Appendix F

Geotechnical Investigations

CORNERSTONE EARTH GROUP

TYPE OF SERVICES	Geotechnical Investigation
PROJECT NAME	25800 Clawiter Development
	Buildings 1, 2, and 3
LOCATION	25800 Clawiter Road Hayward, California
CLIENT	Hines
PROJECT NUMBER	1076-1-1
DATE	January 24, 2020

CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**25800 Clawiter Development** **Buildings 1, 2, and 3**
Location	**25800 Clawiter Road** **Hayward, California**
Client	**Hines**
Client Address	**101 California Street, Suite 1000** **San Francisco, CA**
Project Number	**1076-1-1**
Date	**January 24, 2020**

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

Danh T. Tran, P.E.
Senior Principal Engineer
Quality Assurance Reviewer

1259 Oakmead Parkway | Sunnyvale, CA 94085
T 408 245 4600 | F 408 245 4620

1220 Oakland Boulevard, Suite 220 | Walnut Creek, CA 94596
T 925 988 9500 | F 925 988 9501

www.cornerstoneearth.com

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CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**25800 Clawiter Development Buildings 1, 2, and 3**
Location	**25800 Clawiter Road Hayward, California**

SECTION 1: INTRODUCTION

This updated geotechnical report was prepared for the sole use of Hines for Buildings 1, 2, and 3 for the 25800 Clawiter Development in Hayward, California. The location of the site is shown on the Vicinity Map, Figure 1. For our use, we were provided with the following documents:

- A Conceptual Site Plan titled, "Overall Site Plan, Sheet DAB-A1.1," prepared by HPA Architecture, dated September 30, 2019.
- A report titled, "CPT Site Investigation, 25800 Clawiter Road, Hayward, California, GREGG Project Number: 18-0020MA," by Gregg Drilling & Testing, Inc. dated February 9, 2018.
- A report titled, "Preliminary Geotechnical Investigation, 25800 Clawiter Road, Hayward, California, File No. 131520-002," by Haley & Aldrich, Inc. dated February 14, 2018.

1.1 PROJECT DESCRIPTION

The overall project will consist of redeveloping the approximately 25½-acre site for a new commercial/industrial development. The new development will include four buildings. Building 4, a new stand-alone data center will be included as a separate phase and report. Buildings 1, 2, and 3 are approximately 56,423 square feet, 66,220 square feet, and 215,150 square feet, respectively. Building 1 and 2 will be located on the south side of the existing rail bisecting the site (east-west direction). Building 3 will be located on the north side of the existing rail. We anticipate the buildings will have interior clear height of 36 to 38 feet and consist of concrete tilt-up construction. Office spaces will also be allocated. Loading docks will be located along the north sides of the buildings. Appurtenant trailer parking, utilities, landscaping, stormwater management areas, and other improvements necessary for overall site development will also be planned.

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

1.2 SCOPE OF SERVICES

Our scope of services was presented in our previous proposal dated October 3, 2018 and more recent email authorization dated January 21, 2019. Our investigation 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 seven borings drilled on October 17, 18, and 19 with limited-access, hollow-stem auger drilling equipment. The borings were drilled to depths ranging from 15 to 40 feet. The borings were backfilled with cement grout in accordance with Alameda County requirements; exploration permits were obtained as required by Alameda County.

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.

1.3.1 CPT Exploration by Haley and Aldrich, Inc.

Prior to our field exploration, we reviewed a report titled, “Preliminary Geotechnical Investigation, 25800 Clawiter Road, Hayward, California, File No. 131520-002,” by Haley and Aldrich, Inc. dated February 14, 2018. In addition to the report, we were also provided the results of Cone Penetration Tests (CPTs) advanced by Gregg Drilling & Testing, Inc. on February 5 and 6, 2018. The CPTs were advance to depths of approximately 50 feet below the ground surface.

The approximate locations of the CPT explorations by Haley and Aldrich, Inc. are shown on the Site Plan, Figure 2.

1.3.2 Supplemental Explorations for Building 4

As part of our supplemental geotechnical investigation for Building 4, additional explorations were performed. Field exploration consisted of two borings drilled on October 16, 2019 with track-mounted, limited-access, hollow-stem auger drilling equipment and two Cone Penetration Tests (CPTs) advanced on November 20, 2019. The borings were drilled to depths of 29½ and 35 feet; the CPTs were advanced to depths of approximately 100 feet each. Seismic shear wave velocity measurements were collected from CPT-13 and CPT-14. Boring EB-9 was advanced adjacent to CPT-14 for direct evaluation of physical samples to correlated soil behavior.

The approximate locations of our supplemental exploratory borings are shown on the Site Plan, Figure 2.

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, grain size analyses, washed sieve analyses, and Plasticity Index tests. Details regarding our laboratory program are included in Appendix B.

1.5 CORROSION EVALUATION

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

1.6 ENVIRONMENTAL SERVICES

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

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located approximately 1¾ mile east of the San Francisco Bay. Based on our site exploration and review of recent geologic maps of the area (Graymer 2000; Helley and Graymer, 1997), the site is underlain by Holocene age fan or basin (Qhaf and Qhb). The fan deposits (Qhaf) are generally described by Graymer (2000) as medium dense to dense, gravelly sand or sandy gravel, grading upward to sandy or silty clay. It may contain localized layers, lenses and stringers of silt and sand. The basin deposits (Qhb) are generally very fine silty clays and clays deposited near the distal edge of alluvial fans and adjacent to Bay Mud, which may extend partially onto the western or southern edge of the site. The young sediments are generally underlain by older alluvial fan deposits collectively referred to Older Bay Mud or Old Bay Clay. These older alluvial soils generally consist of clays, sands, silts and localized gravel layers.

2.2 REGIONAL SEISMICITY

The San Francisco Bay area region is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities 2015 revises earlier estimates from their 2008 (2008, UCERF2) publication. Compared to the previous assessment issued in 2008, the estimated rate of earthquakes around magnitude 6.7 (the size of the destructive 1994

Northridge earthquake) has gone down by about 30 percent. The expected frequency of such events statewide has dropped from an average of one per 4.8 years to about one per 6.3 years. However, in the new study, the estimate for the likelihood that California will experience a magnitude 8 or larger earthquake in the next 30 years has increased from about 4.7 percent for UCERF2 to about 7.0 percent for UCERF3.

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

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

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Hayward (Total Length)	3.5	5.6
Calaveras	11	17.7
San Andreas (1906)	14.9	23.9
Monte Vista-Shannon	15.2	24.4

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

SECTION 3: SITE CONDITIONS

3.1 SITE BACKGROUND AND SURFACE DESCRIPTION

The total project site consists of six parcels totaling approximately 25½ acres and is located in an industrial park area. The site is currently occupied by approximately 280,000 square feet of existing office and industrial buildings and was previously used as a bus manufacturing facility. The site is relatively level but graded to drain to storm drainage facilities.

Surface pavements at EB-6 and EB-7 generally consisted of 4½ to 5 inches of asphalt concrete over 1 to 3 inches of aggregate base. Surface pavements at EB-2, EB-3, and EB-4 generally consisted of 6 inches of Portland Cement Concrete (PCC) over subgrade or 12 inches of aggregate base. Exploratory borings EB-1 and EB-4 were advanced at the gravel parking lot and did not encounter any surface pavements or aggregate base. Based on visual observations, the existing pavements are in fair to poor shape with some significant cracking and minor alligator cracking in both the asphalt and concrete pavements.

3.2 SUBSURFACE CONDITIONS

Undocumented fill was encountered in borings EB-1, EB-4, and EB-5 to depths ranging from 1½ to 2 feet below existing ground surface. The fill consisted of hard sandy lean clay with variable amounts of gravel. Fill was not encountered in borings EB-2, EB-3, EB-6, and EB-7. Below the surface pavements and fill, our borings generally encountered very stiff to hard lean clay with variable amounts of sand to depths ranging from 4 to 9 feet below existing ground surface. Beneath the surficial clays, medium to very stiff lean clays with variable amounts of sand were encountered, interbedded with loose to medium dense poorly graded sands with silt and silty sands to depths ranging from 4 feet to the maximum depths explored of 15 to 40 feet below the existing ground surface.

3.2.1 Plasticity/Expansion Potential

We performed six Plasticity Index (PI) tests on representative samples. Test results were used to evaluate expansion potential of surficial soils and the plasticity of the fines in potentially liquefiable layers. The results of the surficial PI tests ranged from 11 to 18, indicating low to moderate expansion potential to wetting and drying cycles.

3.2.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 4 to 24 percent. In our opinion, we estimated this corresponds to about near optimum to 10 percent above the optimum moisture content.

3.2.3 Sulfate Contents

Laboratory testing indicated that the soluble sulfate contents were between 89 to 158 ppm, indicating negligible corrosion potential to buried concrete.

3.3 GROUNDWATER

Groundwater was encountered in our explorations EB-1 through EB-4, and EB-6, EB-7 and EB-8 at depths ranging from 13½ to 20 feet below current grades. Pore pressure dissipation testing was conducted at CPT-1, -2, -4, -5, -6, -7, -9, -10, -11, -13, and -14 and groundwater was estimated to be at depths ranging from 6.4 to 15 feet below current grades. All measurements were taken at the time of drilling and may not represent the stabilized levels that can be higher than the initial levels encountered.

Table 2: Depth to Groundwater

Boring/CPT Number	Date Drilled	Depth to Groundwater (feet)	Depth of Boring/CPT (feet)
EB-1	10/19/18	13.5	40
EB-2	10/17/2018	15	40
EB-3	10/19/2018	18	25
EB-4	10/18/2018	18	30
EB-5	10/19/2018	Not Encountered	15
EB-6	10/17/2018	17	40
EB-7	10/18/2018	20	40
EB-8	10/16/2019	14	29½
EB-9	10/16/2019	Not Encountered	35
CPT-1	2/6/2018	11.9	50
CPT-2	2/6/2018	6.6	50
CPT-4	2/6/2018	14.2	50
CPT-5	2/6/2018	11.9	50
CPT-6	2/6/2018	10.1	50
CPT-7	2/6/2018	6.4	50
CPT-9	2/6/2018	9.7	50
CPT-10	2/6/2018	14.3	50
CPT-11	2/6/2018	13.7	50
CPT-13	11/20/2019	15.0	100
CPT-14	11/20/2019	13.5	100

Based on depth to groundwater maps, the historic high groundwater level is mapped at about 10 feet below the ground surface (CGS, 2003). In general, fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors. For our analysis, a design groundwater level of 10 feet below existing ground surface was selected based on the depth to groundwater maps, depth of groundwater encountered in our borings and our previous experience in the area.

3.4 CORROSION SCREENING

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

Table 3: Summary of Corrosion Test Results

Sample/Test Location Number	Depth (feet)	Soil pH	Minimum Resistivity (1) (ohm-cm)	Chloride (mg/kg)	Sulfate (% dry wt)
EB-3	5½	7.0	2,520	7	0.0158
EB-5	3½	6.2	1,472	17	0.0089

Notes: (1) Laboratory resistivity measured at 100% saturation

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

3.4.1 Preliminary Soil Corrosion Screening

Based on the laboratory test results summarized in Table 3, the soils are considered severely corrosive to buried metallic improvements (Palmer, 1989). Other corrosion parameters (pH and chloride content) do not indicate a significant contribution to corrosion potential to buried metallic structures. In accordance with the 2016 CBC, Chapter 19, Section 1904.5, alternative cementitious materials for sulfate exposure shall be in accordance with the following:

- ACI 318-08 - Table 4.2.1, and Table 4.3.1

Based on the laboratory test results, no cement type restriction is required, although, in our opinion, it is generally a good idea to include some sulfate resistance and to maintain a relatively low water-cement ratio. We have summarized applicable design values and parameters from ACI 318, Table 4.3.1 below in Table 3 for your information. We recommend the structural engineer and a corrosion engineer be retained to confirm the information provided and for additional recommendations, as required.

Table 4: Sulfate Soil Corrosion Design Values and Parameters (1)

Category	Water-Soluble Sulfate (SO4) in Soil (% by weight)	Class	Severity	Cementitious Materials (2)
S, Sulfate	< 0.10	S0	not applicable	no type restriction

Notes: (1) above values and parameters are from on ACI 318-08, Table 4.2.1 and Table 4.3.1
(2) cementitious materials are in accordance with ASTM C150, ASTM C595 and ASTM C1157

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone. Based on review of geologic map as summarized in Figure 3, no known surface expression of fault traces is thought to cross the site; therefore, fault rupture hazard is not a significant geologic hazard at the site.

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A peak ground acceleration was estimated for analysis as allowed in the 2019 edition of the California Building Code. For our liquefaction analysis we used a site-specific peak ground acceleration PGA_M of 0.85g.

4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, Hayward Quadrangle, 2003). Our field and laboratory programs addressed this issue by testing and sampling potentially liquefiable layers to depths of at least 50 feet, performing visual classification on sampled materials, evaluating CPT data, and performing various tests to further classify soil properties.

4.3.1 Background

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

4.3.2 Analysis

As discussed in the “Subsurface” section above, several sand layers were encountered below the design groundwater depth of 10 feet. Following the liquefaction analysis framework in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008), incorporating updates in *CPT and SPT Based Liquefaction Triggering Procedures* (Boulanger and Idriss, 2014), and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic

shaking (Cyclic Stress Ratio - CSR) to the soil's estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation (i.e. settlement).

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

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

In estimating post-liquefaction settlement at the site, we have implemented a depth weighting factor proposed by Cetin (2009). Following evaluation of 49 high-quality, cyclically induced, ground settlement case histories from seven different earthquakes, Cetin proposed the use of a weighting factor based on the depth of layers. The weighting procedure was used to tune the surface observations at liquefaction sites to produce a better model fit with measured data. Aside from the better model fit it produced, the rationale behind the use of a depth weighting factor is based on the following: 1) upward seepage, triggering void ratio redistribution, and resulting in unfavorably higher void ratios for the shallower sublayers of soil layers; 2) reduced induced shear stresses and number of shear stress cycles transmitted to deeper soil layers due to initial liquefaction of surficial layers; and 3) possible arching effects due to nonliquefied soil layers. All these may significantly reduce the contribution of volumetric settlement of deeper soil layers to the overall ground surface settlement (Cetin, 2009).

The results of our CPT analyses (CPT-1 through CPT-14) are presented on Figures 4A through 4N of this report and summarized on Table 5 below. Calculations for these CPTs are attached as Appendix D.

Table 5: Summary of Seismic Settlements

CPT Number	Estimated Dry Sand Settlement (inches)	Estimated Liquefaction Settlement (inches)	Total Seismic Settlement (inches)
CPT-1	0.73	0.35	1.1
CPT-2	0.61	0.44	1.1
CPT-3	0.19	0.46	0.7
CPT-4	0	1.37	1.4
CPT-5	0.18	0.66	0.8
CPT-6	0.68	2.37	3.1
CPT-7	0.62	1.16	1.8
CPT-8	0	0	0
CPT-9	0	0.19	0.2
CPT-10	0.12	1.67	1.8
CPT-11	0.47	0.07	0.5
CPT-12	0.55	0.72	1.3
CPT-13	0.07	0.94	1.0
CPT-14	0.36	0.61	1.0

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 0 to 3.1 inches based on the Yoshimine (2006) method. As discussed in SP 117A, differential movement for level ground sites over deep soil sites will be up to about two-thirds of the total settlement between independent foundation elements. Total differential seismic settlements are anticipated to be on the order of 1½ inch between foundation elements, estimated to be about 40 to 60 feet, in the southwestern portion of the proposed Building 3. At the northwestern, and eastern portions of Building 3, at Building 1, and Building 2, differential settlements are anticipated to be on the order of ¾-inch.

4.3.4 Ground Rupture Potential

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

4.4 LATERAL SPREADING

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

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

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. We evaluated the potential for seismic compaction of loose, unsaturated sandy soils above the design groundwater depth of 10 feet based on the work by Pradell (1998). Our analyses indicate that the in-situ, loose and unsaturated sandy soils could experience up to 0.7 inches of movement after strong seismic shaking.

4.6 TSUNAMI/SEICHE

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

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

A tsunami or seiche originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Based on the study of tsunami inundation potential for the San Francisco Bay Area (Ritter and Dupre, 1972), areas most likely to be inundated are marshlands, tidal flats, and former bay margin lands that are now artificially filled, but are still at or below sea level, and are generally within 1½ miles of the shoreline. The site is approximately 1¾ miles inland from the San Francisco Bay shoreline, and is approximately 23 to 27 feet above mean sea level. Therefore, the potential for inundation due to tsunami or seiche is considered low.

4.7 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone X, described as “Area of Minimal Flood Hazard”. We recommend the project civil engineer be retained to confirm this information and verify the base flood elevation, if appropriate.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

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

- Potential for seismic and liquefaction-induced settlements
- Presence of moderately expansive soils
- Presence of undocumented fill
- Shallow groundwater
- Wet, unstable trench bottoms

5.1.1 Potential for Seismic and Liquefaction-Induced Settlements

As discussed, our liquefaction analysis indicates that there is a potential for settlement of loose, unsaturated sand layers and liquefaction of localized sand layers during a significant seismic event. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is low, our analysis indicates that seismic and liquefaction-induced settlement on the order of 0 to 3.1 inches could occur, resulting in differential settlement up to 1½ inch. Foundations should be designed to tolerate the anticipated total and differential settlements. Structural loads were not made available but based on our experience with similar type structures, it should be feasible to support the proposed buildings on shallow foundations; however, the building foundations will need to be designed to tolerate total and differential settlement due to static loads and seismic and liquefaction-induced settlement. Detailed foundation recommendations are presented in the “Foundations” section.

5.1.2 Expansive Soils

Moderately expansive surficial soils generally blanket the site. Expansive soils can undergo significant volume change with changes in moisture content. They shrink and harden when dried and expand and soften when wetted. To reduce the potential for damage to the planned structures, slabs-on-grade should have sufficient reinforcement and be supported on a layer of

non-expansive fill; footings should extend below the zone of seasonal moisture fluctuation. In addition, it is important to limit moisture changes in the surficial soils by using positive drainage away from buildings as well as limiting landscaping watering. Detailed grading and foundation recommendations addressing this concern are presented in the following sections.

5.1.3 Presence of Undocumented Fill

Undocumented fill was encountered in borings EB-1, EB-4, and EB-5 to depths ranging from 1½ to 2 feet below existing ground surface. The fill consisted of hard sandy lean clay with variable amounts of gravel. All fills should be completely removed from within building areas. Detailed grading recommendations are presented in Section 6.3 below.

5.1.4 Shallow Groundwater

Shallow groundwater has been measured at the site at depths ranging from approximately 13½ to 20 feet below the existing ground surface in our borings, and inferred at shallower depths in our CPTs. Our experience with similar sites in the vicinity indicates that shallow groundwater could significantly impact grading and underground construction. These impacts typically consist of potentially wet and unstable pavement subgrade, difficulty achieving compaction, and difficult underground utility installation. Dewatering and shoring of utility trenches may be required in some areas of the site, depending on the depth of the trenches. Detailed recommendations addressing this concern are presented in the “Earthwork” section of this report.

5.1.5 Wet, Unstable Trench Bottoms

The proposed utility excavations may extend into saturated clay and sand with varying strength. Due to the high moisture content of this material, it will likely be unstable. The contractor should anticipate that in addition to dewatering, it may be necessary to remove an additional approximately 12 to 18 inches of native soil beneath the trench bottoms and replace it with a bridging layer, such as crushed rock to avoid delays. 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.

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.

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

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

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

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. Although not currently present, if vegetation is encountered, it should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight.

6.2.2 Tree and Shrub Removal

Trees and shrubs designated for removal should have the root balls and any roots greater than ½-inch diameter removed completely. Mature trees are estimated to have root balls extending

to depths of 2 to 4 feet, depending on the tree size. Significant root zones are anticipated to extend to the diameter of the tree canopy. Grade depressions resulting from root ball removal should be cleaned of loose material and backfilled in accordance with the recommendations in the "Compaction" section of this report.

6.3 REMOVAL OF EXISTING FILLS

All fills 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 screened out of the remaining material and be removed from the site. Backfill of excavations should be placed in lifts and compacted in accordance with the "Compaction" section below.

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

6.4 TEMPORARY CUT AND FILL SLOPES

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

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

6.5 SUBGRADE PREPARATION

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

6.6 CONSTRUCTION DEWATERING

Design groundwater levels are estimated to be about 10 feet below existing site grades; therefore temporary dewatering may be necessary during underground utility installation.

Selection of the equipment and dewatering method, and construction of temporary dewatering should be the responsibility of the contractor. Depending on the groundwater quality and previous environmental impacts to the site and surrounding area, environmental testing may be required prior to discharge, either into storm or sanitary, or trucked to an off-site facility.

6.7 SUBGRADE STABILIZATION MEASURES

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

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

6.7.1 Chemical Treatment

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

6.7.2 Scarification and Drying

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

6.7.3 Removal and Replacement

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

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

We anticipate that significant quantities of asphalt concrete (AC) grindings and aggregate base (AB) and Portland Cement Concrete (PCC) will be generated during site demolition. If the AC grindings are mixed with the underlying AB to meet Class 2 AB specifications, they may be reused within the new pavement and flatwork structural sections. AC/AB grindings may not be reused within the habitable building areas. Laboratory testing will be required to confirm the grindings meet project specifications. The grinding operation for the AC may leave significant oversize chunks and won't meet the Class 2 AB gradation requirements but may meet Caltrans subbase requirements. Depending on the quantities of oversized material, the grindings may still be used within the structural section; however, the pavement design will need to be modified to account for the difference, typically resulting in the addition of about 1 inch to the structural section.

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

6.8.3 Potential Import Sources

Imported and non-expansive material should be inorganic with a Plasticity Index (PI) of 15 or less, and not contain recycled asphalt concrete where it will be used within the 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.

6.8.4 Non-Expansive Fill Using Chemical Treatment

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

6.9 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 consolidated in place with vibratory equipment. Each lift of fill and all subgrade should be firm and unyielding under construction equipment loading in addition to meeting the compaction requirements to be approved. The contractor (with input from a Cornerstone representative) should evaluate the in-situ moisture conditions, as the use of vibratory equipment on soils with high moistures can cause unstable conditions. General recommendations for soil stabilization are provided in the “Subgrade Stabilization Measures” section of this report. Where the soil’s PI is 20 or greater, the expansive soil criteria should be used.

