27.550	0.814	5219.9	2939.8	16.967	3.263	2.83		Clay	89.6			26.04	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	27.860	0.751	5240.5	2949.8	17.113	2.973	2.81		Clay	87.4			26.33	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	27.130	0.751	5259.9	2959.2	16.559	3.067	2.82		Clay	89.0			25.64	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	24.260	0.613	5280.4	2969.1	14.563	2.836	2.85		Clay	91.0			22.93	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	21.860	0.463	5299.8	2978.5	12.899	2.410	2.85		Clay	91.2			20.66	0.91	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	18.570	0.371	5319.2	2987.9	10.650	2.330	2.91		Clay	96.0			17.55	0.91	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	16.560	0.343	5339.7	2997.9	9.267	2.469	2.98		Clay	100.0			15.65	0.91	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.91

Total Settlement:	0.25	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	17.670	0.312	5359.1	3007.2	9.970	2.084	2.91		Clay	95.9			16.70	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	21.120	0.402	5379.7	3017.2	12.217	2.181	2.85		Clay	90.8			19.96	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	20.870	0.771	5399.0	3026.6	12.007	4.245	3.02		Clay	100.0			19.73	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	19.110	0.834	5418.4	3035.9	10.804	5.083	3.11		Clay	100.0			18.06	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	19.190	0.820	5439.0	3045.9	10.815	4.980	3.10		Clay	100.0			18.14	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	21.640	0.809	5458.3	3055.3	12.379	4.278	3.01		Clay	100.0			20.45	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	24.080	0.942	5478.9	3065.2	13.924	4.414	2.98		Clay	100.0			22.76	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	28.980	1.618	5498.2	3074.6	17.063	6.169	3.01		Clay	100.0			27.39	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	40.310	2.152	5517.6	3084.0	24.352	5.731	2.87		Clay	92.8			38.10	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	58.170	2.568	5538.2	3094.0	35.812	4.636	2.69		Clay	78.1			54.98	0.90	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	72.150	2.831	5557.5	3103.3	54.142	4.081	2.52	plastic	Clay	64.9			68.19	0.90	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	63.260	3.202	5578.1	3113.3	38.847	5.295	2.70		Clay	79.4			59.79	0.90	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	71.710	3.109	5597.5	3122.7	44.136	4.512	2.62		Clay	72.3			67.78	0.90	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	91.240	3.121	5616.8	3132.1	68.701	3.529	2.41		Sand	55.5	90.48		90.48	0.85	77.03	145.78	0.84	0.836	0.940	0.263	0.401	0.48	0.02	0.04
46.590	95.730	3.189	5637.4	3142.0	72.067	3.432	2.38		Sand	53.7			90.48	0.85	76.89	144.87	0.84	0.836	0.940	0.258	0.391	0.47	0.02	0.04
46.750	87.550	2.534	5656.8	3151.4	65.617	2.990	2.37		Sand	52.4	90.48		90.48	0.85	76.76	144.19	0.84	0.835	0.939	0.254	0.383	0.46	0.02	0.04
46.920	70.570	2.443	5677.3	3161.4	52.375	3.607	2.49		Sand	62.6	90.48		90.48	0.85	76.85	147.91	0.84	0.835	0.937	0.275	0.424	0.51	0.02	0.04
47.080	72.140	2.485	5696.7	3170.7	53.502	3.587	2.49		Sand	61.9	90.48		90.48	0.85	76.74	147.57	0.84	0.835	0.937	0.273	0.420	0.50	0.02	0.04
47.240	77.850	2.648	5716.0	3180.1	57.818	3.530	2.46		Sand	59.6	90.48		90.48	0.85	76.60	146.68	0.84	0.835	0.937	0.268	0.410	0.49	0.02	0.04
47.410	68.700	2.979	5736.6	3190.1	41.273	4.526	2.64		Clay	74.0			64.93	0.90	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	64.800	2.950	5756.0	3199.4	38.708	4.765	2.67		Clay	76.8			61.25	0.90	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	58.340	2.676	5776.5	3209.4	34.556	4.825	2.71		Clay	79.9			55.14	0.90	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	68.670	2.545	5795.9	3218.8	50.404	3.869	2.53		Sand	65.3	82.76	1.72	142.35	0.88	124.66	210.18	0.84	0.834	0.875	3.526	6.790	8.14	0.00	0.00
48.060	87.560	2.485	5815.3	3228.2	64.779	2.936	2.37		Sand	52.3		1.72	142.35	0.87	124.15	204.26	0.84	0.834	0.883	2.423	4.709	5.65	0.00	0.00
48.230	74.440	2.460	5835.8	3238.1	54.647	3.439	2.47		Sand	60.4	82.76	1.72	142.35	0.87	124.28	207.98	0.84	0.834	0.877	3.054	5.892	7.07	0.00	0.00
48.390	59.410	1.239	5855.2	3247.5	43.093	2.194	2.41		Sand	55.8	82.76	1.72	142.35	0.87	124.01	205.75	0.83	0.834	0.879	2.653	5.134	6.16	0.00	0.00
48.560	41.070	0.654	5875.8	3257.5	29.049	1.716	2.48		Sand	61.3	82.76	1.72	142.35	0.87	124.05	208.02	0.83	0.833	0.875	3.062	5.896	7.08	0.00	0.00
48.720	24.800	0.436	5895.1	3266.8	13.378	1.996	2.79		Clay	86.5			23.44	0.89	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	15.820	0.369	5914.5	3276.2	7.852	2.872	3.07		Clay	100.0			14.95	0.89	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	15.620	0.353	5935.1	3286.2	7.700	2.790	3.07		Clay	100.0			14.76	0.89	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	15.740	0.431	5954.4	3295.5	7.745	3.375	3.12		Clay	100.0			14.88	0.89	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	17.570	0.520	5975.0	3305.5	8.823	3.563	3.08		Clay	100.0			16.61	0.89	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	19.720	0.561	5994.3	3314.9	10.090	3.352	3.02		Clay	100.0			18.64	0.89	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	19.610	0.563	6013.7	3324.3	9.989	3.391	3.03		Clay	100.0			18.53	0.89	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	20.390	0.689	6034.3	3334.2	10.421	3.965	3.05		Clay	100.0			19.27	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	24.860	0.860	6053.6	3343.6	13.060	3.939	2.97		Clay	100.0			23.50	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	30.680	0.988	6074.2	3353.6	16.486	3.575	2.87		Clay	92.4			29.00	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	28.670	1.262	6093.6	3362.9	15.239	4.925	2.98		Clay	100.0			27.10	0.88	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	24.700	1.201	6112.9	3372.3	12.836	5.549	3.07		Clay	100.0			23.35	0.88	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	22.160	0.980	6133.5	3382.3	11.290	5.133	3.09		Clay	100.0			20.95	0.88	n.a.	n.a.	0.82	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	20.020	0.765	6152.9	3391.7	9.991	4.517	3.10		Clay	100.0			18.92	0.88	n.a.	n.a.	0.82	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	18.460	0.602	6173.4	3401.6	9.039	3.916	3.10		Clay	100.0			17.45	0.88	n.a.	n.a.	0.82	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.180	17.750	0.463	6192.8	3411.0	8.592	3.159	3.06		Clay	100.0			16.78	0.88	n.a.	n.a.	0.82	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.350	17.040	0.424	6213.4	3421.0	8.146	3.042	3.07		Clay	100.0			16.11	0.88	n.a.	n.a.	0.82	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.510	15.670	0.371	6232.7	3430.3	7.319	2.956	3.11		Clay	100.0			14.81	0.88	n.a.	n.a.	0.82	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.670	16.590	0.548	6252.1	3439.7	7.829	4.068	3.16		Clay	100.0			15.68	0.88	n.a.	n.a.	0.82	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.840	18.640	0.817	6272.6	3449.7	8.989	5.268	3.18		Clay	100.0			17.62	0.88	n.a.	n.a.	0.82	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.000	22.700	1.282	6292.0	3459.0	11.306	6.558	3.16		Clay	100.0			21.46	0.88	n.a.	n.a.	0.82	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.170	31.480	1.497	6312.6	3469.0	16.330	5.284	2.98		Clay	100.0			29.75	0.88	n.a.	n.a.	0.82	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.330	44.940	1.050	6331.9	3478.4	24.019	2.513	2.64		Clay	74.5			42.48	0.88	n.a.	n.a.	0.82	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.490	36.350	0.564	6351.3	3487.8	19.023	1.701	2.63		Clay	73.2			34.36	0.88	n.a.	n.a.	0.82	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.660	22.370	0.477	6371.9	3497.7	10.969	2.487	2.92		Clay	96.4			21.14	0.88	n.a.	n.a.	0.82	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.820	15.880	0.392	6391.2	3507.1	7.234	3.090	3.12		Clay	100.0			15.01	0.88	n.a.	n.a.	0.82	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.990	15.180	0.334	6411.8	3517.1	6.809	2.789	3.12		Clay	100.0			14.35	0.87	n.a.	n.a.	0.81	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.150	15.030	0.314	6431.2	3526.4	6.701	2.654	3.11		Clay	100.0			14.21	0.87	n.a.	n.a.	0.81	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.310	14.410	0.324	6450.5	3535.8	6.327	2.897	3.15		Clay	100.0			13.62	0.87	n.a.	n.a.	0.81	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.480	14.540	0.383	6471.1	3545.8	6.376	3.387	3.19		Clay	100.0			13.74	0.87	n.a.	n.a.	0.81	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.640	15.920	0.469	6490.4	3555.1	7.130	3.703	3.17		Clay	100.0			15.05	0.87	n.a.	n.a.	0.81	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.810	20.260	0.406	6511.0	3565.1	9.539	2.386	2.96		Clay	99.7			19.15	0.87	n.a.	n.a.	0.81	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.970	19.910	0.335	6530.4	3574.5	9.313	2.011	2.93		Clay	97.3			18.82	0.87	n.a.	n.a.	0.81	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.130	15.170	0.328	6549.7	3583.9	6.638	2.757	3.13		Clay	100.0			14.34	0.87	n.a.	n.a.	0.81	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.300	14.030	0.302	6570.3	3593.8	5.980	2.806	3.17		Clay	100.0			13.26	0.87	n.a.	n.a.	0.81	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.460	14.730	0.320	6589.7	3603.2	6.347	2.794	3.15		Clay	100.0			13.92	0.87	n.a.	n.a.	0.81	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.630	14.930	0.319	6610.2	3613.2	6.435	2.742	3.14		Clay	100.0			14.11	0.87	n.a.	n.a.	0.81	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.790	14.140	0.362	6629.6	3622.5	5.977	3.339	3.21		Clay	100.0			13.36	0.87	n.a.	n.a.	0.81	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.950	14.390	0.405	6649.0	3631.9	6.094	3.656	3.22		Clay	100.0			13.60	0.87	n.a.	n.a.	0.81	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.120	15.970	0.431	6669.5	3641.9	6.939	3.409	3.16		Clay	100.0			15.09	0.87	n.a.	n.a.	0.81	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (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)
55.280	16.660	0.459	6688.9	3651.2	7.294	3.444	3.14		Clay	100.0			15.75	0.87	n.a.	n.a.	0.80	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.450	16.880	0.547	6709.5	3661.2	7.388	4.047	3.18		Clay	100.0			15.95	0.87	n.a.	n.a.	0.80	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.610	17.620	0.556	6728.8	3670.6	7.767	3.902	3.15		Clay	100.0			16.65	0.86	n.a.	n.a.	0.80	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.770	18.260	0.549	6748.2	3680.0	8.090	3.687	3.12		Clay	100.0			17.26	0.86	n.a.	n.a.	0.80	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.940	18.210	0.491	6768.7	3689.9	8.036	3.315	3.10		Clay	100.0			17.21	0.86	n.a.	n.a.	0.80	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.100	17.440	0.483	6788.1	3699.3	7.594	3.441	3.13		Clay	100.0			16.48	0.86	n.a.	n.a.	0.80	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.270	17.090	0.476	6808.7	3709.3	7.379	3.477	3.14		Clay	100.0			16.15	0.86	n.a.	n.a.	0.80	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.430	17.530	0.503	6828.0	3718.6	7.592	3.561	3.14		Clay	100.0			16.57	0.86	n.a.	n.a.	0.80	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.590	17.080	0.470	6847.4	3728.0	7.326	3.442	3.14		Clay	100.0			16.14	0.86	n.a.	n.a.	0.80	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.760	17.060	0.467	6868.0	3738.0	7.291	3.424	3.14		Clay	100.0			16.12	0.86	n.a.	n.a.	0.80	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.920	16.700	0.493	6887.3	3747.4	7.075	3.720	3.17		Clay	100.0			15.78	0.86	n.a.	n.a.	0.80	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.090	17.350	0.551	6907.9	3757.3	7.397	3.965	3.17		Clay	100.0			16.40	0.86	n.a.	n.a.	0.80	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.250	17.950	0.600	6927.3	3766.7	7.692	4.140	3.17		Clay	100.0			16.97	0.86	n.a.	n.a.	0.80	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.410	18.220	0.626	6946.6	3776.1	7.811	4.242	3.17		Clay	100.0			17.22	0.86	n.a.	n.a.	0.80	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.580	18.470	0.611	6967.2	3786.0	7.917	4.076	3.16		Clay	100.0			17.46	0.86	n.a.	n.a.	0.79	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.740	18.030	0.500	6986.5	3795.4	7.660	3.439	3.13		Clay	100.0			17.04	0.86	n.a.	n.a.	0.79	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.910	17.440	0.442	7007.1	3805.4	7.325	3.170	3.12		Clay	100.0			16.48	0.86	n.a.	n.a.	0.79	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.070	17.290	0.393	7026.5	3814.7	7.223	2.856	3.10		Clay	100.0			16.34	0.86	n.a.	n.a.	0.79	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.230	17.500	0.427	7045.8	3824.1	7.310	3.057	3.11		Clay	100.0			16.54	0.86	n.a.	n.a.	0.79	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.400	18.170	0.439	7066.4	3834.1	7.635	3.002	3.09		Clay	100.0			17.17	0.85	n.a.	n.a.	0.79	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.560	19.670	0.363	7085.8	3843.5	8.392	2.253	2.99		Clay	100.0			18.59	0.85	n.a.	n.a.	0.79	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.730	21.070	0.376	7106.3	3853.4	9.092	2.144	2.95		Clay	99.1			19.91	0.85	n.a.	n.a.	0.79	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.890	20.570	0.395	7125.7	3862.8	8.806	2.323	2.98		Clay	100.0			19.44	0.85	n.a.	n.a.	0.79	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.060	22.160	0.292	7146.3	3872.8	9.599	1.572	2.86		Clay	92.0			20.95	0.85	n.a.	n.a.	0.79	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.220	21.480	0.301	7165.6	3882.1	9.220	1.684	2.89		Clay	94.4			20.30	0.85	n.a.	n.a.	0.79	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.380	18.610	0.309	7185.0	3891.5	7.718	2.056	3.00		Clay	100.0			17.59	0.85	n.a.	n.a.	0.79	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.550	18.320	0.358	7205.6	3901.5	7.544	2.435	3.05		Clay	100.0			17.32	0.85	n.a.	n.a.	0.79	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.710	21.920	0.591	7224.9	3910.8	9.362	3.229	3.04		Clay	100.0			20.72	0.85	n.a.	n.a.	0.79	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.880	27.320	0.771	7245.5	3920.8	12.088	3.254	2.95		Clay	99.0			25.82	0.85	n.a.	n.a.	0.78	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.040	30.590	0.867	7264.8	3930.2	13.718	3.217	2.90		Clay	95.2			28.91	0.85	n.a.	n.a.	0.78	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.200	32.130	0.847	7284.2	3939.6	14.462	2.972	2.86		Clay	92.1			30.37	0.85	n.a.	n.a.	0.78	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.370	30.660	0.850	7304.8	3949.5	13.676	3.149	2.90		Clay	94.9			28.98	0.85	n.a.	n.a.	0.78	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.530	30.250	0.860	7324.1	3958.9	13.432	3.233	2.91		Clay	95.9			28.59	0.85	n.a.	n.a.	0.78	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.700	31.430	0.972	7344.7	3968.9	13.988	3.501	2.92		Clay	96.4			29.71	0.85	n.a.	n.a.	0.78	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.860	30.180	0.986	7364.1	3978.2	13.321	3.720	2.95		Clay	99.1			28.53	0.85	n.a.	n.a.	0.78	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.020	27.620	0.861	7383.4	3987.6	12.001	3.597	2.98		Clay	100.0			26.11	0.85	n.a.	n.a.	0.78	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.190	25.030	0.658	7404.0	3997.6	10.670	3.084	2.98		Clay	100.0			23.66	0.85	n.a.	n.a.	0.78	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.350	23.330	0.570	7423.4	4007.0	9.792	2.903	3.00		Clay	100.0			22.05	0.84	n.a.	n.a.	0.78	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.520	20.940	0.516	7443.9	4016.9	8.573	2.994	3.05		Clay	100.0			19.79	0.84	n.a.	n.a.	0.78	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.680	19.190	0.472	7463.3	4026.3	7.679	3.052	3.10		Clay	100.0			18.14	0.84	n.a.	n.a.	0.78	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.840	18.770	0.475	7482.6	4035.7	7.448	3.163	3.12		Clay	100.0			17.74	0.84	n.a.	n.a.	0.78	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.010	17.770	0.615	7503.2	4045.6	6.930	4.384	3.22		Clay	100.0			16.80	0.84	n.a.	n.a.	0.78	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.170	19.780	0.775	7522.6	4055.0	7.901	4.837	3.20		Clay	100.0			18.70	0.84	n.a.	n.a.	0.77	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.340	26.460	0.823	7543.1	4065.0	11.163	3.626	3.01		Clay	100.0			25.01	0.84	n.a.	n.a.	0.77	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.500	31.630	0.856	7562.5	4074.3	13.670	3.074	2.89		Clay	94.4			29.90	0.84	n.a.	n.a.	0.77	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.660	30.630	1.253	7581.9	4083.7	13.144	4.667	3.02		Clay	100.0			28.95	0.84	n.a.	n.a.	0.77	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.830	28.840	1.121	7602.4	4093.7	12.233	4.478	3.03		Clay	100.0			27.26	0.84	n.a.	n.a.	0.77	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.990	37.870	1.353	7621.8	4103.1	16.602	3.974	2.89		Clay	94.5			35.79	0.84	n.a.	n.a.	0.77	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.160	46.050	1.351	7642.4	4113.0	20.534	3.199	2.76		Clay	84.0			43.53	0.84	n.a.	n.a.	0.77	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.320	36.210	1.122	7661.7	4122.4	15.709	3.464	2.88		Clay	93.0			34.22	0.84	n.a.	n.a.	0.77	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.480	27.490	0.830	7681.1	4131.8	11.448	3.511	2.99		Clay	100.0			25.98	0.84	n.a.	n.a.	0.77	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.650	27.720	0.885	7701.7	4141.7	11.526	3.709	3.00		Clay	100.0			26.20	0.84	n.a.	n.a.	0.77	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.810	22.550	0.960	7721.0	4151.1	9.005	5.137	3.17		Clay	100.0			21.31	0.84	n.a.	n.a.	0.77	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.980	20.550	0.841	7741.6	4161.1	8.017	5.042	3.21		Clay	100.0			19.42	0.84	n.a.	n.a.	0.77	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.140	19.380	0.774	7760.9	4170.4	7.433	4.993	3.23		Clay	100.0			18.32	0.84	n.a.	n.a.	0.77	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.300	18.990	0.940	7780.3	4179.8	7.225	6.228	3.30		Clay	100.0			17.95	0.84	n.a.	n.a.	0.77	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.470	23.040	0.711	7800.9	4189.8	9.136	3.715	3.08		Clay	100.0			21.78	0.84	n.a.	n.a.	0.77	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.630	26.780	0.743	7820.2	4199.2	10.893	3.248	2.99		Clay	100.0			25.31	0.83	n.a.	n.a.	0.76	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.800	21.570	0.610	7840.8	4209.1	8.386	3.458	3.09		Clay	100.0			20.39	0.83	n.a.	n.a.	0.76	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.960	20.650	0.663	7860.2	4218.5	7.927	3.964	3.15		Clay	100.0			19.52	0.83	n.a.	n.a.	0.76	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.120	22.080	0.773	7879.5	4227.9	8.581	4.260	3.14		Clay	100.0			20.87	0.83	n.a.	n.a.	0.76	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.290	25.000	0.846	7900.1	4237.8	9.934	4.019	3.07		Clay	100.0			23.63	0.83	n.a.	n.a.	0.76	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.450	26.070	0.950	7919.5	4247.2	10.412	4.294	3.07		Clay	100.0			24.64	0.83	n.a.	n.a.	0.76	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.620	26.110	0.891	7940.0	4257.2	10.401	4.023	3.06		Clay	100.0			24.68	0.83	n.a.	n.a.	0.76	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.780	26.040	0.825	7959.4	4266.5	10.341	3.738	3.04		Clay	100.0			24.61	0.83	n.a.	n.a.	0.76	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.940	26.700	0.708	7978.7	4275.9	10.623	3.116	2.98		Clay	100.0			25.24	0.83	n.a.	n.a.	0.76	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.110	28.600	0.765	7999.3	4285.9	11.480	3.108	2.96		Clay	99.5			27.03	0.83	n.a.	n.a.	0.76	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (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)
66.270	30.480	0.872	8018.7	4295.3	12.326	3.295	2.95		Clay	98.7			28.81	0.83	n.a.	n.a.	0.76	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.440	32.170	0.920	8039.2	4305.2	13.077	3.267	2.92		Clay	96.9			30.41	0.83	n.a.	n.a.	0.76	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.600	32.460	0.941	8058.6	4314.6	13.179	3.311	2.92		Clay	96.9			30.68	0.83	n.a.	n.a.	0.76	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.770	32.680	1.000	8079.2	4324.6	13.245	3.491	2.94		Clay	97.9			30.89	0.83	n.a.	n.a.	0.76	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.930	34.830	1.110	8098.5	4333.9	14.205	3.605	2.92		Clay	96.6			32.92	0.83	n.a.	n.a.	0.76	0.794	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.090	35.330	1.166	8117.9	4343.3	14.400	3.728	2.92		Clay	97.0			33.39	0.83	n.a.	n.a.	0.75	0.794	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.260	34.670	1.125	8138.5	4353.3	14.059	3.677	2.93		Clay	97.3			32.77	0.83	n.a.	n.a.	0.75	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.420	33.430	1.069	8157.8	4362.7	13.456	3.641	2.94		Clay	98.3			31.60	0.83	n.a.	n.a.	0.75	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.590	33.990	1.022	8178.4	4372.6	13.676	3.417	2.92		Clay	96.6			32.13	0.83	n.a.	n.a.	0.75	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.750	35.580	1.008	8197.8	4382.0	14.368	3.200	2.89		Clay	93.8			33.63	0.83	n.a.	n.a.	0.75	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.910	38.570	1.052	8217.1	4391.4	15.695	3.053	2.84		Clay	90.4			36.46	0.82	n.a.	n.a.	0.75	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.080	42.230	1.160	8237.7	4401.3	17.318	3.044	2.81		Clay	87.6			39.91	0.82	n.a.	n.a.	0.75	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.240	43.100	1.334	8257.0	4410.7	17.671	3.422	2.83		Clay	89.5			40.74	0.82	n.a.	n.a.	0.75	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.410	42.950	1.264	8277.6	4420.7	17.559	3.256	2.82		Clay	88.6			40.60	0.82	n.a.	n.a.	0.75	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.570	41.010	1.145	8297.0	4430.0	16.642	3.107	2.83		Clay	89.1			38.76	0.82	n.a.	n.a.	0.75	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.730	39.210	0.980	8316.3	4439.4	15.791	2.796	2.82		Clay	88.4			37.06	0.82	n.a.	n.a.	0.75	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.900	37.470	0.938	8336.9	4449.4	14.969	2.815	2.84		Clay	90.0			35.42	0.82	n.a.	n.a.	0.75	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.060	36.660	0.883	8356.3	4458.8	14.570	2.718	2.84		Clay	90.1			34.65	0.82	n.a.	n.a.	0.75	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.230	34.470	0.912	8376.8	4468.7	13.553	3.013	2.89		Clay	94.2			32.58	0.82	n.a.	n.a.	0.75	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.390	32.810	0.905	8396.2	4478.1	12.779	3.164	2.92		Clay	96.9			31.01	0.82	n.a.	n.a.	0.75	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.550	30.410	0.848	8415.6	4487.5	11.678	3.236	2.96		Clay	99.9			28.74	0.82	n.a.	n.a.	0.74	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.720	28.150	0.676	8436.1	4497.4	10.642	2.825	2.96		Clay	99.8			26.61	0.82	n.a.	n.a.	0.74	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.880	25.360	0.599	8455.5	4506.8	9.378	2.836	3.01		Clay	100.0			23.97	0.82	n.a.	n.a.	0.74	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.050	22.900	0.554	8476.1	4516.8	8.263	2.966	3.06		Clay	100.0			21.64	0.82	n.a.	n.a.	0.74	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.210	23.080	0.538	8495.4	4526.1	8.322	2.855	3.05		Clay	100.0			21.81	0.82	n.a.	n.a.	0.74	0.786	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.370	22.920	0.499	8514.8	4535.5	8.230	2.671	3.04		Clay	100.0			21.66	0.82	n.a.	n.a.	0.74	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.540	23.010	0.598	8535.3	4545.5	8.247	3.192	3.08		Clay	100.0			21.75	0.82	n.a.	n.a.	0.74	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.700	23.330	0.814	8554.7	4554.9	8.366	4.273	3.15		Clay	100.0			22.05	0.82	n.a.	n.a.	0.74	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.870	25.550	1.040	8575.3	4564.8	9.316	4.891	3.15		Clay	100.0			24.15	0.82	n.a.	n.a.	0.74	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.030	28.460	1.111	8594.6	4574.2	10.565	4.597	3.09		Clay	100.0			26.90	0.82	n.a.	n.a.	0.74	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.190	29.700	1.203	8614.0	4583.6	11.080	4.736	3.08		Clay	100.0			28.07	0.82	n.a.	n.a.	0.74	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.360	30.660	1.225	8634.6	4593.5	11.469	4.649	3.06		Clay	100.0			28.98	0.82	n.a.	n.a.	0.74	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.520	30.780	1.056	8653.9	4602.9	11.494	3.993	3.02		Clay	100.0			29.09	0.81	n.a.	n.a.	0.74	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.690	29.020	0.931	8674.5	4612.9	10.702	3.771	3.03		Clay	100.0			27.43	0.81	n.a.	n.a.	0.74	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.850	26.840	0.708	8693.9	4622.3	9.733	3.148	3.02		Clay	100.0			25.37	0.81	n.a.	n.a.	0.74	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.010	25.110	0.665	8713.2	4631.6	8.962	3.204	3.05		Clay	100.0			23.73	0.81	n.a.	n.a.	0.74	0.781	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.180	24.490	0.644	8733.8	4641.6	8.671	3.199	3.06		Clay	100.0			23.15	0.81	n.a.	n.a.	0.73	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.340	25.250	0.656	8753.1	4651.0	8.976	3.141	3.05		Clay	100.0			23.87	0.81	n.a.	n.a.	0.73	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.510	25.370	0.585	8773.7	4660.9	9.004	2.786	3.02		Clay	100.0			23.98	0.81	n.a.	n.a.	0.73	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.670	25.980	0.504	8793.1	4670.3	9.243	2.335	2.97		Clay	100.0			24.56	0.81	n.a.	n.a.	0.73	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.830	26.730	0.511	8812.4	4679.7	9.541	2.290	2.95		Clay	98.9			25.26	0.81	n.a.	n.a.	0.73	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.000	27.340	0.594	8833.0	4689.6	9.776	2.592	2.97		Clay	100.0			25.84	0.81	n.a.	n.a.	0.73	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.160	30.350	0.652	8852.4	4699.0	11.034	2.516	2.92		Clay	96.5			28.69	0.81	n.a.	n.a.	0.73	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.330	30.670	0.907	8872.9	4709.0	11.142	3.456	2.99		Clay	100.0			28.99	0.81	n.a.	n.a.	0.73	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.490	28.930	0.767	8892.3	4718.4	10.378	3.131	2.99		Clay	100.0			27.34	0.81	n.a.	n.a.	0.73	0.777	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.650	27.450	0.872	8911.7	4727.7	9.727	3.791	3.07		Clay	100.0			25.95	0.81	n.a.	n.a.	0.73	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.820	31.910	1.056	8932.2	4737.7	11.585	3.847	3.01		Clay	100.0			30.16	0.81	n.a.	n.a.	0.73	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.980	38.810	1.440	8951.6	4747.1	14.465	4.193	2.95		Clay	99.4			36.68	0.81	n.a.	n.a.	0.73	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.150	45.200	1.976	8972.2	4757.0	17.117	4.853	2.94		Clay	98.1			42.72	0.81	n.a.	n.a.	0.73	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.310	42.350	2.003	8991.5	4766.4	15.884	5.291	2.99		Clay	100.0			40.03	0.81	n.a.	n.a.	0.73	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.480	35.740	1.500	9012.1	4776.4	13.079	4.802	3.03		Clay	100.0			33.78	0.81	n.a.	n.a.	0.73	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.640	30.630	1.840	9031.4	4785.7	10.913	7.046	3.19		Clay	100.0			28.95	0.81	n.a.	n.a.	0.73	0.774	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.800	27.320	2.943	9050.8	4795.1	9.507	12.909	3.41		Clay	100.0			25.82	0.81	n.a.	n.a.	0.72	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.970	45.820	3.512	9071.4	4805.1	17.184	8.506	3.10		Clay	100.0			43.31	0.81	n.a.	n.a.	0.72	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.130	178.800	3.805	9090.7	4814.5	109.190	2.183	2.12		Sand	32.3			169.00	0.76	127.80	192.29	0.72	0.772	0.802	1.256	2.217	2.87	0.00	0.00
75.300	228.480	3.157	9111.3	4824.4	140.169	1.410	1.90		Sand	15.3			215.95	0.76	163.31	192.94	0.72	0.772	0.800	1.298	2.285	2.96	0.00	0.00
75.460	233.810	3.079	9130.7	4833.8	143.360	1.343	1.88		Sand	13.6			220.99	0.75	166.35	189.45	0.72	0.771	0.807	1.095	1.945	2.52	0.00	0.00
75.620	260.870	3.311	9150.0	4843.2	160.121	1.292	1.84		Sand	9.9			246.57	0.76	187.07	197.00	0.72	0.771	0.790	1.602	2.783	3.61	0.00	0.00
75.790	280.260	2.537	9170.6	4853.1	172.051	0.920	1.71		Sand	0.0			264.90	0.76	201.93	201.93	0.72	0.771	0.777	2.111	3.608	4.68	0.00	0.00
75.950	292.140	2.222	9190.0	4862.5	179.287	0.773	1.65		Sand	0.0			276.12	0.77	212.85	212.85	0.72	0.770	0.750	4.227	6.978	9.06	0.00	0.00
76.120	306.650	1.717	9210.5	4872.5	188.135	0.568	1.54		Sand	0.0			289.84	0.78	226.45	226.45	0.72	0.770	0.750	12.039	19.858	25.80	0.00	0.00
76.280	339.270	2.302	9229.9	4881.8	208.246	0.688	1.56		Sand	0.0			320.67	0.80	257.20	257.20	0.72	0.769	0.749	318.690	525.278	682.81	0.00	0.00
76.440	335.540	2.532	9249.2	4891.2	205.722	0.765	1.60		Sand	0.0			317.15	0.80	254.25	254.25	0.72	0.769	0.749	218.441	359.767	467.92	0.00	0.00
76.610	307.460	2.540	9269.8	4901.2	188.067	0.839	1.65		Sand	0.0			290.60	0.78	226.72	226.72	0.72	0.768	0.748	12.314	20.264	26.37	0.00	0.00
76.770	238.870	2.772	9289.2	4910.6	145.325	1.184	1.84		Sand	10.1			225.78	0.74	166.41	176.42	0.72	0.768	0.828	0.632	1.063	1.38	0.00	0.00
76.940	143.770	1.989	9309.7	4920.5	86.227	1.430	2.06		Sand	27.8			135.89	0.71	96.45	148.18	0.72	0.768	0.867	0.277	0.396	0.52	0.02	0.00
77.100	68.830	1.352	9329.1	4929.9	39.733	2.107	2.43		Sand	57.0			65.06	0.66	42.91	102.78	0.72	0.767	0.908	0.141	0.163	0.21	0.03	0.00

