CORNERSTONE
EARTH GROUP

TYPE OF SERVICES	Geotechnical Investigation
PROJECT NAME	North 27th Street Mixed-Use Development
LOCATION	70-80 North 27th Street San Jose, California
CLIENT	HC Investment Associates, LP
PROJECT NUMBER	1285-1-2
DATE	December 1, 2021

GEOTECHNICAL

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Project Name North 27th Street Mixed-Use Development
Location 70-80 North 27th Street
San Jose, California
Client HC Investment Associates, LP
Client Address 1700 Embarcadero Road
Palo Alto, California
Project Number 1285-1-2
Date December 1, 2021

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STATE OF CALIFORNIA

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SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of HC Investment Associates, LP for the North 27th Street Mixed-Use Development 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:

- Preliminary sketches depicting the layout and elevation profile of the proposed structure prepared by Ruggeri Jensen Azar (RJA), undated.

1.1 PROJECT DESCRIPTION

We understand the project will consist of redeveloping the approximately 1.2-acre rectangular site with an at-grade, mixed-use building consisting of 5-stories of residential above a concrete podium commercial and parking floor. A portion of the podium parking level will be below-grade to accommodate a 3-level puzzle lift parking system in the central portion of the proposed building. The podium floor will also include 7,000 square feet for commercial use. The second floor will consist of residential units surrounding an outdoor podium courtyard. The third through sixth floors will consist of residential units. A total of 198 residential units consisting of studio to 1-bedroom apartments are currently planned. Appurtenant parking, utilities, landscaping and other improvements necessary for site development are also planned. We anticipate the podium level of commercial area and parking to be of concrete construction and the residential units above to be of wood construction.

Structural loads are not currently known for the proposed structure; however, structural loads are expected to be typical of similar type structures. Minor cuts and fills on the order of 1 to 3 feet are expected for site development. However, excavations of up to 8 feet are anticipated for the below-grade portions of the 3-level puzzle mechanical lifts.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated September 23, 2021 and consisted of field and laboratory programs to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare recommendations for site work and grading, building foundations, flatwork, retaining walls, and pavements, and preparation of this report. Brief descriptions of our exploration and laboratory programs are presented below.

1.3 EXPLORATION PROGRAM

Field exploration consisted of two borings drilled on October 19, 2021 with truck-mounted, hollow-stem auger drilling equipment and four Cone Penetration Tests (CPTs) advanced on October 14, 2021 and October 18, 2021. The borings were drilled to depths of 30 to 50 feet; the CPTs were advanced to depths of 50 to 90 feet in which CPT-1 encountered refusal at a depth of 90 feet. Seismic shear wave velocity measurements were performed at CPT-1. Two of the borings (Borings EB-1 and EB-2) were advanced adjacent to CPT-1 and CPT-4, respectively, for direct evaluation of physical samples to correlated soil behavior. We also performed two percolation tests using hand auger equipment to excavate the test holes to depths of 4 to 5 feet on October 20, 2021.

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, a triaxial compression test, and a consolidation test. Details regarding our laboratory program are included in Appendix B.

1.5 ENVIRONMENTAL SERVICES

Cornerstone Earth Group also provided environmental services for this project which included a Phase 1 Site Assessment; environmental findings and conclusions are provided under separate covers.

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located within the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The

San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range. Alluvial soil thicknesses in the area are expected to be on the order of 500 feet or greater (Rogers & Williams, 1974).

2.2 REGIONAL SEISMICITY

While seismologists cannot predict earthquake events, geologists from the U.S. Geological Survey have recently updated (in 2015) earlier estimates from their 2014 Uniform California Earthquake Rupture Forecast (Version 3; UCERF3) publication. The estimated probability of one or more magnitude 6.7 earthquakes (the size of the destructive 1994 Northridge earthquake) expected to occur somewhere in the San Francisco Bay Area has been revised (increased) to 72 percent for the period 2014 to 2043 (Aagaard et al., 2016). The faults in the region with the highest estimated probability of generating damaging earthquakes between 2014 and 2043 are the Hayward (33%), Calaveras (26%), and San Andreas Faults (22%). In this 30-year period, the probability of an earthquake of magnitude 6.7 or larger occurring is 22 percent along the San Andreas Fault and 33 percent for the Hayward Fault.

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

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Hayward (Southeast Extension)	3.9	6.3
Calaveras	6.6	10.7
Hayward (Total Length)	7.6	12.2
Monte Vista-Shannon	9.0	14.5
San Andreas	13.6	21.9
Sargent	15.2	24.5

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

SECTION 3: SITE CONDITIONS

3.1 SITE BACKGROUND

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

- 1948: The site appears to be part of a larger previous parcel spanning along North 27th Street. The site appears developed with warehouse buildings along the western edge and staging area on the eastern section of the site. The railroad tracks are observed east of the site. The church along Santa Clara Street appears built and in its current location. The adjacent residential neighborhood to the west appears mostly built with a few lots undeveloped.
- 1968: The project site appears to remain the same. The adjacent neighborhood appears to have been further developed and largely resembles current conditions.
- 1982: The warehouse buildings appear to have been demolished on the project site. Remainder of the site appears to remain the same.
- 1998: The project site appears to match the current property boundary. The current existing commercial building appears to be built, but the surrounding parking lot and landscape do not appear to be completed yet.
- 2002: The surrounding parking lot and landscaping appear to have been constructed. The adjacent building to the northwest appears to be built
- 2018: The site appears fully constructed with the building, asphalt parking lot, and landscaping in its current condition. No further changes are observed to the site.

3.2 SURFACE DESCRIPTION

The project site is set in a commercial/industrial zone near the intersection of Santa Clara Street and U.S. Highway 101. The area directly west of the site across North 27th Street consist of a residential neighborhood with a few commercial buildings. Currently, the site is developed and occupied by a two-story commercial building, asphalt parking lot, concrete sidewalks, flatwork, utility boxes/pads, and landscaping areas on the edges of the site. Site elevations range from 89 to 91 feet (Google Earth Pro, WGS84). The site is relatively level but graded to drain to storm drain facilities.

Surface pavements generally consisted of 2 to 4 inches of asphalt concrete over 5½ to 8 inches of aggregate base. Based on our observations, the existing pavements are in fair to poor condition with moderate alligator cracking.

3.3 SUBSURFACE CONDITIONS

Our explorations generally encountered existing undocumented fill underlain by interbedded native alluvial soil to the terminal depths explored during this investigation. A more detailed description of the subsurface conditions is presented in the following sections.

3.3.1 Undocumented Fills

Below the surface pavements, our borings encountered approximately 2¼ to 3 feet of undocumented fill; however, deeper localized fill may be encountered during demolition and/or site grading. The fills were highly variable in content and generally consisted of hard, sandy lean clay and medium dense, silty gravel with sand.

3.3.2 Alluvial Soil

Below the undocumented fills, our borings encountered native alluvial soil consisting of medium stiff to very stiff, lean clay and lean clay with sand to a depth of approximately 50 feet below existing site grades. Thin interbedded layers of loose, silty sand were encountered from approximately 8 to 10 feet within our Exploratory Boring EB-2 and 14 to 14½ feet within Boring EB-1. Below the terminal boring depth of 50 feet, our CPTs generally encountered additional fine-grained material consisting of stiff to very stiff, lean clay with varying amounts of silt and sand to depths of approximately 63½ to 64½ feet. Below the fine-grained materials, dense to very dense, sand with variable amounts of silt and clay fines were encountered to a depth of approximately 90 feet, the depth of refusal.

3.3.1 Plasticity/Expansion Potential

We performed two Plasticity Index (PI) tests on representative samples. Test results were used to evaluate expansion potential of surficial soils. The results of the surficial PI tests indicated PIs ranging from 11 to 16, indicating low to moderate expansion potential to wetting and drying cycles.

3.3.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 5 to 31 percent moisture. In our opinion, we estimated this corresponds to about 2 percent below the estimate laboratory optimum moisture content of the sandy gravel fill encountered within EB-1. For the underlying clayey soil, we estimate this corresponds to about 3 to 18 percent above the estimated laboratory optimum moisture content.

3.4 GROUNDWATER

Groundwater was encountered in our Boring EB-1 at a depth of 13 feet below current site grades. Groundwater was inferred at our CPTs (CPT-1 to CPT-4) at depths of approximately 10 to 16 feet below current grades. The depths to groundwater inferred from the CPTs are based on pore pressure dissipation tests being performed at each CPT location. 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.

Maps published by the California Geological Survey (CGS, 2000) indicate historical high groundwater depth between 5 to 10 feet below the ground surface. We also reviewed groundwater data available online from the website GeoTracker, https://geotracker.waterboards.ca.gov/. Nearby monitoring well data indicates that groundwater has been measured at depths of approximately 9 to 11 feet at wells located approximately 600 feet east of the project site between 2007 to 2014.

Based on the above, we recommend a design groundwater depth of 8 feet. Fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

3.5 IN-SITU WATER INFILTRATION

The design of subsurface drainage systems including detention basins and bio-swales typically requires adequate subsurface data and percolation characteristics of the underlying soil. Percolation characteristics of the underlying soil were requested in future potential retention basin or bioswales. To estimate the infiltration rate of the soils at locations and depths typically associated with these subsurface drainage systems, we performed two in-situ field infiltration tests using a Guelph permeameter by SoilMoisture Equipment Corp., Model #2800, in general accordance with ASTM D5126. Generally, the Guelph permeameter is a constant head device, which uses two water-filled chambers to measure infiltration rate in a shallow borehole. A constant head level is established in the borehole and the rate of water outflow into the surrounding soil is noted. The rate of flow when it reaches a steady state, or constant rate, is used to determine an approximate infiltration rate for that location and depth.

The approximate location of the field infiltration tests (P-1 and P-2) are shown on the Site Plan, Figure 2. The infiltration tests were performed at approximate depths of 4 and 5 feet below existing site grades, respectively. The test results are summarized in Table 2.

Table 2: In-Situ Field Guelph Permeameter Test Results

Location	Depth Below Existing Grade (ft)	Infiltration Rate (in/hr)
P-1	4.0	1.2
P-2	5.0	1.2

3.5.1 Reliability of Field Test Data

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

3.5.2 Findings and Recommendations

Based on our findings, the soil at the locations tested and at depths of about 4 and 5 feet below existing grade have an infiltration rate of about 1.2 inches per hour. Based on our test results, the in-situ field tests generally indicated a moderate infiltration rate at the depths and locations tested.

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

3.5.3 General Comments and Design Considerations

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

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT SURFACE RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone, or a Santa Clara County Fault Hazard Zone. As shown in Figure 3, no known surface expression of fault traces is thought to cross the site; therefore, fault surface 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 16 and 18 and Appendix J of the 2019 California Building Code (CBC) and Chapter 21, Section 21.2 of ASCE 7-16 and Supplement No. 1. For our analysis we used a PGA_M of 0.70g which was determined in accordance with Section 21.5 of ASCE 7-16.

4.3 LIQUEFACTION POTENTIAL

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

4.3.1 Background

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

4.3.2 Analysis

As discussed in the “Subsurface” section above, several sand layers were encountered below the design groundwater depth of 8 feet. Following the liquefaction analysis framework in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008), incorporating updates in *CPT and SPT Based Liquefaction Triggering Procedures* (Boulanger and Idriss, 2014), and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic shaking (Cyclic Stress Ratio - CSR) to the soil’s estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation (i.e. settlement).

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

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

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

4.3.3 Summary

Our analyses indicate that several layers could potentially experience liquefaction triggering that could result in post-liquefaction total settlement at the ground surface ranging from ¼- to 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 or less between independent foundation elements or over a horizontal distance of 30 feet.

4.3.4 Ground Deformation and Surficial Cracking Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground deformation or sand boils. For ground deformation 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 8-foot-thick layer of non-liquefiable cap is sufficient to prevent ground deformation and significant surficial cracking; therefore, the above total settlement estimates are reasonable.

4.4 LATERAL SPREADING

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

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

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

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

4.6 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone AH and AO, special flood hazard zones with a base flood elevation of 89 feet and a depth of flooding of 1 foot. We understand the project civil engineer confirmed this information.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

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

- Potential for Static and Seismic Settlement
- Mitigation of Undocumented Fill and Redevelopment Considerations
- Shallow Groundwater – Puzzle Lifts

5.1.1 Potential for Static and Seismic Settlement

5.1.2.1 Static Settlement

We understand the finished floor of the proposed building will approximately be at the existing site grade and that new fill is not anticipated at this time. As such, static settlement due to fill placement was not considered in our static settlement analysis discussed below. In addition, structural loads were not available; therefore, we estimated foundation loading (dead plus live loads) of 600 to 650 kips for interior columns beneath the residential floors, 250 kips for interior columns beneath the courtyard/deepened podium level and 18 to 22 kips per lineal foot for exterior walls. Our static settlement estimates are based on an at-grade building being supported on conventional shallow spread and strip footings with deepened footings under the mechanical puzzle lifts.

For shallow footings for the building anticipated to be about 2 to 4 feet below existing site grades, we estimate static settlement to be on the order of ¾ to 1 inch with differential settlement on the order of ⅓ to ½ inch. Based on our review of the provided plans, we anticipate deepened footings for the puzzle lift to be on the order of 8 to 10 feet below existing site grades. For deepened footings for the puzzle lifts, we estimate static settlement on the order of 1⅓ to 2 inches with differential settlement on the order of ⅔ to 1 inch. This range of settlement is preliminary and will depend on the final building loads and finished floor elevations for the building. Therefore, we recommend that we be retained to re-evaluate the static settlement estimates after final structural loads are known.

5.1.2.2 Seismic Settlement

As discussed above, 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 sand to vent to the ground surface through cracks in the surficial soil is low, our analysis indicates that liquefaction-induced settlement of ¼ to ½ inch could occur, resulting in differential settlement of up to ⅓ inch between adjacent independent foundation elements or over a horizontal distance of 30 feet.

5.1.2.3 Total (Static and Seismic) Settlement

Based on the estimated settlement discussed above, the total (static and seismic) settlement for shallow footings could be on the order of 1 to 1½ inches with differential settlement of about ½ to ¾ inch between independent adjacent foundation elements, or over a horizontal distance of about 30 feet. In addition, the total (static and seismic) settlement for the deeper puzzle lift footings could be on the order of 1½ to 2½ inches with differential settlement of about ¾ inch to 1⅓ inches between independent adjacent foundation elements, or over a horizontal distance of about 30 feet.

5.1.2.4 Foundation Recommendations

Based on our assumed structural loads and results of our settlement analysis, we anticipate the proposed building may be supported on shallow foundations consisting of conventional spread footings provided the estimated total and differential settlement is tolerable. If the settlement estimated above is not tolerable for spread footings, the proposed building may be supported on a rigid mat foundation designed to tolerate the total and differential settlement discussed above. Detailed recommendations are presented in the “Foundations” section.

5.1.2 Mitigation of Undocumented Fill and Redevelopment Considerations

As discussed above, approximately 2¼ to 3 feet of undocumented fill was encountered below current site grades in our borings during our field exploration. Based on our explorations and due to the previous development and site history, we anticipate fills are generally present across the site. Undocumented fills are expected to be variable in thickness, density, and consistency. Additionally, deeper localized fill may be encountered during demolition and/or site grading. We recommend all undocumented fill at the site be completely removed from within the building areas and replaced as engineered fill. Additional recommendations are provided in the “Earthwork” section.

5.1.3 Shallow Groundwater – Puzzle Lifts

Shallow groundwater was encountered within our borings and inferred at our CPTs at depths ranging from approximately 10 to 16 feet below the existing ground surface. As discussed above, we recommend a design groundwater depth of 8 feet. Anticipated grading for the proposed building pad and foundations are expected to be on the order of 2 to 3 feet to mitigate existing undocumented fill and approximately 8 to 10 feet for the puzzle lift parking system. 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 subgrade, difficulty achieving compaction, and difficult underground utility installation. Dewatering and shoring of excavations and utility trenches may be required in some isolated areas (e.g. puzzle lifts) of the site. Detailed recommendations addressing this concern are presented in the “Earthwork” section of this report.

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. A detailed discussion of removal of existing fills is provided later in this report. 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 4 inches below existing grade in vegetated areas.

6.2.2 Tree and Shrub Removal

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

6.3 MITIGATION OF UNDOCUMENTED FILL

As discussed above, approximately 2¼ to 3 feet of undocumented fill was encountered; however, deeper localized fills may be encountered during demolition and/or site grading and should be anticipated and planned for by the contractor. We anticipate that existing fill will be removed within the areas of the deeper excavations (e.g. puzzle lifts); however, all undocumented fills should be completely removed from within building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater. Provided the fills meet the "Material for Fill" requirements below, the fills may be reused when backfilling the excavations. Based on review of the samples collected from our borings, it appears that the fill may be reused. If materials are encountered that do not meet the requirements, such as debris, wood, trash, those materials should be screened out of the remaining material and be removed from the site. Backfill of excavations should be placed in lifts and compacted in accordance with the "Compaction" section below.

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

6.4 TEMPORARY CUT AND FILL SLOPES

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

Excavations performed during site demolition and fill removal should be sloped at 3:1 (horizontal:vertical) within the upper 5 feet below building subgrade. Actual excavation inclinations should be reviewed in the field during construction, as needed. Excavations below building subgrade and excavations in pavement and flatwork areas should be sloped in accordance with OSHA soil classification requirements.

6.5 BELOW-GRADE EXCAVATIONS

The below-grade excavations for the proposed puzzle lifts may be constructed with temporary slopes in accordance with the "Temporary Cut and Fill Slopes" section above if space allows. Alternatively, temporary shoring may support the planned cuts of up to 8 to 10 feet. We have provided geotechnical parameters for shoring design in the section below. The choice of shoring method should be left to the contractor's judgment based on experience, economic considerations and adjacent improvements such as utilities, pavements, and foundation loads. Temporary shoring should support adjacent improvements without distress and should be the contractor's responsibility. A pre-condition survey including photographs and installation of monitoring points for existing site improvements should be included in the contractor's scope. We should be provided the opportunity to review the geotechnical parameters of the shoring design prior to implementation; the project structural engineer should be consulted regarding support of adjacent structures.

6.5.1 Temporary Shoring – Puzzle Lifts

Based on the site conditions encountered during our investigation, the cuts for the puzzle lifts may be supported by slide rails, braced excavations, or potentially other methods. Where shoring will extend more than about 10 feet, restrained shoring will most likely be required to limit detrimental lateral deflections and settlement behind the shoring. In addition to soil earth pressures, the shoring system will need to support adjacent loads such as construction vehicles and incidental loading, existing structure foundation loads, and street loading. We recommend that heavy construction loads (cranes, etc.) and material stockpiles be kept at least 15 feet behind the shoring. Where this loading cannot be set back, the shoring will need to be designed to support the loading. The shoring designer should provide for timely and uniform mobilization of soil pressures that will not result in excessive lateral deflections. Minimum suggested geotechnical parameters for shoring design are provided in the table below.

Table 3: Suggested Temporary Shoring Design Parameters

Design Parameter	Design Value
Minimum Lateral Wall Surcharge (upper 5 feet)	120 psf
Cantilever Wall – Triangular Earth Pressure	40 pcf
Restrained Wall – Trapezoidal Earth Pressure	Increase from 0 to 25H* psf
Passive Pressure – Starting at 2 feet below the bottom of the excavation	400 pcf up to 2,000 psf maximum uniform pressure

* H equals the height of the excavation; passive pressures are assumed to act over twice the soldier pile diameter

The restrained earth pressure may also be distributed as described in Section 5.2.4 Figure 23(b) of the *FHWA Circular No. 4 – Ground Anchors and Anchored Systems* (with the hinge points at ¼H and ¾H) provided the total pressure is established from the uniform pressure above.

If shotcrete lagging is used for the shoring facing, the permanent retaining wall drainage materials, as discussed in the “Wall Drainage” section of this report, will need to be installed during temporary shoring construction. At a minimum, 2-foot-wide vertical panels should be placed between soil nails or tiebacks that are spaced at 6-foot centers. For 8-foot centers, 4-foot-wide vertical panels should be provided. A horizontal strip drain connecting the vertical panels should be provided, or pass-through connections should be included for each vertical panel.

We performed our borings with hollow-stem auger drilling equipment and as such were not able to evaluate the potential for caving soils, which can create difficult conditions during soldier beam, tie-back, or soil nail installation; caving soils can also be problematic during excavation and lagging placement. The contractor is responsible for evaluating excavation difficulties prior to construction. Where relatively clean sands (especially encountered below ground water) or difficult drilling or cobble conditions were encountered during our exploration, pilot holes performed by the contractor may be desired to further evaluate these conditions prior to the finalization of the shoring budget.

In addition to anticipated deflection of the shoring system, other factors such as voids created by soil sloughing, and erosion of granular layers due to perched water conditions can create adverse ground subsidence and deflections. The contractor should attempt to cut the excavation as close to neat lines as possible. Where voids are created, they should be backfilled as soon as possible with sand, gravel, or grout.

The above recommendations are for the use of the design team; the contractor in conjunction with input from the shoring designer should perform additional subsurface exploration they deem necessary to design the chosen shoring system. A California-licensed civil or structural engineer must design and be in responsible charge of the temporary shoring design. The contractor is responsible for means and methods of construction, as well as site safety.

6.6 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.

6.7 WET SOIL STABILIZATION GUIDELINES

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

As discussed in the “Subsurface” section in this report, the in-situ moisture contents are about 3 to 18 percent over the estimated laboratory optimum in the upper 10 feet of the soil profile. The contractor should anticipate drying the soils prior to reusing them as fill. In addition, repetitive rubber-tire loading will likely de-stabilize the soil.

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 site conditions.

6.7.1 Scarification and Drying

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

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

6.7.3 Chemical Treatment

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

6.8 MATERIAL FOR FILL

6.8.1 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.

6.8.2 Re-Use of On-Site Site Improvements

If asphalt concrete (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 beneath 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 proposed 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. Laboratory testing will be required to confirm the material meets project specifications. PCC grindings also make good winter construction access roads, similar to a cement-treated base (CTB) section.

6.8.3 Potential Import Sources

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 habitable building areas. Imported soil for use as general fill 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 habitable 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.

6.9 COMPACTION REQUIREMENTS

All fills, and subgrade areas where fill, slabs-on-grade, and pavements are planned, should be placed in loose lifts 8 inches thick or less and compacted in accordance with ASTM D1557 (latest version) requirements as shown in the table below. In general, clayey soils should be compacted with sheepsfoot equipment and sandy/gravelly soils with vibratory equipment; open-graded materials such as crushed rock should be placed in lifts no thicker than 18 inches and consolidated in place with vibratory equipment. Each lift of fill and all subgrade should be firm and unyielding under construction equipment loading in addition to meeting the compaction requirements to be approved. The contractor (with input from a Cornerstone representative) should evaluate the in-situ moisture conditions, as the use of vibratory equipment on soils with high moistures can cause unstable conditions. General recommendations for soil stabilization are provided in the "Wet Soil Stabilization Guidelines" 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 Soils	90	>1
General Fill (below a depth of 5 feet)	On-Site Soils	95	>1
Basement Wall Backfill	Without Surface Improvements	90	>1
	With Surface Improvements	95[4]	>1
Trench Backfill	On-Site Soils	90	>1
Trench Backfill (upper 6 inches of subgrade)	On-Site 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 Soils	90	>1
Flatwork Aggregate Base	Class 2 Aggregate Base[3]	90	Optimum
Pavement Subgrade	On-Site 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

6.9.1 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.

6.10 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.

6.11 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.

6.12 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.

- In general, from our percolation testing discussed above, the near surface clayey site soils would likely be categorized as Hydrological Soil Group C for USDA soil classification, which typically has a possible range of infiltration of approximately 0.2 up to 1.2 inches per hour. In our opinion, these clayey soils will limit the infiltration of stormwater.

- Locally, design high groundwater is designated at a depth of 8 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.

6.12.1 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.

6.12.1.1 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.

6.12.1.2 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 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.

- 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.

6.12.1.3 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.

6.13 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

7.1 SEISMIC DESIGN CRITERIA

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

7.1.1 Site Location and Provided Data For 2019 CBC Seismic Design

The project is located at latitude 37.349730° and longitude -121.865795°, which is based on Google Earth (WGS84) coordinates at the approximate center of site 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 2019 CBC SEISMIC DESIGN CRITERIA

As discussed in the “Subsurface” of our report, our CPT and exploratory borings encountered alluvial soils consisting of medium dense to dense sands and medium stiff to very stiff clay deposits to a depth of 90 feet, the maximum depth explored. Shear wave velocity (V_S) measurements were performed while advancing CPT-1, resulting in a time-averaged shear wave velocity for the top 30 meters (V_{S30}) of 246 meters per second (807 feet per second), for the upper 100 feet.

7.2.1 2019 CBC Seismic Design

As our borings encountered deep alluvial soils with shear wave velocity for the upper 30 meters between 600 and 1200 feet per second, per section 20.3.2 of ASCE 7-16, we have classified the site 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. Our site-specific ground motion hazard analysis considered a V_{S30} of 246 m/s (807 ft/s).

In accordance with Section 11.4.8 of ASCE 7-16, we performed a ground motion hazard analysis following Chapter 21, Section 21.2 of ASCE 7-16. 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, see Figure 6. The recommended design spectral accelerations and associated periods are provided graphically on Figure 5.

SECTION 8: FOUNDATIONS

8.1 SUMMARY OF RECOMMENDATIONS

As discussed in the "Conclusions" section, the building may be supported on shallow foundations consisting of conventional spread footings provided the recommendations in the "Earthwork" section and below are followed. As an alternative, the building may be supported on a rigid mat foundation. Foundation recommendations are presented in the following sections.

8.2 SHALLOW FOUNDATIONS

8.2.1 Conventional Spread Footings

Conventional shallow footings should bear on natural, undisturbed soil or engineered fill, be at least 15 inches wide, and extend at least 24 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscaping topsoil.

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 1,500 psf for dead loads, 2,250 psf for combined dead plus live loads, and 3,000 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 known at the time this report was prepared; therefore, we assumed the following typical loading. We estimated foundation loading (dead plus live loads) of 600 to 650 kips for interior columns beneath the residential floors, 250 kips for interior columns beneath the courtyard/deepened podium level and 18 to 22 kips per lineal foot for exterior walls.

8.2.2.1 Shallow Footings

Based on the above loading and the allowable bearing pressures presented above, we estimate the total static footing settlement will be on the order of ¾ to 1 inch, with about ⅓ to 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 ¼ to ⅓ inch resulting in a total estimated differential footing movement of ½ to ¾ inch between foundation elements, assumed to be on the order of 30 feet.

8.2.2.2 Deep Footings – Puzzle Lifts

Based on the above loading and the allowable bearing pressures presented above, we estimate the total static footing settlement will be on the order of 1⅓ to 2 inches, with about ⅔ to 1 inch of post-construction differential settlement between adjacent foundation elements. In addition, we estimate that differential seismic movement will be on the order of ¼ to ⅓ inch resulting in a total estimated differential footing movement of ¾ inch to 1⅓ inches between foundation elements, assumed to be on the order of 30 feet.

As our footing loads were assumed, we recommend we be retained to review the final footing layout and loading and verify the settlement estimates above.

8.2.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of footing and the supporting subgrade, and also by passive pressures generated against footing sidewalls. An ultimate frictional resistance of 0.40 applied to the footing dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 400 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 Conventional Shallow 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.

8.3.1 Reinforced Concrete Mat Foundations

As an alternative to conventional spread footings, the proposed structure may be supported on a mat foundation bearing on natural soil or engineered fill prepared in accordance with the "Earthwork" section of this report and designed in accordance with the recommendations below. Reinforced concrete mat foundations should be designed in accordance with the 2019 California Building Code.

To reduce potential differential movement, the mat should be designed for a maximum *average* allowable bearing pressure of 750 psf for dead plus live loads; at column or wall loading, the maximum localized bearing pressure should be limited to 1,500 psf. When evaluating wind and seismic conditions, allowable bearing pressures may be increased by one-third. These pressures are net values; the weight of the mat may be neglected for the portion of the mat extending below grade. Top and bottom mats of reinforcing steel should be included as required to help span irregularities and differential settlement. If the actual average areal bearing pressure is higher than presented above, or if there are other aspects of design not accounted for in this report, please notify us so that we may revise our recommendations.

8.3.2 Mat Foundation Settlement

Based on the assumed areal pressures above, we estimate a static settlement of ¾ to 1 inch with a differential static settlement of up to ½ inch between the center and edges of the mat. The static settlement estimates presented below are based on assumed loads of 125 psf per floor for the residential levels above the podium level and 150 psf per floor for the podium concrete level. Additionally, as discussed earlier, seismic settlements of up to ½ inch with a differential settlement of ¼ inch or less are anticipated across a horizontal distance of 30 feet. The total (static and seismic) settlement is estimated to be 1¼ to 1½ inches with an anticipated differential settlement of up to ¾ inch. As our structural loads are assumed, we recommend we be retained to review the final foundation plan and loading and to verify the settlement estimates above.

If foundations designed in accordance with the above recommendations are not capable of resisting such differential movement, settlement mitigation or an alternative foundation type may be required. Settlement mitigation could possibly include ground improvement to reduce settlement beneath the structures' footprint or the use of a deep foundation system. As mentioned, we recommend we be retained to review the final loading and further evaluate settlement estimates above.

8.3.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of mat foundation and the supporting subgrade, and also by passive pressures generated against deepened mat edges. An ultimate frictional resistance of 0.40 applied to the mat dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 400 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. The upper 12 inches of soil should be neglected when determining passive pressure capacity.

8.3.4 Mat Modulus of Soil Subgrade Reaction

The modulus of soil subgrade reaction is a model element that represents the response to a specific loading condition, including the magnitude, rate, and shape of loading, given the subsurface conditions at that location. Based on the assumed average areal loading indicated above, we developed preliminary soil subgrade moduli for initial structural design. These values are preliminary and should be confirmed/finalized following initial analysis by the project structural engineer. Once contact pressures are available from the initial analysis (SAFE or equivalent), we should revise our model and provide contours of equal soil subgrade modulus values for design. Please forward contact pressures to scale and in color for our analysis.

For preliminary SAFE runs (or equivalent analysis), we recommend an initial modulus of soil subgrade reaction of 5 pounds per cubic inch (pci) for the below grade mat foundation. As discussed above, the modulus of soil subgrade reaction is intended for use in the first iteration of the structural SAFE analysis for the mat design. Once the initial structural analysis is complete, please forward a color plot of contact pressures for the mat (to scale) so that we can provide a revised plan with updated contours of equal modulus of soil subgrade reaction values.

8.3.5 Mat Foundation Construction Considerations

Due to the presence of moderately expansive soils, mat subgrade areas should be kept moist until concrete placement by regular sprinkling to prevent desiccation. If deep drying is allowed to occur, several days of moisture conditioning (flooding of the pads is not recommended) may be required to allow the moisture to re-penetrate the subgrade. If sever drying occurs, reworking and moisture conditioning of the pad may be required. Prior to placement of any vapor retarder and mat construction, the subgrade should be proof-rolled and visually observed by a Cornerstone representative to confirm stable subgrade conditions. The pad moisture should also be checked at least 24 hours prior to vapor barrier or mat reinforcement placement to confirm that the soil has a moisture content of at least 2 percent over optimum in the upper 12 inches.

8.3.6 Hydrostatic Uplift and Waterproofing – Puzzle Lift

As discussed, we recommend a design high groundwater depth of 8 feet below existing grades at the site. In addition, we anticipate the deepened excavations for the puzzle lifts will be 8 to 10 feet below the existing grades. Therefore, where portions of the structure extend below the design groundwater level, including bottoms of slabs-on-grade and mat foundations, they should be designed to resist potential hydrostatic uplift pressures.

In addition, the portions of the structures extending below design groundwater should be waterproofed to limit moisture infiltration, including mat foundation/thickened slab areas, all construction joints, and any retaining walls. We recommend that a waterproof specialist design the waterproofing system.

8.4 GROUND IMPROVEMENT AND DEEP FOUNDATIONS

As alternatives to shallow spread footings and mat foundations, the building may also be supported on spread footings over ground improvement or a deep foundation system, such as augercast or driven piles. If these options are desired, we can provide additional recommendations upon request.

SECTION 9: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

9.1 INTERIOR SLABS-ON-GRADE

Due to the expansion potential of the surficial soils, the proposed slabs-on-grade should be at least 5 inches thick and 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 slab-on-grade 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 3 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 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 15-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
No. 200	0 – 5

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.

9.3 EXTERIOR FLATWORK

Exterior concrete flatwork subject to pedestrian and/or occasional light pick up loading should be at least 4 inches thick and supported on at least 4 inches of non-expansive fill overlying subgrade prepared in accordance with the “Earthwork” recommendations of this report. Flatwork that will be subject to heavier or frequent vehicular loading should be designed in accordance with the recommendations in the “Vehicular Pavements” section below. To help reduce the potential for uncontrolled shrinkage cracking, adequate expansion and control joints should be included. Consideration should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness. Flatwork should be isolated from adjacent foundations or retaining walls 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 on a design R-value of 5. The design R-value was chosen based on our engineering judgement considering the soil type and variable surface conditions.

Table 5: Asphalt Concrete Pavement Recommendations, Design R-value = 5

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	13.5	17.5

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

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 use 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 Portland Cement Concrete (PCC) pavement recommendations outlined below are based on methods presented in American Concrete Pavement Association (ACPA, 2006). We have provided a few pavement alternatives as an anticipated Average Daily Truck Traffic (ADTT) was not provided. Recommendations for garage slabs-on-grade were provided in the “Concrete Slabs and Pedestrian Pavements” section above.

Table 6: PCC Pavement Recommendations, Design R-value = 5

Traffic Category	Minimum PCC Thickness (inches)	Class 2 Aggregate Base* (inches)
Maximum ADTT = 10	6.5	6.0
Maximum ADTT = 20	7.0	6.0

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

The PCC thicknesses above are based on a concrete compressive strength of at least 3,500 psi. 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.

10.2.2 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.

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 pressures in the table below. Due to the presence of expansive native soils, cantilever retaining walls backfilled with the native clay soil should be designed as restrained. If granular backfill materials are used, then the unrestrained values in the table can be used.

Table 7: 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 California Building Code (CBC) states that lateral pressures from earthquakes should be considered in the design of basements and retaining walls. As we anticipate the walls for the puzzle lifts will be at least 8 feet tall, we checked seismic earth pressures for the anticipated proposed restrained walls in accordance with CBC 1803.5.12 and ASCE 7-16 Section 11.8.3 using the Design level earthquake. We developed seismic earth pressures for the proposed puzzle lift walls using interim recommendations generally based on refinement of the Mononobe-Okabe method (Lew et al., SEAOC 2010).

We anticipate the puzzle lift basement retaining wall will be approximately 8 feet tall. The peak ground accelerations at the site are greater than 0.40g so we checked the result of the total seismic increment when added to the recommended active earth pressure against the recommended fixed (restrained) wall earth pressures. Because the wall is restrained, or will act as a restrained wall, and will be designed for 45 pcf (equivalent fluid pressure) plus a uniform earth pressure of 8H psf, based on current recommendations for seismic earth pressures, it appears that active earth pressures plus a seismic increment do not exceed the fixed wall earth pressures. Therefore, an additional seismic increment above the design earth pressures is not required as long as the walls are designed for the restrained wall earth pressures recommended above in accordance with the CBC.

11.3 WALL DRAINAGE

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

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

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

11.4 BACKFILL

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

11.5 FOUNDATIONS

Retaining walls may be supported on a continuous and or 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 HC Investment Associates, LP specifically to support the design of the North 27th Street Mixed-Use Development 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.

HC Investment Associates, LP may have provided Cornerstone with plans, reports and other documents prepared by others. HC Investment Associates, LP 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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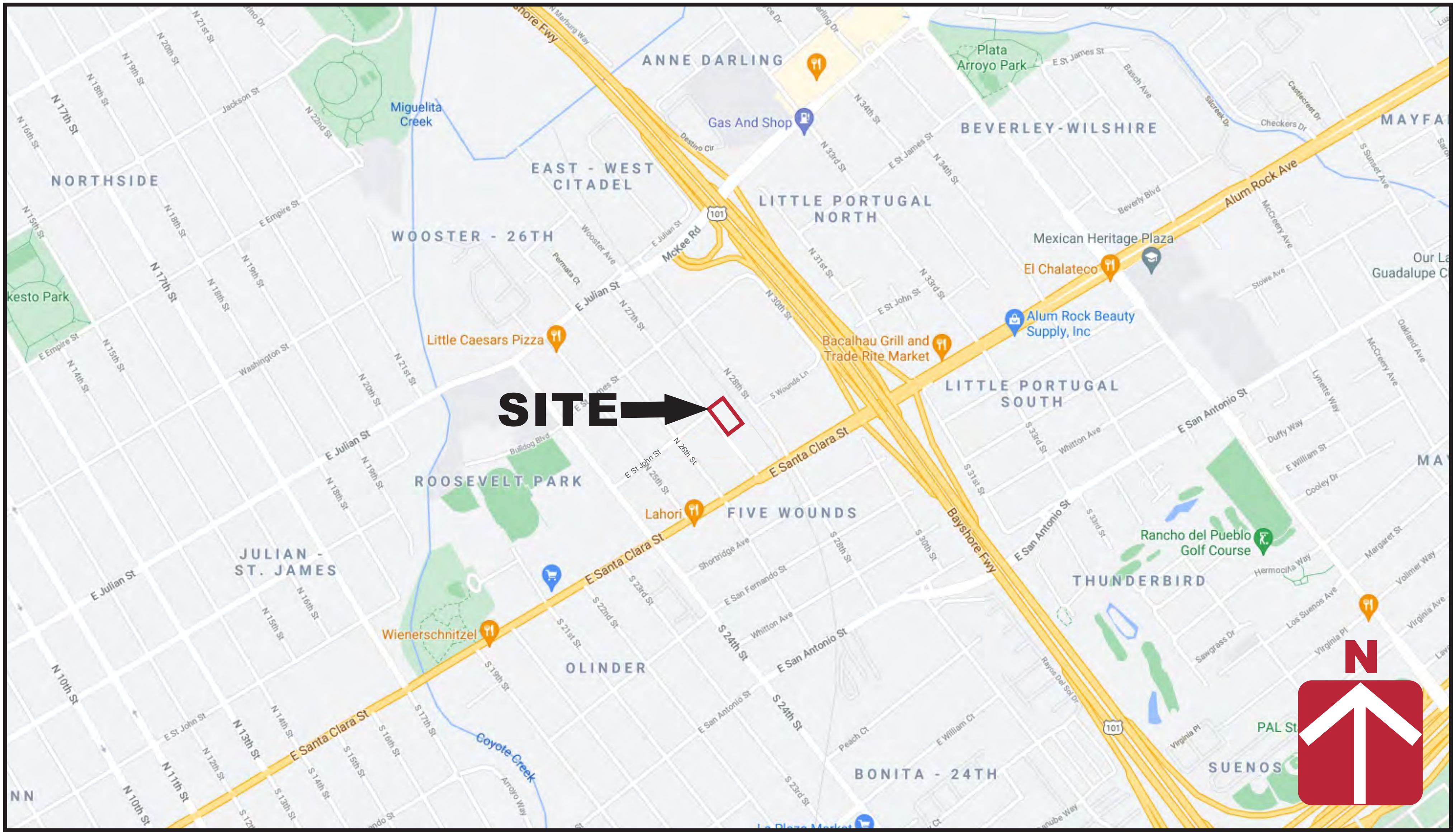

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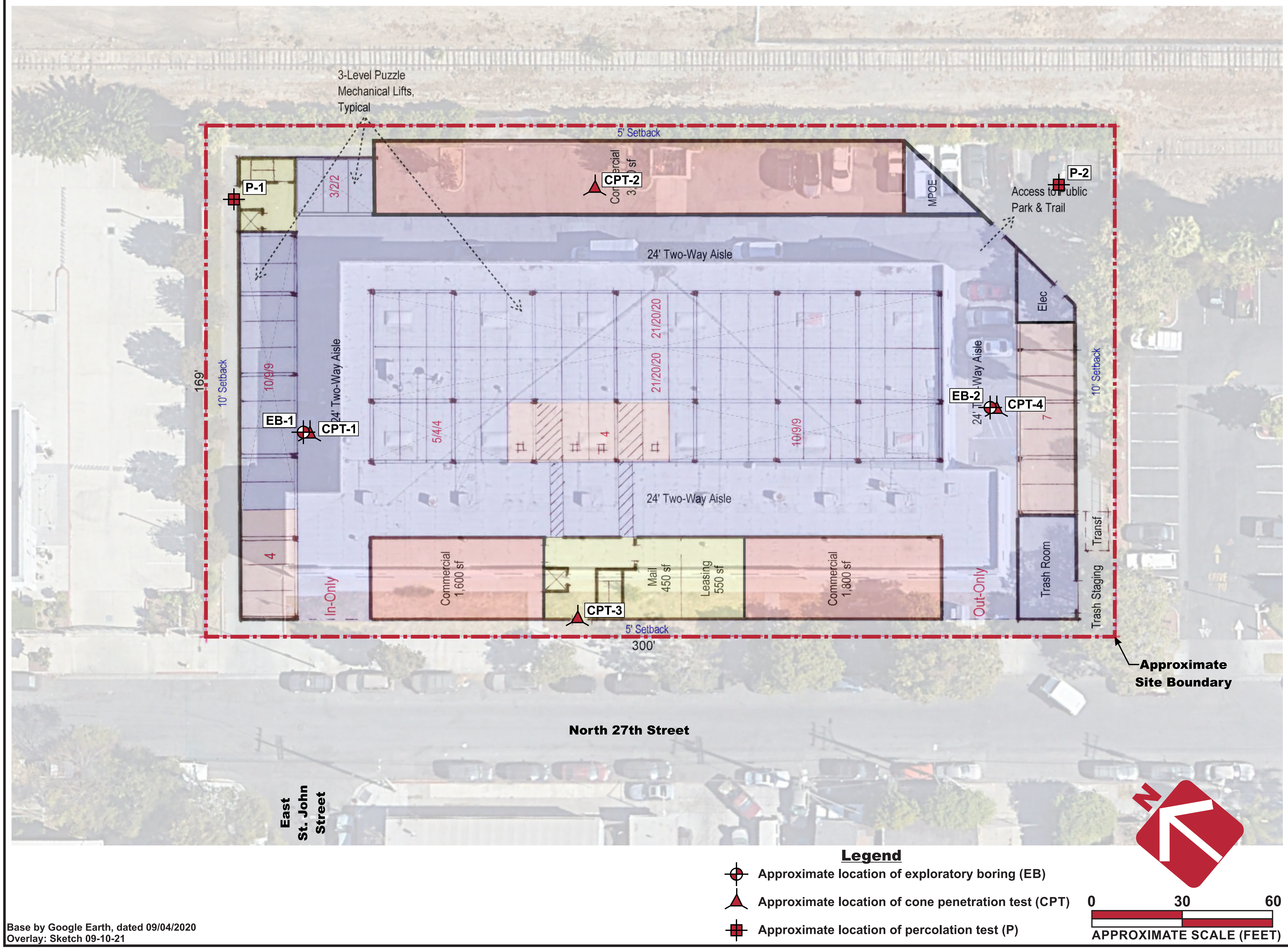
Vicinity Map

North 27th Mixed-Use Development
70-80 North 27th Street
San Jose, CA

Project Number	1285-1-2
Figure Number	Figure 1
Date	November 2021
Drawn By	RRN



Legend

⊕ Approximate location of exploratory boring (EB)

▲ Approximate location of cone penetration test (CPT)

⊞ Approximate location of percolation test (P)