Table 6: Compaction Requirements

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

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

6.9.1 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.

6.9.2 Shrinkage

Shrinkage results when a volume of in-situ material removed at one density is compacted to a higher density. A shrinkage factor of between 5 to 10 percent should be anticipated when excavating the upper 5 feet of existing in-situ native soils on the site and compacting to an average relative compaction of 90 percent and a maximum dry density of 120 pounds per cubic foot.

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.

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

6.11 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.

- The near-surface soils at the site are clayey, and categorized as Hydrologic Soil Group D, and is expected to have infiltration rates of less than 0.2 inches per hour. In our opinion, these clayey soils will significantly limit the infiltration of stormwater.
- Locally, seasonal high groundwater is mapped at a depth of 10 feet, and therefore is expected to be within 10 feet of the base of the infiltration measure.
- No groundwater production wells are within 100 feet of potential locations for infiltration facilities.
- The site is not known, to our knowledge, to have pollutants with the potential for mobilization as a result of stormwater infiltration.
- The site has a known geotechnical hazard consisting of soils subject to liquefaction; therefore, stormwater infiltration facilities may not be feasible.
- In our opinion, infiltration locations within 15 feet of the buildings would create a geotechnical hazard.
- Infiltration devices are not approved as a stand-alone measure for treating stormwater runoff from land uses that pose a high threat to water quality, including but not limited to industrial and light industrial activities, high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway), automotive repair shops, car washes, fleet storage areas, or nurseries (per Provision C.3.d.iv.(2)(d)).
- Infiltration devices should be located at least 100 feet away from septic tanks and underground storage tanks with hazardous materials, as well as any other potential underground sources of pollution.

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

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

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

- Avoid placing bioswales or basins within 15 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 and potentially liquefiable sand layers.

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

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

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

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

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

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

6.12.1.3 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: FOUNDATIONS

7.1 SUMMARY OF RECOMMENDATIONS

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

7.2 SEISMIC DESIGN CRITERIA

We are providing updated Seismic Design Parameters for the project in accordance with the 2019 California Building Code (2019 CBC), which will be effective for projects that are submitted to the local building department starting January 1, 2020. The new 2019 CBC includes major changes to the procedures used determine the seismic design parameters and has added new requirements for design of foundations for structures constructed on sites with liquefiable soils. The analysis used to provide the requested 2019 CBC seismic design parameters was based on Chapters 16/16A and 18/18A of 2019 CBC and Chapter 11 of ASCE 7-16 (including Supplement 1).

The analysis considered mapped spectral acceleration parameters based on distance to the controlling seismic source/fault system. Based on our explorations and review of local geology, the site is underlain by deep alluvial soils. Shear wave velocity (V_s) measurements were performed while advancing CPT-13, resulting in a time-averaged shear wave velocity for the top 30 meters (V_{s30}) of 230 meters per second (755 feet per second). Therefore, the site was classified as Site Class D.

Based on the site coordinates and classification, as well as the Risk Category, Building Period and Importance factor provided by the structural engineer (see Table 7), the following table lists the various factors or site data used for this analysis.

Table 7: 2019 CBC Site Data

Site Data	Design Value
Site Class (Per Chapter 20 ASCE 7-16)	D
Design Shear Wave Velocity, V_{S30}	230
Site Latitude	37.632097
Site Longitude	-122.118289
Risk Category	II
Importance Factor, I_e	1
0.2-second Period Mapped Spectral Acceleration[1], S_S	1.705g
1-second Period Mapped Spectral Acceleration[1], S_1	0.646g

[1]Assumed for Site Class B, 5 percent damped.

In accordance with Section 11.4.8 of ASCE 7-16, we performed a ground motion hazards analysis in accordance with Chapter 21, Section 21.2 of ASCE 7-16. Following the methodology outlined in Section 21.2, we evaluated both Probabilistic MCE_R Ground Motions in accordance with Method 1 and Deterministic MCE_R Ground Motions to generate our recommended design response spectrum for the project. Our recommended Design Response Spectrum is presented graphically on Figure 5.

Based on ASCE 7-16, Chapter 20, the site should be classified as Site Class F because of the potential for liquefaction and the potential for affects to the structures appear high. ASCE 7-16 generally indicates that sites classified as Site Class F shall have a site response analysis performed in accordance with Section 21.1 of ASCE 7-16, unless the proposed structure has a fundamental period of vibration equal to or less than 0.5 seconds, site response analysis is not required to determine spectral accelerations for liquefiable soils. Rather, a site class is permitted to be determined in accordance with Section 20.3 and the corresponding values of F_a and F_v determined from Tables 11.4-1 and 11.4-2.

For these reasons, in our opinion, the above Site Classification of D in Table 6 of this report, and the presented seismic coefficients, appear valid due to the above exception, as the structures are anticipated to have a fundamental period equal to or less than 0.5 seconds. The Project Structural Engineer should verify this assumption. If the structures will have a fundamental period of greater than 0.5 seconds, and meets the requirements for a Site Class designation of F, the requirement for a site response analysis will be triggered, and additional geotechnical analysis will be required.

7.3 SHALLOW FOUNDATIONS

7.3.1 Spread Footings

Spread footings should bear on natural, undisturbed soil or engineered fill, be at least 12 inches wide, and extend at least 24 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscaping topsoil. The deeper footing embedment is due to the presence of moderately expansive soils, and is intended to embed the footing below the zone of significant seasonal moisture fluctuation, reducing the potential for differential movement.

Footings constructed to the above dimensions and in accordance with the “Earthwork” recommendations of this report are capable of supporting maximum allowable bearing pressures of 3,000 psf for dead loads, 4,500 psf for combined dead plus live loads, and 6,000 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.

7.3.2 Footing Settlement

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

Table 8: Assumed Structural Loading

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

Based on the above loading and the allowable bearing pressures presented above, we estimate that the total static footing settlement will be on the order of ½-inch, with about ¼-inch of post-construction differential settlement between adjacent foundation elements. In addition, we

estimate that differential seismic movement will be on the order of 1½ inch between foundation elements in the southwestern portion of the proposed Building 3, resulting in a total estimated differential footing movement of 1¾ inch between foundation elements, assumed to be on the order of 40 to 60 feet. At the northwestern, and eastern portions of Building 3, at Building 1, and Building 2, differential seismic settlements are anticipated to be on the order of ¾-inch, resulting in a total estimated differential footing movement of 1 inch between foundation elements. 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.

Foundations should be designed to tolerate the anticipated total and differential settlements. Additional foundation recommendations can be provided if deemed necessary by the structural engineer.

7.3.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of footing and the supporting subgrade, and also by passive pressures generated against footing sidewalls. An ultimate frictional resistance of 0.35 applied to the footing dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 350 pcf may be used in design. The structural engineer should apply an appropriate factor of safety (such as 1.5) to the ultimate values above. Where footings are adjacent to landscape areas without hardscape, the upper 12 inches of soil should be neglected when determining passive pressure capacity.

7.3.4 Spread Footing Construction Considerations

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

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

SECTION 8: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

8.1 INTERIOR SLABS-ON-GRADE

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

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

8.2 WAREHOUSE SLABS-ON-GRADE

Warehouse slabs-on-grade should be at least 6 inches thick should have a minimum compressive strength of 3,500 psi. The warehouse slab should also be supported on at least 6 inches of non-expansive, crushed granular base having an R-value of at least 50 and no more than 10 percent passing the No. 200 sieve, such as Class 2 aggregate base. All base and sub-base materials should be placed and compacted in accordance with the "Compaction" section of this report. If there will be areas within the warehouse that are moisture sensitive, such as equipment and elevator rooms, a vapor barrier may be placed over the upper granular base prior to slab construction. Please refer to the recommendations in the "Interior Slabs Moisture Protection Considerations" section for vapor barrier construction. Consideration should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness.

8.3 INTERIOR SLABS MOISTURE PROTECTION CONSIDERATIONS

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

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

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

- The 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.

8.4 EXTERIOR FLATWORK

Exterior slabs-on-grade, such as pedestrian walkways, patios, driveways, and sidewalks, may experience seasonal movement due to the native expansive soils; therefore, some cracking or vertical movement of conventional slabs should be anticipated where imported fill is not planned in flatwork areas. There are several alternatives for mitigating the impacts of expansive soils beneath concrete flatwork. We are providing recommendations to reduce distress to concrete flatwork that includes moisture conditioning the subgrade soils, using non-expansive fill, and providing adequate construction and control joints to control cracks that do occur. It should be noted that minor slab movement or localized cracking and/or distress could still occur.

- The minimum recommendation for concrete flatwork constructed on moderately to highly expansive soils is to properly prepare the clayey soils prior to placing concrete. This is typically achieved by scarifying, moisture conditioning, and re-compacting the subgrade soil. Subgrade soil should be moisture conditioned to at least 3 percent over the laboratory optimum and compacted using moderate compaction effort to a relative compaction of 87 to 92 percent (ASTM Test Method D1557). Where the soils PI is less than 20, the minimum relative compaction requirements in Section 6.8, Table 6 should

be applied. Since the near surface soils may have been previously compacted and tested, the subgrade soils could possibly be moisture conditioned by gradually wetting the soil, depending on the time of year slab construction occurs. This should not include flooding or excessively watering the soil, which would likely result in a soft, unstable subgrade condition, and possible delays in the construction while waiting for the soil to dry out. In general, the subgrade should be relatively firm and non-yielding prior to construction.

- Concrete flatwork, excluding pavements that would be subject to wheel loads, should be at least 4 inches thick and supported on at least 6 inches of Class 2 aggregate base overlying subgrade prepared in accordance with the "Earthwork" recommendations of this report. Aggregate base should be compacted to at least 90 percent relative compaction. 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.

- We recommend a maximum control joint spacing of about 2 feet in each direction for each inch of concrete thickness and a construction joint spacing of 10 to 12 feet. Construction joints that abut the foundations or garage slabs should include a felt strip, or approved equivalent, that extends the full depth of the exterior slab. This will help to reduce the potential for permanent vertical offset between the slabs due to friction between the concrete edges. We recommend that exterior slabs be isolated from adjacent foundations.

At the owner's option, if desired to reduce the potential for vertical offset or widening of concrete cracks, consideration should be given to using reinforcing steel, such as No. 3 rebar spaced at 18 inches on center each direction.

SECTION 9: VEHICULAR PAVEMENTS

9.1 ASPHALT CONCRETE

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

Table 9: Asphalt Concrete Pavement Recommendations (Untreated Subgrade)

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

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

Table 10: Asphalt Concrete Pavement Recommendations (Chemical-Treated Subgrade)

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

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

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

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

9.2 PORTLAND CEMENT CONCRETE

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

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

Table 11: PCC Pavement Recommendations (Untreated Subgrade)

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

Table 12: PCC Pavement Recommendations (Chemical-Treated Subgrade)

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

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

9.2.1 Stress Pads for Trash Enclosures

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

9.3 PAVEMENT CUTOFF

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

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

SECTION 10: RETAINING WALLS

10.1 STATIC LATERAL EARTH PRESSURES

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

Table 13: 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.

10.2 SEISMIC LATERAL EARTH PRESSURES

The 2019 CBC states that lateral pressures from earthquakes should be considered in the design of basements and retaining walls. At this time, we are not aware of any retaining walls greater than 6 feet in height for the project. However, minor landscaping walls (i.e. walls 6 feet or less in height) may be proposed. In our opinion, design of these walls for seismic lateral earth pressures in addition to static earth pressures is not warranted.

10.3 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.

10.4 BACKFILL

Where surface improvements will be located over the retaining wall backfill, backfill placed behind the walls should be compacted to at least 95 percent relative compaction using light compaction equipment. Where no surface improvements are planned, backfill should be compacted to at least 90 percent. If heavy compaction equipment is used, the walls should be temporarily braced.

10.5 FOUNDATIONS

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

SECTION 11: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of Hines specifically to support the design of the 25800 Clawiter Development project in Hayward, 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.

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

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

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

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

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

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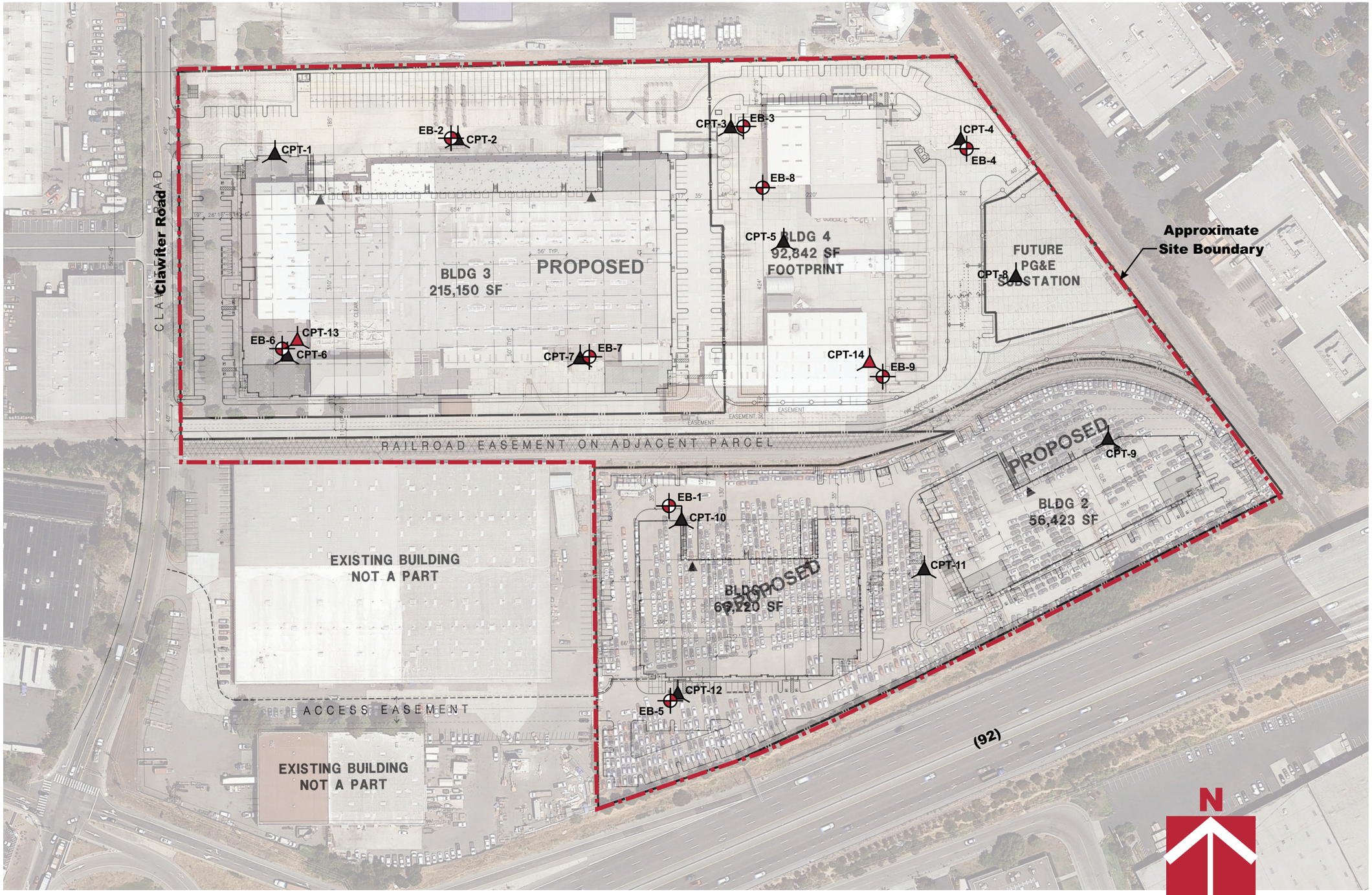
Vicinity Map

25800 Clawiter Road
Hayward, CA

Project Number	1076-1-1
Figure Number	Figure 1
Date	November 2018
Drawn By	RRN



Legend

- Approximate location of exploratory boring (EB)
- Approximate location of cone penetration (CPT)
- Approximate location of previous cone penetration test (CPT) (By others)

Base by Google Earth, dated 8/9/2018
Overlay by Ware Malcomb, Scheme: 9 - Conceptual Site Plan - Sheet 1, dated 2/16/2018

Project Number 1076-1-2
Figure Number Figure 2
Drawn By KLG
Date November 2019

Site Plan

25800 Clawiter Road
Hayward, CA

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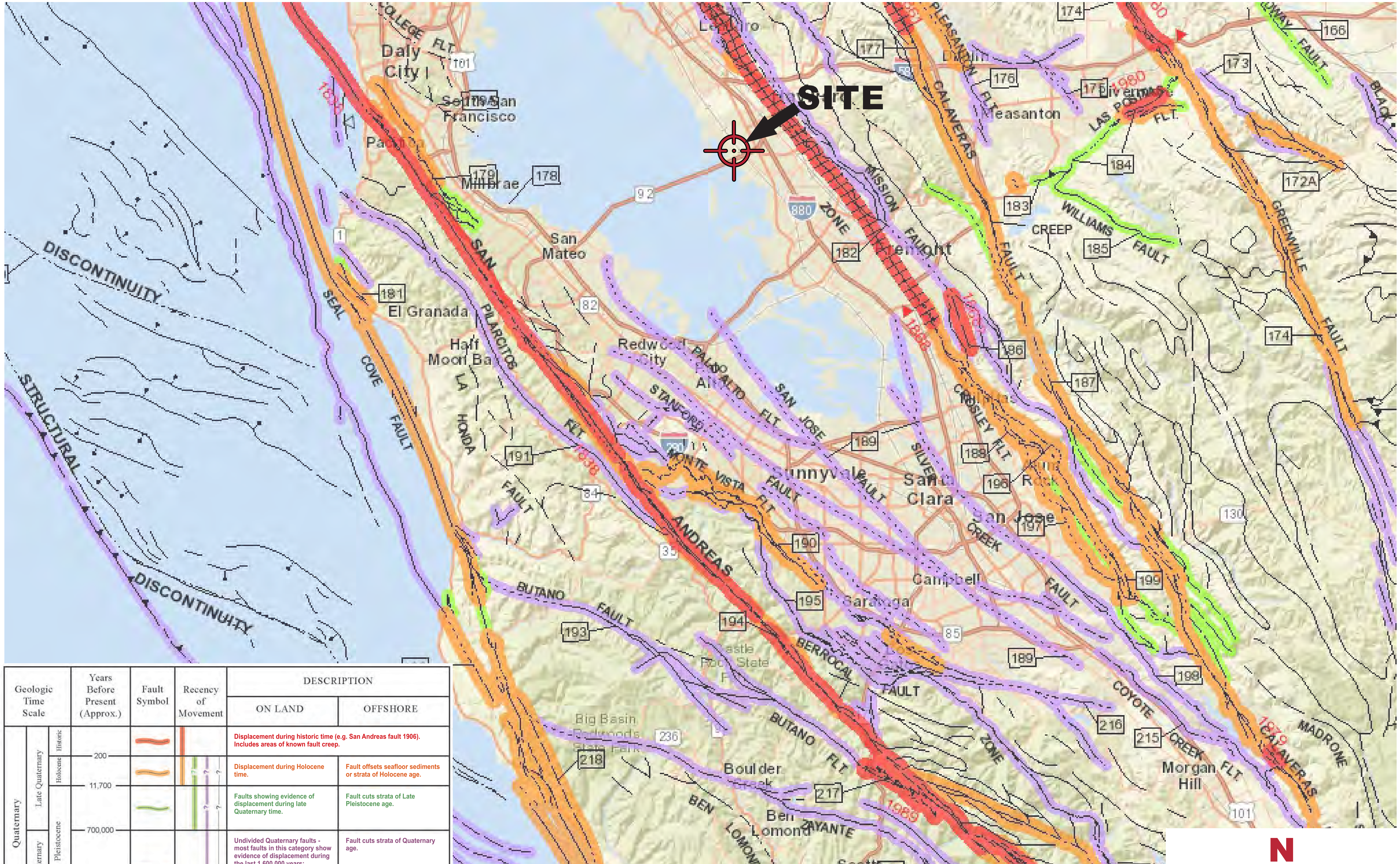

Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION: ON LAND	DESCRIPTION: OFFSHORE
Quaternary	Late Quaternary	Historic	200			Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene	11,700		? ? ?	Displacement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

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

Project Number 1076-1-1

Figure Number Figure 3

Date November 2018

Drawn By RRN

Regional Fault Map

25800 Clawiter Road
Hayward, CA

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FIGURE 4A

CPT NO. 1

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11.9
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.73	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.35	(Inches)
TOTAL SEISMIC SETTLEMENT	1.1	INCHES

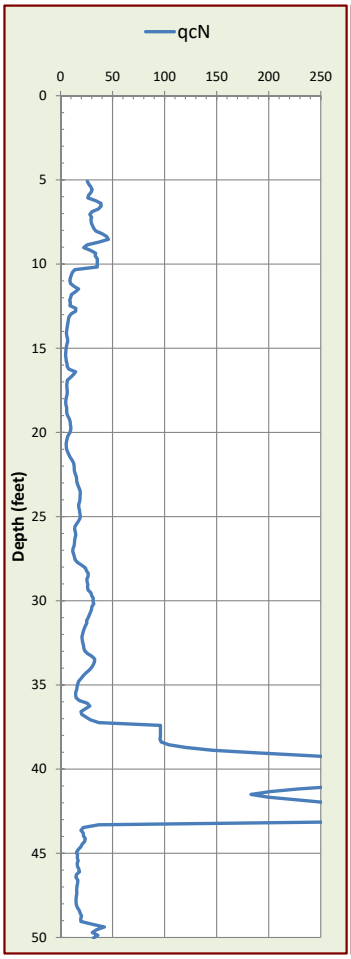
POTENTIAL LATERAL DISPLACEMENT

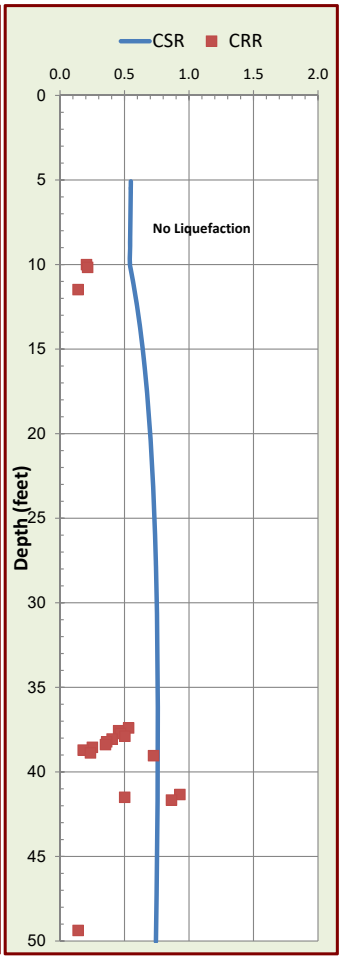
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