CPT No.	3	PGA (A_{max})	0.91	Total Settlement:	0.25 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
77.260	39.260	1.056	9348.5	4939.3	14.004	3.053	2.88		Clay	93.6			37.11	0.80	n.a.	n.a.	0.72	0.767	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.430	34.340	0.732	9369.0	4949.2	11.984	2.468	2.88		Clay	93.7			32.46	0.80	n.a.	n.a.	0.72	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.590	35.170	0.806	9388.4	4958.6	12.292	2.644	2.89		Clay	94.4			33.24	0.80	n.a.	n.a.	0.71	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.760	29.160	0.896	9409.0	4968.6	9.844	3.665	3.05		Clay	100.0			27.56	0.80	n.a.	n.a.	0.71	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.920	30.720	0.720	9428.3	4978.0	10.448	2.770	2.96		Clay	99.9			29.04	0.80	n.a.	n.a.	0.71	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.080	31.840	0.692	9447.7	4987.3	10.874	2.552	2.93		Clay	97.2			30.09	0.80	n.a.	n.a.	0.71	0.765	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.250	28.260	0.707	9468.3	4997.3	9.415	3.005	3.02		Clay	100.0			26.71	0.80	n.a.	n.a.	0.71	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.410	28.090	0.621	9487.6	5006.7	9.326	2.658	2.99		Clay	100.0			26.55	0.80	n.a.	n.a.	0.71	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.580	28.240	0.663	9508.2	5016.6	9.363	2.823	3.01		Clay	100.0			26.69	0.80	n.a.	n.a.	0.71	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.740	26.830	0.627	9527.5	5026.0	8.781	2.842	3.03		Clay	100.0			25.36	0.80	n.a.	n.a.	0.71	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.900	26.070	0.649	9546.9	5035.4	8.459	3.048	3.06		Clay	100.0			24.64	0.80	n.a.	n.a.	0.71	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.070	25.130	0.679	9567.5	5045.3	8.065	3.337	3.10		Clay	100.0			23.75	0.80	n.a.	n.a.	0.71	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.230	24.290	0.711	9586.8	5054.7	7.714	3.644	3.14		Clay	100.0			22.96	0.79	n.a.	n.a.	0.71	0.762	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.400	24.100	0.682	9607.4	5064.7	7.620	3.534	3.13		Clay	100.0			22.78	0.79	n.a.	n.a.	0.71	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.560	23.390	0.655	9626.8	5074.1	7.322	3.525	3.15		Clay	100.0			22.11	0.79	n.a.	n.a.	0.71	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.720	23.010	0.527	9646.1	5083.4	7.155	2.900	3.11		Clay	100.0			21.75	0.79	n.a.	n.a.	0.71	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.890	22.270	0.509	9666.7	5093.4	6.847	2.917	3.13		Clay	100.0			21.05	0.79	n.a.	n.a.	0.71	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.050	21.680	0.515	9686.1	5102.8	6.599	3.057	3.15		Clay	100.0			20.49	0.79	n.a.	n.a.	0.71	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.220	23.170	0.491	9706.6	5112.7	7.165	2.680	3.09		Clay	100.0			21.90	0.79	n.a.	n.a.	0.71	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.380	23.940	0.531	9726.0	5122.1	7.449	2.783	3.09		Clay	100.0			22.63	0.79	n.a.	n.a.	0.70	0.759	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.540	24.350	0.544	9745.3	5131.5	7.591	2.792	3.08		Clay	100.0			23.02	0.79	n.a.	n.a.	0.70	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.710	25.630	0.529	9765.9	5141.4	8.071	2.551	3.04		Clay	100.0			24.22	0.79	n.a.	n.a.	0.70	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.870	26.910	0.509	9785.3	5150.8	8.549	2.314	2.99		Clay	100.0			25.43	0.79	n.a.	n.a.	0.70	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.040	26.410	0.485	9805.8	5160.8	8.335	2.256	3.00		Clay	100.0			24.96	0.79	n.a.	n.a.	0.70	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.200	25.780	0.457	9825.2	5170.2	8.072	2.191	3.00		Clay	100.0			24.37	0.79	n.a.	n.a.	0.70	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.360	26.040	0.438	9844.6	5179.5	8.154	2.073	2.98		Clay	100.0			24.61	0.79	n.a.	n.a.	0.70	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.530	25.940	0.418	9865.1	5189.5	8.096	1.991	2.98		Clay	100.0			24.52	0.79	n.a.	n.a.	0.70	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.690	25.940	0.430	9884.5	5198.9	8.078	2.049	2.99		Clay	100.0			24.52	0.79	n.a.	n.a.	0.70	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.860	25.640	0.525	9905.1	5208.8	7.943	2.537	3.04		Clay	100.0			24.23	0.79	n.a.	n.a.	0.70	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.020	26.650	0.518	9924.4	5218.2	8.312	2.387	3.01		Clay	100.0			25.19	0.79	n.a.	n.a.	0.70	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.190	28.470	0.525	9945.0	5228.2	8.989	2.233	2.97		Clay	100.0			26.91	0.79	n.a.	n.a.	0.70	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.350	29.000	0.613	9964.4	5237.6	9.171	2.550	2.99		Clay	100.0			27.41	0.79	n.a.	n.a.	0.70	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.510	29.310	0.993	9983.7	5246.9	9.269	4.083	3.10		Clay	100.0			27.70	0.79	n.a.	n.a.	0.70	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.680	36.990	1.066	10004.3	5256.9	12.170	3.333	2.95		Clay	99.3			34.96	0.79	n.a.	n.a.	0.70	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
82.840	46.230	0.777	10023.6	5266.3	15.654	1.885	2.72		Clay	80.8			43.70	0.79	n.a.	n.a.	0.70	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.010	36.590	0.754	10044.2	5276.2	11.966	2.387	2.88		Clay	93.1			34.58	0.79	n.a.	n.a.	0.70	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.170	29.210	0.627	10063.6	5285.6	9.149	2.592	2.99		Clay	100.0			27.61	0.79	n.a.	n.a.	0.70	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.330	27.900	0.522	10082.9	5295.0	8.634	2.282	2.99		Clay	100.0			26.37	0.79	n.a.	n.a.	0.69	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.500	26.440	0.564	10103.5	5304.9	8.064	2.639	3.04		Clay	100.0			24.99	0.78	n.a.	n.a.	0.69	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.660	25.990	0.561	10122.9	5314.3	7.876	2.680	3.06		Clay	100.0			24.57	0.78	n.a.	n.a.	0.69	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.830	26.280	0.583	10143.4	5324.3	7.967	2.747	3.06		Clay	100.0			24.84	0.78	n.a.	n.a.	0.69	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.990	25.560	0.593	10162.8	5333.7	7.679	2.893	3.08		Clay	100.0			24.16	0.78	n.a.	n.a.	0.69	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.150	25.850	0.632	10182.2	5343.0	7.770	3.043	3.09		Clay	100.0			24.43	0.78	n.a.	n.a.	0.69	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.320	26.680	0.696	10202.7	5353.0	8.062	3.223	3.09		Clay	100.0			25.22	0.78	n.a.	n.a.	0.69	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.480	27.360	0.756	10222.1	5362.4	8.298	3.396	3.09		Clay	100.0			25.86	0.78	n.a.	n.a.	0.69	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.650	27.240	0.841	10242.7	5372.3	8.234	3.800	3.12		Clay	100.0			25.75	0.78	n.a.	n.a.	0.69	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.810	27.160	0.827	10262.0	5381.7	8.187	3.753	3.12		Clay	100.0			25.67	0.78	n.a.	n.a.	0.69	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.970	27.870	0.803	10281.4	5391.1	8.432	3.535	3.10		Clay	100.0			26.34	0.78	n.a.	n.a.	0.69	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.140	27.840	0.748	10301.9	5401.0	8.402	3.298	3.08		Clay	100.0			26.31	0.78	n.a.	n.a.	0.69	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.300	27.740	0.713	10321.3	5410.4	8.347	3.158	3.07		Clay	100.0			26.22	0.78	n.a.	n.a.	0.69	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.470	27.540	0.629	10341.9	5420.4	8.254	2.813	3.05		Clay	100.0			26.03	0.78	n.a.	n.a.	0.69	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.630	28.130	0.544	10361.2	5429.8	8.453	2.369	3.00		Clay	100.0			26.59	0.78	n.a.	n.a.	0.69	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.790	27.640	0.468	10380.6	5439.1	8.255	2.084	2.98		Clay	100.0			26.12	0.78	n.a.	n.a.	0.69	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.960	26.770	0.405	10401.2	5449.1	7.917	1.877	2.97		Clay	100.0			25.30	0.78	n.a.	n.a.	0.69	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.120	26.160	0.430	10420.5	5458.5	7.676	2.054	3.01		Clay	100.0			24.73	0.78	n.a.	n.a.	0.69	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.290	26.750	0.457	10441.1	5468.4	7.874	2.124	3.00		Clay	100.0			25.28	0.78	n.a.	n.a.	0.69	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.450	29.480	0.453	10460.5	5477.8	8.854	1.869	2.93		Clay	97.5			27.86	0.78	n.a.	n.a.	0.69	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.610	29.820	0.501	10479.8	5487.2	8.959	2.039	2.95		Clay	98.7			28.19	0.78	n.a.	n.a.	0.68	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.780	28.420	0.554	10500.4	5497.1	8.430	2.393	3.00		Clay	100.0			26.86	0.78	n.a.	n.a.	0.68	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.940	28.850	0.808	10519.7	5506.5	8.568	3.424	3.08		Clay	100.0			27.27	0.78	n.a.	n.a.	0.68	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.110	30.570	1.879	10540.3	5516.5	9.172	7.429	3.26		Clay	100.0			28.89	0.78	n.a.	n.a.	0.68	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.270	44.010	3.007	10559.7	5525.9	14.018	7.764	3.14		Clay	100.0			41.60	0.78	n.a.	n.a.	0.68	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.430	75.960	3.753	10579.0	5535.2	25.535	5.310	2.84		Clay	89.8			71.80	0.78	n.a.	n.a.	0.68	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.600	96.970	3.707	10599.6	5545.2	33.063	4.044	2.67		Clay	76.8			91.65	0.78	n.a.	n.a.	0.68	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.760	116.660	3.100	10619.0	5554.6	64.959	2.784	2.35		Sand	50.9			110.26	0.67	73.42	139.29	0.68	0.740	0.859	0.231	0.309	0.42	0.02	0.00
87.930	130.310	2.272	10639.5	5564.5	72.851	1.818	2.18		Sand	37.8			123.17	0.67	82.38	142.42	0.68	0.740	0.855	0.246	0.333	0.45	0.02	0.00
88.090	130.180	2.265	10658.9	5573.9	72.708	1.814	2.18		Sand	37.8			123.04	0.67	82.21	142.22	0.68	0.739	0.855	0.245	0.331	0.45	0.02	0.00

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (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)
88.250	127.840	2.520	10678.3	5583.3	71.280	2.057	2.23		Sand	41.3			120.83	0.67	80.80	143.14	0.68	0.739	0.854	0.249	0.339	0.46	0.02	0.00
88.420	122.890	2.990	10698.8	5593.3	68.333	2.544	2.31		Sand	47.5			116.15	0.67	77.58	142.87	0.68	0.739	0.854	0.248	0.336	0.46	0.02	0.00
88.580	117.340	2.220	10718.2	5602.6	65.046	1.982	2.25		Sand	42.7			110.91	0.66	72.96	134.33	0.68	0.738	0.864	0.212	0.275	0.37	0.02	0.00
88.750	116.110	3.121	10738.8	5612.6	64.268	2.818	2.36		Sand	51.5			109.74	0.66	72.67	138.59	0.68	0.738	0.859	0.228	0.303	0.41	0.02	0.00
88.910	110.540	3.685	10758.1	5622.0	60.979	3.504	2.44		Sand	58.2			104.48	0.66	68.86	136.30	0.68	0.738	0.861	0.219	0.287	0.39	0.02	0.00
89.070	94.630	3.178	10777.5	5631.3	31.694	3.561	2.65		Clay	74.9			89.44	0.77	n.a.	n.a.	0.68	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.240	74.700	3.883	10798.0	5641.3	24.569	5.602	2.86		Clay	92.1			70.60	0.77	n.a.	n.a.	0.68	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.400	68.130	3.941	10817.4	5650.7	22.200	6.283	2.93		Clay	97.4			64.40	0.77	n.a.	n.a.	0.68	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.570	75.000	4.656	10838.0	5660.6	24.584	6.692	2.92		Clay	96.3			70.89	0.77	n.a.	n.a.	0.68	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.730	80.690	3.465	10857.3	5670.0	26.547	4.604	2.78		Clay	85.5			76.27	0.77	n.a.	n.a.	0.68	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.900	119.720	3.814	10877.9	5680.0	65.928	3.338	2.40		Sand	55.1			113.16	0.66	75.14	143.20	0.67	0.735	0.851	0.249	0.338	0.46	0.02	0.00
90.060	148.320	4.305	10897.3	5689.4	82.354	3.013	2.30		Sand	47.2			140.19	0.69	96.56	166.65	0.67	0.735	0.816	0.452	0.694	0.94	0.01	0.00
90.220	167.200	5.110	10916.6	5698.7	93.155	3.159	2.28		Sand	45.6			158.03	0.71	111.67	184.65	0.67	0.735	0.780	0.881	1.492	2.03	0.00	0.00
90.390	172.760	5.150	10937.2	5708.7	96.267	3.078	2.26		Sand	44.2			163.29	0.71	116.03	189.17	0.67	0.734	0.769	1.081	1.829	2.49	0.00	0.00
90.550	177.320	3.899	10956.6	5718.1	98.804	2.269	2.16		Sand	35.7			167.60	0.71	118.28	184.62	0.67	0.734	0.779	0.880	1.488	2.03	0.00	0.00
90.720	191.880	2.903	10977.1	5728.0	107.077	1.558	2.02		Sand	24.4			181.36	0.70	126.65	177.68	0.67	0.733	0.794	0.663	1.080	1.47	0.00	0.00
90.880	200.810	3.212	10996.5	5737.4	112.110	1.645	2.02		Sand	24.6			189.80	0.71	134.23	186.97	0.67	0.733	0.773	0.977	1.662	2.27	0.00	0.00
91.040	210.660	3.524	11015.8	5746.8	117.662	1.718	2.02		Sand	24.5			199.11	0.72	142.60	196.58	0.67	0.733	0.748	1.567	2.577	3.52	0.00	0.00
91.210	221.060	3.418	11036.4	5756.7	123.514	1.586	1.98		Sand	21.3			208.94	0.72	149.66	197.08	0.67	0.732	0.746	1.609	2.639	3.60	0.00	0.00
91.370	229.980	4.068	11055.8	5766.1	128.515	1.812	2.01		Sand	23.8			217.37	0.73	159.13	214.19	0.67	0.732	0.699	4.641	7.139	9.75	0.00	0.00
91.540	235.300	4.968	11076.3	5776.1	131.442	2.162	2.06		Sand	27.8			222.40	0.75	166.19	231.21	0.67	0.732	0.699	18.306	28.141	38.46	0.00	0.00
91.700	244.840	5.565	11095.7	5785.5	136.783	2.325	2.07		Sand	28.8			231.42	0.76	175.53	244.29	0.67	0.731	0.698	67.947	104.377	142.72	0.00	0.00
91.860	250.070	5.088	11115.1	5794.8	139.654	2.081	2.03		Sand	25.4			236.36	0.76	178.46	240.73	0.67	0.731	0.698	46.396	71.222	97.43	0.00	0.00
92.030	253.080	3.275	11135.6	5804.8	141.246	1.323	1.88		Sand	13.6			239.21	0.71	169.98	193.28	0.67	0.731	0.754	1.321	2.191	3.00	0.00	0.00
92.190	235.220	1.829	11155.0	5814.2	130.942	0.797	1.76		Sand	3.6			222.33	0.66	147.21	147.22	0.67	0.730	0.842	0.271	0.374	0.51	0.02	0.00
92.360	225.170	3.162	11175.6	5824.1	125.099	1.440	1.95		Sand	18.6			212.83	0.71	150.39	190.06	0.67	0.730	0.762	1.128	1.890	2.59	0.00	0.00
92.520	202.680	4.512	11194.9	5833.5	112.190	2.289	2.12		Sand	32.9			191.57	0.72	138.20	205.70	0.67	0.730	0.715	2.645	4.160	5.70	0.00	0.00
92.680	152.080	5.122	11214.3	5842.9	83.314	3.497	2.35		Sand	50.8			143.74	0.69	98.72	171.27	0.67	0.729	0.803	0.526	0.823	1.13	0.01	0.00
92.850	107.680	5.600	11234.9	5852.9	34.876	5.486	2.75		Clay	82.9			101.78	0.76	n.a.	n.a.	0.67	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.010	91.020	4.865	11254.2	5862.2	29.133	5.697	2.82		Clay	88.2			86.03	0.76	n.a.	n.a.	0.67	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.180	104.300	3.945	11274.8	5872.2	33.603	3.998	2.66		Clay	76.1			98.58	0.76	n.a.	n.a.	0.67	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.340	127.630	3.012	11294.1	5881.6	69.155	2.470	2.29		Sand	46.4			120.63	0.66	79.10	144.23	0.67	0.728	0.845	0.255	0.345	0.47	0.02	0.00
93.500	139.510	2.363	11313.5	5890.9	75.824	1.765	2.16		Sand	36.1			131.86	0.66	86.70	146.23	0.66	0.728	0.842	0.266	0.363	0.50	0.02	0.00
93.670	141.450	3.077	11334.1	5900.9	76.853	2.266	2.23		Sand	41.7			133.70	0.67	88.95	153.62	0.66	0.727	0.831	0.314	0.447	0.61	0.02	0.00
93.830	136.540	4.396	11353.4	5910.3	74.009	3.359	2.37		Sand	52.5			129.05	0.67	86.17	156.16	0.66	0.727	0.827	0.335	0.483	0.66	0.02	0.00
94.000	110.750	5.441	11374.0	5920.2	35.493	5.179	2.73		Clay	81.0			104.68	0.76	n.a.	n.a.	0.66	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.160	92.430	5.204	11393.4	5929.6	29.254	6.000	2.83		Clay	89.4			87.36	0.76	n.a.	n.a.	0.66	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.320	93.350	4.311	11412.7	5939.0	29.515	4.919	2.77		Clay	84.3			88.23	0.76	n.a.	n.a.	0.66	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.490	125.750	3.599	11433.3	5949.0	67.663	2.998	2.36		Sand	51.8			118.86	0.65	77.68	145.06	0.66	0.725	0.842	0.259	0.352	0.48	0.02	0.00
94.650	142.450	2.572	11452.7	5958.3	77.011	1.881	2.18		Sand	37.2			134.64	0.66	88.63	149.61	0.66	0.725	0.835	0.286	0.397	0.55	0.02	0.00
94.820	138.300	3.385	11473.2	5968.3	74.605	2.554	2.28		Sand	45.4			130.72	0.66	86.47	152.90	0.66	0.725	0.830	0.309	0.437	0.60	0.02	0.00
94.980	129.490	4.676	11492.6	5977.7	69.587	3.779	2.42		Sand	57.0			122.39	0.66	80.64	150.92	0.66	0.724	0.833	0.295	0.412	0.57	0.02	0.00
95.140	135.600	5.767	11511.9	5987.0	43.375	4.442	2.62		Clay	72.3			128.17	0.76	n.a.	n.a.	0.66	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.310	134.940	5.523	11532.5	5997.0	43.079	4.275	2.61		Clay	71.6			127.54	0.76	n.a.	n.a.	0.66	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.470	144.330	4.324	11551.9	6006.4	77.729	3.121	2.33		Sand	49.5			136.42	0.67	91.25	161.17	0.66	0.724	0.816	0.384	0.566	0.78	0.01	0.00
95.640	180.370	2.799	11572.4	6016.3	97.861	1.603	2.05		Sand	27.3			170.48	0.68	115.62	170.19	0.66	0.723	0.799	0.507	0.783	1.08	0.01	0.00
95.800	235.180	2.456	11591.8	6025.7	128.479	1.070	1.85		Sand	10.8			222.29	0.67	148.24	160.03	0.66	0.723	0.817	0.372	0.544	0.75	0.01	0.00
95.960	270.350	2.483	11611.2	6035.1	148.057	0.938	1.76		Sand	4.1			255.53	0.68	174.20	174.23	0.66	0.723	0.791	0.583	0.920	1.27	0.00	0.00
96.130	295.800	2.670	11631.7	6045.1	162.161	0.921	1.73		Sand	1.3			279.58	0.70	197.00	197.00	0.66	0.722	0.733	1.602	2.585	3.58	0.00	0.00
96.290	306.490	2.830	11651.1	6054.4	168.003	0.941	1.72		Sand	1.0			289.69	0.71	206.81	206.81	0.66	0.722	0.700	2.836	4.370	6.05	0.00	0.00
96.460	308.940	3.135	11671.7	6064.4	169.227	1.034	1.75		Sand	3.1			292.00	0.72	208.97	208.97	0.66	0.722	0.692	3.257	4.956	6.87	0.00	0.00
96.620	317.000	3.332	11691.0	6073.8	173.588	1.071	1.75		Sand	3.3			299.62	0.72	216.49	216.49	0.66	0.721	0.684	5.479	8.240	11.42	0.00	0.00
96.780	302.290	3.368	11710.4	6083.1	165.248	1.136	1.79		Sand	6.0			285.72	0.71	202.76	203.56	0.66	0.721	0.711	2.324	3.632	5.04	0.00	0.00
96.950	283.250	3.346	11731.0	6093.1	154.502	1.206	1.83		Sand	9.1			267.72	0.70	187.50	194.62	0.66	0.721	0.739	1.414	2.297	3.19	0.00	0.00
97.110	272.440	3.200	11750.3	6102.5	148.362	1.201	1.84		Sand	10.0			257.50	0.69	178.64	188.45	0.66	0.720	0.755	1.045	1.737	2.41	0.00	0.00
97.280	273.420	3.146	11770.9	6112.4	148.780	1.176	1.83		Sand	9.4			258.43	0.69	178.68	186.55	0.66	0.720	0.760	0.959	1.603	2.23	0.00	0.00
97.440	285.780	3.083	11790.2	6121.8	155.529	1.102	1.80		Sand	6.7			270.11	0.69	187.31	188.91	0.66	0.720	0.753	1.068	1.770	2.46	0.00	0.00
97.600	278.780	3.210	11809.6	6131.2	151.518	1.176	1.82		Sand	8.9			263.50	0.69	182.74	189.31	0.65	0.719	0.752	1.088	1.800	2.50	0.00	0.00
97.770	276.060	2.895	11830.2	6141.2	149.880	1.072	1.80		Sand	7.0			260.93	0.68	178.43	180.36	0.65	0.719	0.774	0.737	1.194	1.66	0.00	0.00
97.930	264.930	2.743	11849.5	6150.5	143.590	1.059	1.81		Sand	7.7			250.41	0.67	169.01	172.30	0.65	0.719	0.791	0.545	0.847	1.18	0.01	0.00
98.100	250.490	1.604	11870.1	6160.5	135.469	0.656	1.69		Sand	0.0			236.76	0.66	155.29	155.29	0.65	0.719	0.821	0.328	0.466	0.65	0.02	0.00
98.260	237.690	1.996	11889.5	6169.9	128.276	0.861	1.79		Sand	5.9			224.66	0.64	144.70	145.30	0.65	0.718	0.836	0.260	0.352	0.49	0.02	0.00
98.430	226.130	2.019	11910.0	6179.8	121.773	0.917	1.82		Sand	8.6			213.73	0.64	136.65	141.61	0.65	0.718	0.841	0.242	0.320	0.45	0.02	0.00
98.590	212.160	1.970	11929.4	6189.2	113.955	0.955	1.85		Sand	11.3			200.53	0.64	127.89	140.62	0.65	0.718	0.842	0.237	0.313	0.44	0.02	0.00
98.750	209.770	2.140	11948.8	6198.6	112.544	1.050	1.88		Sand	13.8			198.27	0.65	128.49	149.78	0.65	0.717	0.828	0.287	0.396	0.55	0.02	0.00
98.920	208.380	2.390	11969.3	6208.6	111.681	1.181	1.92		Sand	16.7			196.96	0.66	130.14	161.42	0.65	0.717	0.809	0.386	0.566	0.79	0.01	0.00
99.080	218.150	2.316	11988.7	6217.9	116.978	1.092	1.88		Sand	13.7			206.19	0.65	135.00	156.38	0.65	0.717	0.818	0.337	0.481	0.67	0.02	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.91