Base by Google Earth, dated 09/04/2020
Overlay: Sketch 09-10-21

Project Number 1285-1-2

Figure Number Figure 2

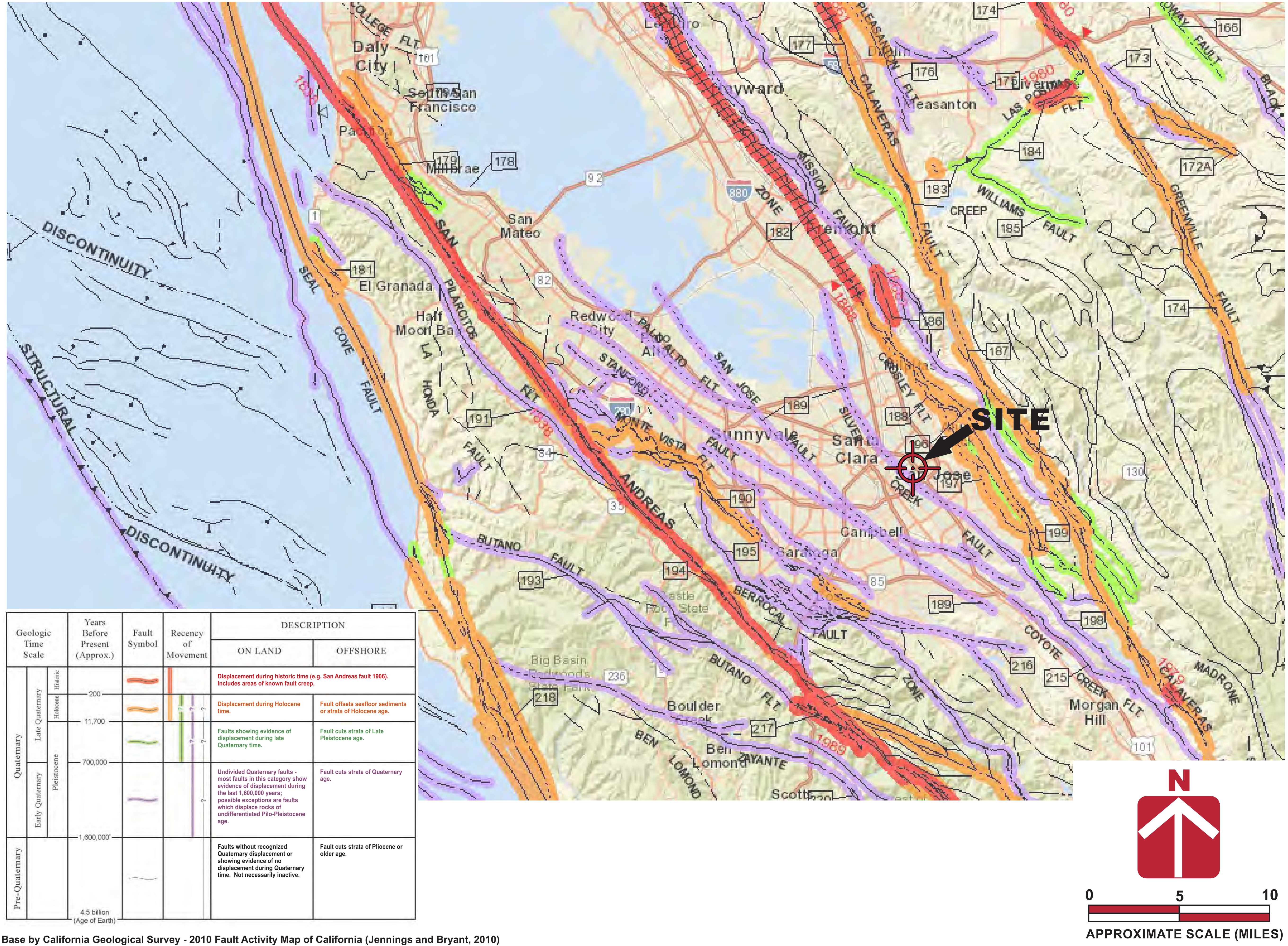
Date November 2021

Drawn By RRN

Site Plan

North 27th Mixed-Use Development
70-80 North 27th Street
San Jose, CA

CORNERSTONE EARTH GROUP



Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION ON LAND	DESCRIPTION OFFSHORE
Quaternary	Late Quaternary	Historic		🟥		Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	200	🟧		Displacement during Holocene time.	Fault offsets seafloor sediments or strata of Holocene age.
		Pleistocene	11,700	🟩		Faults showing evidence of displacement during late Quaternary time.	Fault cuts strata of Late Pleistocene age.
	Early Quaternary		700,000	🟪		Undivided Quaternary faults - most faults in this category show evidence of displacement during the last 1,600,000 years; possible exceptions are faults which displace rocks of undifferentiated Pilo-Pleistocene age.	Fault cuts strata of Quaternary age.
Pre-Quaternary			1,600,000 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)

Regional Fault Map

North 27th Mixed-Use Development
70-80 North 27th Street
San Jose, CA

Project Number 1285-1-2

Figure Number Figure 3

Date November 2021

Drawn By RRN

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FIGURE 4A

CPT NO. 1

PROJECT/CPT DATA

Project Title: **North 27th Street Mixed-Use**

Project No.: **1285-1-2**

Project Manager: **NSD**

SEISMIC PARAMETERS

Controlling Fault: **Hayward**

Earthquake Magnitude (Mw): **7.08**

PGA (Amax): **0.7** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet): **13**

Design Water Depth (feet): **8**

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

Ave. Unit Weight Below GW (pcf): **122**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 8 **FEET**

0.00 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.31 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.3 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.23 **L/H** 118.4

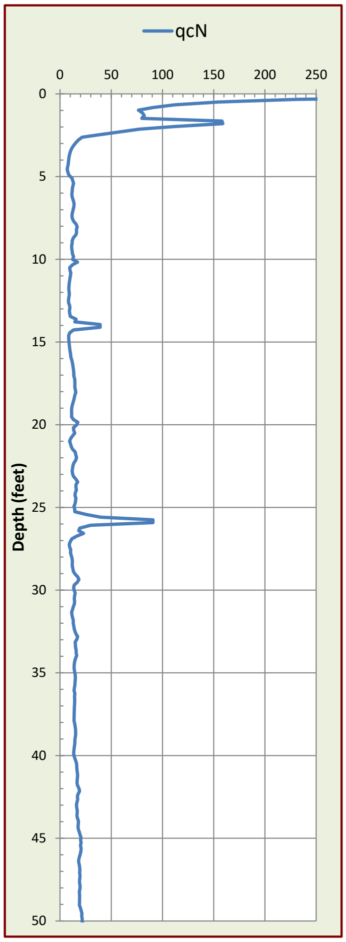
LDI[1]**Corrected for Distance** 0.03 (4 < L/H < 40)

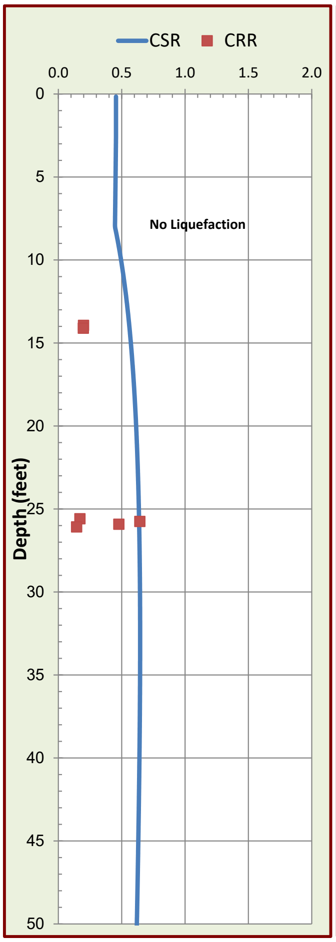
EXPECTED RANGE OF DISPLACEMENT

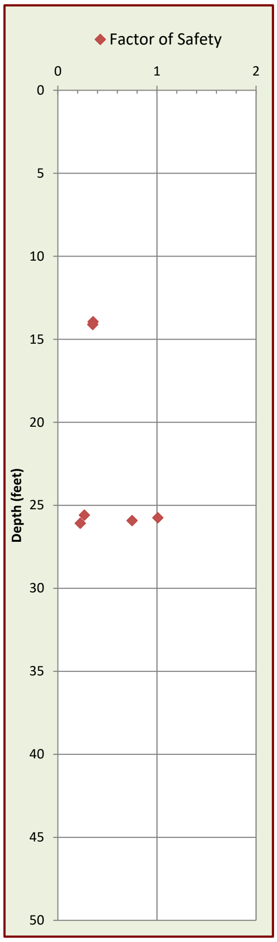
0.0 **to** **0.1** **feet**

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

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







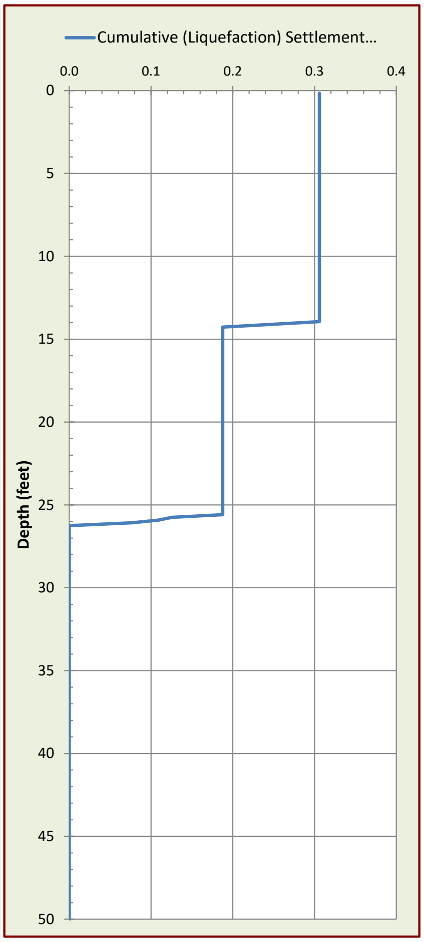


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FIGURE 4B

CPT NO. 2

PROJECT/CPT DATA

Project Title **North 27th Street Mixed-Use**

Project No. **1285-1-2**

Project Manager **NSD**

SEISMIC PARAMETERS

Controlling Fault **Hayward**

Earthquake Magnitude (Mw) **7.08**

PGA (Amax) **0.7** (g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet) **16.3**

Design Water Depth (feet) **8**

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

Ave. Unit Weight Below GW (pcf) **122**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 8 **FEET**

0.01 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.18 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.2 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.13 **L/H** 118.4

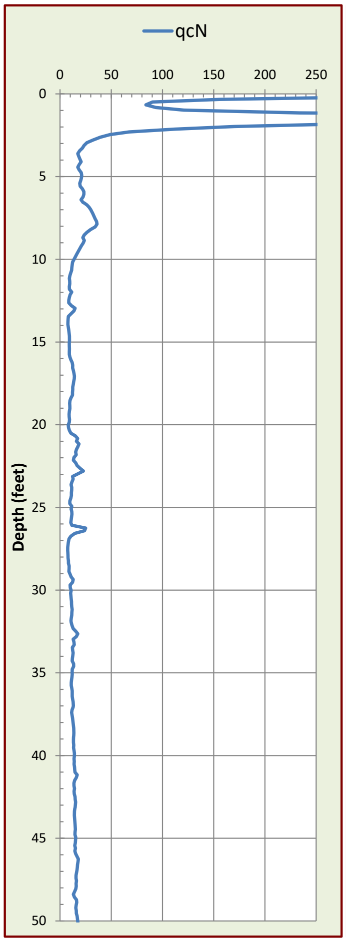
LDI[1]**Corrected for Distance** 0.02 (4 < L/H < 40)

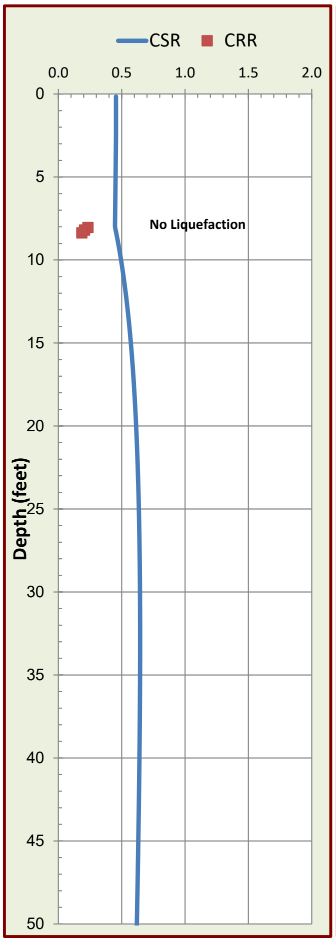
EXPECTED RANGE OF DISPLACEMENT

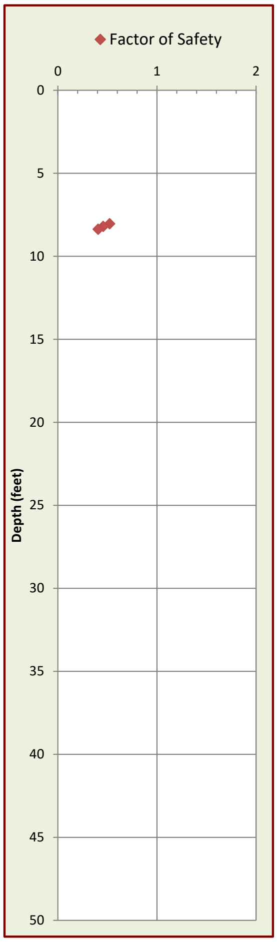
0.0 **to** **0.0** **feet**

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

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







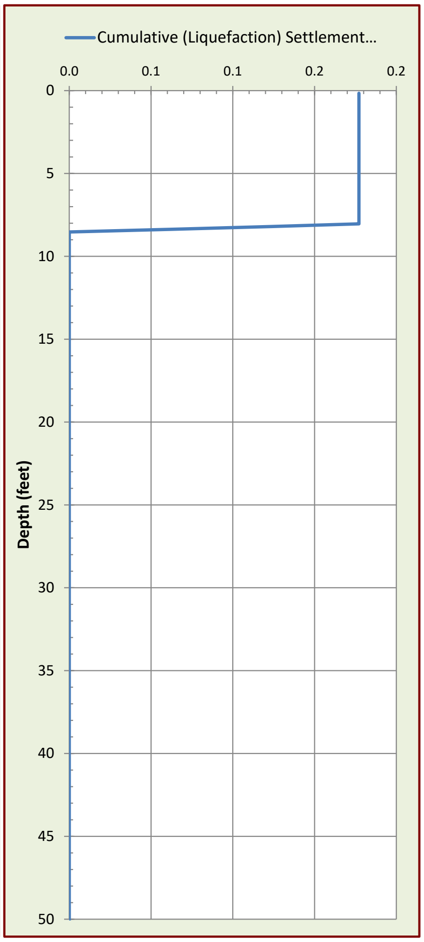


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FIGURE 4C

CPT NO. 3

PROJECT/CPT DATA

Project Title	**North 27th Street Mixed-Use**
Project No.	**1285-1-2**
Project Manager	**NSD**

SEISMIC PARAMETERS

Controlling Fault	**Hayward**	
Earthquake Magnitude (Mw)	**7.08**	
PGA (Amax)	**0.7**	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	**10.1**
Design Water Depth (feet)	**8**
Ave. Unit Weight Above GW (pcf)	**120**
Ave. Unit Weight Below GW (pcf)	**122**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 8 **FEET**

0.02 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.45 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.5 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.26 **L/H** 118.4

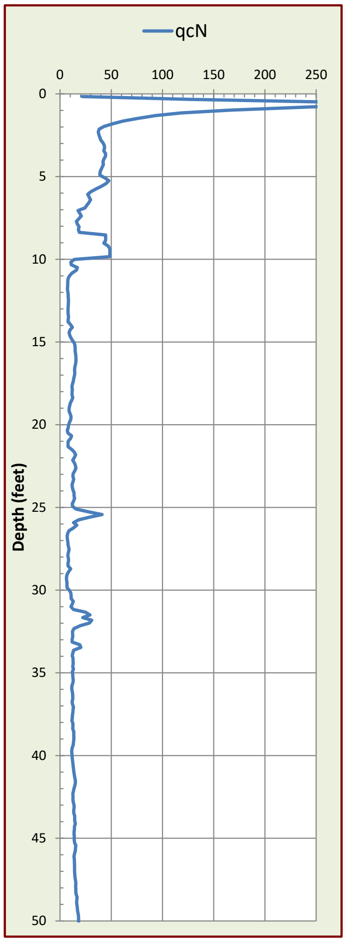
LDI[1]$_{\text{Corrected for Distance}}$ 0.03 (4 < L/H < 40)

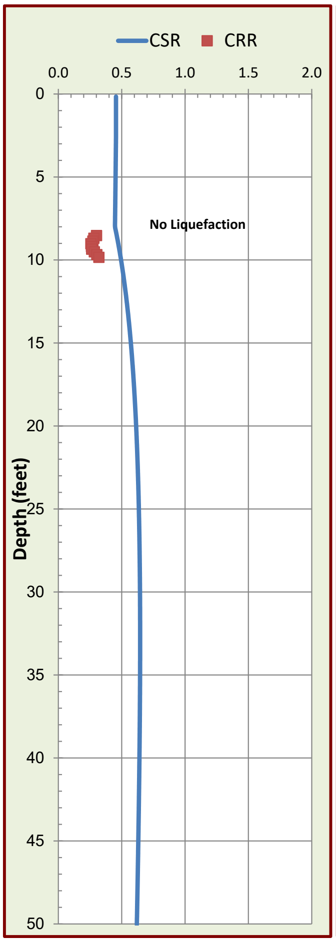
EXPECTED RANGE OF DISPLACEMENT

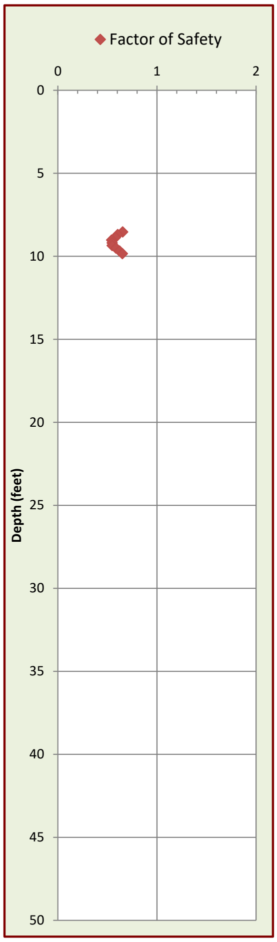
0.0 **to** **0.1** **feet**

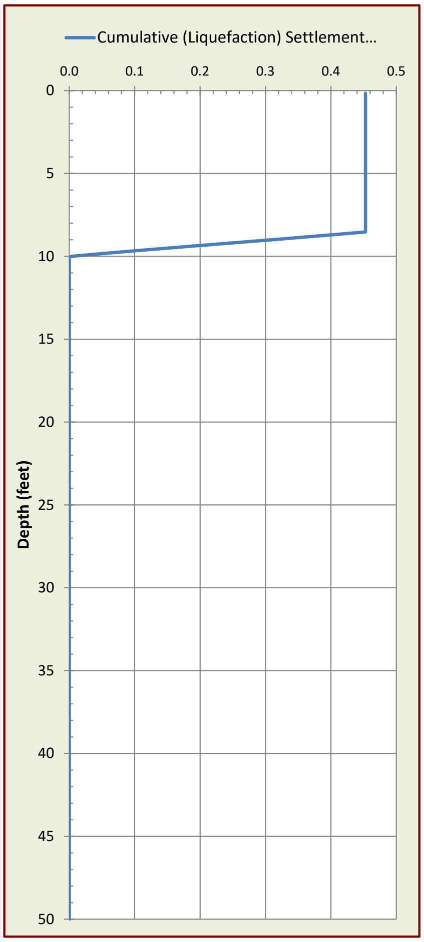
[1] Not Valid for L/H Values < 4 and > 40.

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









CORNERSTONE
EARTH GROUP

FIGURE **4D**

CPT NO. **4**

PROJECT/CPT DATA

Project Title	**North 27th Street Mixed-Use**
Project No.	**1285-1-2**
Project Manager	**NSD**

SEISMIC PARAMETERS

Controlling Fault	**Hayward**	
Earthquake Magnitude (Mw)	**7.08**	
PGA (Amax)	**0.7**	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	**15.4**
Design Water Depth (feet)	**8**
Ave. Unit Weight Above GW (pcf)	**120**
Ave. Unit Weight Below GW (pcf)	**122**

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 8 **FEET**

0.02 **(Inches)**

LIQUEFACTION SETTLEMENT FROM 50 **FEET**

0.31 **(Inches)**

TOTAL SEISMIC SETTLEMENT 0.3 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.19 **L/H** 118.4

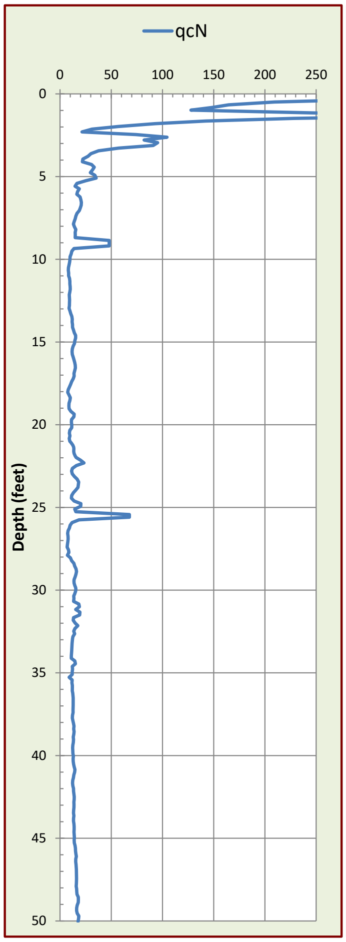
LDI[1]**Corrected for Distance** 0.02 (4 < L/H < 40)

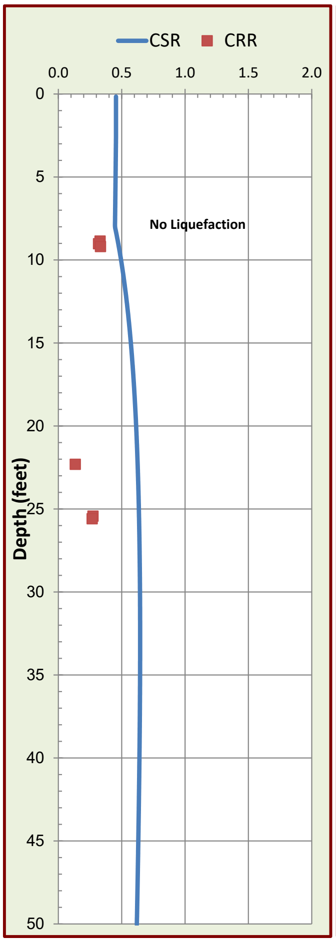
EXPECTED RANGE OF DISPLACEMENT

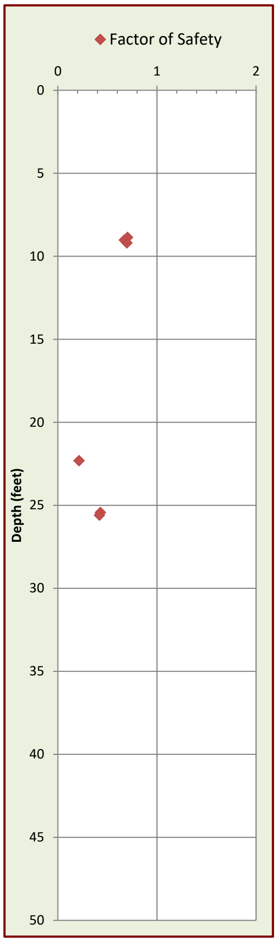
0.0 **to** **0.0** **feet**

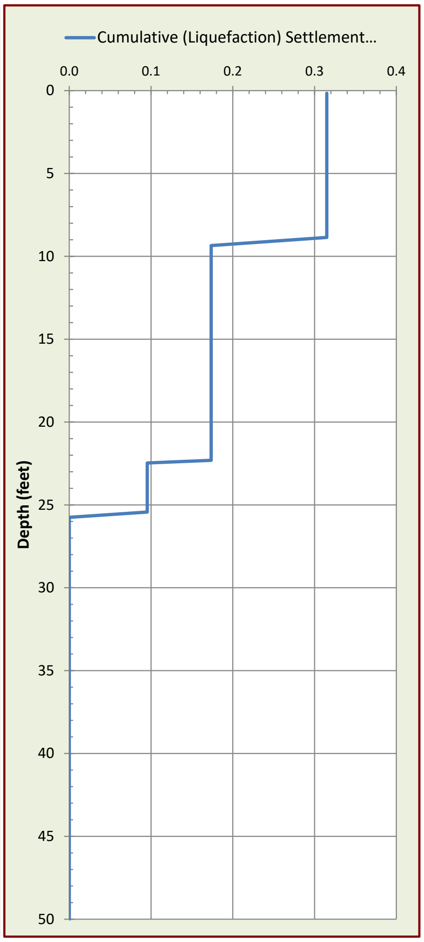
[1] Not Valid for L/H Values < 4 and > 40.

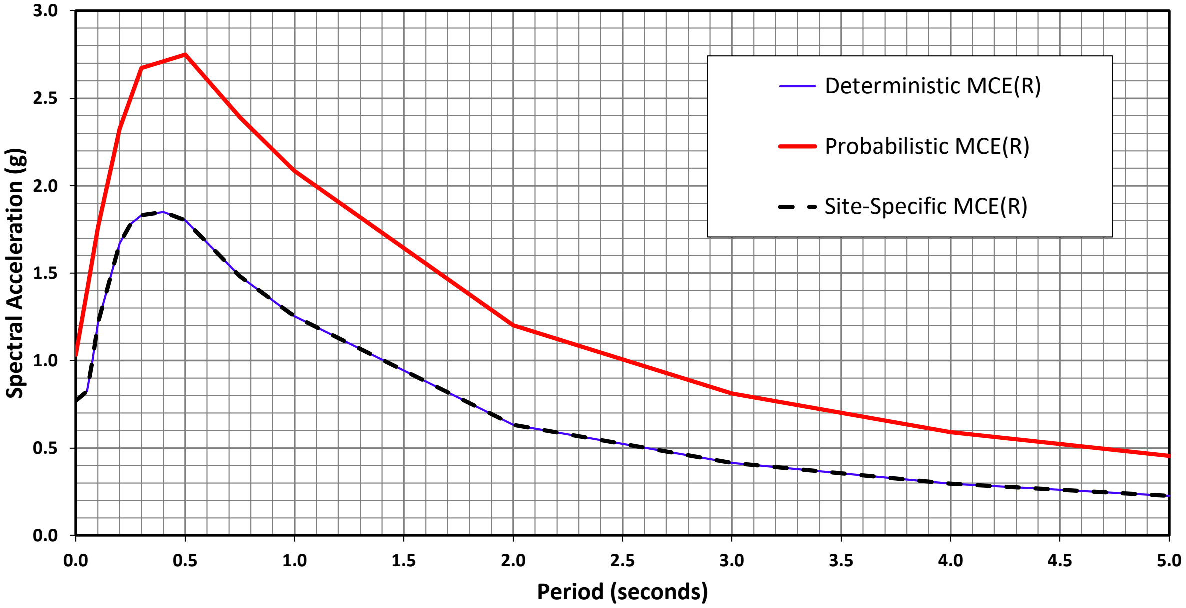
[2] LDI Values Only Summed to 2H Below Grade.











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	0.770
0.05	0.825
0.08	0.998
0.10	1.214
0.20	1.671
0.25	1.781
0.30	1.832
0.40	1.850
0.50	1.801
0.75	1.481
1.00	1.253
2.00	0.632
3.00	0.415
4.00	0.295
5.00	0.226

References:

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

CORNERSTONE
EARTH GROUP

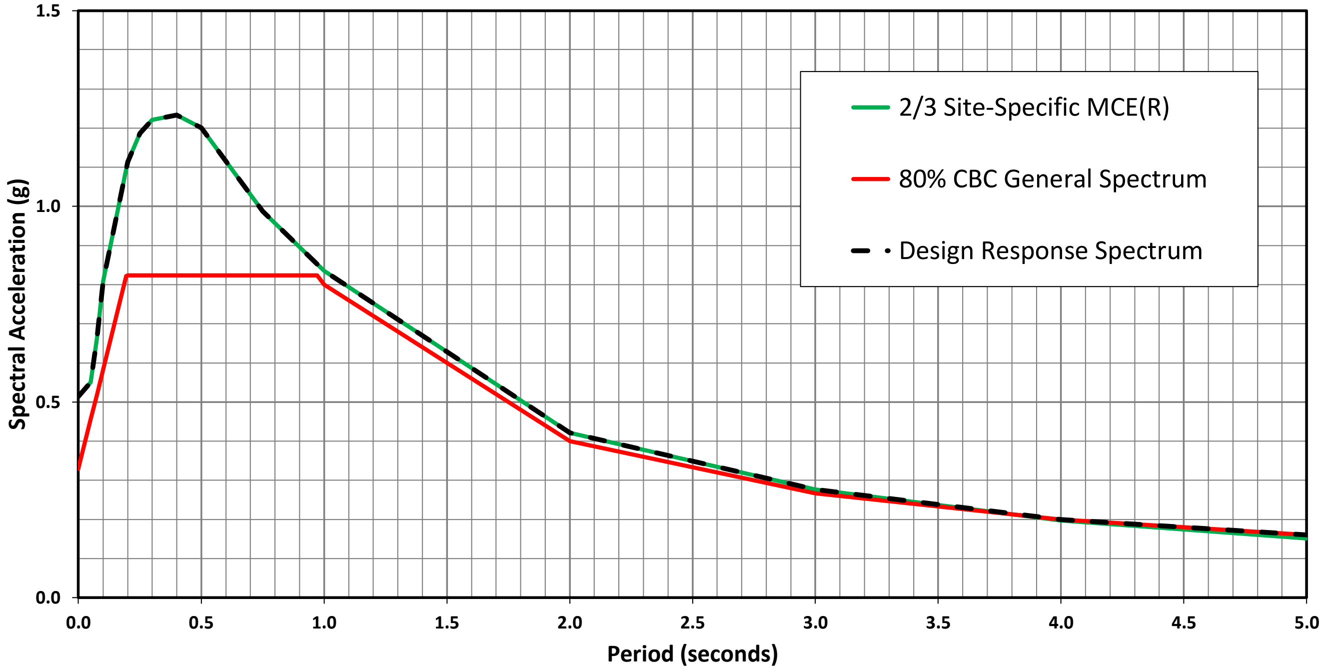
MCE_R RESPONSE SPECTRA

North 27th Street Mixed-Use
70-80 North 27th Street
San Jose, CA

FIGURE 5

PROJECT NO. 1285-1-2

November 30, 2021 | NSD



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	0.513
0.05	0.550
0.08	0.666
0.10	0.809
0.20	1.114
0.25	1.187
0.30	1.221
0.40	1.233
0.50	1.201
0.75	0.987
1.00	0.836
2.00	0.421
3.00	0.276
4.00	0.200
5.00	0.160

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	246
Site Latitude (degrees)	37.34973
Site Longitude (degrees)	-121.865795
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	0.70

Design Acceleration Parameters[1]	
S_{DS}	1.110
S_{D1}	0.843
S_{MS}	1.665
S_{M1}	1.264

[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.

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**	**FIGURE 6**	
	North 27th Street Mixed-Use 70-80 North 27th Street San Jose, CA	**PROJECT NO. 1285-1-2**	
		November 30, 2021	NSD

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using truck-mounted, hollow-stem auger drilling equipment and 25-ton truck-mounted Cone Penetration Test equipment. Two 8-inch-diameter exploratory borings were drilled on October 19, 2021 to depths of approximately 30 to 50 feet. Four CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on October 14, 2021 and October 18, 2021, to depths ranging from approximately 50 to 90 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 bedrock, 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 based on interpolation of plan contours 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

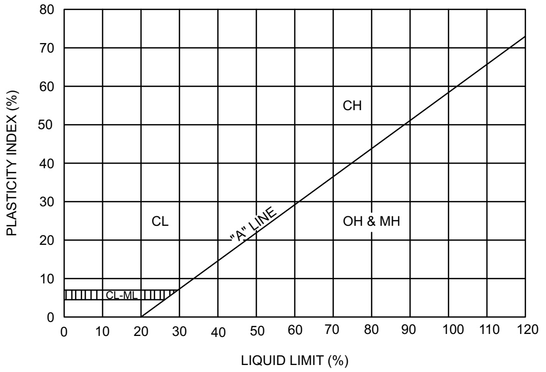
SAMPLER TYPES

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

ADDITIONAL TESTS

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

PLASTICITY CHART



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

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

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

CORNERSTONE EARTH GROUP

LEGEND TO SOIL DESCRIPTIONS

Figure Number A-1

BORING NUMBER EB-1

PAGE 1 OF 2

CORNERSTONE
EARTH GROUP

PROJECT NAME North 27th Street Mixed Use Development

PROJECT NUMBER 1285-1-2

PROJECT LOCATION 70-80 North 27th St., San Jose, CA

DATE STARTED 10/19/21 **DATE COMPLETED** 10/19/21

GROUND ELEVATION **BORING DEPTH** 50 ft.

DRILLING CONTRACTOR Exploration Geoservices Inc.

LATITUDE 37.349883° **LONGITUDE** -121.866059°

DRILLING METHOD Mobile B-61, 8 inch Hollow-Stem Auger

GROUND WATER LEVELS:

LOGGED BY EA

▽ **AT TIME OF DRILLING** 20 ft.

NOTES

▼ **AT END OF DRILLING** 13 ft.

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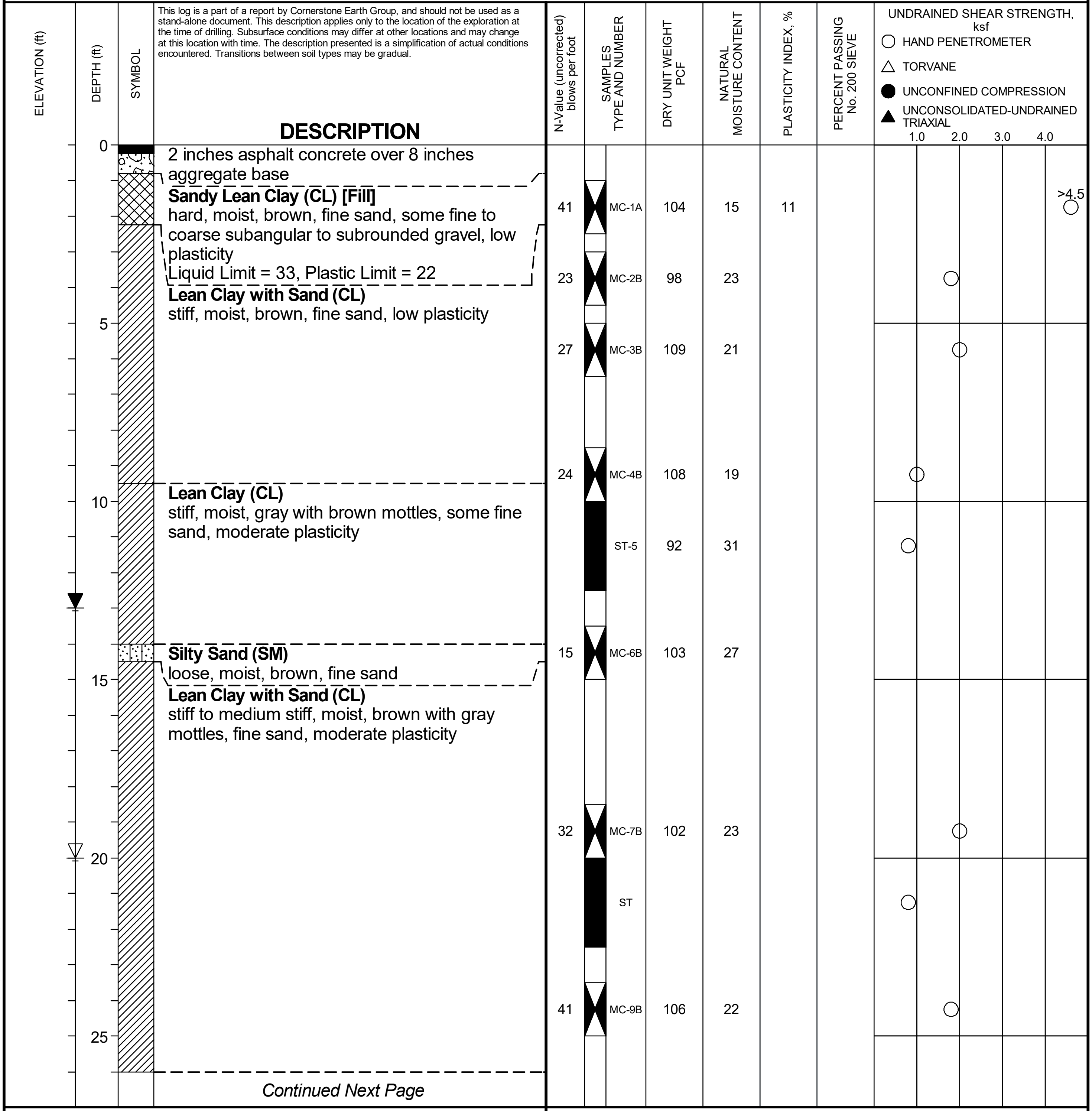

DESCRIPTION

2 inches asphalt concrete over 8 inches aggregate base

Sandy Lean Clay (CL) [Fill]
hard, moist, brown, fine sand, some fine to coarse subangular to subrounded gravel, low plasticity
Liquid Limit = 33, Plastic Limit = 22

Lean Clay with Sand (CL)
stiff, moist, brown, fine sand, low plasticity

Lean Clay (CL)
stiff, moist, gray with brown mottles, some fine sand, moderate plasticity

Silty Sand (SM)
loose, moist, brown, fine sand

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

N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
41	MC-1A	104	15	11	
23	MC-2B	98	23		
27	MC-3B	109	21		
24	MC-4B	108	19		
	ST-5	92	31		
15	MC-6B	103	27		
32	MC-7B	102	23		
	ST				
41	MC-9B	106	22		

Continued Next Page

PROJECT NAME North 27th Street Mixed Use Development

PROJECT NUMBER 1285-1-2

PROJECT LOCATION 70-80 North 27th St., San Jose, CA

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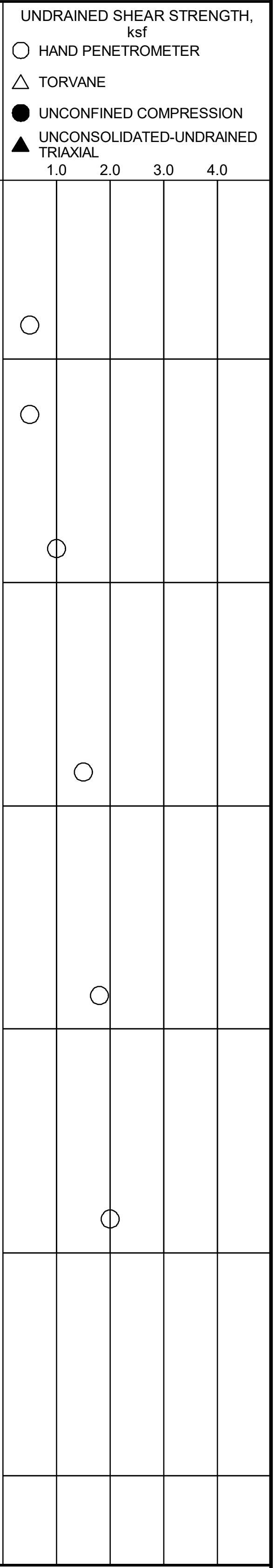
ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
		▨	**Lean Clay with Sand (CL)** medium stiff, moist, brown with gray mottles, fine sand, moderate plasticity						
				14	MC-10B	102	25		
	30				ST				
				23	MC-12B	90	31		
	35	▨	**Lean Clay (CL)** stiff, moist, gray with brown mottles, some fine sand, moderate plasticity						
	40			31	MC-13B	89	32		
	45			42	MC				
				56	MC-15B	95	30		
	50		Bottom of Boring at 50.0 feet.						
	55								



BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME North 27th Street Mixed Use Development
PROJECT NUMBER 1285-1-2
PROJECT LOCATION 70-80 North 27th St., San Jose, CA
DATE STARTED 10/19/21 **DATE COMPLETED** 10/19/21
GROUND ELEVATION **BORING DEPTH** 30 ft.
DRILLING CONTRACTOR Exploration Geoservices Inc.
LATITUDE 37.349366° **LONGITUDE** -121.865545°
DRILLING METHOD Mobile B-61, 8 inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY EA
▽ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

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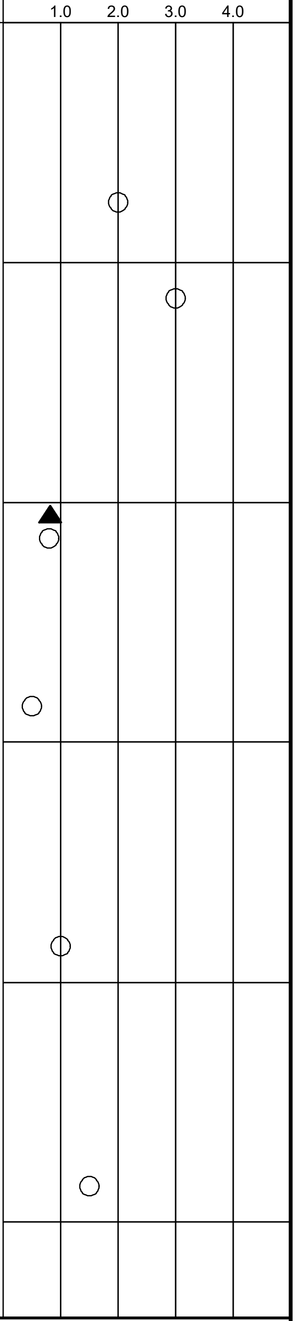
ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0	4 inches asphalt concrete over 8 inches aggregate base						
		Silty Gravel with Sand (GM) [Fill] medium dense, moist, gray, fine to coarse subangular to subrounded gravel, fine to coarse sand	44	MC-1B		5		
		Lean Clay with Sand (CL) very stiff, moist, brown, fine sand, low plasticity Liquid Limit =34, Plastic Limit = 18	31	MC-2C	103	21	16	
	5							
			21	MC-3B	109	18		
		Silty Sand (SM) loose, moist, brown, fine sand	18	MC-4B	106	19		48
	10	**Lean Clay (CL)** medium stiff to stiff, moist, gray with brown mottles, some fine sand, low to moderate plasticity	10	5A MC 5B	97 93	27 31		
		Lean Clay with Sand (CL) medium stiff, moist, gray with brown mottles, fine sand, low plasticity	23	MC				
	15							
			22	MC-7B	103	24		
	20							
		becomes stiff	50	MC-8B	104	23		
	25							

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



Continued Next Page

BORING NUMBER EB-2

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CORNERSTONE EARTH GROUP

PROJECT NAME North 27th Street Mixed Use Development

PROJECT NUMBER 1285-1-2

PROJECT LOCATION 70-80 North 27th St., San Jose, CA

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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)** medium stiff, moist, gray with brown mottles, fine sand, low plasticity	36	MC-9B	100	26			○ 1.0
	30		Bottom of Boring at 30.0 feet.							
	35									
	40									
	45									
	50									
	55									

BORING NUMBER P-1

PAGE 1 OF 1

CORNERSTONE
EARTH GROUP

PROJECT NAME North 27th Street Mixed Use Development
PROJECT NUMBER 1285-1-2
PROJECT LOCATION 70-80 North 27th St., San Jose, CA
DATE STARTED 10/20/21 **DATE COMPLETED** 10/20/21
GROUND ELEVATION **BORING DEPTH** 4 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE **LONGITUDE**
DRILLING METHOD Coring Machine and Hand Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

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

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf
	0		4 inches asphalt concrete over 5½ inches aggregate base							
			Sandy Lean Clay (CL) [Fill] moist, gray and brown, fine sand, low plasticity		GB					
			Lean Clay with Sand (CL) moist, brown, fine sand, low plasticity		GB					
			Bottom of Boring at 4.0 feet.							

DEPTH (ft): 0, 5, 10, 15, 20, 25

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

BORING NUMBER P-2

PAGE 1 OF 1

CORNERSTONE EARTH GROUP

PROJECT NAME North 27th Street Mixed Use Development
PROJECT NUMBER 1285-1-2
PROJECT LOCATION 70-80 North 27th St., San Jose, CA
DATE STARTED 10/20/21 **DATE COMPLETED** 10/20/21
GROUND ELEVATION **BORING DEPTH** 5 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE **LONGITUDE**
DRILLING METHOD Coring Machine and Hand Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** Not Encountered
NOTES
▼ **AT END OF DRILLING** Not Encountered

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

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

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf
	0	3 inches asphalt concrete over 6 inches aggregate base							
		Sandy Lean Clay (CL) [Fill] moist, gray and brown, fine sand, low plasticity		GB					
		Lean Clay with Sand (CL) moist, brown, fine sand, low plasticity		GB					
				GB					
	5	Bottom of Boring at 5.0 feet.							
	10								
	15								
	20								
	25								

Middle Earth
GEO TESTING INC.