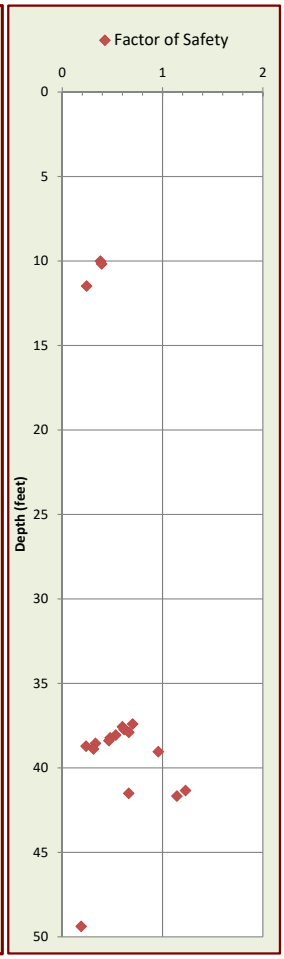
EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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







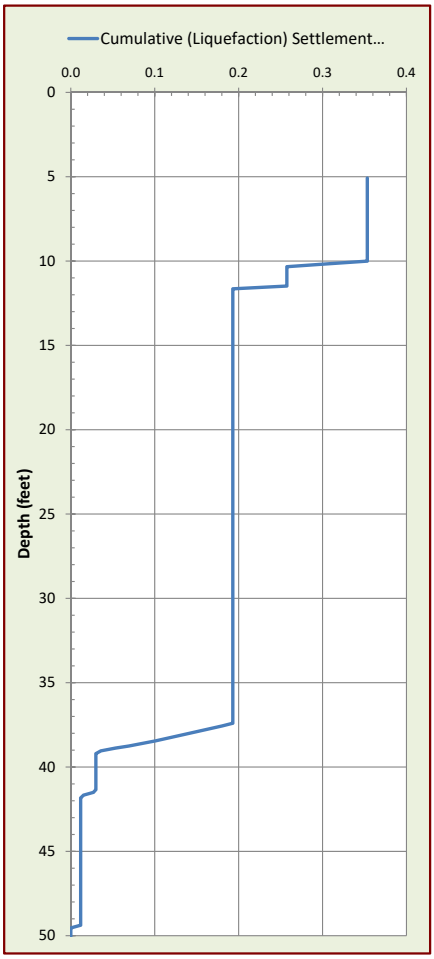


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FIGURE 4B

CPT NO. 2

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	6.4
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.61	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.44	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.1**	**INCHES**

POTENTIAL LATERAL DISPLACEMENT

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

EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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

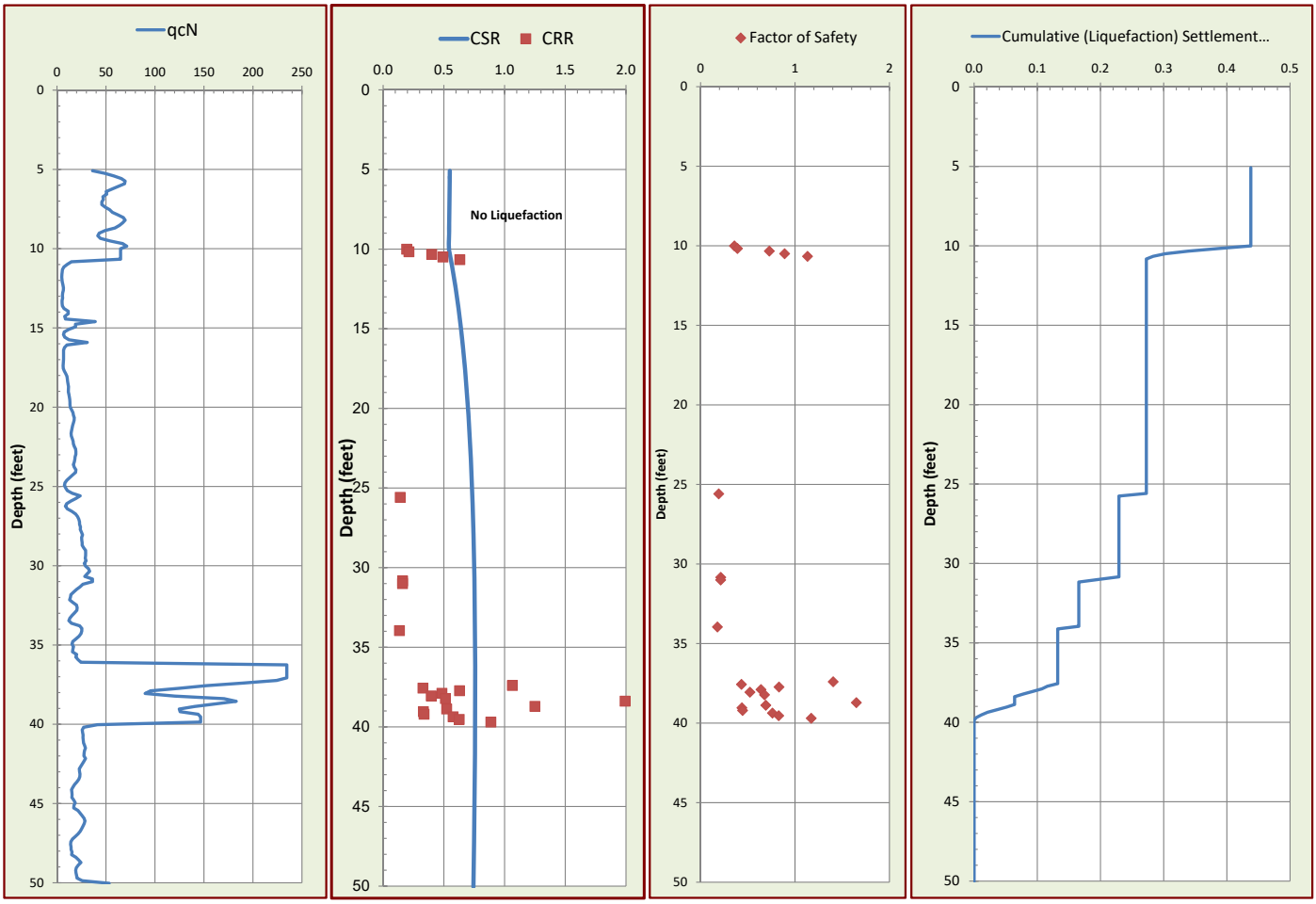

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FIGURE 4C

CPT NO. 3

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-2
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.81	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.19	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.46	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.7**	**INCHES**

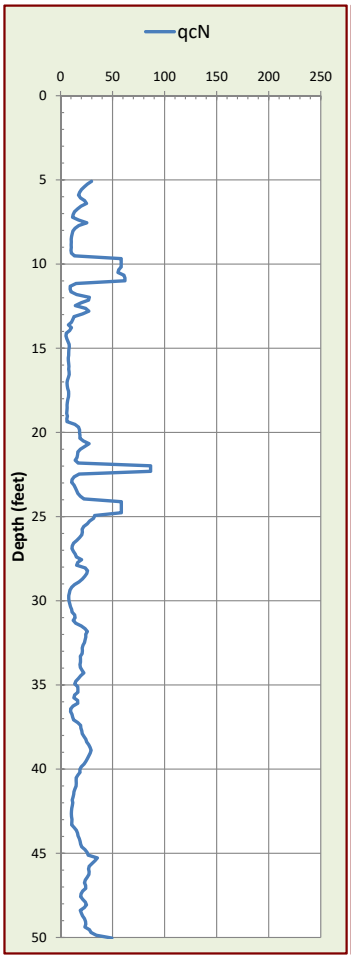
POTENTIAL LATERAL DISPLACEMENT

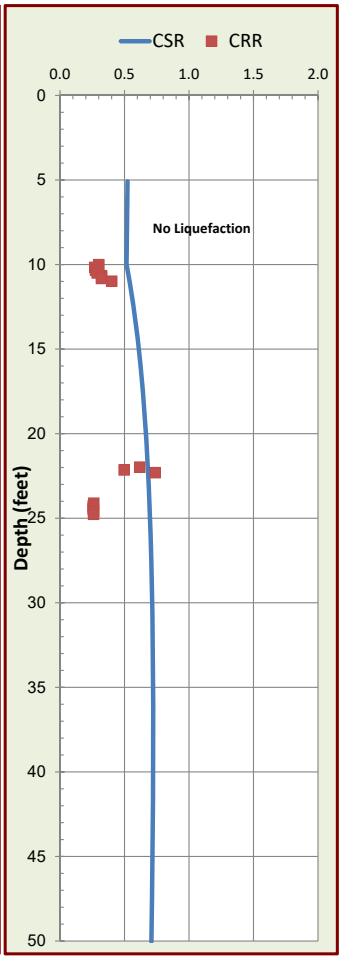
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

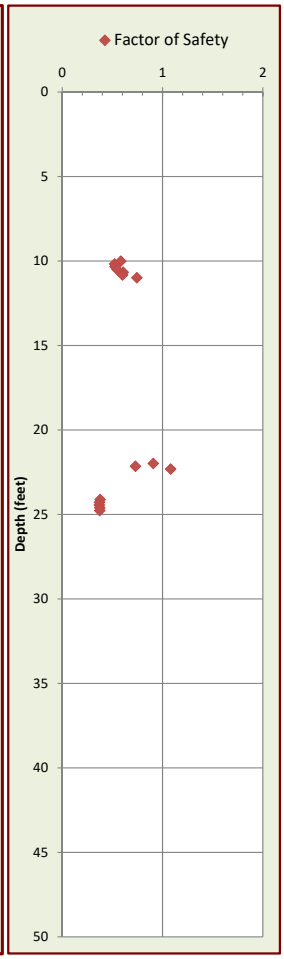
EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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







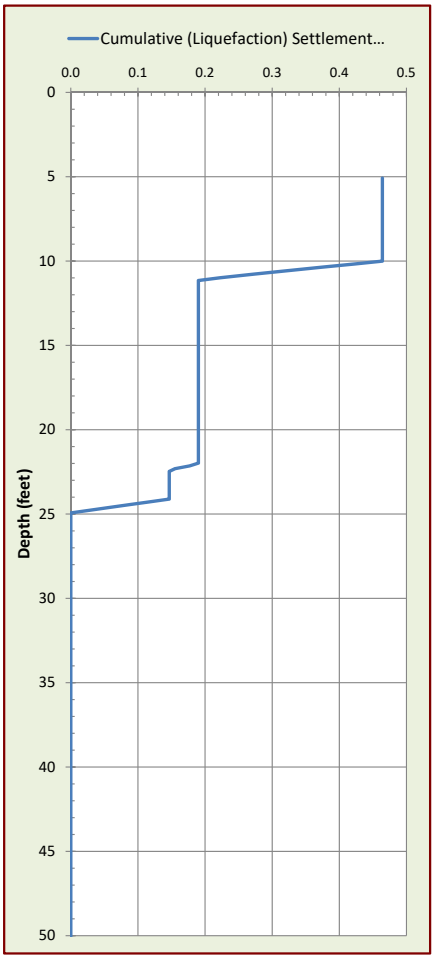


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FIGURE 4D

CPT NO. 4

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	14.1
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.00	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	1.37	(Inches)
TOTAL SEISMIC SETTLEMENT	1.4	INCHES

POTENTIAL LATERAL DISPLACEMENT

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

EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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

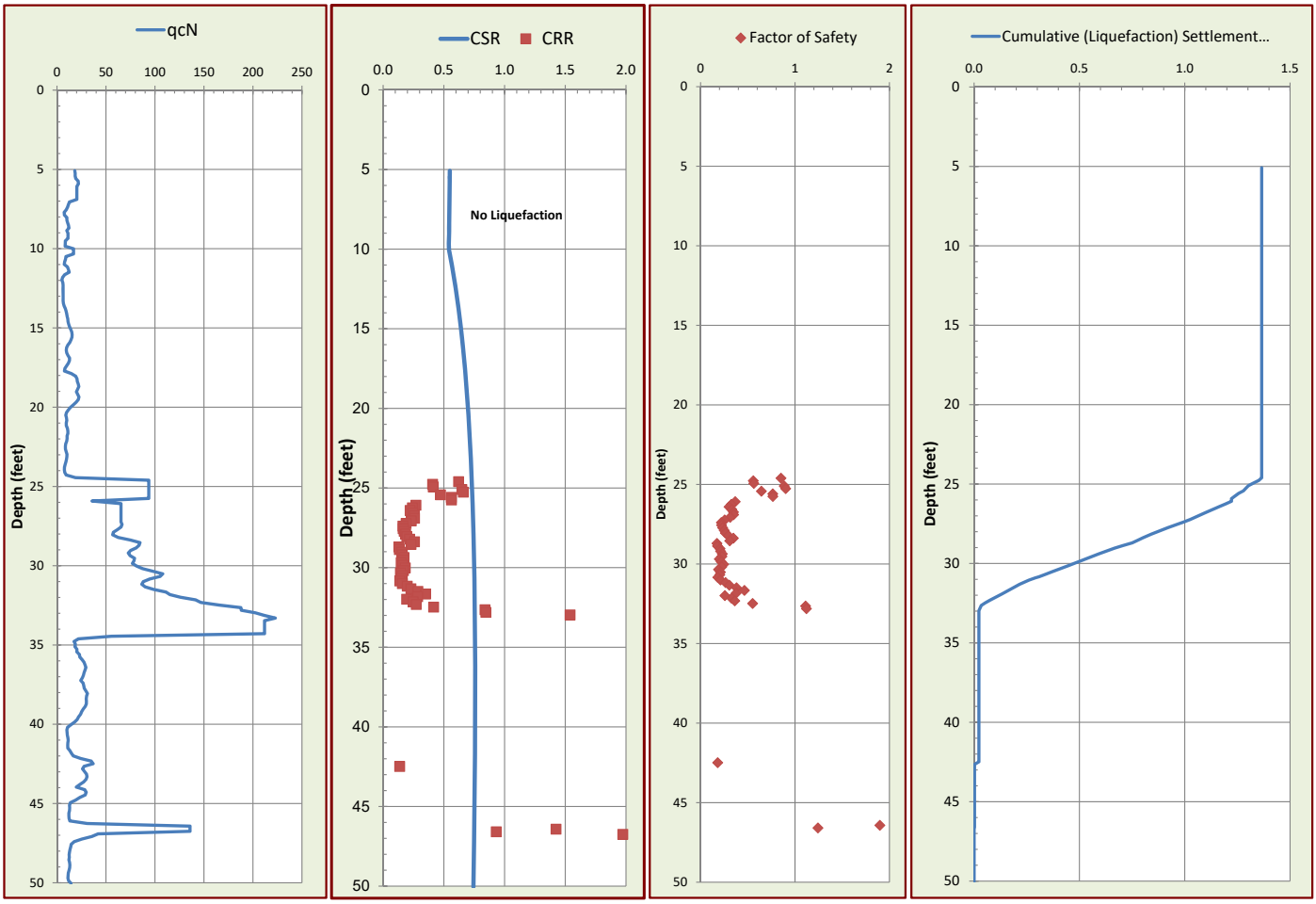

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FIGURE 4E

CPT NO. 5

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-2
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.81	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11.9
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.18	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.66	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.8**	**INCHES**

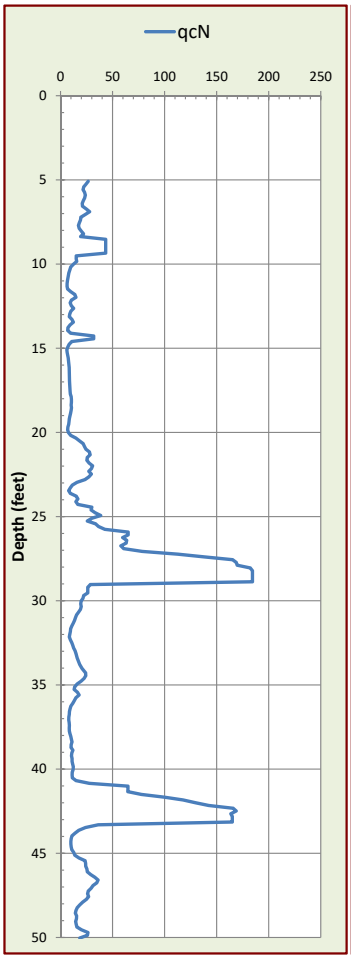
POTENTIAL LATERAL DISPLACEMENT

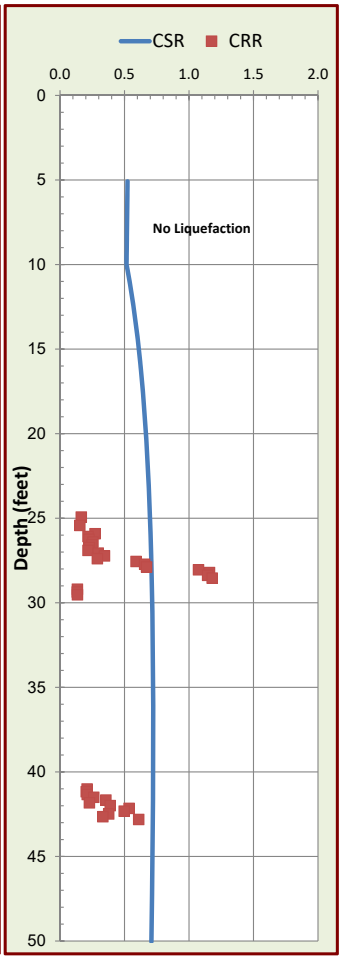
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

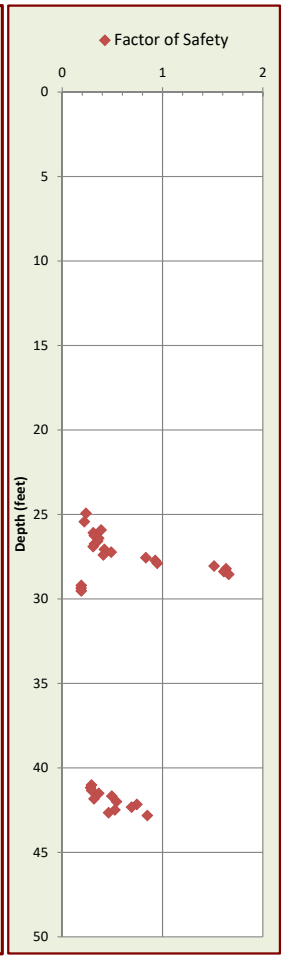
EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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







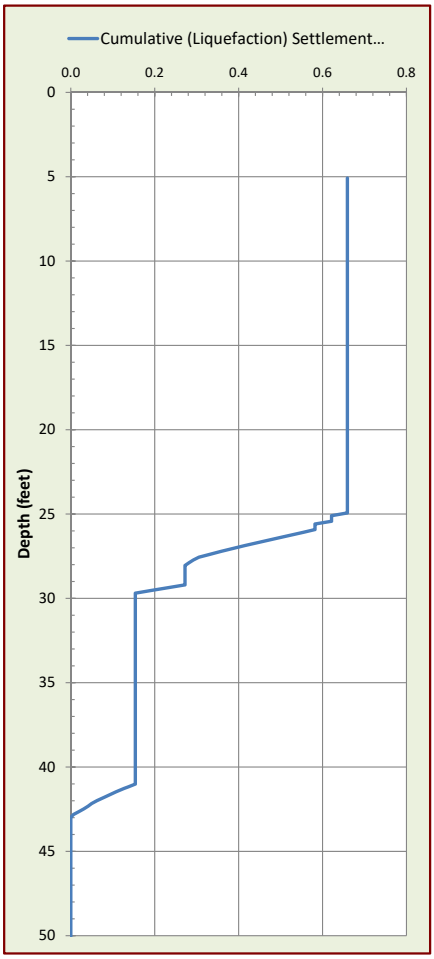


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FIGURE 4F

CPT NO. 6

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	10
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.68	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	2.37	(Inches)
TOTAL SEISMIC SETTLEMENT	**3.1**	**INCHES**

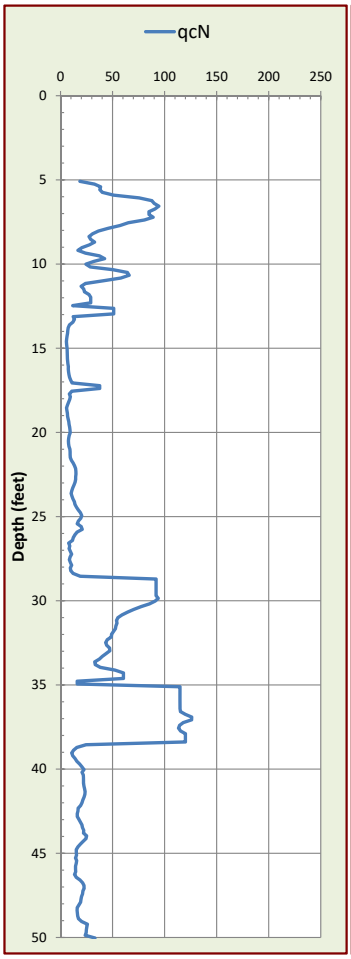
POTENTIAL LATERAL DISPLACEMENT

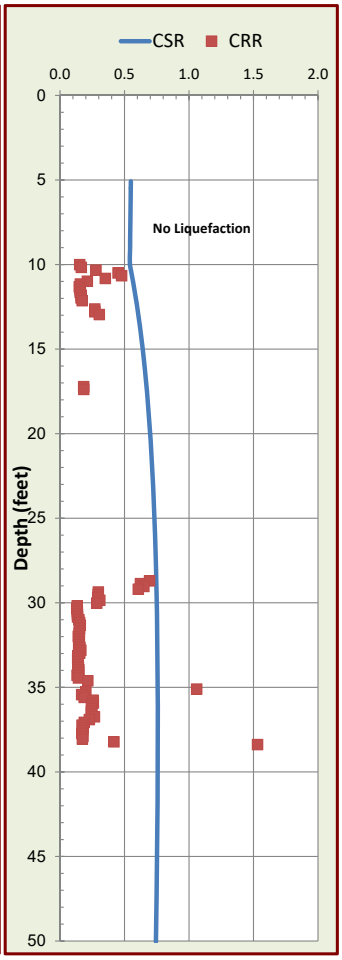
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