Total Settlement:	0.25	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
99.250	236.250	2.341	12009.3	6227.9	126.851	1.017	1.84		Sand	9.9			223.30	0.65	145.62	154.43	0.65	0.716	0.821	0.321	0.453	0.63	0.02	0.00
99.410	242.790	2.486	12028.6	6237.3	130.350	1.050	1.84		Sand	10.0			229.48	0.66	151.03	160.15	0.65	0.716	0.811	0.373	0.542	0.76	0.01	0.00
99.570	257.070	2.491	12048.0	6246.6	138.103	0.992	1.80		Sand	7.2			242.98	0.66	160.51	162.70	0.65	0.716	0.806	0.401	0.591	0.83	0.01	0.00
99.740	291.310	1.740	12068.5	6256.6	156.808	0.610	1.62		Sand	0.0			275.34	0.69	189.75	189.75	0.65	0.716	0.746	1.111	1.823	2.55	0.00	0.00
99.900	276.230	1.841	12087.9	6266.0	148.402	0.681	1.67		Sand	0.0			261.09	0.67	176.08	176.08	0.65	0.715	0.779	0.624	0.985	1.38	0.00	0.00
100.070	247.800	2.022	12108.5	6275.9	132.676	0.836	1.77		Sand	4.3			234.22	0.65	151.50	151.55	0.65	0.715	0.824	0.299	0.416	0.58	0.02	0.00
100.230	217.120	2.211	12127.8	6285.3	115.746	1.048	1.88		Sand	13.0			205.22	0.65	132.64	151.44	0.65	0.715	0.824	0.298	0.414	0.58	0.02	0.00
100.390	216.480	2.259	12147.2	6294.7	115.304	1.074	1.88		Sand	13.7			204.61	0.65	132.75	153.92	0.65	0.715	0.820	0.317	0.445	0.62	0.02	0.00
100.560	215.280	2.382	12167.8	6304.7	114.550	1.139	1.90		Sand	15.2			203.48	0.66	133.30	159.88	0.65	0.714	0.809	0.370	0.536	0.75	0.01	0.00
100.720	214.080	3.021	12187.1	6314.0	113.803	1.452	1.98		Sand	21.2			202.34	0.68	137.53	182.77	0.65	0.714	0.762	0.813	1.324	1.85	0.00	0.00
100.890	221.730	3.936	12207.7	6324.0	117.890	1.825	2.04		Sand	26.0			209.57	0.70	147.18	205.07	0.65	0.714	0.694	2.545	3.888	5.45	0.00	0.00
101.050	238.700	4.942	12227.1	6333.4	127.069	2.125	2.06		Sand	28.1			225.61	0.73	163.61	228.73	0.65	0.713	0.671	14.669	21.658	30.36	0.00	0.00
101.210	262.100	3.295	12246.4	6342.7	139.744	1.287	1.88		Sand	13.2			247.73	0.69	170.57	192.26	0.65	0.713	0.736	1.255	2.031	2.85	0.00	0.00
101.380	312.540	3.124	12267.0	6352.7	167.144	1.019	1.75		Sand	3.0			295.41	0.70	208.03	208.03	0.65	0.713	0.682	3.065	4.597	6.45	0.00	0.00
101.540	356.100	3.074	12286.3	6362.1	190.760	0.878	1.66		Sand	0.0			336.58	0.74	250.73	250.73	0.65	0.713	0.670	141.994	209.222	293.58	0.00	0.00
101.710	380.070	3.541	12306.9	6372.0	203.661	0.947	1.67		Sand	0.0			359.23	0.75	268.58	268.58	0.65	0.712	0.669	1570.341	2312.203	3245.70	0.00	0.00
101.870	391.510	4.016	12326.3	6381.4	209.732	1.042	1.69		Sand	0.0			370.05	0.75	276.55	276.55	0.65	0.712	0.669	5544.235	8158.065	11455.74	0.00	0.00
102.030	382.090	3.929	12345.6	6390.8	204.450	1.045	1.70		Sand	0.0			361.14	0.75	269.80	269.80	0.65	0.712	0.668	1888.966	2777.689	3901.87	0.00	0.00
102.200	380.550	4.351	12366.2	6400.8	203.448	1.162	1.73		Sand	1.6			359.69	0.75	268.60	268.60	0.64	0.712	0.668	1575.170	2314.639	3252.63	0.00	0.00
102.360	381.410	4.486	12385.6	6410.1	203.761	1.196	1.74		Sand	2.3			360.50	0.75	269.10	269.10	0.64	0.711	0.667	1699.503	2495.698	3508.28	0.00	0.00
102.530	392.510	4.308	12406.1	6420.1	209.621	1.115	1.71		Sand	0.0			370.99	0.75	276.82	276.82	0.64	0.711	0.667	5793.654	8501.968	11955.88	0.00	0.00
102.690	395.900	4.343	12425.5	6429.5	211.301	1.115	1.71		Sand	0.0			374.20	0.75	279.10	279.10	0.64	0.711	0.667	8517.877	12491.458	17572.13	0.00	0.00
102.850	387.650	4.311	12444.9	6438.9	206.671	1.130	1.72		Sand	0.5			366.40	0.75	273.18	273.18	0.64	0.711	0.666	3203.586	4694.974	6606.82	0.00	0.00
103.020	388.600	4.367	12465.4	6448.8	207.020	1.142	1.72		Sand	0.7			367.30	0.75	273.74	273.74	0.64	0.710	0.666	3502.330	5129.221	7220.50	0.00	0.00
103.180	388.140	4.259	12484.8	6458.2	206.616	1.115	1.71		Sand	0.2			366.86	0.74	273.31	273.31	0.64	0.710	0.665	3270.144	4786.045	6739.67	0.00	0.00
103.350	382.690	4.530	12505.4	6468.2	203.505	1.203	1.74		Sand	2.5			361.71	0.74	269.36	269.36	0.64	0.710	0.665	1768.460	2586.445	3643.50	0.00	0.00
103.510	382.590	4.749	12524.7	6477.5	203.298	1.262	1.76		Sand	3.7			361.62	0.74	269.19	269.21	0.64	0.710	0.664	1726.772	2523.823	3556.47	0.00	0.00
103.670	382.520	4.999	12544.1	6486.9	203.108	1.329	1.78		Sand	5.1			361.55	0.74	269.04	269.34	0.64	0.709	0.664	1762.539	2574.417	3628.96	0.00	0.00
103.840	367.490	5.506	12564.6	6496.9	194.840	1.524	1.83		Sand	9.7			347.34	0.74	258.36	269.18	0.64	0.709	0.663	1720.273	2510.940	3540.70	0.00	0.00
104.000	360.220	3.438	12584.0	6506.2	190.775	0.971	1.69		Sand	0.0			340.47	0.74	252.76	252.76	0.64	0.709	0.663	181.682	265.013	373.82	0.00	0.00
104.170	345.720	3.869	12604.6	6516.2	182.814	1.140	1.76		Sand	3.6			326.77	0.73	237.89	237.90	0.64	0.709	0.663	34.732	50.627	71.44	0.00	0.00
104.330	329.490	3.686	12623.9	6525.6	173.942	1.141	1.77		Sand	4.8			311.43	0.71	221.79	221.96	0.64	0.708	0.662	8.318	12.117	17.10	0.00	0.00
104.490	311.060	3.523	12643.3	6535.0	163.900	1.156	1.80		Sand	6.6			294.01	0.70	204.62	206.15	0.64	0.708	0.681	2.721	4.077	5.76	0.00	0.00
104.660	307.300	1.770	12663.9	6544.9	161.749	0.588	1.60		Sand	0.0			290.45	0.69	200.30	200.30	0.64	0.708	0.702	1.922	2.969	4.19	0.00	0.00
104.820	296.500	2.381	12683.2	6554.3	155.828	0.821	1.71		Sand	0.0			280.25	0.68	190.21	190.21	0.64	0.708	0.734	1.136	1.833	2.59	0.00	0.00
104.990	293.580	3.102	12703.8	6564.3	154.137	1.080	1.79		Sand	6.4			277.49	0.68	187.94	189.19	0.64	0.708	0.736	1.082	1.753	2.48	0.00	0.00
105.150	272.330	3.184	12723.2	6573.6	142.626	1.197	1.85		Sand	10.9			257.40	0.67	173.47	186.38	0.64	0.707	0.744	0.951	1.557	2.20	0.00	0.00
105.320	294.120	3.067	12743.7	6583.6	154.189	1.066	1.79		Sand	6.1			278.00	0.68	188.01	188.91	0.64	0.707	0.736	1.068	1.731	2.45	0.00	0.00
105.480	292.990	2.802	12763.1	6593.0	153.469	0.978	1.76		Sand	4.2			276.93	0.67	186.49	186.53	0.64	0.707	0.743	0.958	1.565	2.21	0.00	0.00
105.640	289.090	2.778	12782.4	6602.3	151.268	0.983	1.77		Sand	4.6			273.24	0.67	182.87	182.98	0.64	0.707	0.752	0.821	1.320	1.87	0.00	0.00
105.810	292.250	3.038	12803.0	6612.3	152.838	1.063	1.79		Sand	6.3			276.23	0.67	185.97	187.02	0.64	0.706	0.741	0.979	1.596	2.26	0.00	0.00
105.970	272.170	3.329	12822.4	6621.7	141.996	1.252	1.86		Sand	12.1			257.25	0.68	174.53	192.19	0.64	0.706	0.725	1.250	1.996	2.83	0.00	0.00
106.140	235.330	3.475	12842.9	6631.6	122.215	1.518	1.97		Sand	20.5			222.43	0.68	152.09	197.58	0.64	0.706	0.708	1.653	2.575	3.65	0.00	0.00
106.300	187.240	3.191	12862.3	6641.0	96.466	1.765	2.09		Sand	30.0			176.98	0.66	116.80	175.78	0.64	0.706	0.768	0.617	0.958	1.36	0.00	0.00
106.460	153.150	3.390	12881.7	6650.4	78.218	2.311	2.23		Sand	41.8			144.75	0.64	92.61	158.22	0.64	0.706	0.803	0.354	0.503	0.71	0.02	0.00
106.630	132.810	3.403	12902.2	6660.4	67.318	2.693	2.33		Sand	49.2			125.53	0.62	78.24	144.60	0.64	0.705	0.825	0.257	0.341	0.48	0.02	0.00
106.790	127.360	3.085	12921.6	6669.7	64.364	2.552	2.33		Sand	49.0			120.38	0.62	74.23	139.43	0.64	0.705	0.832	0.232	0.300	0.43	0.02	0.00
106.960	139.120	2.030	12942.2	6679.7	70.566	1.530	2.15		Sand	34.6			131.49	0.61	80.72	137.52	0.64	0.705	0.835	0.224	0.287	0.41	0.02	0.00
107.120	151.610	2.641	12961.5	6689.1	77.151	1.820	2.17		Sand	36.3			143.30	0.63	90.23	150.83	0.64	0.705	0.815	0.294	0.402	0.57	0.02	0.00
107.280	154.280	3.193	12980.9	6698.4	78.511	2.161	2.21		Sand	40.0			145.82	0.64	92.87	157.23	0.64	0.705	0.804	0.345	0.486	0.69	0.02	0.00
107.450	157.820	3.006	13001.5	6708.4	80.326	1.986	2.18		Sand	37.4			149.17	0.64	95.03	157.72	0.64	0.704	0.802	0.349	0.494	0.70	0.02	0.00
107.610	161.260	3.178	13020.8	6717.8	82.090	2.054	2.18		Sand	37.7			152.42	0.64	97.66	161.22	0.64	0.704	0.796	0.384	0.553	0.79	0.01	0.00
107.780	158.170	3.642	13041.4	6727.7	80.386	2.401	2.24		Sand	42.1			149.50	0.64	95.98	162.62	0.63	0.704	0.793	0.400	0.579	0.82	0.01	0.00
107.940	153.290	4.245	13060.7	6737.1	77.739	2.893	2.31		Sand	47.5			144.89	0.64	92.90	162.21	0.63	0.704	0.793	0.395	0.571	0.81	0.01	0.00
108.100	144.120	5.043	13080.1	6746.5	72.826	3.665	2.40		Sand	55.1			136.22	0.64	86.60	157.81	0.63	0.704	0.801	0.350	0.495	0.70	0.02	0.00
108.270	144.950	5.857	13100.7	6756.5	40.968	4.232	2.62		Clay	72.5			137.00	0.74	n.a.	n.a.	0.63	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
108.430	143.910	4.787	13120.0	6765.8	72.601	3.486	2.39		Sand	53.9			136.02	0.63	86.22	156.83	0.63	0.703	0.803	0.341	0.479	0.68	0.02	0.00
108.600	187.390	3.778	13140.6	6775.8	95.508	2.090	2.14		Sand	34.4			177.12	0.66	117.27	182.00	0.63	0.703	0.749	0.788	1.252	1.78	0.00	0.00
108.760	252.930	2.533	13160.0	6785.2	130.030	1.028	1.83		Sand	9.6			239.06	0.64	152.28	160.08	0.63	0.703	0.796	0.372	0.531	0.76	0.01	0.00
108.920	289.250	2.721	13179.3	6794.6	149.093	0.962	1.77		Sand	4.5			273.39	0.66	180.37	180.45	0.63	0.703	0.752	0.739	1.166	1.66	0.00	0.00
109.090	294.210	3.189	13199.9	6804.5	151.592	1.109	1.81		Sand	7.5			278.08	0.67	185.92	188.85	0.63	0.703	0.729	1.065	1.708	2.43	0.00	0.00
109.250	310.010	3.392	13219.3	6813.9	159.805	1.118	1.79		Sand	6.4			293.02	0.68	199.56	200.81	0.63	0.702	0.690	1.978	3.002	4.27	0.00	0.00
109.420	312.620	3.509	13239.8	6823.9	161.057	1.147	1.80		Sand	6.8			295.48	0.68	202.14	203.99	0.63	0.702	0.677	2.384	3.553	5.06	0.00	0.00
109.580	314.190	3.432	13259.2	6833.2	161.767	1.116	1.79		Sand	6.0			296.97	0.68	203.04	203.92	0.63	0.702	0.677	2.374	3.538	5.04	0.00	0.00
109.740	306.860	2.070	13278.5	6842.6	157.798	0.689	1.65		Sand	0.0			290.04	0.67	195.68	195.68	0.63	0.702	0.706	1.494	2.322	3.31	0.00	0.00
109.910	295.410	2.444	13299.1	6852.6	151.664	0.846	1.73		Sand	1.1			279.22	0.66	185.07	185.07	0.63	0.702	0.738	0.898	1.442	2.06	0.00	0.00
110.070	286.000	2.500	13318.5	6861.9	146.617	0.895	1.75		Sand	3.2			270.32	0.65	176.53	176.53	0.63	0.702	0.759	0.635	0.980	1.40	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (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)
110.240	258.510	2.496	13339.0	6871.9	132.087	0.991	1.82		Sand	8.3			244.34	0.63	154.55	158.95	0.63	0.701	0.796	0.361	0.511	0.73	0.02	0.00
110.400	246.130	2.403	13358.4	6881.3	125.503	1.004	1.84		Sand	9.9			232.64	0.63	145.88	154.62	0.63	0.701	0.804	0.322	0.446	0.64	0.02	0.00
110.560	233.780	2.295	13377.8	6890.7	118.944	1.010	1.86		Sand	11.5			220.96	0.62	137.58	151.21	0.63	0.701	0.809	0.297	0.404	0.58	0.02	0.00
110.730	223.330	2.184	13398.3	6900.6	113.383	1.008	1.87		Sand	12.7			211.09	0.62	130.55	148.06	0.63	0.701	0.814	0.276	0.370	0.53	0.02	0.00
110.890	215.140	2.269	13417.7	6910.0	109.017	1.088	1.91		Sand	15.5			203.35	0.63	127.16	154.02	0.63	0.701	0.804	0.317	0.438	0.63	0.02	0.00
111.060	213.790	2.332	13438.3	6920.0	108.228	1.126	1.92		Sand	16.4			202.07	0.63	127.02	157.07	0.63	0.701	0.798	0.343	0.481	0.69	0.02	0.00
111.220	223.080	2.427	13457.6	6929.3	113.002	1.122	1.90		Sand	15.2			210.85	0.63	133.13	159.72	0.63	0.700	0.793	0.368	0.523	0.75	0.01	0.00
111.380	240.330	2.186	13477.0	6938.7	121.924	0.936	1.83		Sand	9.1			227.16	0.61	139.50	145.64	0.63	0.700	0.817	0.262	0.347	0.50	0.02	0.00
111.550	249.090	2.350	13497.6	6948.7	126.400	0.970	1.82		Sand	8.9			235.43	0.62	146.41	152.30	0.63	0.700	0.806	0.304	0.416	0.59	0.02	0.00
111.710	258.970	2.247	13516.9	6958.0	131.460	0.891	1.79		Sand	6.0			244.77	0.62	152.36	153.06	0.63	0.700	0.804	0.310	0.425	0.61	0.02	0.00
111.880	257.790	2.290	13537.5	6968.0	130.746	0.912	1.80		Sand	6.7			243.66	0.62	151.54	152.93	0.63	0.700	0.804	0.309	0.424	0.61	0.02	0.00
112.040	223.570	2.458	13556.8	6977.4	112.841	1.134	1.91		Sand	15.5			211.31	0.63	133.37	160.94	0.63	0.700	0.790	0.381	0.543	0.78	0.01	0.00
112.200	205.260	2.836	13576.2	6986.8	103.237	1.429	2.00		Sand	23.2			194.01	0.65	125.20	173.48	0.63	0.700	0.763	0.568	0.860	1.23	0.00	0.00
112.370	183.460	2.783	13596.8	6996.7	91.826	1.575	2.07		Sand	28.5			173.40	0.64	110.30	165.73	0.63	0.700	0.780	0.439	0.640	0.92	0.01	0.00
112.530	165.230	2.376	13616.1	7006.1	82.290	1.500	2.09		Sand	30.2			156.17	0.62	96.71	151.80	0.63	0.699	0.806	0.301	0.410	0.59	0.02	0.00
112.700	152.770	1.773	13636.7	7016.1	75.759	1.215	2.06		Sand	27.6			144.40	0.60	86.53	135.96	0.63	0.699	0.830	0.218	0.275	0.39	0.02	0.00
112.860	142.140	1.044	13656.1	7025.4	70.189	0.771	1.97		Sand	20.2			134.35	0.56	75.83	110.06	0.63	0.699	0.862	0.152	0.173	0.25	0.03	0.00
113.020	138.040	1.626	13675.4	7034.8	68.012	1.239	2.10		Sand	30.9			130.47	0.59	76.91	128.89	0.63	0.699	0.839	0.194	0.237	0.34	0.02	0.00
113.190	139.370	2.886	13696.0	7044.8	68.648	2.178	2.26		Sand	43.6			131.73	0.61	80.10	143.80	0.63	0.699	0.818	0.252	0.330	0.47	0.02	0.00
113.350	143.270	3.147	13715.4	7054.2	70.616	2.307	2.27		Sand	44.3			135.42	0.61	82.97	147.82	0.63	0.699	0.811	0.275	0.366	0.52	0.02	0.00
113.520	187.320	4.278	13735.9	7064.1	93.348	2.371	2.19		Sand	38.2			177.05	0.65	115.94	184.20	0.63	0.699	0.734	0.864	1.371	1.96	0.00	0.00
113.680	220.180	5.970	13755.3	7073.5	110.268	2.799	2.19		Sand	38.6			208.11	0.69	144.11	219.43	0.63	0.699	0.638	6.825	9.579	13.71	0.00	0.00
113.850	181.260	5.452	13775.9	7083.5	90.080	3.127	2.29		Sand	46.1			171.32	0.66	112.41	185.90	0.63	0.698	0.728	0.931	1.486	2.13	0.00	0.00
114.010	80.240	3.917	13795.2	7092.8	20.681	5.341	2.90		Clay	95.3			75.84	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.170	43.750	1.702	13814.6	7102.2	10.375	4.621	3.09		Clay	100.0			41.35	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.340	37.910	1.643	13835.1	7112.2	8.715	5.301	3.19		Clay	100.0			35.83	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.500	37.760	1.524	13854.5	7121.5	8.659	4.942	3.17		Clay	100.0			35.69	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.670	37.330	1.157	13875.1	7131.5	8.523	3.806	3.11		Clay	100.0			35.28	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.830	35.670	1.136	13894.4	7140.9	8.045	3.955	3.14		Clay	100.0			33.71	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
114.990	34.970	1.002	13913.8	7150.3	7.836	3.575	3.13		Clay	100.0			33.05	0.73	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.160	40.340	1.074	13934.4	7160.2	9.322	3.217	3.04		Clay	100.0			38.13	0.72	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.320	35.500	1.122	13953.7	7169.6	7.957	3.934	3.15		Clay	100.0			33.55	0.72	n.a.	n.a.	0.63	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.490	35.410	1.221	13974.3	7179.6	7.918	4.294	3.17		Clay	100.0			33.47	0.72	n.a.	n.a.	0.63	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.650	35.730	1.220	13993.7	7188.9	7.994	4.247	3.16		Clay	100.0			33.77	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.810	35.480	1.023	14013.0	7198.3	7.911	3.593	3.13		Clay	100.0			33.53	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
115.980	33.860	0.840	14033.6	7208.3	7.448	3.129	3.11		Clay	100.0			32.00	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.140	31.300	0.839	14052.9	7217.6	6.726	3.458	3.17		Clay	100.0			29.58	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.310	29.570	1.418	14073.5	7227.6	6.235	6.294	3.35		Clay	100.0			27.95	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.470	30.110	1.354	14092.9	7237.0	6.374	5.872	3.33		Clay	100.0			28.46	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.630	46.940	1.163	14112.2	7246.4	11.008	2.917	2.96		Clay	99.4			44.37	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.800	45.460	1.251	14132.8	7256.3	10.582	3.259	3.00		Clay	100.0			42.97	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
116.960	40.010	1.085	14152.2	7265.7	9.066	3.295	3.06		Clay	100.0			37.82	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.130	37.670	1.217	14172.7	7275.7	8.407	3.978	3.13		Clay	100.0			35.60	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.290	37.550	1.134	14192.1	7285.0	8.361	3.725	3.11		Clay	100.0			35.49	0.72	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.450	35.390	1.111	14211.5	7294.4	7.755	3.927	3.15		Clay	100.0			33.45	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.620	36.280	1.242	14232.0	7304.4	7.985	4.260	3.16		Clay	100.0			34.29	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.780	37.140	1.278	14251.4	7313.7	8.208	4.258	3.15		Clay	100.0			35.10	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
117.950	40.180	1.253	14272.0	7323.7	9.024	3.791	3.09		Clay	100.0			37.98	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.110	43.820	1.743	14291.3	7333.1	10.002	4.753	3.11		Clay	100.0			41.42	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.270	45.700	1.610	14310.7	7342.5	10.499	4.176	3.06		Clay	100.0			43.19	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.440	52.440	1.330	14331.2	7352.4	12.315	2.937	2.92		Clay	96.4			49.57	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.600	52.120	1.237	14350.6	7361.8	12.210	2.752	2.90		Clay	95.3			49.26	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.770	39.830	1.120	14371.2	7371.8	8.857	3.432	3.07		Clay	100.0			37.65	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
118.930	36.020	1.590	14390.5	7381.1	7.810	5.517	3.24		Clay	100.0			34.05	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.090	40.110	2.819	14409.9	7390.5	8.905	8.568	3.31		Clay	100.0			37.91	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.260	45.230	2.494	14430.5	7400.5	10.274	6.561	3.19		Clay	100.0			42.75	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.420	82.920	1.571	14449.8	7409.9	20.431	2.075	2.65		Clay	75.1			78.37	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.590	71.630	1.512	14470.4	7419.8	17.358	2.348	2.74		Clay	82.2			67.70	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.750	46.700	1.951	14489.8	7429.2	10.622	4.945	3.10		Clay	100.0			44.14	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
119.910	35.810	2.041	14509.1	7438.6	7.678	7.146	3.31		Clay	100.0			33.85	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.080	40.330	2.352	14529.7	7448.5	8.878	7.112	3.26		Clay	100.0			38.12	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.240	49.260	2.012	14549.0	7457.9	11.259	4.791	3.08		Clay	100.0			46.56	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.410	66.970	1.484	14569.6	7467.9	15.985	2.487	2.78		Clay	85.7			63.30	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.570	67.090	1.319	14589.0	7477.2	15.994	2.206	2.75		Clay	83.3			63.41	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.730	52.520	1.620	14608.3	7486.6	12.079	3.582	2.97		Clay	100.0			49.64	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
120.900	40.740	1.608	14628.9	7496.6	8.918	4.811	3.16		Clay	100.0			38.51	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.060	37.970	1.320	14648.3	7506.0	8.166	4.307	3.16		Clay	100.0			35.89	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
121.230	48.460	1.106	14668.8	7515.9	10.944	2.689	2.94		Clay	98.0			45.80	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.390	48.410	0.854	14688.2	7525.3	10.914	2.079	2.88		Clay	93.2			45.76	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.560	37.290	0.808	14708.8	7535.3	7.945	2.699	3.05		Clay	100.0			35.25	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.720	33.060	1.057	14728.1	7544.6	6.812	4.115	3.21		Clay	100.0			31.25	0.72	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
121.880	32.400	1.523	14747.5	7554.0	6.626	6.086	3.32		Clay	100.0			30.62	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.050	41.690	1.854	14768.1	7564.0	9.071	5.404	3.18		Clay	100.0			39.40	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.210	56.140	1.795	14787.4	7573.3	12.873	3.683	2.96		Clay	99.8			53.06	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.380	70.360	1.552	14808.0	7583.3	16.604	2.464	2.77		Clay	84.4			66.50	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.540	60.660	1.904	14827.3	7592.7	14.026	3.575	2.92		Clay	96.8			57.33	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.700	47.670	1.565	14846.7	7602.1	10.588	3.890	3.04		Clay	100.0			45.06	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
122.870	62.250	1.518	14867.3	7612.0	14.403	2.769	2.85		Clay	90.8			58.84	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.030	57.030	1.304	14886.6	7621.4	13.012	2.629	2.87		Clay	92.6			53.90	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.200	48.980	1.194	14907.2	7631.4	10.883	2.876	2.96		Clay	99.5			46.29	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.360	43.590	0.867	14926.6	7640.7	9.456	2.401	2.96		Clay	100.0			41.20	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.520	42.280	0.810	14945.9	7650.1	9.100	2.328	2.97		Clay	100.0			39.96	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.690	36.060	1.014	14966.5	7660.1	7.461	3.548	3.14		Clay	100.0			34.08	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
123.850	36.000	1.464	14985.9	7669.5	7.434	5.135	3.24		Clay	100.0			34.03	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.020	43.050	2.535	15006.4	7679.4	9.258	7.130	3.25		Clay	100.0			40.69	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.180	47.100	3.130	15025.8	7688.8	10.297	7.908	3.24		Clay	100.0			44.52	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.340	76.330	2.985	15045.1	7698.2	17.876	4.338	2.89		Clay	94.4			72.15	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.510	109.060	2.726	15065.7	7708.1	26.343	2.685	2.63		Clay	73.4			103.08	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
124.670	126.890	1.808	15085.1	7717.5	59.067	1.515	2.20		Sand	39.1			119.93	0.56	67.19	124.69	0.62	0.696	0.833	0.182	0.216	0.31	0.03	0.00
124.840	125.840	3.014	15105.6	7727.5	58.505	2.548	2.35		Sand	51.4			118.94	0.57	67.84	132.41	0.62	0.696	0.822	0.205	0.251	0.36	0.02	0.00
125.000	119.240	3.945	15125.0	7736.8	28.869	3.532	2.68		Clay	77.1			112.70	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.160	127.720	4.076	15144.4	7746.2	31.021	3.393	2.64		Clay	74.3			120.72	0.71	n.a.	n.a.	0.62	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
125.330	132.370	3.327	15164.9	7756.2	61.605	2.666	2.35		Sand	51.2			125.11	0.58	72.13	137.76	0.62	0.696	0.813	0.225	0.281	0.40	0.02	0.00
125.490	152.810	2.132	15184.3	7765.6	71.648	1.468	2.13		Sand	33.3			144.43	0.58	83.57	139.62	0.62	0.696	0.810	0.233	0.293	0.42	0.02	0.00
125.660	169.730	2.103	15204.9	7775.5	79.940	1.297	2.06		Sand	27.6			160.43	0.58	93.83	144.69	0.62	0.696	0.801	0.257	0.331	0.48	0.02	0.00
125.820	191.090	1.899	15224.2	7784.9	90.413	1.035	1.95		Sand	19.3			180.61	0.58	104.58	140.38	0.62	0.696	0.808	0.236	0.298	0.43	0.02	0.00
125.980	188.560	1.763	15243.6	7794.3	89.108	0.974	1.94		Sand	18.4			178.22	0.57	101.85	134.88	0.62	0.696	0.817	0.214	0.264	0.38	0.02	0.00
126.150	185.590	3.492	15264.2	7804.2	87.584	1.962	2.15		Sand	35.0			175.42	0.62	108.32	171.68	0.62	0.697	0.746	0.533	0.778	1.12	0.01	0.00
126.310	156.170	3.230	15283.5	7813.6	73.056	2.174	2.24		Sand	42.0			147.61	0.59	87.54	152.04	0.62	0.697	0.787	0.303	0.403	0.58	0.02	0.00
126.480	88.830	2.837	15304.1	7823.6	20.752	3.495	2.78		Clay	85.6			83.96	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.640	54.590	2.234	15323.4	7832.9	11.982	4.760	3.05		Clay	100.0			51.60	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.800	54.790	1.819	15342.8	7842.3	12.016	3.859	3.00		Clay	100.0			51.79	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
126.970	59.040	2.116	15363.4	7852.3	13.081	4.120	2.98		Clay	100.0			55.80	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.130	66.660	2.239	15382.7	7861.7	15.002	3.797	2.92		Clay	96.2			63.01	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.300	69.920	2.356	15403.3	7871.6	15.808	3.786	2.90		Clay	94.7			66.09	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.460	67.140	2.225	15422.7	7881.0	15.082	3.744	2.91		Clay	95.8			63.46	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.620	63.170	2.051	15442.0	7890.4	14.055	3.699	2.93		Clay	97.5			59.71	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.790	57.990	1.724	15462.6	7900.3	12.723	3.431	2.95		Clay	98.6			54.81	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
127.950	54.500	1.670	15482.0	7909.7	11.823	3.571	2.98		Clay	100.0			51.51	0.71	n.a.	n.a.	0.62	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.120	52.600	1.645	15502.5	7919.7	11.326	3.669	3.00		Clay	100.0			49.72	0.71	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.280	52.110	1.660	15521.9	7929.0	11.186	3.744	3.01		Clay	100.0			49.25	0.71	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.440	52.950	1.701	15541.2	7938.4	11.382	3.765	3.01		Clay	100.0			50.05	0.71	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.610	52.730	2.067	15561.8	7948.4	11.310	4.598	3.06		Clay	100.0			49.84	0.71	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.770	53.930	2.074	15581.2	7957.8	11.596	4.495	3.05		Clay	100.0			50.97	0.71	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
128.940	54.280	2.105	15601.7	7967.7	11.667	4.528	3.05		Clay	100.0			51.30	0.70	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.100	47.440	1.890	15621.1	7977.1	9.936	4.770	3.12		Clay	100.0			44.84	0.70	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.270	41.120	1.565	15641.7	7987.1	8.338	4.699	3.17		Clay	100.0			38.87	0.70	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.430	37.520	1.293	15661.0	7996.4	7.426	4.354	3.20		Clay	100.0			35.46	0.70	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.590	35.000	1.361	15680.4	8005.8	6.785	5.012	3.26		Clay	100.0			33.08	0.70	n.a.	n.a.	0.62	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.760	34.900	1.186	15701.0	8015.8	6.749	4.384	3.23		Clay	100.0			32.99	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
129.920	37.360	1.489	15720.3	8025.2	7.352	5.047	3.24		Clay	100.0			35.31	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.090	36.830	1.595	15740.9	8035.1	7.208	5.508	3.27		Clay	100.0			34.81	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.250	40.250	1.692	15760.3	8044.5	8.048	5.228	3.21		Clay	100.0			38.04	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.410	40.490	1.504	15779.6	8053.9	8.096	4.612	3.18		Clay	100.0			38.27	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.580	43.940	1.029	15800.2	8063.8	8.939	2.854	3.03		Clay	100.0			41.53	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.740	50.940	1.034	15819.5	8073.2	10.660	2.404	2.92		Clay	96.6			48.15	0.70	n.a.	n.a.	0.62	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
130.910	40.240	1.085	15840.1	8083.2	7.997	3.357	3.10		Clay	100.0			38.03	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.070	39.180	1.043	15859.5	8092.5	7.723	3.337	3.12		Clay	100.0			37.03	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.230	38.990	0.957	15878.8	8101.9	7.665	3.082	3.10		Clay	100.0			36.85	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.400	36.040	0.916	15899.4	8111.9	6.926	3.260	3.15		Clay	100.0			34.06	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.560	32.310	0.816	15918.8	8121.3	5.997	3.349	3.21		Clay	100.0			30.54	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.730	32.680	0.657	15939.3	8131.2	6.078	2.660	3.15		Clay	100.0			30.89	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
131.890	35.030	0.838	15958.7	8140.6	6.646	3.098	3.15		Clay	100.0			33.11	0.70	n.a.	n.a.	0.62	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.050	31.670	1.126	15978.1	8150.0	5.811	4.755	3.30		Clay	100.0			29.93	0.70	n.a.	n.a.	0.62	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (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)
132.220	32.860	1.499	15998.6	8159.9	6.093	6.029	3.35		Clay	100.0			31.06	0.70	n.a.	n.a.	0.62	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.380	38.120	2.679	16018.0	8169.3	7.372	8.898	3.39		Clay	100.0			36.03	0.70	n.a.	n.a.	0.62	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.550	49.860	4.606	16038.6	8179.3	10.231	11.007	3.34		Clay	100.0			47.13	0.70	n.a.	n.a.	0.62	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.710	106.970	5.012	16057.9	8188.6	24.165	5.065	2.84		Clay	90.1			101.11	0.70	n.a.	n.a.	0.62	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
132.870	184.140	4.968	16077.3	8198.0	84.563	2.821	2.27		Sand	44.9			174.05	0.61	106.93	178.26	0.62	0.701	0.718	0.678	1.004	1.43	0.00	0.00
133.040	220.880	3.659	16097.8	8208.0	102.138	1.719	2.06		Sand	28.0			208.77	0.63	131.03	189.60	0.62	0.702	0.683	1.103	1.657	2.36	0.00	0.00
133.200	154.500	3.573	16117.2	8217.4	70.238	2.440	2.28		Sand	45.8			146.03	0.58	84.65	150.83	0.62	0.702	0.782	0.294	0.386	0.55	0.02	0.00
133.370	85.610	2.878	16137.8	8227.3	18.850	3.712	2.83		Clay	89.5			80.92	0.70	n.a.	n.a.	0.62	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.530	66.090	2.268	16157.1	8236.7	14.086	3.910	2.94		Clay	98.6			62.47	0.70	n.a.	n.a.	0.62	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.690	52.510	1.588	16176.5	8246.1	10.774	3.575	3.01		Clay	100.0			49.63	0.70	n.a.	n.a.	0.62	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
133.860	54.460	2.207	16197.1	8256.0	11.231	4.761	3.08		Clay	100.0			51.47	0.70	n.a.	n.a.	0.62	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.020	56.490	3.159	16216.4	8265.4	11.707	6.529	3.15		Clay	100.0			53.39	0.70	n.a.	n.a.	0.62	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.190	54.690	3.133	16237.0	8275.4	11.255	6.728	3.17		Clay	100.0			51.69	0.70	n.a.	n.a.	0.62	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.350	85.360	4.168	16256.4	8284.8	18.644	5.397	2.94		Clay	98.3			80.68	0.70	n.a.	n.a.	0.62	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.510	77.150	3.691	16275.7	8294.1	16.641	5.348	2.98		Clay	100.0			72.92	0.70	n.a.	n.a.	0.62	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.680	53.430	4.621	16296.3	8304.1	10.906	10.204	3.30		Clay	100.0			50.50	0.70	n.a.	n.a.	0.62	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
134.840	72.530	4.539	16315.6	8313.5	15.486	7.050	3.08		Clay	100.0			68.55	0.70	n.a.	n.a.	0.62	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.010	67.730	3.841	16336.2	8323.4	14.312	6.448	3.08		Clay	100.0			64.02	0.70	n.a.	n.a.	0.62	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.170	87.980	4.435	16355.6	8332.8	19.154	5.558	2.94		Clay	98.2			83.16	0.70	n.a.	n.a.	0.62	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.330	73.190	3.752	16374.9	8342.2	15.584	5.773	3.02		Clay	100.0			69.18	0.70	n.a.	n.a.	0.62	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.500	79.050	3.061	16395.5	8352.1	16.966	4.320	2.91		Clay	95.7			74.72	0.70	n.a.	n.a.	0.62	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.660	70.410	1.905	16414.9	8361.5	14.878	3.063	2.86		Clay	91.9			66.55	0.70	n.a.	n.a.	0.62	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.830	46.460	1.928	16435.4	8371.5	9.136	5.040	3.16		Clay	100.0			43.91	0.70	n.a.	n.a.	0.62	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
135.990	42.350	3.033	16454.8	8380.9	8.143	8.889	3.35		Clay	100.0			40.03	0.70	n.a.	n.a.	0.62	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.150	60.070	4.080	16474.2	8390.2	12.356	7.871	3.18		Clay	100.0			56.78	0.70	n.a.	n.a.	0.62	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.320	103.000	4.753	16494.7	8400.2	22.560	5.016	2.86		Clay	91.6			97.35	0.70	n.a.	n.a.	0.62	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.480	116.950	4.597	16514.1	8409.6	25.850	4.229	2.76		Clay	84.2			110.54	0.69	n.a.	n.a.	0.62	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.650	123.060	4.835	16534.7	8419.5	27.268	4.212	2.75		Clay	82.7			116.31	0.69	n.a.	n.a.	0.62	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.810	140.420	4.691	16554.0	8428.9	31.355	3.550	2.65		Clay	75.1			132.72	0.69	n.a.	n.a.	0.62	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
136.980	130.120	5.037	16574.6	8438.9	28.874	4.135	2.72		Clay	80.8			122.99	0.69	n.a.	n.a.	0.62	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.140	127.560	4.804	16593.9	8448.2	28.234	4.028	2.72		Clay	80.7			120.57	0.69	n.a.	n.a.	0.63	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.300	137.340	4.240	16613.3	8457.6	30.513	3.286	2.64		Clay	74.0			129.81	0.69	n.a.	n.a.	0.63	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.470	146.470	3.943	16633.9	8467.6	65.276	2.854	2.36		Sand	51.4			138.44	0.57	78.38	145.79	0.63	0.707	0.786	0.263	0.335	0.47	0.02	0.00
137.630	147.400	4.771	16653.2	8477.0	32.812	3.431	2.63		Clay	73.1			139.32	0.69	n.a.	n.a.	0.63	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.800	94.090	4.968	16673.8	8486.9	20.208	5.793	2.94		Clay	97.8			88.93	0.69	n.a.	n.a.	0.63	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
137.960	93.220	5.118	16693.2	8496.3	19.979	6.030	2.95		Clay	99.1			88.11	0.69	n.a.	n.a.	0.63	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.120	109.310	5.142	16712.5	8505.7	23.738	5.093	2.85		Clay	90.7			103.32	0.69	n.a.	n.a.	0.63	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.290	114.030	5.441	16733.1	8515.6	24.816	5.150	2.84		Clay	89.8			107.78	0.69	n.a.	n.a.	0.63	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.450	124.060	6.335	16752.5	8525.0	27.140	5.476	2.83		Clay	89.0			117.26	0.69	n.a.	n.a.	0.63	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.620	136.180	4.929	16773.0	8535.0	29.946	3.857	2.69		Clay	78.2			128.71	0.69	n.a.	n.a.	0.63	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.780	140.810	4.061	16792.4	8544.3	30.994	3.067	2.61		Clay	72.0			133.09	0.69	n.a.	n.a.	0.63	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
138.940	210.390	2.597	16811.7	8553.7	94.954	1.286	2.00		Sand	22.9			198.86	0.59	116.43	162.56	0.63	0.710	0.750	0.399	0.547	0.77	0.01	0.00
139.110	231.780	2.073	16832.3	8563.7	104.943	0.928	1.87		Sand	12.9			219.07	0.55	121.52	139.20	0.63	0.710	0.796	0.231	0.285	0.40	0.02	0.00
139.270	233.440	1.909	16851.7	8573.1	105.661	0.848	1.85		Sand	10.7			220.64	0.54	119.58	130.06	0.63	0.710	0.811	0.198	0.235	0.33	0.02	0.00
139.440	245.440	2.025	16872.2	8583.0	111.226	0.854	1.83		Sand	9.5			231.98	0.55	126.90	133.91	0.63	0.711	0.805	0.210	0.254	0.36	0.02	0.00
139.600	250.060	2.186	16891.6	8592.4	113.328	0.905	1.84		Sand	10.3			236.35	0.56	131.44	140.81	0.63	0.711	0.793	0.238	0.296	0.42	0.02	0.00
139.760	221.920	3.664	16911.0	8601.8	100.070	1.717	2.07		Sand	28.4			209.75	0.62	129.19	188.18	0.63	0.711	0.677	1.033	1.538	2.16	0.00	0.00
139.930	182.850	5.194	16931.5	8611.7	81.702	2.978	2.30		Sand	47.1			172.83	0.60	103.76	175.65	0.63	0.711	0.716	0.614	0.887	1.25	0.00	0.00
140.090	149.540	6.179	16950.9	8621.1	32.725	4.380	2.70		Clay	79.0			141.34	0.69	n.a.	n.a.	0.63	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.260	127.980	5.769	16971.5	8631.1	27.689	4.828	2.78		Clay	85.5			120.96	0.69	n.a.	n.a.	0.63	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.420	115.750	5.226	16990.8	8640.5	24.826	4.872	2.82		Clay	88.5			109.40	0.69	n.a.	n.a.	0.63	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.580	113.280	4.839	17010.2	8649.8	24.226	4.619	2.81		Clay	87.9			107.07	0.69	n.a.	n.a.	0.63	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.750	111.580	4.827	17030.8	8659.8	23.803	4.684	2.82		Clay	88.7			105.46	0.69	n.a.	n.a.	0.63	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
140.910	114.180	4.876	17050.1	8669.2	24.375	4.615	2.81		Clay	87.7			107.92	0.69	n.a.	n.a.	0.63	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.080	110.850	4.634	17070.7	8679.1	23.577	4.529	2.81		Clay	88.1			104.77	0.69	n.a.	n.a.	0.63	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.240	116.890	4.499	17090.0	8688.5	24.940	4.152	2.77		Clay	84.7			110.48	0.69	n.a.	n.a.	0.63	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
141.400	145.360	3.684	17109.4	8697.9	63.778	2.693	2.34		Sand	50.6			137.39	0.56	76.40	142.90	0.63	0.714	0.787	0.248	0.310	0.43	0.02	0.00
141.570	205.920	2.898	17130.0	8707.8	91.953	1.469	2.05		Sand	26.8			194.63	0.59	114.52	167.99	0.63	0.715	0.734	0.471	0.658	0.92	0.01	0.00
141.730	215.700	2.692	17149.3	8717.2	96.453	1.300	2.00		Sand	22.7			203.88	0.59	119.27	165.50	0.63	0.715	0.740	0.436	0.602	0.84	0.01	0.00
141.900	213.970	3.318	17169.9	8727.2	95.588	1.615	2.06		Sand	28.1			202.24	0.60	121.55	178.52	0.63	0.715	0.704	0.685	0.997	1.39	0.00	0.00
142.060	216.450	3.583	17189.3	8736.6	96.686	1.724	2.08		Sand	29.4			204.58	0.61	124.23	183.77	0.63	0.715	0.688	0.849	1.258	1.76	0.00	0.00
142.220	211.170	3.569	17208.6	8745.9	94.175	1.762	2.09		Sand	30.6			199.59	0.60	120.48	181.00	0.63	0.716	0.697	0.756	1.109	1.55	0.00	0.00
142.390	205.550	3.504	17229.2	8755.9	91.505	1.779	2.11		Sand	31.5			194.28	0.60	116.34	177.31	0.63	0.716	0.707	0.654	0.946	1.32	0.00	0.00
142.550	204.130	2.732	17248.6	8765.3	90.792	1.397	2.04		Sand	26.0			192.94	0.58	112.22	163.79	0.63	0.716	0.743	0.414	0.567	0.79	0.01	0.00
142.720	206.550	3.005	17269.1	8775.2	91.859	1.518	2.06		Sand	27.6			195.23	0.59	115.03	169.97	0.63	0.717	0.727	0.503	0.707	0.99	0.01	0.00
142.880	205.420	3.463	17288.5	8784.6	91.281	1.760	2.10		Sand	31.3			194.16	0.60	115.95	176.57	0.63	0.717	0.709	0.636	0.916	1.28	0.00	0.00
143.040	199.760	4.065	17307.8	8794.0	88.604	2.127	2.17		Sand	36.7			188.81	0.60	113.45	179.72	0.63	0.718	0.699	0.718	1.047	1.46	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.91