Cornerstone Earth Group

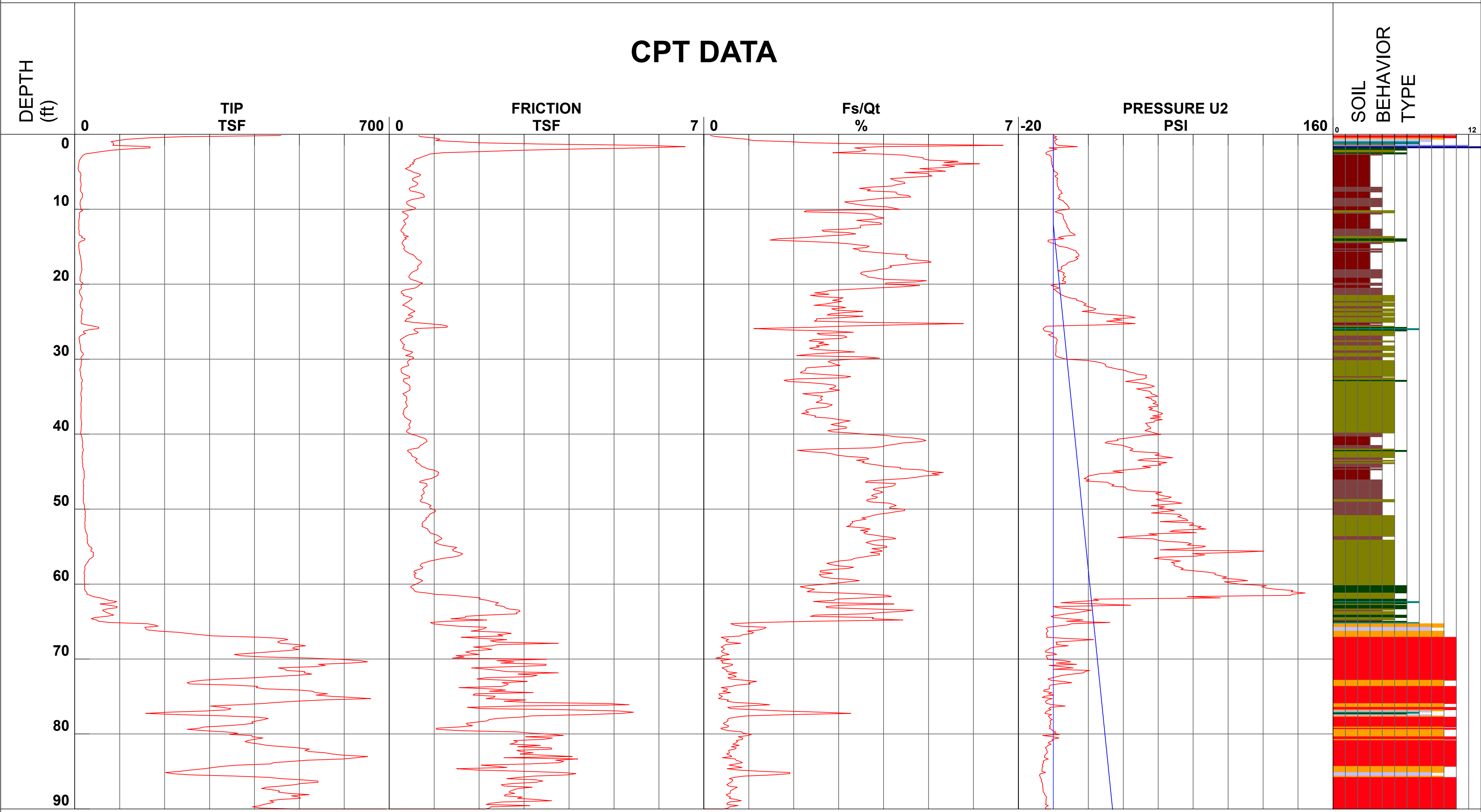
Project 27th Mixed Use Development
Job Number N/A
Hole Number CPT-01
EST GW Depth During Test 12.00 ft

Operator AJ-OO
Cone Number DDG1587
Date and Time 10/18/2021 7:27:53 AM

Filename SDF(088).cpt
GPS
Maximum Depth 90.55 ft

Net Area Ratio .8

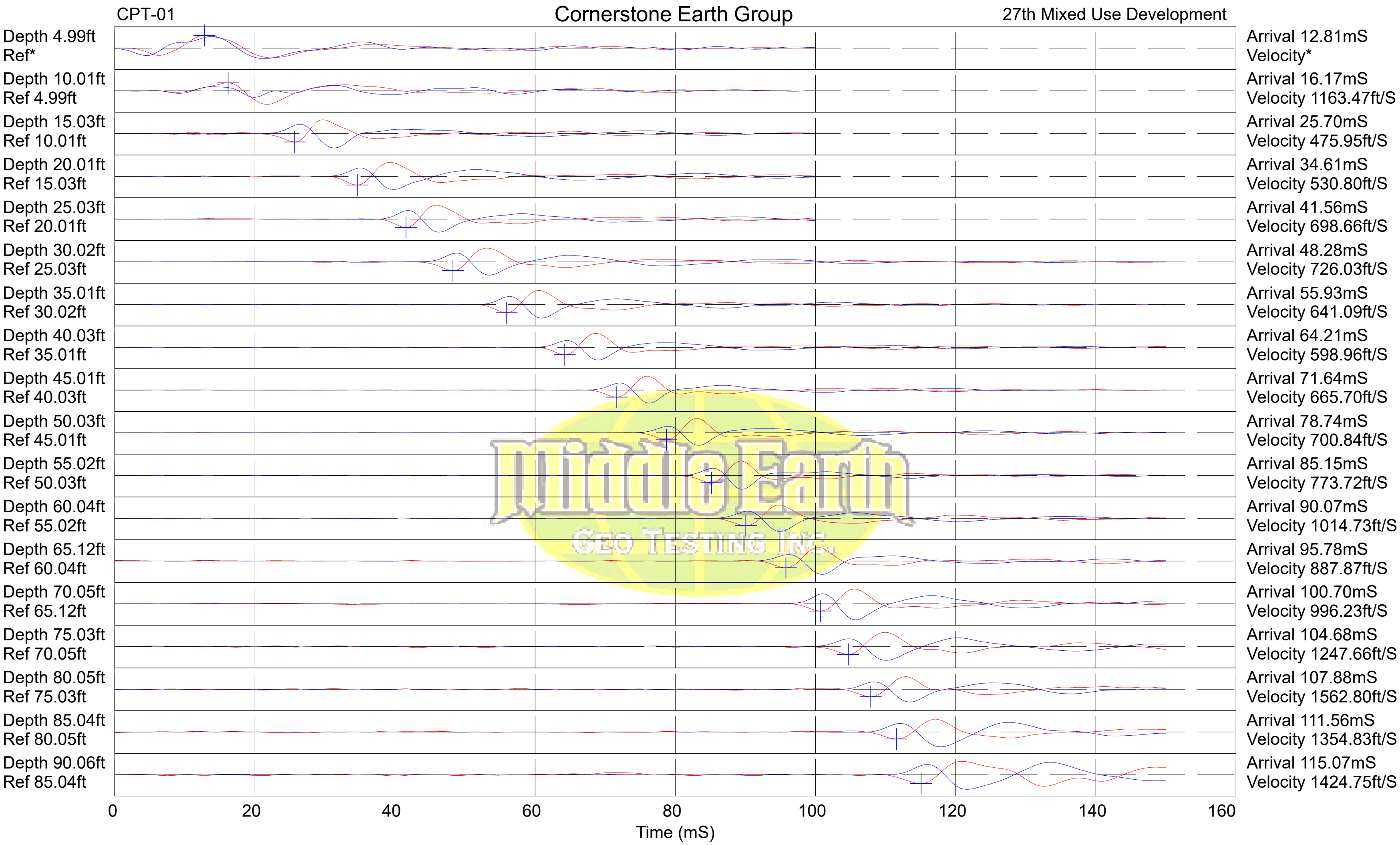
CPT DATA



■ 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



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

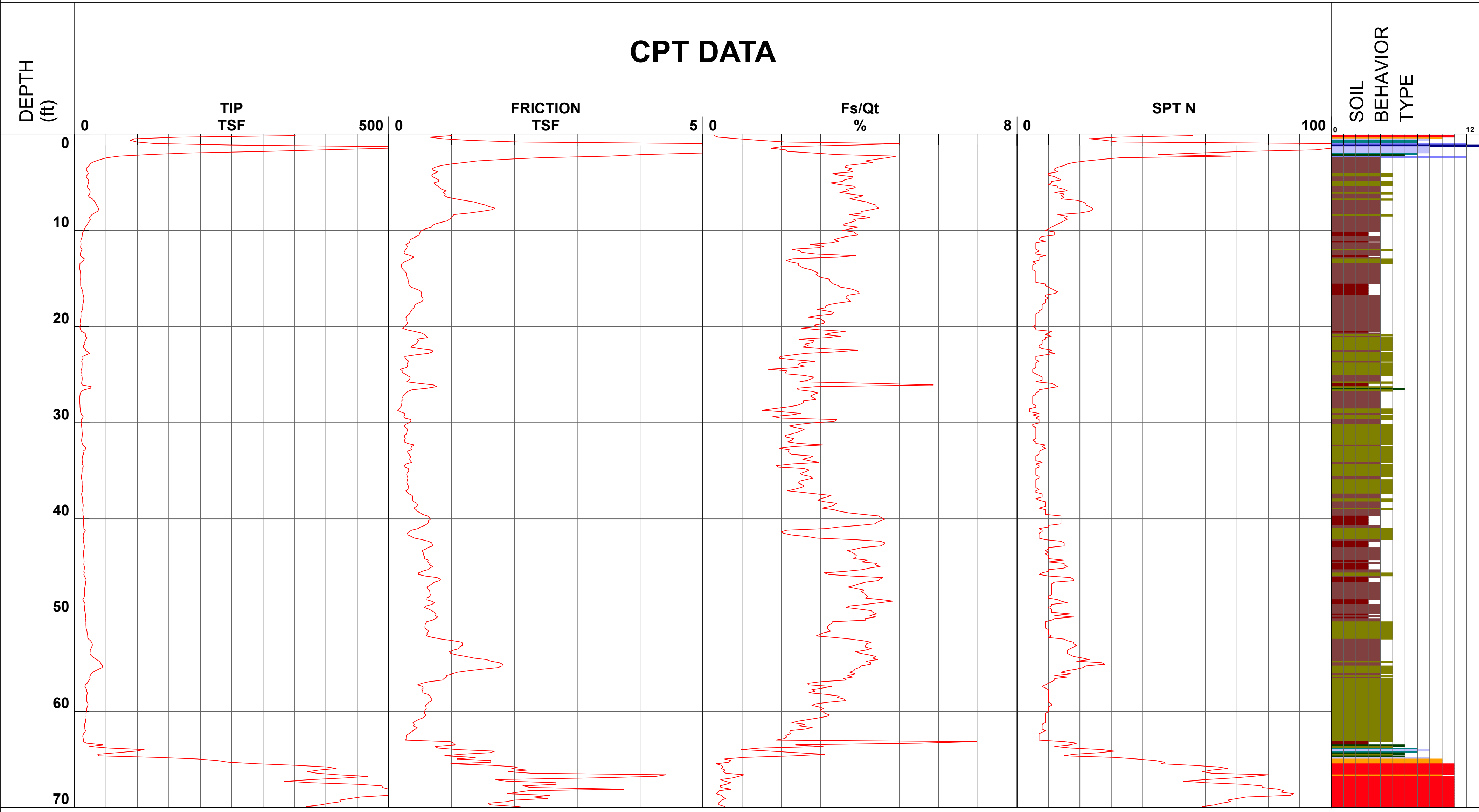
COMMENT:

Cornerstone Earth Group

Middle Earth
Geo Testing Inc.

Project	N 27th Mixed Use Development	Operator	AJ-OO	Filename	SDF(067).cpt
Job Number	1285-1-2	Cone Number	DDG1587	GPS	
Hole Number	CPT-02	Date and Time	10/14/2021 8:17:03 AM	Maximum Depth	70.70 ft
EST GW Depth During Test	16.00 ft				

Net Area Ratio .8



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

Cone Size 15cm squared

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

Cornerstone Earth Group

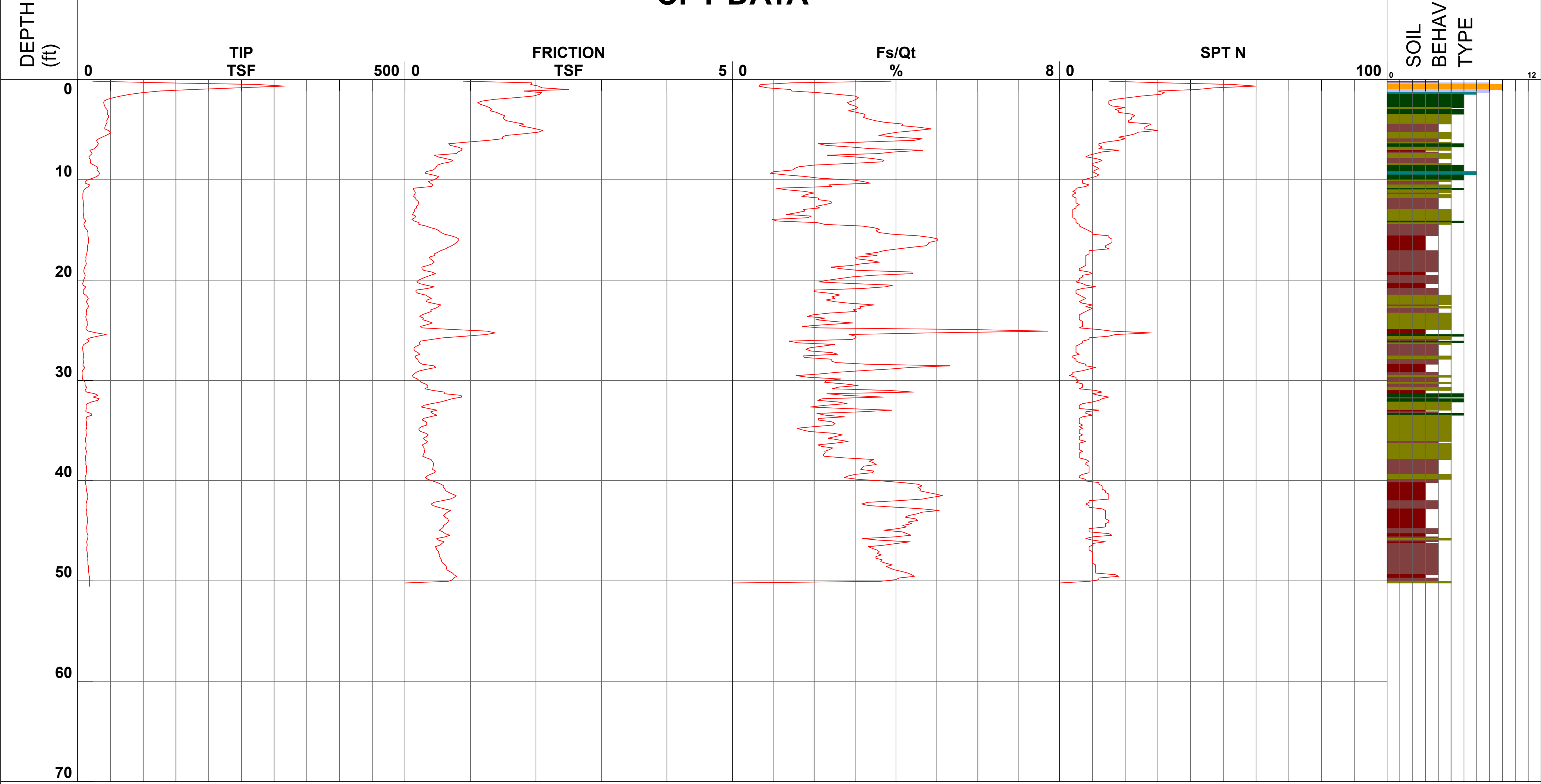
Project N 27th Mixed Use Development
Job Number 1285-1-2
Hole Number CPT-03
EST GW Depth During Test 12.00 ft

Operator AJ-OO
Cone Number DDG1587
Date and Time 10/14/2021 1:07:12 PM

Filename SDF(071).cpt
GPS
Maximum Depth 50.52 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

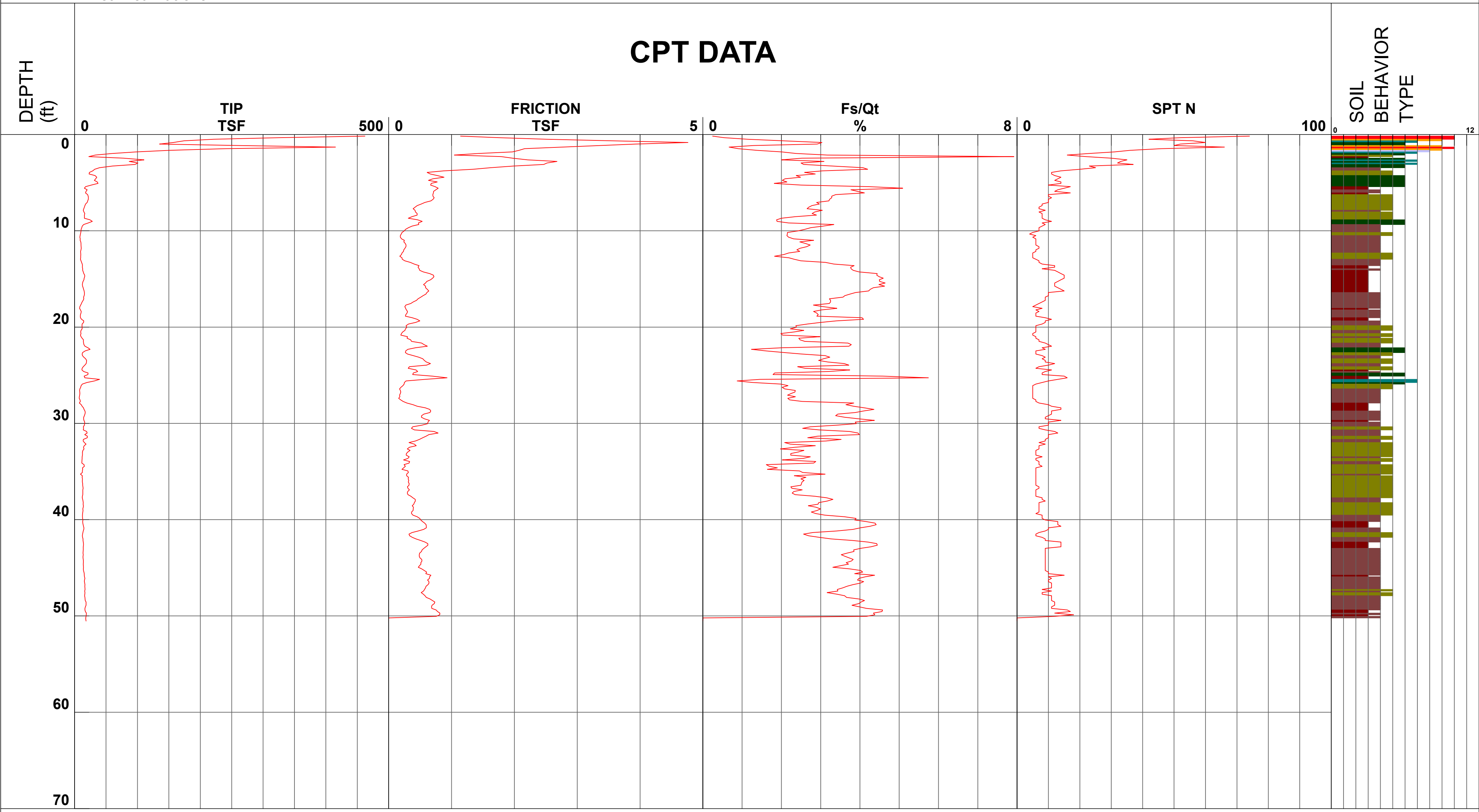
Middle Earth
Geo Testing Inc.

Cornerstone Earth Group

Project N 27th Mixed Use Development
Job Number 1285-1-2
Hole Number CPT-04
EST GW Depth During Test 16.00 ft
Operator AJ-OO
Cone Number DDG1587
Date and Time 10/14/2021 10:26:09 AM
Filename SDF(068).cpt
GPS
Maximum Depth 50.52 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

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 21 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 20 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.

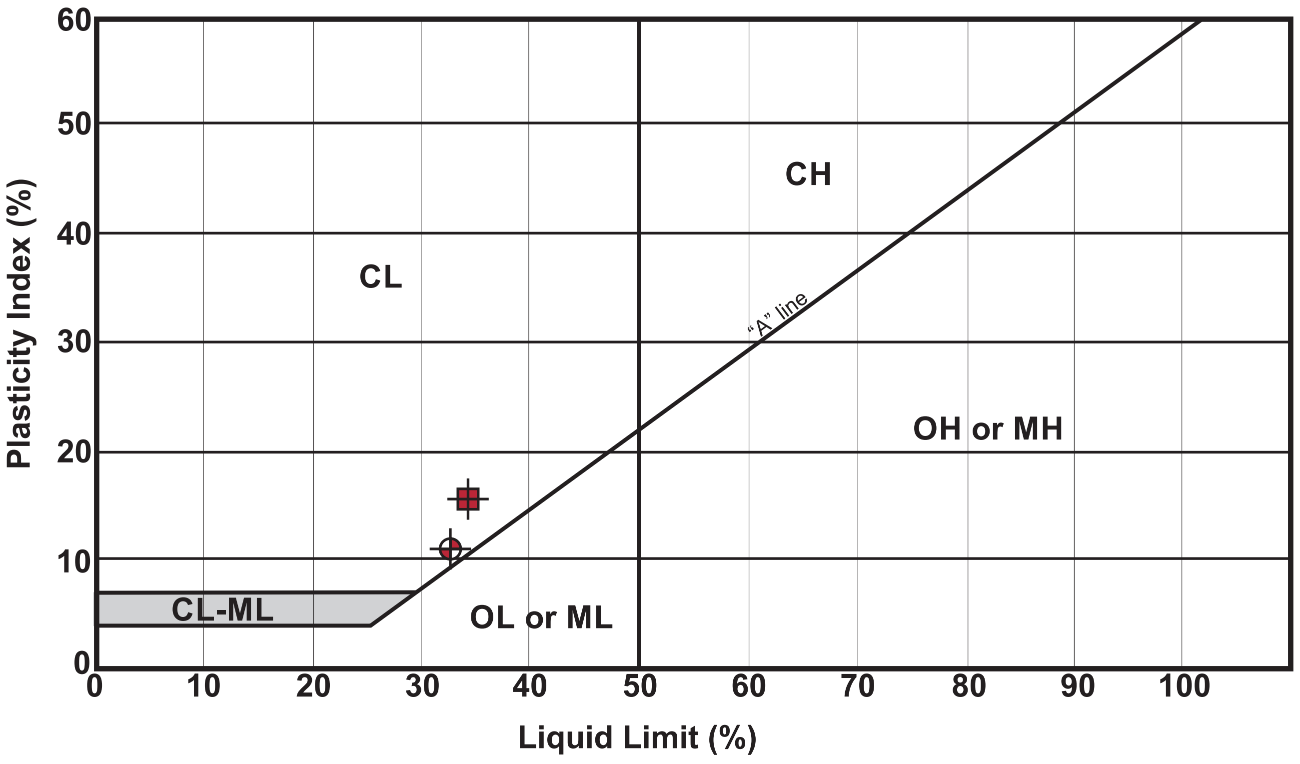
Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on one sample of the subsurface soils to aid in the classification of these soils. The result of these test is shown on the boring log at the appropriate sample depth.

Plasticity Index: Two Plasticity Index determinations (ASTM D4318) were performed on samples of the subsurface soils 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 these tests are shown on the boring logs at the appropriate sample depths.

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

Consolidation: One consolidation test (ASTM D2435) was performed on a relatively undisturbed sample of the subsurface clayey soils to assist in evaluating the compressibility property of this soil. Results of the consolidation test are presented graphically 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-1	1.5	15	33	22	11	—	Sandy Lean Clay (CL) [Fill]
⊞	EB-2	3.0	21	34	18	16	—	Lean Clay with Sand (CL)

Samples prepared in accordance with ASTM D421

CORNERSTONE
EARTH GROUP

Plasticity Index Testing Summary

North 27th Mixed-Use Development
70-80 North 27th Street
San Jose, CA

Project Number
1285-1-2

Figure Number
Figure B1

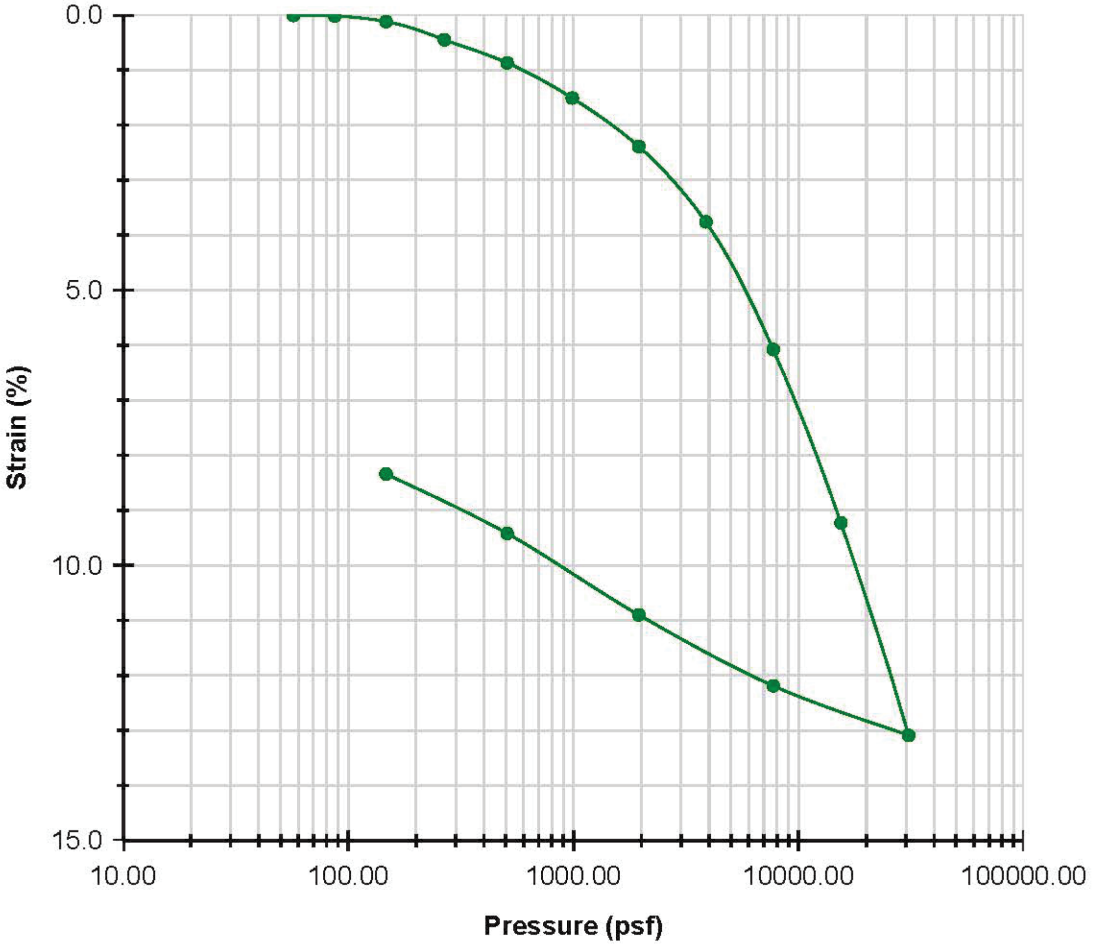
Date
November 2021

Drawn By
FLL

Consolidation Test ASTM D2435

Boring: EB-1 **Sample:** 5 **Depth:** 12.2’

Description: Lean Clay (CL)



	BEFORE	AFTER
Moisture (%)	30.8	26.2
Dry Density (pcf)	91.5	99.2
Saturation (%)	98.0	100.0
Void Ratio	0.86	0.71

—●— (A) Stress Strain Curve

CORNERSTONE EARTH GROUP

Strain-Log Curve - EB-1 @ 12.2’

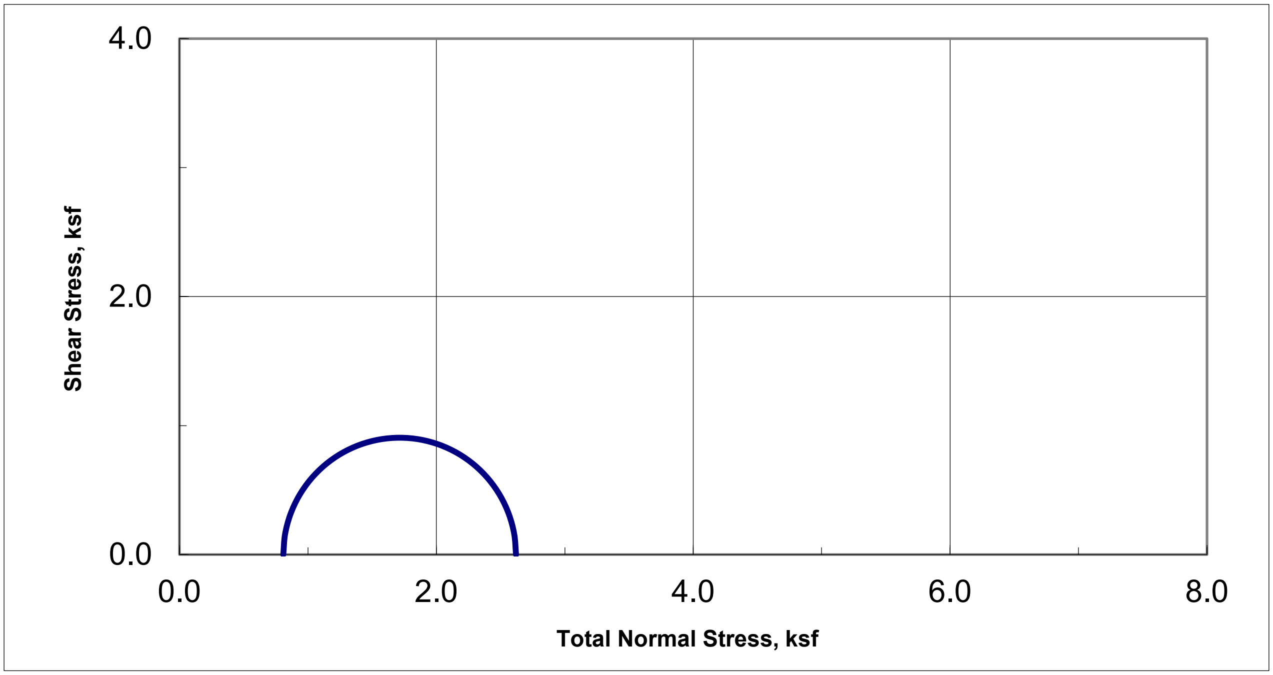
North 27th Mixed-Use Development
70-80 North 27th Street
San Jose, CA

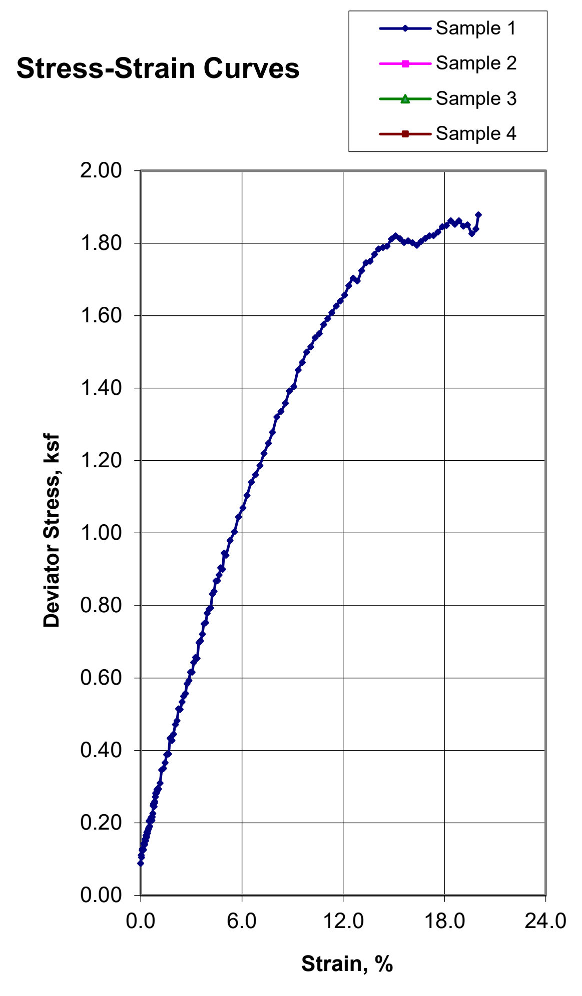
Project Number	1285-1-2
Figure Number	Figure B2
Date	November 2021
Drawn By	FLL

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

Unconsolidated-Undrained Triaxial Test

ASTM D2850





Sample Data				
	1	2	3	4
Moisture %	26.9			
Dry Den,pcf	96.7			
Void Ratio	0.742			
Saturation %	97.9			
Height in	4.96			
Diameter in	2.40			
Cell psi	5.6			
Strain %	15.00			
Deviator, ksf	1.812			
Rate %/min	1.00			
in/min	0.050			
Job No.:	**640-1485**			
Client:	**Cornerstone Earth Group**			
Project:	**1285-1-2**			
Boring:	EB-2			
Sample:	5A			
Depth ft:	10.5			

Visual Soil Description

Sample #	
1	Olive Gray Sandy Clay (CL)
2	
3	
4	

Remarks:

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

APPENDIX C: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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	459.020	0.655	19.2	19.2	4554.535	0.143	0.42		Unsaturated	0.0			433.86	1.70	737.56	737.56	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	244.400	0.694	39.6	39.6	1688.459	0.284	0.72		Unsaturated	0.0			231.00	1.70	392.70	392.70	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	163.610	1.000	58.8	58.8	927.503	0.611	1.12		Unsaturated	0.0			154.64	1.70	262.89	262.89	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	118.300	1.129	79.2	79.2	577.762	0.955	1.39		Unsaturated	0.0			111.81	1.70	190.09	190.09	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	96.380	1.033	98.4	98.4	422.221	1.072	1.51		Unsaturated	0.0			91.10	1.70	154.86	154.86	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	80.990	1.545	117.6	117.6	324.477	1.909	1.78		Unsaturated	5.5			76.55	1.70	130.14	130.49	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	85.100	2.034	138.0	138.0	314.710	2.392	1.87		Unsaturated	12.7			80.43	1.70	136.74	154.62	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	87.010	3.416	157.2	157.2	301.455	3.930	2.07		Unsaturated	28.4			82.24	1.70	139.81	200.79	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	84.450	5.623	177.6	177.6	275.229	6.666	2.29		Unsaturated	46.1			79.82	1.70	135.69	215.18	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	167.200	6.582	196.8	196.8	517.893	3.939	1.97		Unsaturated	20.3			158.03	1.70	268.66	329.68	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	168.070	5.642	216.0	216.0	496.886	3.359	1.91		Unsaturated	15.8			158.86	1.70	270.06	311.36	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	118.750	4.185	236.4	236.4	335.467	3.527	2.00		Unsaturated	23.3			112.24	1.70	190.81	249.94	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	82.200	2.965	255.6	255.6	223.197	3.613	2.10		Unsaturated	31.2			77.69	1.70	132.08	195.84	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	61.460	2.123	276.0	276.0	160.485	3.462	2.17		Unsaturated	36.3			58.09	1.70	98.75	161.29	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	41.940	1.204	295.2	295.2	105.758	2.881	2.22		Unsaturated	40.3			39.64	1.70	67.39	125.77	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	22.810	0.898	314.4	314.4	55.546	3.966	2.51		Unsaturated	63.5			21.56	1.70	36.65	96.54	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	18.940	0.849	334.8	334.8	64.499	4.523	2.50		Unsaturated	63.4			17.90	1.70	30.43	88.52	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	16.350	0.756	354.0	354.0	53.440	4.677	2.57		Unsaturated	68.6			15.45	1.70	26.27	84.28	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	14.150	0.691	374.4	374.4	44.362	4.950	2.64		Unsaturated	74.5			13.37	1.70	22.74	80.74	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	12.390	0.605	393.6	393.6	37.407	4.965	2.70		Unsaturated	78.7			11.71	1.70	19.91	77.71	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	10.880	0.547	412.8	412.8	51.713	5.122	2.61		Unsaturated	71.7			10.28	1.70	17.48	73.49	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	10.020	0.567	433.2	433.2	45.260	5.787	2.69		Unsaturated	78.0			9.47	1.70	16.10	72.66	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	9.600	0.514	452.4	452.4	41.440	5.479	2.70		Unsaturated	78.7			9.07	1.70	15.43	71.88	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	8.950	0.550	472.8	472.8	36.860	6.311	2.78		Unsaturated	85.0			8.46	1.70	14.38	71.33	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	8.680	0.461	492.0	492.0	34.285	5.467	2.75		Unsaturated	83.2			8.20	1.70	13.95	70.54	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	8.410	0.470	512.4	512.4	31.826	5.761	2.79		Unsaturated	86.3			7.95	1.70	13.51	70.34	0.99	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	7.770	0.418	531.6	531.6	28.233	5.576	2.82		Unsaturated	88.5			7.34	1.70	12.48	69.23	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	7.440	0.358	550.8	550.8	26.015	4.993	2.81		Unsaturated	87.9			7.03	1.70	11.95	68.48	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	8.250	0.425	571.2	571.2	27.887	5.330	2.81		Unsaturated	87.7			7.80	1.70	13.26	70.16	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	9.290	0.499	590.4	590.4	30.470	5.550	2.79		Unsaturated	86.5			8.78	1.70	14.93	72.20	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	12.320	0.549	610.8	610.8	39.341	4.572	2.66		Unsaturated	75.4			11.64	1.70	19.80	77.08	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	13.110	0.654	630.0	630.0	40.619	5.108	2.68		Unsaturated	77.4			12.39	1.70	21.07	79.02	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	14.040	0.700	649.2	649.2	42.253	5.104	2.67		Unsaturated	76.4			13.27	1.70	22.56	80.82	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	13.230	0.672	669.6	669.6	38.516	5.208	2.70		Unsaturated	79.2			12.50	1.70	21.26	79.53	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	12.700	0.583	688.8	688.8	35.876	4.722	2.69		Unsaturated	78.5			12.00	1.70	20.41	78.32	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	12.580	0.521	709.2	709.2	34.477	4.260	2.67		Unsaturated	77.0			11.89	1.70	20.21	77.86	0.99	0.450	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.070	12.210	0.514	728.4	728.4	32.526	4.342	2.70		Unsaturated	78.9			11.54	1.70	19.62	77.36	0.99	0.450	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.230	12.550	0.538	747.6	747.6	32.574	4.422	2.70		Unsaturated	79.3			11.86	1.70	20.17	78.13	0.99	0.450	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.400	13.460	0.599	768.0	768.0	34.052	4.581	2.70		Unsaturated	79.0			12.72	1.70	21.63	79.99	0.99	0.449	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.560	14.260	0.637	787.2	787.2	35.230	4.590	2.69		Unsaturated	78.3			13.48	1.70	22.91	81.54	0.99	0.449	1.091	n.a.	n.a.	n.a.	0.00	0.00
6.730	14.610	0.624	807.6	807.6	35.181	4.395	2.68		Unsaturated	77.2			13.81	1.68	23.26	81.85	0.99	0.449	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.890	13.860	0.579	826.8	826.8	32.527	4.309	2.70		Unsaturated	78.7			13.10	1.67	21.87	80.26	0.99	0.449	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.050	13.320	0.495	846.0	846.0	30.489	3.835	2.68		Unsaturated	77.6			12.59	1.65	20.83	78.76	0.99	0.448	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.220	12.760	0.441	866.4	866.4	28.455	3.575	2.68		Unsaturated	77.8			12.06	1.64	19.76	77.39	0.99	0.448	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.380	12.250	0.452	885.6	885.6	26.665	3.827	2.73		Unsaturated	81.0			11.58	1.62	18.78	76.56	0.98	0.448	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.550	12.980	0.470	906.0	906.0	27.653	3.751	2.71		Unsaturated	79.6			12.27	1.60	19.61	77.45	0.98	0.448	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.710	14.220	0.606	925.2	925.2	29.739	4.406	2.73		Unsaturated	81.5			13.44	1.57	21.13	79.68	0.98	0.447	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.870	16.630	0.709	944.4	944.4	34.218	4.385	2.69		Unsaturated	77.9			15.72	1.54	24.26	83.24	0.98	0.447	1.075	n.a.	n.a.	n.a.	0.00	0.00
8.040	17.750	0.768	964.8	964.8	35.795	4.446	2.68		Clay	77.1			16.78	1.23	n.a.	n.a.	0.98	0.448	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.200	16.950	0.772	984.0	984.0	33.451	4.693	2.71		Clay	80.1			16.02	1.22	n.a.	n.a.	0.98	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.370	17.110	0.786	1004.4	1004.4	33.070	4.730	2.72		Clay	80.6			16.17	1.22	n.a.	n.a.	0.98	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	16.350	0.651	1023.6	1023.6	30.946	4.110	2.70		Clay	78.9			15.45	1.21	n.a.	n.a.	0.98	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.690	13.860	0.514	1042.8	1042.8	25.582	3.850	2.74		Clay	82.3			13.10	1.21	n.a.	n.a.	0.98	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.860	12.640	0.435	1063.2	1063.2	22.777	3.590	2.76		Clay	83.7			11.95	1.20	n.a.	n.a.	0.98	0.469	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.020	12.530	0.390	1082.4	1082.4	22.152	3.249	2.74		Clay	82.3			11.84	1.19	n.a.	n.a.	0.98	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.190	12.010	0.387	1102.8	1102.8	20.781	3.375	2.77		Clay	84.8			11.35	1.19	n.a.	n.a.	0.98	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	12.120	0.410	1122.0	1122.0	20.604	3.548	2.79		Clay	86.2			11.46	1.18	n.a.	n.a.	0.98	0.481	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.510	12.560	0.448	1141.2	1141.2	21.012	3.734	2.80		Clay	86.8			11.87	1.18	n.a.	n.a.	0.98	0.484	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.680	12.870	0.517	1161.6	1161.6	21.159	4.205	2.83		Clay	89.3			12.16	1.17	n.a.	n.a.	0.98	0.488	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.840	14.050	0.586	1180.8	1180.8	22.797	4.354	2.81		Clay	88.1			13.28	1.17	n.a.	n.a.	0.98	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.010	13.010	0.564	1201.2	1201.2	20.662	4.541	2.86		Clay	91.6			12.30	1.16	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	18.060	0.412	1220.4	1220.4	24.245	2.358	2.62	plastic	Clay	72.9			17.07	1.16	n.a.	n.a.	0.97	0.498	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	12.950	0.289	1239.6	1239.6	19.894	2.340	2.69		Clay	78.3			12.24	1.15	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	10.010	0.327	1260.0	1260.0	14.889	3.485	2.90		Clay	94.6			9.46	1.15	n.a.	n.a.	0.97	0.505	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	10.330	0.383	1279.2	1279.2	15.151	3.948	2.92		Clay	96.8			9.76	1.14	n.a.	n.a.	0.97	0.508	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	11.130	0.418	1299.6	1299.6	16.128	3.991	2.90		Clay	95.3			10.52	1.14	n.a.	n.a.	0.97	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	10.930	0.418	1318.8	1318.8	15.576	4.068	2.92		Clay	96.7			10.33	1.13	n.a.	n.a.	0.97	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'_{vc} = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.150	10.130	0.403	1338.0	1338.0	14.142	4.257	2.97		Clay	100.0			9.57	1.13	n.a.	n.a.	0.97	0.517	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.320	9.690	0.365	1358.4	1358.4	13.267	4.054	2.98		Clay	100.0			9.16	1.12	n.a.	n.a.	0.97	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	9.580	0.323	1377.6	1377.6	12.908	3.632	2.96		Clay	99.4			9.05	1.12	n.a.	n.a.	0.97	0.523	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	9.220	0.331	1398.0	1398.0	12.190	3.883	2.99		Clay	100.0			8.71	1.12	n.a.	n.a.	0.97	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	9.120	0.354	1417.2	1417.2	11.870	4.204	3.02		Clay	100.0			8.62	1.11	n.a.	n.a.	0.97	0.529	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	9.420	0.369	1437.6	1437.6	12.105	4.237	3.02		Clay	100.0			8.90	1.11	n.a.	n.a.	0.97	0.531	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.600	0.331	1456.8	1456.8	12.180	3.731	2.98		Clay	100.0			9.07	1.10	n.a.	n.a.	0.97	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.160	0.315	1476.0	1476.0	11.412	3.743	3.01		Clay	100.0			8.66	1.10	n.a.	n.a.	0.97	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	8.830	0.304	1496.4	1496.4	10.802	3.762	3.03		Clay	100.0			8.35	1.10	n.a.	n.a.	0.97	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	8.810	0.278	1515.6	1515.6	10.626	3.456	3.01		Clay	100.0			8.33	1.09	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	9.940	0.258	1536.0	1536.0	11.943	2.812	2.92		Clay	96.4			9.40	1.09	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	10.130	0.267	1555.2	1555.2	12.027	2.851	2.92		Clay	96.5			9.57	1.08	n.a.	n.a.	0.96	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	9.650	0.306	1574.6	1567.2	11.311	3.457	2.99		Clay	100.0			9.12	1.08	n.a.	n.a.	0.96	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	10.040	0.333	1595.4	1577.3	11.719	3.607	2.99		Clay	100.0			9.49	1.08	n.a.	n.a.	0.96	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	10.600	0.319	1614.9	1586.8	12.342	3.253	2.94		Clay	98.4			10.02	1.08	n.a.	n.a.	0.96	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	16.680	0.429	1635.6	1597.0	19.866	2.704	2.73		Clay	81.3			15.77	1.08	n.a.	n.a.	0.96	0.555	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	15.260	0.340	1655.2	1606.5	17.968	2.357	2.73		Clay	81.3			14.42	1.08	n.a.	n.a.	0.96	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	23.030	0.385	1674.7	1616.0	24.003	1.734	2.55		Sand	66.9		1.8	39.18	1.14	44.62	107.57	0.96	0.560	1.030	0.148	0.199	0.36	0.03	0.06
14.110	22.100	0.325	1695.4	1626.2	22.914	1.531	2.53		Sand	65.8	21.77	1.8	39.19	1.14	44.50	107.16	0.96	0.562	1.030	0.147	0.198	0.35	0.03	0.06
14.270	13.860	0.308	1714.9	1635.7	15.899	2.366	2.77		Clay	84.8			13.10	1.07	n.a.	n.a.	0.96	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	10.070	0.288	1735.7	1645.8	11.182	3.133	2.97		Clay	100.0			9.52	1.07	n.a.	n.a.	0.96	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	8.950	0.288	1755.2	1655.4	9.753	3.564	3.05		Clay	100.0			8.46	1.07	n.a.	n.a.	0.96	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	8.990	0.308	1774.7	1664.9	9.734	3.798	3.07		Clay	100.0			8.50	1.07	n.a.	n.a.	0.96	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	9.060	0.332	1795.5	1675.0	9.746	4.065	3.08		Clay	100.0			8.56	1.06	n.a.	n.a.	0.96	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	9.450	0.339	1815.0	1684.6	10.142	3.966	3.06		Clay	100.0			8.93	1.06	n.a.	n.a.	0.95	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	9.810	0.321	1835.7	1694.7	10.494	3.609	3.03		Clay	100.0			9.27	1.06	n.a.	n.a.	0.95	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	9.970	0.339	1855.2	1704.2	10.612	3.751	3.03		Clay	100.0			9.42	1.06	n.a.	n.a.	0.95	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	10.480	0.357	1874.8	1713.8	11.136	3.743	3.01		Clay	100.0			9.91	1.06	n.a.	n.a.	0.95	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	10.970	0.409	1895.5	1723.9	11.627	4.084	3.02		Clay	100.0			10.37	1.06	n.a.	n.a.	0.95	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	11.220	0.449	1915.0	1733.4	11.841	4.378	3.03		Clay	100.0			10.60	1.05	n.a.	n.a.	0.95	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	12.010	0.535	1935.8	1743.6	12.666	4.845	3.04		Clay	100.0			11.35	1.05	n.a.	n.a.	0.95	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	12.800	0.565	1955.3	1753.1	13.487	4.775	3.01		Clay	100.0			12.10	1.05	n.a.	n.a.	0.95	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	13.230	0.590	1974.8	1762.6	13.891	4.818	3.01		Clay	100.0			12.50	1.05	n.a.	n.a.	0.95	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	13.530	0.602	1995.5	1772.8	14.139	4.805	3.00		Clay	100.0			12.79	1.05	n.a.	n.a.	0.95	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	14.050	0.642	2015.1	1782.3	14.635	4.925	2.99		Clay	100.0			13.28	1.05	n.a.	n.a.	0.95	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	14.250	0.701	2035.8	1792.4	14.764	5.299	3.01		Clay	100.0			13.47	1.04	n.a.	n.a.	0.95	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	14.300	0.717	2055.3	1802.0	14.731	5.404	3.02		Clay	100.0			13.52	1.04	n.a.	n.a.	0.95	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	15.120	0.704	2074.8	1811.5	15.548	5.001	2.98		Clay	100.0			14.29	1.04	n.a.	n.a.	0.95	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	15.310	0.674	2095.6	1821.6	15.659	4.725	2.96		Clay	99.9			14.47	1.04	n.a.	n.a.	0.94	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	15.390	0.634	2115.1	1831.2	15.654	4.421	2.94		Clay	98.4			14.55	1.04	n.a.	n.a.	0.94	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	15.250	0.635	2135.8	1841.3	15.404	4.475	2.95		Clay	99.1			14.41	1.04	n.a.	n.a.	0.94	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	15.810	0.643	2155.4	1850.8	15.920	4.362	2.93		Clay	97.6			14.94	1.04	n.a.	n.a.	0.94	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	16.310	0.634	2174.9	1860.4	16.365	4.162	2.91		Clay	95.9			15.42	1.03	n.a.	n.a.	0.94	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	15.380	0.579	2195.6	1870.5	15.271	4.055	2.93		Clay	97.2			14.54	1.03	n.a.	n.a.	0.94	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	14.750	0.518	2215.1	1880.1	14.513	3.797	2.93		Clay	97.1			13.94	1.03	n.a.	n.a.	0.94	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	14.060	0.486	2235.9	1890.2	13.694	3.758	2.94		Clay	98.5			13.29	1.03	n.a.	n.a.	0.94	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	13.320	0.466	2255.4	1899.7	12.836	3.819	2.97		Clay	100.0			12.59	1.03	n.a.	n.a.	0.94	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	12.380	0.446	2274.9	1909.3	11.777	3.964	3.01		Clay	100.0			11.70	1.03	n.a.	n.a.	0.94	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	12.070	0.435	2295.7	1919.4	11.381	3.983	3.02		Clay	100.0			11.41	1.03	n.a.	n.a.	0.94	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	11.900	0.453	2315.2	1928.9	11.138	4.218	3.05		Clay	100.0			11.25	1.02	n.a.	n.a.	0.94	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	12.100	0.484	2335.9	1939.1	11.276	4.427	3.05		Clay	100.0			11.44	1.02	n.a.	n.a.	0.94	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.910	0.586	2355.4	1948.6	11.015	5.462	3.12		Clay	100.0			11.26	1.02	n.a.	n.a.	0.93	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	13.840	0.650	2376.2	1958.7	12.919	5.140	3.05		Clay	100.0			13.08	1.02	n.a.	n.a.	0.93	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	18.400	0.742	2395.7	1968.3	17.480	4.311	2.90		Clay	94.9			17.39	1.02	n.a.	n.a.	0.93	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	17.150	0.691	2415.2	1977.8	16.121	4.334	2.93		Clay	97.2			16.21	1.02	n.a.	n.a.	0.93	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	13.820	0.664	2436.0	1987.9	12.679	5.271	3.06		Clay	100.0			13.06	1.02	n.a.	n.a.	0.93	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	14.190	0.625	2455.5	1997.5	12.979	4.822	3.03		Clay	100.0			13.41	1.02	n.a.	n.a.	0.93	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	15.210	0.575	2476.2	2007.6	13.919	4.113	2.96		Clay	100.0			14.38	1.01	n.a.	n.a.	0.93	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	13.000	0.433	2495.7	2017.1	11.652	3.680	2.99		Clay	100.0			12.29	1.01	n.a.	n.a.	0.93	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	10.980	0.307	2515.3	2026.7	9.594	3.158	3.02		Clay	100.0			10.38	1.01	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	9.930	0.268	2536.0	2036.8	8.505	3.091	3.06		Clay	100.0			9.39	1.01	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	10.860	0.267	2555.5	2046.3	9.365	2.784	3.00		Clay	100.0			10.26	1.01	n.a.	n.a.	0.93	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	11.650	0.323	2576.3	2056.5	10.077	3.112	3.00		Clay	100.0			11.01	1.01	n.a.	n.a.	0.93	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	13.090	0.309	2595.8	2066.0	11.415	2.616	2.92		Clay	96.3			12.37	1.01	n.a.	n.a.	0.93	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	15.730	0.402	2615.3	2075.5	13.897	2.784	2.86		Clay	91.9			14.87	1.01	n.a.	n.a.	0.92	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	16.260	0.500	2636.0	2085.7	14.328	3.346	2.90		Clay	94.8			15.37	1.00	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	17.060	0.509	2655.6	2095.2	15.017	3.236	2.87		Clay	92.8			16.12	1.00	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
22.150	16.220	0.459	2676.3	2105.3	14.137	3.084	2.88		Clay	93.5			15.33	1.00	n.a.	n.a.	0.92	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	14.350	0.433	2695.8	2114.9	12.296	3.328	2.95		Clay	99.0			13.56	1.00	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	13.360	0.377	2715.3	2124.4	11.299	3.137	2.96		Clay	100.0			12.63	1.00	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	12.930	0.344	2736.1	2134.5	10.833	2.974	2.97		Clay	100.0			12.22	1.00	n.a.	n.a.	0.92	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	12.500	0.300	2755.6	2144.1	10.375	2.699	2.96		Clay	99.6			11.81	1.00	n.a.	n.a.	0.92	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	13.010	0.381	2776.3	2154.2	10.790	3.280	2.99		Clay	100.0			12.30	1.00	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	13.910	0.429	2795.9	2163.7	11.565	3.432	2.98		Clay	100.0			13.15	0.99	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	16.360	0.455	2815.4	2173.3	13.760	3.044	2.89		Clay	94.0			15.46	0.99	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	18.240	0.529	2836.1	2183.4	15.409	3.142	2.86		Clay	91.5			17.24	0.99	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	16.460	0.574	2855.6	2193.0	13.710	3.817	2.95		Clay	98.8			15.56	0.99	n.a.	n.a.	0.92	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	16.480	0.504	2876.4	2203.1	13.655	3.353	2.92		Clay	96.2			15.58	0.99	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	16.920	0.465	2895.9	2212.6	13.985	3.007	2.88		Clay	93.3			15.99	0.99	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	15.830	0.420	2915.4	2222.2	12.935	2.923	2.90		Clay	94.9			14.96	0.99	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	15.470	0.526	2936.2	2232.3	12.545	3.754	2.97		Clay	100.0			14.62	0.99	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	16.410	0.490	2955.7	2241.8	13.321	3.283	2.92		Clay	96.5			15.51	0.98	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	16.020	0.389	2976.4	2252.0	12.906	2.677	2.88		Clay	93.2			15.14	0.98	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	15.590	0.377	2995.9	2261.5	12.463	2.678	2.89		Clay	94.2			14.74	0.98	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	14.440	0.344	3015.5	2271.0	11.389	2.658	2.92		Clay	96.6			13.65	0.98	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	15.130	0.529	3036.2	2281.2	11.934	3.886	3.00		Clay	100.0			14.30	0.98	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	15.300	0.845	3055.7	2290.7	12.024	6.136	3.12		Clay	100.0			14.46	0.98	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	27.280	1.165	3076.5	2300.8	22.376	4.525	2.83		Clay	89.5			25.78	0.98	n.a.	n.a.	0.91	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	42.050	1.298	3096.0	2310.4	36.636	3.204	2.57		Sand	68.7			39.74	0.96	38.04	99.47	0.91	0.637	0.991	0.137	0.170	0.27	0.03	0.06
25.750	53.310	1.281	3115.5	2319.9	46.716	2.474	2.42		Sand	56.4		1.8	90.70	0.96	87.52	159.48	0.90	0.637	0.984	0.366	0.643	1.01	0.01	0.02
25.920	52.860	0.589	3136.2	2330.0	46.200	1.148	2.21		Sand	40.0	50.39	1.8	90.70	0.96	87.25	150.26	0.90	0.638	0.985	0.290	0.478	0.75	0.02	0.03
26.080	31.670	0.547	3155.8	2339.6	27.049	1.817	2.52		Sand	64.5			29.93	0.95	28.38	86.13	0.90	0.638	0.990	0.122	0.144	0.23	0.04	0.08
26.250	20.440	0.586	3176.5	2349.7	16.046	3.106	2.84		Clay	90.1			19.32	0.97	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	19.350	0.645	3196.0	2359.2	15.049	3.632	2.90		Clay	95.2			18.29	0.97	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	24.300	0.612	3215.5	2368.8	19.159	2.695	2.74		Clay	82.2			22.97	0.97	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	16.980	0.442	3236.3	2378.9	12.915	2.874	2.90		Clay	94.6			16.05	0.97	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	12.120	0.381	3255.8	2388.4	8.786	3.627	3.09		Clay	100.0			11.46	0.97	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	10.600	0.337	3276.5	2398.6	7.473	3.760	3.16		Clay	100.0			10.02	0.97	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	9.510	0.289	3296.1	2408.1	6.530	3.680	3.20		Clay	100.0			8.99	0.97	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	9.990	0.243	3316.8	2418.2	6.891	2.917	3.12		Clay	100.0			9.44	0.97	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	11.050	0.258	3336.3	2427.8	7.729	2.752	3.07		Clay	100.0			10.44	0.96	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	10.800	0.288	3355.8	2437.3	7.485	3.156	3.11		Clay	100.0			10.21	0.96	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	11.500	0.294	3376.6	2447.4	8.018	2.992	3.08		Clay	100.0			10.87	0.96	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	12.280	0.341	3396.1	2457.0	8.614	3.223	3.07		Clay	100.0			11.61	0.96	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	12.720	0.318	3416.8	2467.1	8.927	2.883	3.03		Clay	100.0			12.02	0.96	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	12.680	0.326	3436.4	2476.6	8.852	2.970	3.04		Clay	100.0			11.98	0.96	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	12.660	0.297	3455.9	2486.2	8.794	2.719	3.02		Clay	100.0			11.97	0.96	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	13.320	0.330	3476.6	2496.3	9.279	2.852	3.01		Clay	100.0			12.59	0.96	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	13.790	0.416	3496.1	2505.9	9.611	3.451	3.05		Clay	100.0			13.03	0.96	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	15.660	0.524	3516.9	2516.0	11.051	3.771	3.02		Clay	100.0			14.80	0.96	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	18.270	0.496	3536.4	2525.5	13.068	3.004	2.90		Clay	95.2			17.27	0.95	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	19.520	0.454	3555.9	2535.1	13.997	2.558	2.84		Clay	90.0			18.45	0.95	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	17.730	0.366	3576.7	2545.2	12.527	2.296	2.85		Clay	91.1			16.76	0.95	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	14.690	0.526	3596.2	2554.7	10.093	4.082	3.07		Clay	100.0			13.88	0.95	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	14.030	0.546	3616.9	2564.9	9.530	4.468	3.11		Clay	100.0			13.26	0.95	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	14.700	0.479	3636.4	2574.4	10.008	3.720	3.05		Clay	100.0			13.89	0.95	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	15.660	0.435	3656.0	2583.9	10.706	3.147	2.98		Clay	100.0			14.80	0.95	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	15.030	0.406	3676.7	2594.1	10.171	3.078	3.00		Clay	100.0			14.21	0.95	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	14.770	0.410	3696.2	2603.6	9.926	3.174	3.01		Clay	100.0			13.96	0.95	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	15.020	0.427	3717.0	2613.7	10.071	3.247	3.01		Clay	100.0			14.20	0.95	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	14.810	0.436	3736.5	2623.3	9.867	3.370	3.03		Clay	100.0			14.00	0.94	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	13.730	0.352	3756.0	2632.8	9.003	2.968	3.03		Clay	100.0			12.98	0.94	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	12.960	0.285	3776.7	2642.9	8.378	2.576	3.02		Clay	100.0			12.25	0.94	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	12.000	0.260	3796.3	2652.5	7.617	2.572	3.06		Clay	100.0			11.34	0.94	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	12.270	0.264	3817.0	2662.6	7.783	2.550	3.05		Clay	100.0			11.60	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	12.940	0.270	3836.5	2672.1	8.249	2.447	3.02		Clay	100.0			12.23	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	13.740	0.281	3856.0	2681.7	8.809	2.379	2.99		Clay	100.0			12.99	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	13.650	0.329	3876.8	2691.8	8.702	2.808	3.03		Clay	100.0			12.90	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	14.110	0.395	3896.3	2701.3	9.004	3.246	3.05		Clay	100.0			13.34	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	14.640	0.453	3917.0	2711.5	9.354	3.575	3.06		Clay	100.0			13.84	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	15.350	0.457	3936.6	2721.0	9.836	3.414	3.03		Clay	100.0			14.51	0.94	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	16.450	0.325	3956.1	2730.5	10.600	2.245	2.91		Clay	95.5			15.55	0.93	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	18.210	0.313	3976.8	2740.7	11.838	1.930	2.83		Clay	89.4			17.21	0.93	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	17.400	0.316	3996.3	2750.2	11.200	2.050	2.86		Clay	92.2			16.45	0.93	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
33.140	15.640	0.354	4017.1	2760.3	9.877	2.597	2.97		Clay	100.0			14.78	0.93	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	15.840	0.405	4036.6	2769.9	9.980	2.928	2.99		Clay	100.0			14.97	0.93	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	16.060	0.442	4056.1	2779.4	10.097	3.153	3.01		Clay	100.0			15.18	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	16.640	0.464	4076.9	2789.5	10.469	3.180	2.99		Clay	100.0			15.73	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	16.660	0.458	4096.4	2799.1	10.440	3.137	2.99		Clay	100.0			15.75	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	17.210	0.462	4117.1	2809.2	10.787	3.049	2.97		Clay	100.0			16.27	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	16.050	0.463	4136.6	2818.8	9.920	3.309	3.02		Clay	100.0			15.17	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	15.280	0.416	4156.2	2828.3	9.336	3.154	3.03		Clay	100.0			14.44	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	14.780	0.369	4176.9	2838.4	8.943	2.904	3.03		Clay	100.0			13.97	0.93	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	14.550	0.303	4196.4	2848.0	8.744	2.432	3.00		Clay	100.0			13.75	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	14.630	0.328	4217.2	2858.1	8.762	2.619	3.01		Clay	100.0			13.83	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	15.100	0.377	4236.7	2867.6	9.054	2.904	3.02		Clay	100.0			14.27	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	15.730	0.389	4256.2	2877.2	9.455	2.863	3.01		Clay	100.0			14.87	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	15.730	0.389	4276.9	2887.3	9.415	2.861	3.01		Clay	100.0			14.87	0.92	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	15.690	0.392	4296.5	2896.8	9.349	2.895	3.01		Clay	100.0			14.83	0.92	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	15.460	0.376	4317.2	2907.0	9.151	2.825	3.01		Clay	100.0			14.61	0.92	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	15.300	0.361	4336.7	2916.5	9.005	2.748	3.01		Clay	100.0			14.46	0.92	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	14.760	0.378	4357.5	2926.6	8.598	3.008	3.05		Clay	100.0			13.95	0.92	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	14.570	0.392	4377.0	2936.2	8.434	3.166	3.07		Clay	100.0			13.77	0.92	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	15.300	0.404	4396.5	2945.7	8.896	3.080	3.05		Clay	100.0			14.46	0.92	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	14.970	0.388	4417.2	2955.8	8.635	3.039	3.05		Clay	100.0			14.15	0.92	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	15.120	0.346	4436.8	2965.4	8.702	2.685	3.02		Clay	100.0			14.29	0.91	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	15.120	0.328	4457.5	2975.5	8.665	2.547	3.01		Clay	100.0			14.29	0.91	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	15.030	0.321	4477.0	2985.0	8.570	2.510	3.01		Clay	100.0			14.21	0.91	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	14.820	0.326	4496.5	2994.6	8.396	2.594	3.03		Clay	100.0			14.01	0.91	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	14.860	0.304	4517.3	3004.7	8.388	2.412	3.01		Clay	100.0			14.05	0.91	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	14.730	0.323	4536.8	3014.2	8.268	2.588	3.03		Clay	100.0			13.92	0.91	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	14.290	0.336	4557.5	3024.4	7.943	2.795	3.06		Clay	100.0			13.51	0.91	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	14.750	0.342	4577.1	3033.9	8.215	2.748	3.05		Clay	100.0			13.94	0.91	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	14.490	0.386	4596.6	3043.4	8.012	3.163	3.09		Clay	100.0			13.70	0.91	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	15.140	0.428	4617.3	3053.6	8.404	3.335	3.09		Clay	100.0			14.31	0.91	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	15.590	0.481	4636.8	3063.1	8.665	3.624	3.09		Clay	100.0			14.74	0.91	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	15.980	0.469	4657.6	3073.2	8.884	3.438	3.07		Clay	100.0			15.10	0.91	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	16.130	0.462	4677.1	3082.8	8.947	3.353	3.06		Clay	100.0			15.25	0.91	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	16.180	0.436	4696.6	3092.3	8.946	3.154	3.05		Clay	100.0			15.29	0.90	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	15.820	0.443	4717.4	3102.4	8.678	3.293	3.07		Clay	100.0			14.95	0.90	n.a.	n.a.	0.84	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	15.390	0.463	4736.9	3112.0	8.369	3.553	3.10		Clay	100.0			14.55	0.90	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	15.300	0.460	4757.6	3122.1	8.277	3.556	3.11		Clay	100.0			14.46	0.90	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	15.090	0.424	4777.1	3131.7	8.112	3.341	3.10		Clay	100.0			14.26	0.90	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	14.660	0.384	4796.7	3141.2	7.807	3.130	3.10		Clay	100.0			13.86	0.90	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	14.320	0.386	4817.4	3151.3	7.560	3.240	3.12		Clay	100.0			13.53	0.90	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	14.120	0.437	4836.9	3160.9	7.404	3.735	3.16		Clay	100.0			13.35	0.90	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	14.460	0.498	4857.7	3171.0	7.588	4.142	3.18		Clay	100.0			13.67	0.90	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	15.530	0.603	4877.2	3180.5	8.232	4.605	3.17		Clay	100.0			14.68	0.90	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	16.460	0.674	4896.7	3190.1	8.785	4.808	3.16		Clay	100.0			15.56	0.90	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	17.060	0.765	4917.4	3200.2	9.125	5.241	3.17		Clay	100.0			16.12	0.90	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	17.320	0.815	4937.0	3209.7	9.254	5.485	3.18		Clay	100.0			16.37	0.90	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	17.450	0.836	4957.7	3219.9	9.299	5.583	3.18		Clay	100.0			16.49	0.90	n.a.	n.a.	0.82	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	17.850	0.839	4977.2	3229.4	9.513	5.461	3.17		Clay	100.0			16.87	0.89	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	18.130	0.785	4996.7	3238.9	9.652	5.023	3.14		Clay	100.0			17.14	0.89	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	18.000	0.749	5017.5	3249.1	9.536	4.832	3.14		Clay	100.0			17.01	0.89	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	17.690	0.697	5037.0	3258.6	9.312	4.593	3.13		Clay	100.0			16.72	0.89	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	17.630	0.676	5057.7	3268.7	9.240	4.476	3.13		Clay	100.0			16.66	0.89	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	18.220	0.654	5077.3	3278.3	9.567	4.169	3.10		Clay	100.0			17.22	0.89	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	19.590	0.509	5096.8	3287.8	10.367	2.984	2.98		Clay	100.0			18.52	0.89	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	20.190	0.407	5117.5	3297.9	10.692	2.306	2.91		Clay	95.7			19.08	0.89	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	18.710	0.418	5137.0	3307.5	9.761	2.587	2.97		Clay	100.0			17.68	0.89	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	17.870	0.461	5157.8	3317.6	9.218	3.015	3.03		Clay	100.0			16.89	0.89	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	18.270	0.497	5177.3	3327.1	9.426	3.170	3.03		Clay	100.0			17.27	0.89	n.a.	n.a.	0.81	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	17.470	0.493	5196.8	3336.7	8.914	3.312	3.06		Clay	100.0			16.51	0.89	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	17.060	0.517	5217.6	3346.8	8.636	3.579	3.09		Clay	100.0			16.12	0.89	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	17.280	0.589	5237.1	3356.3	8.737	4.020	3.12		Clay	100.0			16.33	0.89	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	17.810	0.627	5257.8	3366.5	9.019	4.128	3.11		Clay	100.0			16.83	0.88	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	17.770	0.580	5277.3	3376.0	8.964	3.834	3.10		Clay	100.0			16.80	0.88	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	17.450	0.594	5298.1	3386.1	8.742	4.013	3.12		Clay	100.0			16.49	0.88	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	18.090	0.605	5317.6	3395.7	9.089	3.919	3.10		Clay	100.0			17.10	0.88	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	19.020	0.665	5337.1	3405.2	9.604	4.067	3.09		Clay	100.0			17.98	0.88	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
44.130	18.890	0.696	5357.9	3415.3	9.493	4.292	3.11		Clay	100.0			17.85	0.88	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	18.600	0.719	5377.4	3424.9	9.292	4.519	3.13		Clay	100.0			17.58	0.88	n.a.	n.a.	0.81	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	18.920	0.793	5398.1	3435.0	9.444	4.891	3.14		Clay	100.0			17.88	0.88	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	19.950	0.841	5417.6	3444.6	10.011	4.878	3.12		Clay	100.0			18.86	0.88	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	20.610	0.977	5437.2	3454.1	10.360	5.463	3.14		Clay	100.0			19.48	0.88	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	21.680	1.050	5457.9	3464.2	10.941	5.538	3.12		Clay	100.0			20.49	0.88	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	21.270	1.103	5477.4	3473.8	10.669	5.949	3.15		Clay	100.0			20.10	0.88	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	21.750	1.085	5498.2	3483.9	10.908	5.708	3.13		Clay	100.0			20.56	0.88	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	21.160	1.091	5517.7	3493.4	10.535	5.927	3.16		Clay	100.0			20.00	0.88	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	21.740	1.044	5537.2	3503.0	10.832	5.504	3.13		Clay	100.0			20.55	0.88	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	21.530	1.001	5557.9	3513.1	10.675	5.339	3.12		Clay	100.0			20.35	0.87	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	20.970	0.925	5577.5	3522.6	10.323	5.089	3.12		Clay	100.0			19.82	0.87	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	20.360	0.804	5598.2	3532.8	9.942	4.577	3.11		Clay	100.0			19.24	0.87	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	19.330	0.695	5617.7	3542.3	9.328	4.208	3.11		Clay	100.0			18.27	0.87	n.a.	n.a.	0.80	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	19.230	0.675	5637.2	3551.8	9.241	4.114	3.10		Clay	100.0			18.18	0.87	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	19.840	0.826	5658.0	3562.0	9.551	4.857	3.14		Clay	100.0			18.75	0.87	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	20.260	0.841	5677.5	3571.5	9.756	4.827	3.13		Clay	100.0			19.15	0.87	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	20.530	0.843	5698.2	3581.6	9.873	4.770	3.12		Clay	100.0			19.40	0.87	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	20.250	0.799	5717.8	3591.2	9.685	4.595	3.12		Clay	100.0			19.14	0.87	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	20.630	0.765	5737.3	3600.7	9.865	4.307	3.09		Clay	100.0			19.50	0.87	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	20.420	0.747	5758.0	3610.8	9.716	4.258	3.10		Clay	100.0			19.30	0.87	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	20.070	0.757	5777.5	3620.4	9.491	4.407	3.11		Clay	100.0			18.97	0.87	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	20.450	0.779	5798.3	3630.5	9.669	4.436	3.11		Clay	100.0			19.33	0.87	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	20.750	0.777	5817.8	3640.0	9.803	4.356	3.10		Clay	100.0			19.61	0.87	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	20.540	0.743	5837.3	3649.6	9.657	4.216	3.10		Clay	100.0			19.41	0.87	n.a.	n.a.	0.79	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	19.980	0.712	5858.1	3659.7	9.318	4.177	3.11		Clay	100.0			18.88	0.87	n.a.	n.a.	0.78	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	20.030	0.737	5877.6	3669.2	9.316	4.309	3.11		Clay	100.0			18.93	0.86	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	20.240	0.737	5898.3	3679.4	9.399	4.259	3.11		Clay	100.0			19.13	0.86	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	20.450	0.714	5917.8	3688.9	9.483	4.081	3.09		Clay	100.0			19.33	0.86	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	19.870	0.687	5937.4	3698.4	9.140	4.066	3.11		Clay	100.0			18.78	0.86	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	20.060	0.708	5958.1	3708.6	9.212	4.146	3.11		Clay	100.0			18.96	0.86	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	21.070	0.823	5977.6	3718.1	9.726	4.554	3.11		Clay	100.0			19.91	0.86	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	21.850	0.885	5998.4	3728.2	10.112	4.692	3.11		Clay	100.0			20.65	0.86	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	22.600	0.933	6017.9	3737.8	10.483	4.762	3.10		Clay	100.0			21.36	0.86	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	22.420	0.896	6037.4	3747.3	10.355	4.618	3.09		Clay	100.0			21.19	0.86	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	22.900	0.910	6058.1	3757.5	10.577	4.578	3.09		Clay	100.0			21.64	0.86	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	22.810	0.977	6077.7	3767.0	10.497	4.941	3.11		Clay	100.0			21.56	0.86	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	24.090	1.032	6098.4	3777.1	11.141	4.904	3.09		Clay	100.0			22.77	0.86	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	24.820	1.021	6117.9	3786.7	11.494	4.693	3.06		Clay	100.0			23.46	0.86	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	24.120	0.956	6137.4	3796.2	11.091	4.542	3.07		Clay	100.0			22.80	0.86	n.a.	n.a.	0.77	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	24.180	0.900	6158.2	3806.3	11.087	4.264	3.05		Clay	100.0			22.85	0.86	n.a.	n.a.	0.77	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	24.530	0.881	6177.7	3815.9	11.238	4.110	3.04		Clay	100.0			23.19	0.86	n.a.	n.a.	0.77	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	24.740	0.869	6198.4	3826.0	11.313	4.017	3.03		Clay	100.0			23.38	0.86	n.a.	n.a.	0.77	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.180	24.180	0.813	6218.0	3835.5	10.987	3.858	3.03		Clay	100.0			22.85	0.85	n.a.	n.a.	0.77	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.350	24.050	0.829	6238.7	3845.7	10.885	3.959	3.04		Clay	100.0			22.73	0.85	n.a.	n.a.	0.77	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.510	24.390	0.801	6258.2	3855.2	11.030	3.766	3.02		Clay	100.0			23.05	0.85	n.a.	n.a.	0.77	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.670	23.890	0.758	6277.7	3864.7	10.739	3.655	3.02		Clay	100.0			22.58	0.85	n.a.	n.a.	0.77	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.840	23.380	0.737	6298.5	3874.9	10.442	3.643	3.03		Clay	100.0			22.10	0.85	n.a.	n.a.	0.77	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.000	23.490	0.728	6318.0	3884.4	10.468	3.579	3.02		Clay	100.0			22.20	0.85	n.a.	n.a.	0.76	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.170	23.970	0.748	6338.7	3894.5	10.682	3.597	3.02		Clay	100.0			22.66	0.85	n.a.	n.a.	0.76	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.330	24.110	0.727	6358.3	3904.1	10.723	3.473	3.01		Clay	100.0			22.79	0.85	n.a.	n.a.	0.76	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.490	23.670	0.798	6377.8	3913.6	10.467	3.896	3.05		Clay	100.0			22.37	0.85	n.a.	n.a.	0.76	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.660	24.540	0.861	6398.5	3923.7	10.878	4.036	3.04		Clay	100.0			23.19	0.85	n.a.	n.a.	0.76	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.820	25.620	0.857	6418.0	3933.3	11.396	3.826	3.01		Clay	100.0			24.22	0.85	n.a.	n.a.	0.76	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.990	25.450	0.894	6438.8	3943.4	11.275	4.020	3.03		Clay	100.0			24.05	0.85	n.a.	n.a.	0.76	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.150	26.520	0.902	6458.3	3952.9	11.784	3.871	3.00		Clay	100.0			25.07	0.85	n.a.	n.a.	0.76	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.310	27.760	0.971	6477.8	3962.5	12.377	3.959	2.99		Clay	100.0			26.24	0.85	n.a.	n.a.	0.76	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.480	28.900	1.066	6498.6	3972.6	12.914	4.157	2.99		Clay	100.0			27.32	0.85	n.a.	n.a.	0.76	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.640	28.480	1.112	6518.1	3982.1	12.667	4.407	3.01		Clay	100.0			26.92	0.85	n.a.	n.a.	0.76	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.810	27.950	1.153	6538.8	3992.3	12.364	4.670	3.04		Clay	100.0			26.42	0.85	n.a.	n.a.	0.76	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.970	28.270	1.172	6558.3	4001.8	12.490	4.690	3.03		Clay	100.0			26.72	0.85	n.a.	n.a.	0.75	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.130	29.490	1.110	6577.9	4011.3	13.063	4.238	2.99		Clay	100.0			27.87	0.84	n.a.	n.a.	0.75	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.300	29.460	1.057	6598.6	4021.5	13.010	4.041	2.98		Clay	100.0			27.84	0.84	n.a.	n.a.	0.75	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.460	29.090	1.011	6618.1	4031.0	12.791	3.920	2.98		Clay	100.0			27.50	0.84	n.a.	n.a.	0.75	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.630	30.320	1.080	6638.9	4041.1	13.363	4.000	2.97		Clay	100.0			28.66	0.84	n.a.	n.a.	0.75	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.790	31.710	1.167	6658.4	4050.7	14.013	4.112	2.96		Clay	99.8			29.97	0.84	n.a.	n.a.	0.75	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.950	33.670	1.319	6677.9	4060.2	14.941	4.348	2.95		Clay	99.3			31.82	0.84	n.a.	n.a.	0.75	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
55.120	38.120	1.502	6698.6	4070.4	17.085	4.320	2.91		Clay	95.5			36.03	0.84	n.a.	n.a.	0.75	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.280	39.760	1.447	6718.2	4079.9	17.844	3.975	2.87		Clay	92.5			37.58	0.84	n.a.	n.a.	0.75	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.450	36.890	1.408	6738.9	4090.0	16.391	4.200	2.91		Clay	96.0			34.87	0.84	n.a.	n.a.	0.75	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.610	37.910	1.437	6758.4	4099.6	16.846	4.160	2.90		Clay	95.1			35.83	0.84	n.a.	n.a.	0.75	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.770	43.150	1.543	6777.9	4109.1	19.353	3.880	2.84		Clay	89.8			40.78	0.84	n.a.	n.a.	0.74	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.940	42.940	1.633	6798.7	4119.2	19.198	4.129	2.86		Clay	91.4			40.59	0.84	n.a.	n.a.	0.74	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.100	42.170	1.600	6818.2	4128.8	18.776	4.128	2.86		Clay	92.0			39.86	0.84	n.a.	n.a.	0.74	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.270	42.760	1.525	6838.9	4138.9	19.010	3.877	2.84		Clay	90.3			40.42	0.84	n.a.	n.a.	0.74	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.430	40.540	1.396	6858.5	4148.4	17.891	3.762	2.85		Clay	91.2			38.32	0.84	n.a.	n.a.	0.74	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.590	36.040	1.177	6878.0	4158.0	15.681	3.611	2.89		Clay	93.9			34.06	0.84	n.a.	n.a.	0.74	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.760	32.640	1.042	6898.7	4168.1	14.007	3.568	2.92		Clay	96.8			30.85	0.84	n.a.	n.a.	0.74	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.920	31.200	0.909	6918.2	4177.6	13.281	3.275	2.92		Clay	96.5			29.49	0.84	n.a.	n.a.	0.74	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.090	29.620	0.822	6939.0	4187.8	12.489	3.143	2.93		Clay	97.4			28.00	0.84	n.a.	n.a.	0.74	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.250	27.620	0.729	6958.5	4197.3	11.503	3.019	2.95		Clay	98.9			26.11	0.83	n.a.	n.a.	0.74	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.410	25.810	0.704	6978.0	4206.8	10.612	3.153	2.99		Clay	100.0			24.40	0.83	n.a.	n.a.	0.74	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.580	23.900	0.688	6998.8	4217.0	9.675	3.373	3.04		Clay	100.0			22.59	0.83	n.a.	n.a.	0.74	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.740	23.380	0.744	7018.3	4226.5	9.403	3.745	3.07		Clay	100.0			22.10	0.83	n.a.	n.a.	0.73	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.910	23.870	0.732	7039.0	4236.6	9.607	3.596	3.06		Clay	100.0			22.56	0.83	n.a.	n.a.	0.73	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.070	23.750	0.648	7058.5	4246.2	9.524	3.205	3.03		Clay	100.0			22.45	0.83	n.a.	n.a.	0.73	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.230	22.910	0.564	7078.1	4255.7	9.104	2.911	3.02		Clay	100.0			21.65	0.83	n.a.	n.a.	0.73	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.400	22.310	0.546	7098.8	4265.8	8.796	2.909	3.04		Clay	100.0			21.09	0.83	n.a.	n.a.	0.73	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.560	22.370	0.603	7118.3	4275.4	8.800	3.204	3.06		Clay	100.0			21.14	0.83	n.a.	n.a.	0.73	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.730	22.770	0.550	7139.1	4285.5	8.961	2.863	3.02		Clay	100.0			21.52	0.83	n.a.	n.a.	0.73	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.890	23.570	0.577	7158.6	4295.0	9.309	2.888	3.01		Clay	100.0			22.28	0.83	n.a.	n.a.	0.73	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.060	22.790	0.563	7179.3	4305.2	8.920	2.934	3.03		Clay	100.0			21.54	0.83	n.a.	n.a.	0.73	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.220	22.610	0.597	7198.8	4314.7	8.812	3.142	3.05		Clay	100.0			21.37	0.83	n.a.	n.a.	0.73	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.380	22.660	0.689	7218.4	4324.2	8.811	3.616	3.09		Clay	100.0			21.42	0.83	n.a.	n.a.	0.73	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.550	23.090	0.744	7239.1	4334.4	8.984	3.822	3.10		Clay	100.0			21.82	0.83	n.a.	n.a.	0.73	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.710	23.030	0.694	7258.6	4343.9	8.932	3.578	3.08		Clay	100.0			21.77	0.83	n.a.	n.a.	0.73	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.880	23.200	0.640	7279.4	4354.0	8.985	3.273	3.06		Clay	100.0			21.93	0.83	n.a.	n.a.	0.72	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.040	23.720	0.591	7298.9	4363.6	9.199	2.943	3.02		Clay	100.0			22.42	0.83	n.a.	n.a.	0.72	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.200	23.700	0.511	7318.4	4373.1	9.165	2.550	2.99		Clay	100.0			22.40	0.83	n.a.	n.a.	0.72	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.370	23.920	0.477	7339.1	4383.3	9.240	2.355	2.97		Clay	100.0			22.61	0.83	n.a.	n.a.	0.72	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.530	23.790	0.503	7358.7	4392.8	9.156	2.503	2.99		Clay	100.0			22.49	0.82	n.a.	n.a.	0.72	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.700	23.750	0.540	7379.4	4402.9	9.112	2.692	3.00		Clay	100.0			22.45	0.82	n.a.	n.a.	0.72	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.860	25.290	0.555	7398.9	4412.5	9.786	2.572	2.97		Clay	100.0			23.90	0.82	n.a.	n.a.	0.72	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.020	27.530	0.588	7418.4	4422.0	10.774	2.468	2.92		Clay	96.8			26.02	0.82	n.a.	n.a.	0.72	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.190	29.460	0.831	7439.2	4432.1	11.615	3.229	2.96		Clay	100.0			27.84	0.82	n.a.	n.a.	0.72	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.350	29.260	1.005	7458.7	4441.7	11.496	3.937	3.02		Clay	100.0			27.66	0.82	n.a.	n.a.	0.72	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.520	36.630	1.412	7479.4	4451.8	14.776	4.294	2.95		Clay	99.3			34.62	0.82	n.a.	n.a.	0.72	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.680	41.940	1.705	7499.0	4461.3	17.121	4.463	2.92		Clay	96.2			39.64	0.82	n.a.	n.a.	0.72	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.840	58.160	2.025	7518.5	4470.9	24.336	3.722	2.75		Clay	82.8			54.97	0.82	n.a.	n.a.	0.71	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.010	68.510	2.009	7539.2	4481.0	28.896	3.104	2.64		Clay	74.2			64.75	0.82	n.a.	n.a.	0.71	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.170	76.320	2.196	7558.7	4490.5	47.066	3.027	2.47		Sand	61.0			72.14	0.70	50.69	113.90	0.71	0.586	0.911	0.159	0.194	0.33	0.03	0.00
62.340	93.350	2.274	7579.5	4500.7	58.043	2.539	2.36		Sand	51.5			88.23	0.72	63.09	126.44	0.71	0.586	0.901	0.187	0.242	0.41	0.03	0.00
62.500	86.720	2.432	7599.0	4510.2	53.683	2.932	2.42		Sand	56.9			81.97	0.71	58.20	122.26	0.71	0.585	0.904	0.176	0.224	0.38	0.03	0.00
62.660	56.540	2.376	7618.5	4519.7	23.334	4.506	2.82		Clay	88.3			53.44	0.82	n.a.	n.a.	0.71	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.830	76.870	2.366	7639.3	4529.9	32.253	3.239	2.62		Clay	72.2			72.66	0.82	n.a.	n.a.	0.71	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.990	93.980	2.554	7658.8	4539.4	58.176	2.833	2.39		Sand	54.1			88.83	0.71	63.40	127.87	0.71	0.584	0.899	0.191	0.249	0.43	0.02	0.00
63.160	93.980	2.576	7679.5	4549.5	58.104	2.858	2.39		Sand	54.3			88.83	0.71	63.34	127.88	0.71	0.583	0.898	0.191	0.249	0.43	0.02	0.00
63.320	72.620	2.657	7699.0	4559.1	30.169	3.864	2.69		Clay	78.1			68.64	0.82	n.a.	n.a.	0.71	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.480	62.260	2.887	7718.6	4568.6	25.566	4.943	2.81		Clay	88.1			58.85	0.82	n.a.	n.a.	0.71	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.650	65.980	2.909	7739.3	4578.7	27.130	4.684	2.78		Clay	85.3			62.36	0.82	n.a.	n.a.	0.71	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.810	72.460	2.830	7758.8	4588.3	29.894	4.127	2.71		Clay	79.8			68.49	0.82	n.a.	n.a.	0.71	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.980	78.790	2.841	7779.6	4598.4	32.577	3.793	2.66		Clay	75.7			74.47	0.81	n.a.	n.a.	0.70	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.140	87.100	2.167	7799.1	4607.9	53.290	2.604	2.39		Sand	54.2			82.33	0.70	57.76	120.77	0.70	0.581	0.902	0.173	0.217	0.37	0.03	0.00
64.300	71.600	1.699	7818.6	4617.5	43.311	2.510	2.45		Sand	58.7			67.67	0.69	46.49	107.86	0.70	0.580	0.912	0.149	0.177	0.30	0.03	0.00
64.470	44.720	1.689	7839.3	4627.6	17.633	4.139	2.88		Clay	93.7			42.27	0.81	n.a.	n.a.	0.70	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.630	36.840	1.376	7858.9	4637.1	14.194	4.180	2.96		Clay	99.8			34.82	0.81	n.a.	n.a.	0.70	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.800	49.250	2.173	7879.6	4647.3	19.500	4.795	2.89		Clay	94.4			46.55	0.81	n.a.	n.a.	0.70	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.960	53.160	1.304	7899.1	4656.8	21.135	2.650	2.70		Clay	79.2			50.25	0.81	n.a.	n.a.	0.70	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.120	77.130	0.922	7918.6	4666.4	46.572	1.260	2.23		Sand	41.7			72.90	0.68	49.55	104.50	0.70	0.578	0.913	0.143	0.168	0.29	0.03	0.00
65.290	161.660	0.964	7939.4	4676.5	100.258	0.611	1.78		Sand	5.4			152.80	0.68	103.64	103.94	0.70	0.577	0.913	0.143	0.167	0.29	0.03	0.00
65.450	178.130	1.204	7958.9	4686.0	110.610	0.691	1.78		Sand	5.1			168.36	0.69	116.50	116.70	0.70	0.577	0.904	0.164	0.202	0.35	0.03	0.00
65.620	185.580	1.546	7979.6	4696.2	115.211	0.851	1.82		Sand	8.5			175.41	0.70	123.29	127.64	0.70	0.576	0.894	0.190	0.246	0.43	0.02	0.00
65.780	156.300	2.160	7999.2	4705.7	96.530	1.418	2.02		Sand	24.7			147.73	0.73	107.93	156.47	0.70	0.576	0.865	0.338	0.510	0.89	0.01	0.00
65.940	157.700	2.123	8018.7	4715.2	97.312	1.382	2.01		Sand	23.9			149.05	0.73	108.71	155.78	0.70	0.575	0.865	0.332	0.499	0.87	0.01	0.00