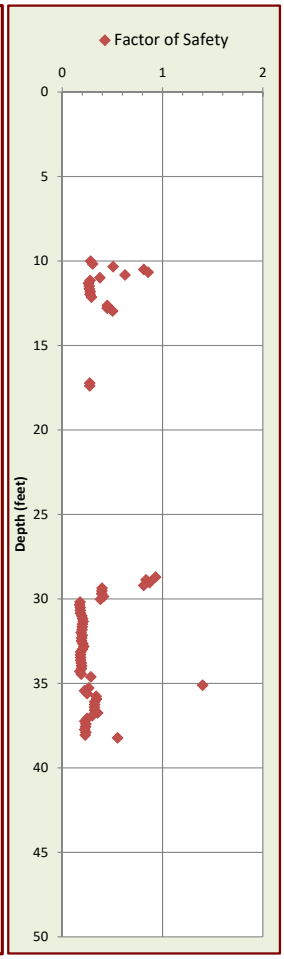
EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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







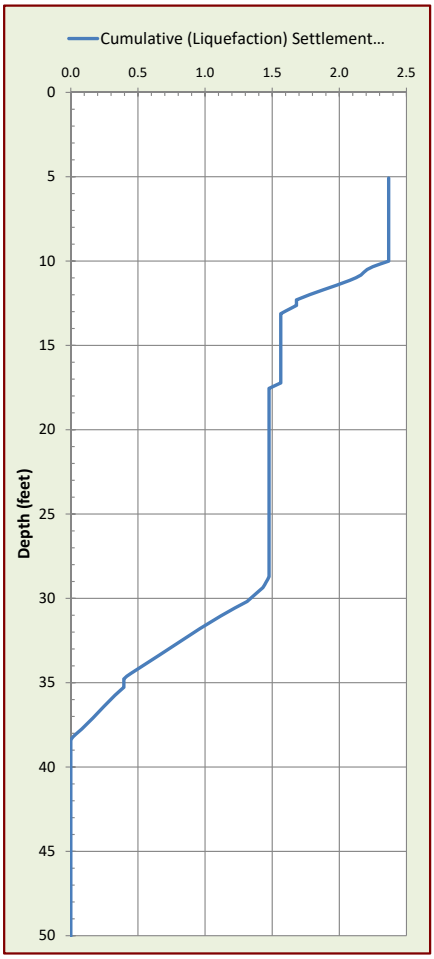


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FIGURE 4G

CPT NO. 7

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	6.3
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.62	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	1.16	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.8**	**INCHES**

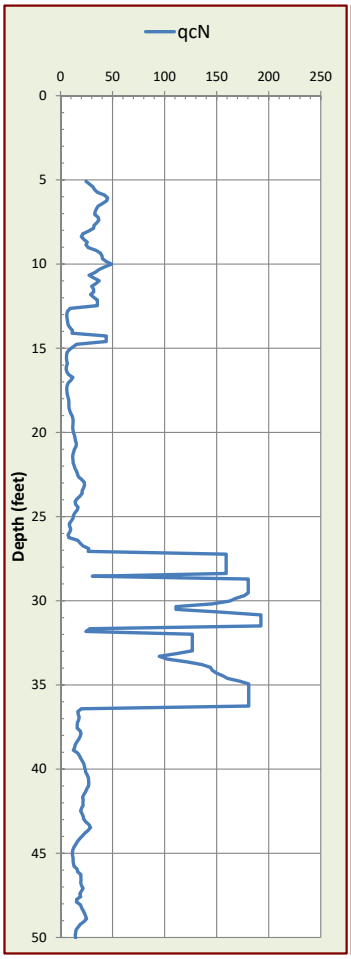
POTENTIAL LATERAL DISPLACEMENT

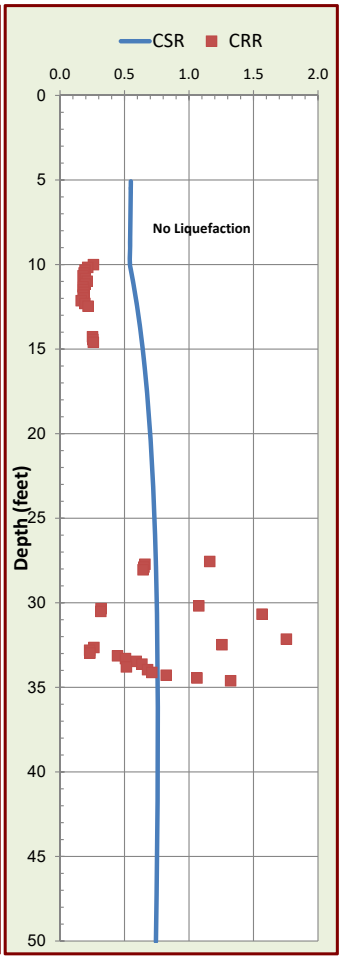
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

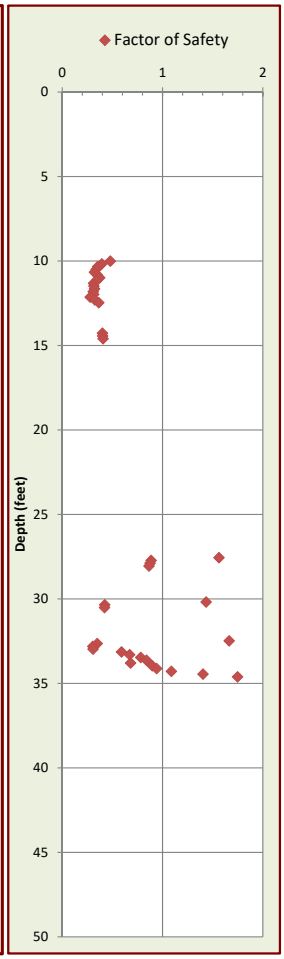
EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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







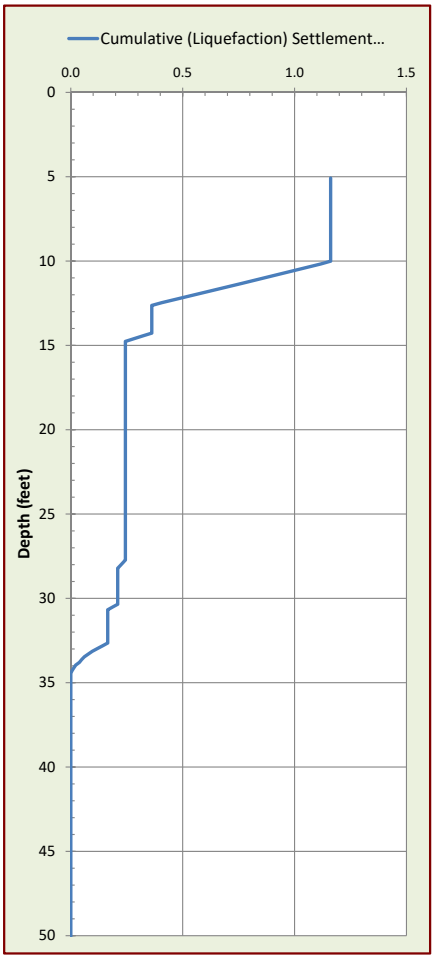


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FIGURE 4H

CPT NO. 8

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	12
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.01	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.00	(Inches)
TOTAL SEISMIC SETTLEMENT	0.0	INCHES

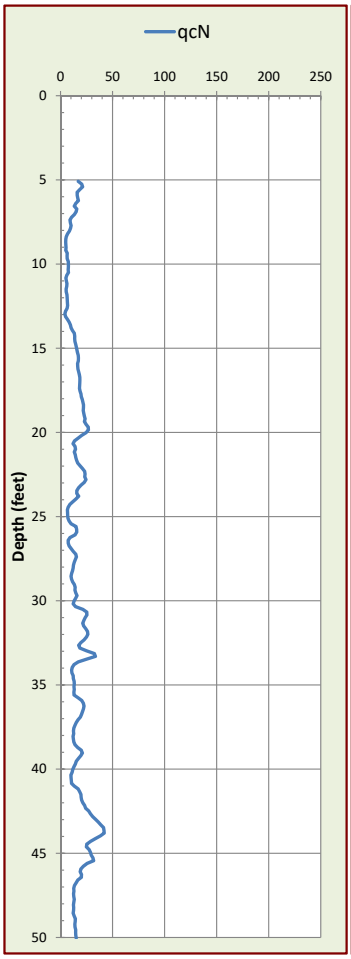
POTENTIAL LATERAL DISPLACEMENT

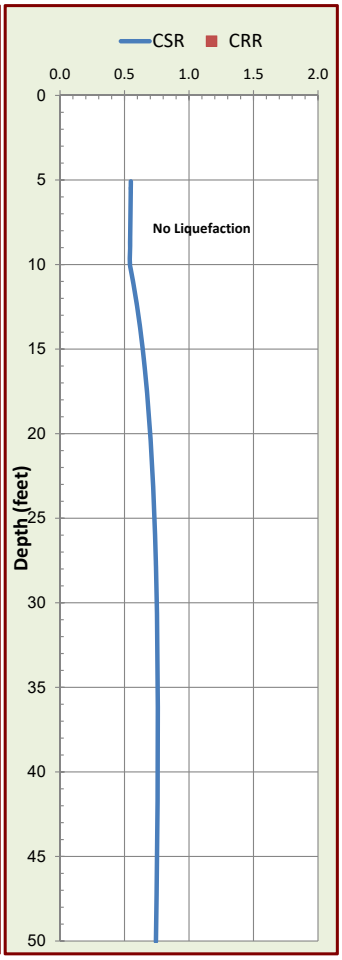
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

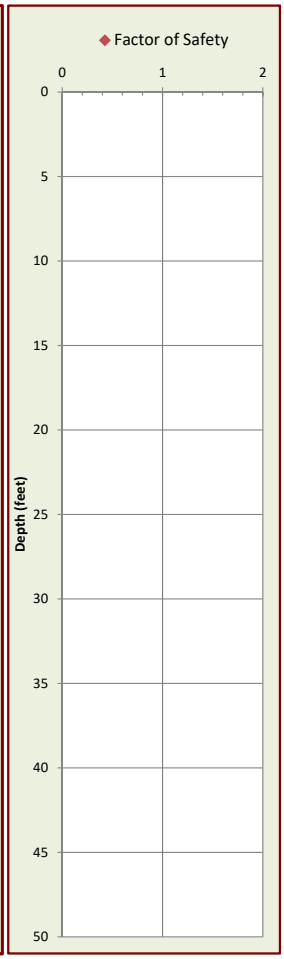
EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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







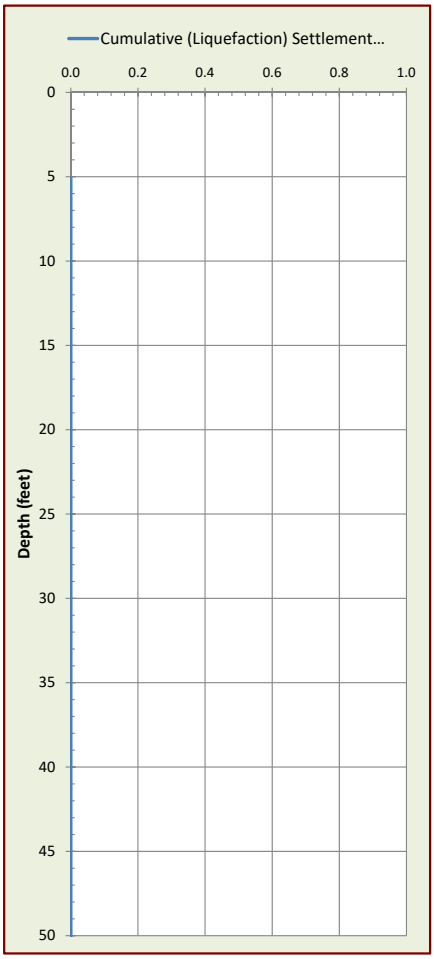


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FIGURE 4I

CPT NO. 9

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	9.6
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.00	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.19	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.2**	**INCHES**

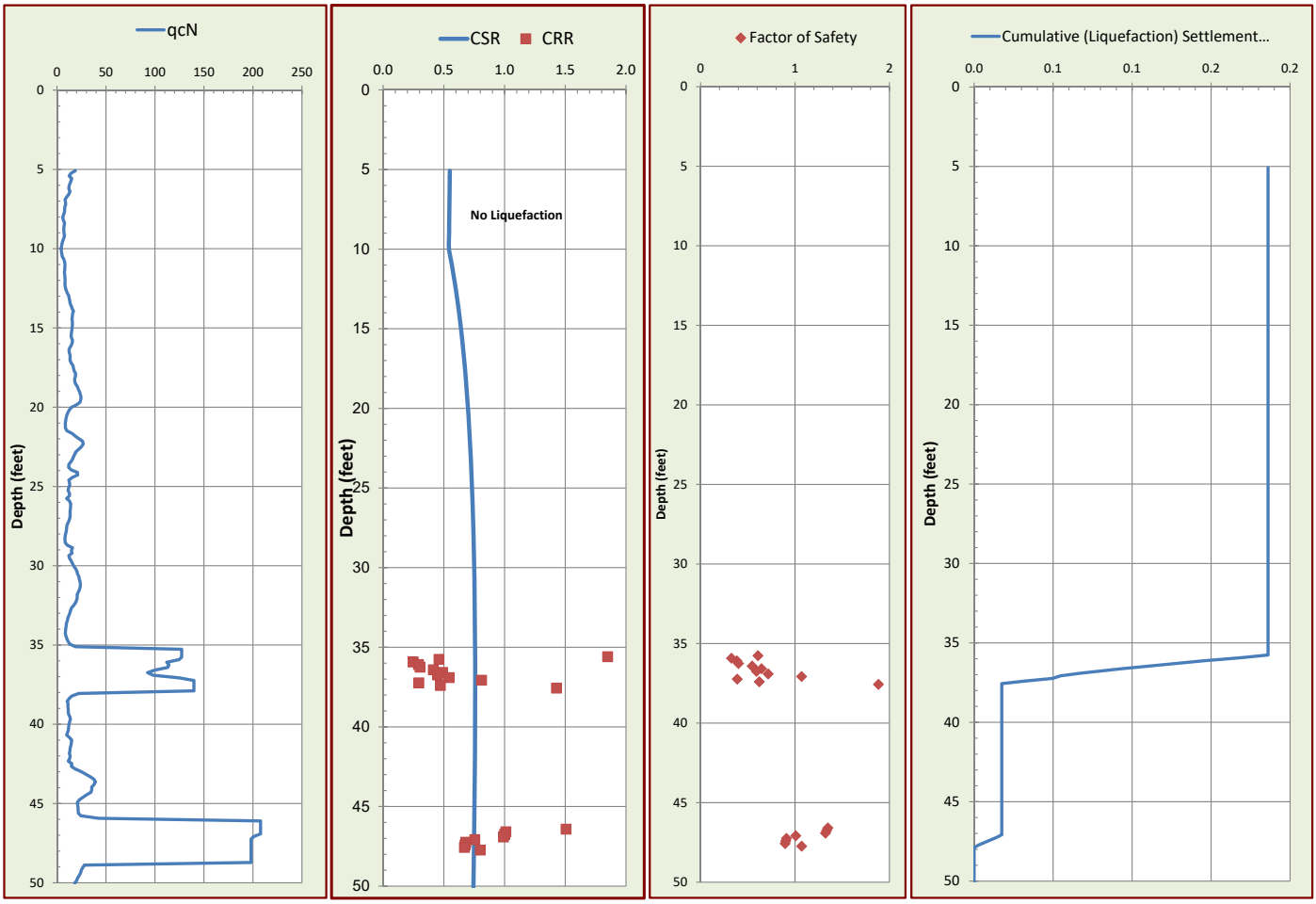
POTENTIAL LATERAL DISPLACEMENT

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

EXPECTED RANGE OF DISPLACEMENT

0.0 to 0.0 feet

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



CORNERSTONE EARTH GROUP

FIGURE 4J

CPT NO. 10

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	14
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.12	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	1.67	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.8**	**INCHES**

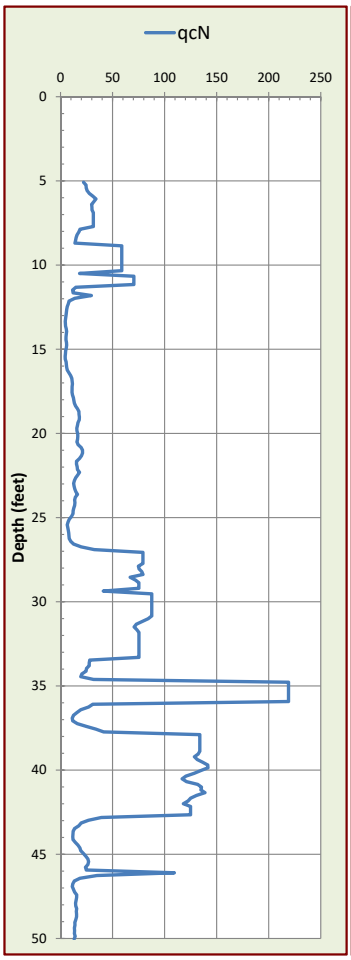
POTENTIAL LATERAL DISPLACEMENT

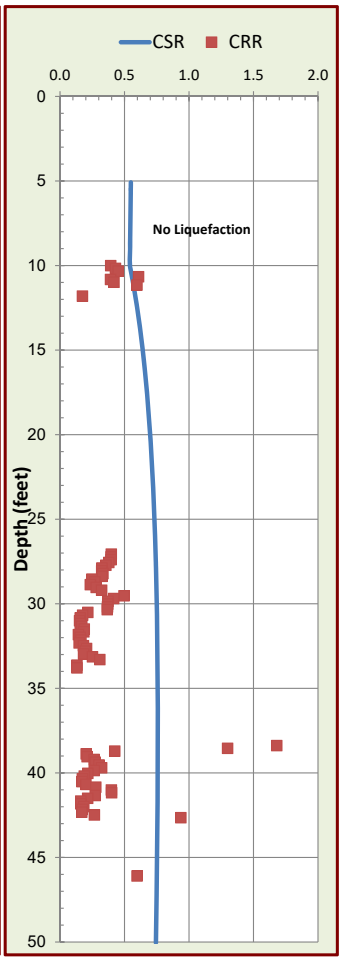
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

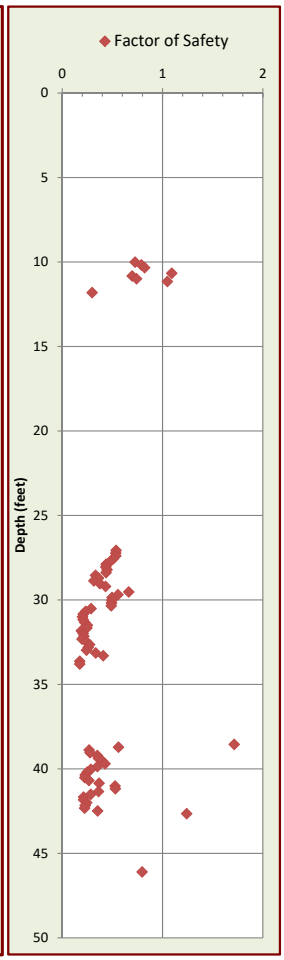
EXPECTED RANGE OF DISPLACEMENT

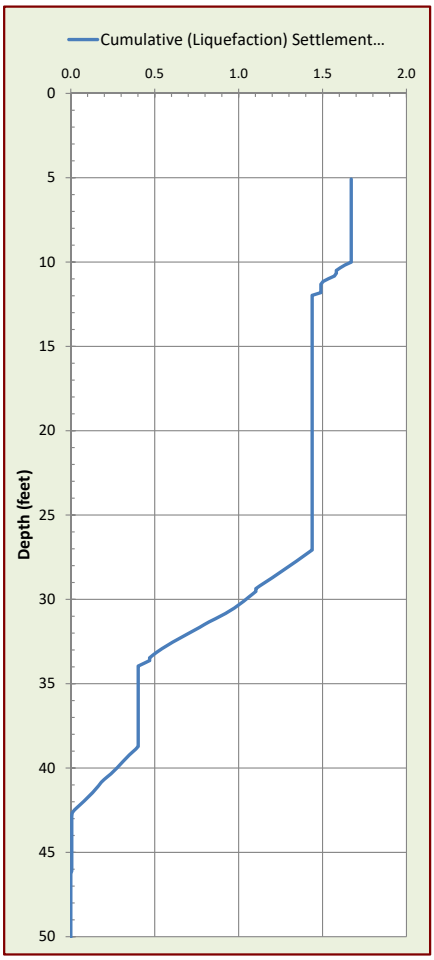
0.0 to 0.0 feet

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









CORNERSTONE EARTH GROUP

FIGURE 4K

CPT NO. 11

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	12
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.47	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.07	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.5**	**INCHES**