Total Settlement: 0.25 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'_{vc}=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
143.210	209.660	3.590	17328.4	8803.9	93.137	1.786	2.10		Sand	31.2			198.17	0.60	119.15	180.25	0.63	0.718	0.697	0.733	1.071	1.49	0.00	0.00
143.370	241.000	3.419	17347.8	8813.3	107.597	1.472	2.00		Sand	22.9			227.79	0.61	139.40	189.21	0.63	0.718	0.668	1.083	1.591	2.21	0.00	0.00
143.540	264.540	3.185	17368.3	8823.3	118.427	1.245	1.92		Sand	16.5			250.04	0.61	151.37	183.99	0.63	0.719	0.685	0.857	1.266	1.76	0.00	0.00
143.700	260.780	3.607	17387.7	8832.7	116.621	1.431	1.97		Sand	20.2			246.48	0.62	153.40	198.21	0.63	0.719	0.632	1.711	2.380	3.31	0.00	0.00
143.860	257.700	2.552	17407.1	8842.0	115.130	1.025	1.87		Sand	12.7			243.57	0.57	139.05	156.96	0.63	0.719	0.757	0.342	0.454	0.63	0.02	0.00
144.030	250.390	3.171	17427.6	8852.0	111.683	1.312	1.95		Sand	19.2			236.66	0.60	142.95	183.43	0.63	0.720	0.686	0.836	1.233	1.71	0.00	0.00
144.190	266.420	3.391	17447.0	8861.4	119.023	1.316	1.93		Sand	17.7			251.81	0.61	154.55	191.60	0.63	0.720	0.658	1.215	1.758	2.44	0.00	0.00
144.360	303.890	3.578	17467.6	8871.3	136.248	1.212	1.87		Sand	12.3			287.23	0.62	177.98	196.70	0.63	0.720	0.637	1.577	2.211	3.07	0.00	0.00
144.520	322.030	3.831	17486.9	8880.7	144.541	1.223	1.85		Sand	11.1			304.38	0.63	192.03	206.36	0.64	0.721	0.593	2.757	3.599	4.99	0.00	0.00
144.690	319.790	2.443	17507.5	8890.7	143.422	0.785	1.72		Sand	0.8			302.26	0.60	181.62	181.62	0.64	0.721	0.691	0.775	1.134	1.57	0.00	0.00
144.850	317.130	3.439	17526.9	8900.1	142.116	1.115	1.83		Sand	9.2			299.74	0.61	183.46	190.96	0.64	0.722	0.659	1.177	1.707	2.37	0.00	0.00
145.010	311.870	4.054	17546.2	8909.4	139.614	1.338	1.89		Sand	14.1			294.77	0.64	189.11	216.03	0.64	0.722	0.569	5.296	6.626	9.18	0.00	0.00
145.180	311.210	4.479	17566.8	8919.4	139.227	1.481	1.92		Sand	16.7			294.15	0.66	194.01	231.94	0.64	0.722	0.568	19.584	24.488	33.90	0.00	0.00
145.340	324.410	5.259	17586.1	8928.8	145.223	1.666	1.95		Sand	18.7			306.63	0.68	209.72	257.03	0.64	0.723	0.568	311.735	389.596	539.10	0.00	0.00
145.510	314.770	4.522	17606.7	8938.7	140.705	1.478	1.92		Sand	16.4			297.51	0.66	196.69	233.69	0.64	0.723	0.568	23.054	28.795	39.82	0.00	0.00
145.670	299.940	3.616	17626.1	8948.1	133.810	1.242	1.88		Sand	13.3			283.50	0.62	175.82	198.63	0.64	0.723	0.627	1.751	2.415	3.34	0.00	0.00
145.830	281.440	2.944	17645.4	8957.5	125.237	1.080	1.86		Sand	11.7			266.01	0.59	155.93	171.13	0.64	0.724	0.720	0.523	0.734	1.01	0.01	0.00
146.000	255.170	2.833	17666.0	8967.4	113.101	1.150	1.91		Sand	15.8			241.18	0.58	141.05	170.26	0.64	0.724	0.722	0.508	0.710	0.98	0.01	0.00
146.160	238.650	3.122	17685.4	8976.8	105.457	1.359	1.98		Sand	21.5			225.57	0.60	134.72	180.35	0.64	0.725	0.693	0.736	1.069	1.48	0.00	0.00
146.330	252.430	3.318	17705.9	8986.8	111.714	1.362	1.96		Sand	20.1			238.59	0.61	144.68	187.98	0.64	0.725	0.667	1.023	1.502	2.07	0.00	0.00
146.490	258.760	3.244	17725.3	8996.2	114.553	1.298	1.94		Sand	18.3			244.57	0.60	147.66	185.98	0.64	0.725	0.674	0.934	1.381	1.90	0.00	0.00
146.650	262.860	3.048	17744.7	9005.5	116.367	1.200	1.91		Sand	16.0			248.45	0.59	147.61	178.39	0.64	0.726	0.698	0.681	0.982	1.35	0.00	0.00
146.820	295.980	1.568	17765.2	9015.5	131.464	0.546	1.66		Sand	0.0			279.75	0.57	159.38	159.38	0.64	0.726	0.748	0.365	0.487	0.67	0.02	0.00
146.980	328.030	2.239	17784.6	9024.9	146.060	0.701	1.69		Sand	0.0			310.05	0.61	187.59	187.59	0.64	0.727	0.668	1.005	1.476	2.03	0.00	0.00
147.150	332.290	2.746	17805.2	9034.8	147.923	0.849	1.73		Sand	1.8			314.07	0.61	191.42	191.42	0.64	0.727	0.654	1.204	1.732	2.38	0.00	0.00
147.310	291.860	3.720	17824.5	9044.2	129.358	1.315	1.91		Sand	15.6			275.86	0.62	172.03	203.35	0.64	0.728	0.603	2.294	3.043	4.18	0.00	0.00
147.470	280.110	4.435	17843.9	9053.6	123.917	1.635	1.99		Sand	22.0			264.75	0.65	171.46	224.02	0.64	0.728	0.564	9.827	12.191	16.75	0.00	0.00
147.640	260.980	4.142	17864.4	9063.5	115.108	1.643	2.01		Sand	23.9			246.67	0.63	155.91	210.84	0.64	0.728	0.564	3.684	4.569	6.27	0.00	0.00
147.800	252.910	3.344	17883.8	9072.9	111.361	1.371	1.97		Sand	20.3			239.05	0.61	144.66	188.58	0.64	0.729	0.663	1.052	1.535	2.11	0.00	0.00
147.970	260.090	3.048	17904.4	9082.9	114.570	1.214	1.92		Sand	16.7			245.83	0.59	145.64	178.50	0.64	0.729	0.696	0.684	0.984	1.35	0.00	0.00
148.130	266.640	3.124	17923.7	9092.3	117.494	1.212	1.91		Sand	16.0			252.02	0.60	150.05	181.03	0.64	0.730	0.688	0.757	1.097	1.50	0.00	0.00
148.290	288.100	3.064	17943.1	9101.6	127.209	1.098	1.86		Sand	11.7			272.31	0.59	160.19	175.51	0.64	0.730	0.705	0.611	0.869	1.19	0.01	0.00
148.460	308.480	3.258	17963.7	9111.6	136.417	1.088	1.83		Sand	9.7			291.57	0.60	174.09	182.77	0.64	0.731	0.682	0.813	1.185	1.62	0.00	0.00
148.620	245.790	4.403	17983.0	9121.0	107.803	1.859	2.07		Sand	28.6			232.32	0.63	145.88	208.40	0.64	0.731	0.575	3.138	3.971	5.43	0.00	0.00
148.790	138.650	4.832	18003.6	9130.9	28.398	3.727	2.70		Clay	78.8			131.05	0.68	n.a.	n.a.	0.64	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
148.950	77.510	3.762	18023.0	9140.3	14.988	5.491	3.02		Clay	100.0			73.26	0.68	n.a.	n.a.	0.64	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.110	54.220	2.428	18042.3	9149.7	9.880	5.372	3.15		Clay	100.0			51.25	0.68	n.a.	n.a.	0.64	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.280	42.310	1.680	18062.9	9159.6	7.266	5.047	3.24		Clay	100.0			39.99	0.68	n.a.	n.a.	0.64	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.440	36.540	1.509	18082.2	9169.0	5.998	5.489	3.33		Clay	100.0			34.54	0.68	n.a.	n.a.	0.64	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.610	34.350	1.496	18102.8	9179.0	5.512	5.913	3.38		Clay	100.0			32.47	0.68	n.a.	n.a.	0.64	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.770	33.770	1.458	18122.2	9188.4	5.378	5.901	3.39		Clay	100.0			31.92	0.68	n.a.	n.a.	0.65	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
149.930	33.360	1.366	18141.5	9197.7	5.282	5.623	3.38		Clay	100.0			31.53	0.68	n.a.	n.a.	0.65	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
150.100	34.060	1.267	18162.1	9207.7	5.426	5.072	3.35		Clay	100.0			32.19	0.68	n.a.	n.a.	0.65	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
150.260	34.530	1.186	18181.5	9217.1	5.520	4.663	3.32		Clay	100.0			32.64	0.68	n.a.	n.a.	0.65	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.91