CPT No.	1

PGA (A_{max})	0.70

Total Settlement:	0.31	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
66.110	161.690	2.003	8039.4	4725.4	99.725	1.271	1.98		Sand	21.3			152.83	0.73	110.92	152.70	0.69	0.575	0.868	0.307	0.454	0.79	0.01	0.00
66.270	187.260	1.822	8058.9	4734.9	115.775	0.994	1.86		Sand	11.8			176.99	0.71	126.28	140.58	0.69	0.575	0.881	0.237	0.327	0.57	0.02	0.00
66.440	231.500	2.562	8079.7	4745.0	143.568	1.126	1.83		Sand	9.2			218.81	0.74	161.81	168.80	0.69	0.574	0.847	0.484	0.785	1.37	0.00	0.00
66.600	252.450	2.715	8099.2	4754.6	156.628	1.093	1.79		Sand	6.3			238.61	0.75	178.64	179.75	0.69	0.574	0.829	0.719	1.243	2.17	0.00	0.00
66.770	280.120	2.416	8119.9	4764.7	173.883	0.875	1.69		Sand	0.0			264.76	0.77	203.36	203.36	0.69	0.573	0.778	2.296	3.930	6.86	0.00	0.00
66.930	309.880	2.527	8139.5	4774.2	192.430	0.826	1.64		Sand	0.0			292.89	0.79	231.32	231.32	0.69	0.573	0.756	18.500	30.765	53.72	0.00	0.00
67.090	414.470	1.601	8159.0	4783.8	257.979	0.390	1.33		Sand	0.0			391.75	0.81	315.90	315.90	0.69	0.572	0.755	#########	########	##########	0.00	0.00
67.260	464.750	2.100	8179.7	4793.9	289.273	0.456	1.34		Sand	0.0			439.27	0.81	354.02	354.02	0.69	0.572	0.755	#########	########	##########	0.00	0.00
67.420	474.840	2.615	8199.2	4803.4	295.310	0.556	1.39		Sand	0.0			448.81	0.81	361.52	361.52	0.69	0.571	0.754	#########	########	##########	0.00	0.00
67.590	457.370	2.249	8220.0	4813.6	284.044	0.496	1.37		Sand	0.0			432.30	0.81	348.02	348.02	0.69	0.571	0.753	#########	########	##########	0.00	0.00
67.750	451.820	2.420	8239.5	4823.1	280.283	0.541	1.40		Sand	0.0			427.05	0.80	343.62	343.62	0.69	0.570	0.753	#########	########	##########	0.00	0.00
67.910	459.300	3.760	8259.0	4832.6	284.678	0.826	1.52		Sand	0.0			434.12	0.80	349.13	349.13	0.69	0.570	0.752	#########	########	##########	0.00	0.00
68.080	496.060	2.399	8279.8	4842.8	307.341	0.488	1.34		Sand	0.0			468.87	0.80	376.86	376.86	0.69	0.569	0.752	#########	########	##########	0.00	0.00
68.240	513.600	2.300	8299.3	4852.3	317.980	0.451	1.30		Sand	0.0			485.44	0.80	389.99	389.99	0.68	0.569	0.751	#########	########	##########	0.00	0.00
68.410	489.450	1.877	8320.0	4862.4	302.584	0.387	1.28		Sand	0.0			462.62	0.80	371.44	371.44	0.68	0.568	0.750	#########	########	##########	0.00	0.00
68.570	485.000	2.148	8339.5	4872.0	299.510	0.447	1.32		Sand	0.0			458.41	0.80	367.88	367.88	0.68	0.568	0.750	#########	########	##########	0.00	0.00
68.730	499.110	2.280	8359.1	4881.5	307.992	0.461	1.32		Sand	0.0			471.75	0.80	378.38	378.38	0.68	0.568	0.749	#########	########	##########	0.00	0.00
68.900	469.210	1.857	8379.8	4891.6	289.079	0.399	1.30		Sand	0.0			443.49	0.80	355.52	355.52	0.68	0.567	0.749	#########	########	##########	0.00	0.00
69.060	431.700	1.704	8399.3	4901.2	265.496	0.399	1.33		Sand	0.0			408.03	0.80	326.93	326.93	0.68	0.567	0.748	#########	########	##########	0.00	0.00
69.230	392.240	1.805	8420.1	4911.3	240.735	0.465	1.40		Sand	0.0			370.74	0.80	296.89	296.89	0.68	0.566	0.747	#########	########	728524.69	0.00	0.00
69.390	355.680	2.004	8439.6	4920.8	217.835	0.570	1.49		Sand	0.0			336.18	0.80	269.08	269.08	0.68	0.566	0.747	1693.392	2782.229	4917.97	0.00	0.00
69.550	368.810	1.487	8459.1	4930.4	225.749	0.408	1.39		Sand	0.0			348.59	0.80	278.87	278.87	0.68	0.565	0.746	8183.169	13434.419	23765.97	0.00	0.00
69.720	418.710	1.666	8479.8	4940.5	256.377	0.402	1.34		Sand	0.0			395.76	0.80	316.43	316.43	0.68	0.565	0.746	#########	########	##########	0.00	0.00
69.880	526.900	1.404	8499.4	4950.0	322.982	0.269	1.16		Sand	0.0			498.02	0.80	397.99	397.99	0.68	0.564	0.745	#########	########	##########	0.00	0.00
70.050	587.130	3.499	8520.1	4960.2	359.828	0.600	1.35		Sand	0.0			554.94	0.80	443.24	443.24	0.68	0.564	0.744	#########	########	##########	0.00	0.00
70.210	635.980	2.393	8539.6	4969.7	389.605	0.379	1.19		Sand	0.0			601.12	0.80	479.87	479.87	0.68	0.563	0.744	#########	########	##########	0.00	0.00
70.370	651.630	2.771	8559.1	4979.3	398.868	0.428	1.22		Sand	0.0			615.91	0.80	491.43	491.43	0.68	0.563	0.743	#########	########	##########	0.00	0.00
70.540	613.970	2.486	8579.9	4989.4	375.276	0.408	1.22		Sand	0.0			580.31	0.80	462.78	462.78	0.67	0.563	0.743	#########	########	##########	0.00	0.00
70.700	542.650	3.491	8599.4	4998.9	331.054	0.648	1.40		Sand	0.0			512.90	0.80	408.82	408.82	0.67	0.562	0.742	#########	########	##########	0.00	0.00
70.870	557.840	3.482	8620.1	5009.1	340.044	0.629	1.39		Sand	0.0			527.26	0.80	420.04	420.04	0.67	0.562	0.741	#########	########	##########	0.00	0.00
71.030	533.780	2.712	8639.7	5018.6	324.949	0.512	1.33		Sand	0.0			504.52	0.80	401.72	401.72	0.67	0.561	0.741	#########	########	##########	0.00	0.00
71.190	453.100	1.833	8659.2	5028.1	275.165	0.408	1.32		Sand	0.0			428.26	0.80	340.83	340.83	0.67	0.561	0.740	#########	########	##########	0.00	0.00
71.360	469.380	2.189	8679.9	5038.3	284.854	0.471	1.35		Sand	0.0			443.65	0.80	352.89	352.89	0.67	0.560	0.740	#########	########	##########	0.00	0.00
71.520	470.910	2.433	8699.4	5047.8	285.515	0.521	1.38		Sand	0.0			445.09	0.80	353.86	353.86	0.67	0.560	0.739	#########	########	##########	0.00	0.00
71.690	512.440	2.599	8720.2	5057.9	310.612	0.512	1.35		Sand	0.0			484.35	0.79	384.87	384.87	0.67	0.559	0.739	#########	########	##########	0.00	0.00
71.850	510.810	3.761	8739.7	5067.5	309.318	0.743	1.47		Sand	0.0			482.81	0.79	383.45	383.45	0.67	0.559	0.738	#########	########	##########	0.00	0.00
72.010	527.600	2.866	8759.2	5077.0	319.267	0.548	1.36		Sand	0.0			498.68	0.79	395.86	395.86	0.67	0.558	0.737	#########	########	##########	0.00	0.00
72.180	496.220	3.292	8780.0	5087.1	299.813	0.669	1.44		Sand	0.0			469.02	0.79	372.12	372.12	0.67	0.558	0.737	#########	########	##########	0.00	0.00
72.340	437.540	3.154	8799.5	5096.7	263.790	0.728	1.51		Sand	0.0			413.55	0.79	327.95	327.95	0.67	0.558	0.736	#########	########	##########	0.00	0.00
72.510	401.210	2.141	8820.2	5106.8	241.418	0.539	1.45		Sand	0.0			379.22	0.79	300.56	300.56	0.67	0.557	0.736	#########	########	1604659.99	0.00	0.00
72.670	330.370	1.954	8839.7	5116.3	198.127	0.600	1.54		Sand	0.0			312.26	0.79	245.21	245.21	0.67	0.557	0.735	75.200	121.619	218.47	0.00	0.00
72.830	285.160	2.576	8859.3	5125.9	170.482	0.917	1.71		Sand	0.0			269.53	0.75	201.79	201.79	0.66	0.556	0.763	2.093	3.512	6.31	0.00	0.00
73.000	262.290	3.070	8880.0	5136.0	156.432	1.191	1.82		Sand	8.5			247.91	0.74	182.33	187.53	0.66	0.556	0.797	1.002	1.757	3.16	0.00	0.00
73.160	250.390	2.512	8899.5	5145.5	149.069	1.021	1.79		Sand	5.9			236.66	0.72	170.29	171.00	0.66	0.555	0.828	0.521	0.839	1.51	0.00	0.00
73.330	256.400	2.649	8920.3	5155.7	152.555	1.051	1.79		Sand	6.0			242.34	0.72	175.47	176.28	0.66	0.555	0.818	0.629	1.044	1.88	0.00	0.00
73.490	356.890	2.605	8939.8	5165.2	213.201	0.739	1.58		Sand	0.0			337.33	0.79	266.56	266.56	0.66	0.554	0.732	1163.919	1875.080	3381.79	0.00	0.00
73.650	407.200	2.501	8959.3	5174.7	243.406	0.621	1.48		Sand	0.0			384.88	0.79	303.99	303.99	0.66	0.554	0.732	#########	########	3447231.11	0.00	0.00
73.820	404.100	1.549	8980.0	5184.9	241.290	0.388	1.36		Sand	0.0			381.95	0.79	301.52	301.52	0.66	0.554	0.731	#########	########	1980728.17	0.00	0.00
73.980	425.260	2.242	8999.6	5194.4	253.828	0.533	1.43		Sand	0.0			401.95	0.79	317.16	317.16	0.66	0.553	0.731	#########	########	##########	0.00	0.00
74.150	502.840	2.590	9020.3	5204.5	300.329	0.520	1.36		Sand	0.0			475.27	0.79	374.82	374.82	0.66	0.553	0.730	#########	########	##########	0.00	0.00
74.310	529.010	2.229	9039.8	5214.1	315.806	0.425	1.29		Sand	0.0			500.01	0.79	394.14	394.14	0.66	0.552	0.729	#########	########	##########	0.00	0.00
74.480	535.790	3.206	9060.6	5224.2	319.572	0.603	1.39		Sand	0.0			506.42	0.79	398.99	398.99	0.66	0.552	0.729	#########	########	##########	0.00	0.00
74.640	562.180	1.906	9080.1	5233.7	335.135	0.342	1.21		Sand	0.0			531.36	0.79	418.44	418.44	0.66	0.551	0.728	#########	########	##########	0.00	0.00
74.800	537.590	1.861	9099.6	5243.3	320.059	0.349	1.23		Sand	0.0			508.12	0.79	399.94	399.94	0.66	0.551	0.728	#########	########	##########	0.00	0.00
74.970	569.600	2.356	9120.3	5253.4	338.946	0.417	1.26		Sand	0.0			538.37	0.79	423.54	423.54	0.66	0.551	0.727	#########	########	##########	0.00	0.00
75.130	615.430	2.325	9139.9	5262.9	366.100	0.381	1.21		Sand	0.0			581.69	0.79	457.40	457.40	0.66	0.550	0.727	#########	########	##########	0.00	0.00
75.300	658.800	2.155	9160.6	5273.1	391.709	0.329	1.15		Sand	0.0			622.68	0.79	489.38	489.38	0.65	0.550	0.726	#########	########	##########	0.00	0.00
75.460	551.180	3.028	9180.1	5282.6	326.971	0.554	1.36		Sand	0.0			520.96	0.79	409.24	409.24	0.65	0.549	0.726	#########	########	##########	0.00	0.00
75.620	492.880	2.556	9199.6	5292.2	291.827	0.523	1.38		Sand	0.0			465.86	0.79	365.78	365.78	0.65	0.549	0.725	#########	########	##########	0.00	0.00
75.790	449.130	3.107	9220.4	5302.3	265.419	0.699	1.49		Sand	0.0			424.51	0.78	333.15	333.15	0.65	0.548	0.724	#########	########	##########	0.00	0.00
75.950	417.830	4.906	9239.9	5311.8	246.503	1.187	1.68		Sand	0.0			394.92	0.78	309.78	309.78	0.65	0.548	0.724	#########	########	##########	0.00	0.00
76.120	363.740	5.337	9260.6	5322.0	214.025	1.486	1.80		Sand	6.9			343.80	0.78	269.54	271.90	0.65	0.547	0.723	2617.324	4164.878	7607.09	0.00	0.00
76.280	302.430	2.816	9280.2	5331.5	177.320	0.946	1.71		Sand	0.0			285.85	0.75	214.51	214.51	0.65	0.547	0.723	4.748	7.550	13.80	0.00	0.00
76.440	328.600	1.741	9299.7	5341.0	192.725	0.537	1.52		Sand	0.0			310.59	0.77	239.60	239.60	0.65	0.547	0.722	41.299	65.621	120.04	0.00	0.00
76.610	347.490	2.050	9320.4	5351.2	203.764	0.598	1.53		Sand	0.0			328.44	0.78	257.13	257.13	0.65	0.546	0.722	315.754	501.311	917.77	0.00	0.00
76.770	342.710	3.916	9339.9	5360.7	200.738	1.158	1.74		Sand	1.8			323.92	0.78	253.29	253.29	0.65	0.546	0.721	193.865	307.565	563.50	0.00	0.00
76.940	293.260	5.096	9360.7	5370.8	171.205	1.766	1.92		Sand	16.5			277.18	0.78	216.79	256.07	0.65	0.545	0.721	275.187	436.238	799.88	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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	$CRR_{M=7.5}$, σ'_{vc} = 1 atm	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
77.100	208.010	5.435	9380.2	5380.4	120.516	2.673	2.15		Sand	35.4			196.61	0.75	148.24	221.01	0.65	0.545	0.720	7.715	12.221	22.43	0.00	0.00
77.260	157.910	5.172	9399.7	5389.9	90.734	3.376	2.31		Sand	47.9			149.25	0.72	106.89	180.06	0.65	0.545	0.802	0.728	1.221	2.24	0.00	0.00
77.430	234.470	4.362	9420.5	5400.0	135.940	1.898	2.01		Sand	23.6			221.62	0.76	167.40	223.54	0.65	0.544	0.719	9.448	14.944	27.46	0.00	0.00
77.590	332.100	3.166	9440.0	5409.6	193.528	0.967	1.69		Sand	0.0			313.89	0.77	241.90	241.90	0.65	0.544	0.718	52.464	82.920	152.51	0.00	0.00
77.760	405.980	2.926	9460.7	5419.7	236.973	0.729	1.54		Sand	0.0			383.72	0.78	299.40	299.40	0.65	0.543	0.718	#########	########	1247185.05	0.00	0.00
77.920	430.750	2.421	9480.2	5429.2	251.375	0.568	1.45		Sand	0.0			407.14	0.78	317.52	317.52	0.64	0.543	0.717	#########	########	##########	0.00	0.00
78.080	421.480	2.220	9499.8	5438.8	245.684	0.533	1.44		Sand	0.0			398.37	0.78	310.55	310.55	0.64	0.542	0.717	#########	########	##########	0.00	0.00
78.250	405.720	2.189	9520.5	5448.9	236.167	0.546	1.46		Sand	0.0			383.48	0.78	298.79	298.79	0.64	0.542	0.716	#########	########	1092287.10	0.00	0.00
78.410	393.960	1.951	9540.0	5458.4	229.034	0.501	1.44		Sand	0.0			372.36	0.78	289.99	289.99	0.64	0.542	0.716	62236.135	97994.594	180922.00	0.00	0.00
78.580	397.180	1.720	9560.8	5468.6	230.709	0.438	1.40		Sand	0.0			375.41	0.78	292.22	292.22	0.64	0.541	0.715	96494.206	########	280514.02	0.00	0.00
78.740	374.180	1.734	9580.3	5478.1	216.991	0.469	1.44		Sand	0.0			353.67	0.78	275.17	275.17	0.64	0.541	0.715	4417.074	6944.468	12840.80	0.00	0.00
78.900	337.790	1.858	9599.8	5487.6	195.439	0.558	1.52		Sand	0.0			319.27	0.77	246.23	246.23	0.64	0.540	0.714	84.258	132.373	244.95	0.00	0.00
79.070	287.240	1.549	9620.5	5497.8	165.611	0.548	1.58		Sand	0.0			271.49	0.73	197.60	197.60	0.64	0.540	0.756	1.655	2.752	5.10	0.00	0.00
79.230	276.780	1.044	9640.1	5507.3	159.334	0.384	1.50		Sand	0.0			261.61	0.72	187.89	187.89	0.64	0.540	0.780	1.019	1.749	3.24	0.00	0.00
79.400	250.550	1.057	9660.8	5517.4	143.828	0.430	1.57		Sand	0.0			236.81	0.69	164.49	164.49	0.64	0.539	0.825	0.423	0.647	1.20	0.01	0.00
79.560	287.950	1.604	9680.3	5527.0	165.571	0.567	1.59		Sand	0.0			272.16	0.73	197.79	197.79	0.64	0.539	0.754	1.672	2.774	5.15	0.00	0.00
79.720	336.480	2.844	9699.8	5536.5	193.780	0.858	1.65		Sand	0.0			318.03	0.77	244.11	244.11	0.64	0.538	0.711	66.616	104.266	193.66	0.00	0.00
79.890	362.810	3.177	9720.6	5546.6	208.968	0.888	1.64		Sand	0.0			342.92	0.78	265.94	265.94	0.64	0.538	0.711	1062.371	1661.527	3088.54	0.00	0.00
80.050	344.980	3.639	9740.1	5556.2	198.382	1.070	1.71		Sand	0.1			326.07	0.77	252.29	252.29	0.64	0.538	0.710	171.429	267.917	498.38	0.00	0.00
80.220	394.170	3.875	9760.8	5566.3	226.862	0.995	1.65		Sand	0.0			372.56	0.77	288.65	288.65	0.64	0.537	0.710	48062.630	75056.746	139728.98	0.00	0.00
80.380	394.990	3.030	9780.4	5575.8	227.139	0.777	1.57		Sand	0.0			373.34	0.77	289.12	289.12	0.64	0.537	0.709	52599.161	82081.772	152917.89	0.00	0.00
80.540	419.200	3.632	9799.9	5585.4	241.024	0.877	1.59		Sand	0.0			396.22	0.77	306.71	306.71	0.63	0.536	0.709	#########	########	6456894.80	0.00	0.00
80.710	400.180	3.437	9820.6	5595.5	229.745	0.870	1.60		Sand	0.0			378.24	0.77	292.65	292.65	0.63	0.536	0.708	#########	########	305712.38	0.00	0.00
80.870	384.670	2.770	9840.1	5605.1	220.536	0.729	1.56		Sand	0.0			363.58	0.77	281.18	281.18	0.63	0.536	0.708	12214.777	19019.227	35511.10	0.00	0.00
81.040	379.110	2.852	9860.9	5615.2	217.105	0.762	1.58		Sand	0.0			358.33	0.77	276.99	276.99	0.63	0.535	0.707	5957.957	9269.837	17321.08	0.00	0.00
81.200	392.670	2.793	9880.4	5624.7	224.776	0.720	1.55		Sand	0.0			371.14	0.77	286.77	286.77	0.63	0.535	0.707	33608.220	52252.554	97706.04	0.00	0.00
81.360	412.510	2.683	9899.9	5634.3	236.073	0.658	1.51		Sand	0.0			389.90	0.77	301.12	301.12	0.63	0.534	0.706	#########	########	1813821.93	0.00	0.00
81.530	428.100	3.365	9920.7	5644.4	244.877	0.795	1.56		Sand	0.0			404.63	0.77	312.35	312.35	0.63	0.534	0.706	#########	########	##########	0.00	0.00
81.690	464.930	2.860	9940.2	5653.9	265.961	0.622	1.46		Sand	0.0			439.44	0.77	339.07	339.07	0.63	0.534	0.705	#########	########	##########	0.00	0.00
81.860	497.260	3.602	9960.9	5664.1	284.394	0.732	1.49		Sand	0.0			470.00	0.77	362.48	362.48	0.63	0.533	0.705	#########	########	##########	0.00	0.00
82.020	522.450	3.618	9980.4	5673.6	298.689	0.699	1.46		Sand	0.0			493.81	0.77	380.67	380.67	0.63	0.533	0.704	#########	########	##########	0.00	0.00
82.190	512.190	2.840	10001.2	5683.7	292.500	0.560	1.39		Sand	0.0			484.11	0.77	373.02	373.02	0.63	0.532	0.704	#########	########	##########	0.00	0.00
82.350	522.130	2.916	10020.7	5693.3	297.977	0.564	1.39		Sand	0.0			493.51	0.77	380.09	380.09	0.63	0.532	0.703	#########	########	##########	0.00	0.00
82.510	557.590	3.200	10040.2	5702.8	318.138	0.579	1.38		Sand	0.0			527.02	0.77	405.73	405.73	0.63	0.532	0.703	#########	########	##########	0.00	0.00
82.680	573.480	2.910	10061.0	5712.9	326.990	0.512	1.33		Sand	0.0			542.04	0.77	417.09	417.09	0.63	0.531	0.702	#########	########	##########	0.00	0.00
82.840	599.230	3.467	10080.5	5722.5	341.512	0.583	1.36		Sand	0.0			566.38	0.77	435.63	435.63	0.63	0.531	0.702	#########	########	##########	0.00	0.00
83.010	651.860	4.073	10101.2	5732.6	371.426	0.630	1.36		Sand	0.0			616.12	0.77	473.67	473.67	0.63	0.531	0.701	#########	########	##########	0.00	0.00
83.170	626.590	2.551	10120.7	5742.1	356.613	0.410	1.24		Sand	0.0			592.24	0.77	455.11	455.11	0.63	0.530	0.701	#########	########	##########	0.00	0.00
83.330	597.830	4.196	10140.3	5751.7	339.824	0.708	1.42		Sand	0.0			565.06	0.77	434.03	434.03	0.63	0.530	0.700	#########	########	##########	0.00	0.00
83.500	518.910	3.702	10161.0	5761.8	294.315	0.720	1.47		Sand	0.0			490.46	0.77	376.56	376.56	0.62	0.529	0.699	#########	########	##########	0.00	0.00
83.660	485.230	3.881	10180.5	5771.3	274.790	0.808	1.53		Sand	0.0			458.63	0.77	351.96	351.96	0.62	0.529	0.699	#########	########	##########	0.00	0.00
83.830	441.820	3.785	10201.3	5781.5	249.721	0.867	1.58		Sand	0.0			417.60	0.77	320.33	320.33	0.62	0.529	0.698	#########	########	##########	0.00	0.00
83.990	435.970	3.134	10220.8	5791.0	246.168	0.727	1.53		Sand	0.0			412.07	0.77	315.95	315.95	0.62	0.528	0.698	#########	########	##########	0.00	0.00
84.150	364.210	2.043	10240.3	5800.5	204.994	0.569	1.51		Sand	0.0			344.24	0.77	263.83	263.83	0.62	0.528	0.697	784.766	1204.177	2280.88	0.00	0.00
84.320	327.900	2.399	10261.0	5810.7	184.099	0.743	1.63		Sand	0.0			309.92	0.75	231.18	231.18	0.62	0.528	0.697	18.255	27.991	53.06	0.00	0.00
84.480	308.410	2.617	10280.6	5820.2	172.835	0.863	1.69		Sand	0.0			291.50	0.73	212.26	212.26	0.62	0.527	0.696	4.057	6.215	11.79	0.00	0.00
84.650	287.950	1.499	10301.3	5830.3	161.029	0.530	1.58		Sand	0.0			272.16	0.71	193.05	193.05	0.62	0.527	0.754	1.305	2.164	4.11	0.00	0.00
84.810	256.950	1.960	10320.8	5839.9	143.254	0.779	1.72		Sand	0.7			242.86	0.68	165.30	165.30	0.62	0.526	0.814	0.433	0.657	1.25	0.00	0.00
84.970	235.490	2.993	10340.3	5849.4	130.932	1.299	1.90		Sand	15.0			222.58	0.70	155.51	183.19	0.62	0.526	0.778	0.828	1.380	2.62	0.00	0.00
85.140	202.230	3.858	10361.1	5859.5	111.922	1.958	2.07		Sand	29.0			191.14	0.71	136.18	197.46	0.62	0.526	0.740	1.642	2.674	5.09	0.00	0.00
85.300	216.490	4.153	10380.6	5869.1	119.918	1.965	2.06		Sand	27.5			204.62	0.72	147.94	208.83	0.62	0.525	0.702	3.226	4.981	9.48	0.00	0.00
85.470	257.410	3.971	10401.3	5879.2	143.012	1.574	1.93		Sand	17.6			243.30	0.73	177.76	217.33	0.62	0.525	0.693	5.826	8.888	16.93	0.00	0.00
85.630	360.530	3.209	10420.9	5888.7	201.317	0.903	1.66		Sand	0.0			340.77	0.76	260.13	260.13	0.62	0.525	0.693	469.850	716.277	1365.19	0.00	0.00
85.790	433.540	2.866	10440.4	5898.3	242.481	0.669	1.51		Sand	0.0			409.77	0.76	312.67	312.67	0.62	0.524	0.692	#########	########	##########	0.00	0.00
85.960	460.600	2.614	10461.1	5908.4	257.573	0.574	1.44		Sand	0.0			435.35	0.76	332.04	332.04	0.62	0.524	0.692	#########	########	##########	0.00	0.00
86.120	504.690	3.268	10480.6	5918.0	282.279	0.654	1.45		Sand	0.0			477.02	0.76	363.66	363.66	0.62	0.524	0.691	#########	########	##########	0.00	0.00
86.290	541.040	3.417	10501.4	5928.1	302.558	0.638	1.42		Sand	0.0			511.38	0.76	389.68	389.68	0.62	0.523	0.691	#########	########	##########	0.00	0.00
86.450	541.510	3.265	10520.9	5937.6	302.575	0.609	1.41		Sand	0.0			511.82	0.76	389.85	389.85	0.62	0.523	0.690	#########	########	##########	0.00	0.00
86.610	503.720	2.754	10540.4	5947.2	281.021	0.552	1.40		Sand	0.0			476.11	0.76	362.49	362.49	0.61	0.523	0.690	#########	########	##########	0.00	0.00
86.780	488.890	2.493	10561.2	5957.3	272.422	0.515	1.39		Sand	0.0			462.09	0.76	351.66	351.66	0.61	0.522	0.689	#########	########	##########	0.00	0.00
86.940	461.290	2.554	10580.7	5966.8	256.664	0.560	1.44		Sand	0.0			436.00	0.76	331.67	331.67	0.61	0.522	0.689	#########	########	##########	0.00	0.00
87.110	427.830	3.181	10601.4	5977.0	237.623	0.753	1.55		Sand	0.0			404.38	0.76	307.48	307.48	0.61	0.522	0.688	#########	########	7727917.60	0.00	0.00
87.270	415.480	2.873	10620.9	5986.5	230.489	0.700	1.54		Sand	0.0			392.70	0.76	298.47	298.47	0.61	0.521	0.688	#########	########	1020143.64	0.00	0.00
87.430	438.510	2.784	10640.5	5996.0	243.231	0.643	1.49		Sand	0.0			414.47	0.76	314.89	314.89	0.61	0.521	0.688	#########	########	##########	0.00	0.00
87.600	455.720	2.692	10661.2	6006.2	252.675	0.598	1.46		Sand	0.0			430.74	0.76	327.10	327.10	0.61	0.520	0.687	#########	########	##########	0.00	0.00
87.760	453.250	2.665	10680.7	6015.7	251.084	0.595	1.46		Sand	0.0			428.40	0.76	325.19	325.19	0.61	0.520	0.687	#########	########	##########	0.00	0.00
87.930	477.170	2.793	10701.5	6025.8	264.265	0.592	1.44		Sand	0.0			451.01	0.76	342.20	342.20	0.61	0.520	0.686	#########	########	##########	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
88.090	521.370	2.584	10721.0	6035.4	288.787	0.501	1.37		Sand	0.0			492.79	0.76	373.74	373.74	0.61	0.519	0.686	#########	########	##########	0.00	0.00
88.250	482.530	2.560	10740.5	6044.9	266.834	0.537	1.41		Sand	0.0			456.08	0.76	345.75	345.75	0.61	0.519	0.685	#########	########	##########	0.00	0.00
88.420	499.630	2.958	10761.2	6055.0	276.160	0.599	1.43		Sand	0.0			472.24	0.76	357.85	357.85	0.61	0.519	0.685	#########	########	##########	0.00	0.00
88.580	502.770	2.851	10780.8	6064.6	277.690	0.573	1.42		Sand	0.0			475.21	0.76	359.95	359.95	0.61	0.518	0.684	#########	########	##########	0.00	0.00
88.750	457.220	3.252	10801.5	6074.7	252.043	0.720	1.52		Sand	0.0			432.16	0.76	327.19	327.19	0.61	0.518	0.684	#########	########	##########	0.00	0.00
88.910	434.110	3.613	10821.0	6084.2	238.958	0.843	1.58		Sand	0.0			410.31	0.76	310.53	310.53	0.61	0.518	0.683	#########	########	##########	0.00	0.00
89.070	442.900	2.500	10840.5	6093.8	243.662	0.571	1.46		Sand	0.0			418.62	0.76	316.68	316.68	0.61	0.518	0.683	#########	########	##########	0.00	0.00
89.240	435.040	2.253	10861.3	6103.9	239.079	0.524	1.44		Sand	0.0			411.19	0.76	310.93	310.93	0.61	0.517	0.682	#########	########	##########	0.00	0.00
89.400	420.160	2.158	10880.8	6113.4	230.613	0.520	1.45		Sand	0.0			397.13	0.76	300.17	300.17	0.61	0.517	0.682	#########	########	1470094.09	0.00	0.00
89.570	412.410	3.131	10901.5	6123.6	226.110	0.769	1.57		Sand	0.0			389.80	0.76	294.50	294.50	0.61	0.517	0.681	#########	########	444036.55	0.00	0.00
89.730	395.540	2.264	10921.1	6133.1	216.563	0.580	1.50		Sand	0.0			373.86	0.76	282.34	282.34	0.61	0.516	0.681	14989.161	22448.443	43485.91	0.00	0.00
89.900	413.120	2.234	10941.8	6143.2	226.131	0.548	1.47		Sand	0.0			390.47	0.75	294.76	294.76	0.60	0.516	0.680	#########	########	468023.77	0.00	0.00
90.060	488.050	2.145	10961.3	6152.8	267.483	0.445	1.36		Sand	0.0			461.29	0.75	348.08	348.08	0.60	0.516	0.680	#########	########	##########	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.70

Total Settlement: 0.18 (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	350.800	0.999	19.2	19.2	3480.721	0.285	0.68		Unsaturated	0.0			331.57	1.70	563.67	563.67	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	165.560	0.654	39.6	39.6	1143.742	0.395	0.91		Unsaturated	0.0			156.48	1.70	266.02	266.02	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	95.510	0.858	58.8	58.8	541.376	0.899	1.39		Unsaturated	0.0			90.27	1.70	153.47	153.47	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	88.700	1.264	79.2	79.2	433.151	1.425	1.61		Unsaturated	0.0			83.84	1.70	142.52	142.52	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	98.910	2.061	98.4	98.4	433.310	2.085	1.75		Unsaturated	3.0			93.49	1.70	158.93	158.93	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	127.890	6.391	117.6	117.6	512.514	5.000	2.06		Unsaturated	28.1			120.88	1.70	205.49	278.72	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	247.490	9.640	138.0	138.0	915.734	3.896	1.88		Unsaturated	13.4			233.92	1.70	397.67	435.62	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	622.340	12.483	157.2	157.2	2157.838	2.006	1.53		Unsaturated	0.0			588.22	1.70	999.98	999.98	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	531.680	9.224	177.6	177.6	1734.317	1.735	1.48		Unsaturated	0.0			502.53	1.70	854.31	854.31	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	397.950	8.363	196.8	196.8	1233.050	2.102	1.59		Unsaturated	0.0			376.13	1.70	639.43	639.43	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	304.030	6.532	216.0	216.0	899.099	2.149	1.64		Unsaturated	0.0			287.36	1.70	488.52	488.52	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	180.320	5.076	236.4	236.4	509.574	2.817	1.84		Unsaturated	9.9			170.43	1.70	289.74	302.12	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	118.500	4.031	255.6	255.6	321.915	3.405	2.00		Unsaturated	22.9			112.00	1.70	190.41	248.40	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	71.370	3.513	276.0	276.0	186.420	4.932	2.26		Unsaturated	43.6			67.46	1.70	114.68	187.10	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	51.710	2.433	295.2	295.2	130.481	4.718	2.33		Unsaturated	49.3			48.88	1.70	83.09	150.74	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	41.670	1.825	314.4	314.4	101.792	4.397	2.37		Unsaturated	52.5			39.39	1.70	66.96	131.76	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	34.060	1.409	334.8	334.8	80.535	4.156	2.41		Unsaturated	56.1			32.19	1.70	54.73	117.56	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	27.790	1.199	354.0	354.0	63.809	4.341	2.49		Unsaturated	62.6			26.27	1.70	44.65	106.58	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	24.860	0.997	374.4	374.4	55.440	4.039	2.51		Unsaturated	64.0			23.50	1.70	39.95	100.90	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	23.100	0.843	393.6	393.6	50.193	3.681	2.51		Unsaturated	64.1			21.83	1.70	37.12	97.28	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	20.250	0.735	412.8	412.8	42.892	3.669	2.56		Unsaturated	67.9			19.14	1.70	32.54	92.22	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	18.330	0.695	433.2	433.2	51.963	3.839	2.52		Unsaturated	64.3			17.33	1.70	29.45	87.47	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	19.350	0.714	452.4	452.4	39.092	3.735	2.60		Unsaturated	70.7			18.29	1.70	31.09	90.89	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	20.550	0.787	472.8	472.8	40.618	3.872	2.59		Unsaturated	70.6			19.42	1.70	33.02	93.37	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	21.810	0.723	492.0	492.0	42.269	3.350	2.54		Unsaturated	66.1			20.61	1.70	35.04	95.07	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	19.840	0.685	512.4	512.4	37.615	3.496	2.59		Unsaturated	70.1			18.75	1.70	31.88	91.80	0.99	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	18.360	0.701	531.6	531.6	44.979	3.873	2.56		Unsaturated	68.1			17.35	1.70	29.50	88.33	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	19.750	0.746	550.8	550.8	47.222	3.832	2.55		Unsaturated	66.6			18.67	1.70	31.73	90.91	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	21.910	0.791	571.2	571.2	39.339	3.656	2.59		Unsaturated	70.0			20.71	1.70	35.21	96.08	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	22.420	0.798	590.4	590.4	39.589	3.606	2.58		Unsaturated	69.5			21.19	1.70	36.02	97.04	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	22.040	0.718	610.8	610.8	38.236	3.302	2.57		Unsaturated	68.3			20.83	1.70	35.41	96.01	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	21.300	0.742	630.0	630.0	46.318	3.537	2.53		Unsaturated	65.1			20.13	1.70	34.22	93.79	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	20.400	0.783	649.2	649.2	43.388	3.899	2.58		Unsaturated	69.1			19.28	1.70	32.78	92.77	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	20.810	0.810	669.6	669.6	43.304	3.954	2.58		Unsaturated	69.5			19.67	1.70	33.44	93.70	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	23.090	0.844	688.8	688.8	47.164	3.709	2.54		Unsaturated	65.8			21.82	1.70	37.10	97.65	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	24.640	0.917	709.2	709.2	39.649	3.778	2.59		Unsaturated	70.6			23.29	1.70	39.59	101.86	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	24.630	0.860	728.4	728.4	39.091	3.544	2.58		Unsaturated	69.4			23.28	1.70	39.46	101.46	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	23.820	0.900	747.6	747.6	45.907	3.838	2.55		Unsaturated	67.3			22.51	1.68	37.89	99.00	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	21.720	0.889	768.0	768.0	40.995	4.165	2.61		Unsaturated	72.1			20.53	1.67	34.37	95.40	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	23.700	0.936	787.2	787.2	44.014	4.016	2.58		Unsaturated	69.5			22.40	1.64	36.82	98.06	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	28.230	1.059	807.6	807.6	42.572	3.804	2.57		Unsaturated	69.0			26.68	1.60	42.62	105.45	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	30.310	1.198	826.8	826.8	45.206	4.007	2.57		Unsaturated	68.8			28.65	1.57	44.98	108.44	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.050	32.460	1.356	846.0	846.0	47.889	4.233	2.57		Unsaturated	68.7			30.68	1.54	47.36	111.51	0.99	0.448	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.220	33.730	1.442	866.4	866.4	49.183	4.330	2.57		Unsaturated	68.7			31.88	1.52	48.53	113.00	0.99	0.448	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.380	34.930	1.541	885.6	885.6	50.386	4.467	2.57		Unsaturated	68.9			33.02	1.50	49.62	114.45	0.98	0.448	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.550	36.240	1.599	906.0	906.0	51.693	4.469	2.57		Unsaturated	68.3			34.25	1.48	50.81	115.86	0.98	0.448	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.710	37.760	1.692	925.2	925.2	53.313	4.536	2.56		Unsaturated	67.9			35.69	1.46	52.27	117.66	0.98	0.447	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.870	38.240	1.637	944.4	944.4	53.434	4.335	2.55		Unsaturated	66.7			36.14	1.45	52.44	117.61	0.98	0.447	1.099	n.a.	n.a.	n.a.	0.00	0.00
8.040	36.370	1.469	964.8	964.8	50.234	4.094	2.55		Sand	66.7			34.38	1.44	49.67	114.04	0.98	0.448	1.093	0.159	0.234	0.52	0.03	0.05
8.200	31.640	1.286	984.0	984.0	43.172	4.128	2.60		Sand	70.6			29.91	1.45	43.31	106.67	0.98	0.452	1.086	0.147	0.207	0.46	0.03	0.06
8.370	27.780	1.039	1004.4	1004.4	43.436	3.810	2.57		Mixed	68.5			26.26	1.45	38.09	99.51	0.98	0.457	1.079	0.137	0.186	0.41	0.03	0.06
8.530	24.970	1.014	1023.6	1023.6	38.433	4.147	2.63	plastic	Clay	73.6			23.60	1.21	n.a.	n.a.	0.98	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.690	23.540	1.002	1042.8	1042.8	44.148	4.355	2.61		Clay	71.4			22.25	1.21	n.a.	n.a.	0.98	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.860	25.070	0.963	1063.2	1063.2	37.548	3.925	2.62	plastic	Clay	72.9			23.70	1.20	n.a.	n.a.	0.98	0.469	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.020	23.880	0.930	1082.4	1082.4	35.268	3.984	2.65	plastic	Clay	74.8			22.57	1.19	n.a.	n.a.	0.98	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.190	21.990	0.827	1102.8	1102.8	38.880	3.858	2.61		Clay	71.6			20.78	1.19	n.a.	n.a.	0.98	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.350	20.500	0.737	1122.0	1122.0	35.542	3.697	2.62		Clay	72.8			19.38	1.18	n.a.	n.a.	0.98	0.481	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.510	19.210	0.692	1141.2	1141.2	32.666	3.711	2.65		Clay	75.1			18.16	1.18	n.a.	n.a.	0.98	0.484	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.680	17.260	0.682	1161.6	1161.6	28.718	4.088	2.72		Clay	80.7			16.31	1.17	n.a.	n.a.	0.98	0.488	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.840	15.710	0.590	1180.8	1180.8	25.609	3.905	2.74		Clay	82.6			14.85	1.17	n.a.	n.a.	0.98	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.010	14.790	0.527	1201.2	1201.2	23.625	3.714	2.76		Clay	83.5			13.98	1.16	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	13.010	0.501	1220.4	1220.4	20.321	4.044	2.83		Clay	89.4			12.30	1.16	n.a.	n.a.	0.97	0.498	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	12.600	0.492	1239.6	1239.6	19.329	4.103	2.85		Clay	91.1			11.91	1.15	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	12.190	0.483	1260.0	1260.0	18.349	4.174	2.87		Clay	92.9			11.52	1.15	n.a.	n.a.	0.97	0.505	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	11.970	0.438	1279.2	1279.2	17.715	3.866	2.86		Clay	92.1			11.31	1.14	n.a.	n.a.	0.97	0.508	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	11.020	0.381	1299.6	1299.6	15.959	3.670	2.89		Clay	93.8			10.42	1.14	n.a.	n.a.	0.97	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	10.180	0.341	1318.8	1318.8	14.438	3.581	2.91		Clay	96.0			9.62	1.13	n.a.	n.a.	0.97	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.70