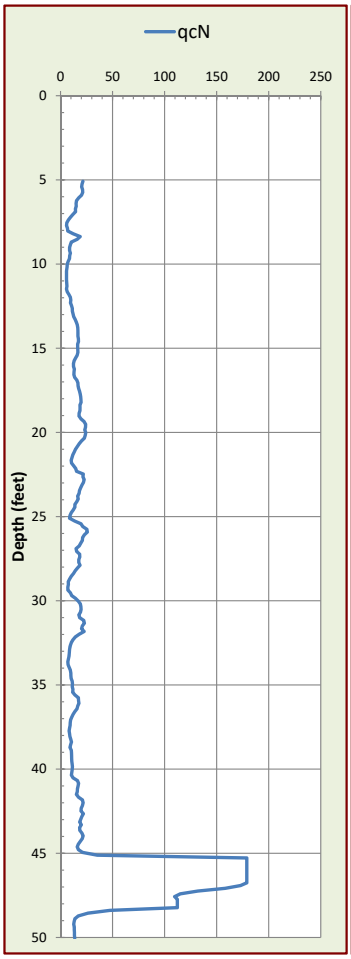
POTENTIAL LATERAL DISPLACEMENT

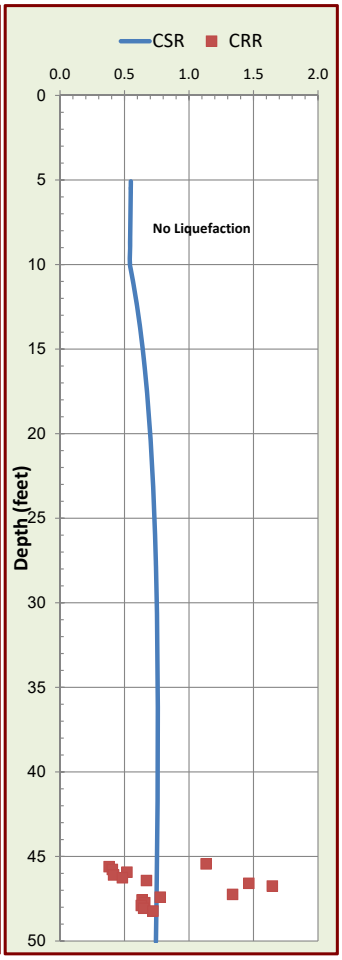
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

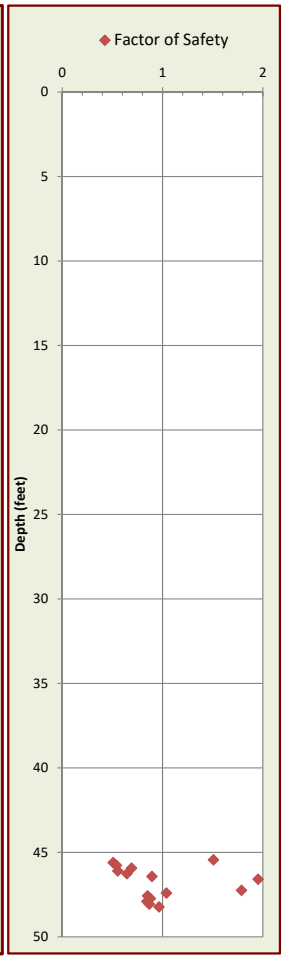
EXPECTED RANGE OF DISPLACEMENT

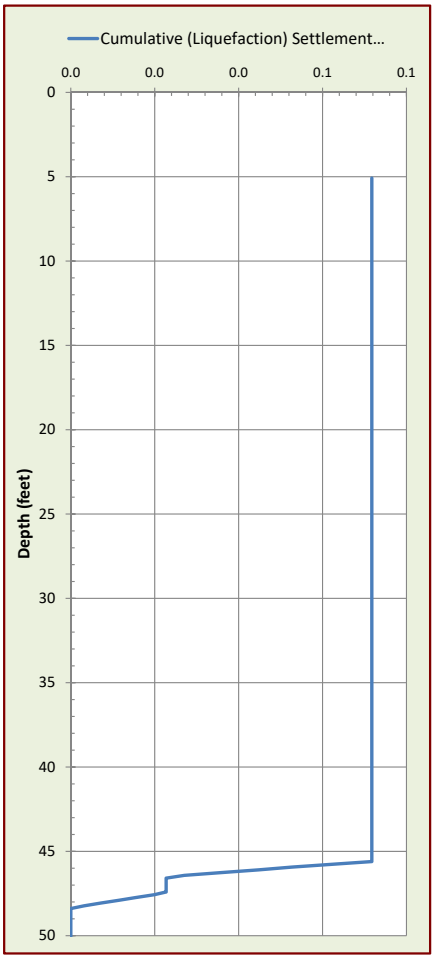
0.0 to 0.0 feet

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









CORNERSTONE EARTH GROUP

FIGURE 4L

CPT NO. 12

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	12
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.55	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.72	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.3**	**INCHES**

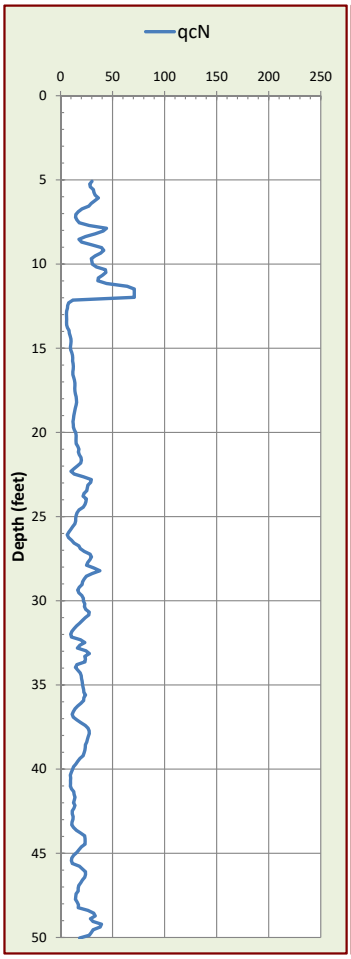
POTENTIAL LATERAL DISPLACEMENT

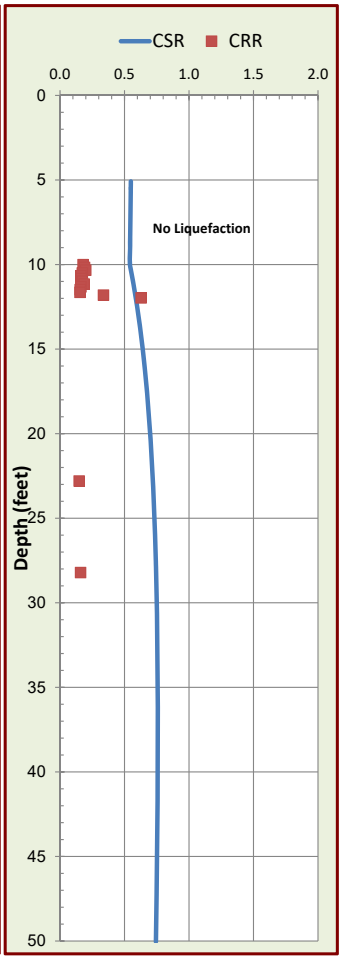
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

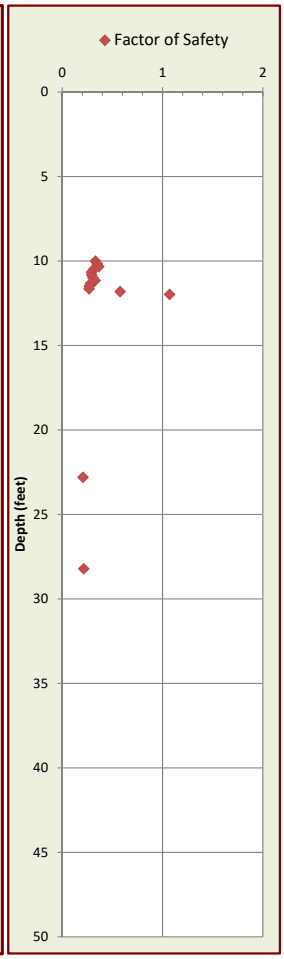
EXPECTED RANGE OF DISPLACEMENT

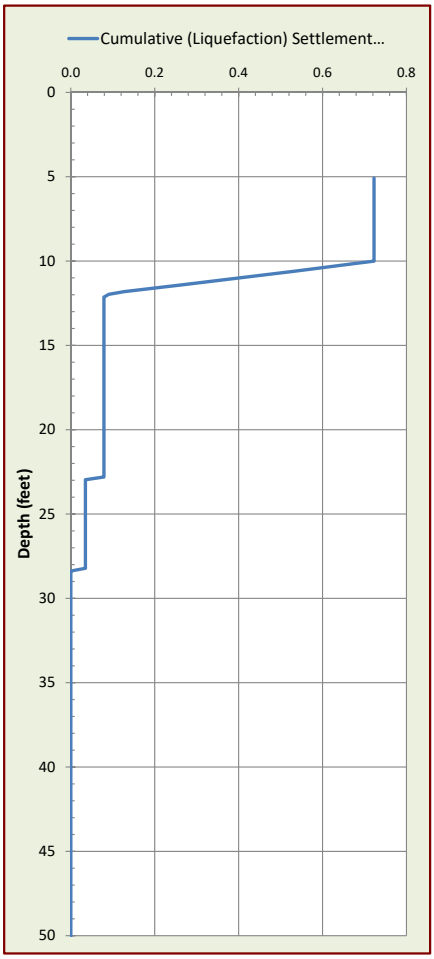
0.0 to 0.0 feet

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









CORNERSTONE EARTH GROUP

FIGURE 4M

CPT NO. 13

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-1
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.85	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	15
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.07	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.94	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.0**	**INCHES**

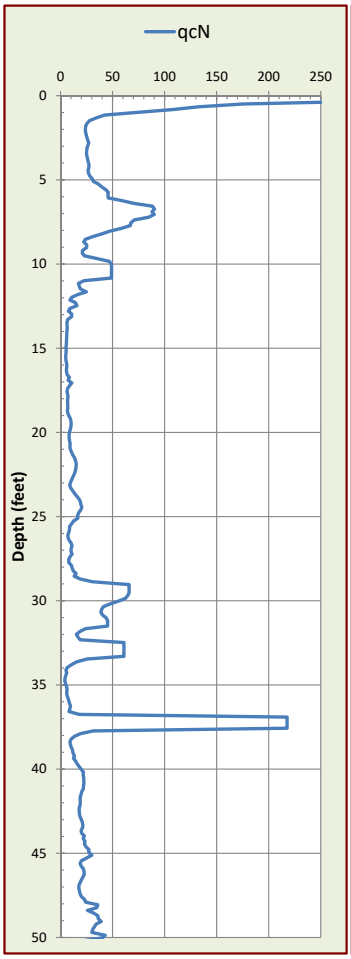
POTENTIAL LATERAL DISPLACEMENT

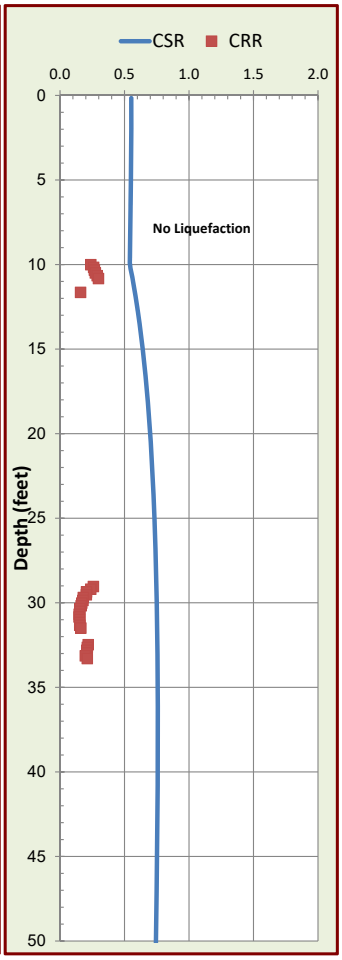
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

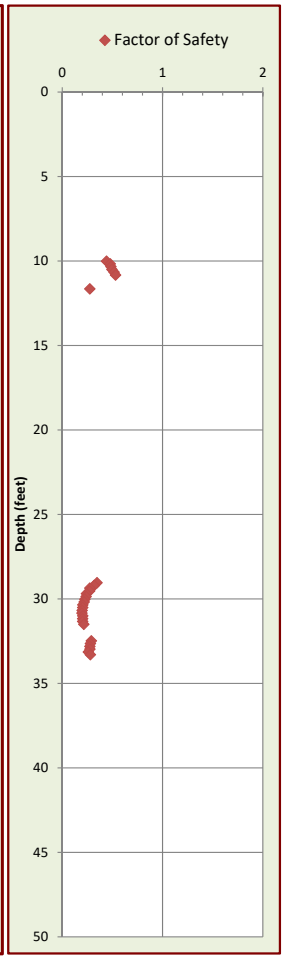
EXPECTED RANGE OF DISPLACEMENT

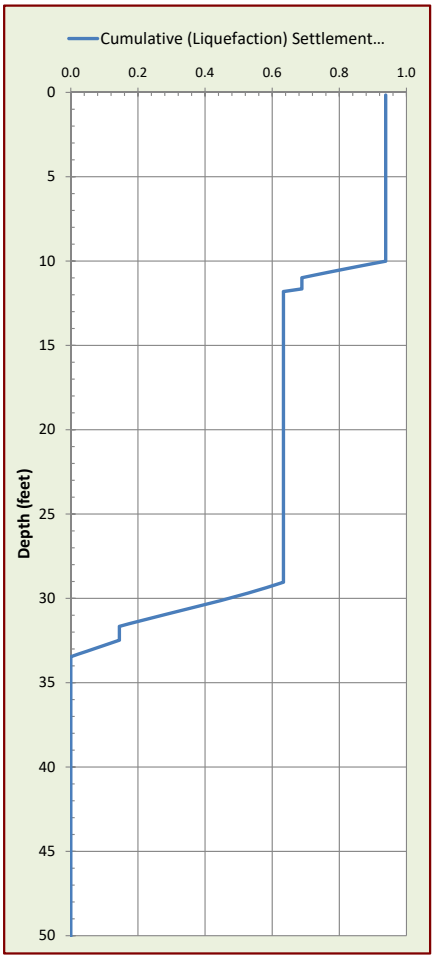
0.0 to 0.0 feet

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









CORNERSTONE EARTH GROUP

FIGURE 4N

CPT NO. 14

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-2
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.81	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.36	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.61	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.0**	**INCHES**

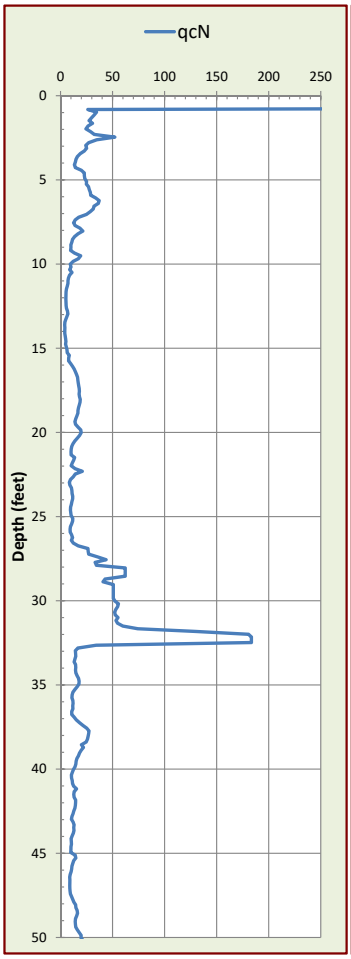
POTENTIAL LATERAL DISPLACEMENT

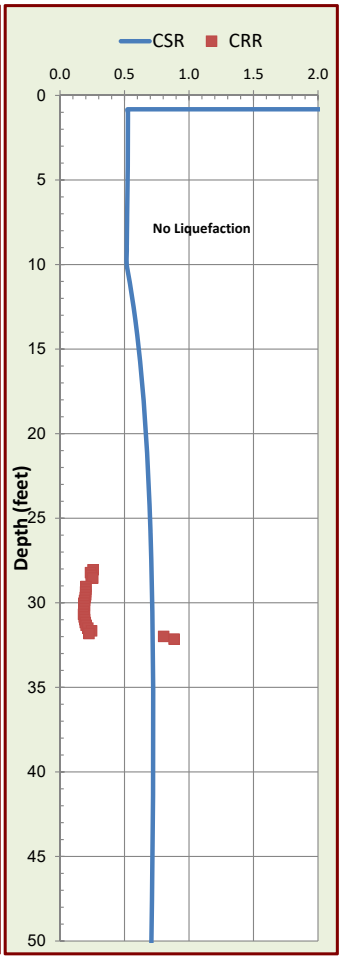
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

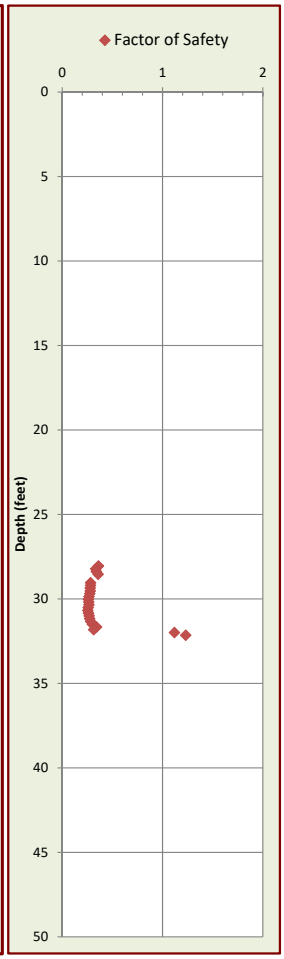
EXPECTED RANGE OF DISPLACEMENT

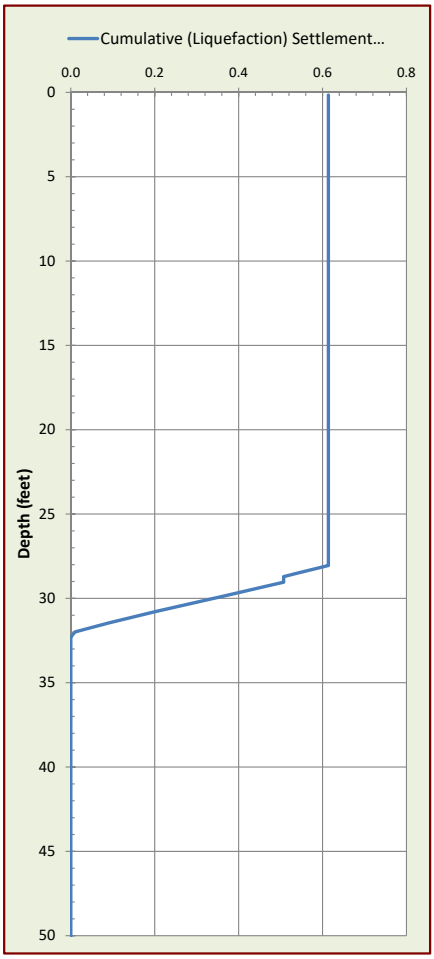
0.0 to 0.0 feet

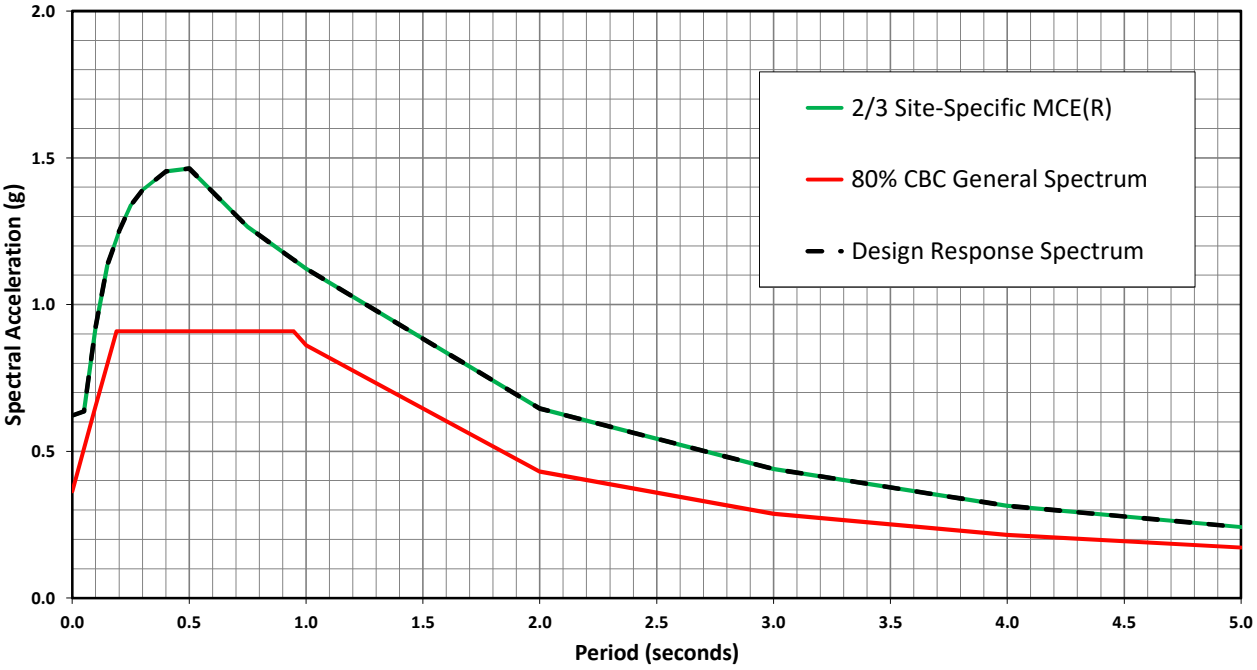
[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.











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	0.622
0.05	0.636
0.10	0.921
0.15	1.135
0.19	1.225
0.20	1.251
0.25	1.339
0.30	1.391
0.40	1.454
0.50	1.463
0.75	1.265
0.95	1.153
1.00	1.123
2.00	0.645
3.00	0.440
4.00	0.314
5.00	0.242

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	230
Site Latitude (degrees)	37.632097
Site Longitude (degrees)	-122.118289
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	0.85

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

Design Acceleration Parameters[1]	
S_{DS}	1.317
S_{D1}	1.320
S_{MS}	1.976
S_{M1}	1.980

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 5

Buildings 1, 2, and 3
25800 Clawiter Road
Hayward, California

PROJECT NO. 1076-1-1

January 22, 2020 | RSM

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using limited-access hollow-stem auger drilling equipment. Seven 8-inch-diameter exploratory borings were drilled on October 17 to 19, 2018 to depths of 15 to 40 feet. The approximate locations of exploratory borings 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 locations were approximated using existing site boundaries and other site features as references. Boring elevations were not determined. The locations of the borings 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. 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.