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.660	2.670	0.055	79.9	79.9	24.644	2.099	2.59		Unsaturated	70.0			2.52	1.70	4.29	56.16	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	4.260	0.086	99.2	99.2	33.891	2.035	2.47		Unsaturated	60.6			4.03	1.70	6.84	57.61	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	6.210	0.102	118.6	118.6	24.558	1.655	2.53		Unsaturated	65.3			5.87	1.70	9.98	62.64	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	9.260	0.105	139.2	139.2	33.874	1.141	2.32		Unsaturated	48.8			8.75	1.70	14.88	64.41	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	10.880	0.168	158.5	158.5	37.299	1.557	2.37		Unsaturated	52.3			10.28	1.70	17.48	68.91	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	12.630	0.131	179.1	179.1	40.744	1.046	2.24		Unsaturated	41.8			11.94	1.70	20.29	68.10	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	15.250	0.159	198.4	198.4	46.762	1.047	2.19		Unsaturated	37.9			14.41	1.70	24.50	71.03	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	14.870	0.350	217.8	217.8	43.487	2.369	2.43		Unsaturated	57.3			14.05	1.70	23.89	78.58	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	15.500	0.437	238.4	238.4	43.314	2.843	2.48		Unsaturated	61.6			14.65	1.70	24.91	81.00	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	17.920	0.417	257.7	257.7	48.183	2.346	2.39		Unsaturated	54.4			16.94	1.70	28.79	83.96	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	25.110	0.344	278.3	278.3	65.080	1.378	2.14		Unsaturated	34.4			23.73	1.70	40.35	87.96	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	23.510	0.273	297.7	297.7	58.872	1.169	2.13		Unsaturated	33.6			22.22	1.70	37.78	84.16	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	17.010	0.223	317.0	317.0	41.150	1.324	2.29		Unsaturated	46.2			16.08	1.70	27.33	79.02	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	15.630	0.283	337.6	337.6	36.586	1.833	2.42		Unsaturated	56.2			14.77	1.70	25.11	79.84	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	16.240	0.306	357.0	357.0	36.962	1.905	2.42		Unsaturated	56.8			15.35	1.70	26.09	81.25	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	19.620	0.393	377.5	377.5	43.481	2.021	2.38		Unsaturated	53.7			18.54	1.70	31.53	87.21	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	27.600	0.433	396.9	396.9	59.802	1.581	2.21		Unsaturated	39.7			26.09	1.70	44.35	96.80	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	28.090	0.418	416.2	416.2	59.419	1.498	2.20		Unsaturated	38.7			26.55	1.70	45.14	97.10	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	25.850	0.308	436.8	436.8	53.321	1.200	2.17		Unsaturated	36.9			24.43	1.70	41.54	91.38	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	25.030	0.346	456.2	456.2	50.489	1.394	2.23		Unsaturated	41.6			23.66	1.70	40.22	92.80	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	28.640	0.369	476.7	476.7	56.555	1.299	2.17		Unsaturated	37.0			27.07	1.70	46.02	96.93	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	26.710	0.344	496.1	496.1	51.655	1.301	2.21		Unsaturated	39.5			25.25	1.70	42.92	94.87	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	21.030	0.306	516.7	516.7	39.732	1.473	2.33		Unsaturated	49.4			19.88	1.70	33.79	88.50	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	16.560	0.259	536.0	536.0	30.595	1.587	2.44		Unsaturated	58.2			15.65	1.70	26.61	82.31	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	13.470	0.235	555.4	555.4	24.339	1.782	2.55		Unsaturated	67.0			12.73	1.70	21.64	78.00	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	13.980	0.240	576.0	576.0	24.805	1.754	2.54		Unsaturated	66.2			13.21	1.70	22.46	78.88	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	13.550	0.298	595.3	595.3	30.433	2.245	2.53		Unsaturated	65.6			12.81	1.70	21.77	77.88	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	15.360	0.360	615.9	615.9	26.370	2.389	2.60		Unsaturated	70.9			14.52	1.70	24.68	82.65	1.00	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	19.330	0.528	635.3	635.3	32.797	2.775	2.57		Unsaturated	68.3			18.27	1.70	31.06	90.39	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	25.190	0.640	654.6	654.6	42.250	2.574	2.46		Unsaturated	59.9			23.81	1.70	40.48	100.52	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	28.670	0.709	675.2	675.2	47.407	2.502	2.42		Unsaturated	56.3			27.10	1.70	46.07	106.58	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	27.530	0.718	694.5	694.5	44.845	2.643	2.45		Unsaturated	59.0			26.02	1.70	44.24	105.07	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	27.280	0.657	715.1	715.1	43.772	2.441	2.43		Unsaturated	57.8			25.78	1.70	43.83	104.19	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	29.460	0.524	734.5	734.5	46.673	1.800	2.33		Unsaturated	49.2			27.84	1.68	46.66	104.71	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	31.710	0.486	753.8	753.8	49.618	1.552	2.27		Unsaturated	44.4			29.97	1.65	49.46	105.90	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	34.480	0.505	774.4	774.4	53.266	1.481	2.23		Unsaturated	41.4			32.59	1.62	52.81	108.38	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	39.270	0.462	793.8	793.8	59.990	1.187	2.13		Unsaturated	33.4			37.12	1.60	59.22	110.11	0.99	0.585	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	41.810	0.392	814.3	814.3	63.082	0.946	2.05		Unsaturated	27.3			39.52	1.59	62.65	107.23	0.99	0.585	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	41.500	0.266	833.7	833.7	61.863	0.648	1.97		Unsaturated	20.6			39.22	1.60	62.89	96.16	0.99	0.585	1.096	n.a.	n.a.	n.a.	0.00	0.00
7.050	31.380	0.314	853.1	853.1	46.078	1.015	2.18		Unsaturated	37.7			29.66	1.58	46.78	98.41	0.99	0.585	1.095	n.a.	n.a.	n.a.	0.00	0.00
7.220	22.400	0.417	873.6	873.6	32.308	1.900	2.47		Unsaturated	60.4			21.17	1.58	33.46	91.67	0.99	0.584	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.380	15.270	0.469	893.0	893.0	25.629	3.166	2.68		Unsaturated	77.8			14.43	1.60	23.04	81.64	0.99	0.584	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.550	10.250	0.461	913.6	913.6	21.440	4.705	2.86		Unsaturated	91.5			9.69	1.61	15.55	73.54	0.99	0.584	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.710	8.520	0.469	932.9	932.9	17.265	5.821	2.99		Unsaturated	100.0			8.05	1.60	12.86	70.78	0.99	0.584	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.870	9.850	0.262	952.3	952.3	19.687	2.793	2.74		Unsaturated	82.2			9.31	1.58	14.67	71.37	0.99	0.583	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.040	10.180	0.266	972.8	972.8	19.928	2.741	2.73		Unsaturated	81.5			9.62	1.56	14.97	71.67	0.99	0.583	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.200	7.890	0.299	992.2	992.2	14.904	4.045	2.93		Unsaturated	97.8			7.46	1.55	11.54	68.88	0.99	0.583	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.370	6.710	0.351	1012.8	1012.8	12.251	5.653	3.09		Unsaturated	100.0			6.34	1.54	9.75	66.71	0.99	0.583	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.530	7.040	0.385	1032.1	1032.1	12.642	5.894	3.09		Unsaturated	100.0			6.65	1.52	10.10	67.17	0.99	0.582	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.690	7.680	0.436	1051.5	1051.5	13.608	6.093	3.08		Unsaturated	100.0			7.26	1.50	10.88	68.19	0.99	0.582	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.860	8.140	0.479	1072.1	1072.1	14.186	6.297	3.07		Unsaturated	100.0			7.69	1.48	11.39	68.86	0.99	0.582	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.020	8.650	0.501	1091.4	1091.4	14.851	6.186	3.05		Unsaturated	100.0			8.18	1.46	11.96	69.61	0.99	0.582	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.190	9.030	0.519	1112.0	1112.0	15.241	6.127	3.04		Unsaturated	100.0			8.53	1.45	12.34	70.11	0.98	0.581	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.350	9.250	0.529	1131.4	1131.4	15.352	6.090	3.04		Unsaturated	100.0			8.74	1.43	12.51	70.33	0.98	0.581	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.510	9.660	0.560	1150.7	1150.7	15.790	6.166	3.03		Unsaturated	100.0			9.13	1.42	12.93	70.88	0.98	0.581	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.680	10.020	0.583	1171.3	1171.3	16.109	6.180	3.03		Unsaturated	100.0			9.47	1.40	13.27	71.32	0.98	0.580	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.840	10.410	0.619	1190.6	1190.6	16.486	6.309	3.03		Unsaturated	100.0			9.84	1.39	13.64	71.81	0.98	0.580	1.049	n.a.	n.a.	n.a.	0.00	0.00
10.010	10.460	0.610	1211.2	1210.6	16.280	6.187	3.02		Clay	100.0			9.89	1.16	n.a.	n.a.	0.98	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	10.110	0.594	1230.6	1220.0	15.566	6.256	3.04		Clay	100.0			9.56	1.16	n.a.	n.a.	0.98	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	8.940	0.544	1249.9	1229.3	13.528	6.539	3.10		Clay	100.0			8.45	1.15	n.a.	n.a.	0.98	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	8.440	0.510	1270.5	1239.3	12.595	6.538	3.12		Clay	100.0			7.98	1.15	n.a.	n.a.	0.98	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	8.090	0.536	1289.9	1248.7	11.925	7.202	3.17		Clay	100.0			7.65	1.15	n.a.	n.a.	0.98	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	8.250	0.551	1310.4	1258.6	12.068	7.252	3.17		Clay	100.0			7.80	1.15	n.a.	n.a.	0.98	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	8.900	0.555	1329.8	1268.0	12.989	6.743	3.12		Clay	100.0			8.41	1.14	n.a.	n.a.	0.98	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	7.870	0.484	1349.2	1277.4	11.266	6.732	3.17		Clay	100.0			7.44	1.14	n.a.	n.a.	0.98	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.320	7.100	0.424	1369.7	1287.4	9.966	6.603	3.20		Clay	100.0			6.71	1.14	n.a.	n.a.	0.98	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	7.500	0.429	1389.1	1296.7	10.496	6.302	3.17		Clay	100.0			7.09	1.14	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	8.560	0.483	1409.7	1306.7	12.023	6.146	3.12		Clay	100.0			8.09	1.14	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4 | PGA (A_{max}) 0.91 | Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'_{vc}=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.810	9.750	0.503	1429.0	1316.1	13.731	5.561	3.05		Clay	100.0			9.22	1.13	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	10.340	0.529	1449.6	1326.0	14.502	5.506	3.03		Clay	100.0			9.77	1.13	n.a.	n.a.	0.98	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.890	0.480	1468.9	1335.4	13.712	5.238	3.03		Clay	100.0			9.35	1.13	n.a.	n.a.	0.98	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	8.790	0.402	1488.3	1344.8	11.966	5.001	3.07		Clay	100.0			8.31	1.13	n.a.	n.a.	0.98	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	8.850	0.388	1508.9	1354.7	11.951	4.790	3.06		Clay	100.0			8.36	1.12	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	9.910	0.415	1528.2	1364.1	13.409	4.532	3.00		Clay	100.0			9.37	1.12	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	9.690	0.360	1548.8	1374.1	12.977	4.038	2.98		Clay	100.0			9.16	1.12	n.a.	n.a.	0.97	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	9.030	0.379	1568.2	1383.5	11.921	4.590	3.04		Clay	100.0			8.53	1.12	n.a.	n.a.	0.97	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	9.100	0.382	1587.5	1392.8	11.927	4.595	3.04		Clay	100.0			8.60	1.12	n.a.	n.a.	0.97	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	9.330	0.386	1608.1	1402.8	12.156	4.521	3.03		Clay	100.0			8.82	1.11	n.a.	n.a.	0.97	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	9.940	0.436	1627.5	1412.2	12.925	4.776	3.03		Clay	100.0			9.40	1.11	n.a.	n.a.	0.97	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	10.060	0.470	1648.0	1422.1	12.989	5.086	3.04		Clay	100.0			9.51	1.11	n.a.	n.a.	0.97	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	10.680	0.416	1667.4	1431.5	13.757	4.227	2.97		Clay	100.0			10.09	1.11	n.a.	n.a.	0.97	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	9.790	0.409	1686.7	1440.9	12.418	4.566	3.03		Clay	100.0			9.25	1.11	n.a.	n.a.	0.97	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	9.020	0.442	1707.3	1450.8	11.257	5.417	3.11		Clay	100.0			8.53	1.10	n.a.	n.a.	0.97	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	9.480	0.459	1726.7	1460.2	11.802	5.325	3.09		Clay	100.0			8.96	1.10	n.a.	n.a.	0.97	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	8.720	0.449	1747.2	1470.2	10.674	5.716	3.14		Clay	100.0			8.24	1.10	n.a.	n.a.	0.97	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	8.230	0.433	1766.6	1479.6	9.931	5.887	3.17		Clay	100.0			7.78	1.10	n.a.	n.a.	0.97	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	7.900	0.426	1786.0	1488.9	9.412	6.074	3.20		Clay	100.0			7.47	1.10	n.a.	n.a.	0.97	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	7.890	0.442	1806.5	1498.9	9.322	6.321	3.21		Clay	100.0			7.46	1.10	n.a.	n.a.	0.97	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	8.180	0.481	1825.9	1508.3	9.636	6.624	3.22		Clay	100.0			7.73	1.09	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	9.200	0.540	1846.5	1518.2	10.903	6.518	3.17		Clay	100.0			8.70	1.09	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	9.920	0.578	1865.8	1527.6	11.766	6.426	3.14		Clay	100.0			9.38	1.09	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	10.060	0.555	1885.2	1537.0	11.864	6.085	3.12		Clay	100.0			9.51	1.09	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	9.830	0.529	1905.8	1547.0	11.477	5.958	3.13		Clay	100.0			9.29	1.09	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	9.090	0.495	1925.1	1556.3	10.444	6.095	3.17		Clay	100.0			8.59	1.08	n.a.	n.a.	0.96	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	8.800	0.476	1945.7	1566.3	9.995	6.079	3.18		Clay	100.0			8.32	1.08	n.a.	n.a.	0.96	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	9.070	0.471	1965.0	1575.7	10.265	5.819	3.16		Clay	100.0			8.57	1.08	n.a.	n.a.	0.96	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	9.380	0.460	1984.4	1585.0	10.584	5.482	3.13		Clay	100.0			8.87	1.08	n.a.	n.a.	0.96	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	9.500	0.440	2005.0	1595.0	10.655	5.177	3.12		Clay	100.0			8.98	1.08	n.a.	n.a.	0.96	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	9.420	0.411	2024.3	1604.4	10.481	4.886	3.11		Clay	100.0			8.90	1.08	n.a.	n.a.	0.96	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	9.510	0.409	2044.9	1614.3	10.515	4.815	3.10		Clay	100.0			8.99	1.07	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	9.990	0.446	2064.3	1623.7	11.034	4.977	3.09		Clay	100.0			9.44	1.07	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	10.770	0.453	2083.6	1633.1	11.914	4.651	3.05		Clay	100.0			10.18	1.07	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	11.210	0.450	2104.2	1643.1	12.365	4.433	3.02		Clay	100.0			10.60	1.07	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	11.270	0.438	2123.6	1652.4	12.355	4.293	3.01		Clay	100.0			10.65	1.07	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	11.680	0.443	2144.1	1662.4	12.762	4.178	3.00		Clay	100.0			11.04	1.07	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	11.630	0.479	2163.5	1671.8	12.619	4.543	3.02		Clay	100.0			10.99	1.06	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	12.100	0.508	2182.8	1681.1	13.097	4.618	3.01		Clay	100.0			11.44	1.06	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	11.550	0.476	2203.4	1691.1	12.357	4.553	3.03		Clay	100.0			10.92	1.06	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	10.950	0.392	2222.8	1700.5	11.572	3.986	3.02		Clay	100.0			10.35	1.06	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	10.700	0.330	2243.3	1710.4	11.200	3.449	2.99		Clay	100.0			10.11	1.06	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	9.950	0.304	2262.7	1719.8	10.255	3.448	3.02		Clay	100.0			9.40	1.06	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	9.670	0.368	2282.1	1729.2	9.865	4.311	3.09		Clay	100.0			9.14	1.05	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	10.380	0.507	2302.6	1739.2	10.613	5.497	3.13		Clay	100.0			9.81	1.05	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	11.370	0.613	2322.0	1748.5	11.677	6.004	3.13		Clay	100.0			10.75	1.05	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	11.660	0.620	2342.6	1758.5	11.929	5.913	3.11		Clay	100.0			11.02	1.05	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.550	0.621	2361.9	1767.9	11.731	5.990	3.12		Clay	100.0			10.92	1.05	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	11.860	0.658	2382.5	1777.8	12.002	6.168	3.12		Clay	100.0			11.21	1.05	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	12.450	0.699	2401.9	1787.2	12.588	6.211	3.11		Clay	100.0			11.77	1.05	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	11.810	0.679	2421.2	1796.6	11.799	6.409	3.14		Clay	100.0			11.16	1.04	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	11.950	0.620	2441.8	1806.5	11.878	5.774	3.11		Clay	100.0			11.29	1.04	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	11.080	0.596	2461.1	1815.9	10.848	6.052	3.15		Clay	100.0			10.47	1.04	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	11.410	0.609	2481.7	1825.9	11.139	5.993	3.14		Clay	100.0			10.78	1.04	n.a.	n.a.	0.95	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	12.320	0.572	2501.1	1835.3	12.063	5.166	3.07		Clay	100.0			11.64	1.04	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	11.300	0.501	2520.4	1844.6	10.885	4.992	3.10		Clay	100.0			10.68	1.04	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.110	0.462	2541.0	1854.6	9.533	5.229	3.16		Clay	100.0			9.56	1.04	n.a.	n.a.	0.95	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	9.670	0.452	2560.4	1864.0	9.002	5.387	3.18		Clay	100.0			9.14	1.03	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	10.500	0.512	2580.9	1873.9	9.829	5.554	3.16		Clay	100.0			9.92	1.03	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	11.250	0.613	2600.3	1883.3	10.566	6.157	3.17		Clay	100.0			10.63	1.03	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	11.180	0.627	2619.7	1892.7	10.430	6.352	3.18		Clay	100.0			10.57	1.03	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	10.890	0.609	2640.2	1902.7	10.060	6.366	3.19		Clay	100.0			10.29	1.03	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	10.150	0.553	2659.6	1912.0	9.226	6.267	3.22		Clay	100.0			9.59	1.03	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	9.620	0.463	2680.2	1922.0	8.616	5.594	3.21		Clay	100.0			9.09	1.03	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	9.120	0.468	2699.5	1931.4	8.046	6.028	3.25		Clay	100.0			8.62	1.02	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	9.450	0.520	2718.9	1940.7	8.338	6.426	3.26		Clay	100.0			8.93	1.02	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	11.240	0.586	2739.4	1950.7	10.120	5.932	3.17		Clay	100.0			10.62	1.02	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.91

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.800	11.880	0.636	2758.8	1960.1	10.714	6.053	3.16		Clay	100.0			11.23	1.02	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	12.430	0.661	2779.4	1970.0	11.208	5.984	3.14		Clay	100.0			11.75	1.02	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.650	0.668	2798.7	1979.4	11.368	5.936	3.13		Clay	100.0			11.96	1.02	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	12.560	0.678	2818.1	1988.8	11.214	6.080	3.14		Clay	100.0			11.87	1.02	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.750	0.664	2838.7	1998.8	11.338	5.858	3.13		Clay	100.0			12.05	1.02	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	13.260	0.659	2858.0	2008.1	11.783	5.571	3.10		Clay	100.0			12.53	1.01	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	13.260	0.673	2878.6	2018.1	11.715	5.691	3.11		Clay	100.0			12.53	1.01	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	13.090	0.682	2898.0	2027.5	11.483	5.860	3.12		Clay	100.0			12.37	1.01	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	13.090	0.692	2917.3	2036.8	11.421	5.953	3.13		Clay	100.0			12.37	1.01	n.a.	n.a.	0.94	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	13.550	0.652	2937.9	2046.8	11.805	5.398	3.09		Clay	100.0			12.81	1.01	n.a.	n.a.	0.94	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	13.810	0.686	2957.2	2056.2	11.994	5.561	3.09		Clay	100.0			13.05	1.01	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	13.710	0.700	2977.8	2066.1	11.830	5.724	3.11		Clay	100.0			12.96	1.01	n.a.	n.a.	0.93	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	13.770	0.745	2997.2	2075.5	11.825	6.072	3.12		Clay	100.0			13.02	1.01	n.a.	n.a.	0.93	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	14.390	0.793	3016.5	2084.9	12.357	6.159	3.11		Clay	100.0			13.60	1.00	n.a.	n.a.	0.93	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	14.770	0.800	3037.1	2094.9	12.651	6.036	3.10		Clay	100.0			13.96	1.00	n.a.	n.a.	0.93	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	14.180	0.770	3056.5	2104.2	12.025	6.085	3.12		Clay	100.0			13.40	1.00	n.a.	n.a.	0.93	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	12.040	0.689	3077.0	2114.2	9.934	6.562	3.20		Clay	100.0			11.38	1.00	n.a.	n.a.	0.93	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	10.400	0.650	3096.4	2123.6	8.337	7.343	3.29		Clay	100.0			9.83	1.00	n.a.	n.a.	0.93	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	8.750	0.545	3115.8	2133.0	6.744	7.578	3.37		Clay	100.0			8.27	1.00	n.a.	n.a.	0.93	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	9.870	0.496	3136.3	2142.9	7.748	5.975	3.26		Clay	100.0			9.33	1.00	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	10.830	0.518	3155.7	2152.3	8.598	5.595	3.21		Clay	100.0			10.24	1.00	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	10.600	0.515	3176.3	2162.3	8.336	5.715	3.23		Clay	100.0			10.02	0.99	n.a.	n.a.	0.93	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	10.460	0.473	3195.6	2171.6	8.162	5.332	3.21		Clay	100.0			9.89	0.99	n.a.	n.a.	0.93	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	10.380	0.444	3215.0	2181.0	8.044	5.057	3.21		Clay	100.0			9.81	0.99	n.a.	n.a.	0.93	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	9.740	0.436	3235.5	2191.0	7.414	5.368	3.25		Clay	100.0			9.21	0.99	n.a.	n.a.	0.93	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	10.410	0.453	3254.9	2200.3	7.983	5.163	3.21		Clay	100.0			9.84	0.99	n.a.	n.a.	0.93	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	10.520	0.428	3275.5	2210.3	8.037	4.820	3.19		Clay	100.0			9.94	0.99	n.a.	n.a.	0.92	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	9.670	0.447	3294.8	2219.7	7.229	5.568	3.27		Clay	100.0			9.14	0.99	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	10.430	0.536	3315.4	2229.6	7.869	6.104	3.26		Clay	100.0			9.86	0.99	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	13.390	0.640	3334.8	2239.0	10.471	5.460	3.14		Clay	100.0			12.66	0.99	n.a.	n.a.	0.92	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	16.190	0.864	3354.1	2248.4	12.910	5.953	3.09		Clay	100.0			15.30	0.98	n.a.	n.a.	0.92	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	19.570	1.062	3374.7	2258.4	15.837	5.936	3.02		Clay	100.0			18.50	0.98	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	23.930	1.307	3394.1	2267.7	19.608	5.879	2.95		Clay	99.0			22.62	0.98	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	25.350	1.417	3414.6	2277.7	20.760	5.992	2.94		Clay	97.9			23.96	0.98	n.a.	n.a.	0.92	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	26.060	1.445	3434.0	2287.1	21.288	5.937	2.93		Clay	97.1			24.63	0.98	n.a.	n.a.	0.92	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	27.040	1.456	3453.3	2296.4	22.046	5.752	2.91		Clay	95.4			25.56	0.98	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	27.070	1.411	3473.9	2306.4	21.968	5.569	2.90		Clay	94.8			25.59	0.98	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	26.220	1.400	3493.3	2315.8	21.136	5.722	2.92		Clay	96.4			24.78	0.98	n.a.	n.a.	0.92	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	26.610	1.470	3513.8	2325.7	21.372	5.914	2.92		Clay	96.9			25.15	0.98	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	27.250	1.373	3533.2	2335.1	21.826	5.389	2.89		Clay	94.2			25.76	0.97	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	25.820	1.362	3552.6	2344.5	20.511	5.664	2.92		Clay	96.9			24.40	0.97	n.a.	n.a.	0.92	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	24.540	1.204	3573.1	2354.5	19.328	5.290	2.92		Clay	96.9			23.19	0.97	n.a.	n.a.	0.91	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	23.520	1.137	3592.5	2363.8	18.380	5.233	2.94		Clay	97.9			22.23	0.97	n.a.	n.a.	0.91	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	23.170	1.090	3613.1	2373.8	17.999	5.103	2.94		Clay	97.9			21.90	0.97	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	22.190	1.016	3632.4	2383.2	17.098	4.987	2.95		Clay	98.7			20.97	0.97	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	21.550	1.046	3651.8	2392.5	16.488	5.301	2.98		Clay	100.0			20.37	0.97	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	21.050	1.041	3672.4	2402.5	15.995	5.415	2.99		Clay	100.0			19.90	0.97	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	20.400	0.944	3691.7	2411.9	15.386	5.088	2.99		Clay	100.0			19.28	0.97	n.a.	n.a.	0.91	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	19.200	0.886	3712.3	2421.8	14.323	5.107	3.01		Clay	100.0			18.15	0.97	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	18.300	0.867	3731.6	2431.2	13.519	5.276	3.04		Clay	100.0			17.30	0.96	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	17.000	0.811	3751.0	2440.6	12.394	5.363	3.07		Clay	100.0			16.07	0.96	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	15.490	0.754	3771.6	2450.6	11.103	5.539	3.12		Clay	100.0			14.64	0.96	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	14.020	0.694	3790.9	2459.9	9.858	5.723	3.17		Clay	100.0			13.25	0.96	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	13.180	0.623	3811.5	2469.9	9.129	5.526	3.19		Clay	100.0			12.46	0.96	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	12.220	0.565	3830.9	2479.3	8.313	5.482	3.22		Clay	100.0			11.55	0.96	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	11.700	0.511	3850.2	2488.7	7.856	5.224	3.22		Clay	100.0			11.06	0.96	n.a.	n.a.	0.91	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	11.780	0.503	3870.8	2498.6	7.880	5.108	3.22		Clay	100.0			11.13	0.96	n.a.	n.a.	0.90	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	12.920	0.507	3890.2	2508.0	8.752	4.616	3.15		Clay	100.0			12.21	0.96	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	14.060	0.628	3910.7	2518.0	9.615	5.191	3.15		Clay	100.0			13.29	0.96	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	14.480	0.701	3930.1	2527.3	9.904	5.604	3.16		Clay	100.0			13.69	0.95	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	14.570	0.651	3949.4	2536.7	9.930	5.171	3.14		Clay	100.0			13.77	0.95	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	13.900	0.624	3970.0	2546.7	9.357	5.239	3.16		Clay	100.0			13.14	0.95	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	13.030	0.570	3989.4	2556.0	8.635	5.165	3.19		Clay	100.0			12.32	0.95	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	13.280	0.559	4009.9	2566.0	8.788	4.957	3.17		Clay	100.0			12.55	0.95	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	13.200	0.522	4029.3	2575.4	8.686	4.666	3.16		Clay	100.0			12.48	0.95	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	12.610	0.472	4048.7	2584.8	8.191	4.460	3.17		Clay	100.0			11.92	0.95	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	12.440	0.459	4069.2	2594.7	8.020	4.411	3.17		Clay	100.0			11.76	0.95	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.91

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.790	12.640	0.458	4088.6	2604.1	8.138	4.325	3.16		Clay	100.0			11.95	0.95	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	12.470	0.403	4109.2	2614.1	7.969	3.864	3.14		Clay	100.0			11.79	0.95	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	11.050	0.335	4128.5	2623.4	6.850	3.731	3.19		Clay	100.0			10.44	0.94	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	9.770	0.327	4147.9	2632.8	5.846	4.244	3.27		Clay	100.0			9.23	0.94	n.a.	n.a.	0.90	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	10.170	0.408	4168.5	2642.8	6.119	5.045	3.30		Clay	100.0			9.61	0.94	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	12.870	0.456	4187.8	2652.1	8.126	4.231	3.16		Clay	100.0			12.16	0.94	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	14.180	0.357	4208.4	2662.1	9.072	2.959	3.03		Clay	100.0			13.40	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	15.130	0.370	4227.7	2671.5	9.744	2.840	2.99		Clay	100.0			14.30	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	13.170	0.397	4247.1	2680.9	8.241	3.598	3.11		Clay	100.0			12.45	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	12.660	0.419	4267.7	2690.8	7.824	3.979	3.15		Clay	100.0			11.97	0.94	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	12.980	0.428	4287.0	2700.2	8.026	3.948	3.14		Clay	100.0			12.27	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	12.430	0.337	4307.6	2710.2	7.583	3.280	3.12		Clay	100.0			11.75	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	11.380	0.311	4327.0	2719.5	6.778	3.377	3.17		Clay	100.0			10.76	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	10.660	0.330	4347.5	2729.5	6.218	3.890	3.23		Clay	100.0			10.08	0.94	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	11.090	0.389	4366.9	2738.9	6.504	4.369	3.24		Clay	100.0			10.48	0.93	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	13.270	0.427	4386.3	2748.3	8.061	3.851	3.14		Clay	100.0			12.54	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	13.930	0.632	4406.8	2758.2	8.503	5.386	3.20		Clay	100.0			13.17	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	14.970	0.730	4426.2	2767.6	9.219	5.722	3.19		Clay	100.0			14.15	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	13.990	0.789	4446.8	2777.6	8.473	6.703	3.26		Clay	100.0			13.22	0.93	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	19.130	0.852	4466.1	2786.9	12.126	5.043	3.06		Clay	100.0			18.08	0.93	n.a.	n.a.	0.88	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	19.040	0.856	4485.5	2796.3	12.014	5.098	3.07		Clay	100.0			18.00	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	18.860	0.892	4506.0	2806.3	11.836	5.372	3.09		Clay	100.0			17.83	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	18.670	0.751	4525.4	2815.6	11.654	4.578	3.05		Clay	100.0			17.65	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	18.290	0.709	4546.0	2825.6	11.337	4.426	3.05		Clay	100.0			17.29	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	16.460	0.472	4565.3	2835.0	10.002	3.332	3.02		Clay	100.0			15.56	0.93	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	13.990	0.398	4584.7	2844.4	8.225	3.406	3.10		Clay	100.0			13.22	0.92	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	12.530	0.392	4605.3	2854.3	7.166	3.828	3.18		Clay	100.0			11.84	0.92	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	11.580	0.347	4624.6	2863.7	6.473	3.739	3.21		Clay	100.0			10.95	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	11.750	0.353	4645.2	2873.7	6.561	3.749	3.20		Clay	100.0			11.11	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	11.670	0.317	4664.6	2883.0	6.478	3.393	3.18		Clay	100.0			11.03	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	11.840	0.348	4683.9	2892.4	6.568	3.664	3.20		Clay	100.0			11.19	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	13.320	0.344	4704.5	2902.4	7.558	3.136	3.11		Clay	100.0			12.59	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	15.640	0.427	4723.8	2911.7	9.120	3.216	3.05		Clay	100.0			14.78	0.92	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	17.050	0.469	4744.4	2921.7	10.047	3.197	3.01		Clay	100.0			16.12	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	18.670	0.527	4763.8	2931.1	11.114	3.237	2.98		Clay	100.0			17.65	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	18.330	0.586	4783.1	2940.5	10.841	3.677	3.02		Clay	100.0			17.33	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	19.520	0.569	4803.7	2950.4	11.604	3.323	2.97		Clay	100.0			18.45	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	20.400	0.544	4823.1	2959.8	12.155	3.023	2.93		Clay	97.3			19.28	0.92	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	21.480	0.474	4843.6	2969.8	12.835	2.489	2.86		Clay	91.9			20.30	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	21.780	0.487	4863.0	2979.1	12.989	2.519	2.86		Clay	91.8			20.59	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	23.100	0.507	4882.4	2988.5	13.826	2.452	2.83		Clay	89.5			21.83	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	23.210	0.570	4902.9	2998.5	13.846	2.744	2.86		Clay	91.7			21.94	0.91	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	23.520	0.639	4922.3	3007.8	14.003	3.035	2.88		Clay	93.4			22.23	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	24.540	0.701	4942.9	3017.8	14.626	3.175	2.88		Clay	93.2			23.19	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	24.030	0.721	4962.2	3027.2	14.237	3.347	2.90		Clay	95.0			22.71	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	21.970	0.591	4981.6	3036.6	12.830	3.036	2.91		Clay	95.9			20.77	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	20.500	0.547	5002.1	3046.5	11.816	3.039	2.94		Clay	98.2			19.38	0.91	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	19.900	0.563	5021.5	3055.9	11.381	3.235	2.97		Clay	100.0			18.81	0.91	n.a.	n.a.	0.86	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	20.450	0.594	5042.1	3065.9	11.696	3.311	2.97		Clay	100.0			19.33	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	20.750	0.664	5061.4	3075.2	11.849	3.644	2.99		Clay	100.0			19.61	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	21.730	0.598	5080.8	3084.6	12.442	3.115	2.93		Clay	97.3			20.54	0.91	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	18.220	0.530	5101.4	3094.6	10.127	3.384	3.02		Clay	100.0			17.22	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	14.470	0.368	5120.7	3104.0	7.674	3.092	3.10		Clay	100.0			13.68	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	11.650	0.292	5141.3	3113.9	5.831	3.212	3.21		Clay	100.0			11.01	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	9.650	0.260	5160.7	3123.3	4.527	3.672	3.33		Clay	100.0			9.12	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	8.700	0.212	5180.0	3132.7	3.901	3.473	3.37		Clay	100.0			8.22	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	9.280	0.181	5200.6	3142.6	4.251	2.714	3.29		Clay	100.0			8.77	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	8.790	0.176	5219.9	3152.0	3.921	2.848	3.33		Clay	100.0			8.31	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	8.290	0.191	5240.5	3162.0	3.586	3.363	3.40		Clay	100.0			7.84	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	9.050	0.187	5259.9	3171.3	4.049	2.919	3.32		Clay	100.0			8.55	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	9.420	0.203	5280.4	3181.3	4.262	3.000	3.31		Clay	100.0			8.90	0.90	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	9.780	0.166	5299.8	3190.7	4.469	2.324	3.24		Clay	100.0			9.24	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	10.010	0.144	5319.2	3200.1	4.594	1.965	3.19		Clay	100.0			9.46	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	9.790	0.190	5339.7	3210.0	4.436	2.666	3.27		Clay	100.0			9.25	0.90	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	10.410	0.351	5359.1	3219.4	4.802	4.539	3.36		Clay	100.0			9.84	0.90	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	13.110	0.460	5379.7	3229.4	6.453	4.417	3.25		Clay	100.0			12.39	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	14.790	0.548	5399.0	3238.7	7.466	4.534	3.20		Clay	100.0			13.98	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 4

PGA (A_{max}) 0.91

Total Settlement: 0.00 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.780	15.550	0.618	5418.4	3248.1	7.907	4.810	3.20		Clay	100.0			14.70	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	15.310	0.537	5439.0	3258.1	7.729	4.263	3.18		Clay	100.0			14.47	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	15.550	0.496	5458.3	3267.4	7.848	3.867	3.15		Clay	100.0			14.70	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	15.120	0.487	5478.9	3277.4	7.555	3.930	3.16		Clay	100.0			14.29	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	15.620	0.516	5498.2	3286.8	7.832	4.005	3.16		Clay	100.0			14.76	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	16.350	0.582	5517.6	3296.2	8.247	4.280	3.15		Clay	100.0			15.45	0.89	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	16.970	0.701	5538.2	3306.1	8.591	4.938	3.18		Clay	100.0			16.04	0.89	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	18.230	0.726	5557.5	3315.5	9.321	4.699	3.14		Clay	100.0			17.23	0.89	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	19.110	0.698	5578.1	3325.5	9.816	4.274	3.09		Clay	100.0			18.06	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	18.380	0.594	5597.5	3334.8	9.345	3.811	3.08		Clay	100.0			17.37	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	17.500	0.536	5616.8	3344.2	8.786	3.647	3.09		Clay	100.0			16.54	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	17.670	0.466	5637.4	3354.2	8.855	3.138	3.05		Clay	100.0			16.70	0.89	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	17.710	0.425	5656.8	3363.6	8.849	2.853	3.03		Clay	100.0			16.74	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	16.670	0.395	5677.3	3373.5	8.200	2.853	3.06		Clay	100.0			15.76	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	16.410	0.466	5696.7	3382.9	8.018	3.436	3.11		Clay	100.0			15.51	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	16.920	0.424	5716.0	3392.3	8.291	3.012	3.07		Clay	100.0			15.99	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	17.440	0.457	5736.6	3402.2	8.566	3.139	3.06		Clay	100.0			16.48	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	18.210	0.949	5756.0	3411.6	8.988	6.192	3.22		Clay	100.0			17.21	0.88	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	20.220	1.198	5776.5	3421.6	10.131	6.914	3.21		Clay	100.0			19.11	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	26.320	0.891	5795.9	3430.9	13.653	3.805	2.95		Clay	98.9			24.88	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	35.880	0.559	5815.3	3440.3	19.168	1.695	2.62		Clay	72.9			33.91	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	22.810	0.510	5835.8	3450.3	11.531	2.561	2.91		Clay	95.6			21.56	0.88	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	16.520	0.460	5855.2	3459.7	7.858	3.384	3.11		Clay	100.0			15.61	0.88	n.a.	n.a.	0.83	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	17.440	0.509	5875.8	3469.6	8.359	3.511	3.10		Clay	100.0			16.48	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	20.150	0.582	5895.1	3479.0	9.889	3.384	3.03		Clay	100.0			19.05	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	20.830	0.609	5914.5	3488.4	10.247	3.406	3.02		Clay	100.0			19.69	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	20.420	0.504	5935.1	3498.3	9.978	2.888	2.99		Clay	100.0			19.30	0.88	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	17.860	0.436	5954.4	3507.7	8.486	2.932	3.05		Clay	100.0			16.88	0.88	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	15.050	0.390	5975.0	3517.7	6.858	3.229	3.15		Clay	100.0			14.22	0.87	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	14.200	0.297	5994.3	3527.0	6.353	2.653	3.13		Clay	100.0			13.42	0.87	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	13.570	0.319	6013.7	3536.4	5.974	3.020	3.19		Clay	100.0			12.83	0.87	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	13.500	0.358	6034.3	3546.4	5.912	3.412	3.22		Clay	100.0			12.76	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	14.410	0.366	6053.6	3555.8	6.403	3.211	3.17		Clay	100.0			13.62	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	14.950	0.344	6074.2	3565.7	6.682	2.889	3.13		Clay	100.0			14.13	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	15.470	0.351	6093.6	3575.1	6.950	2.824	3.11		Clay	100.0			14.62	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	16.510	0.385	6112.9	3584.5	7.507	2.862	3.09		Clay	100.0			15.60	0.87	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 5