Total Settlement: 0.18 (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)
11.150	9.680	0.336	1338.0	1338.0	13.469	3.728	2.95		Clay	98.8			9.15	1.13	n.a.	n.a.	0.97	0.517	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.320	10.020	0.329	1358.4	1358.4	13.753	3.520	2.93		Clay	97.0			9.47	1.12	n.a.	n.a.	0.97	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	10.040	0.275	1377.6	1377.6	13.576	2.942	2.88		Clay	93.7			9.49	1.12	n.a.	n.a.	0.97	0.523	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	9.610	0.297	1398.0	1398.0	12.748	3.334	2.94		Clay	98.0			9.08	1.12	n.a.	n.a.	0.97	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	9.720	0.288	1417.2	1417.2	12.717	3.190	2.93		Clay	97.2			9.19	1.11	n.a.	n.a.	0.97	0.529	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	12.100	0.275	1437.6	1437.6	15.834	2.415	2.78		Clay	85.3			11.44	1.11	n.a.	n.a.	0.97	0.531	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	10.470	0.259	1456.8	1456.8	13.374	2.661	2.86		Clay	92.1			9.90	1.10	n.a.	n.a.	0.97	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.660	0.244	1476.0	1476.0	12.089	2.734	2.91		Clay	95.5			9.13	1.10	n.a.	n.a.	0.97	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	9.050	0.260	1496.4	1496.4	11.096	3.126	2.97		Clay	100.0			8.55	1.10	n.a.	n.a.	0.97	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	9.010	0.351	1515.6	1515.6	10.890	4.249	3.06		Clay	100.0			8.52	1.09	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	11.680	0.402	1536.0	1536.0	14.208	3.685	2.93		Clay	97.1			11.04	1.09	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	15.570	0.357	1555.2	1555.2	19.023	2.412	2.71		Clay	80.1			14.72	1.08	n.a.	n.a.	0.96	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	14.380	0.306	1574.4	1574.4	17.267	2.254	2.73		Clay	81.5			13.59	1.08	n.a.	n.a.	0.96	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	11.440	0.254	1594.8	1594.8	13.347	2.385	2.84		Clay	90.0			10.81	1.08	n.a.	n.a.	0.96	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	8.630	0.211	1614.0	1614.0	9.694	2.693	2.98		Clay	100.0			8.16	1.07	n.a.	n.a.	0.96	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	8.310	0.202	1634.4	1634.4	9.169	2.700	3.00		Clay	100.0			7.85	1.07	n.a.	n.a.	0.96	0.555	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	8.180	0.204	1653.6	1653.6	8.894	2.772	3.02		Clay	100.0			7.73	1.07	n.a.	n.a.	0.96	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	8.140	0.210	1672.8	1672.8	8.732	2.881	3.04		Clay	100.0			7.69	1.06	n.a.	n.a.	0.96	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	8.390	0.231	1693.2	1693.2	8.910	3.064	3.04		Clay	100.0			7.93	1.06	n.a.	n.a.	0.96	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	9.020	0.256	1712.4	1712.4	9.535	3.137	3.02		Clay	100.0			8.53	1.06	n.a.	n.a.	0.96	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	9.570	0.281	1732.8	1732.8	10.046	3.230	3.01		Clay	100.0			9.05	1.05	n.a.	n.a.	0.96	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	9.630	0.278	1752.0	1752.0	9.993	3.170	3.01		Clay	100.0			9.10	1.05	n.a.	n.a.	0.96	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	9.720	0.286	1771.2	1771.2	9.976	3.236	3.02		Clay	100.0			9.19	1.05	n.a.	n.a.	0.96	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	9.740	0.293	1791.6	1791.6	9.873	3.317	3.03		Clay	100.0			9.21	1.04	n.a.	n.a.	0.96	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	9.540	0.307	1810.8	1810.8	9.537	3.559	3.06		Clay	100.0			9.02	1.04	n.a.	n.a.	0.95	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	9.600	0.310	1831.2	1831.2	9.485	3.564	3.06		Clay	100.0			9.07	1.04	n.a.	n.a.	0.95	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	9.710	0.318	1850.4	1850.4	9.495	3.620	3.06		Clay	100.0			9.18	1.04	n.a.	n.a.	0.95	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	9.610	0.319	1869.6	1869.6	9.280	3.681	3.07		Clay	100.0			9.08	1.03	n.a.	n.a.	0.95	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	9.620	0.330	1890.0	1890.0	9.180	3.807	3.09		Clay	100.0			9.09	1.03	n.a.	n.a.	0.95	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	10.190	0.357	1909.2	1909.2	9.675	3.861	3.07		Clay	100.0			9.63	1.03	n.a.	n.a.	0.95	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	11.240	0.421	1929.6	1929.6	10.650	4.099	3.05		Clay	100.0			10.62	1.02	n.a.	n.a.	0.95	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	12.540	0.487	1948.8	1948.8	11.869	4.214	3.02		Clay	100.0			11.85	1.02	n.a.	n.a.	0.95	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	13.090	0.518	1968.2	1962.0	12.341	4.281	3.01		Clay	100.0			12.37	1.02	n.a.	n.a.	0.95	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	13.030	0.519	1988.9	1972.1	12.206	4.310	3.02		Clay	100.0			12.32	1.02	n.a.	n.a.	0.95	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	13.830	0.514	2008.5	1981.6	12.945	4.004	2.98		Clay	100.0			13.07	1.02	n.a.	n.a.	0.95	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	14.420	0.525	2029.2	1991.8	13.461	3.916	2.96		Clay	99.9			13.63	1.02	n.a.	n.a.	0.95	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	14.890	0.543	2048.7	2001.3	13.857	3.918	2.95		Clay	99.1			14.07	1.01	n.a.	n.a.	0.95	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	14.700	0.546	2068.2	2010.8	13.592	3.998	2.96		Clay	100.0			13.89	1.01	n.a.	n.a.	0.95	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	14.110	0.531	2089.0	2021.0	12.930	4.065	2.98		Clay	100.0			13.34	1.01	n.a.	n.a.	0.94	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	13.720	0.475	2108.5	2030.5	12.475	3.749	2.98		Clay	100.0			12.97	1.01	n.a.	n.a.	0.94	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	13.140	0.424	2129.2	2040.6	11.835	3.507	2.98		Clay	100.0			12.42	1.01	n.a.	n.a.	0.94	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	13.120	0.411	2148.8	2050.2	11.751	3.409	2.97		Clay	100.0			12.40	1.01	n.a.	n.a.	0.94	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	12.900	0.402	2168.3	2059.7	11.473	3.406	2.98		Clay	100.0			12.19	1.01	n.a.	n.a.	0.94	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	12.900	0.375	2189.0	2069.8	11.407	3.175	2.96		Clay	100.0			12.19	1.01	n.a.	n.a.	0.94	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	11.380	0.358	2208.5	2079.4	9.883	3.480	3.04		Clay	100.0			10.76	1.00	n.a.	n.a.	0.94	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	10.250	0.342	2229.3	2089.5	8.744	3.738	3.10		Clay	100.0			9.69	1.00	n.a.	n.a.	0.94	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	9.980	0.328	2248.8	2099.0	8.438	3.708	3.11		Clay	100.0			9.43	1.00	n.a.	n.a.	0.94	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	10.130	0.295	2268.3	2108.6	8.533	3.282	3.08		Clay	100.0			9.57	1.00	n.a.	n.a.	0.94	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	10.140	0.271	2289.1	2118.7	8.491	3.016	3.06		Clay	100.0			9.58	1.00	n.a.	n.a.	0.94	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	9.670	0.288	2308.6	2128.2	8.003	3.384	3.11		Clay	100.0			9.14	1.00	n.a.	n.a.	0.94	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	9.340	0.284	2329.3	2138.4	7.646	3.471	3.13		Clay	100.0			8.83	1.00	n.a.	n.a.	0.94	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	9.450	0.293	2348.8	2147.9	7.706	3.539	3.13		Clay	100.0			8.93	1.00	n.a.	n.a.	0.93	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	9.820	0.302	2369.6	2158.0	8.003	3.492	3.11		Clay	100.0			9.28	0.99	n.a.	n.a.	0.93	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	9.580	0.271	2389.1	2167.6	7.737	3.234	3.11		Clay	100.0			9.05	0.99	n.a.	n.a.	0.93	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	8.460	0.248	2408.6	2177.1	6.665	3.411	3.17		Clay	100.0			8.00	0.99	n.a.	n.a.	0.93	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	8.820	0.223	2429.4	2187.2	6.954	2.926	3.12		Clay	100.0			8.34	0.99	n.a.	n.a.	0.93	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	9.660	0.288	2448.9	2196.8	7.680	3.413	3.12		Clay	100.0			9.13	0.99	n.a.	n.a.	0.93	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	11.180	0.405	2469.6	2206.9	9.013	4.072	3.11		Clay	100.0			10.57	0.99	n.a.	n.a.	0.93	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	15.750	0.516	2489.1	2216.5	13.089	3.554	2.94		Clay	98.6			14.89	0.99	n.a.	n.a.	0.93	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	18.210	0.566	2508.7	2226.0	15.234	3.339	2.88		Clay	93.1			17.21	0.99	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	16.960	0.595	2529.4	2236.1	14.038	3.792	2.94		Clay	98.0			16.03	0.99	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	19.590	0.622	2548.9	2245.7	16.312	3.396	2.86		Clay	91.6			18.52	0.98	n.a.	n.a.	0.93	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	18.410	0.448	2569.7	2255.8	15.183	2.618	2.81		Clay	88.2			17.40	0.98	n.a.	n.a.	0.93	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	16.980	0.478	2589.2	2265.3	13.848	3.047	2.89		Clay	93.8			16.05	0.98	n.a.	n.a.	0.93	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	16.140	0.450	2608.7	2274.9	13.043	3.035	2.91		Clay	95.4			15.26	0.98	n.a.	n.a.	0.92	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	16.690	0.431	2629.4	2285.0	13.458	2.806	2.87		Clay	93.0			15.78	0.98	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	14.360	0.385	2649.0	2294.5	11.362	2.952	2.95		Clay	98.8			13.57	0.98	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 2

PGA (A_{max}) 0.70

Total Settlement: 0.18 (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)
22.150	13.820	0.350	2669.7	2304.7	10.835	2.801	2.95		Clay	99.1			13.06	0.98	n.a.	n.a.	0.92	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	16.270	0.493	2689.2	2314.2	12.899	3.301	2.93		Clay	97.5			15.38	0.98	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	17.660	0.694	2708.7	2323.7	14.034	4.259	2.97		Clay	100.0			16.69	0.98	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	20.830	0.698	2729.5	2333.9	16.681	3.587	2.86		Clay	92.1			19.69	0.97	n.a.	n.a.	0.92	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	24.140	0.631	2749.0	2343.4	19.429	2.770	2.74		Clay	82.4			22.82	0.97	n.a.	n.a.	0.92	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	18.450	0.422	2769.7	2353.5	14.502	2.473	2.82		Clay	88.3			17.44	0.97	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.980	0.255	2789.3	2363.1	9.805	2.200	2.93		Clay	97.4			12.27	0.97	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	13.520	0.261	2808.8	2372.6	10.213	2.155	2.91		Clay	95.8			12.78	0.97	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.310	0.282	2829.5	2382.7	9.145	2.591	2.99		Clay	100.0			11.64	0.97	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	11.410	0.323	2849.0	2392.3	8.348	3.234	3.08		Clay	100.0			10.78	0.97	n.a.	n.a.	0.92	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	12.080	0.301	2869.8	2402.4	8.862	2.831	3.03		Clay	100.0			11.42	0.97	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	12.030	0.290	2889.3	2411.9	8.777	2.735	3.02		Clay	100.0			11.37	0.97	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	11.740	0.302	2908.8	2421.5	8.495	2.938	3.05		Clay	100.0			11.10	0.97	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	11.730	0.277	2929.6	2431.6	8.443	2.700	3.03		Clay	100.0			11.09	0.96	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	11.140	0.185	2949.1	2441.1	7.919	1.910	2.98		Clay	100.0			10.53	0.96	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	10.170	0.216	2969.8	2451.3	7.086	2.481	3.08		Clay	100.0			9.61	0.96	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	10.110	0.212	2989.3	2460.8	7.002	2.460	3.08		Clay	100.0			9.56	0.96	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	12.150	0.256	3008.9	2470.3	8.619	2.407	3.00		Clay	100.0			11.48	0.96	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	11.400	0.292	3029.6	2480.5	7.970	2.954	3.07		Clay	100.0			10.78	0.96	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	12.150	0.342	3049.1	2490.0	8.534	3.218	3.07		Clay	100.0			11.48	0.96	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	12.230	0.337	3069.9	2500.1	8.556	3.153	3.06		Clay	100.0			11.56	0.96	n.a.	n.a.	0.91	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	11.930	0.318	3089.4	2509.7	8.276	3.058	3.07		Clay	100.0			11.28	0.96	n.a.	n.a.	0.91	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	11.500	0.283	3108.9	2519.2	7.896	2.843	3.07		Clay	100.0			10.87	0.96	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	11.170	0.484	3129.6	2529.4	7.595	5.039	3.23		Clay	100.0			10.56	0.95	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	12.190	0.713	3149.2	2538.9	8.362	6.714	3.27		Clay	100.0			11.52	0.95	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	26.490	0.761	3169.9	2549.0	19.541	3.055	2.77		Clay	84.3			25.04	0.95	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	25.270	0.609	3189.4	2558.6	18.507	2.570	2.74		Clay	82.2			23.88	0.95	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	15.320	0.372	3208.9	2568.1	10.681	2.709	2.95		Clay	98.9			14.48	0.95	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	11.170	0.309	3229.7	2578.2	7.412	3.231	3.12		Clay	100.0			10.56	0.95	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	9.290	0.273	3249.2	2587.8	5.924	3.561	3.23		Clay	100.0			8.78	0.95	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	8.730	0.247	3269.9	2597.9	5.462	3.480	3.25		Clay	100.0			8.25	0.95	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	8.330	0.228	3289.5	2607.4	5.128	3.409	3.27		Clay	100.0			7.87	0.95	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	7.950	0.223	3310.2	2617.6	4.810	3.536	3.30		Clay	100.0			7.51	0.95	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	7.960	0.228	3329.7	2627.1	4.792	3.628	3.31		Clay	100.0			7.52	0.94	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	8.090	0.207	3349.2	2636.6	4.866	3.219	3.28		Clay	100.0			7.65	0.94	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	8.220	0.210	3370.0	2646.8	4.938	3.218	3.27		Clay	100.0			7.77	0.94	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	8.270	0.206	3389.5	2656.3	4.951	3.134	3.26		Clay	100.0			7.82	0.94	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	8.690	0.206	3410.2	2666.4	5.239	2.952	3.23		Clay	100.0			8.21	0.94	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	8.730	0.183	3429.8	2676.0	5.243	2.614	3.20		Clay	100.0			8.25	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	9.390	0.167	3449.3	2685.5	5.709	2.172	3.13		Clay	100.0			8.88	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	9.370	0.141	3470.0	2695.6	5.665	1.848	3.10		Clay	100.0			8.86	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	9.170	0.185	3489.5	2705.2	5.490	2.494	3.17		Clay	100.0			8.67	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	10.400	0.257	3510.3	2715.3	6.368	2.973	3.16		Clay	100.0			9.83	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	11.480	0.256	3529.8	2724.8	7.131	2.637	3.09		Clay	100.0			10.85	0.94	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	13.650	0.242	3549.3	2734.4	8.686	2.041	2.96		Clay	99.6			12.90	0.93	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	12.880	0.253	3570.1	2744.5	8.085	2.282	3.01		Clay	100.0			12.17	0.93	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	10.420	0.354	3589.6	2754.0	6.264	4.103	3.24		Clay	100.0			9.85	0.93	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	10.610	0.352	3610.3	2764.2	6.371	3.999	3.23		Clay	100.0			10.03	0.93	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	11.480	0.318	3629.8	2773.7	6.969	3.294	3.15		Clay	100.0			10.85	0.93	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	10.940	0.264	3649.4	2783.2	6.550	2.893	3.14		Clay	100.0			10.34	0.93	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	11.260	0.246	3670.1	2793.4	6.748	2.608	3.11		Clay	100.0			10.64	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	11.510	0.271	3689.6	2802.9	6.897	2.802	3.12		Clay	100.0			10.88	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	11.840	0.303	3710.4	2813.0	7.099	3.034	3.12		Clay	100.0			11.19	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	11.880	0.294	3729.9	2822.6	7.096	2.939	3.12		Clay	100.0			11.23	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	12.100	0.289	3749.4	2832.1	7.221	2.821	3.10		Clay	100.0			11.44	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	12.560	0.281	3770.1	2842.3	7.512	2.636	3.07		Clay	100.0			11.87	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	12.250	0.253	3789.7	2851.8	7.262	2.447	3.07		Clay	100.0			11.58	0.92	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	12.170	0.253	3810.4	2861.9	7.173	2.464	3.07		Clay	100.0			11.50	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	11.720	0.266	3829.9	2871.5	6.829	2.716	3.11		Clay	100.0			11.08	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	11.300	0.250	3849.4	2881.0	6.508	2.671	3.13		Clay	100.0			10.68	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	11.750	0.248	3870.2	2891.1	6.790	2.524	3.10		Clay	100.0			11.11	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	12.470	0.297	3889.7	2900.7	7.257	2.821	3.10		Clay	100.0			11.79	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	13.540	0.406	3910.4	2910.8	7.960	3.501	3.12		Clay	100.0			12.80	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	16.180	0.367	3930.0	2920.3	9.735	2.582	2.97		Clay	100.0			15.29	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	18.340	0.353	3949.5	2929.9	11.171	2.156	2.88		Clay	93.2			17.33	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	16.870	0.366	3970.2	2940.0	10.126	2.456	2.94		Clay	98.5			15.95	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	13.570	0.288	3989.7	2949.5	7.849	2.487	3.04		Clay	100.0			12.83	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.70

Total Settlement: 0.18 (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)
33.140	14.380	0.307	4010.5	2959.7	8.362	2.484	3.02		Clay	100.0			13.59	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	14.690	0.322	4030.0	2969.2	8.538	2.544	3.01		Clay	100.0			13.88	0.91	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	12.790	0.347	4049.5	2978.7	7.228	3.221	3.13		Clay	100.0			12.09	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	13.060	0.343	4070.3	2988.9	7.377	3.115	3.12		Clay	100.0			12.34	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	13.550	0.333	4089.8	2998.4	7.674	2.893	3.08		Clay	100.0			12.81	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	13.170	0.344	4110.5	3008.5	7.389	3.091	3.11		Clay	100.0			12.45	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	12.780	0.362	4130.0	3018.1	7.101	3.380	3.15		Clay	100.0			12.08	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	12.610	0.274	4149.6	3027.6	6.959	2.599	3.09		Clay	100.0			11.92	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	14.020	0.253	4170.3	3037.7	7.858	2.116	3.00		Clay	100.0			13.25	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	14.100	0.261	4189.8	3047.3	7.879	2.170	3.01		Clay	100.0			13.33	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	12.650	0.310	4210.6	3057.4	6.898	2.943	3.13		Clay	100.0			11.96	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	12.530	0.321	4230.1	3066.9	6.792	3.086	3.14		Clay	100.0			11.84	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	12.570	0.311	4249.6	3076.5	6.790	2.979	3.14		Clay	100.0			11.88	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	12.310	0.290	4270.3	3086.6	6.593	2.846	3.14		Clay	100.0			11.64	0.91	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	11.900	0.286	4289.9	3096.1	6.301	2.930	3.16		Clay	100.0			11.25	0.90	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	11.590	0.299	4310.6	3106.3	6.075	3.167	3.19		Clay	100.0			10.95	0.90	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	11.620	0.306	4330.1	3115.8	6.069	3.236	3.20		Clay	100.0			10.98	0.90	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.120	0.299	4350.9	3125.9	6.363	3.008	3.16		Clay	100.0			11.46	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	12.570	0.292	4370.4	3135.5	6.624	2.810	3.13		Clay	100.0			11.88	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	12.600	0.287	4389.9	3145.0	6.617	2.762	3.13		Clay	100.0			11.91	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	12.600	0.298	4410.6	3155.2	6.589	2.871	3.14		Clay	100.0			11.91	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	12.990	0.315	4430.2	3164.7	6.809	2.927	3.13		Clay	100.0			12.28	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	13.510	0.320	4450.9	3174.8	7.109	2.831	3.11		Clay	100.0			12.77	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.980	13.760	0.298	4479.0	3188.5	7.226	2.585	3.08		Clay	100.0			13.01	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	13.550	0.275	4489.9	3193.9	7.079	2.431	3.07		Clay	100.0			12.81	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	12.430	0.296	4510.7	3204.0	6.351	2.904	3.15		Clay	100.0			11.75	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	11.970	0.323	4530.2	3213.6	6.040	3.331	3.20		Clay	100.0			11.31	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	12.300	0.375	4550.9	3223.7	6.219	3.737	3.22		Clay	100.0			11.63	0.89	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	12.970	0.384	4570.5	3233.2	6.609	3.589	3.19		Clay	100.0			12.26	0.89	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	13.550	0.383	4590.0	3242.8	6.942	3.403	3.16		Clay	100.0			12.81	0.89	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	13.570	0.374	4610.7	3252.9	6.926	3.317	3.15		Clay	100.0			12.83	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	13.840	0.403	4630.2	3262.4	7.065	3.496	3.16		Clay	100.0			13.08	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	14.000	0.449	4651.0	3272.6	7.135	3.843	3.18		Clay	100.0			13.23	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	14.540	0.458	4670.5	3282.1	7.437	3.755	3.16		Clay	100.0			13.74	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	14.270	0.439	4690.0	3291.6	7.246	3.684	3.16		Clay	100.0			13.49	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	13.980	0.401	4710.8	3301.8	7.041	3.449	3.16		Clay	100.0			13.21	0.89	n.a.	n.a.	0.84	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	13.890	0.437	4730.3	3311.3	6.961	3.793	3.18		Clay	100.0			13.13	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	13.870	0.455	4751.0	3321.4	6.921	3.956	3.20		Clay	100.0			13.11	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	14.200	0.499	4770.5	3331.0	7.094	4.220	3.20		Clay	100.0			13.42	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	13.970	0.540	4790.1	3340.5	6.930	4.661	3.24		Clay	100.0			13.20	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	14.450	0.616	4810.8	3350.6	7.189	5.110	3.25		Clay	100.0			13.66	0.89	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	14.870	0.648	4830.3	3360.2	7.413	5.202	3.24		Clay	100.0			14.05	0.89	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	14.810	0.661	4851.1	3370.3	7.349	5.337	3.25		Clay	100.0			14.00	0.88	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	14.480	0.630	4870.6	3379.8	7.127	5.231	3.26		Clay	100.0			13.69	0.88	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	14.700	0.629	4890.1	3389.4	7.231	5.135	3.25		Clay	100.0			13.89	0.88	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	14.520	0.614	4910.8	3399.5	7.098	5.088	3.25		Clay	100.0			13.72	0.88	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	14.950	0.572	4930.4	3409.0	7.325	4.582	3.21		Clay	100.0			14.13	0.88	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	15.160	0.504	4951.1	3419.2	7.420	3.975	3.17		Clay	100.0			14.33	0.88	n.a.	n.a.	0.82	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	15.470	0.468	4970.6	3428.7	7.574	3.601	3.14		Clay	100.0			14.62	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	17.740	0.366	4990.1	3438.3	8.868	2.403	2.99		Clay	100.0			16.77	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	16.760	0.324	5010.9	3448.4	8.267	2.272	3.00		Clay	100.0			15.84	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	15.100	0.297	5030.4	3457.9	7.279	2.360	3.06		Clay	100.0			14.27	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	14.360	0.308	5051.1	3468.1	6.825	2.604	3.10		Clay	100.0			13.57	0.88	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	14.400	0.362	5070.7	3477.6	6.824	3.047	3.14		Clay	100.0			13.61	0.88	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	14.980	0.410	5090.2	3487.1	7.132	3.300	3.14		Clay	100.0			14.16	0.88	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	14.510	0.530	5110.9	3497.3	6.837	4.433	3.23		Clay	100.0			13.71	0.88	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	14.730	0.630	5130.4	3506.8	6.938	5.176	3.26		Clay	100.0			13.92	0.88	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	15.530	0.685	5151.2	3516.9	7.367	5.285	3.25		Clay	100.0			14.68	0.87	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	15.680	0.695	5170.7	3526.5	7.427	5.304	3.25		Clay	100.0			14.82	0.87	n.a.	n.a.	0.81	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	16.090	0.705	5190.2	3536.0	7.633	5.220	3.23		Clay	100.0			15.21	0.87	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	15.850	0.621	5211.0	3546.1	7.470	4.689	3.21		Clay	100.0			14.98	0.87	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	15.600	0.589	5230.5	3555.7	7.304	4.535	3.21		Clay	100.0			14.74	0.87	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	14.860	0.529	5251.2	3565.8	6.862	4.322	3.22		Clay	100.0			14.05	0.87	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	14.970	0.548	5270.7	3575.3	6.900	4.445	3.23		Clay	100.0			14.15	0.87	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	14.850	0.551	5291.5	3585.5	6.808	4.517	3.24		Clay	100.0			14.04	0.87	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	14.930	0.560	5311.0	3595.0	6.829	4.563	3.24		Clay	100.0			14.11	0.87	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	15.330	0.575	5330.5	3604.5	7.027	4.536	3.23		Clay	100.0			14.49	0.87	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.70

Total Settlement:	0.18	(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)
44.130	15.430	0.568	5351.3	3614.7	7.057	4.453	3.22		Clay	100.0			14.58	0.87	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	15.690	0.631	5370.8	3624.2	7.177	4.854	3.24		Clay	100.0			14.83	0.87	n.a.	n.a.	0.81	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	15.850	0.616	5391.5	3634.3	7.239	4.680	3.22		Clay	100.0			14.98	0.87	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	15.540	0.660	5411.0	3643.9	7.044	5.143	3.26		Clay	100.0			14.69	0.87	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	15.440	0.646	5430.6	3653.4	6.966	5.074	3.26		Clay	100.0			14.59	0.87	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	16.240	0.704	5451.3	3663.5	7.378	5.211	3.24		Clay	100.0			15.35	0.87	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	15.990	0.654	5470.8	3673.1	7.217	4.935	3.24		Clay	100.0			15.11	0.86	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	15.790	0.618	5491.6	3683.2	7.083	4.737	3.23		Clay	100.0			14.92	0.86	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	15.230	0.534	5511.1	3692.7	6.756	4.283	3.22		Clay	100.0			14.40	0.86	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	15.960	0.476	5530.6	3702.3	7.128	3.607	3.16		Clay	100.0			15.09	0.86	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	15.330	0.470	5551.3	3712.4	6.763	3.743	3.19		Clay	100.0			14.49	0.86	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	16.110	0.580	5570.9	3721.9	7.160	4.351	3.21		Clay	100.0			15.23	0.86	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	17.530	0.768	5591.6	3732.1	7.896	5.214	3.22		Clay	100.0			16.57	0.86	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	18.920	0.824	5611.1	3741.6	8.614	5.115	3.19		Clay	100.0			17.88	0.86	n.a.	n.a.	0.80	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	18.600	0.808	5630.6	3751.2	8.416	5.121	3.19		Clay	100.0			17.58	0.86	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	18.100	0.730	5651.4	3761.3	8.122	4.782	3.19		Clay	100.0			17.11	0.86	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	17.880	0.690	5670.9	3770.8	7.979	4.584	3.18		Clay	100.0			16.90	0.86	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	17.540	0.654	5691.6	3781.0	7.773	4.450	3.19		Clay	100.0			16.58	0.86	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	17.030	0.607	5711.2	3790.5	7.479	4.284	3.19		Clay	100.0			16.10	0.86	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	16.550	0.618	5730.7	3800.0	7.202	4.517	3.22		Clay	100.0			15.64	0.86	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	16.490	0.645	5751.4	3810.2	7.146	4.735	3.23		Clay	100.0			15.59	0.86	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	17.000	0.656	5770.9	3819.7	7.390	4.648	3.21		Clay	100.0			16.07	0.86	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	16.630	0.655	5791.7	3829.8	7.172	4.770	3.23		Clay	100.0			15.72	0.86	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	16.770	0.662	5811.2	3839.4	7.222	4.778	3.23		Clay	100.0			15.85	0.85	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	16.330	0.655	5830.7	3848.9	6.971	4.883	3.25		Clay	100.0			15.43	0.85	n.a.	n.a.	0.79	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	15.010	0.595	5851.5	3859.0	6.263	4.922	3.29		Clay	100.0			14.19	0.85	n.a.	n.a.	0.78	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	13.790	0.595	5871.0	3868.6	5.612	5.483	3.35		Clay	100.0			13.03	0.85	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	14.850	0.679	5891.7	3878.7	6.138	5.706	3.33		Clay	100.0			14.04	0.85	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	17.000	0.732	5911.2	3888.2	7.224	5.208	3.25		Clay	100.0			16.07	0.85	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	17.270	0.688	5930.8	3897.8	7.340	4.812	3.23		Clay	100.0			16.32	0.85	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	16.670	0.601	5951.5	3907.9	7.008	4.387	3.22		Clay	100.0			15.76	0.85	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	16.330	0.568	5971.0	3917.4	6.813	4.254	3.22		Clay	100.0			15.43	0.85	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	16.790	0.635	5991.8	3927.6	7.024	4.602	3.23		Clay	100.0			15.87	0.85	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	16.880	0.686	6011.3	3937.1	7.048	4.942	3.25		Clay	100.0			15.95	0.85	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	17.640	0.726	6030.8	3946.6	7.411	4.965	3.23		Clay	100.0			16.67	0.85	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	18.000	0.756	6051.5	3956.8	7.569	5.047	3.23		Clay	100.0			17.01	0.85	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	18.340	0.744	6071.1	3966.3	7.717	4.858	3.21		Clay	100.0			17.33	0.85	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	18.560	0.780	6091.8	3976.4	7.803	5.030	3.22		Clay	100.0			17.54	0.85	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	18.860	0.741	6111.3	3986.0	7.930	4.687	3.19		Clay	100.0			17.83	0.85	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	17.690	0.695	6130.8	3995.5	7.321	4.754	3.22		Clay	100.0			16.72	0.85	n.a.	n.a.	0.77	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	19.290	0.603	6151.6	4005.6	8.096	3.718	3.13		Clay	100.0			18.23	0.85	n.a.	n.a.	0.77	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	19.060	0.591	6171.1	4015.2	7.957	3.698	3.13		Clay	100.0			18.02	0.84	n.a.	n.a.	0.77	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	19.100	0.580	6191.8	4025.3	7.952	3.625	3.13		Clay	100.0			18.05	0.84	n.a.	n.a.	0.77	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.180	19.390	0.578	6211.4	4034.8	8.072	3.551	3.11		Clay	100.0			18.33	0.84	n.a.	n.a.	0.77	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.350	19.530	0.578	6232.1	4045.0	8.116	3.524	3.11		Clay	100.0			18.46	0.84	n.a.	n.a.	0.77	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.510	20.150	0.604	6251.6	4054.5	8.398	3.548	3.10		Clay	100.0			19.05	0.84	n.a.	n.a.	0.77	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.670	20.800	0.637	6271.1	4064.1	8.693	3.606	3.09		Clay	100.0			19.66	0.84	n.a.	n.a.	0.77	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.840	21.000	0.610	6291.9	4074.2	8.764	3.414	3.08		Clay	100.0			19.85	0.84	n.a.	n.a.	0.77	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.000	21.530	0.611	6311.4	4083.7	8.999	3.325	3.06		Clay	100.0			20.35	0.84	n.a.	n.a.	0.76	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.170	22.180	0.605	6332.1	4093.9	9.289	3.184	3.04		Clay	100.0			20.96	0.84	n.a.	n.a.	0.76	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.330	21.860	0.702	6351.7	4103.4	9.107	3.759	3.09		Clay	100.0			20.66	0.84	n.a.	n.a.	0.76	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.490	23.150	0.839	6371.2	4112.9	9.708	4.202	3.09		Clay	100.0			21.88	0.84	n.a.	n.a.	0.76	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.660	25.650	1.021	6391.9	4123.1	10.892	4.545	3.07		Clay	100.0			24.24	0.84	n.a.	n.a.	0.76	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.820	27.760	1.165	6411.4	4132.6	11.883	4.743	3.05		Clay	100.0			26.24	0.84	n.a.	n.a.	0.76	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.990	28.720	1.171	6432.2	4142.7	12.313	4.591	3.03		Clay	100.0			27.15	0.84	n.a.	n.a.	0.76	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.150	29.040	1.177	6451.7	4152.3	12.434	4.560	3.03		Clay	100.0			27.45	0.84	n.a.	n.a.	0.76	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.310	28.180	1.126	6471.2	4161.8	11.987	4.512	3.04		Clay	100.0			26.64	0.84	n.a.	n.a.	0.76	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.480	26.810	1.116	6492.0	4171.9	11.296	4.738	3.07		Clay	100.0			25.34	0.84	n.a.	n.a.	0.76	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.640	25.640	1.026	6511.5	4181.5	10.706	4.584	3.08		Clay	100.0			24.23	0.84	n.a.	n.a.	0.76	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.810	25.490	0.964	6532.2	4191.6	10.604	4.336	3.07		Clay	100.0			24.09	0.83	n.a.	n.a.	0.76	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.970	25.400	0.987	6551.7	4201.1	10.532	4.459	3.08		Clay	100.0			24.01	0.83	n.a.	n.a.	0.75	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.130	26.510	1.084	6571.3	4210.7	11.031	4.666	3.08		Clay	100.0			25.06	0.83	n.a.	n.a.	0.75	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.300	28.920	1.231	6592.0	4220.8	12.142	4.805	3.05		Clay	100.0			27.33	0.83	n.a.	n.a.	0.75	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.460	32.500	1.363	6611.5	4230.3	13.802	4.669	3.00		Clay	100.0			30.72	0.83	n.a.	n.a.	0.75	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.630	36.120	1.557	6632.3	4240.5	15.472	4.747	2.97		Clay	100.0			34.14	0.83	n.a.	n.a.	0.75	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.790	40.150	1.628	6651.8	4250.0	17.329	4.420	2.91		Clay	95.7			37.95	0.83	n.a.	n.a.	0.75	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.950	42.120	1.760	6671.3	4259.5	18.211	4.538	2.90		Clay	94.9			39.81	0.83	n.a.	n.a.	0.75	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.70

Total Settlement: 0.18 (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)
55.120	43.560	1.813	6692.0	4269.7	18.837	4.509	2.89		Clay	93.9			41.17	0.83	n.a.	n.a.	0.75	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.280	45.690	1.804	6711.6	4279.2	19.786	4.262	2.85		Clay	91.3			43.19	0.83	n.a.	n.a.	0.75	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.450	44.550	1.738	6732.3	4289.3	19.203	4.221	2.86		Clay	91.9			42.11	0.83	n.a.	n.a.	0.75	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.610	39.260	1.494	6751.8	4298.9	16.695	4.164	2.90		Clay	95.3			37.11	0.83	n.a.	n.a.	0.75	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.770	33.810	1.278	6771.3	4308.4	14.123	4.200	2.96		Clay	100.0			31.96	0.83	n.a.	n.a.	0.74	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.940	30.070	1.095	6792.1	4318.5	12.353	4.105	3.00		Clay	100.0			28.42	0.83	n.a.	n.a.	0.74	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.100	26.890	1.013	6811.6	4328.1	10.852	4.313	3.06		Clay	100.0			25.42	0.83	n.a.	n.a.	0.74	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.270	25.630	0.915	6832.3	4338.2	10.241	4.120	3.07		Clay	100.0			24.22	0.83	n.a.	n.a.	0.74	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.430	24.950	0.919	6851.9	4347.7	9.901	4.271	3.09		Clay	100.0			23.58	0.83	n.a.	n.a.	0.74	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.590	25.480	0.880	6871.4	4357.3	10.118	3.994	3.06		Clay	100.0			24.08	0.83	n.a.	n.a.	0.74	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.760	24.110	0.855	6892.1	4367.4	9.463	4.138	3.10		Clay	100.0			22.79	0.83	n.a.	n.a.	0.74	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.920	22.070	0.642	6911.6	4377.0	8.506	3.451	3.09		Clay	100.0			20.86	0.83	n.a.	n.a.	0.74	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.090	20.370	0.527	6932.4	4387.1	7.706	3.118	3.10		Clay	100.0			19.25	0.83	n.a.	n.a.	0.74	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.250	17.820	0.460	6951.9	4396.6	6.525	3.206	3.17		Clay	100.0			16.84	0.82	n.a.	n.a.	0.74	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.410	17.110	0.536	6971.4	4406.2	6.184	3.935	3.24		Clay	100.0			16.17	0.82	n.a.	n.a.	0.74	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.580	18.810	0.549	6992.2	4416.3	6.935	3.584	3.17		Clay	100.0			17.78	0.82	n.a.	n.a.	0.74	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.740	19.850	0.527	7011.7	4425.8	7.386	3.221	3.12		Clay	100.0			18.76	0.82	n.a.	n.a.	0.73	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.910	19.950	0.543	7032.4	4436.0	7.409	3.303	3.13		Clay	100.0			18.86	0.82	n.a.	n.a.	0.73	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.070	21.140	0.544	7051.9	4445.5	7.924	3.086	3.09		Clay	100.0			19.98	0.82	n.a.	n.a.	0.73	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.230	20.770	0.622	7071.5	4455.0	7.737	3.607	3.13		Clay	100.0			19.63	0.82	n.a.	n.a.	0.73	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.400	20.140	0.659	7092.2	4465.2	7.433	3.972	3.17		Clay	100.0			19.04	0.82	n.a.	n.a.	0.73	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.560	20.300	0.662	7111.7	4474.7	7.484	3.953	3.17		Clay	100.0			19.19	0.82	n.a.	n.a.	0.73	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.730	20.100	0.685	7132.5	4484.8	7.373	4.141	3.19		Clay	100.0			19.00	0.82	n.a.	n.a.	0.73	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.890	20.030	0.688	7152.0	4494.4	7.322	4.184	3.19		Clay	100.0			18.93	0.82	n.a.	n.a.	0.73	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.060	21.140	0.643	7172.7	4504.5	7.794	3.662	3.14		Clay	100.0			19.98	0.82	n.a.	n.a.	0.73	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.220	22.590	0.616	7192.2	4514.0	8.415	3.241	3.08		Clay	100.0			21.35	0.82	n.a.	n.a.	0.73	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.380	22.240	0.584	7211.8	4523.6	8.239	3.132	3.08		Clay	100.0			21.02	0.82	n.a.	n.a.	0.73	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.550	21.340	0.593	7232.5	4533.7	7.819	3.347	3.11		Clay	100.0			20.17	0.82	n.a.	n.a.	0.73	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.710	20.790	0.599	7252.0	4543.2	7.556	3.490	3.13		Clay	100.0			19.65	0.82	n.a.	n.a.	0.73	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.880	20.660	0.578	7272.8	4553.4	7.477	3.392	3.13		Clay	100.0			19.53	0.82	n.a.	n.a.	0.72	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.040	19.970	0.572	7292.3	4562.9	7.155	3.501	3.15		Clay	100.0			18.88	0.82	n.a.	n.a.	0.72	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.200	19.570	0.564	7311.8	4572.4	6.961	3.545	3.17		Clay	100.0			18.50	0.82	n.a.	n.a.	0.72	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.370	19.800	0.592	7332.5	4582.6	7.041	3.672	3.17		Clay	100.0			18.71	0.82	n.a.	n.a.	0.72	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.530	19.490	0.575	7352.1	4592.1	6.887	3.638	3.18		Clay	100.0			18.42	0.82	n.a.	n.a.	0.72	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.700	19.650	0.538	7372.8	4602.2	6.937	3.371	3.16		Clay	100.0			18.57	0.81	n.a.	n.a.	0.72	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.860	19.010	0.473	7392.3	4611.8	6.641	3.087	3.15		Clay	100.0			17.97	0.81	n.a.	n.a.	0.72	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.020	18.940	0.426	7411.8	4621.3	6.593	2.794	3.13		Clay	100.0			17.90	0.81	n.a.	n.a.	0.72	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.190	18.490	0.387	7432.6	4631.4	6.380	2.617	3.13		Clay	100.0			17.48	0.81	n.a.	n.a.	0.72	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.350	17.200	0.406	7452.1	4641.0	5.807	3.016	3.20		Clay	100.0			16.26	0.81	n.a.	n.a.	0.72	0.589	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.520	17.310	0.386	7472.8	4651.1	5.837	2.844	3.18		Clay	100.0			16.36	0.81	n.a.	n.a.	0.72	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.680	17.650	0.451	7492.4	4660.6	5.966	3.244	3.20		Clay	100.0			16.68	0.81	n.a.	n.a.	0.72	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.840	17.720	0.424	7511.9	4670.2	5.980	3.039	3.19		Clay	100.0			16.75	0.81	n.a.	n.a.	0.71	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.010	18.760	0.387	7532.6	4680.3	6.407	2.584	3.12		Clay	100.0			17.73	0.81	n.a.	n.a.	0.71	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.170	17.390	0.355	7552.1	4689.9	5.806	2.608	3.16		Clay	100.0			16.44	0.81	n.a.	n.a.	0.71	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.340	15.580	0.317	7572.9	4700.0	5.019	2.690	3.22		Clay	100.0			14.73	0.81	n.a.	n.a.	0.71	0.586	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.500	14.610	0.279	7592.4	4709.5	4.592	2.583	3.25		Clay	100.0			13.81	0.81	n.a.	n.a.	0.71	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.660	14.540	0.282	7611.9	4719.1	4.549	2.629	3.26		Clay	100.0			13.74	0.81	n.a.	n.a.	0.71	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.830	15.260	0.288	7632.7	4729.2	4.840	2.512	3.22		Clay	100.0			14.42	0.81	n.a.	n.a.	0.71	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.990	15.650	0.265	7652.2	4738.7	4.990	2.241	3.19		Clay	100.0			14.79	0.81	n.a.	n.a.	0.71	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.160	15.450	0.977	7672.9	4748.9	4.891	8.410	3.51		Clay	100.0			14.60	0.81	n.a.	n.a.	0.71	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.320	20.120	1.035	7692.4	4758.4	6.840	6.362	3.32		Clay	100.0			19.02	0.81	n.a.	n.a.	0.71	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.480	45.280	1.057	7712.0	4767.9	17.376	2.552	2.76		Clay	83.8			42.80	0.81	n.a.	n.a.	0.71	0.583	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.650	24.050	0.735	7732.7	4778.1	8.448	3.639	3.10		Clay	100.0			22.73	0.81	n.a.	n.a.	0.71	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.810	53.920	0.785	7752.2	4787.6	31.446	1.568	2.43		Sand	57.2			50.96	0.65	33.34	90.62	0.71	0.582	0.919	0.126	0.141	0.24	0.04	0.00
63.980	110.710	1.084	7773.0	4797.7	67.053	1.015	2.05		Sand	27.1			104.64	0.69	71.73	117.63	0.70	0.581	0.900	0.166	0.205	0.35	0.03	0.00
64.140	97.880	1.688	7792.5	4807.3	58.935	1.796	2.25		Sand	43.0			92.51	0.69	63.92	123.21	0.70	0.581	0.895	0.179	0.226	0.39	0.03	0.00
64.300	67.130	1.611	7812.0	4816.8	26.251	2.549	2.62		Clay	72.4			63.45	0.80	n.a.	n.a.	0.70	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.470	37.100	1.143	7832.7	4826.9	13.749	3.443	2.92		Clay	96.6			35.07	0.80	n.a.	n.a.	0.70	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.630	38.880	0.888	7852.3	4836.5	14.454	2.542	2.82		Clay	89.0			36.75	0.80	n.a.	n.a.	0.70	0.579	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.800	131.400	1.379	7873.0	4846.6	79.605	1.082	2.01		Sand	23.7			124.20	0.69	86.29	129.19	0.70	0.579	0.889	0.195	0.253	0.44	0.02	0.00
64.960	196.000	1.088	7892.5	4856.1	119.826	0.567	1.70		Sand	0.0			185.26	0.69	128.46	128.46	0.70	0.578	0.889	0.193	0.249	0.43	0.02	0.00
65.120	227.520	1.619	7912.0	4865.7	139.349	0.724	1.71		Sand	0.0			215.05	0.72	154.69	154.69	0.70	0.578	0.861	0.323	0.479	0.83	0.01	0.00
65.290	245.350	1.627	7932.8	4875.8	150.299	0.674	1.66		Sand	0.0			231.90	0.73	170.02	170.02	0.70	0.577	0.840	0.504	0.818	1.42	0.00	0.00
65.450	291.010	0.989	7952.3	4885.3	178.549	0.344	1.43		Sand	0.0			275.06	0.77	211.39	211.39	0.70	0.577	0.749	3.824	6.300	10.92	0.00	0.00
65.620	353.590	1.652	7973.0	4895.5	217.245	0.473	1.44		Sand	0.0			334.21	0.80	267.86	267.86	0.70	0.576	0.748	1410.520	2322.285	4029.04	0.00	0.00
65.780	401.740	2.050	7992.6	4905.0	246.920	0.515	1.42		Sand	0.0			379.72	0.80	304.18	304.18	0.70	0.576	0.748	#########	########	3538484.63	0.00	0.00
65.940	416.810	1.956	8012.1	4914.5	256.020	0.474	1.39		Sand	0.0			393.96	0.80	315.43	315.43	0.70	0.575	0.747	#########	########	##########	0.00	0.00