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 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 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

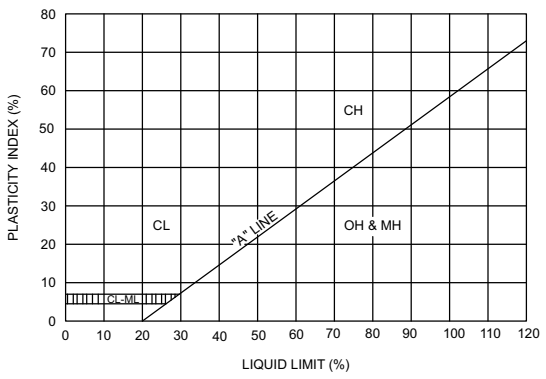
SAMPLER TYPES

- 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

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/19/18 **DATE COMPLETED** 10/19/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
AT TIME OF DRILLING 13.5 ft.
NOTES _____
AT END OF DRILLING 13.5 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		**Sandy Lean Clay (CL) [Fill]** hard, moist, brown, fine to coarse sand, fine to coarse subangular gravel, low plasticity							
			Lean Clay (CL) hard, moist, dark brown to brown, some fine to medium sand, moderate plasticity	14	MC-1B	104	19			>4.5 ○
				17	MC					>4.5 ○
	5		**Sandy Lean Clay (CL)** hard, moist, brown, fine sand, low plasticity Liquid Limit = 26, Plastic Limit = 15	7	MC-3B	100	16	11	57	>4.5 ○
			Lean Clay with Sand (CL) very stiff, moist, brown, fine to medium sand, low plasticity	8	MC					○
	10		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine sand	7	MC-5B	98	21			
			Clayey Sand (SC) loose, moist, brown, fine to medium sand							
			Lean Clay with Sand (CL) medium stiff to stiff, moist, brown, fine sand, low plasticity	6	MC-6B	102	22			○
	15		**Lean Clay (CL)** stiff, moist, brown, some fine sand, moderate plasticity							
				13	MC-7B	98	25			○
	20		becomes medium stiff	7	MC-8B	96	27			○
	25									
			Continued Next Page							

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BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, CA

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	30		**Silty Sand (SM)** medium dense, moist, brown, fine to medium sand	22	MC-9A	108	20		42	
			Poorly Graded Sand with Silt and Gravel (SP-SM) medium dense, moist, brown, fine to coarse sand, fine subangular to subrounded gravel	23	MC-10B	128	7		11	
	35		**Lean Clay with Sand (CL)** stiff, moist, brown, fine to medium sand, low to moderate plasticity	13	MC-11B	107	20			○
	40		Bottom of Boring at 40.0 feet.							
	45									
	50									
	55									

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BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/17/18 **DATE COMPLETED** 10/17/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo **LATITUDE** 37.63265° **LONGITUDE** -122.11802°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY BCG ▽ **AT TIME OF DRILLING** 15 ft.
NOTES _____ ▼ **AT END OF DRILLING** 16 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0		6 inches Portland cement concrete						
			Lean Clay with Sand (CL) very stiff, moist, dark brown to brown, fine to medium sand, low plasticity Liquid Limit = 34, Plastic Limit = 16	19	MC-1B	108	17	18	
				16	MC				
	5		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to coarse sand, some fine to coarse subangular to subrounded gravel	6	MC-3B	93	9		
			Poorly Graded Sand (SP) loose, moist, brown, fine to coarse sand	11	MC-4A	90	4		3
	10			5	MC-5B	98	24		
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine to medium sand, moderate plasticity						
			Silty, Clayey Sand (SC-SM) loose, moist, brwn, fine to medium sand Liquid Limit = 24, Plastic Limit = 17	6	MC-6B	110	20	7	37
▽	15			5	MC				
▼			**Lean Clay with Sand (CL)** medium stiff, moist, brown, fine to medium sand, moderate plasticity						
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	7	MC-8B	98	26		
	20								
				9	MC-9B	103	23		
	25								
			Continued Next Page						

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

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BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, 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 (CL) very stiff, moist, brown, some fine sand, moderate plasticity	21	MC-10B	109	20		
	30		**Lean Clay with Sand (CL)** stiff, moist, brown, fine to medium sand, moderate plasticity	12	MC-11B	105	21		
	35		**Silty Sand (SM)** medium dense, moist, brown, fine to medium sand	23	MC				
				11	SPT-13A		23		16
	40		**Lean Clay with Sand (CL)** very stiff, moist, brown, fine to medium sand, moderate plasticity						
			Bottom of Boring at 40.0 feet.						
	45								
	50								
	55								

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

1.0 2.0 3.0 4.0

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BORING NUMBER EB-3

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/19/18 **DATE COMPLETED** 10/19/18
GROUND ELEVATION _____ **BORING DEPTH** 25 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 18 ft.
NOTES _____
▼ **AT END OF DRILLING** 18 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf
	0		6 inches Portland cement concrete							
			Lean Clay (CL) hard, moist, dark brown, some fine to medium sand, moderate plasticity	12	MC-1B	98	21			>4.5
			Lean Clay (CL) very stiff, moist, brown, some fine sand, moderate plasticity	11	MC-2B	100	18			
	5			12	MC-3B	102	20			
			Lean Clay with Sand (CL) stiff, moist, brown, fine to medium sand, low plasticity	9	MC-4B	102	21			
			Poorly Graded Sand with Silt (SP-SM) loose, moist, brown, fine sand							
	10			5	5B MC 5C	101 93	23 31	18	12 71	
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine to medium sand, moderate plasticity Liquid Limit = 36, Plastic Limit = 18							
			Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity	5	MC-6B	88	34			
	15									
▼				15	MC-7B	105	22			
	20									
				21	MC-8B	108	20			
	25		Bottom of Boring at 25.0 feet.							

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

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BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/18/18 **DATE COMPLETED** 10/18/18
GROUND ELEVATION _____ **BORING DEPTH** 30 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 18 ft.
NOTES _____
▼ **AT END OF DRILLING** 15 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		6 inches Portland cement concrete over 12 inches aggregate base							
			Sandy Lean Clay (CL) [Fill] hard, moist, brown, fine to coarse sand, fine to coarse subangular gravel, low plasticity	30	MC-1B	106	20			>4.5 ○
			Lean Clay (CL) hard, moist, dark brown, some fine sand, moderate plasticity	15	MC-2B	94	24			○
	5		**Lean Clay with Sand (CL)** very stiff, moist, brown, fine sand, moderate plasticity	15	MC-3B	105	17			○
			becomes medium stiff	12	MC					○
			Sandy Lean Clay (CL) medium stiff, moist, brown, fine to medium sand, low plasticity							
	10		Liquid Limit = 30, Plastic Limit = 15	4	MC-5A	92	27	15	55	○
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	10	MC-6B	93	29			○
	15									
			becomes very stiff	14	MC-7B	100	25			○
	20									

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BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, 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
			Silty Sand (SM) loose, moist, brown, fine to medium sand						
	25		**Lean Clay with Sand (CL)** medium stiff, moist, brown, fine sand, low plasticity	11	MC-8B	95	28		
			Silty Sand (SM) loose, moist, brown, fine to medium sand	13	MC-9B		22		19
	30		Bottom of Boring at 30.0 feet.						
	35								
	40								
	45								

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

1.0 2.0 3.0 4.0

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BORING NUMBER EB-5

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/19/18 **DATE COMPLETED** 10/19/18
GROUND ELEVATION _____ **BORING DEPTH** 15 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
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	UNDRAINED SHEAR STRENGTH, ksf
	0	**Sandy Lean Clay (CL) [Fill]** hard, moist, brown, fine to coarse sand, fine to coarse subangular gravel	21	MC-1B	106	15			>4.5
		Lean Clay (CL) hard, moist, dark brown to brown, some fine to medium sand, moderate plasticity	13	MC-2B	103	17			>4.5
	5	**Sandy Lean Clay (CL)** very stiff, moist, brown, fine sand, low plasticity Liquid Limit = 27, Plastic Limit = 18	6	MC-3B	107	15	9	55	
			14	MC-4B	106	12			
		Poorly Graded Sand with Silt (SP-SM) loose, moist, brown, fine to medium sand							
	10		4	5A MC	94	12		7	
		Silty Sand (SM) loose, moist, brown, fine sand		5B	92	25		49	
		Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity	6	MC-6B	92	30			
	15	Bottom of Boring at 15.0 feet.							
	20								
	25								

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

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BORING NUMBER EB-6

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/17/18 **DATE COMPLETED** 10/17/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo **LATITUDE** 37.63175° **LONGITUDE** -122.11911°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY BCG ▽ **AT TIME OF DRILLING** 17 ft.
NOTES _____ ▼ **AT END OF DRILLING** 13 ft.

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ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0	5 inches asphalt concrete over 1 inch aggregate base						
		Lean Clay (CL) very stiff, moist, dark brown to brown, some fine to medium sand, moderate plasticity	17	MC-1B	99	22		
			19	MC-2B	107	19		
	5	**Clayey Sand (SC)** loose, moist, brown, fine to coarse sand	16	MC-3B	103	6		
		Poorly Graded Sand with Silt (SP-SM) loose, moist, brown, fine to coarse sand, some fine subangular to subrounded gravel	9	MC-4B	96	5		6
	10	**Silty Sand (SM)** loose, moist, brown, fine sand	5	MC-5B	94	20		45
		Sandy Lean Clay (CL) medium stiff, moist, brown, fine sand, moderate plasticity	5	MC				
		Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity	5	MC				
	15							
	20		8	MC-8B	94	29		
	25	becomes stiff	10	MC				

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

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BORING NUMBER EB-6

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, CA

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Silty Sand (SM) loose, moist, brown, fine sand	10	MC-10B	102	23		25	
	30		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to medium sand	12	MC-11B	99	24		6	
			Silty Sand (SM) loose, moist, gray, fine to medium sand	10	MC					
	35			5	SPT-13		23		15	
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine sand, moderate plasticity	8	MC-14B	103	22			○
	40		Bottom of Boring at 40.0 feet.							
	45									
	50									
	55									

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BORING NUMBER EB-7

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/18/18 **DATE COMPLETED** 10/18/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 20 ft.
NOTES _____
▼ **AT END OF DRILLING** 16 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		4½ inches asphalt concrete over 3 inch aggregate base							
			Lean Clay (CL) very stiff, moist, dark brown to brown, some fine to medium sand, moderate plasticity	21	MC-1B	101	20			>4.5 ○
				18	MC-2B	103	20			○
	5		**Clayey Sand (SC)** loose, moist, brown, fine to coarse sand	12	MC-3B	102	12			○
			Silty Sand (SM) loose, moist, brown, fine sand							
	10			10	MC-4B	98	15		31	
			Sandy Lean Clay (CL) medium stiff, moist, brown, fine sand, low plasticity	7	MC					○
	15									
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	10	MC-6B	95	27			○
	20									
			becomes very stiff	15	MC-7B	106	21			○
	25									

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BORING NUMBER EB-7

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, CA

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Silty Sand (SM) medium dense, moist, brown, fine to coarse sand	20	MC-8B	121	13		16	
	30		decreasing medium to coarse sand	22	MC-9B	109	20		15	
	35									
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	12	MC-10B	106	21			○
	40		Bottom of Boring at 40.0 feet.							
	45									
	50									
	55									

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BORING NUMBER EB-8

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-2
PROJECT LOCATION Hayward, CA

DATE STARTED 10/16/19 **DATE COMPLETED** 10/16/19
GROUND ELEVATION _____ **BORING DEPTH** 29.5 ft.
DRILLING CONTRACTOR Cuesta Geo **LATITUDE** 37.63236° **LONGITUDE** -122.11656°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger **GROUNDWATER LEVELS:**
LOGGED BY JLC ▽ **AT TIME OF DRILLING** 14 ft.
NOTES _____ ▼ **AT END OF DRILLING** 14 ft.

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ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0	5½ inches Portland cement concrete over 12 inches aggregate base						
		Lean Clay (CL) very stiff, moist, dark brown, trace fine to medium sand, moderate plasticity Liquid Limit = 39, Plastic Limit = 17	15	MC-1B	112	21	22	
			14	MC-2B	100	21		
	5	becomes brown	20	MC-3B	113	15		
		Sandy Silty Clay (CL-ML) very stiff, moist, brown, fine sand, low plasticity	14	MC-4B	100	18		
		Silty Sand (SM) loose, moist, light brown, fine sand	8	MC-5B	104	23		
	10	**Lean Clay (CL)** very stiff, moist, brown, some fine sand, moderate to high plasticity						
▼		**Sandy Silt (ML)** stiff, moist, brown, fine sand, low plasticity	5	6A MC	103	32		
				6B	99	27		
	15	**Sandy Lean Clay (CL)** stiff, moist, brown, fine to medium sand, low to moderate plasticity		ST-7	96	28		
		Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	8	MC-8B	99	27		
	20							
		Silty Sand (SM) loose, wet, brown, fine to medium sand some thin clay layers	6	MC-9B	103	24		
	25		9	SPT-10B		23		29

Continued Next Page

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

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-8

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-2

PROJECT LOCATION Hayward, CA

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Silty Sand (SM) loose, wet, brown, fine to medium sand some thin clay layers	8	SPT-11		23			
			Lean Clay with Sand (CL) very stiff, moist, brown, fine sand, moderate plasticity	9	SPT-12		23			○
	30		Bottom of Boring at 29.5 feet.							
	35									
	40									
	45									
	50									
	55									

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-9

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-2
PROJECT LOCATION Hayward, CA

DATE STARTED 10/16/19 **DATE COMPLETED** 10/16/19
GROUND ELEVATION _____ **BORING DEPTH** 35 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE 37.63162° **LONGITUDE** -122.11592°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUNDWATER LEVELS:
LOGGED BY JLC
▽ **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		7 inches Portland cement concrete over 8 inches aggregate base							
			Lean Clay with Sand (CL) [Fill] hard, moist, dark brown with brown mottles, fine sand, some coarse subangular gravel, low plasticity	19	MC-1B	106	12	17		>4.5
			Liquid Limit = 33, Plastic Limit = 16	18	MC-2B	104	19			>4.5
	5		**Lean Clay with Sand (CL)** hard, moist, dark brown, fine sand, moderate plasticity	17	MC-3B	113	12			
			Sandy Silty Clay (CL-ML) very stiff, moist, brown, fine sand, low plasticity	11	MC-4B	98	20			
			Lean Clay with Sand (CL) very stiff, moist, brown, fine sand, moderate plasticity	8	MC-5B	99	26			
	10									
				5	MC-6A	95	30			
	15		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to coarse sand	5	SPT-7		27			
			Lean Clay (CL) very stiff, moist, brown, some fine sand, moderate plasticity		ST-8		consol			
	20									
				9	MC-9B	99	26			
	25									
			Continued Next Page							

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

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-9

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-2

PROJECT LOCATION Hayward, 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
			Sandy Lean Clay (CL) stiff, moist, brown, fine to medium sand, trace fine gravel, low plasticity		ST-10		consol		
			Silty Sand (SM) loose, wet, brown, fine sand	10	SPT				
	30			15	SPT-12		22		17
				5	SPT-13B		25		
			Lean Clay (CL) very stiff, moist, brown, some fine to coarse sand, moderate plasticity	13	MC-14B	103	23		
	35		Bottom of Boring at 35.0 feet.						
	40								
	45								
	50								
	55								

UNDRAINED SHEAR STRENGTH, ksf

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

1.0 2.0 3.0 4.0

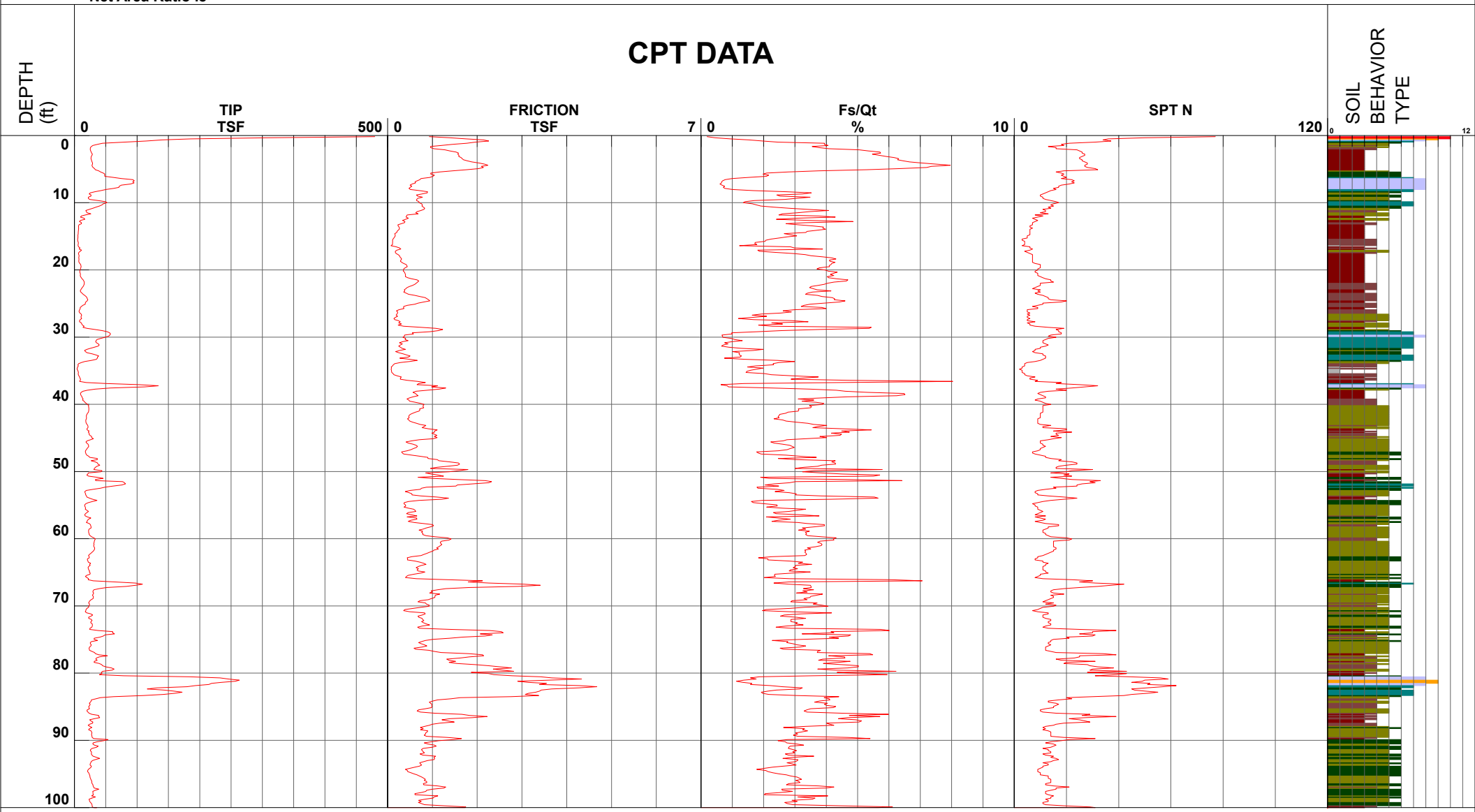
CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

Cornerstone Earth Group

Project	25800 Clawiter Road GI Update	Operator	JM-AJ	Filename	SDF(371).cpt
Job Number	1076-1-2	Cone Number	DDG1489	GPS	
Hole Number	CPT-13	Date and Time	11/20/2019 2:28:00 PM	Maximum Depth	100.56 ft
EST GW Depth During Test		15.00 ft			

Net Area Ratio .8

CPT DATA



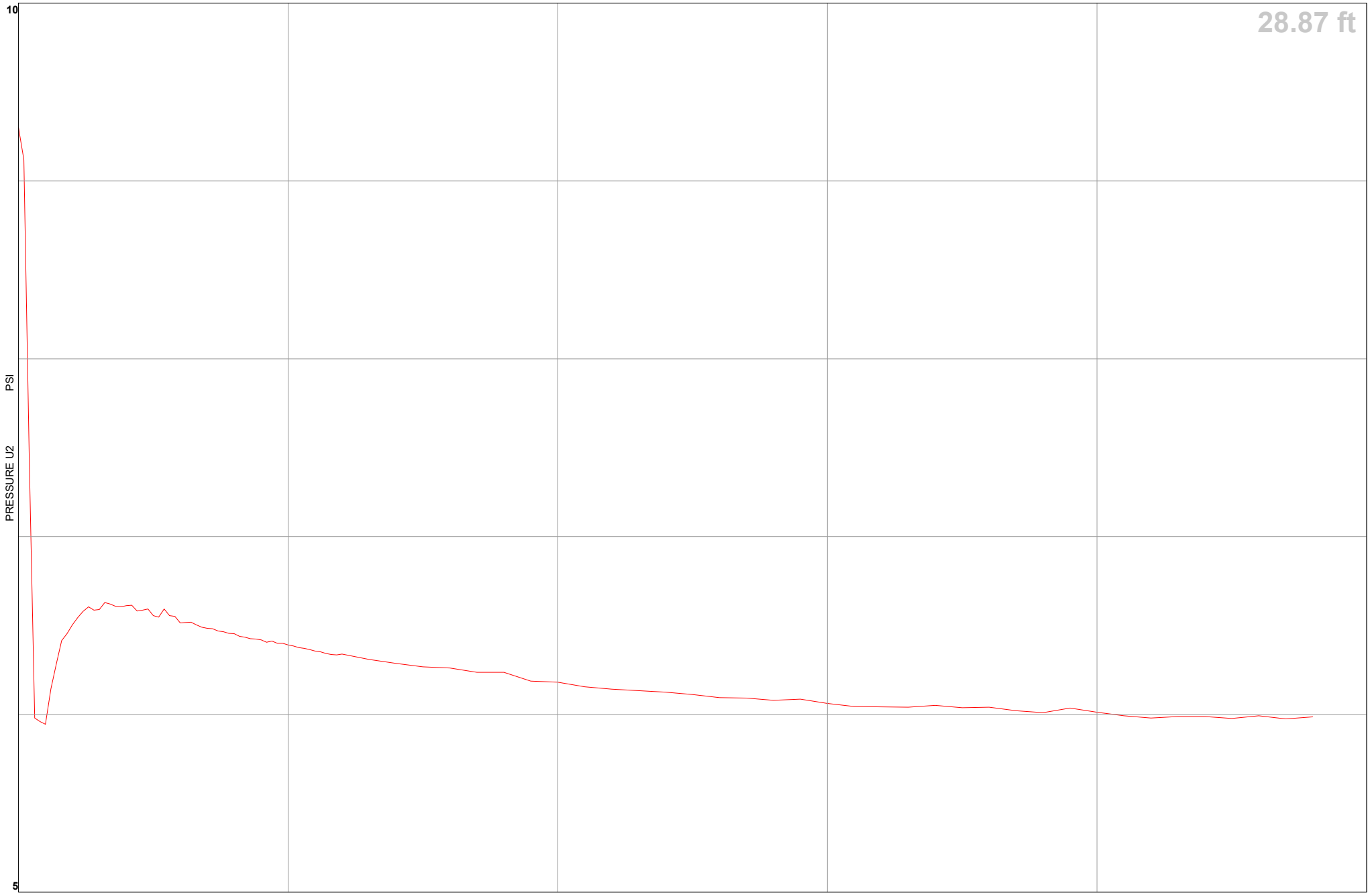
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