PGA (A_{max}) 0.91

Total Settlement: 0.40 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.660	4.180	0.160	79.9	79.9	38.793	3.862	2.61		Unsaturated	71.7			3.95	1.70	6.72	59.56	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	12.510	0.205	99.2	99.2	54.388	1.644	2.25		Unsaturated	43.1			11.82	1.70	20.10	68.54	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	14.570	0.200	118.6	118.6	57.937	1.375	2.18		Unsaturated	37.5			13.77	1.70	23.41	69.46	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	17.010	0.175	139.2	139.2	62.439	1.035	2.08		Unsaturated	29.4			16.08	1.70	27.33	67.58	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	13.900	0.136	158.5	158.5	47.728	0.984	2.16		Unsaturated	36.1			13.14	1.70	22.33	67.15	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	11.240	0.087	179.1	179.1	36.228	0.781	2.21		Unsaturated	39.9			10.62	1.70	18.06	64.29	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	9.680	0.103	198.4	198.4	29.570	1.070	2.36		Unsaturated	51.6			9.15	1.70	15.55	66.23	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	10.110	0.115	217.8	217.8	29.464	1.146	2.37		Unsaturated	53.0			9.56	1.70	16.24	67.56	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	14.110	0.135	238.4	238.4	39.399	0.966	2.23		Unsaturated	41.3			13.34	1.70	22.67	70.77	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	15.990	0.132	257.7	257.7	42.956	0.832	2.16		Unsaturated	36.0			15.11	1.70	25.69	71.19	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	12.340	0.154	278.3	278.3	31.798	1.262	2.37		Unsaturated	52.6			11.66	1.70	19.83	71.99	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	12.270	0.182	297.7	297.7	30.546	1.502	2.43		Unsaturated	57.2			11.60	1.70	19.72	73.21	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	15.230	0.171	317.0	317.0	36.803	1.137	2.29		Unsaturated	46.4			14.40	1.70	24.47	75.50	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	17.640	0.177	337.6	337.6	41.343	1.013	2.22		Unsaturated	40.8			16.67	1.70	28.34	77.56	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	14.280	0.163	357.0	357.0	32.451	1.157	2.34		Unsaturated	50.3			13.50	1.70	22.95	75.16	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	13.300	0.238	377.5	377.5	29.339	1.815	2.49		Unsaturated	62.2			12.57	1.70	21.37	76.60	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	13.020	0.296	396.9	396.9	27.982	2.312	2.57		Unsaturated	68.6			12.31	1.70	20.92	77.36	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	13.520	0.255	416.2	416.2	28.369	1.914	2.51		Unsaturated	64.2			12.78	1.70	21.72	77.51	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	12.330	0.211	436.8	436.8	25.196	1.738	2.53		Unsaturated	65.6			11.65	1.70	19.81	75.34	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	10.270	0.162	456.2	456.2	20.442	1.609	2.59		Unsaturated	70.1			9.71	1.70	16.50	71.93	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	9.110	0.162	476.7	476.7	23.800	1.828	2.56		Unsaturated	68.2			8.61	1.70	14.64	69.19	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	9.600	0.158	496.1	496.1	24.399	1.693	2.54		Unsaturated	65.9			9.07	1.70	15.43	69.78	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	12.150	0.206	516.7	516.7	22.746	1.731	2.57		Unsaturated	68.4			11.48	1.70	19.52	75.53	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	12.440	0.211	536.0	536.0	22.858	1.735	2.57		Unsaturated	68.3			11.76	1.70	19.99	76.11	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	9.770	0.203	555.4	555.4	22.884	2.135	2.62		Unsaturated	72.5			9.23	1.70	15.70	71.31	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	9.940	0.273	576.0	576.0	22.684	2.833	2.70		Unsaturated	78.6			9.40	1.70	15.97	72.59	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	10.760	0.294	595.3	595.3	24.026	2.812	2.67		Unsaturated	76.9			10.17	1.70	17.29	74.06	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	13.620	0.259	615.9	615.9	23.322	1.944	2.59		Unsaturated	70.0			12.87	1.70	21.88	78.88	1.00	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	12.620	0.332	635.3	635.3	26.996	2.700	2.62		Unsaturated	72.9			11.93	1.70	20.28	77.30	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	11.640	0.198	654.6	654.6	24.308	1.746	2.55		Unsaturated	66.7			11.00	1.70	18.70	74.14	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	12.300	0.160	675.2	675.2	20.016	1.337	2.55		Unsaturated	67.2			11.63	1.70	19.76	75.61	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	9.370	0.275	694.5	694.5	25.982	3.048	2.67		Unsaturated	76.6			8.86	1.70	15.06	71.11	0.99	0.587	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.910	10.070	0.499	715.1	715.1	27.163	5.134	2.81		Unsaturated	87.5			9.52	1.70	16.18	73.94	0.99	0.586	1.094	n.a.	n.a.	n.a.	0.00	0.00
6.070	15.160	0.778	734.5	734.5	40.281	5.259	2.69		Unsaturated	78.3			14.33	1.70	24.36	83.43	0.99	0.586	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.230	21.880	1.100	753.8	753.8	41.859	5.116	2.67		Unsaturated	76.7			20.68	1.68	34.84	96.79	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	21.710	1.281	774.4	774.4	55.069	6.009	2.64		Unsaturated	74.4			20.52	1.67	34.20	95.58	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	21.610	1.327	793.8	793.8	53.450	6.257	2.66		Unsaturated	76.2			20.43	1.65	33.65	95.15	0.99	0.585	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	21.730	1.317	814.3	814.3	52.369	6.178	2.67		Unsaturated	76.3			20.54	1.63	33.42	94.88	0.99	0.585	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.890	21.580	1.125	833.7	833.7	50.770	5.316	2.63		Unsaturated	73.1			20.40	1.61	32.88	93.65	0.99	0.585	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.050	21.760	0.865	853.1	853.1	38.085	4.055	2.63		Unsaturated	73.3			20.57	1.59	32.77	93.54	0.99	0.585	1.092	n.a.	n.a.	n.a.	0.00	0.00
7.220	24.220	0.687	873.6	873.6	34.985	2.890	2.56		Unsaturated	67.5			22.89	1.57	35.83	96.38	0.99	0.584	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.380	23.810	0.614	893.0	893.0	33.993	2.630	2.54		Unsaturated	66.1			22.50	1.55	34.93	94.93	0.99	0.584	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.550	21.920	0.550	913.6	913.6	30.875	2.563	2.56		Unsaturated	68.1			20.72	1.54	32.00	91.57	0.99	0.584	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.710	21.340	0.541	932.9	932.9	29.713	2.592	2.58		Unsaturated	69.4			20.17	1.53	30.89	90.39	0.99	0.584	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.870	21.690	0.481	952.3	952.3	29.889	2.266	2.54		Unsaturated	66.3			20.50	1.52	31.08	90.01	0.99	0.583	1.079	n.a.	n.a.	n.a.	0.00	0.00
8.040	20.770	0.418	972.8	972.8	28.275	2.060	2.54		Unsaturated	65.8			19.63	1.51	29.55	87.93	0.99	0.583	1.075	n.a.	n.a.	n.a.	0.00	0.00
8.200	17.480	0.397	992.2	992.2	27.277	2.338	2.58		Unsaturated	69.5			16.52	1.50	24.86	82.62	0.99	0.583	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.370	15.490	0.425	1012.8	1012.8	29.589	2.833	2.61		Unsaturated	71.5			14.64	1.50	21.93	79.20	0.99	0.583	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.530	12.570	0.461	1032.1	1032.1	23.357	3.821	2.77		Unsaturated	84.5			11.88	1.49	17.73	75.63	0.99	0.582	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.690	10.460	0.531	1051.5	1051.5	18.896	5.340	2.93		Unsaturated	97.7			9.89	1.48	14.68	72.97	0.99	0.582	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.860	10.300	0.561	1072.1	1072.1	18.215	5.750	2.97		Unsaturated	100.0			9.74	1.47	14.31	72.68	0.99	0.582	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.020	10.020	0.603	1091.4	1091.4	17.361	6.362	3.01		Unsaturated	100.0			9.47	1.46	13.79	72.01	0.99	0.582	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.190	9.870	0.591	1112.0	1112.0	16.752	6.341	3.02		Unsaturated	100.0			9.33	1.44	13.45	71.56	0.98	0.581	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.350	10.670	0.631	1131.4	1131.4	17.862	6.248	3.00		Unsaturated	100.0			10.09	1.43	14.37	72.77	0.98	0.581	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.510	10.270	0.665	1150.7	1150.7	16.850	6.857	3.04		Unsaturated	100.0			9.71	1.41	13.72	71.91	0.98	0.581	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.680	9.920	0.666	1171.3	1171.3	15.939	7.138	3.07		Unsaturated	100.0			9.38	1.40	13.14	71.15	0.98	0.580	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.840	9.670	0.681	1190.6	1190.6	15.243	7.499	3.10		Unsaturated	100.0			9.14	1.39	12.70	70.57	0.98	0.580	1.048	n.a.	n.a.	n.a.	0.00	0.00
10.010	9.700	0.661	1211.2	1211.2	15.017	7.268	3.10		Clay	100.0			9.17	1.16	n.a.	n.a.	0.98	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	9.040	0.622	1230.6	1230.6	13.692	7.388	3.13		Clay	100.0			8.54	1.15	n.a.	n.a.	0.98	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	8.580	0.583	1249.9	1249.9	12.729	7.325	3.15		Clay	100.0			8.11	1.15	n.a.	n.a.	0.98	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	7.700	0.525	1270.5	1270.5	11.121	7.434	3.20		Clay	100.0			7.28	1.14	n.a.	n.a.	0.98	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	7.060	0.458	1289.9	1289.9	9.947	7.138	3.23		Clay	100.0			6.67	1.14	n.a.	n.a.	0.98	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	7.110	0.447	1310.4	1310.4	9.851	6.922	3.22		Clay	100.0			6.72	1.13	n.a.	n.a.	0.98	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	7.260	0.468	1329.8	1329.8	9.919	7.102	3.23		Clay	100.0			6.86	1.13	n.a.	n.a.	0.98	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	7.100	0.441	1349.2	1349.2	9.525	6.866	3.23		Clay	100.0			6.71	1.13	n.a.	n.a.	0.98	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.320	6.730	0.398	1369.7	1369.7	8.827	6.585	3.24		Clay	100.0			6.36	1.12	n.a.	n.a.	0.98	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	7.400	0.367	1389.1	1389.1	9.655	5.469	3.16		Clay	100.0			6.99	1.12	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	7.620	0.379	1409.7	1409.7	9.811	5.479	3.16		Clay	100.0			7.20	1.11	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.91

Total Settlement: 0.40 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'_{vc}=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.810	8.270	0.357	1429.0	1429.0	10.574	4.725	3.09		Clay	100.0			7.82	1.11	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	8.010	0.282	1449.6	1449.6	10.051	3.875	3.06		Clay	100.0			7.57	1.10	n.a.	n.a.	0.98	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	7.540	0.255	1468.9	1468.9	9.266	3.744	3.08		Clay	100.0			7.13	1.10	n.a.	n.a.	0.98	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	7.000	0.184	1488.3	1488.3	8.407	2.946	3.05		Clay	100.0			6.62	1.10	n.a.	n.a.	0.98	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	6.630	0.120	1508.9	1508.9	7.788	2.044	3.00		Clay	100.0			6.27	1.09	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	6.350	0.323	1528.2	1528.2	7.310	5.779	3.27		Clay	100.0			6.00	1.09	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	10.730	0.412	1548.8	1548.8	12.856	4.133	2.99		Clay	100.0			10.14	1.09	n.a.	n.a.	0.97	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	11.640	0.428	1568.2	1568.2	13.845	3.938	2.95		Clay	99.2			11.00	1.08	n.a.	n.a.	0.97	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	22.420	0.400	1587.5	1587.5	23.599	1.848	2.57		Sand	68.7	22.5	1.8	40.50	1.15	46.44	110.30	0.97	0.655	1.033	0.153	0.208	0.32	0.03	0.06
13.290	23.810	0.277	1608.1	1608.1	24.943	1.204	2.45		Sand	58.8		1.8	40.51	1.14	46.24	107.56	0.97	0.658	1.031	0.148	0.199	0.30	0.03	0.06
13.450	17.520	0.183	1627.5	1627.5	18.005	1.094	2.55		Sand	66.8	22.5	1.8	40.50	1.13	45.92	109.22	0.97	0.661	1.030	0.151	0.204	0.31	0.03	0.06
13.620	9.780	0.146	1648.0	1648.0	10.869	1.626	2.82		Clay	88.9			9.24	1.07	n.a.	n.a.	0.97	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.290	0.226	1667.4	1667.4	6.545	4.138	3.23		Clay	100.0			5.95	1.06	n.a.	n.a.	0.97	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	5.350	0.214	1686.7	1686.7	5.344	4.737	3.33		Clay	100.0			5.06	1.06	n.a.	n.a.	0.97	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	4.980	0.209	1707.3	1707.3	4.834	5.065	3.39		Clay	100.0			4.71	1.06	n.a.	n.a.	0.97	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	5.140	0.213	1726.7	1726.7	4.954	4.969	3.37		Clay	100.0			4.86	1.06	n.a.	n.a.	0.97	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	5.320	0.253	1747.2	1747.2	5.090	5.688	3.40		Clay	100.0			5.03	1.05	n.a.	n.a.	0.97	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	5.340	0.240	1766.6	1766.6	5.046	5.394	3.39		Clay	100.0			5.05	1.05	n.a.	n.a.	0.97	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	5.150	0.257	1786.0	1786.0	4.767	6.028	3.43		Clay	100.0			4.87	1.05	n.a.	n.a.	0.97	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	5.350	0.262	1806.5	1806.5	4.923	5.892	3.42		Clay	100.0			5.06	1.04	n.a.	n.a.	0.97	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	5.800	0.295	1825.9	1825.9	5.353	6.042	3.39		Clay	100.0			5.48	1.04	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	5.810	0.304	1846.5	1846.5	5.293	6.227	3.41		Clay	100.0			5.49	1.04	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	5.790	0.271	1865.8	1865.8	5.206	5.575	3.38		Clay	100.0			5.47	1.03	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	5.940	0.282	1885.2	1885.2	5.302	5.635	3.38		Clay	100.0			5.61	1.03	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	5.670	0.278	1905.8	1905.8	4.950	5.889	3.42		Clay	100.0			5.36	1.03	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	5.670	0.286	1925.1	1925.1	4.891	6.075	3.43		Clay	100.0			5.36	1.03	n.a.	n.a.	0.96	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	6.300	0.308	1945.7	1945.7	5.476	5.778	3.37		Clay	100.0			5.95	1.02	n.a.	n.a.	0.96	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	6.810	0.293	1965.0	1965.0	5.931	5.033	3.31		Clay	100.0			6.44	1.02	n.a.	n.a.	0.96	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	6.810	0.276	1984.4	1984.4	5.864	4.735	3.30		Clay	100.0			6.44	1.02	n.a.	n.a.	0.96	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	6.660	0.238	2005.0	2005.0	5.643	4.201	3.28		Clay	100.0			6.29	1.01	n.a.	n.a.	0.96	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	6.900	0.246	2024.3	2024.3	5.817	4.170	3.27		Clay	100.0			6.52	1.01	n.a.	n.a.	0.96	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	7.310	0.306	2044.9	2044.9	6.149	4.872	3.29		Clay	100.0			6.91	1.01	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	9.010	0.339	2064.3	2064.3	7.730	4.245	3.18		Clay	100.0			8.52	1.01	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	9.870	0.376	2083.6	2083.6	8.474	4.262	3.14		Clay	100.0			9.33	1.00	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	9.150	0.381	2104.2	2104.2	7.697	4.709	3.20		Clay	100.0			8.65	1.00	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	8.660	0.385	2123.6	2123.6	7.156	5.072	3.25		Clay	100.0			8.19	1.00	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	8.590	0.392	2144.1	2144.1	7.013	5.208	3.26		Clay	100.0			8.12	1.00	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	8.970	0.418	2163.5	2163.5	7.292	5.295	3.25		Clay	100.0			8.48	0.99	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	9.240	0.485	2182.8	2182.8	7.466	5.946	3.27		Clay	100.0			8.73	0.99	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	10.080	0.574	2203.4	2203.4	8.149	6.388	3.26		Clay	100.0			9.53	0.99	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	10.560	0.591	2222.8	2222.8	8.502	6.258	3.24		Clay	100.0			9.98	0.99	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	9.920	0.545	2243.3	2243.3	7.844	6.189	3.27		Clay	100.0			9.38	0.98	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	8.720	0.326	2262.7	2262.7	6.708	4.292	3.23		Clay	100.0			8.24	0.98	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	7.630	0.286	2282.1	2282.1	5.687	4.409	3.29		Clay	100.0			7.21	0.98	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	5.200	0.307	2302.6	2302.6	3.517	7.578	3.60		Clay	100.0			4.91	0.98	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	3.800	0.381	2322.0	2322.0	2.273	14.426	3.92		Clay	100.0			3.59	0.98	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	5.440	0.545	2342.6	2342.6	3.644	12.756	3.72		Clay	100.0			5.14	0.97	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.530	0.673	2361.9	2361.9	8.763	6.503	3.24		Clay	100.0			10.90	0.97	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	11.190	0.708	2382.5	2382.5	8.394	7.077	3.28		Clay	100.0			10.58	0.97	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	10.660	0.614	2401.9	2401.9	7.876	6.488	3.28		Clay	100.0			10.08	0.97	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	10.320	0.543	2421.2	2421.2	7.525	5.958	3.27		Clay	100.0			9.75	0.97	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	10.290	0.531	2441.8	2441.8	7.428	5.850	3.27		Clay	100.0			9.73	0.96	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	10.460	0.518	2461.1	2461.1	7.500	5.614	3.26		Clay	100.0			9.89	0.96	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	10.080	0.494	2481.7	2481.7	7.123	5.590	3.27		Clay	100.0			9.53	0.96	n.a.	n.a.	0.95	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	8.670	0.458	2501.1	2501.1	5.933	6.173	3.36		Clay	100.0			8.19	0.96	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	8.320	0.429	2520.4	2520.4	5.602	6.081	3.38		Clay	100.0			7.86	0.95	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	8.340	0.424	2541.0	2541.0	5.564	6.002	3.38		Clay	100.0			7.88	0.95	n.a.	n.a.	0.95	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	7.710	0.374	2560.4	2560.4	5.023	5.815	3.41		Clay	100.0			7.29	0.95	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	7.380	0.360	2580.9	2580.9	4.719	5.904	3.43		Clay	100.0			6.98	0.95	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	7.540	0.357	2600.3	2600.3	4.799	5.720	3.42		Clay	100.0			7.13	0.95	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	8.020	0.423	2619.7	2619.7	5.123	6.298	3.42		Clay	100.0			7.58	0.95	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	9.040	0.460	2640.2	2640.2	5.848	5.964	3.36		Clay	100.0			8.54	0.94	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	10.360	0.496	2659.6	2659.6	6.791	5.494	3.29		Clay	100.0			9.79	0.94	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	10.580	0.525	2680.2	2680.2	6.895	5.684	3.29		Clay	100.0			10.00	0.94	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	10.360	0.547	2699.5	2699.5	6.675	6.068	3.32		Clay	100.0			9.79	0.94	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	10.790	0.605	2718.9	2718.9	6.937	6.410	3.32		Clay	100.0			10.20	0.94	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	11.300	0.605	2739.4	2739.4	7.250	6.091	3.29		Clay	100.0			10.68	0.93	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.91

Total Settlement: 0.40 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.800	12.040	0.596	2758.8	2758.8	7.728	5.592	3.25		Clay	100.0			11.38	0.93	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	11.000	0.579	2779.4	2779.4	6.915	6.026	3.30		Clay	100.0			10.40	0.93	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	9.070	0.534	2798.7	2798.7	5.482	6.963	3.42		Clay	100.0			8.57	0.93	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	8.880	0.520	2818.1	2818.1	5.302	6.960	3.43		Clay	100.0			8.39	0.93	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	11.060	0.582	2838.7	2838.7	6.792	6.032	3.31		Clay	100.0			10.45	0.93	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	12.940	0.674	2858.0	2858.0	8.055	5.857	3.24		Clay	100.0			12.23	0.92	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	13.490	0.706	2878.6	2878.6	8.373	5.859	3.23		Clay	100.0			12.75	0.92	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	14.920	0.654	2898.0	2898.0	9.297	4.858	3.15		Clay	100.0			14.10	0.92	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	15.650	0.697	2917.3	2917.3	9.729	4.914	3.13		Clay	100.0			14.79	0.92	n.a.	n.a.	0.94	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	15.100	0.704	2937.9	2937.9	9.280	5.167	3.16		Clay	100.0			14.27	0.92	n.a.	n.a.	0.94	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	15.670	0.747	2957.2	2957.2	9.598	5.262	3.16		Clay	100.0			14.81	0.92	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	15.140	0.688	2977.8	2977.8	9.169	5.040	3.16		Clay	100.0			14.31	0.91	n.a.	n.a.	0.93	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	14.610	0.638	2997.2	2997.2	8.749	4.867	3.17		Clay	100.0			13.81	0.91	n.a.	n.a.	0.93	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	14.340	0.600	3016.5	3016.5	8.508	4.679	3.17		Clay	100.0			13.55	0.91	n.a.	n.a.	0.93	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	14.340	0.564	3037.1	3037.1	8.443	4.397	3.15		Clay	100.0			13.55	0.91	n.a.	n.a.	0.93	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	13.840	0.561	3056.5	3056.5	8.056	4.556	3.18		Clay	100.0			13.08	0.91	n.a.	n.a.	0.93	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	11.610	0.513	3077.0	3077.0	6.546	5.096	3.28		Clay	100.0			10.97	0.91	n.a.	n.a.	0.93	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	9.950	0.475	3096.4	3096.4	5.427	5.651	3.37		Clay	100.0			9.40	0.90	n.a.	n.a.	0.93	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	9.960	0.422	3115.8	3115.8	5.393	5.026	3.34		Clay	100.0			9.41	0.90	n.a.	n.a.	0.93	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	10.710	0.425	3136.3	3136.3	5.830	4.649	3.30		Clay	100.0			10.12	0.90	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	12.210	0.398	3155.7	3155.7	6.738	3.742	3.19		Clay	100.0			11.54	0.90	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	11.790	0.337	3176.3	3176.3	6.424	3.302	3.18		Clay	100.0			11.14	0.90	n.a.	n.a.	0.93	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	11.050	0.302	3195.6	3195.6	5.916	3.195	3.20		Clay	100.0			10.44	0.90	n.a.	n.a.	0.93	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	10.350	0.235	3215.0	3215.0	5.439	2.682	3.19		Clay	100.0			9.78	0.90	n.a.	n.a.	0.93	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	9.910	0.268	3235.5	3235.5	5.126	3.227	3.26		Clay	100.0			9.37	0.89	n.a.	n.a.	0.93	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	11.760	0.325	3254.9	3254.9	6.226	3.204	3.18		Clay	100.0			11.12	0.89	n.a.	n.a.	0.93	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	12.960	0.345	3275.5	3264.9	6.936	3.043	3.13		Clay	100.0			12.25	0.89	n.a.	n.a.	0.92	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	13.720	0.380	3294.8	3274.2	7.374	3.149	3.12		Clay	100.0			12.97	0.89	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	14.350	0.408	3315.4	3284.2	7.729	3.215	3.11		Clay	100.0			13.56	0.89	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	17.410	0.576	3334.8	3293.6	9.560	3.660	3.06		Clay	100.0			16.46	0.89	n.a.	n.a.	0.92	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	20.290	0.741	3354.1	3303.0	11.270	3.980	3.03		Clay	100.0			19.18	0.89	n.a.	n.a.	0.92	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	22.430	0.873	3374.7	3312.9	12.522	4.207	3.00		Clay	100.0			21.20	0.89	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	24.640	0.974	3394.1	3322.3	13.812	4.244	2.97		Clay	100.0			23.29	0.89	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	25.040	0.916	3414.6	3332.3	14.004	3.928	2.95		Clay	98.8			23.67	0.89	n.a.	n.a.	0.92	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	25.080	0.935	3434.0	3341.6	13.983	4.001	2.95		Clay	99.3			23.71	0.89	n.a.	n.a.	0.92	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	23.850	0.883	3453.3	3351.0	13.204	3.993	2.97		Clay	100.0			22.54	0.89	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	23.310	0.700	3473.9	3361.0	12.837	3.245	2.93		Clay	97.3			22.03	0.89	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	22.340	0.774	3493.3	3370.3	12.220	3.759	2.98		Clay	100.0			21.12	0.88	n.a.	n.a.	0.92	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	21.260	0.702	3513.8	3380.3	11.539	3.599	2.99		Clay	100.0			20.09	0.88	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	17.630	0.640	3533.2	3389.7	9.360	4.034	3.09		Clay	100.0			16.66	0.88	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	21.230	0.689	3552.6	3399.1	11.447	3.539	2.99		Clay	100.0			20.07	0.88	n.a.	n.a.	0.92	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	22.480	0.714	3573.1	3409.0	12.140	3.451	2.96		Clay	100.0			21.25	0.88	n.a.	n.a.	0.91	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	24.340	0.863	3592.5	3418.4	13.190	3.829	2.96		Clay	99.9			23.01	0.88	n.a.	n.a.	0.91	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	24.230	0.788	3613.1	3428.4	13.081	3.515	2.94		Clay	98.4			22.90	0.88	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	23.310	0.777	3632.4	3437.7	12.505	3.614	2.97		Clay	100.0			22.03	0.88	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	21.810	0.776	3651.8	3447.1	11.595	3.882	3.01		Clay	100.0			20.61	0.88	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	21.480	0.872	3672.4	3457.1	11.364	4.438	3.05		Clay	100.0			20.30	0.88	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	20.060	0.835	3691.7	3466.4	10.509	4.587	3.09		Clay	100.0			18.96	0.88	n.a.	n.a.	0.91	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	17.400	0.795	3712.3	3476.4	8.942	5.111	3.17		Clay	100.0			16.45	0.88	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	15.430	0.695	3731.6	3485.8	7.783	5.127	3.22		Clay	100.0			14.58	0.88	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	13.230	0.551	3751.0	3495.2	6.497	4.852	3.27		Clay	100.0			12.50	0.88	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	12.050	0.493	3771.6	3505.1	5.800	4.853	3.31		Clay	100.0			11.39	0.88	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	11.440	0.428	3790.9	3514.5	5.432	4.488	3.31		Clay	100.0			10.81	0.87	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	10.700	0.513	3811.5	3524.5	4.990	5.838	3.41		Clay	100.0			10.11	0.87	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	9.770	0.635	3830.9	3533.8	4.445	8.081	3.53		Clay	100.0			9.23	0.87	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	11.200	0.739	3850.2	3543.2	5.235	7.971	3.47		Clay	100.0			10.59	0.87	n.a.	n.a.	0.91	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	20.230	0.775	3870.8	3553.2	10.298	4.236	3.07		Clay	100.0			19.12	0.87	n.a.	n.a.	0.90	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	19.050	0.705	3890.2	3562.6	9.603	4.120	3.09		Clay	100.0			18.01	0.87	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	18.140	0.591	3910.7	3572.5	9.061	3.654	3.08		Clay	100.0			17.15	0.87	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	17.370	0.624	3930.1	3581.9	8.602	4.048	3.13		Clay	100.0			16.42	0.87	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	18.080	0.682	3949.4	3591.3	8.969	4.234	3.12		Clay	100.0			17.09	0.87	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	19.690	0.863	3970.0	3601.2	9.833	4.873	3.13		Clay	100.0			18.61	0.87	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	21.200	1.034	3989.4	3610.6	10.638	5.384	3.13		Clay	100.0			20.04	0.87	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	20.210	1.100	4009.9	3620.6	10.056	6.044	3.18		Clay	100.0			19.10	0.87	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	22.980	1.120	4029.3	3629.9	11.551	5.344	3.10		Clay	100.0			21.72	0.87	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	23.210	1.145	4048.7	3639.3	11.643	5.406	3.10		Clay	100.0			21.94	0.87	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	23.510	1.173	4069.2	3649.3	11.770	5.461	3.10		Clay	100.0			22.22	0.87	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.91