CPT No. 2

PGA (A_{max}) 0.70

Total Settlement: 0.18 (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)
66.110	388.670	2.196	8032.8	4924.7	238.316	0.571	1.47		Sand	0.0			367.36	0.80	293.97	293.97	0.69	0.575	0.747	#########	########	392308.61	0.00	0.00
66.270	371.070	1.903	8052.3	4934.2	227.186	0.518	1.45		Sand	0.0			350.73	0.80	280.52	280.52	0.69	0.575	0.746	10876.958	17851.272	31070.81	0.00	0.00
66.440	386.280	2.271	8073.1	4944.3	236.351	0.594	1.48		Sand	0.0			365.10	0.80	291.86	291.86	0.69	0.574	0.745	89780.311	########	256468.21	0.00	0.00
66.600	419.830	4.412	8092.6	4953.9	256.842	1.061	1.64		Sand	0.0			396.81	0.80	317.05	317.05	0.69	0.574	0.745	#########	########	##########	0.00	0.00
66.770	466.890	4.252	8113.3	4964.0	285.615	0.919	1.56		Sand	0.0			441.29	0.80	352.40	352.40	0.69	0.573	0.744	#########	########	##########	0.00	0.00
66.930	431.230	3.256	8132.9	4973.5	263.350	0.762	1.52		Sand	0.0			407.59	0.80	325.32	325.32	0.69	0.573	0.744	#########	########	##########	0.00	0.00
67.090	377.770	1.704	8152.4	4983.1	230.165	0.456	1.41		Sand	0.0			357.06	0.80	284.84	284.84	0.69	0.572	0.743	23537.462	38476.592	67242.57	0.00	0.00
67.260	334.370	1.871	8173.1	4993.2	203.221	0.566	1.52		Sand	0.0			316.04	0.80	251.34	251.34	0.69	0.572	0.742	152.811	249.594	436.56	0.00	0.00
67.420	377.130	2.658	8192.6	5002.8	229.306	0.713	1.54		Sand	0.0			356.46	0.80	284.06	284.06	0.69	0.571	0.742	20425.360	33336.148	58354.35	0.00	0.00
67.590	451.900	2.666	8213.4	5012.9	274.983	0.595	1.43		Sand	0.0			427.13	0.80	340.20	340.20	0.69	0.571	0.741	#########	########	##########	0.00	0.00
67.750	489.840	2.134	8232.9	5022.4	297.992	0.439	1.32		Sand	0.0			462.99	0.80	368.58	368.58	0.69	0.570	0.741	#########	########	##########	0.00	0.00
67.910	490.170	2.252	8252.4	5032.0	297.906	0.463	1.33		Sand	0.0			463.30	0.80	368.64	368.64	0.69	0.570	0.740	#########	########	##########	0.00	0.00
68.080	522.930	3.743	8273.2	5042.1	317.659	0.722	1.45		Sand	0.0			494.26	0.80	393.07	393.07	0.69	0.569	0.740	#########	########	##########	0.00	0.00
68.240	532.690	2.224	8292.7	5051.6	323.324	0.421	1.28		Sand	0.0			503.49	0.79	400.21	400.21	0.68	0.569	0.739	#########	########	##########	0.00	0.00
68.410	527.720	2.060	8313.4	5061.8	319.956	0.393	1.26		Sand	0.0			498.79	0.79	396.26	396.26	0.68	0.568	0.738	#########	########	##########	0.00	0.00
68.570	550.050	1.886	8332.9	5071.3	333.283	0.345	1.21		Sand	0.0			519.90	0.79	412.83	412.83	0.68	0.568	0.738	#########	########	##########	0.00	0.00
68.730	546.490	2.564	8352.5	5080.8	330.792	0.473	1.31		Sand	0.0			516.53	0.79	409.95	409.95	0.68	0.568	0.737	#########	########	##########	0.00	0.00
68.900	455.640	2.311	8373.2	5091.0	275.097	0.512	1.39		Sand	0.0			430.66	0.79	341.62	341.62	0.68	0.567	0.737	#########	########	##########	0.00	0.00
69.060	438.860	2.531	8392.7	5100.5	264.618	0.582	1.44		Sand	0.0			414.80	0.79	328.88	328.88	0.68	0.567	0.736	#########	########	##########	0.00	0.00
69.230	422.040	2.003	8413.5	5110.6	254.120	0.479	1.39		Sand	0.0			398.90	0.79	316.11	316.11	0.68	0.566	0.735	#########	########	##########	0.00	0.00
69.390	424.680	1.868	8433.0	5120.2	255.481	0.444	1.37		Sand	0.0			401.40	0.79	317.93	317.93	0.68	0.566	0.735	#########	########	##########	0.00	0.00
69.550	405.880	1.585	8452.5	5129.7	243.825	0.394	1.36		Sand	0.0			383.63	0.79	303.70	303.70	0.68	0.565	0.734	#########	########	3177722.99	0.00	0.00
69.720	392.080	1.620	8473.2	5139.8	235.209	0.418	1.38		Sand	0.0			370.59	0.79	293.23	293.23	0.68	0.565	0.734	#########	########	337358.83	0.00	0.00
69.880	369.220	2.032	8492.8	5149.4	221.135	0.557	1.48		Sand	0.0			348.98	0.79	275.99	275.99	0.68	0.564	0.733	5054.549	8153.146	14446.73	0.00	0.00
70.050	390.800	2.173	8513.5	5159.5	233.973	0.562	1.47		Sand	0.0			369.38	0.79	291.97	291.97	0.68	0.564	0.733	91865.292	########	262575.08	0.00	0.00
70.210	450.850	3.199	8533.0	5169.0	270.066	0.716	1.49		Sand	0.0			426.13	0.79	336.67	336.67	0.68	0.563	0.732	#########	########	##########	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.70

Total Settlement: 0.45 (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	$CRR_{M=7.5,}$ σ'_{vc} = 1 atm	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	22.910	0.888	19.2	19.2	227.229	3.879	2.12		Unsaturated	32.9			21.65	1.70	36.81	82.36	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	134.380	1.938	39.6	39.6	928.315	1.442	1.47		Unsaturated	0.0			127.01	1.70	215.92	215.92	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	274.830	1.920	58.8	58.8	1558.121	0.699	1.10		Unsaturated	0.0			259.76	1.70	441.60	441.60	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	315.660	2.037	79.2	79.2	1541.965	0.645	1.07		Unsaturated	0.0			298.36	1.70	507.20	507.20	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	243.940	2.095	98.4	98.4	1068.981	0.859	1.24		Unsaturated	0.0			230.57	1.70	391.96	391.96	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	175.960	2.500	117.6	117.6	705.241	1.421	1.51		Unsaturated	0.0			166.31	1.70	282.73	282.73	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	125.400	1.816	138.0	138.0	463.864	1.449	1.60		Unsaturated	0.0			118.53	1.70	201.49	201.49	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	98.880	2.088	157.2	157.2	342.617	2.114	1.81		Unsaturated	7.5			93.46	1.70	158.88	161.57	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	80.490	2.057	177.6	177.6	262.309	2.558	1.94		Unsaturated	18.0			76.08	1.70	129.33	164.63	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	65.330	1.959	196.8	196.8	202.170	3.003	2.06		Unsaturated	27.7			61.75	1.70	104.97	158.09	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	54.820	1.689	216.0	216.0	161.856	3.087	2.12		Unsaturated	32.9			51.81	1.70	88.09	144.75	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	45.330	1.372	236.4	236.4	127.850	3.035	2.18		Unsaturated	37.5			42.84	1.70	72.84	130.38	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	40.400	1.187	255.6	255.6	109.521	2.948	2.21		Unsaturated	40.1			38.19	1.70	64.91	122.57	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	39.510	1.111	276.0	276.0	103.040	2.821	2.22		Unsaturated	40.3			37.34	1.70	63.48	120.95	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	40.110	1.147	295.2	295.2	101.127	2.871	2.23		Unsaturated	41.2			37.91	1.70	64.45	122.75	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	41.130	1.231	314.4	314.4	100.468	3.004	2.24		Unsaturated	42.6			38.88	1.70	66.09	125.65	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	42.130	1.293	334.8	334.8	99.711	3.082	2.25		Unsaturated	43.4			39.82	1.70	67.69	128.17	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	44.340	1.324	354.0	354.0	102.054	2.997	2.24		Unsaturated	42.1			41.91	1.70	71.25	131.82	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	45.740	1.300	374.4	374.4	102.357	2.854	2.22		Unsaturated	40.8			43.23	1.70	73.50	133.71	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	45.980	1.397	393.6	393.6	100.335	3.051	2.25		Unsaturated	43.0			43.46	1.70	73.88	135.65	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	45.170	1.458	412.8	412.8	96.220	3.242	2.28		Unsaturated	45.5			42.69	1.70	72.58	135.54	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	47.080	1.527	433.2	433.2	97.895	3.257	2.28		Unsaturated	45.3			44.50	1.70	75.65	139.24	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	46.940	1.501	452.4	452.4	95.490	3.212	2.28		Unsaturated	45.5			44.37	1.70	75.42	139.07	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	45.260	1.510	472.8	472.8	90.027	3.353	2.31		Unsaturated	47.9			42.78	1.70	72.72	136.99	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	44.330	1.546	492.0	492.0	86.411	3.508	2.34		Unsaturated	50.0			41.90	1.70	71.23	136.12	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	44.850	1.671	512.4	512.4	85.653	3.746	2.36		Unsaturated	52.0			42.39	1.70	72.07	138.04	0.99	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	43.560	1.817	531.6	531.6	81.641	4.198	2.41		Unsaturated	56.1			41.17	1.70	69.99	137.01	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	42.260	1.748	550.8	550.8	77.780	4.164	2.42		Unsaturated	56.9			39.94	1.70	67.90	134.65	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	41.250	1.890	571.2	571.2	74.522	4.614	2.47		Unsaturated	60.6			38.99	1.70	66.28	133.77	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	41.270	2.007	590.4	590.4	73.319	4.897	2.49		Unsaturated	62.6			39.01	1.70	66.31	134.38	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	46.720	2.107	610.8	610.8	81.654	4.540	2.44		Unsaturated	58.2			44.16	1.68	73.98	142.83	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	50.330	2.034	630.0	630.0	86.637	4.066	2.39		Unsaturated	53.9			47.57	1.64	78.09	146.49	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	47.830	1.809	649.2	649.2	81.064	3.808	2.38		Unsaturated	53.7			45.21	1.64	74.07	141.28	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	42.940	1.538	669.6	669.6	71.586	3.609	2.40		Unsaturated	55.1			40.59	1.65	66.81	132.61	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	37.400	1.488	688.8	688.8	61.387	4.015	2.48		Unsaturated	61.5			35.35	1.66	58.51	124.06	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	32.020	1.487	709.2	709.2	51.698	4.695	2.58		Unsaturated	69.5			30.26	1.66	50.34	115.53	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	28.630	1.273	728.4	728.4	56.361	4.502	2.54		Unsaturated	66.4			27.06	1.67	45.17	108.18	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	30.040	0.944	747.6	747.6	47.174	3.182	2.49		Unsaturated	62.1			28.39	1.65	46.72	109.11	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	31.610	0.665	768.0	768.0	48.990	2.131	2.36		Unsaturated	51.7			29.88	1.63	48.62	108.21	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	30.020	0.689	787.2	787.2	45.910	2.327	2.41		Unsaturated	55.5			28.37	1.62	45.84	106.01	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	27.660	0.806	807.6	807.6	41.700	2.956	2.51		Unsaturated	63.5			26.14	1.60	41.95	103.33	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	25.900	0.871	826.8	826.8	38.538	3.419	2.57		Unsaturated	68.9			24.48	1.59	39.03	100.80	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.050	18.580	0.865	846.0	846.0	42.924	4.765	2.64		Unsaturated	74.3			17.56	1.62	28.44	88.10	0.99	0.448	1.089	n.a.	n.a.	n.a.	0.00	0.00
7.220	20.450	0.812	866.4	866.4	35.348	4.057	2.65		Unsaturated	75.2			19.33	1.59	30.71	91.18	0.99	0.448	1.089	n.a.	n.a.	n.a.	0.00	0.00
7.380	22.010	0.785	885.6	885.6	37.506	3.638	2.60		Unsaturated	71.1			20.80	1.57	32.56	92.87	0.98	0.448	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.550	19.340	0.449	906.0	906.0	27.282	2.378	2.59		Unsaturated	69.9			18.28	1.56	28.59	87.51	0.98	0.448	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.710	16.890	0.502	925.2	925.2	27.706	3.053	2.65		Unsaturated	74.9			15.96	1.56	24.89	83.60	0.98	0.447	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.870	17.970	0.614	944.4	944.4	29.090	3.511	2.67		Unsaturated	76.8			16.98	1.54	26.09	85.46	0.98	0.447	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.040	19.730	0.732	964.8	964.8	31.524	3.802	2.67	plastic	Clay	76.6			18.65	1.23	n.a.	n.a.	0.98	0.448	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.200	18.940	0.695	984.0	984.0	37.496	3.767	2.61		Clay	71.9			17.90	1.22	n.a.	n.a.	0.98	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.370	19.860	0.569	1004.4	1004.4	30.825	2.938	2.60	plastic	Clay	71.2			18.77	1.22	n.a.	n.a.	0.98	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	24.840	0.493	1023.6	1023.6	33.061	2.025	2.48		Sand	61.2	28.69	1.55	44.47	1.38	61.32	127.57	0.98	0.461	1.096	0.190	0.301	0.65	0.02	0.05
8.690	29.460	0.479	1042.8	1042.8	38.963	1.656	2.37		Sand	52.4	28.69	1.55	44.47	1.37	61.08	124.26	0.98	0.465	1.091	0.181	0.281	0.60	0.03	0.05
8.860	30.350	0.462	1063.2	1063.2	39.760	1.549	2.34		Sand	50.4		1.55	44.46	1.36	60.65	122.90	0.98	0.469	1.088	0.178	0.273	0.58	0.03	0.05
9.020	29.170	0.429	1082.4	1082.4	37.834	1.498	2.35		Sand	51.1		1.55	42.73	1.36	58.05	119.90	0.98	0.473	1.083	0.171	0.257	0.54	0.03	0.05
9.190	31.970	0.323	1102.8	1102.8	41.135	1.029	2.23		Sand	41.2		1.55	46.84	1.35	63.00	120.95	0.98	0.477	1.082	0.173	0.261	0.55	0.03	0.05
9.350	33.170	0.307	1122.0	1122.0	42.327	0.942	2.20		Sand	38.7		1.55	48.59	1.33	64.81	121.44	0.98	0.481	1.080	0.175	0.263	0.55	0.03	0.05
9.510	32.230	0.422	1141.2	1141.2	40.747	1.332	2.29		Sand	46.6	31.35	1.55	48.59	1.32	64.02	125.35	0.98	0.484	1.080	0.184	0.284	0.59	0.03	0.05
9.680	28.880	0.518	1161.6	1161.6	36.101	1.829	2.42		Sand	56.6	31.35	1.55	48.59	1.30	63.28	128.63	0.98	0.488	1.080	0.193	0.304	0.62	0.02	0.05
9.840	22.370	0.482	1180.8	1180.8	27.557	2.215	2.56		Sand	68.1	31.35	1.55	48.59	1.29	62.66	131.09	0.98	0.492	1.079	0.201	0.320	0.65	0.02	0.05
10.010	14.830	0.436	1201.2	1201.2	23.692	3.061	2.70		Clay	79.2			14.02	1.16	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	11.190	0.359	1220.5	1216.2	17.398	3.391	2.83		Clay	89.8			10.58	1.16	n.a.	n.a.	0.97	0.498	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	11.590	0.391	1240.1	1225.7	17.900	3.562	2.84		Clay	90.0			10.95	1.15	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	17.940	0.423	1260.8	1235.8	23.839	2.446	2.64	plastic	Clay	74.2			16.96	1.15	n.a.	n.a.	0.97	0.505	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	16.840	0.409	1280.3	1245.4	26.016	2.526	2.62		Clay	72.4			15.92	1.15	n.a.	n.a.	0.97	0.508	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	12.390	0.133	1301.1	1255.5	15.990	1.135	2.60	plastic	Clay	71.0			11.71	1.15	n.a.	n.a.	0.97	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	9.900	0.129	1320.6	1265.0	14.608	1.398	2.68		Clay	77.4			9.36	1.15	n.a.	n.a.	0.97	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 3

PGA (A_{max}) 0.70

Total Settlement: 0.45 (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)
11.150	8.440	0.149	1340.1	1274.6	12.192	1.915	2.82		Clay	88.4			7.98	1.14	n.a.	n.a.	0.97	0.517	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.320	7.990	0.159	1360.8	1284.7	11.379	2.168	2.87		Clay	92.8			7.55	1.14	n.a.	n.a.	0.97	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	7.960	0.143	1380.4	1294.2	11.234	1.968	2.85		Clay	91.3			7.52	1.14	n.a.	n.a.	0.97	0.523	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	7.820	0.132	1401.1	1304.4	10.916	1.858	2.85		Clay	91.1			7.39	1.14	n.a.	n.a.	0.97	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	7.680	0.162	1420.6	1313.9	10.609	2.319	2.91		Clay	96.1			7.26	1.13	n.a.	n.a.	0.97	0.529	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	8.080	0.169	1441.4	1324.0	11.116	2.296	2.89		Clay	94.5			7.64	1.13	n.a.	n.a.	0.97	0.531	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	8.480	0.204	1460.9	1333.6	11.622	2.626	2.91		Clay	95.8			8.02	1.13	n.a.	n.a.	0.97	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	8.420	0.204	1480.4	1343.1	11.436	2.662	2.92		Clay	96.6			7.96	1.13	n.a.	n.a.	0.97	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	8.860	0.200	1501.1	1353.3	11.985	2.471	2.88		Clay	93.8			8.37	1.13	n.a.	n.a.	0.97	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	8.580	0.175	1520.7	1362.8	11.476	2.238	2.88		Clay	93.1			8.11	1.12	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	8.250	0.176	1541.4	1372.9	10.895	2.352	2.91		Clay	95.6			7.80	1.12	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	8.500	0.147	1560.9	1382.5	11.168	1.900	2.85		Clay	90.9			8.03	1.12	n.a.	n.a.	0.96	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	8.270	0.146	1580.4	1392.0	10.747	1.955	2.87		Clay	92.5			7.82	1.12	n.a.	n.a.	0.96	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	8.300	0.130	1601.2	1402.1	10.697	1.731	2.84		Clay	90.5			7.84	1.11	n.a.	n.a.	0.96	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	8.840	0.116	1620.7	1411.7	11.376	1.450	2.78		Clay	85.5			8.36	1.11	n.a.	n.a.	0.96	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	8.460	0.163	1641.4	1421.8	10.746	2.127	2.89		Clay	94.1			8.00	1.11	n.a.	n.a.	0.96	0.555	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	8.310	0.152	1661.0	1431.3	10.451	2.036	2.89		Clay	94.1			7.85	1.11	n.a.	n.a.	0.96	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	10.780	0.104	1680.5	1440.9	13.797	1.048	2.64		Clay	74.2			10.19	1.11	n.a.	n.a.	0.96	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	12.760	0.139	1701.2	1451.0	14.659	1.166	2.64	plastic	Clay	74.1			12.06	1.10	n.a.	n.a.	0.96	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	10.300	0.213	1720.7	1460.5	12.926	2.261	2.84		Clay	89.9			9.74	1.10	n.a.	n.a.	0.96	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	9.380	0.211	1741.5	1470.7	11.572	2.477	2.90		Clay	94.8			8.87	1.10	n.a.	n.a.	0.96	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	10.100	0.318	1761.0	1480.2	12.457	3.447	2.95		Clay	99.3			9.55	1.10	n.a.	n.a.	0.96	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	11.290	0.389	1780.5	1489.7	13.962	3.739	2.94		Clay	97.9			10.67	1.10	n.a.	n.a.	0.96	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	13.270	0.475	1801.3	1499.9	16.494	3.843	2.89		Clay	93.9			12.54	1.10	n.a.	n.a.	0.96	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	14.870	0.520	1820.8	1509.4	18.497	3.726	2.84		Clay	90.1			14.05	1.09	n.a.	n.a.	0.95	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	15.470	0.552	1841.5	1519.5	19.150	3.797	2.83		Clay	89.6			14.62	1.09	n.a.	n.a.	0.95	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	15.620	0.605	1861.0	1529.1	19.214	4.119	2.85		Clay	91.3			14.76	1.09	n.a.	n.a.	0.95	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	15.660	0.708	1880.6	1538.6	19.134	4.809	2.90		Clay	94.9			14.80	1.09	n.a.	n.a.	0.95	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	16.160	0.781	1901.3	1548.7	19.641	5.136	2.91		Clay	95.8			15.27	1.09	n.a.	n.a.	0.95	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	16.430	0.823	1920.8	1558.3	19.855	5.321	2.92		Clay	96.3			15.53	1.08	n.a.	n.a.	0.95	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	16.260	0.811	1941.6	1568.4	19.496	5.302	2.92		Clay	96.7			15.37	1.08	n.a.	n.a.	0.95	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	16.390	0.785	1961.1	1577.9	19.531	5.095	2.91		Clay	95.7			15.49	1.08	n.a.	n.a.	0.95	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	15.850	0.757	1980.6	1587.5	18.721	5.094	2.92		Clay	96.8			14.98	1.08	n.a.	n.a.	0.95	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	15.090	0.714	2001.3	1597.6	17.638	5.067	2.94		Clay	98.3			14.26	1.08	n.a.	n.a.	0.95	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	15.100	0.657	2020.9	1607.1	17.534	4.659	2.92		Clay	96.5			14.27	1.08	n.a.	n.a.	0.95	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	15.260	0.616	2041.6	1617.3	17.609	4.329	2.90		Clay	94.8			14.42	1.07	n.a.	n.a.	0.95	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	14.760	0.546	2061.1	1626.8	16.879	3.975	2.89		Clay	94.0			13.95	1.07	n.a.	n.a.	0.95	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	14.150	0.502	2080.6	1636.4	16.023	3.825	2.90		Clay	94.6			13.37	1.07	n.a.	n.a.	0.95	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	13.690	0.445	2101.4	1646.5	15.353	3.522	2.89		Clay	94.0			12.94	1.07	n.a.	n.a.	0.94	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	12.770	0.451	2120.9	1656.0	14.142	3.850	2.94		Clay	98.1			12.07	1.07	n.a.	n.a.	0.94	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	12.320	0.369	2141.6	1666.2	13.503	3.278	2.91		Clay	96.0			11.64	1.07	n.a.	n.a.	0.94	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	12.670	0.385	2161.2	1675.7	13.832	3.324	2.91		Clay	95.7			11.98	1.06	n.a.	n.a.	0.94	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	12.440	0.422	2180.7	1685.2	13.470	3.714	2.95		Clay	98.7			11.76	1.06	n.a.	n.a.	0.94	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	12.450	0.446	2201.4	1695.4	13.389	3.932	2.96		Clay	100.0			11.77	1.06	n.a.	n.a.	0.94	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	13.180	0.415	2220.9	1704.9	14.159	3.439	2.91		Clay	95.7			12.46	1.06	n.a.	n.a.	0.94	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	11.950	0.349	2241.7	1715.0	12.629	3.220	2.93		Clay	97.6			11.29	1.06	n.a.	n.a.	0.94	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	10.610	0.255	2261.2	1724.6	10.993	2.691	2.94		Clay	97.9			10.03	1.06	n.a.	n.a.	0.94	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	9.890	0.262	2280.7	1734.1	10.091	2.990	2.99		Clay	100.0			9.35	1.05	n.a.	n.a.	0.94	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	9.370	0.287	2301.5	1744.2	9.425	3.495	3.06		Clay	100.0			8.86	1.05	n.a.	n.a.	0.94	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	9.340	0.409	2321.0	1753.8	9.328	5.002	3.15		Clay	100.0			8.83	1.05	n.a.	n.a.	0.94	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	10.610	0.467	2341.7	1763.9	10.703	4.942	3.10		Clay	100.0			10.03	1.05	n.a.	n.a.	0.94	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	11.420	0.392	2361.2	1773.4	11.548	3.832	3.01		Clay	100.0			10.79	1.05	n.a.	n.a.	0.93	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	11.030	0.322	2382.0	1783.6	11.033	3.274	2.98		Clay	100.0			10.43	1.05	n.a.	n.a.	0.93	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	9.880	0.258	2401.5	1793.1	9.681	2.969	3.01		Clay	100.0			9.34	1.04	n.a.	n.a.	0.93	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	8.840	0.205	2421.0	1802.6	8.465	2.690	3.03		Clay	100.0			8.36	1.04	n.a.	n.a.	0.93	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	8.510	0.180	2441.8	1812.8	8.042	2.463	3.03		Clay	100.0			8.04	1.04	n.a.	n.a.	0.93	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	7.480	0.219	2461.3	1822.3	6.859	3.509	3.17		Clay	100.0			7.07	1.04	n.a.	n.a.	0.93	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	8.250	0.323	2482.0	1832.4	7.650	4.608	3.20		Clay	100.0			7.80	1.04	n.a.	n.a.	0.93	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	11.940	0.446	2501.5	1842.0	11.606	4.171	3.03		Clay	100.0			11.29	1.04	n.a.	n.a.	0.93	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	10.890	0.347	2521.1	1851.5	10.402	3.606	3.03		Clay	100.0			10.29	1.04	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	8.430	0.169	2541.8	1861.6	7.691	2.358	3.04		Clay	100.0			7.97	1.03	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	8.280	0.166	2561.3	1871.2	7.481	2.373	3.05		Clay	100.0			7.83	1.03	n.a.	n.a.	0.93	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	8.300	0.199	2582.1	1881.3	7.451	2.842	3.09		Clay	100.0			7.84	1.03	n.a.	n.a.	0.93	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	11.990	0.314	2601.6	1890.8	11.306	2.939	2.95		Clay	98.8			11.33	1.03	n.a.	n.a.	0.93	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	14.650	0.355	2621.1	1900.4	14.039	2.661	2.85		Clay	90.7			13.85	1.03	n.a.	n.a.	0.92	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	16.160	0.403	2641.8	1910.5	15.534	2.714	2.82		Clay	88.2			15.27	1.03	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	14.840	0.338	2661.4	1920.0	14.072	2.503	2.83		Clay	89.4			14.03	1.03	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.70

Total Settlement: 0.45 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.150	13.150	0.325	2682.1	1930.2	12.236	2.751	2.90		Clay	95.3			12.43	1.02	n.a.	n.a.	0.92	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	14.880	0.425	2701.6	1939.7	13.950	3.140	2.89		Clay	94.2			14.06	1.02	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	15.890	0.547	2721.1	1949.3	14.908	3.763	2.92		Clay	96.2			15.02	1.02	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	16.410	0.508	2741.9	1959.4	15.351	3.379	2.88		Clay	93.1			15.51	1.02	n.a.	n.a.	0.92	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	15.130	0.473	2761.4	1968.9	13.966	3.441	2.91		Clay	96.1			14.30	1.02	n.a.	n.a.	0.92	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	13.460	0.394	2782.1	1979.1	12.197	3.265	2.95		Clay	98.8			12.72	1.02	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	13.270	0.401	2801.7	1988.6	11.937	3.377	2.96		Clay	100.0			12.54	1.02	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	14.130	0.332	2821.2	1998.1	12.731	2.609	2.88		Clay	93.1			13.36	1.02	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	13.350	0.260	2841.9	2008.3	11.880	2.181	2.86		Clay	91.6			12.62	1.01	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	12.420	0.225	2861.4	2017.8	10.892	2.048	2.87		Clay	93.0			11.74	1.01	n.a.	n.a.	0.92	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	12.720	0.284	2882.2	2027.9	11.124	2.516	2.92		Clay	96.3			12.02	1.01	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	13.400	0.270	2901.7	2037.5	11.729	2.263	2.87		Clay	92.7			12.67	1.01	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	14.520	0.352	2921.2	2047.0	12.760	2.695	2.88		Clay	93.7			13.72	1.01	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	14.400	0.419	2942.0	2057.1	12.570	3.237	2.93		Clay	97.8			13.61	1.01	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	15.060	0.335	2961.5	2066.7	13.141	2.465	2.85		Clay	91.1			14.23	1.01	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	14.080	0.238	2982.2	2076.8	12.123	1.887	2.82		Clay	88.3			13.31	1.00	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	12.620	0.264	3001.7	2086.3	10.659	2.376	2.92		Clay	96.4			11.93	1.00	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	12.930	0.743	3021.3	2095.9	10.897	6.508	3.17		Clay	100.0			12.22	1.00	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	16.500	1.256	3042.0	2106.0	14.225	8.382	3.16		Clay	100.0			15.60	1.00	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	28.900	1.378	3061.5	2115.5	25.875	5.035	2.82		Clay	88.2			27.32	1.00	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	43.470	1.240	3082.3	2125.7	39.540	2.957	2.52	plastic	Clay	64.9			41.09	1.00	n.a.	n.a.	0.91	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	30.480	0.920	3101.8	2135.2	27.097	3.178	2.67		Clay	76.4			28.81	1.00	n.a.	n.a.	0.91	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	19.280	0.583	3121.3	2144.7	16.524	3.291	2.84		Clay	90.5			18.22	1.00	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	14.000	0.410	3142.0	2154.9	11.536	3.300	2.97		Clay	100.0			13.23	1.00	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	17.360	0.239	3161.6	2164.4	14.581	1.514	2.70		Clay	78.8			16.41	0.99	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	13.650	0.219	3182.3	2174.5	11.091	1.814	2.84		Clay	90.2			12.90	0.99	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	9.320	0.232	3201.8	2184.1	7.069	3.011	3.12		Clay	100.0			8.81	0.99	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	7.970	0.176	3221.3	2193.6	5.798	2.769	3.18		Clay	100.0			7.53	0.99	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	7.470	0.141	3242.1	2203.7	5.308	2.412	3.18		Clay	100.0			7.06	0.99	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	7.550	0.135	3261.6	2213.3	5.349	2.284	3.16		Clay	100.0			7.14	0.99	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	8.050	0.153	3282.3	2223.4	5.765	2.394	3.15		Clay	100.0			7.61	0.99	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	8.230	0.200	3301.9	2232.9	5.893	3.035	3.19		Clay	100.0			7.78	0.99	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	8.830	0.226	3322.6	2243.1	6.392	3.158	3.17		Clay	100.0			8.35	0.98	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	9.370	0.162	3342.1	2252.6	6.836	2.099	3.05		Clay	100.0			8.86	0.98	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	8.740	0.153	3361.6	2262.2	6.241	2.172	3.09		Clay	100.0			8.26	0.98	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	8.120	0.195	3382.4	2272.3	5.658	3.030	3.21		Clay	100.0			7.67	0.98	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	8.510	0.203	3401.9	2281.8	5.968	2.987	3.18		Clay	100.0			8.04	0.98	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	8.810	0.220	3422.6	2292.0	6.194	3.094	3.18		Clay	100.0			8.33	0.98	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	8.150	0.263	3442.2	2301.5	5.587	4.097	3.28		Clay	100.0			7.70	0.98	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	8.340	0.438	3461.7	2311.0	5.720	6.626	3.39		Clay	100.0			7.88	0.98	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	11.000	0.474	3482.4	2321.2	7.978	5.115	3.21		Clay	100.0			10.40	0.98	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	9.040	0.344	3501.9	2330.7	6.255	4.718	3.28		Clay	100.0			8.54	0.97	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	7.380	0.230	3522.7	2340.8	4.801	4.092	3.34		Clay	100.0			6.98	0.97	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	6.750	0.169	3542.2	2350.4	4.237	3.402	3.34		Clay	100.0			6.38	0.97	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	6.710	0.141	3561.7	2359.9	4.177	2.854	3.31		Clay	100.0			6.34	0.97	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	7.160	0.109	3582.5	2370.0	4.531	2.036	3.20		Clay	100.0			6.77	0.97	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	7.110	0.129	3602.0	2379.6	4.462	2.434	3.25		Clay	100.0			6.72	0.97	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	7.280	0.189	3622.7	2389.7	4.577	3.449	3.31		Clay	100.0			6.88	0.97	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	9.770	0.221	3642.2	2399.2	6.626	2.780	3.13		Clay	100.0			9.23	0.97	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	11.200	0.248	3661.8	2408.8	7.779	2.651	3.06		Clay	100.0			10.59	0.97	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	11.440	0.309	3682.5	2418.9	7.936	3.220	3.10		Clay	100.0			10.81	0.97	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	11.510	0.348	3702.0	2428.4	7.955	3.604	3.12		Clay	100.0			10.88	0.96	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	13.740	0.349	3722.8	2438.6	9.742	2.938	3.00		Clay	100.0			12.99	0.96	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	12.620	0.304	3742.3	2448.1	8.781	2.825	3.03		Clay	100.0			11.93	0.96	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	11.340	0.427	3761.8	2457.6	7.698	4.518	3.19		Clay	100.0			10.72	0.96	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	13.830	0.601	3782.5	2467.8	9.676	5.034	3.14		Clay	100.0			13.07	0.96	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	26.230	0.597	3802.1	2477.3	19.641	2.456	2.71		Clay	79.6			24.79	0.96	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	30.920	0.855	3822.8	2487.4	23.324	2.948	2.70		Clay	78.8			29.22	0.96	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	23.470	0.866	3842.3	2497.0	17.260	4.021	2.88		Clay	93.7			22.18	0.96	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	32.780	0.720	3861.8	2506.5	24.615	2.334	2.62		Clay	72.3			30.98	0.96	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	30.410	0.635	3882.6	2516.6	22.624	2.229	2.63		Clay	73.7			28.74	0.96	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	20.980	0.543	3902.1	2526.2	15.065	2.853	2.84		Clay	90.1			19.83	0.95	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	14.530	0.407	3922.8	2536.3	9.911	3.241	3.02		Clay	100.0			13.73	0.95	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	12.950	0.295	3942.4	2545.8	8.625	2.685	3.02		Clay	100.0			12.24	0.95	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	12.990	0.246	3961.9	2555.4	8.616	2.238	2.98		Clay	100.0			12.28	0.95	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	13.120	0.359	3982.6	2565.5	8.676	3.226	3.07		Clay	100.0			12.40	0.95	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	12.540	0.486	4002.1	2575.1	8.185	4.614	3.18		Clay	100.0			11.85	0.95	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No.	3

PGA (A_{max})	0.70

Total Settlement:	0.45	(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)
33.140	12.540	0.394	4022.9	2585.2	8.145	3.743	3.12		Clay	100.0			11.85	0.95	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	20.420	0.421	4042.4	2594.7	14.182	2.285	2.80		Clay	87.4			19.30	0.95	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	21.570	0.489	4061.9	2604.3	15.005	2.505	2.81		Clay	87.6			20.39	0.95	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	14.090	0.384	4082.7	2614.4	9.217	3.189	3.04		Clay	100.0			13.32	0.95	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	13.230	0.277	4102.2	2623.9	8.521	2.481	3.01		Clay	100.0			12.50	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	12.650	0.264	4122.9	2634.1	8.040	2.489	3.03		Clay	100.0			11.96	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	13.440	0.320	4142.4	2643.6	8.601	2.817	3.04		Clay	100.0			12.70	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	13.490	0.333	4162.0	2653.1	8.600	2.920	3.04		Clay	100.0			12.75	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	13.670	0.330	4182.7	2663.3	8.695	2.853	3.03		Clay	100.0			12.92	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	13.100	0.252	4202.2	2672.8	8.230	2.291	3.00		Clay	100.0			12.38	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	13.950	0.216	4223.0	2682.9	8.825	1.823	2.93		Clay	97.1			13.19	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	12.700	0.211	4242.5	2692.5	7.858	1.997	2.99		Clay	100.0			12.00	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	13.110	0.240	4262.0	2702.0	8.127	2.187	3.00		Clay	100.0			12.39	0.94	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	13.240	0.318	4282.7	2712.1	8.184	2.863	3.06		Clay	100.0			12.51	0.94	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	13.670	0.357	4302.3	2721.7	8.465	3.099	3.06		Clay	100.0			12.92	0.94	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	13.350	0.327	4323.0	2731.8	8.191	2.921	3.06		Clay	100.0			12.62	0.93	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	12.410	0.281	4342.5	2741.3	7.470	2.743	3.08		Clay	100.0			11.73	0.93	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.030	0.298	4363.3	2751.5	7.159	3.030	3.12		Clay	100.0			11.37	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	12.490	0.341	4382.8	2761.0	7.460	3.312	3.13		Clay	100.0			11.81	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	13.030	0.316	4402.3	2770.5	7.817	2.914	3.08		Clay	100.0			12.32	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	13.130	0.265	4423.0	2780.7	7.853	2.422	3.03		Clay	100.0			12.41	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	13.110	0.276	4442.6	2790.2	7.805	2.532	3.05		Clay	100.0			12.39	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	12.490	0.293	4463.3	2800.3	7.327	2.855	3.10		Clay	100.0			11.81	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	12.920	0.293	4482.8	2809.9	7.601	2.742	3.07		Clay	100.0			12.21	0.93	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	13.950	0.302	4502.3	2819.4	8.299	2.583	3.03		Clay	100.0			13.19	0.93	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	13.450	0.293	4523.1	2829.5	7.908	2.614	3.05		Clay	100.0			12.71	0.93	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	13.210	0.279	4542.6	2839.1	7.706	2.553	3.05		Clay	100.0			12.49	0.93	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	12.810	0.271	4563.3	2849.2	7.390	2.571	3.07		Clay	100.0			12.11	0.92	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	12.680	0.327	4582.9	2858.7	7.268	3.143	3.12		Clay	100.0			11.98	0.92	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	12.250	0.397	4602.4	2868.3	6.937	3.989	3.20		Clay	100.0			11.58	0.92	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	13.310	0.417	4623.1	2878.4	7.642	3.795	3.15		Clay	100.0			12.58	0.92	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	13.260	0.433	4642.6	2888.0	7.575	3.955	3.16		Clay	100.0			12.53	0.92	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	13.150	0.434	4663.4	2898.1	7.466	4.011	3.17		Clay	100.0			12.43	0.92	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	14.210	0.430	4682.9	2907.6	8.164	3.626	3.12		Clay	100.0			13.43	0.92	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	14.190	0.426	4702.4	2917.2	8.117	3.595	3.12		Clay	100.0			13.41	0.92	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	14.270	0.423	4723.2	2927.3	8.136	3.548	3.11		Clay	100.0			13.49	0.92	n.a.	n.a.	0.84	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	14.220	0.466	4742.7	2936.8	8.069	3.931	3.14		Clay	100.0			13.44	0.92	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	13.850	0.448	4763.4	2947.0	7.783	3.909	3.15		Clay	100.0			13.09	0.92	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	13.620	0.388	4782.9	2956.5	7.596	3.459	3.13		Clay	100.0			12.87	0.92	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	12.590	0.336	4802.5	2966.0	6.870	3.302	3.16		Clay	100.0			11.90	0.91	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	12.070	0.309	4823.2	2976.2	6.491	3.197	3.17		Clay	100.0			11.41	0.91	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	12.180	0.350	4842.7	2985.7	6.537	3.589	3.19		Clay	100.0			11.51	0.91	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	12.350	0.423	4863.5	2995.8	6.621	4.262	3.23		Clay	100.0			11.67	0.91	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	12.680	0.495	4883.0	3005.4	6.813	4.834	3.25		Clay	100.0			11.98	0.91	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	12.950	0.552	4902.5	3014.9	6.965	5.253	3.27		Clay	100.0			12.24	0.91	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	13.590	0.595	4923.2	3025.0	7.358	5.342	3.25		Clay	100.0			12.84	0.91	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	13.720	0.588	4942.8	3034.6	7.414	5.231	3.24		Clay	100.0			12.97	0.91	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	13.940	0.609	4963.5	3044.7	7.527	5.317	3.24		Clay	100.0			13.18	0.91	n.a.	n.a.	0.82	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	14.300	0.622	4983.0	3054.2	7.733	5.269	3.23		Clay	100.0			13.52	0.91	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	14.770	0.670	5002.5	3063.8	8.009	5.462	3.23		Clay	100.0			13.96	0.91	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	15.220	0.723	5023.3	3073.9	8.269	5.689	3.23		Clay	100.0			14.39	0.91	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	15.840	0.782	5042.8	3083.4	8.639	5.874	3.22		Clay	100.0			14.97	0.91	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	15.820	0.748	5063.5	3093.6	8.591	5.631	3.21		Clay	100.0			14.95	0.90	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	15.290	0.690	5083.1	3103.1	8.217	5.415	3.22		Clay	100.0			14.45	0.90	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	14.420	0.566	5102.6	3112.6	7.626	4.766	3.21		Clay	100.0			13.63	0.90	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	13.820	0.441	5123.3	3122.8	7.210	3.917	3.18		Clay	100.0			13.06	0.90	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	13.210	0.401	5142.8	3132.3	6.793	3.765	3.19		Clay	100.0			12.49	0.90	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	13.430	0.428	5163.6	3142.4	6.904	3.944	3.20		Clay	100.0			12.69	0.90	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	13.320	0.510	5183.1	3152.0	6.807	4.756	3.25		Clay	100.0			12.59	0.90	n.a.	n.a.	0.81	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	13.640	0.601	5202.6	3161.5	6.983	5.448	3.27		Clay	100.0			12.89	0.90	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	14.430	0.698	5223.4	3171.6	7.452	5.909	3.27		Clay	100.0			13.64	0.90	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	14.550	0.648	5242.9	3181.2	7.499	5.436	3.25		Clay	100.0			13.75	0.90	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	14.140	0.617	5263.6	3191.3	7.212	5.364	3.26		Clay	100.0			13.36	0.90	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	14.230	0.589	5283.1	3200.9	7.241	5.084	3.24		Clay	100.0			13.45	0.90	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	15.140	0.612	5303.9	3211.0	7.778	4.904	3.21		Clay	100.0			14.31	0.90	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	15.130	0.652	5323.4	3220.5	7.743	5.228	3.23		Clay	100.0			14.30	0.90	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	15.200	0.664	5342.9	3230.1	7.757	5.297	3.23		Clay	100.0			14.37	0.89	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 3