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

Cornerstone Earth Group

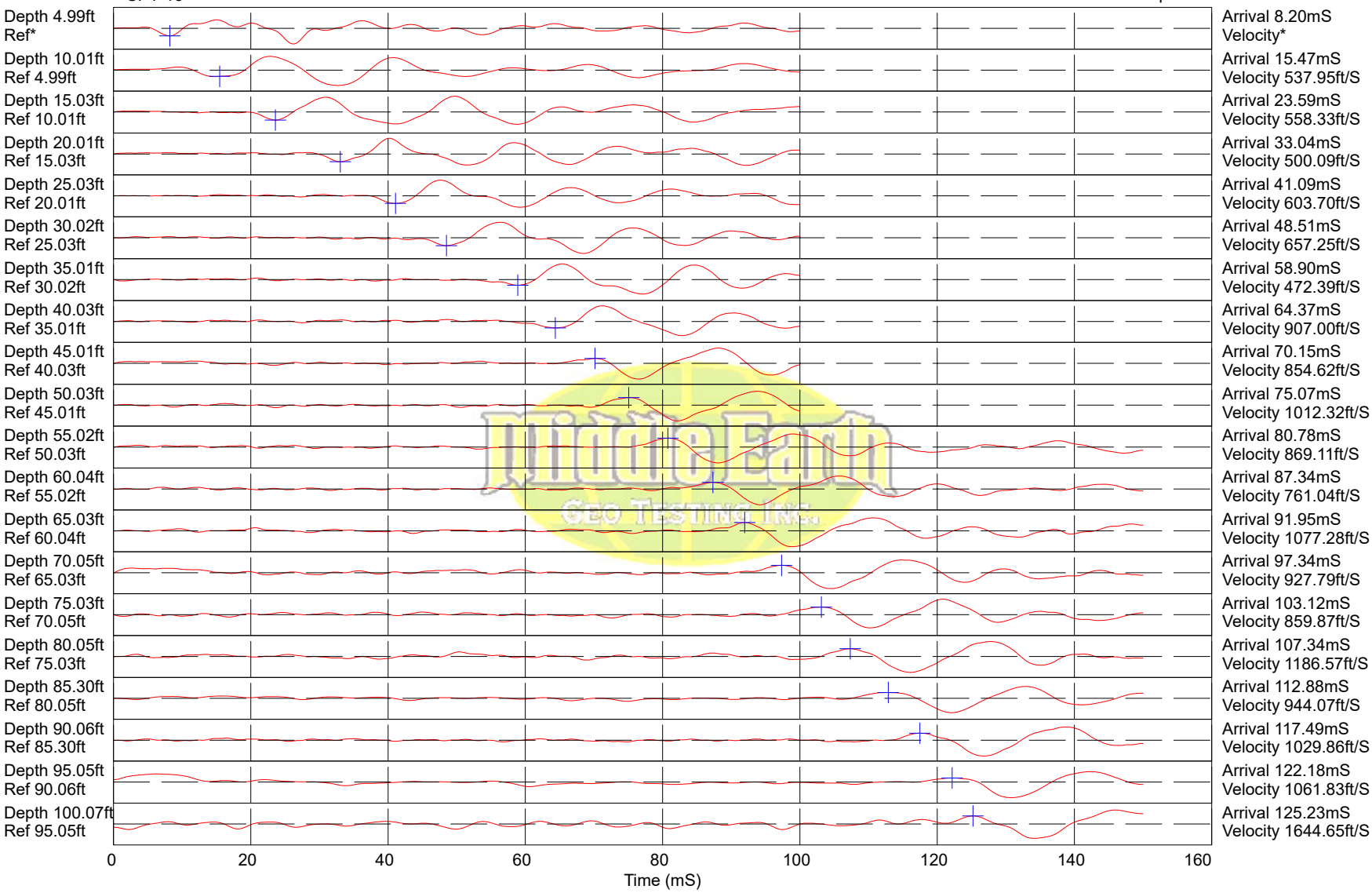
Location	25800 Clawiter Road GI Update	Operator	JM-AJ	GPS	
Job Number	1076-1-2	Cone Number	DDG1489		
Hole Number	CPT-13	Date and Time	11/20/2019 2:28:00 PM		
Equilized Pressure	6.0	EST GW Depth During Test	15.0		



CPT-13

Cornerstone Earth Group

25800 Clawiter Road GI Update



Hammer to Rod String Distance (ft): 5.83

* = Not Determined

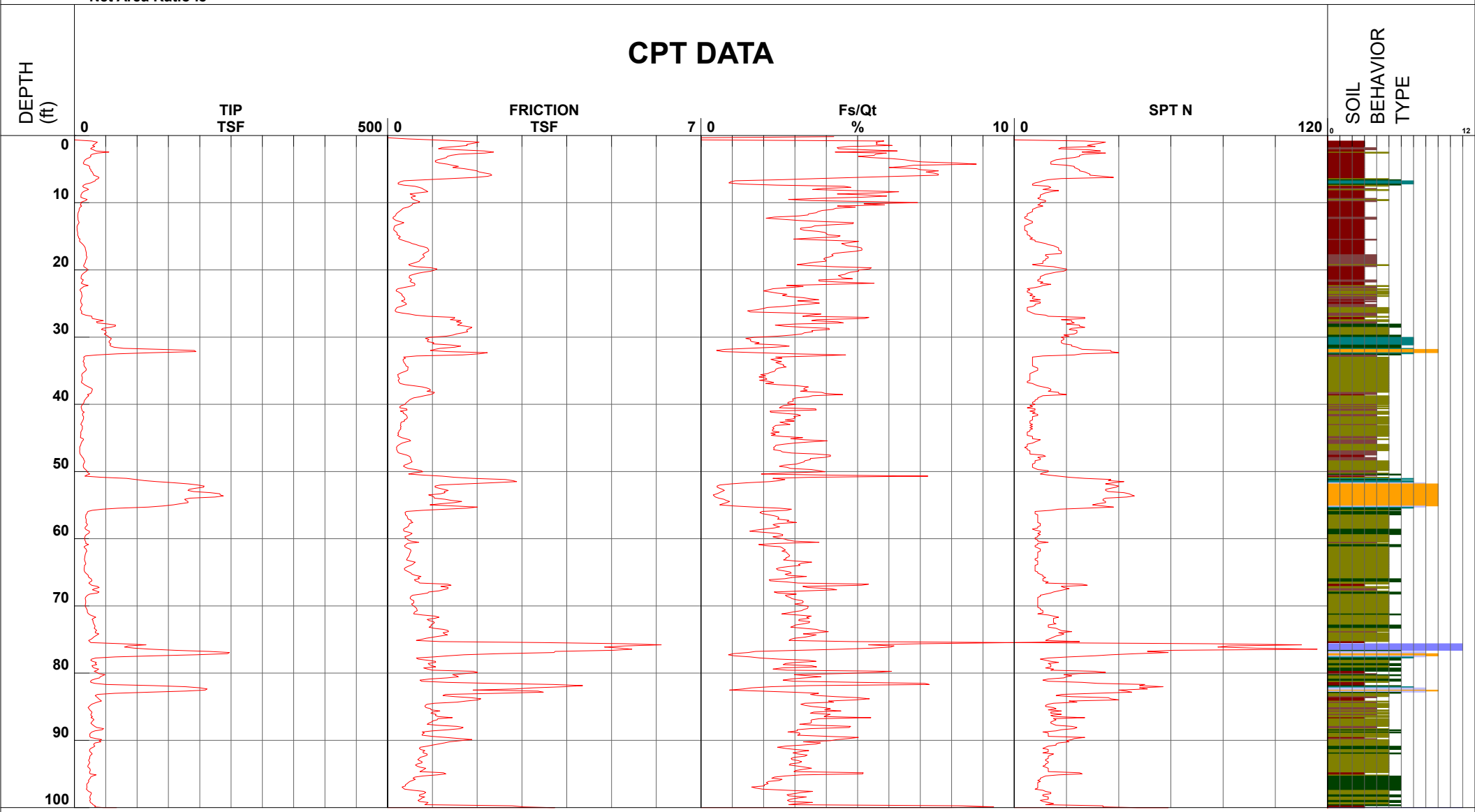
COMMENT:

Cornerstone Earth Group

Project	25800 Clawiter Road GI Update	Operator	JM-AJ	Filename	SDF(372).cpt
Job Number	1076-1-2	Cone Number	DDG1489	GPS	
Hole Number	CPT-14	Date and Time	11/20/2019 5:01:24 PM	Maximum Depth	100.72 ft
EST GW Depth During Test		13.50 ft			

Net Area Ratio .8

CPT DATA



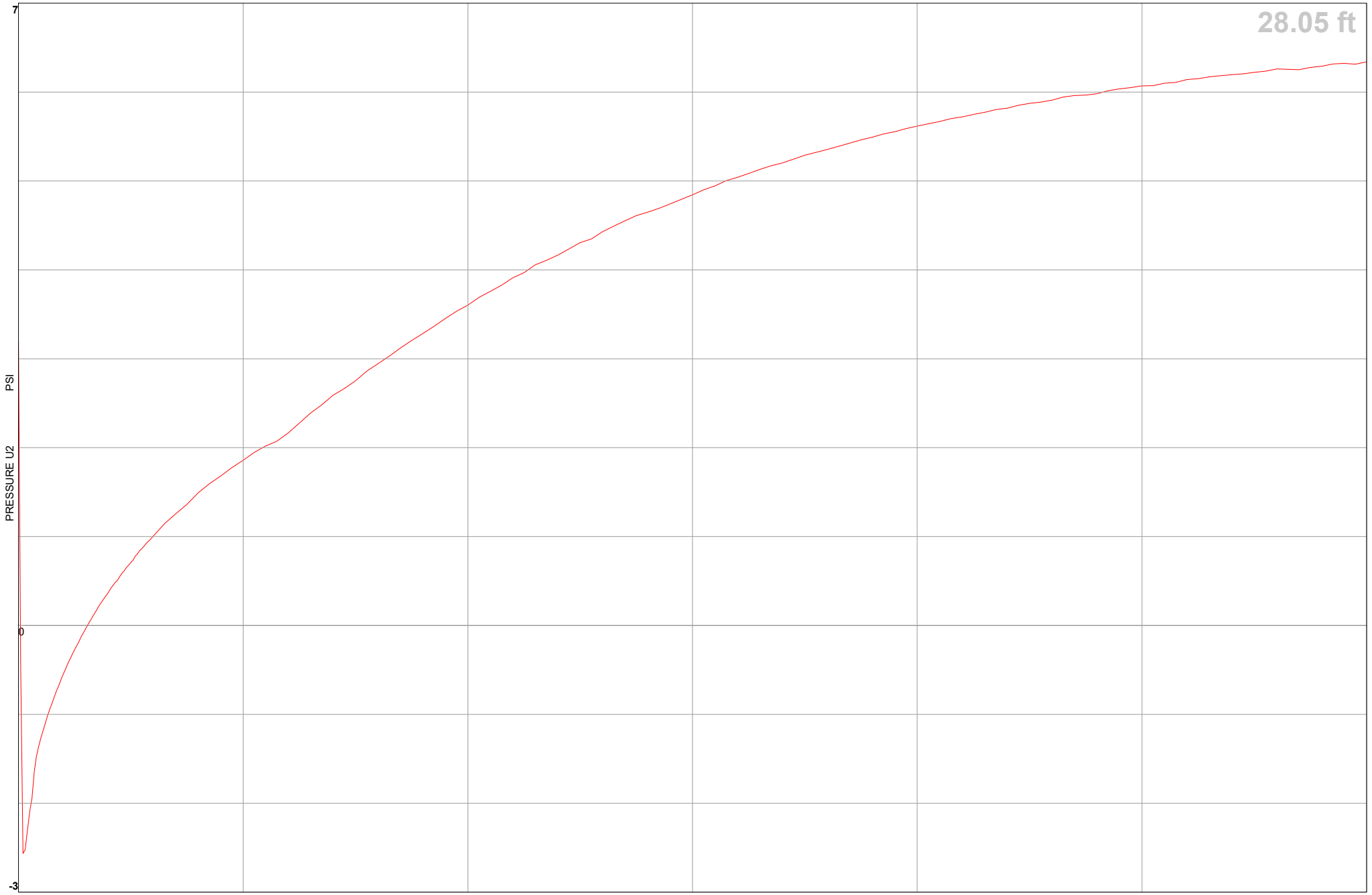
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

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

Cornerstone Earth Group

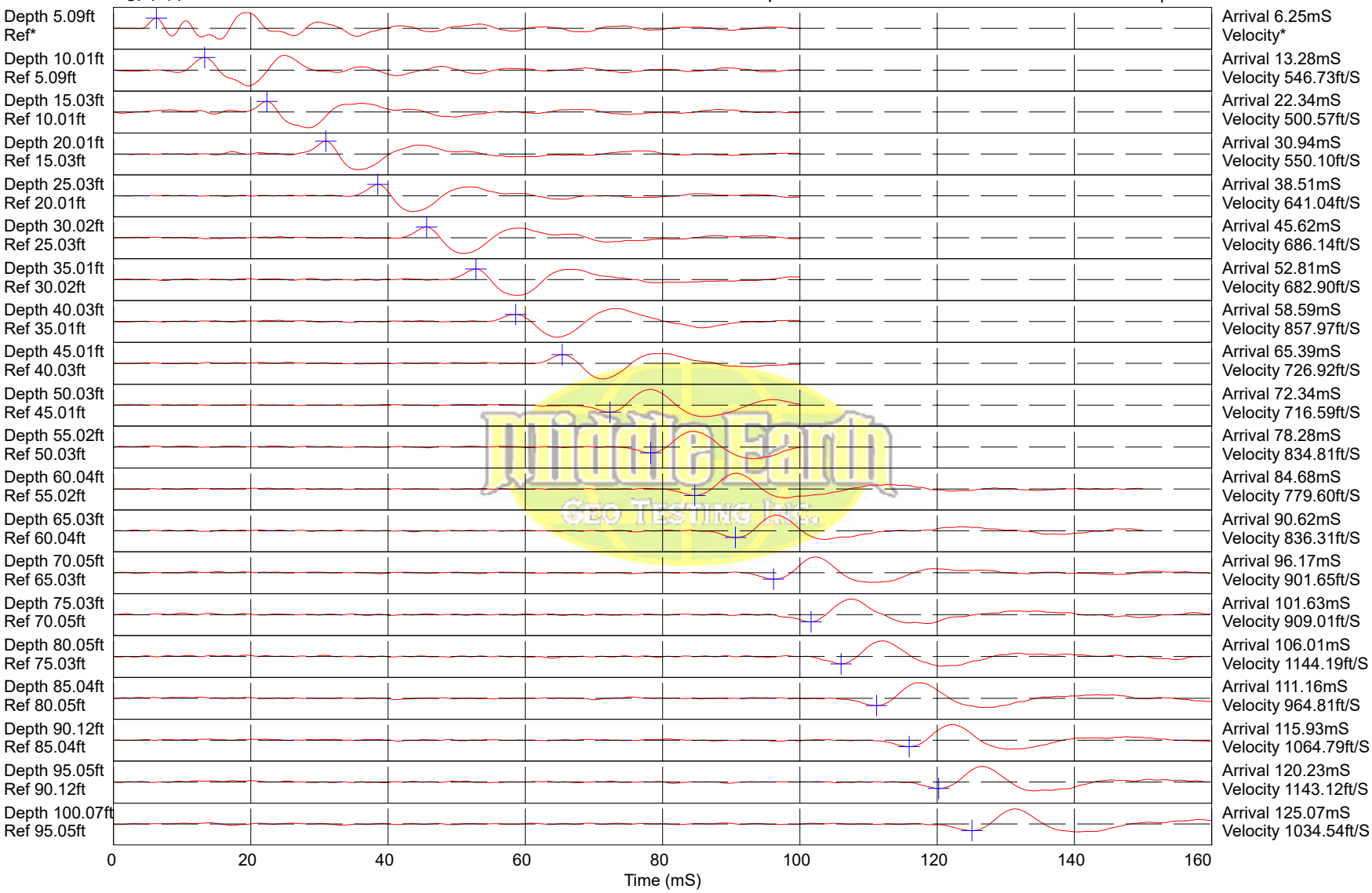
Location	25800 Clawiter Road GI Update	Operator	JM-AJ	
Job Number	1076-1-2	Cone Number	DDG1489	GPS
Hole Number	CPT-14	Date and Time	11/20/2019 5:01:24 PM	
Equilized Pressure	6.2	EST GW Depth During Test	13.5	



CPT-14

Cornerstone Earth Group

25800 Clawiter Road GI Update



Hammer to Rod String Distance (ft): 5.83

* = Not Determined

COMMENT:

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 62 samples of the materials recovered from the borings. These water contents are recorded on the boring logs at the appropriate sample depths.

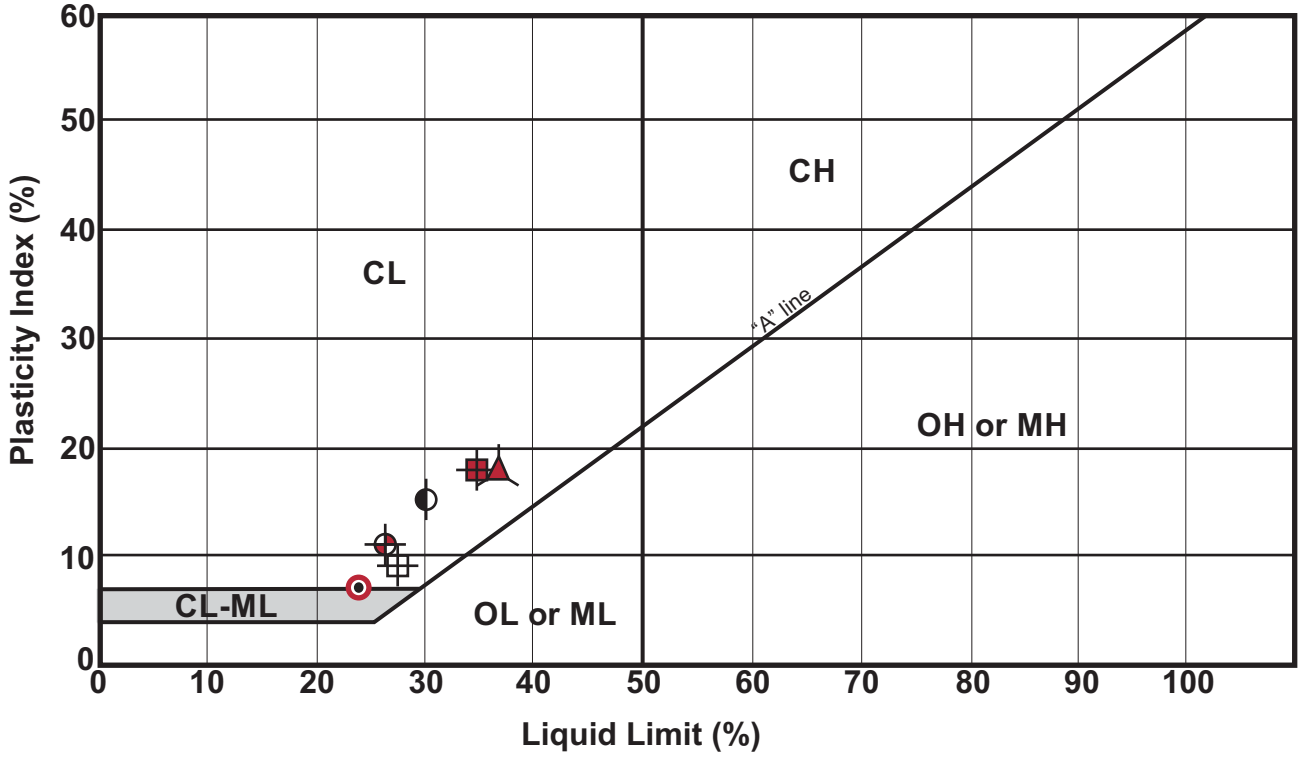
Dry Densities: In place dry density determinations (ASTM D2937) were performed on 59 samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on 21 samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Plasticity Index: Six 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.