Total Settlement: 0.40 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.790	23.910	1.199	4088.6	3658.7	11.953	5.483	3.09		Clay	100.0			22.60	0.87	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	23.810	1.220	4109.2	3668.6	11.860	5.605	3.10		Clay	100.0			22.50	0.86	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	23.390	1.259	4128.5	3678.0	11.596	5.902	3.12		Clay	100.0			22.11	0.86	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	22.690	1.272	4147.9	3687.4	11.182	6.170	3.15		Clay	100.0			21.45	0.86	n.a.	n.a.	0.90	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	21.630	1.291	4168.5	3697.3	10.573	6.606	3.18		Clay	100.0			20.44	0.86	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	19.660	1.048	4187.8	3706.7	9.478	5.967	3.19		Clay	100.0			18.58	0.86	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	17.580	0.822	4208.4	3716.7	8.328	5.310	3.21		Clay	100.0			16.62	0.86	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	14.930	0.591	4227.7	3726.0	6.879	4.614	3.24		Clay	100.0			14.11	0.86	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	12.290	0.488	4247.1	3735.4	5.443	4.798	3.33		Clay	100.0			11.62	0.86	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	11.890	0.440	4267.7	3745.4	5.210	4.511	3.33		Clay	100.0			11.24	0.86	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	13.130	0.494	4287.0	3754.8	5.852	4.495	3.29		Clay	100.0			12.41	0.86	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	13.580	0.533	4307.6	3764.7	6.070	4.666	3.28		Clay	100.0			12.84	0.86	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	13.940	0.558	4327.0	3774.1	6.241	4.734	3.28		Clay	100.0			13.18	0.86	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	14.730	0.638	4347.5	3784.1	6.636	5.080	3.27		Clay	100.0			13.92	0.86	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	15.540	0.526	4366.9	3793.4	7.042	3.934	3.19		Clay	100.0			14.69	0.86	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	20.360	0.499	4386.3	3802.8	9.554	2.745	2.99		Clay	100.0			19.24	0.86	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	21.280	0.955	4406.8	3812.8	10.007	5.007	3.13		Clay	100.0			20.11	0.86	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	18.890	0.972	4426.2	3822.1	8.726	5.828	3.22		Clay	100.0			17.85	0.86	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	25.920	0.831	4446.8	3832.1	12.367	3.509	2.96		Clay	99.9			24.50	0.85	n.a.	n.a.	0.89	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	27.610	0.751	4466.1	3841.5	13.212	2.959	2.89		Clay	94.6			26.10	0.85	n.a.	n.a.	0.88	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	22.740	0.580	4485.5	3850.9	10.646	2.827	2.96		Clay	99.8			21.49	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	22.640	0.299	4506.0	3860.8	10.561	1.466	2.81		Clay	87.9			21.40	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	20.520	0.389	4525.4	3870.2	9.435	2.132	2.94		Clay	98.0			19.40	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	12.880	0.424	4546.0	3880.2	5.467	3.997	3.28		Clay	100.0			12.17	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	11.080	0.408	4565.3	3889.5	4.524	4.634	3.39		Clay	100.0			10.47	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	12.170	0.426	4584.7	3898.9	5.067	4.310	3.33		Clay	100.0			11.50	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	11.090	0.392	4605.3	3908.9	4.496	4.455	3.38		Clay	100.0			10.48	0.85	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	10.900	0.332	4624.6	3918.3	4.383	3.864	3.36		Clay	100.0			10.30	0.85	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	11.120	0.227	4645.2	3928.2	4.479	2.577	3.26		Clay	100.0			10.51	0.85	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	10.940	0.170	4664.6	3937.6	4.372	1.976	3.21		Clay	100.0			10.34	0.85	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	9.410	0.166	4683.9	3947.0	3.582	2.342	3.32		Clay	100.0			8.89	0.85	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	9.200	0.176	4704.5	3956.9	3.461	2.569	3.35		Clay	100.0			8.70	0.85	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	9.440	0.190	4723.8	3966.3	3.569	2.680	3.35		Clay	100.0			8.92	0.85	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	9.630	0.308	4744.4	3976.3	3.651	4.248	3.45		Clay	100.0			9.10	0.85	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	9.390	0.556	4763.8	3985.6	3.517	7.931	3.61		Clay	100.0			8.88	0.85	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	13.480	0.522	4783.1	3995.0	5.551	4.705	3.32		Clay	100.0			12.74	0.85	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	23.700	0.730	4803.7	4005.0	10.636	3.426	3.01		Clay	100.0			22.40	0.85	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	45.400	0.849	4823.1	4014.4	21.417	1.974	2.62		Clay	72.7			42.91	0.84	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	45.840	0.948	4843.6	4024.3	21.578	2.183	2.64		Clay	74.6			43.33	0.84	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	56.170	1.338	4863.0	4033.7	26.645	2.489	2.61		Clay	71.5			53.09	0.84	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	51.110	1.622	4882.4	4043.1	24.075	3.333	2.72		Clay	80.6			48.31	0.84	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	44.420	1.662	4902.9	4053.0	20.710	3.961	2.82		Clay	88.5			41.98	0.84	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	54.310	1.451	4922.3	4062.4	25.526	2.798	2.65		Clay	75.2			51.33	0.84	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	72.020	1.436	4942.9	4072.4	47.385	2.065	2.36		Sand	51.9	78.28		78.28	0.74	58.07	120.25	0.87	0.839	0.918	0.172	0.219	0.26	0.03	0.05
41.010	83.880	1.841	4962.2	4081.7	55.395	2.261	2.34		Sand	49.9			79.28	0.74	58.75	120.28	0.87	0.839	0.918	0.172	0.219	0.26	0.03	0.05
41.170	74.640	1.936	4981.6	4091.1	49.044	2.683	2.43		Sand	57.1	79.28		79.28	0.74	58.90	123.21	0.87	0.839	0.916	0.179	0.231	0.28	0.03	0.05
41.340	56.320	2.480	5002.1	4101.1	26.246	4.607	2.78		Clay	85.8			53.23	0.84	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	77.580	1.774	5021.5	4110.5	50.908	2.363	2.38		Sand	53.1	222.91		222.91	0.84	187.09	284.63	0.86	0.839	0.801	22647.950	39900.141	47584.22	0.00	0.00
41.670	85.700	1.338	5042.1	4120.4	56.340	1.609	2.23		Sand	41.7	222.91		222.91	0.84	186.97	275.75	0.86	0.838	0.800	4855.497	8546.440	10192.55	0.00	0.00
41.830	112.440	1.497	5061.4	4129.8	74.360	1.362	2.10		Sand	30.6	222.91		222.91	0.84	186.86	261.12	0.86	0.838	0.799	537.871	945.930	1128.15	0.00	0.00
41.990	160.900	1.222	5080.8	4139.2	107.019	0.772	1.82		Sand	8.4	222.91		222.91	0.79	175.46	180.28	0.86	0.838	0.858	0.734	1.319	1.57	0.00	0.00
42.160	192.700	1.280	5101.4	4149.1	128.348	0.673	1.72		Sand	0.5	222.91		222.91	0.78	174.28	174.28	0.86	0.838	0.865	0.584	1.010	1.20	0.01	0.01
42.320	210.170	1.271	5120.7	4158.5	139.975	0.612	1.66		Sand	0.0	222.91		222.91	0.78	174.10	174.10	0.86	0.838	0.865	0.580	1.002	1.19	0.01	0.01
42.490	227.590	1.159	5141.3	4168.5	151.532	0.515	1.59		Sand	0.0	222.91		222.91	0.78	173.92	173.92	0.86	0.838	0.865	0.577	0.993	1.18	0.01	0.01
42.650	235.840	1.042	5160.7	4177.9	156.905	0.447	1.54		Sand	0.0			222.91	0.78	173.75	173.75	0.86	0.838	0.865	0.573	0.986	1.18	0.01	0.01
42.810	223.720	1.000	5180.0	4187.2	148.579	0.452	1.57		Sand	0.0	222.91		222.91	0.78	173.57	173.57	0.86	0.838	0.864	0.570	0.978	1.17	0.01	0.01
42.980	197.020	0.744	5200.6	4197.2	130.477	0.383	1.57		Sand	0.0	222.91		222.91	0.78	173.39	173.39	0.86	0.838	0.864	0.566	0.970	1.16	0.01	0.01
43.140	176.720	1.398	5219.9	4206.6	116.716	0.803	1.80		Sand	6.8	222.91		222.91	0.78	173.58	175.31	0.86	0.838	0.861	0.606	1.052	1.25	0.00	0.01
43.310	146.960	2.183	5240.5	4216.5	96.645	1.512	2.04		Sand	26.2	222.91		222.91	0.83	185.37	250.74	0.86	0.838	0.793	142.203	248.135	296.09	0.00	0.00
43.470	111.420	1.312	5259.9	4225.9	72.762	1.206	2.07		Sand	28.5	222.91		222.91	0.83	185.73	255.87	0.86	0.838	0.792	268.189	467.580	558.00	0.00	0.00
43.640	75.410	1.458	5280.4	4235.9	48.613	2.004	2.34		Sand	50.5	222.91		222.91	0.83	185.61	281.14	0.86	0.838	0.792	12126.337	21123.116	25210.54	0.00	0.00
43.800	36.340	1.178	5299.8	4245.2	15.872	3.496	2.87		Clay	92.9			34.35	0.83	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	24.580	1.059	5319.2	4254.6	10.304	4.832	3.11		Clay	100.0			23.23	0.83	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	22.740	1.133	5339.7	4264.6	9.412	5.646	3.18		Clay	100.0			21.49	0.83	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	21.690	1.121	5359.1	4274.0	8.896	5.897	3.21		Clay	100.0			20.50	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	20.470	1.095	5379.7	4283.9	8.301	6.160	3.25		Clay	100.0			19.35	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	18.450	0.961	5399.0	4293.3	7.337	6.102	3.29		Clay	100.0			17.44	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.91

Total Settlement: 0.40 (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)
44.780	17.400	0.870	5418.4	4302.7	6.829	5.923	3.30		Clay	100.0			16.45	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	16.940	0.795	5439.0	4312.6	6.595	5.588	3.30		Clay	100.0			16.01	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	15.860	0.736	5458.3	4322.0	6.076	5.605	3.33		Clay	100.0			14.99	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	15.890	0.640	5478.9	4332.0	6.071	4.864	3.29		Clay	100.0			15.02	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	15.870	0.590	5498.2	4341.3	6.045	4.493	3.28		Clay	100.0			15.00	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	15.740	0.549	5517.6	4350.7	5.967	4.232	3.27		Clay	100.0			14.88	0.83	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	15.980	0.559	5538.2	4360.7	6.059	4.232	3.26		Clay	100.0			15.10	0.83	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	16.790	0.590	5557.5	4370.1	6.412	4.207	3.24		Clay	100.0			15.87	0.83	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	16.000	0.584	5578.1	4380.0	6.032	4.421	3.27		Clay	100.0			15.12	0.83	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	15.510	0.699	5597.5	4389.4	5.792	5.497	3.34		Clay	100.0			14.66	0.82	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	16.950	0.580	5616.8	4398.8	6.430	4.101	3.23		Clay	100.0			16.02	0.82	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	17.150	0.542	5637.4	4408.7	6.501	3.779	3.21		Clay	100.0			16.21	0.82	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	16.600	0.533	5656.8	4418.1	6.234	3.872	3.23		Clay	100.0			15.69	0.82	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	17.820	0.472	5677.3	4428.1	6.767	3.153	3.15		Clay	100.0			16.84	0.82	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	17.740	0.460	5696.7	4437.4	6.712	3.088	3.15		Clay	100.0			16.77	0.82	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	15.680	0.381	5716.0	4446.8	5.767	2.968	3.19		Clay	100.0			14.82	0.82	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	14.690	0.346	5736.6	4456.8	5.305	2.928	3.22		Clay	100.0			13.88	0.82	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	14.970	0.302	5756.0	4466.2	5.415	2.501	3.18		Clay	100.0			14.15	0.82	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	14.170	0.281	5776.5	4476.1	5.041	2.493	3.21		Clay	100.0			13.39	0.82	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	13.420	0.234	5795.9	4485.5	4.692	2.223	3.21		Clay	100.0			12.68	0.82	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	13.120	0.201	5815.3	4494.9	4.544	1.967	3.19		Clay	100.0			12.40	0.82	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	12.040	0.214	5835.8	4504.8	4.050	2.349	3.27		Clay	100.0			11.38	0.82	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	11.190	0.202	5855.2	4514.2	3.661	2.445	3.32		Clay	100.0			10.58	0.82	n.a.	n.a.	0.83	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	11.730	0.190	5875.8	4524.2	3.887	2.164	3.27		Clay	100.0			11.09	0.82	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	12.510	0.167	5895.1	4533.6	4.219	1.745	3.20		Clay	100.0			11.82	0.82	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	12.030	0.165	5914.5	4542.9	3.994	1.815	3.23		Clay	100.0			11.37	0.82	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	12.380	0.227	5935.1	4552.9	4.135	2.410	3.27		Clay	100.0			11.70	0.82	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	14.180	0.298	5954.4	4562.3	4.911	2.656	3.23		Clay	100.0			13.40	0.82	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	16.680	0.350	5975.0	4572.2	5.989	2.559	3.15		Clay	100.0			15.77	0.82	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	18.760	0.401	5994.3	4581.6	6.881	2.543	3.09		Clay	100.0			17.73	0.82	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	20.050	0.484	6013.7	4591.0	7.425	2.840	3.09		Clay	100.0			18.95	0.82	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	22.940	0.561	6034.3	4600.9	8.660	2.813	3.03		Clay	100.0			21.68	0.81	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	26.190	0.743	6053.6	4610.3	10.048	3.207	3.01		Clay	100.0			24.75	0.81	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	6

PGA (A_{max})	0.91

Total Settlement:	0.47	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc=1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	170.150	0.782	19.4	19.4	1681.228	0.460	0.92		Unsaturated	0.0			160.82	1.70	273.40	273.40	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	321.510	0.720	39.9	39.9	2212.025	0.224	0.58		Unsaturated	0.0			303.88	1.70	516.60	516.60	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	207.550	1.060	59.3	59.3	1171.769	0.511	1.01		Unsaturated	0.0			196.17	1.70	333.49	333.49	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	146.800	0.901	79.9	79.9	714.028	0.614	1.18		Unsaturated	0.0			138.75	1.70	235.88	235.88	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	98.640	1.081	99.2	99.2	430.335	1.097	1.51		Unsaturated	0.0			93.23	1.70	158.50	158.50	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	59.390	1.084	118.6	118.6	236.890	1.827	1.84		Unsaturated	10.4			56.13	1.70	95.43	104.13	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	27.370	0.996	139.2	139.2	100.624	3.648	2.31		Unsaturated	47.7			25.87	1.70	43.98	100.64	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	13.410	0.872	158.5	158.5	77.302	6.539	2.58		Unsaturated	69.2			12.67	1.70	21.55	78.30	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	12.320	0.831	179.1	179.1	65.116	6.798	2.64		Unsaturated	74.0			11.64	1.70	19.80	76.86	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	15.800	0.974	198.4	198.4	77.796	6.204	2.56		Unsaturated	67.7			14.93	1.70	25.39	82.95	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	20.160	1.083	217.8	217.8	59.072	5.401	2.59		Unsaturated	70.0			19.05	1.70	32.39	92.45	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	20.450	1.105	238.4	238.4	57.253	5.436	2.60		Unsaturated	70.9			19.33	1.70	32.86	93.22	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	16.560	1.009	257.7	257.7	67.800	6.143	2.59		Unsaturated	70.4			15.65	1.70	26.61	85.05	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	15.630	0.935	278.3	278.3	60.575	6.038	2.62		Unsaturated	72.4			14.77	1.70	25.11	83.48	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	14.900	0.903	297.7	297.7	55.030	6.123	2.65		Unsaturated	74.9			14.08	1.70	23.94	82.38	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	15.020	0.804	317.0	317.0	53.049	5.407	2.62		Unsaturated	72.5			14.20	1.70	24.13	82.23	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	14.460	0.873	337.6	337.6	48.817	6.106	2.68		Unsaturated	77.6			13.67	1.70	23.23	81.87	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	14.660	0.903	357.0	357.0	47.573	6.238	2.70		Unsaturated	78.8			13.86	1.70	23.56	82.45	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	13.510	0.882	377.5	377.5	70.572	6.620	2.61		Unsaturated	71.5			12.77	1.70	21.71	78.92	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	13.670	0.831	396.9	396.9	41.090	6.165	2.74		Unsaturated	81.9			12.92	1.70	21.97	80.81	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	12.420	0.812	416.2	416.2	58.677	6.650	2.66		Unsaturated	75.7			11.74	1.70	19.96	77.33	1.00	0.590	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	13.530	0.796	436.8	436.8	60.949	5.982	2.61		Unsaturated	72.0			12.79	1.70	21.74	79.05	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	14.080	0.766	456.2	456.2	38.326	5.532	2.72		Unsaturated	80.8			13.31	1.70	22.62	81.52	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	12.330	0.661	476.7	476.7	50.726	5.466	2.64		Unsaturated	73.9			11.65	1.70	19.81	76.86	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	10.020	0.580	496.1	496.1	39.395	5.930	2.74		Unsaturated	81.9			9.47	1.70	16.10	73.18	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	9.720	0.587	516.7	516.7	36.626	6.204	2.77		Unsaturated	84.8			9.19	1.70	15.62	72.91	1.00	0.589	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	10.040	0.628	536.0	536.0	36.461	6.421	2.78		Unsaturated	85.7			9.49	1.70	16.13	73.69	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	10.010	0.655	555.4	555.4	35.047	6.731	2.81		Unsaturated	87.9			9.46	1.70	16.08	73.86	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	9.680	0.640	576.0	576.0	32.613	6.813	2.84		Unsaturated	89.9			9.15	1.70	15.55	73.39	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	9.900	0.601	595.3	595.3	32.259	6.257	2.81		Unsaturated	88.0			9.36	1.70	15.91	73.65	1.00	0.588	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	9.860	0.558	615.9	610.3	31.304	5.846	2.80		Unsaturated	87.1			9.32	1.70	15.84	73.46	1.00	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	9.720	0.524	635.3	619.7	30.347	5.570	2.80		Unsaturated	86.7			9.19	1.70	15.62	73.12	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	9.330	0.527	654.6	629.0	28.624	5.856	2.83		Unsaturated	89.3			8.82	1.70	14.99	72.59	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	9.120	0.565	675.2	639.0	27.488	6.430	2.87		Unsaturated	92.6			8.62	1.70	14.65	72.48	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	9.590	0.607	694.5	648.4	28.511	6.565	2.87		Unsaturated	92.2			9.06	1.70	15.41	73.43	0.99	0.587	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	10.100	0.663	715.1	658.3	29.598	6.804	2.87		Unsaturated	92.2			9.55	1.70	16.23	74.50	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	10.510	0.694	734.5	667.7	30.381	6.845	2.86		Unsaturated	91.7			9.93	1.70	16.89	75.31	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	10.670	0.657	753.8	677.1	30.404	6.386	2.84		Unsaturated	90.0			10.09	1.70	17.14	75.47	0.99	0.586	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	10.700	0.594	774.4	687.0	30.021	5.764	2.81		Unsaturated	87.8			10.11	1.70	17.19	75.30	0.99	0.586	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.560	11.200	0.585	793.8	696.4	31.025	5.412	2.78		Unsaturated	85.4			10.59	1.70	18.00	76.08	0.99	0.585	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.730	11.320	0.532	814.3	706.4	30.898	4.876	2.75		Unsaturated	83.0			10.70	1.70	18.19	76.04	0.99	0.585	1.097	n.a.	n.a.	n.a.	0.00	0.00
6.890	10.450	0.560	833.7	715.8	28.035	5.581	2.82		Unsaturated	88.7			9.88	1.70	16.79	74.87	0.99	0.585	1.095	n.a.	n.a.	n.a.	0.00	0.00
7.050	10.980	0.576	853.1	725.1	29.108	5.460	2.80		Unsaturated	87.2			10.38	1.70	17.64	75.82	0.99	0.585	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.220	11.740	0.667	873.6	735.1	30.753	5.903	2.81		Unsaturated	87.8			11.10	1.70	18.86	77.48	0.99	0.584	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.380	12.700	0.607	893.0	744.5	32.919	4.950	2.73		Unsaturated	81.8			12.00	1.70	20.41	78.77	0.99	0.584	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.550	11.920	0.517	913.6	754.4	30.389	4.507	2.73		Unsaturated	81.5			11.27	1.70	19.15	77.11	0.99	0.584	1.092	n.a.	n.a.	n.a.	0.00	0.00
7.710	10.900	0.579	932.9	763.8	27.320	5.545	2.83		Unsaturated	89.2			10.30	1.70	17.51	75.87	0.99	0.584	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.870	11.030	0.628	952.3	773.2	27.300	5.954	2.85		Unsaturated	90.9			10.43	1.70	17.72	76.32	0.99	0.583	1.089	n.a.	n.a.	n.a.	0.00	0.00
8.040	12.210	0.546	972.8	783.1	29.940	4.657	2.75		Unsaturated	82.7			11.54	1.70	19.62	77.86	0.99	0.583	1.089	n.a.	n.a.	n.a.	0.00	0.00
8.200	11.390	0.396	992.2	792.5	27.492	3.634	2.70		Unsaturated	79.1			10.77	1.70	18.30	75.67	0.99	0.583	1.086	n.a.	n.a.	n.a.	0.00	0.00
8.370	11.610	0.396	1012.8	802.5	27.673	3.563	2.69		Unsaturated	78.4			10.97	1.70	18.66	76.04	0.99	0.583	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.530	11.550	0.485	1032.1	811.9	27.182	4.395	2.76		Unsaturated	83.8			10.92	1.70	18.56	76.61	0.99	0.582	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.690	11.260	0.463	1051.5	821.2	26.142	4.313	2.77		Unsaturated	84.3			10.64	1.69	18.03	75.99	0.99	0.582	1.083	n.a.	n.a.	n.a.	0.00	0.00
8.860	14.040	0.354	1072.1	831.2	24.550	2.618	2.65		Unsaturated	74.8			13.27	1.67	22.11	79.98	0.99	0.582	1.085	n.a.	n.a.	n.a.	0.00	0.00
9.020	13.260	0.234	1091.4	840.6	22.933	1.840	2.58		Unsaturated	69.4			12.53	1.67	20.88	77.46	0.99	0.582	1.082	n.a.	n.a.	n.a.	0.00	0.00
9.190	11.180	0.198	1112.0	850.5	19.006	1.862	2.65		Unsaturated	75.0			10.57	1.67	17.63	74.21	0.98	0.581	1.079	n.a.	n.a.	n.a.	0.00	0.00
9.350	9.010	0.235	1131.4	859.9	19.640	2.781	2.74		Unsaturated	82.2			8.52	1.67	14.24	70.81	0.98	0.581	1.076	n.a.	n.a.	n.a.	0.00	0.00
9.510	8.210	0.429	1150.7	869.3	17.565	5.624	2.97		Unsaturated	100.0			7.76	1.66	12.90	70.84	0.98	0.581	1.075	n.a.	n.a.	n.a.	0.00	0.00
9.680	8.460	0.380	1171.3	879.2	17.912	4.830	2.92		Unsaturated	96.8			8.00	1.65	13.20	70.96	0.98	0.580	1.074	n.a.	n.a.	n.a.	0.00	0.00
9.840	7.350	0.287	1190.6	888.6	15.203	4.247	2.94		Unsaturated	98.3			6.95	1.65	11.46	68.81	0.98	0.580	1.072	n.a.	n.a.	n.a.	0.00	0.00
10.010	6.510	0.222	1211.2	898.6	13.142	3.751	2.96		Clay	99.6			6.15	1.25	n.a.	n.a.	0.98	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	6.110	0.182	1230.6	908.0	12.103	3.305	2.95		Clay	99.3			5.78	1.25	n.a.	n.a.	0.98	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	5.830	0.151	1249.9	917.3	11.348	2.903	2.94		Clay	98.5			5.51	1.25	n.a.	n.a.	0.98	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	5.820	0.179	1270.5	927.3	11.182	3.454	2.99		Clay	100.0			5.50	1.24	n.a.	n.a.	0.98	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	6.360	0.322	1289.9	936.7	12.203	5.639	3.09		Clay	100.0			6.01	1.24	n.a.	n.a.	0.98	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	6.590	0.325	1310.4	946.6	12.539	5.475	3.08		Clay	100.0			6.23	1.24	n.a.	n.a.	0.98	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	6.560	0.328	1329.8	956.0	12.333	5.561	3.09		Clay	100.0			6.20	1.23	n.a.	n.a.	0.98	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	6.830	0.319	1349.2	965.4	12.752	5.189	3.06		Clay	100.0			6.46	1.23	n.a.	n.a.	0.98	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 6

PGA (A_{max}) 0.91

Total Settlement: 0.47 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.320	6.730	0.228	1369.7	975.4	12.396	3.765	2.98		Clay	100.0			6.36	1.23	n.a.	n.a.	0.98	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	5.990	0.182	1389.1	984.7	10.755	3.431	3.00		Clay	100.0			5.66	1.22	n.a.	n.a.	0.98	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	5.410	0.149	1409.7	994.7	9.461	3.158	3.03		Clay	100.0			5.11	1.22	n.a.	n.a.	0.98	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	5.110	0.159	1429.0	1004.1	8.755	3.622	3.09		Clay	100.0			4.83	1.22	n.a.	n.a.	0.98	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	5.320	0.223	1449.6	1014.0	9.063	4.859	3.15		Clay	100.0			5.03	1.21	n.a.	n.a.	0.98	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	6.700	0.288	1468.9	1023.4	11.658	4.828	3.07		Clay	100.0			6.33	1.21	n.a.	n.a.	0.98	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	7.340	0.325	1488.3	1032.8	12.773	4.932	3.04		Clay	100.0			6.94	1.21	n.a.	n.a.	0.98	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	7.230	0.324	1508.9	1042.7	12.420	5.000	3.05		Clay	100.0			6.83	1.21	n.a.	n.a.	0.98	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	6.950	0.317	1528.2	1052.1	11.759	5.129	3.08		Clay	100.0			6.57	1.20	n.a.	n.a.	0.98	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	7.090	0.321	1548.8	1062.1	11.893	5.086	3.07		Clay	100.0			6.70	1.20	n.a.	n.a.	0.97	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	7.200	0.343	1568.2	1071.5	11.976	5.340	3.08		Clay	100.0			6.81	1.20	n.a.	n.a.	0.97	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	7.030	0.334	1587.5	1080.8	11.540	5.349	3.10		Clay	100.0			6.64	1.19	n.a.	n.a.	0.97	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	6.980	0.312	1608.1	1090.8	11.324	5.053	3.09		Clay	100.0			6.60	1.19	n.a.	n.a.	0.97	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	6.580	0.302	1627.5	1100.2	10.483	5.230	3.12		Clay	100.0			6.22	1.19	n.a.	n.a.	0.97	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	6.520	0.301	1648.0	1110.1	10.262	5.279	3.13		Clay	100.0			6.16	1.19	n.a.	n.a.	0.97	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.880	0.323	1667.4	1119.5	10.802	5.339	3.12		Clay	100.0			6.50	1.18	n.a.	n.a.	0.97	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	7.330	0.336	1686.7	1128.9	11.492	5.183	3.09		Clay	100.0			6.93	1.18	n.a.	n.a.	0.97	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	7.520	0.322	1707.3	1138.8	11.707	4.824	3.06		Clay	100.0			7.11	1.18	n.a.	n.a.	0.97	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	7.330	0.330	1726.7	1148.2	11.264	5.098	3.09		Clay	100.0			6.93	1.18	n.a.	n.a.	0.97	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	7.310	0.334	1747.2	1158.2	11.115	5.189	3.10		Clay	100.0			6.91	1.17	n.a.	n.a.	0.97	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	8.210	0.351	1766.6	1167.6	12.550	4.793	3.04		Clay	100.0			7.76	1.17	n.a.	n.a.	0.97	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	8.060	0.439	1786.0	1176.9	12.179	6.120	3.12		Clay	100.0			7.62	1.17	n.a.	n.a.	0.97	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	8.210	0.473	1806.5	1186.9	12.312	6.471	3.13		Clay	100.0			7.76	1.16	n.a.	n.a.	0.97	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	9.420	0.429	1825.9	1196.3	14.223	5.041	3.01		Clay	100.0			8.90	1.16	n.a.	n.a.	0.97	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	8.730	0.476	1846.5	1206.2	12.944	6.096	3.10		Clay	100.0			8.25	1.16	n.a.	n.a.	0.97	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.790	0.541	1865.8	1215.6	12.927	6.883	3.13		Clay	100.0			8.31	1.16	n.a.	n.a.	0.97	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	10.170	0.569	1885.2	1225.0	15.065	6.167	3.05		Clay	100.0			9.61	1.16	n.a.	n.a.	0.97	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	10.360	0.533	1905.8	1235.0	15.235	5.664	3.02		Clay	100.0			9.79	1.15	n.a.	n.a.	0.97	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	10.570	0.509	1925.1	1244.3	15.442	5.298	3.00		Clay	100.0			9.99	1.15	n.a.	n.a.	0.96	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	11.750	0.569	1945.7	1254.3	17.185	5.275	2.96		Clay	99.9			11.11	1.15	n.a.	n.a.	0.96	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	12.640	0.606	1965.0	1263.7	18.450	5.198	2.93		Clay	97.7			11.95	1.15	n.a.	n.a.	0.96	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	13.890	0.619	1984.4	1273.0	20.263	4.802	2.88		Clay	93.4			13.13	1.14	n.a.	n.a.	0.96	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	13.570	0.646	2005.0	1283.0	19.591	5.141	2.91		Clay	95.9			12.83	1.14	n.a.	n.a.	0.96	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	14.120	0.690	2024.3	1292.4	20.285	5.265	2.91		Clay	95.5			13.35	1.14	n.a.	n.a.	0.96	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	13.620	0.700	2044.9	1302.3	19.346	5.557	2.94		Clay	98.0			12.87	1.14	n.a.	n.a.	0.96	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	12.430	0.634	2064.3	1311.7	17.379	5.565	2.97		Clay	100.0			11.75	1.13	n.a.	n.a.	0.96	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	11.670	0.528	2083.6	1321.1	16.090	4.965	2.97		Clay	100.0			11.03	1.13	n.a.	n.a.	0.96	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	11.390	0.459	2104.2	1331.1	15.533	4.439	2.95		Clay	98.7			10.77	1.13	n.a.	n.a.	0.96	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	11.330	0.420	2123.6	1340.4	15.321	4.091	2.93		Clay	97.3			10.71	1.13	n.a.	n.a.	0.96	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	11.930	0.430	2144.1	1350.4	16.081	3.961	2.90		Clay	95.3			11.28	1.13	n.a.	n.a.	0.96	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	12.980	0.446	2163.5	1359.8	17.500	3.749	2.86		Clay	91.8			12.27	1.12	n.a.	n.a.	0.96	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	13.770	0.454	2182.8	1369.1	18.520	3.584	2.83		Clay	89.3			13.02	1.12	n.a.	n.a.	0.96	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	14.590	0.425	2203.4	1379.1	19.561	3.152	2.77		Clay	85.0			13.79	1.12	n.a.	n.a.	0.96	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	15.090	0.449	2222.8	1388.5	20.135	3.211	2.77		Clay	84.6			14.26	1.12	n.a.	n.a.	0.96	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	13.970	0.455	2243.3	1398.4	18.375	3.541	2.83		Clay	89.2			13.20	1.12	n.a.	n.a.	0.96	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	11.740	0.425	2262.7	1407.8	15.071	4.009	2.93		Clay	97.3			11.10	1.11	n.a.	n.a.	0.96	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	10.920	0.374	2282.1	1417.2	13.800	3.829	2.95		Clay	98.7			10.32	1.11	n.a.	n.a.	0.95	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	10.510	0.337	2302.6	1427.2	13.115	3.605	2.95		Clay	98.8			9.93	1.11	n.a.	n.a.	0.95	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	10.850	0.353	2322.0	1436.5	13.489	3.647	2.94		Clay	98.3			10.26	1.11	n.a.	n.a.	0.95	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	10.680	0.403	2342.6	1446.5	13.147	4.233	2.99		Clay	100.0			10.09	1.11	n.a.	n.a.	0.95	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.170	0.445	2361.9	1455.9	13.722	4.451	2.99		Clay	100.0			10.56	1.10	n.a.	n.a.	0.95	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	12.060	0.502	2382.5	1465.8	14.829	4.621	2.97		Clay	100.0			11.40	1.10	n.a.	n.a.	0.95	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	12.070	0.529	2401.9	1475.2	14.736	4.868	2.99		Clay	100.0			11.41	1.10	n.a.	n.a.	0.95	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	11.670	0.551	2421.2	1484.6	14.091	5.272	3.03		Clay	100.0			11.03	1.10	n.a.	n.a.	0.95	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	11.080	0.534	2441.8	1494.5	13.193	5.418	3.06		Clay	100.0			10.47	1.10	n.a.	n.a.	0.95	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	10.720	0.523	2461.1	1503.9	12.620	5.506	3.08		Clay	100.0			10.13	1.09	n.a.	n.a.	0.95	0.760	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	10.690	0.532	2481.7	1513.9	12.483	5.630	3.09		Clay	100.0			10.10	1.09	n.a.	n.a.	0.95	0.761	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	11.100	0.530	2501.1	1523.3	12.932	5.383	3.06		Clay	100.0			10.49	1.09	n.a.	n.a.	0.95	0.763	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	10.610	0.525	2520.4	1532.6	12.201	5.615	3.09		Clay	100.0			10.03	1.09	n.a.	n.a.	0.95	0.764	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.700	0.519	2541.0	1542.6	12.225	5.502	3.09		Clay	100.0			10.11	1.09	n.a.	n.a.	0.95	0.766	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	11.580	0.555	2560.4	1552.0	13.273	5.388	3.05		Clay	100.0			10.95	1.09	n.a.	n.a.	0.95	0.768	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	12.430	0.603	2580.9	1561.9	14.264	5.411	3.03		Clay	100.0			11.75	1.08	n.a.	n.a.	0.95	0.769	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	13.830	0.667	2600.3	1571.3	15.948	5.320	2.99		Clay	100.0			13.07	1.08	n.a.	n.a.	0.95	0.771	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	14.860	0.689	2619.7	1580.7	17.145	5.084	2.95		Clay	99.1			14.05	1.08	n.a.	n.a.	0.95	0.772	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	15.660	0.715	2640.2	1590.7	18.030	4.985	2.93		Clay	97.3			14.80	1.08	n.a.	n.a.	0.94	0.773	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	16.010	0.723	2659.6	1600.0	18.350	4.928	2.92		Clay	96.6			15.13	1.08	n.a.	n.a.	0.94	0.775	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	16.140	0.720	2680.2	1610.0	18.385	4.866	2.92		Clay	96.3			15.26	1.07	n.a.	n.a.	0.94	0.776	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 6