PGA (A_{max}) 0.70

Total Settlement: 0.45 (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)
44.130	15.870	0.656	5363.7	3240.2	8.140	4.976	3.20		Clay	100.0			15.00	0.89	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	14.930	0.627	5383.2	3249.7	7.532	5.123	3.23		Clay	100.0			14.11	0.89	n.a.	n.a.	0.81	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	14.850	0.590	5403.9	3259.9	7.453	4.858	3.22		Clay	100.0			14.04	0.89	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	14.470	0.587	5423.4	3269.4	7.193	4.993	3.24		Clay	100.0			13.68	0.89	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	14.560	0.562	5443.0	3278.9	7.221	4.743	3.23		Clay	100.0			13.76	0.89	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	14.780	0.522	5463.7	3289.1	7.326	4.329	3.20		Clay	100.0			13.97	0.89	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	14.670	0.579	5483.2	3298.6	7.232	4.856	3.23		Clay	100.0			13.87	0.89	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	15.140	0.614	5504.0	3308.7	7.488	4.955	3.23		Clay	100.0			14.31	0.89	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	16.330	0.686	5523.5	3318.3	8.178	5.057	3.20		Clay	100.0			15.43	0.89	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	15.960	0.611	5543.0	3327.8	7.926	4.633	3.19		Clay	100.0			15.09	0.89	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	15.780	0.484	5563.7	3337.9	7.788	3.723	3.14		Clay	100.0			14.91	0.89	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	14.960	0.512	5583.3	3347.5	7.270	4.205	3.19		Clay	100.0			14.14	0.89	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	14.430	0.597	5604.0	3357.6	6.926	5.134	3.26		Clay	100.0			13.64	0.89	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	14.950	0.564	5623.5	3367.1	7.210	4.644	3.22		Clay	100.0			14.13	0.88	n.a.	n.a.	0.80	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	15.110	0.532	5643.0	3376.7	7.278	4.329	3.20		Clay	100.0			14.28	0.88	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	14.790	0.464	5663.8	3386.8	7.062	3.878	3.18		Clay	100.0			13.98	0.88	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	14.860	0.477	5683.3	3396.3	7.077	3.971	3.19		Clay	100.0			14.05	0.88	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	14.790	0.488	5704.0	3406.5	7.009	4.090	3.20		Clay	100.0			13.98	0.88	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	15.230	0.512	5723.6	3416.0	7.241	4.140	3.19		Clay	100.0			14.40	0.88	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	15.460	0.515	5743.1	3425.5	7.350	4.088	3.18		Clay	100.0			14.61	0.88	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	15.650	0.535	5763.8	3435.7	7.433	4.186	3.19		Clay	100.0			14.79	0.88	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	16.050	0.527	5783.3	3445.2	7.639	4.001	3.16		Clay	100.0			15.17	0.88	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	16.380	0.543	5804.1	3455.3	7.801	4.030	3.16		Clay	100.0			15.48	0.88	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	16.130	0.555	5823.6	3464.9	7.630	4.199	3.18		Clay	100.0			15.25	0.88	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	16.380	0.558	5843.1	3474.4	7.747	4.148	3.17		Clay	100.0			15.48	0.88	n.a.	n.a.	0.79	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	16.250	0.580	5863.9	3484.5	7.644	4.354	3.19		Clay	100.0			15.36	0.88	n.a.	n.a.	0.78	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	16.640	0.612	5883.4	3494.1	7.841	4.469	3.18		Clay	100.0			15.73	0.88	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	17.660	0.630	5904.1	3504.2	8.394	4.281	3.15		Clay	100.0			16.69	0.88	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	17.370	0.633	5923.6	3513.8	8.201	4.396	3.16		Clay	100.0			16.42	0.87	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	17.160	0.639	5943.2	3523.3	8.054	4.502	3.18		Clay	100.0			16.22	0.87	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	17.490	0.680	5963.9	3533.4	8.212	4.684	3.18		Clay	100.0			16.53	0.87	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	17.890	0.726	5983.4	3543.0	8.410	4.874	3.18		Clay	100.0			16.91	0.87	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	18.080	0.750	6004.2	3553.1	8.487	4.971	3.18		Clay	100.0			17.09	0.87	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	18.630	0.789	6023.7	3562.6	8.768	5.052	3.18		Clay	100.0			17.61	0.87	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	19.090	0.743	6043.2	3572.2	8.996	4.626	3.14		Clay	100.0			18.04	0.87	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	19.120	0.726	6063.9	3582.3	8.982	4.515	3.14		Clay	100.0			18.07	0.87	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	19.220	0.657	6083.5	3591.8	9.008	4.058	3.11		Clay	100.0			18.17	0.87	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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	462.150	1.143	19.2	19.2	4585.593	0.247	0.64		Unsaturated	0.0			436.81	1.70	742.59	742.59	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	326.120	1.752	39.6	39.6	2253.075	0.537	0.96		Unsaturated	0.0			308.24	1.70	524.01	524.01	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	221.430	2.510	58.8	58.8	1255.343	1.134	1.33		Unsaturated	0.0			209.29	1.70	355.79	355.79	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	174.110	3.558	79.2	79.2	850.422	2.044	1.62		Unsaturated	0.0			164.57	1.70	279.76	279.76	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	157.100	4.762	98.4	98.4	688.359	3.032	1.82		Unsaturated	8.2			148.49	1.70	252.43	257.90	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	135.230	3.932	117.6	117.6	541.942	2.909	1.84		Unsaturated	10.0			127.82	1.70	217.29	228.30	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	261.440	3.366	138.0	138.0	967.364	1.288	1.42		Unsaturated	0.0			247.11	1.70	420.08	420.08	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	415.460	2.762	157.2	157.2	1440.433	0.665	1.09		Unsaturated	0.0			392.68	1.70	667.56	667.56	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	241.340	2.163	177.6	177.6	787.082	0.896	1.31		Unsaturated	0.0			228.11	1.70	387.79	387.79	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	150.630	2.073	196.8	196.8	466.538	1.377	1.58		Unsaturated	0.0			142.37	1.70	242.03	242.03	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	98.190	1.967	216.0	216.0	290.158	2.006	1.83		Unsaturated	9.0			92.81	1.70	157.77	164.11	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	60.200	1.428	236.4	236.4	169.899	2.376	2.02		Unsaturated	24.7			56.90	1.70	96.73	143.20	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	33.050	1.044	255.6	255.6	89.532	3.172	2.30		Unsaturated	46.6			31.24	1.70	53.10	111.62	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	22.700	1.791	276.0	276.0	88.739	7.939	2.61		Unsaturated	71.8			21.46	1.70	36.47	98.05	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	78.440	1.973	295.2	295.2	198.122	2.519	2.00		Unsaturated	23.1			74.14	1.70	126.04	174.17	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	110.450	2.212	314.4	314.4	270.444	2.006	1.84		Unsaturated	10.4			104.40	1.70	177.47	188.77	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	86.870	2.677	334.8	334.8	206.021	3.087	2.06		Unsaturated	28.1			82.11	1.70	139.58	200.04	1.00	0.455	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	100.820	2.519	354.0	354.0	232.570	2.503	1.96		Unsaturated	19.7			95.29	1.70	162.00	206.47	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	96.220	2.466	374.4	374.4	215.786	2.568	1.99		Unsaturated	21.9			90.95	1.70	154.61	204.34	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	60.490	1.990	393.6	393.6	132.134	3.301	2.20		Unsaturated	39.0			57.17	1.70	97.20	161.80	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	39.790	1.621	412.8	412.8	84.707	4.094	2.39		Unsaturated	54.6			37.61	1.70	63.93	128.74	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	32.000	1.341	433.2	433.2	66.394	4.220	2.47		Unsaturated	60.9			30.25	1.70	51.42	114.81	1.00	0.454	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	28.930	0.881	452.4	452.4	58.675	3.070	2.41		Unsaturated	55.8			27.34	1.70	46.48	106.96	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	23.620	0.610	472.8	472.8	46.757	2.610	2.43		Unsaturated	57.6			22.33	1.70	37.95	96.64	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	23.130	0.661	492.0	492.0	44.856	2.888	2.48		Unsaturated	61.1			21.86	1.70	37.17	96.59	1.00	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	32.620	0.775	512.4	512.4	62.162	2.394	2.32		Unsaturated	48.3			30.83	1.70	52.41	111.58	0.99	0.453	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	35.380	0.880	531.6	531.6	66.216	2.507	2.31		Unsaturated	47.9			33.44	1.70	56.85	116.95	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	33.600	0.703	550.8	550.8	61.736	2.108	2.28		Unsaturated	45.5			31.76	1.70	53.99	112.18	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	31.320	0.633	571.2	571.2	56.457	2.040	2.30		Unsaturated	47.0			29.60	1.70	50.33	108.34	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	36.030	0.771	590.4	590.4	63.943	2.157	2.28		Unsaturated	45.1			34.05	1.70	57.89	116.89	0.99	0.452	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	37.340	0.678	610.8	610.8	65.152	1.831	2.22		Unsaturated	40.8			35.29	1.70	60.00	116.96	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	26.630	0.666	630.0	630.0	45.583	2.529	2.43		Unsaturated	57.6			25.17	1.70	42.79	102.79	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	17.490	0.739	649.2	649.2	37.099	4.305	2.66		Unsaturated	75.4			16.53	1.70	28.10	87.84	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	15.500	0.788	669.6	669.6	45.296	5.193	2.65		Unsaturated	75.2			14.65	1.70	24.91	83.67	0.99	0.451	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	19.920	0.750	688.8	688.8	40.591	3.833	2.59		Unsaturated	70.4			18.83	1.70	32.01	92.02	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	18.160	0.714	709.2	709.2	36.173	4.012	2.64		Unsaturated	74.3			17.16	1.70	29.18	89.06	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	17.330	0.712	728.4	728.4	33.829	4.199	2.68		Unsaturated	77.1			16.38	1.70	27.85	87.78	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	20.740	0.702	747.6	747.6	39.876	3.444	2.57		Unsaturated	68.2			19.60	1.70	33.33	93.30	0.99	0.450	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	21.500	0.705	768.0	768.0	40.573	3.339	2.55		Unsaturated	67.1			20.32	1.68	34.13	94.09	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	22.070	0.723	787.2	787.2	40.936	3.336	2.55		Unsaturated	66.8			20.86	1.66	34.55	94.59	0.99	0.449	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	21.890	0.705	807.6	807.6	39.856	3.282	2.55		Unsaturated	67.1			20.69	1.64	33.89	93.79	0.99	0.449	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.890	20.980	0.672	826.8	826.8	37.528	3.268	2.57		Unsaturated	68.5			19.83	1.62	32.22	91.94	0.99	0.449	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.050	19.930	0.576	846.0	846.0	35.027	2.951	2.56		Unsaturated	68.0			18.84	1.61	30.41	89.49	0.99	0.448	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.220	17.550	0.519	866.4	866.4	30.227	3.033	2.62		Unsaturated	72.5			16.59	1.61	26.68	85.51	0.99	0.448	1.085	n.a.	n.a.	n.a.	0.00	0.00
7.380	16.410	0.455	885.6	885.6	27.768	2.848	2.63		Unsaturated	73.3			15.51	1.60	24.78	83.20	0.98	0.448	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.550	15.640	0.421	906.0	906.0	25.993	2.771	2.64		Unsaturated	74.5			14.78	1.58	23.41	81.62	0.98	0.448	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.710	14.680	0.388	925.2	925.2	23.979	2.730	2.67		Unsaturated	76.3			13.88	1.57	21.81	79.83	0.98	0.447	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.870	13.810	0.418	944.4	944.4	28.246	3.137	2.65		Unsaturated	75.0			13.05	1.56	20.38	77.77	0.98	0.447	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.040	14.940	0.424	964.8	964.8	29.970	2.935	2.61		Clay	71.9			14.12	1.23	n.a.	n.a.	0.98	0.448	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.200	16.310	0.452	984.0	984.0	25.552	2.858	2.66	plastic	Clay	75.6			15.42	1.22	n.a.	n.a.	0.98	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.370	15.670	0.452	1004.4	1004.4	30.203	2.979	2.61		Clay	72.1			14.81	1.22	n.a.	n.a.	0.98	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.530	15.780	0.370	1023.6	1023.6	23.992	2.423	2.63	plastic	Clay	73.8			14.91	1.21	n.a.	n.a.	0.98	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.690	15.670	0.312	1042.8	1042.8	23.497	2.061	2.60	plastic	Clay	71.0			14.81	1.21	n.a.	n.a.	0.98	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
8.860	24.560	0.460	1063.2	1063.2	32.040	1.913	2.47		Sand	60.8	26.66	1.8	47.99	1.35	64.72	131.82	0.98	0.469	1.094	0.203	0.330	0.70	0.02	0.05
9.020	28.210	0.532	1082.4	1082.4	36.565	1.924	2.43		Sand	57.3		1.8	47.99	1.34	64.35	130.24	0.98	0.473	1.091	0.198	0.317	0.67	0.02	0.05
9.190	21.700	0.472	1102.8	1102.8	27.689	2.234	2.56		Sand	68.1	26.66	1.8	47.99	1.33	63.66	132.39	0.98	0.477	1.090	0.205	0.332	0.70	0.02	0.05
9.350	14.440	0.480	1122.0	1122.0	24.740	3.461	2.72		Clay	80.7			13.65	1.18	n.a.	n.a.	0.98	0.481	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.510	12.200	0.373	1141.2	1141.2	20.381	3.203	2.77		Clay	84.2			11.53	1.18	n.a.	n.a.	0.98	0.484	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.680	11.480	0.315	1161.6	1161.6	18.766	2.887	2.77		Clay	84.3			10.85	1.17	n.a.	n.a.	0.98	0.488	n.a.	n.a.	n.a.	n.a.	0.00	0.00
9.840	10.410	0.269	1180.8	1180.8	16.632	2.742	2.79		Clay	86.5			9.84	1.17	n.a.	n.a.	0.98	0.492	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.010	10.280	0.248	1201.2	1201.2	16.116	2.561	2.79		Clay	86.0			9.72	1.16	n.a.	n.a.	0.97	0.495	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	9.890	0.212	1220.4	1220.4	15.208	2.287	2.78		Clay	85.4			9.35	1.16	n.a.	n.a.	0.97	0.498	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	9.340	0.200	1239.6	1239.6	14.069	2.291	2.81		Clay	87.7			8.83	1.15	n.a.	n.a.	0.97	0.502	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	8.740	0.186	1260.0	1260.0	12.873	2.296	2.84		Clay	90.3			8.26	1.15	n.a.	n.a.	0.97	0.505	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	8.570	0.186	1279.2	1279.2	12.399	2.347	2.86		Clay	91.8			8.10	1.14	n.a.	n.a.	0.97	0.508	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	8.900	0.205	1299.6	1299.6	12.697	2.481	2.86		Clay	92.2			8.41	1.14	n.a.	n.a.	0.97	0.511	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	8.870	0.249	1318.8	1318.8	12.452	3.033	2.92		Clay	96.7			8.38	1.13	n.a.	n.a.	0.97	0.514	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.70

Total Settlement: 0.31 (Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'_{vc} = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.150	9.820	0.241	1338.0	1338.0	13.679	2.634	2.85		Clay	91.2			9.28	1.13	n.a.	n.a.	0.97	0.517	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.320	10.140	0.263	1358.4	1358.4	13.929	2.784	2.86		Clay	91.8			9.58	1.12	n.a.	n.a.	0.97	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	10.160	0.276	1377.6	1377.6	13.750	2.916	2.88		Clay	93.1			9.60	1.12	n.a.	n.a.	0.97	0.523	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	10.460	0.275	1398.0	1398.0	13.964	2.818	2.86		Clay	92.0			9.89	1.12	n.a.	n.a.	0.97	0.526	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	10.540	0.259	1417.2	1417.2	13.874	2.637	2.85		Clay	90.9			9.96	1.11	n.a.	n.a.	0.97	0.529	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	10.130	0.241	1437.6	1437.6	13.093	2.562	2.86		Clay	91.9			9.57	1.11	n.a.	n.a.	0.97	0.531	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.560	0.235	1456.8	1456.8	12.125	2.661	2.90		Clay	94.9			9.04	1.10	n.a.	n.a.	0.97	0.534	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	9.700	0.211	1476.0	1476.0	12.144	2.353	2.87		Clay	92.4			9.17	1.10	n.a.	n.a.	0.97	0.536	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	9.880	0.203	1496.4	1496.4	12.205	2.219	2.85		Clay	91.2			9.34	1.10	n.a.	n.a.	0.97	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	9.770	0.177	1515.6	1515.6	11.893	1.966	2.83		Clay	89.6			9.23	1.09	n.a.	n.a.	0.96	0.542	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	9.700	0.211	1536.0	1536.0	11.630	2.367	2.88		Clay	93.8			9.17	1.09	n.a.	n.a.	0.96	0.544	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	9.320	0.215	1555.2	1555.2	10.986	2.519	2.92		Clay	96.6			8.81	1.08	n.a.	n.a.	0.96	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	10.280	0.255	1574.4	1574.4	12.059	2.688	2.90		Clay	95.2			9.72	1.08	n.a.	n.a.	0.96	0.549	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	11.080	0.344	1594.8	1594.8	12.895	3.344	2.93		Clay	97.7			10.47	1.08	n.a.	n.a.	0.96	0.551	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	12.190	0.405	1614.0	1614.0	14.105	3.559	2.92		Clay	96.6			11.52	1.07	n.a.	n.a.	0.96	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	12.620	0.483	1634.4	1634.4	14.443	4.096	2.95		Clay	98.9			11.93	1.07	n.a.	n.a.	0.96	0.555	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	12.470	0.467	1653.6	1653.6	14.082	4.008	2.95		Clay	99.1			11.79	1.07	n.a.	n.a.	0.96	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	12.880	0.484	1672.8	1672.8	14.399	4.017	2.94		Clay	98.6			12.17	1.06	n.a.	n.a.	0.96	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	12.940	0.493	1693.2	1693.2	14.285	4.077	2.95		Clay	99.1			12.23	1.06	n.a.	n.a.	0.96	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	13.880	0.549	1712.4	1712.4	15.211	4.217	2.94		Clay	98.1			13.12	1.06	n.a.	n.a.	0.96	0.564	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	14.750	0.652	1732.8	1732.8	16.024	4.695	2.95		Clay	99.1			13.94	1.05	n.a.	n.a.	0.96	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	16.100	0.710	1752.0	1752.0	17.379	4.662	2.92		Clay	96.8			15.22	1.05	n.a.	n.a.	0.96	0.568	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	16.090	0.719	1771.2	1771.2	17.168	4.732	2.93		Clay	97.4			15.21	1.05	n.a.	n.a.	0.96	0.570	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	15.270	0.698	1791.6	1791.6	16.046	4.858	2.96		Clay	99.8			14.43	1.04	n.a.	n.a.	0.96	0.571	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	14.910	0.667	1810.8	1810.8	15.468	4.763	2.97		Clay	100.0			14.09	1.04	n.a.	n.a.	0.95	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	13.500	0.606	1831.2	1831.2	13.744	4.812	3.01		Clay	100.0			12.76	1.04	n.a.	n.a.	0.95	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	12.670	0.586	1850.4	1849.2	12.703	4.986	3.05		Clay	100.0			11.98	1.04	n.a.	n.a.	0.95	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	12.420	0.554	1870.0	1858.7	12.358	4.826	3.05		Clay	100.0			11.74	1.03	n.a.	n.a.	0.95	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	12.710	0.586	1890.7	1868.9	12.590	4.978	3.05		Clay	100.0			12.01	1.03	n.a.	n.a.	0.95	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	13.560	0.586	1910.2	1878.4	13.421	4.651	3.01		Clay	100.0			12.82	1.03	n.a.	n.a.	0.95	0.582	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	14.400	0.612	1931.0	1888.5	14.228	4.553	2.98		Clay	100.0			13.61	1.03	n.a.	n.a.	0.95	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	15.180	0.638	1950.5	1898.1	14.968	4.492	2.96		Clay	99.9			14.35	1.03	n.a.	n.a.	0.95	0.585	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	15.700	0.608	1970.0	1907.6	15.428	4.133	2.93		Clay	97.3			14.84	1.03	n.a.	n.a.	0.95	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	15.860	0.592	1990.7	1917.7	15.502	3.981	2.92		Clay	96.4			14.99	1.03	n.a.	n.a.	0.95	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	15.180	0.547	2010.3	1927.3	14.710	3.855	2.93		Clay	97.1			14.35	1.02	n.a.	n.a.	0.95	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	14.400	0.512	2031.0	1937.4	13.817	3.824	2.95		Clay	98.6			13.61	1.02	n.a.	n.a.	0.95	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	14.580	0.467	2050.5	1946.9	13.924	3.445	2.92		Clay	96.2			13.78	1.02	n.a.	n.a.	0.95	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	13.650	0.442	2070.0	1956.5	12.896	3.504	2.95		Clay	98.7			12.90	1.02	n.a.	n.a.	0.95	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	12.040	0.389	2090.8	1966.6	11.181	3.541	3.00		Clay	100.0			11.38	1.02	n.a.	n.a.	0.94	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	10.980	0.351	2110.3	1976.1	10.045	3.540	3.04		Clay	100.0			10.38	1.02	n.a.	n.a.	0.94	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	9.710	0.272	2131.0	1986.3	8.704	3.142	3.06		Clay	100.0			9.18	1.02	n.a.	n.a.	0.94	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	8.470	0.258	2150.6	1995.8	7.410	3.482	3.14		Clay	100.0			8.01	1.02	n.a.	n.a.	0.94	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	7.950	0.269	2170.1	2005.3	6.847	3.923	3.20		Clay	100.0			7.51	1.01	n.a.	n.a.	0.94	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	9.350	0.281	2190.8	2015.5	8.191	3.405	3.10		Clay	100.0			8.84	1.01	n.a.	n.a.	0.94	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	10.650	0.298	2210.3	2025.0	9.427	3.124	3.03		Clay	100.0			10.07	1.01	n.a.	n.a.	0.94	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	10.180	0.293	2231.1	2035.1	8.908	3.235	3.06		Clay	100.0			9.62	1.01	n.a.	n.a.	0.94	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	9.310	0.271	2250.6	2044.7	8.006	3.316	3.10		Clay	100.0			8.80	1.01	n.a.	n.a.	0.94	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	9.160	0.264	2270.1	2054.2	7.813	3.288	3.11		Clay	100.0			8.66	1.01	n.a.	n.a.	0.94	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	9.300	0.375	2290.9	2064.3	7.900	4.594	3.19		Clay	100.0			8.79	1.01	n.a.	n.a.	0.94	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	11.150	0.453	2310.4	2073.9	9.639	4.535	3.11		Clay	100.0			10.54	1.01	n.a.	n.a.	0.94	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	14.630	0.495	2331.1	2084.0	12.922	3.675	2.96		Clay	99.6			13.83	1.00	n.a.	n.a.	0.94	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	14.350	0.428	2350.6	2093.6	12.586	3.247	2.94		Clay	97.8			13.56	1.00	n.a.	n.a.	0.93	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	11.890	0.315	2371.4	2103.7	10.177	2.942	2.99		Clay	100.0			11.24	1.00	n.a.	n.a.	0.93	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	11.750	0.277	2390.9	2113.2	9.989	2.621	2.96		Clay	100.0			11.11	1.00	n.a.	n.a.	0.93	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	12.160	0.288	2410.4	2122.8	10.321	2.628	2.95		Clay	99.3			11.49	1.00	n.a.	n.a.	0.93	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	12.110	0.268	2431.2	2132.9	10.216	2.462	2.94		Clay	98.3			11.45	1.00	n.a.	n.a.	0.93	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	10.100	0.258	2450.7	2142.4	8.285	2.907	3.06		Clay	100.0			9.55	1.00	n.a.	n.a.	0.93	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	9.660	0.223	2471.4	2152.6	7.827	2.642	3.06		Clay	100.0			9.13	1.00	n.a.	n.a.	0.93	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	10.250	0.202	2490.9	2162.1	8.329	2.244	2.99		Clay	100.0			9.69	0.99	n.a.	n.a.	0.93	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	9.500	0.192	2510.5	2171.6	7.593	2.324	3.04		Clay	100.0			8.98	0.99	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.110	0.299	2531.2	2181.8	8.108	3.382	3.10		Clay	100.0			9.56	0.99	n.a.	n.a.	0.93	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	12.010	0.291	2550.7	2191.3	9.798	2.715	2.98		Clay	100.0			11.35	0.99	n.a.	n.a.	0.93	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	14.210	0.349	2571.5	2201.4	11.742	2.703	2.91		Clay	96.1			13.43	0.99	n.a.	n.a.	0.93	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	14.080	0.363	2591.0	2211.0	11.565	2.839	2.93		Clay	97.5			13.31	0.99	n.a.	n.a.	0.93	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	14.330	0.525	2610.5	2220.5	11.731	4.032	3.02		Clay	100.0			13.54	0.99	n.a.	n.a.	0.92	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	15.010	0.563	2631.2	2230.6	12.278	4.110	3.01		Clay	100.0			14.19	0.99	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	16.640	0.615	2650.8	2240.2	13.673	4.016	2.96		Clay	100.0			15.73	0.99	n.a.	n.a.	0.92	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
22.150	21.330	0.427	2671.5	2250.3	17.770	2.133	2.71		Clay	79.6			20.16	0.98	n.a.	n.a.	0.92	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	24.750	0.305	2691.0	2259.8	21.406	1.304	2.52		Sand	64.8			23.39	0.96	22.56	78.71	0.92	0.626	0.994	0.115	0.134	0.21	0.04	0.08
22.470	16.900	0.270	2710.5	2269.4	13.700	1.739	2.75		Clay	83.2			15.97	0.98	n.a.	n.a.	0.92	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	12.750	0.264	2731.3	2279.5	9.988	2.319	2.94		Clay	97.8			12.05	0.98	n.a.	n.a.	0.92	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	11.940	0.299	2750.8	2289.0	9.231	2.831	3.01		Clay	100.0			11.29	0.98	n.a.	n.a.	0.92	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	12.630	0.391	2771.5	2299.2	9.781	3.476	3.04		Clay	100.0			11.94	0.98	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	14.830	0.477	2791.1	2308.7	11.638	3.549	2.99		Clay	100.0			14.02	0.98	n.a.	n.a.	0.92	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	17.670	0.540	2810.6	2318.2	14.032	3.321	2.90		Clay	95.2			16.70	0.98	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	19.300	0.566	2831.3	2328.4	15.362	3.166	2.86		Clay	91.7			18.24	0.98	n.a.	n.a.	0.92	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	18.940	0.599	2850.8	2337.9	14.983	3.422	2.89		Clay	94.1			17.90	0.97	n.a.	n.a.	0.92	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	18.540	0.664	2871.6	2348.0	14.569	3.880	2.93		Clay	97.5			17.52	0.97	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	16.300	0.602	2891.1	2357.6	12.601	4.053	2.99		Clay	100.0			15.41	0.97	n.a.	n.a.	0.91	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	13.780	0.330	2910.6	2367.1	10.413	2.678	2.95		Clay	99.4			13.02	0.97	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	12.050	0.311	2931.4	2377.2	8.905	2.934	3.03		Clay	100.0			11.39	0.97	n.a.	n.a.	0.91	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	11.750	0.435	2950.9	2386.8	8.610	4.235	3.14		Clay	100.0			11.11	0.97	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	14.540	0.461	2971.6	2396.9	10.892	3.530	3.01		Clay	100.0			13.74	0.97	n.a.	n.a.	0.91	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	21.570	0.392	2991.1	2406.5	16.684	1.953	2.71		Clay	79.7			20.39	0.97	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	21.390	0.381	3010.7	2416.0	16.461	1.914	2.71		Clay	79.7			20.22	0.97	n.a.	n.a.	0.91	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	15.200	0.691	3031.4	2426.1	11.281	5.047	3.09		Clay	100.0			14.37	0.96	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	16.290	0.929	3050.9	2435.7	12.124	6.289	3.13		Clay	100.0			15.40	0.96	n.a.	n.a.	0.91	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	39.800	0.578	3071.7	2445.8	33.640	1.510	2.39		Sand	54.5		1.8	67.71	0.94	63.52	128.20	0.91	0.637	0.981	0.192	0.273	0.43	0.02	0.05
25.590	31.700	0.277	3091.2	2455.3	26.459	0.917	2.36		Sand	52.1	37.62	1.8	67.72	0.94	63.40	127.11	0.91	0.637	0.980	0.189	0.267	0.42	0.02	0.05
25.750	19.620	0.249	3110.7	2464.9	14.658	1.381	2.68		Clay	77.0			18.54	0.96	n.a.	n.a.	0.90	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	12.400	0.245	3131.4	2475.0	8.755	2.263	2.98		Clay	100.0			11.72	0.96	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	10.440	0.225	3151.0	2484.5	7.136	2.542	3.08		Clay	100.0			9.87	0.96	n.a.	n.a.	0.90	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	9.680	0.194	3171.7	2494.7	6.489	2.400	3.10		Clay	100.0			9.15	0.96	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	8.320	0.172	3191.2	2504.2	5.370	2.561	3.19		Clay	100.0			7.86	0.96	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	7.900	0.185	3210.7	2513.7	5.008	2.931	3.24		Clay	100.0			7.47	0.96	n.a.	n.a.	0.90	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	8.260	0.192	3231.5	2523.9	5.265	2.894	3.22		Clay	100.0			7.81	0.95	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	8.360	0.186	3251.0	2533.4	5.317	2.766	3.21		Clay	100.0			7.90	0.95	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	8.060	0.172	3271.7	2543.5	5.051	2.684	3.22		Clay	100.0			7.62	0.95	n.a.	n.a.	0.90	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	7.670	0.179	3291.3	2553.1	4.719	2.971	3.27		Clay	100.0			7.25	0.95	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	7.340	0.157	3312.0	2563.2	4.435	2.762	3.28		Clay	100.0			6.94	0.95	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	8.720	0.191	3331.5	2572.7	5.484	2.702	3.19		Clay	100.0			8.24	0.95	n.a.	n.a.	0.90	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	9.190	0.230	3351.0	2582.3	5.820	3.063	3.20		Clay	100.0			8.69	0.95	n.a.	n.a.	0.89	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	7.620	0.288	3371.8	2592.4	4.578	4.858	3.40		Clay	100.0			7.20	0.95	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	10.750	0.387	3391.3	2601.9	6.960	4.272	3.21		Clay	100.0			10.16	0.95	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	11.980	0.455	3412.0	2612.1	7.867	4.425	3.18		Clay	100.0			11.32	0.95	n.a.	n.a.	0.89	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	14.320	0.583	3431.6	2621.6	9.616	4.621	3.12		Clay	100.0			13.53	0.95	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	15.120	0.653	3451.1	2631.1	10.181	4.873	3.11		Clay	100.0			14.29	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	16.490	0.669	3471.8	2641.3	11.172	4.537	3.06		Clay	100.0			15.59	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	17.040	0.655	3491.3	2650.8	11.539	4.285	3.04		Clay	100.0			16.11	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	16.440	0.560	3512.1	2660.9	11.037	3.812	3.02		Clay	100.0			15.54	0.94	n.a.	n.a.	0.89	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.200	15.600	0.522	3531.6	2670.5	10.361	3.776	3.04		Clay	100.0			14.74	0.94	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.360	14.590	0.521	3551.1	2680.0	9.563	4.063	3.09		Clay	100.0			13.79	0.94	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.530	14.490	0.568	3571.9	2690.1	9.445	4.474	3.12		Clay	100.0			13.70	0.94	n.a.	n.a.	0.89	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.690	15.020	0.649	3591.4	2699.7	9.797	4.910	3.13		Clay	100.0			14.20	0.94	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.860	16.260	0.625	3612.1	2709.8	10.668	4.322	3.07		Clay	100.0			15.37	0.94	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	16.080	0.623	3631.6	2719.4	10.491	4.365	3.08		Clay	100.0			15.20	0.94	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.180	15.630	0.527	3651.2	2728.9	10.117	3.818	3.05		Clay	100.0			14.77	0.94	n.a.	n.a.	0.88	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.350	14.160	0.384	3671.9	2739.0	8.999	3.114	3.04		Clay	100.0			13.38	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.510	14.370	0.361	3691.4	2748.6	9.113	2.882	3.02		Clay	100.0			13.58	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.680	14.010	0.410	3712.2	2758.7	8.811	3.371	3.07		Clay	100.0			13.24	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	19.450	0.719	3731.7	2768.2	12.704	4.089	2.99		Clay	100.0			18.38	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.000	20.030	0.786	3751.2	2777.8	13.071	4.331	3.00		Clay	100.0			18.93	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.170	16.220	0.641	3771.9	2787.9	10.283	4.468	3.09		Clay	100.0			15.33	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.330	20.600	0.597	3791.5	2797.4	13.372	3.189	2.91		Clay	95.7			19.47	0.93	n.a.	n.a.	0.88	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.500	20.300	0.541	3812.2	2807.6	13.103	2.938	2.90		Clay	94.6			19.19	0.93	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	13.970	0.489	3831.7	2817.1	8.558	4.057	3.13		Clay	100.0			13.20	0.93	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	13.630	0.425	3851.2	2826.6	8.282	3.630	3.11		Clay	100.0			12.88	0.93	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	15.600	0.323	3872.0	2836.8	9.634	2.363	2.95		Clay	99.2			14.74	0.93	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	18.410	0.408	3891.5	2846.3	11.569	2.480	2.90		Clay	94.8			17.40	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	15.420	0.439	3912.2	2856.4	9.427	3.259	3.04		Clay	100.0			14.57	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	14.170	0.330	3931.8	2866.0	8.517	2.704	3.03		Clay	100.0			13.39	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.640	15.110	0.296	3951.3	2875.5	9.135	2.256	2.96		Clay	99.9			14.28	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	13.330	0.340	3972.0	2885.6	7.862	3.001	3.08		Clay	100.0			12.60	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	12.650	0.305	3991.5	2895.2	7.360	2.858	3.10		Clay	100.0			11.96	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE
EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
33.140	12.670	0.281	4012.3	2905.3	7.341	2.636	3.08		Clay	100.0			11.98	0.92	n.a.	n.a.	0.87	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.300	12.560	0.278	4031.8	2914.8	7.235	2.637	3.08		Clay	100.0			11.87	0.92	n.a.	n.a.	0.87	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	12.020	0.325	4051.3	2924.4	6.835	3.251	3.15		Clay	100.0			11.36	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	12.110	0.306	4072.1	2934.5	6.866	3.042	3.14		Clay	100.0			11.45	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	11.870	0.237	4091.6	2944.0	6.674	2.412	3.09		Clay	100.0			11.22	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	11.720	0.333	4112.3	2954.2	6.542	3.441	3.18		Clay	100.0			11.08	0.92	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	11.670	0.325	4131.8	2963.7	6.481	3.380	3.18		Clay	100.0			11.03	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	15.260	0.243	4151.4	2973.2	8.869	1.842	2.93		Clay	97.2			14.42	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	15.890	0.265	4172.1	2983.4	9.254	1.920	2.92		Clay	96.6			15.02	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	12.700	0.237	4191.6	2992.9	7.086	2.233	3.05		Clay	100.0			12.00	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	12.960	0.209	4212.4	3003.0	7.229	1.926	3.01		Clay	100.0			12.25	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	12.610	0.304	4231.9	3012.6	6.967	2.900	3.12		Clay	100.0			11.92	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	12.580	0.313	4251.4	3022.1	6.919	2.998	3.13		Clay	100.0			11.89	0.91	n.a.	n.a.	0.86	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	9.420	0.285	4272.1	3032.3	4.804	3.909	3.33		Clay	100.0			8.90	0.91	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	12.560	0.286	4291.7	3041.8	6.847	2.743	3.11		Clay	100.0			11.87	0.91	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	12.280	0.315	4312.4	3051.9	6.634	3.107	3.15		Clay	100.0			11.61	0.91	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	12.750	0.310	4331.9	3061.5	6.914	2.932	3.12		Clay	100.0			12.05	0.91	n.a.	n.a.	0.85	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.720	0.320	4352.7	3071.6	6.865	3.034	3.14		Clay	100.0			12.02	0.91	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	12.710	0.313	4372.2	3081.1	6.831	2.970	3.13		Clay	100.0			12.01	0.91	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	13.340	0.326	4391.7	3090.7	7.212	2.925	3.11		Clay	100.0			12.61	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	13.240	0.322	4412.4	3100.8	7.117	2.916	3.11		Clay	100.0			12.51	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	13.640	0.297	4432.0	3110.3	7.346	2.602	3.07		Clay	100.0			12.89	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	13.890	0.306	4452.7	3120.5	7.476	2.624	3.07		Clay	100.0			13.13	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	13.410	0.330	4472.2	3130.0	7.140	2.951	3.11		Clay	100.0			12.67	0.90	n.a.	n.a.	0.85	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	13.480	0.303	4491.7	3139.5	7.157	2.696	3.09		Clay	100.0			12.74	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	13.440	0.296	4512.5	3149.7	7.102	2.648	3.09		Clay	100.0			12.70	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	13.460	0.306	4532.0	3159.2	7.087	2.735	3.10		Clay	100.0			12.72	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	12.880	0.353	4552.7	3169.3	6.691	3.324	3.17		Clay	100.0			12.17	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	12.730	0.385	4572.3	3178.9	6.571	3.685	3.20		Clay	100.0			12.03	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	13.270	0.422	4591.8	3188.4	6.884	3.844	3.19		Clay	100.0			12.54	0.90	n.a.	n.a.	0.84	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	13.910	0.423	4612.5	3198.5	7.256	3.645	3.16		Clay	100.0			13.15	0.90	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	14.410	0.409	4632.0	3208.1	7.540	3.380	3.13		Clay	100.0			13.62	0.90	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	14.140	0.398	4652.8	3218.2	7.342	3.368	3.14		Clay	100.0			13.36	0.90	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	14.510	0.374	4672.3	3227.7	7.543	3.074	3.10		Clay	100.0			13.71	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	14.230	0.393	4691.8	3237.3	7.342	3.310	3.13		Clay	100.0			13.45	0.89	n.a.	n.a.	0.84	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	13.660	0.391	4712.6	3247.4	6.962	3.462	3.16		Clay	100.0			12.91	0.89	n.a.	n.a.	0.84	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	13.950	0.388	4732.1	3256.9	7.113	3.352	3.15		Clay	100.0			13.19	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	13.720	0.362	4752.8	3267.1	6.944	3.191	3.14		Clay	100.0			12.97	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	13.230	0.363	4772.3	3276.6	6.619	3.349	3.17		Clay	100.0			12.50	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	13.060	0.386	4791.9	3286.1	6.490	3.619	3.20		Clay	100.0			12.34	0.89	n.a.	n.a.	0.83	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	13.160	0.451	4812.6	3296.3	6.525	4.195	3.23		Clay	100.0			12.44	0.89	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	13.300	0.493	4832.1	3305.8	6.585	4.532	3.25		Clay	100.0			12.57	0.89	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	13.800	0.509	4852.9	3315.9	6.860	4.476	3.23		Clay	100.0			13.04	0.89	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	13.510	0.537	4872.4	3325.5	6.660	4.853	3.26		Clay	100.0			12.77	0.89	n.a.	n.a.	0.83	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	13.610	0.572	4891.9	3335.0	6.695	5.119	3.27		Clay	100.0			12.86	0.89	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	14.040	0.594	4912.6	3345.2	6.926	5.130	3.26		Clay	100.0			13.27	0.89	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	14.610	0.598	4932.2	3354.7	7.240	4.927	3.24		Clay	100.0			13.81	0.89	n.a.	n.a.	0.83	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	15.420	0.599	4952.9	3364.8	7.693	4.625	3.20		Clay	100.0			14.57	0.88	n.a.	n.a.	0.82	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	15.050	0.556	4972.4	3374.4	7.447	4.422	3.20		Clay	100.0			14.22	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	14.270	0.469	4991.9	3383.9	6.959	3.985	3.20		Clay	100.0			13.49	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	13.820	0.372	5012.7	3394.0	6.667	3.288	3.17		Clay	100.0			13.06	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	13.130	0.322	5032.2	3403.6	6.237	3.038	3.17		Clay	100.0			12.41	0.88	n.a.	n.a.	0.82	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	12.930	0.333	5052.9	3413.7	6.095	3.197	3.19		Clay	100.0			12.22	0.88	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	13.250	0.376	5072.5	3423.2	6.259	3.506	3.20		Clay	100.0			12.52	0.88	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	13.920	0.435	5092.0	3432.8	6.627	3.825	3.20		Clay	100.0			13.16	0.88	n.a.	n.a.	0.82	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	13.970	0.510	5112.7	3442.9	6.630	4.467	3.24		Clay	100.0			13.20	0.88	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	14.350	0.576	5132.2	3452.4	6.826	4.891	3.25		Clay	100.0			13.56	0.88	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	14.680	0.623	5153.0	3462.6	6.991	5.146	3.26		Clay	100.0			13.88	0.88	n.a.	n.a.	0.82	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	14.620	0.624	5172.5	3472.1	6.932	5.185	3.26		Clay	100.0			13.82	0.88	n.a.	n.a.	0.81	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	14.350	0.592	5192.0	3481.6	6.752	5.037	3.27		Clay	100.0			13.56	0.88	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	14.410	0.558	5212.8	3491.8	6.761	4.727	3.25		Clay	100.0			13.62	0.88	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	14.360	0.530	5232.3	3501.3	6.708	4.516	3.24		Clay	100.0			13.57	0.88	n.a.	n.a.	0.81	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	14.100	0.521	5253.0	3511.4	6.535	4.543	3.25		Clay	100.0			13.33	0.87	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	13.940	0.491	5272.5	3521.0	6.421	4.345	3.25		Clay	100.0			13.18	0.87	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	14.340	0.485	5293.3	3531.1	6.623	4.150	3.22		Clay	100.0			13.55	0.87	n.a.	n.a.	0.81	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	13.990	0.487	5312.8	3540.6	6.402	4.293	3.24		Clay	100.0			13.22	0.87	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	13.950	0.496	5332.3	3550.2	6.357	4.392	3.25		Clay	100.0			13.19	0.87	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CPT No. 4

PGA (A_{max}) 0.70

Total Settlement: 0.31 (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)
44.130	14.380	0.527	5353.1	3560.3	6.574	4.499	3.25		Clay	100.0			13.59	0.87	n.a.	n.a.	0.81	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.290	14.590	0.529	5372.6	3569.8	6.669	4.445	3.24		Clay	100.0			13.79	0.87	n.a.	n.a.	0.81	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	14.580	0.511	5393.3	3580.0	6.639	4.296	3.23		Clay	100.0			13.78	0.87	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	14.420	0.512	5412.8	3589.5	6.527	4.371	3.24		Clay	100.0			13.63	0.87	n.a.	n.a.	0.80	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	14.630	0.491	5432.4	3599.0	6.621	4.121	3.22		Clay	100.0			13.83	0.87	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	14.840	0.470	5453.1	3609.2	6.713	3.876	3.20		Clay	100.0			14.03	0.87	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	14.640	0.523	5472.6	3618.7	6.579	4.391	3.24		Clay	100.0			13.84	0.87	n.a.	n.a.	0.80	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	14.750	0.567	5493.4	3628.8	6.615	4.722	3.26		Clay	100.0			13.94	0.87	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	15.520	0.603	5512.9	3638.4	7.016	4.728	3.24		Clay	100.0			14.67	0.87	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	15.920	0.590	5532.4	3647.9	7.212	4.487	3.21		Clay	100.0			15.05	0.87	n.a.	n.a.	0.80	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	16.030	0.672	5553.1	3658.1	7.246	5.067	3.24		Clay	100.0			15.15	0.87	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	16.360	0.651	5572.7	3667.6	7.402	4.797	3.22		Clay	100.0			15.46	0.86	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	16.850	0.648	5593.4	3677.7	7.642	4.613	3.20		Clay	100.0			15.93	0.86	n.a.	n.a.	0.80	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	16.240	0.618	5612.9	3687.3	7.286	4.600	3.22		Clay	100.0			15.35	0.86	n.a.	n.a.	0.80	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	16.200	0.640	5632.4	3696.8	7.241	4.781	3.23		Clay	100.0			15.31	0.86	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	16.560	0.642	5653.2	3706.9	7.410	4.676	3.21		Clay	100.0			15.65	0.86	n.a.	n.a.	0.79	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	16.880	0.626	5672.7	3716.5	7.558	4.459	3.20		Clay	100.0			15.95	0.86	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	16.770	0.595	5693.4	3726.6	7.472	4.273	3.19		Clay	100.0			15.85	0.86	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	16.970	0.583	5713.0	3736.1	7.555	4.133	3.18		Clay	100.0			16.04	0.86	n.a.	n.a.	0.79	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	17.250	0.570	5732.5	3745.7	7.680	3.963	3.16		Clay	100.0			16.30	0.86	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	16.820	0.554	5753.2	3755.8	7.425	3.972	3.17		Clay	100.0			15.90	0.86	n.a.	n.a.	0.79	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	17.080	0.517	5772.7	3765.3	7.539	3.642	3.15		Clay	100.0			16.14	0.86	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	16.890	0.550	5793.5	3775.5	7.413	3.931	3.17		Clay	100.0			15.96	0.86	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	16.730	0.576	5813.0	3785.0	7.304	4.168	3.19		Clay	100.0			15.81	0.86	n.a.	n.a.	0.79	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	17.160	0.599	5832.5	3794.5	7.508	4.207	3.18		Clay	100.0			16.22	0.86	n.a.	n.a.	0.79	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	17.300	0.659	5853.3	3804.7	7.556	4.583	3.20		Clay	100.0			16.35	0.86	n.a.	n.a.	0.78	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	17.570	0.697	5872.8	3814.2	7.673	4.761	3.21		Clay	100.0			16.61	0.86	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	18.880	0.733	5893.5	3824.3	8.333	4.602	3.17		Clay	100.0			17.84	0.86	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	18.930	0.725	5913.0	3833.9	8.333	4.538	3.17		Clay	100.0			17.89	0.85	n.a.	n.a.	0.78	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	18.830	0.690	5932.6	3843.4	8.255	4.348	3.16		Clay	100.0			17.80	0.85	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	17.770	0.681	5953.3	3853.5	7.678	4.603	3.20		Clay	100.0			16.80	0.85	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	17.180	0.687	5972.8	3863.1	7.348	4.838	3.23		Clay	100.0			16.24	0.85	n.a.	n.a.	0.78	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	17.140	0.753	5993.6	3873.2	7.303	5.321	3.25		Clay	100.0			16.20	0.85	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	17.740	0.777	6013.1	3882.7	7.589	5.273	3.24		Clay	100.0			16.77	0.85	n.a.	n.a.	0.78	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	19.430	0.815	6032.6	3892.3	8.434	4.962	3.18		Clay	100.0			18.36	0.85	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	19.130	0.813	6053.3	3902.4	8.253	5.051	3.20		Clay	100.0			18.08	0.85	n.a.	n.a.	0.78	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	18.640	0.754	6072.9	3911.9	7.977	4.834	3.20		Clay	100.0			17.62	0.85	n.a.	n.a.	0.77	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00