PGA (A_{max}) 0.91

Total Settlement: 0.47 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.310	16.250	0.761	2699.5	1619.4	18.403	5.105	2.93		Clay	97.3			15.36	1.07	n.a.	n.a.	0.94	0.778	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	16.120	0.793	2718.9	1628.7	18.125	5.372	2.95		Clay	98.9			15.24	1.07	n.a.	n.a.	0.94	0.779	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	16.980	0.848	2739.4	1638.7	19.052	5.432	2.94		Clay	97.9			16.05	1.07	n.a.	n.a.	0.94	0.780	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	16.790	0.902	2758.8	1648.1	18.701	5.852	2.96		Clay	100.0			15.87	1.07	n.a.	n.a.	0.94	0.782	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	16.300	0.859	2779.4	1658.0	17.985	5.758	2.97		Clay	100.0			15.41	1.07	n.a.	n.a.	0.94	0.783	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	15.460	0.812	2798.7	1667.4	16.865	5.777	2.99		Clay	100.0			14.61	1.06	n.a.	n.a.	0.94	0.784	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	13.720	0.742	2818.1	1676.8	14.684	6.030	3.05		Clay	100.0			12.97	1.06	n.a.	n.a.	0.94	0.785	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.900	0.679	2838.7	1686.8	13.613	5.916	3.07		Clay	100.0			12.19	1.06	n.a.	n.a.	0.94	0.787	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	12.310	0.670	2858.0	1696.1	12.830	6.158	3.10		Clay	100.0			11.64	1.06	n.a.	n.a.	0.94	0.788	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	11.740	0.670	2878.6	1706.1	12.075	6.505	3.14		Clay	100.0			11.10	1.06	n.a.	n.a.	0.94	0.789	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	13.260	0.660	2898.0	1715.5	13.770	5.586	3.05		Clay	100.0			12.53	1.06	n.a.	n.a.	0.94	0.790	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	13.920	0.656	2917.3	1724.8	14.449	5.262	3.02		Clay	100.0			13.16	1.06	n.a.	n.a.	0.94	0.791	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	12.240	0.628	2937.9	1734.8	12.418	5.831	3.10		Clay	100.0			11.57	1.05	n.a.	n.a.	0.94	0.792	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	10.590	0.581	2957.2	1744.2	10.448	6.371	3.18		Clay	100.0			10.01	1.05	n.a.	n.a.	0.93	0.793	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	11.380	0.552	2977.8	1754.1	11.277	5.579	3.12		Clay	100.0			10.76	1.05	n.a.	n.a.	0.93	0.795	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	13.360	0.568	2997.2	1763.5	13.452	4.788	3.02		Clay	100.0			12.63	1.05	n.a.	n.a.	0.93	0.796	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	13.950	0.569	3016.5	1772.9	14.035	4.572	2.99		Clay	100.0			13.19	1.05	n.a.	n.a.	0.93	0.797	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	11.310	0.535	3037.1	1782.9	10.984	5.464	3.12		Clay	100.0			10.69	1.05	n.a.	n.a.	0.93	0.798	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	10.980	0.480	3056.5	1792.2	10.547	5.077	3.11		Clay	100.0			10.38	1.04	n.a.	n.a.	0.93	0.799	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	10.300	0.405	3077.0	1802.2	9.723	4.625	3.12		Clay	100.0			9.74	1.04	n.a.	n.a.	0.93	0.800	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	10.210	0.355	3096.4	1811.6	9.563	4.101	3.09		Clay	100.0			9.65	1.04	n.a.	n.a.	0.93	0.801	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	10.320	0.349	3115.8	1821.0	9.624	3.983	3.08		Clay	100.0			9.75	1.04	n.a.	n.a.	0.93	0.802	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	10.840	0.349	3136.3	1830.9	10.128	3.762	3.05		Clay	100.0			10.25	1.04	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	16.240	0.372	3155.7	1840.3	15.935	2.534	2.79		Clay	86.1			15.35	1.04	n.a.	n.a.	0.93	0.803	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	19.300	0.389	3176.3	1850.3	19.145	2.197	2.69		Clay	78.1			18.24	1.04	n.a.	n.a.	0.93	0.804	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	14.600	0.406	3195.6	1859.6	13.984	3.124	2.89		Clay	94.1			13.80	1.03	n.a.	n.a.	0.93	0.805	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	14.800	0.410	3215.0	1869.0	14.117	3.108	2.88		Clay	93.7			13.99	1.03	n.a.	n.a.	0.93	0.806	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	14.170	0.470	3235.5	1879.0	13.361	3.748	2.95		Clay	99.1			13.39	1.03	n.a.	n.a.	0.93	0.807	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	13.890	0.527	3254.9	1888.3	12.988	4.294	3.00		Clay	100.0			13.13	1.03	n.a.	n.a.	0.93	0.808	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	15.050	0.577	3275.5	1898.3	14.131	4.301	2.97		Clay	100.0			14.22	1.03	n.a.	n.a.	0.92	0.809	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	15.520	0.578	3294.8	1907.7	14.544	4.169	2.95		Clay	99.1			14.67	1.03	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	16.040	0.637	3315.4	1917.6	15.000	4.426	2.96		Clay	99.6			15.16	1.03	n.a.	n.a.	0.92	0.810	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	14.320	0.567	3334.8	1927.0	13.132	4.477	3.01		Clay	100.0			13.53	1.02	n.a.	n.a.	0.92	0.811	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	12.890	0.544	3354.1	1936.4	11.581	4.852	3.07		Clay	100.0			12.18	1.02	n.a.	n.a.	0.92	0.812	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	11.910	0.556	3374.7	1946.4	10.504	5.437	3.13		Clay	100.0			11.26	1.02	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	13.330	0.585	3394.1	1955.7	11.896	5.031	3.07		Clay	100.0			12.60	1.02	n.a.	n.a.	0.92	0.813	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	12.810	0.560	3414.6	1965.7	11.296	5.041	3.09		Clay	100.0			12.11	1.02	n.a.	n.a.	0.92	0.814	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	12.140	0.463	3434.0	1975.1	10.555	4.440	3.08		Clay	100.0			11.47	1.02	n.a.	n.a.	0.92	0.815	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	12.070	0.375	3453.3	1984.4	10.424	3.628	3.03		Clay	100.0			11.41	1.02	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	12.360	0.310	3473.9	1994.4	10.653	2.913	2.97		Clay	100.0			11.68	1.02	n.a.	n.a.	0.92	0.816	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	11.940	0.310	3493.3	2003.8	10.174	3.044	2.99		Clay	100.0			11.29	1.01	n.a.	n.a.	0.92	0.817	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	12.230	0.371	3513.8	2013.7	10.402	3.545	3.02		Clay	100.0			11.56	1.01	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	18.750	0.470	3533.2	2023.1	16.789	2.769	2.79		Clay	86.5			17.72	1.01	n.a.	n.a.	0.92	0.818	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	21.090	0.611	3552.6	2032.5	19.005	3.161	2.79		Clay	85.8			19.93	1.01	n.a.	n.a.	0.92	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	22.610	0.778	3573.1	2042.5	20.391	3.737	2.81		Clay	87.6			21.37	1.01	n.a.	n.a.	0.91	0.819	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	23.730	0.803	3592.5	2051.8	21.380	3.660	2.79		Clay	85.9			22.43	1.01	n.a.	n.a.	0.91	0.820	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	23.550	0.856	3613.1	2061.8	21.092	3.938	2.81		Clay	87.9			22.26	1.01	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	21.200	0.799	3632.4	2071.2	18.718	4.119	2.86		Clay	92.0			20.04	1.01	n.a.	n.a.	0.91	0.821	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	18.440	0.721	3651.8	2080.5	15.971	4.337	2.93		Clay	97.4			17.43	1.00	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	17.020	0.619	3672.4	2090.5	14.526	4.076	2.95		Clay	98.6			16.09	1.00	n.a.	n.a.	0.91	0.822	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	16.360	0.630	3691.7	2099.9	13.824	4.341	2.98		Clay	100.0			15.46	1.00	n.a.	n.a.	0.91	0.823	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	16.160	0.652	3712.3	2109.8	13.559	4.556	3.00		Clay	100.0			15.27	1.00	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	16.190	0.599	3731.6	2119.2	13.518	4.184	2.98		Clay	100.0			15.30	1.00	n.a.	n.a.	0.91	0.824	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	16.770	0.576	3751.0	2128.6	13.995	3.865	2.94		Clay	98.5			15.85	1.00	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	18.390	0.654	3771.6	2138.6	15.435	3.964	2.92		Clay	96.4			17.38	1.00	n.a.	n.a.	0.91	0.825	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	19.380	0.840	3790.9	2147.9	16.280	4.804	2.95		Clay	99.2			18.32	1.00	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	21.980	0.927	3811.5	2157.9	18.605	4.619	2.90		Clay	94.8			20.78	0.99	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	20.910	0.942	3830.9	2167.3	17.529	4.959	2.94		Clay	97.9			19.76	0.99	n.a.	n.a.	0.91	0.826	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	20.840	0.854	3850.2	2176.7	17.380	4.514	2.91		Clay	96.1			19.70	0.99	n.a.	n.a.	0.91	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	19.450	0.719	3870.8	2186.6	16.020	4.107	2.91		Clay	96.2			18.38	0.99	n.a.	n.a.	0.90	0.827	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	18.090	0.660	3890.2	2196.0	14.704	4.089	2.94		Clay	98.4			17.10	0.99	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	17.840	0.620	3910.7	2206.0	14.402	3.904	2.94		Clay	97.9			16.86	0.99	n.a.	n.a.	0.90	0.828	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	17.150	0.608	3930.1	2215.3	13.709	4.003	2.96		Clay	99.8			16.21	0.99	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	15.910	0.541	3949.4	2224.7	12.528	3.882	2.98		Clay	100.0			15.04	0.99	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	15.270	0.488	3970.0	2234.7	11.890	3.673	2.99		Clay	100.0			14.43	0.99	n.a.	n.a.	0.90	0.829	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	15.230	0.539	3989.4	2244.0	11.796	4.072	3.02		Clay	100.0			14.40	0.98	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	16.950	0.601	4009.9	2254.0	13.261	4.021	2.97		Clay	100.0			16.02	0.98	n.a.	n.a.	0.90	0.830	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 6

PGA (A_{max}) 0.91

Total Settlement: 0.47 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.300	17.370	0.671	4029.3	2263.4	13.569	4.372	2.99		Clay	100.0			16.42	0.98	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	18.630	0.729	4048.7	2272.8	14.613	4.391	2.96		Clay	100.0			17.61	0.98	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	18.980	0.595	4069.2	2282.7	14.847	3.512	2.90		Clay	94.9			17.94	0.98	n.a.	n.a.	0.90	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	18.640	0.430	4088.6	2292.1	14.481	2.591	2.83		Clay	89.3			17.62	0.98	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	15.990	0.472	4109.2	2302.1	12.107	3.388	2.96		Clay	99.8			15.11	0.98	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	13.880	0.451	4128.5	2311.4	10.224	3.818	3.05		Clay	100.0			13.12	0.98	n.a.	n.a.	0.90	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	17.010	0.296	4147.9	2320.8	12.871	1.980	2.81		Clay	87.4			16.08	0.98	n.a.	n.a.	0.90	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	24.840	0.193	4168.5	2330.8	20.493	0.850	2.45		Sand	58.6		1.8	42.26	0.95	40.27	99.89	0.89	0.833	0.990	0.137	0.171	0.21	0.03	0.06
34.610	17.040	0.198	4187.8	2340.1	12.774	1.324	2.72		Clay	80.4			16.11	0.97	n.a.	n.a.	0.89	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	12.280	0.232	4208.4	2350.1	8.660	2.282	2.98		Clay	100.0			11.61	0.97	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	11.080	0.413	4227.7	2359.5	7.600	4.602	3.20		Clay	100.0			10.47	0.97	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	14.030	0.562	4247.1	2368.9	10.052	4.718	3.11		Clay	100.0			13.26	0.97	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	26.490	1.895	4267.7	2378.8	20.478	7.781	3.02		Clay	100.0			25.04	0.97	n.a.	n.a.	0.89	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	35.550	2.065	4287.0	2388.2	27.976	6.183	2.85		Clay	91.2			33.60	0.97	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	46.020	2.129	4307.6	2398.2	36.583	4.854	2.70		Clay	78.7			43.50	0.97	n.a.	n.a.	0.89	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	61.650	2.355	4327.0	2407.5	52.711	3.958	2.52		Sand	64.7	74.91	1.6	119.86	0.96	114.81	197.34	0.89	0.835	0.967	1.632	3.472	4.16	0.00	0.00
35.930	78.300	2.170	4347.5	2417.5	67.317	2.850	2.35		Sand	50.6	74.91	1.6	119.86	0.96	114.53	191.20	0.89	0.835	0.968	1.191	2.538	3.04	0.00	0.00
36.090	79.250	2.177	4366.9	2426.9	68.017	2.825	2.34		Sand	50.2		1.6	119.85	0.95	114.36	190.74	0.89	0.835	0.968	1.165	2.480	2.97	0.00	0.00
36.250	69.160	1.931	4386.3	2436.3	58.989	2.883	2.39		Sand	54.2	74.91	1.6	119.86	0.95	114.26	192.59	0.89	0.836	0.966	1.276	2.711	3.24	0.00	0.00
36.420	62.940	1.748	4406.8	2446.2	53.392	2.877	2.42		Sand	56.6	74.91	1.6	119.86	0.95	114.12	193.48	0.89	0.836	0.965	1.334	2.831	3.39	0.00	0.00
36.580	60.370	1.449	4426.2	2455.6	51.026	2.491	2.39		Sand	54.3	74.91	1.6	119.86	0.95	113.94	192.26	0.89	0.836	0.964	1.255	2.662	3.18	0.00	0.00
36.750	55.720	1.251	4446.8	2465.6	46.843	2.338	2.40		Sand	55.0	74.91	1.6	119.86	0.95	113.79	192.40	0.89	0.836	0.963	1.264	2.677	3.20	0.00	0.00
36.910	46.790	1.142	4466.1	2474.9	38.941	2.563	2.49		Sand	62.0	74.91	1.6	119.86	0.95	113.71	195.00	0.88	0.836	0.961	1.442	3.049	3.65	0.00	0.00
37.070	39.970	1.036	4485.5	2484.3	32.910	2.746	2.56		Sand	68.0			37.78	0.92	34.82	95.17	0.88	0.837	0.984	0.131	0.160	0.19	0.03	0.07
37.240	37.460	0.989	4506.0	2494.3	28.230	2.809	2.62		Clay	72.6			35.41	0.96	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	35.740	0.982	4525.4	2503.6	26.743	2.934	2.65		Clay	75.0			33.78	0.96	n.a.	n.a.	0.88	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	39.250	0.903	4546.0	2513.6	32.067	2.442	2.54		Sand	66.0	49.71	1.66	82.52	0.93	76.96	149.02	0.88	0.837	0.973	0.282	0.455	0.54	0.02	0.04
37.730	49.230	1.135	4565.3	2523.0	40.637	2.417	2.46		Sand	59.5	49.71	1.66	82.52	0.93	76.80	146.89	0.88	0.837	0.973	0.269	0.428	0.51	0.02	0.04
37.890	52.590	1.440	4584.7	2532.4	43.457	2.863	2.48		Sand	61.7		1.66	82.51	0.93	76.69	147.43	0.88	0.837	0.972	0.272	0.434	0.52	0.02	0.04
38.060	49.430	1.411	4605.3	2542.3	40.638	2.995	2.52		Sand	64.5	49.71	1.66	82.52	0.93	76.59	148.11	0.88	0.837	0.971	0.277	0.442	0.53	0.02	0.04
38.220	45.900	1.070	4624.6	2551.7	37.516	2.454	2.49		Sand	62.0	49.71	1.66	82.52	0.93	76.45	147.21	0.88	0.838	0.971	0.271	0.431	0.51	0.02	0.04
38.390	45.980	0.643	4645.2	2561.7	37.503	1.472	2.35		Sand	51.0	49.71	1.66	82.52	0.92	76.22	142.87	0.88	0.838	0.971	0.248	0.383	0.46	0.02	0.04
38.550	36.720	0.583	4664.6	2571.0	29.486	1.694	2.47		Sand	60.6	49.71	1.66	82.52	0.92	76.20	146.47	0.88	0.838	0.970	0.267	0.422	0.50	0.02	0.04
38.710	22.080	0.414	4683.9	2580.4	15.298	2.097	2.76		Clay	83.5			20.87	0.95	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	12.450	0.261	4704.5	2590.4	7.796	2.584	3.05		Clay	100.0			11.77	0.95	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	11.280	0.320	4723.8	2599.7	6.861	3.593	3.18		Clay	100.0			10.66	0.95	n.a.	n.a.	0.88	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	11.360	0.640	4744.4	2609.7	6.888	7.123	3.35		Clay	100.0			10.74	0.95	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	14.190	0.843	4763.8	2619.1	9.017	7.137	3.26		Clay	100.0			13.41	0.95	n.a.	n.a.	0.87	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	50.500	1.184	4783.1	2628.5	40.798	2.461	2.46		Sand	59.8	70.16	1.55	108.75	0.92	100.56	177.41	0.87	0.838	0.955	0.656	1.283	1.53	0.00	0.00
39.700	67.710	1.499	4803.7	2638.4	55.280	2.295	2.34		Sand	50.3	70.16	1.55	108.75	0.92	100.28	173.01	0.87	0.838	0.956	0.558	1.056	1.26	0.00	0.01
39.860	74.230	1.896	4823.1	2647.8	60.683	2.641	2.35		Sand	51.3		1.55	108.75	0.92	100.16	173.35	0.87	0.838	0.956	0.565	1.071	1.28	0.00	0.01
40.030	70.180	1.938	4843.6	2657.8	57.145	2.860	2.40		Sand	54.7	70.16	1.55	108.75	0.92	100.07	174.80	0.87	0.838	0.954	0.595	1.140	1.36	0.00	0.00
40.190	60.260	1.895	4863.0	2667.1	48.685	3.277	2.49		Sand	62.0	70.16	1.55	108.75	0.92	100.03	177.49	0.87	0.838	0.952	0.658	1.284	1.53	0.00	0.00
40.350	62.990	1.559	4882.4	2676.5	50.885	2.575	2.40		Sand	55.2	70.16	1.55	108.75	0.92	99.81	174.65	0.87	0.838	0.953	0.592	1.130	1.35	0.00	0.00
40.520	67.300	1.342	4902.9	2686.5	54.398	2.069	2.32		Sand	48.3	70.16	1.55	108.75	0.92	99.55	171.03	0.87	0.838	0.954	0.521	0.968	1.15	0.01	0.01
40.680	65.010	0.986	4922.3	2695.8	52.377	1.577	2.25		Sand	43.2	70.16	1.55	108.75	0.91	99.29	167.58	0.87	0.839	0.955	0.465	0.842	1.00	0.01	0.02
40.850	44.520	0.915	4942.9	2705.8	35.146	2.176	2.48		Sand	61.0	70.16	1.55	108.75	0.91	99.48	176.45	0.87	0.839	0.950	0.633	1.221	1.46	0.00	0.00
41.010	25.950	0.927	4962.2	2715.2	17.287	3.951	2.88		Clay	93.2			24.53	0.94	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	14.930	0.733	4981.6	2724.6	9.131	5.889	3.20		Clay	100.0			14.11	0.94	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	15.290	0.582	5002.1	2734.5	9.354	4.552	3.13		Clay	100.0			14.45	0.93	n.a.	n.a.	0.87	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	16.530	0.475	5021.5	2743.9	10.218	3.389	3.02		Clay	100.0			15.62	0.93	n.a.	n.a.	0.86	0.839	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	13.880	0.375	5042.1	2753.9	8.249	3.301	3.09		Clay	100.0			13.12	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	12.500	0.268	5061.4	2763.2	7.216	2.691	3.09		Clay	100.0			11.81	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	11.920	0.220	5080.8	2772.6	6.766	2.349	3.08		Clay	100.0			11.27	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	10.630	0.260	5101.4	2782.6	5.807	3.214	3.21		Clay	100.0			10.05	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	11.010	0.391	5120.7	2792.0	6.053	4.623	3.28		Clay	100.0			10.41	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	14.090	0.551	5141.3	2801.9	8.222	4.787	3.18		Clay	100.0			13.32	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	18.060	0.667	5160.7	2811.3	11.013	4.310	3.06		Clay	100.0			17.07	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	20.090	0.582	5180.0	2820.7	12.408	3.327	2.95		Clay	98.7			18.99	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	19.230	0.529	5200.6	2830.6	11.750	3.180	2.95		Clay	99.3			18.18	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	16.340	0.431	5219.9	2840.0	9.669	3.138	3.02		Clay	100.0			15.44	0.93	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	15.480	0.545	5240.5	2850.0	9.024	4.238	3.12		Clay	100.0			14.63	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	15.330	0.569	5259.9	2859.3	8.883	4.478	3.14		Clay	100.0			14.49	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	17.030	0.575	5280.4	2869.3	10.030	3.998	3.07		Clay	100.0			16.10	0.92	n.a.	n.a.	0.86	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	15.940	0.574	5299.8	2878.7	9.233	4.318	3.12		Clay	100.0			15.07	0.92	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	15.790	0.563	5319.2	2888.1	9.093	4.286	3.12		Clay	100.0			14.92	0.92	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	15.830	0.511	5339.7	2898.0	9.082	3.884	3.10		Clay	100.0			14.96	0.92	n.a.	n.a.	0.85	0.838	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 6

PGA (A_{max}) 0.91

Total Settlement: 0.47 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	16.450	0.471	5359.1	2907.4	9.473	3.422	3.05		Clay	100.0			15.55	0.92	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	16.700	0.426	5379.7	2917.4	9.605	3.043	3.01		Clay	100.0			15.78	0.92	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	16.590	0.474	5399.0	2926.7	9.492	3.410	3.05		Clay	100.0			15.68	0.92	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	16.710	0.494	5418.4	2936.1	9.537	3.525	3.05		Clay	100.0			15.79	0.92	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	15.930	0.370	5439.0	2946.1	8.968	2.803	3.02		Clay	100.0			15.06	0.92	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	15.240	0.251	5458.3	2955.4	8.466	2.002	2.96		Clay	100.0			14.40	0.92	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	13.940	0.243	5478.9	2965.4	7.554	2.168	3.02		Clay	100.0			13.18	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	12.560	0.271	5498.2	2974.8	6.596	2.766	3.13		Clay	100.0			11.87	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	13.030	0.312	5517.6	2984.2	6.884	3.037	3.13		Clay	100.0			12.32	0.91	n.a.	n.a.	0.85	0.837	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	16.680	0.341	5538.2	2994.1	9.292	2.448	2.97		Clay	100.0			15.77	0.91	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	18.170	0.360	5557.5	3003.5	10.249	2.336	2.93		Clay	97.2			17.17	0.91	n.a.	n.a.	0.85	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	17.470	0.382	5578.1	3013.5	9.744	2.605	2.97		Clay	100.0			16.51	0.91	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	17.420	0.387	5597.5	3022.8	9.674	2.648	2.98		Clay	100.0			16.47	0.91	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	18.590	0.419	5616.8	3032.2	10.409	2.652	2.95		Clay	99.2			17.57	0.91	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	19.870	0.387	5637.4	3042.2	11.210	2.271	2.89		Clay	94.1			18.78	0.91	n.a.	n.a.	0.84	0.836	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	21.070	0.395	5656.8	3051.6	11.956	2.165	2.85		Clay	91.3			19.91	0.91	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	20.570	0.398	5677.3	3061.5	11.583	2.242	2.87		Clay	92.9			19.44	0.91	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	19.630	0.525	5696.7	3070.9	10.930	3.127	2.98		Clay	100.0			18.55	0.91	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	22.330	0.660	5716.0	3080.3	12.643	3.391	2.94		Clay	98.6			21.11	0.91	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	25.760	0.835	5736.6	3090.2	14.816	3.649	2.91		Clay	95.7			24.35	0.90	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	23.140	0.883	5756.0	3099.6	13.074	4.356	3.00		Clay	100.0			21.87	0.90	n.a.	n.a.	0.84	0.835	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	22.940	0.876	5776.5	3109.6	12.897	4.371	3.00		Clay	100.0			21.68	0.90	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	22.870	0.899	5795.9	3118.9	12.807	4.499	3.01		Clay	100.0			21.62	0.90	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	20.990	0.757	5815.3	3128.3	11.560	4.188	3.03		Clay	100.0			19.84	0.90	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	18.560	0.570	5835.8	3138.3	9.969	3.643	3.05		Clay	100.0			17.54	0.90	n.a.	n.a.	0.84	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	16.840	0.402	5855.2	3147.7	8.840	2.892	3.03		Clay	100.0			15.92	0.90	n.a.	n.a.	0.83	0.834	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	16.000	0.352	5875.8	3157.6	8.273	2.692	3.04		Clay	100.0			15.12	0.90	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	16.030	0.413	5895.1	3167.0	8.262	3.154	3.08		Clay	100.0			15.15	0.90	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	19.370	0.559	5914.5	3176.4	10.334	3.408	3.02		Clay	100.0			18.31	0.90	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	23.140	0.746	5935.1	3186.3	12.662	3.696	2.97		Clay	100.0			21.87	0.90	n.a.	n.a.	0.83	0.833	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	25.360	0.911	5954.4	3195.7	14.008	4.071	2.96		Clay	99.6			23.97	0.90	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	23.490	0.910	5975.0	3205.7	12.791	4.440	3.01		Clay	100.0			22.20	0.90	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	21.650	0.731	5994.3	3215.0	11.603	3.918	3.01		Clay	100.0			20.46	0.90	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	20.060	0.685	6013.7	3224.4	10.577	4.019	3.05		Clay	100.0			18.96	0.89	n.a.	n.a.	0.83	0.832	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	20.140	0.650	6034.3	3234.4	10.588	3.798	3.04		Clay	100.0			19.04	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	21.430	0.677	6053.6	3243.8	11.347	3.680	3.00		Clay	100.0			20.26	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	21.410	0.642	6074.2	3253.7	11.293	3.495	2.99		Clay	100.0			20.24	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	20.580	0.604	6093.6	3263.1	10.746	3.446	3.01		Clay	100.0			19.45	0.89	n.a.	n.a.	0.83	0.831	n.a.	n.a.	n.a.	n.a.	0.00	0.00