Soluble Sulfate: Two soluble sulfate determinations (California Test Method No. 417-Modified) were performed on sample of the subsurface soils to measure the water soluble sulfate content. Results of these tests are attached is 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	6.0	16	26	15	11	57	Sandy Lean Clay (CL)
⊞	EB-2	2.0	17	34	16	18	—	Lean Clay with Sand (CL)
◎	EB-2	14.0	20	24	17	7	37	Silty, Clayey Sand (SC-SM)(CL-ML fines)
▲	EB-3	11.0	31	36	18	18	71	Lean Clay with Sand (CL)
◐	EB-4	10.5	27	30	15	15	55	Sandy Lean Clay (CL)
⊞	EB-5	6.0	15	27	18	9	55	Sandy Lean Clay (CL)

CORNERSTONE EARTH GROUP

Plasticity Index Testing Summary

25800 Clawiter Road
Hayward, CA

Project Number: 1076-1-1

Figure Number: Figure B1

Date: November 2018

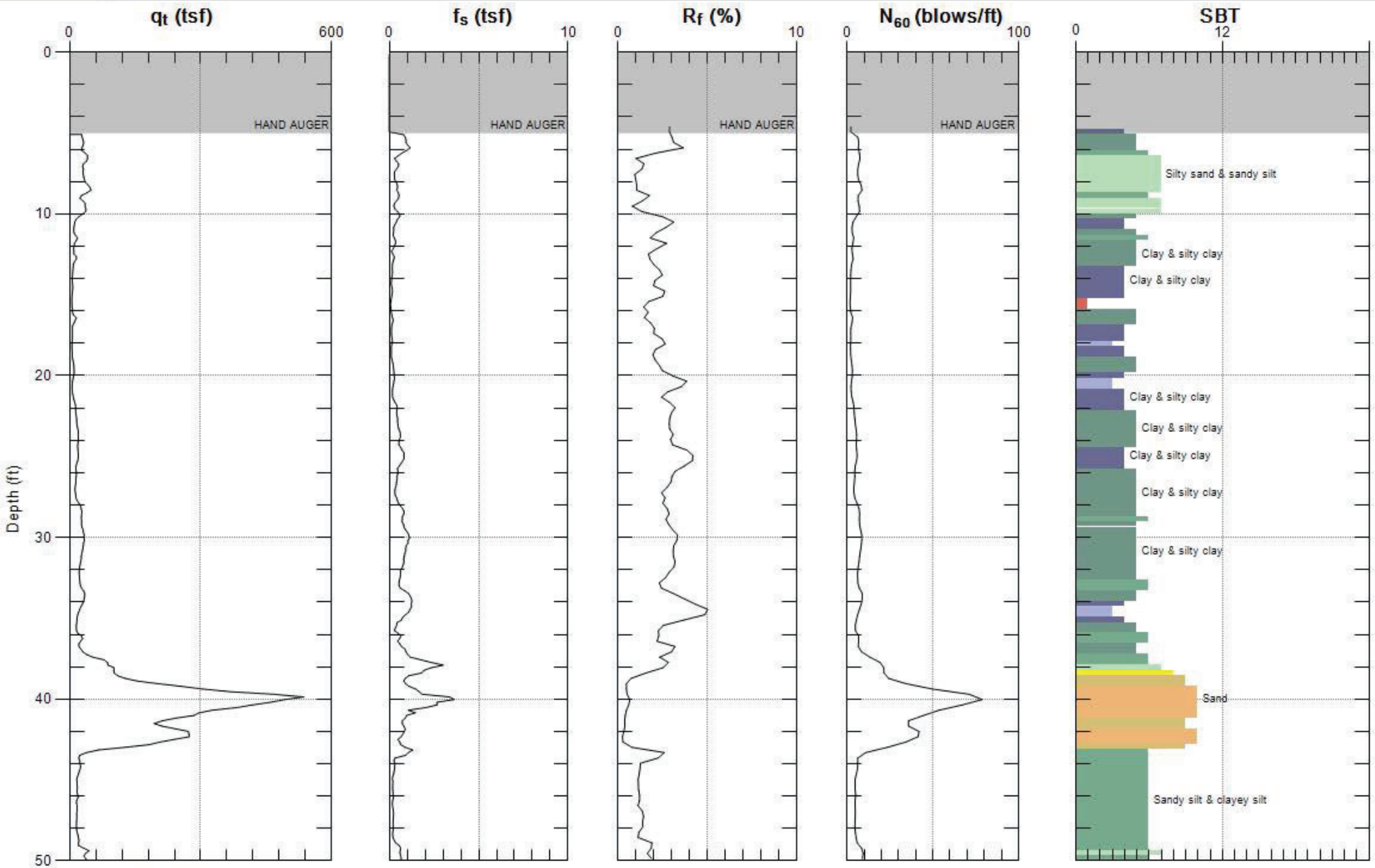
Drawn By: FLL

APPENDIX C: PREVIOUS FIELD EXPLORATION PROGRAM

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-1

Engineer: M.HINTZ
Date: 2/6/2018 07:04



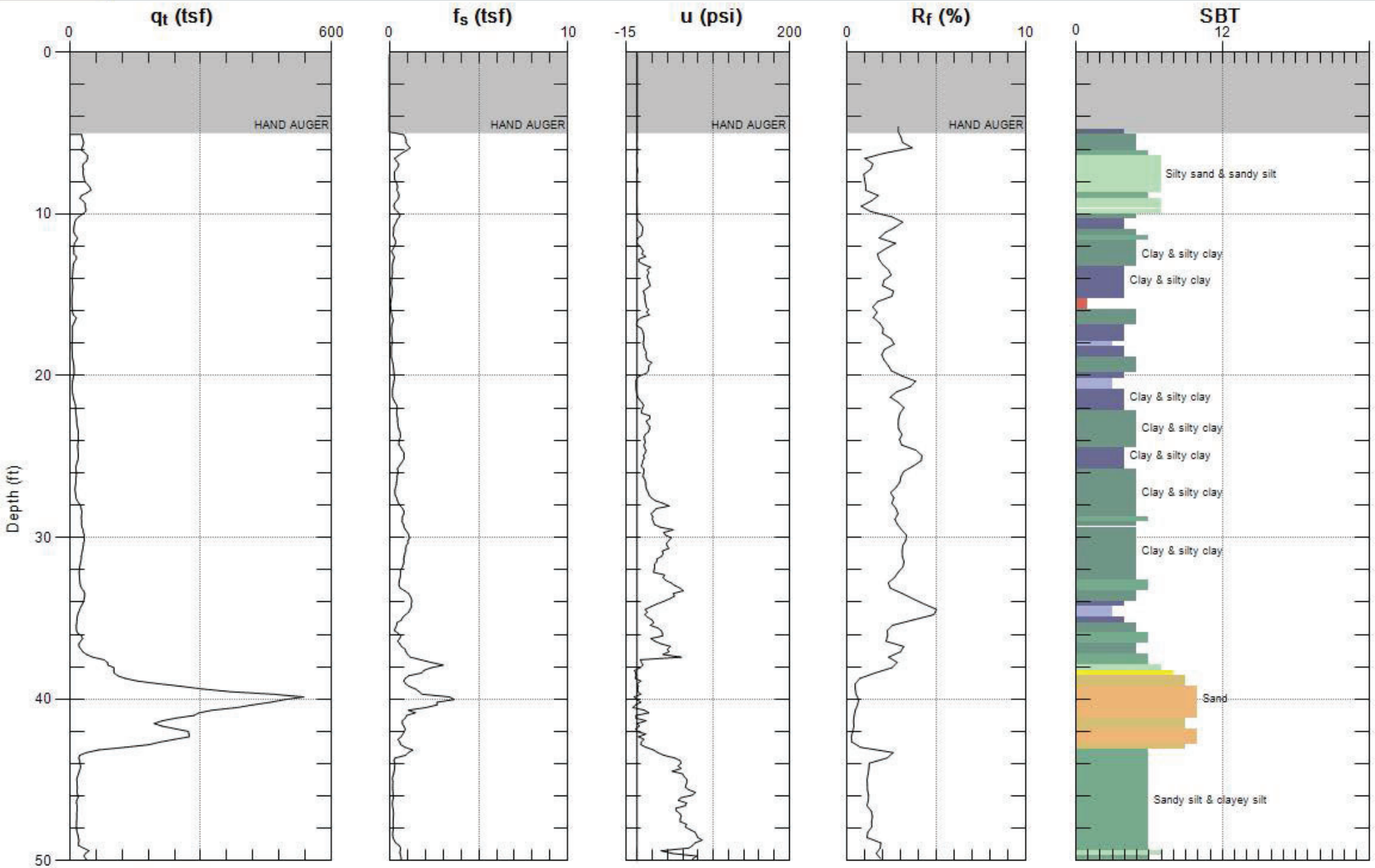
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-1

Engineer: M.HINTZ
Date: 2/6/2018 07:04



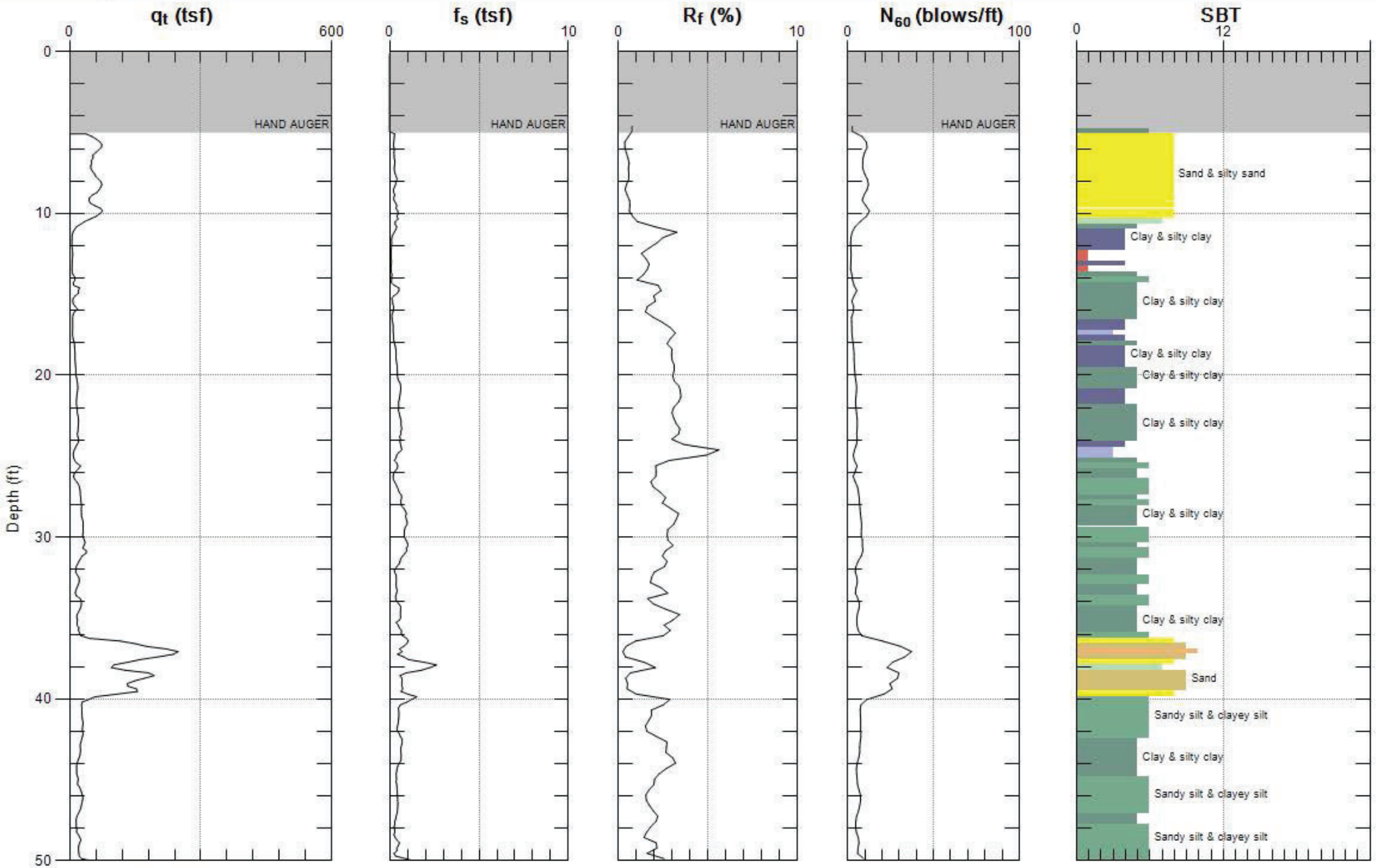
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-2

Engineer: M.HINTZ
Date: 2/6/2018 08:27



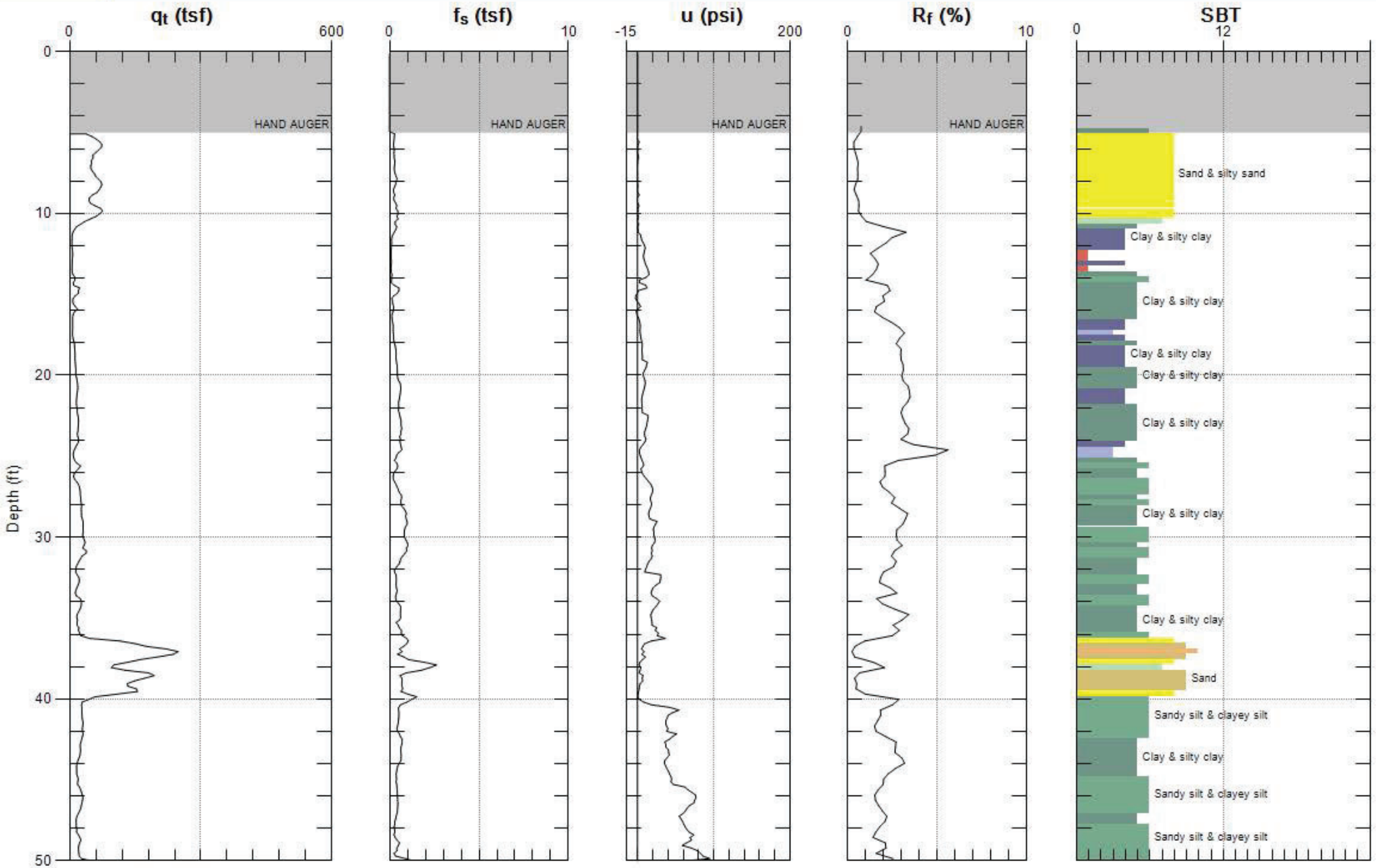
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-2

Engineer: M.HINTZ
Date: 2/6/2018 08:27



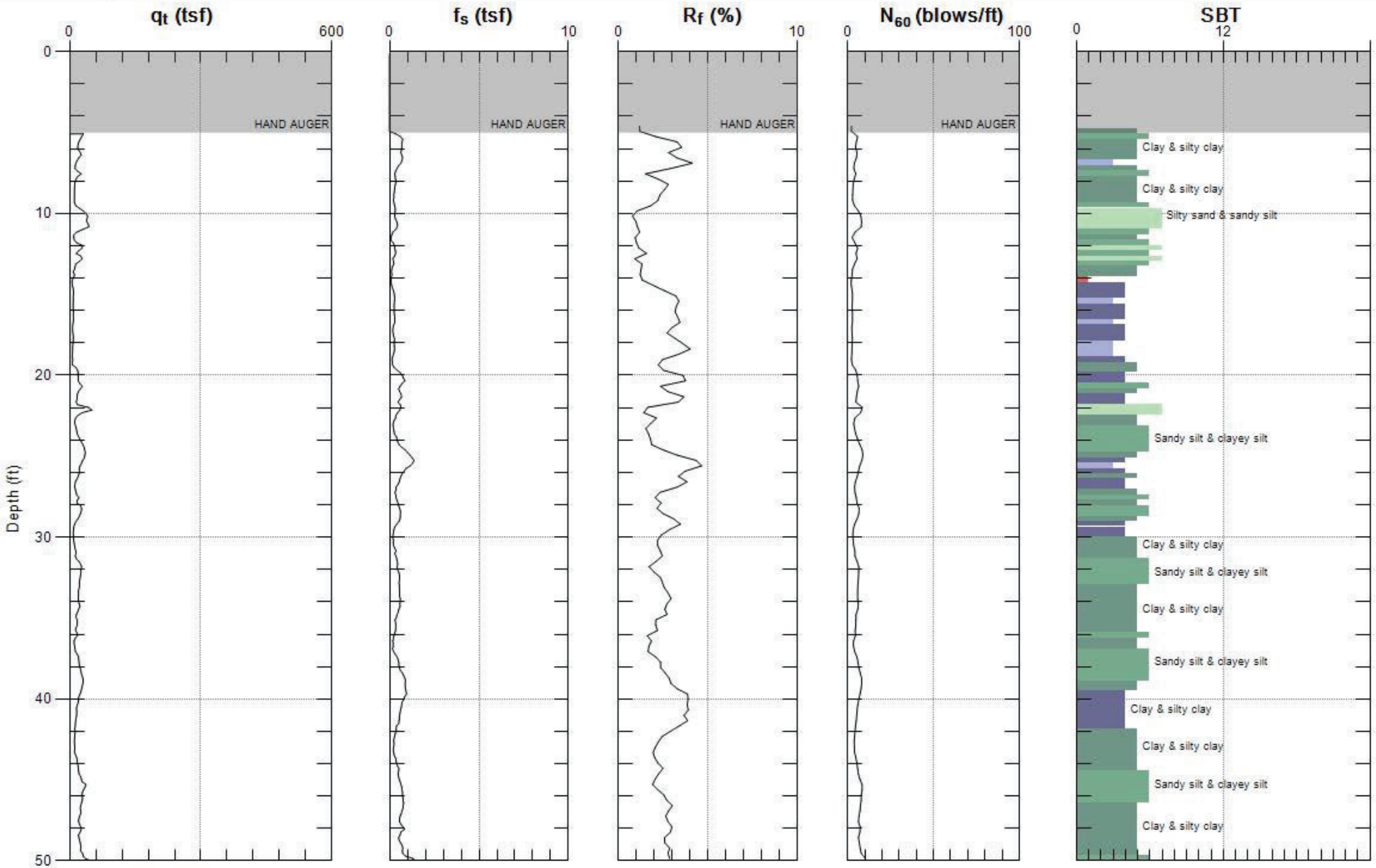
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-3

Engineer: M.HINTZ
Date: 2/5/2018 01:54



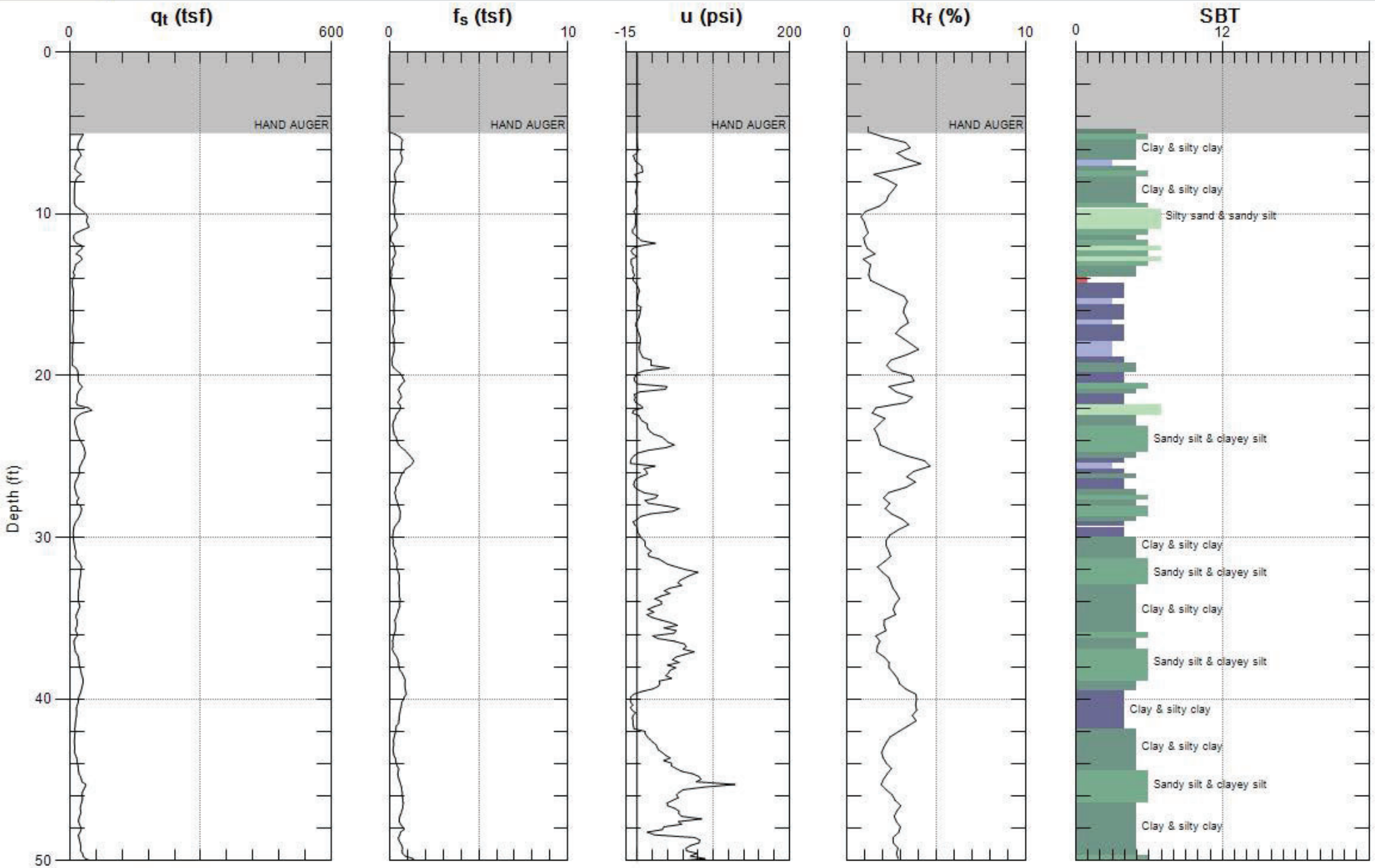
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-3

Engineer: M.HINTZ
Date: 2/5/2018 01:54



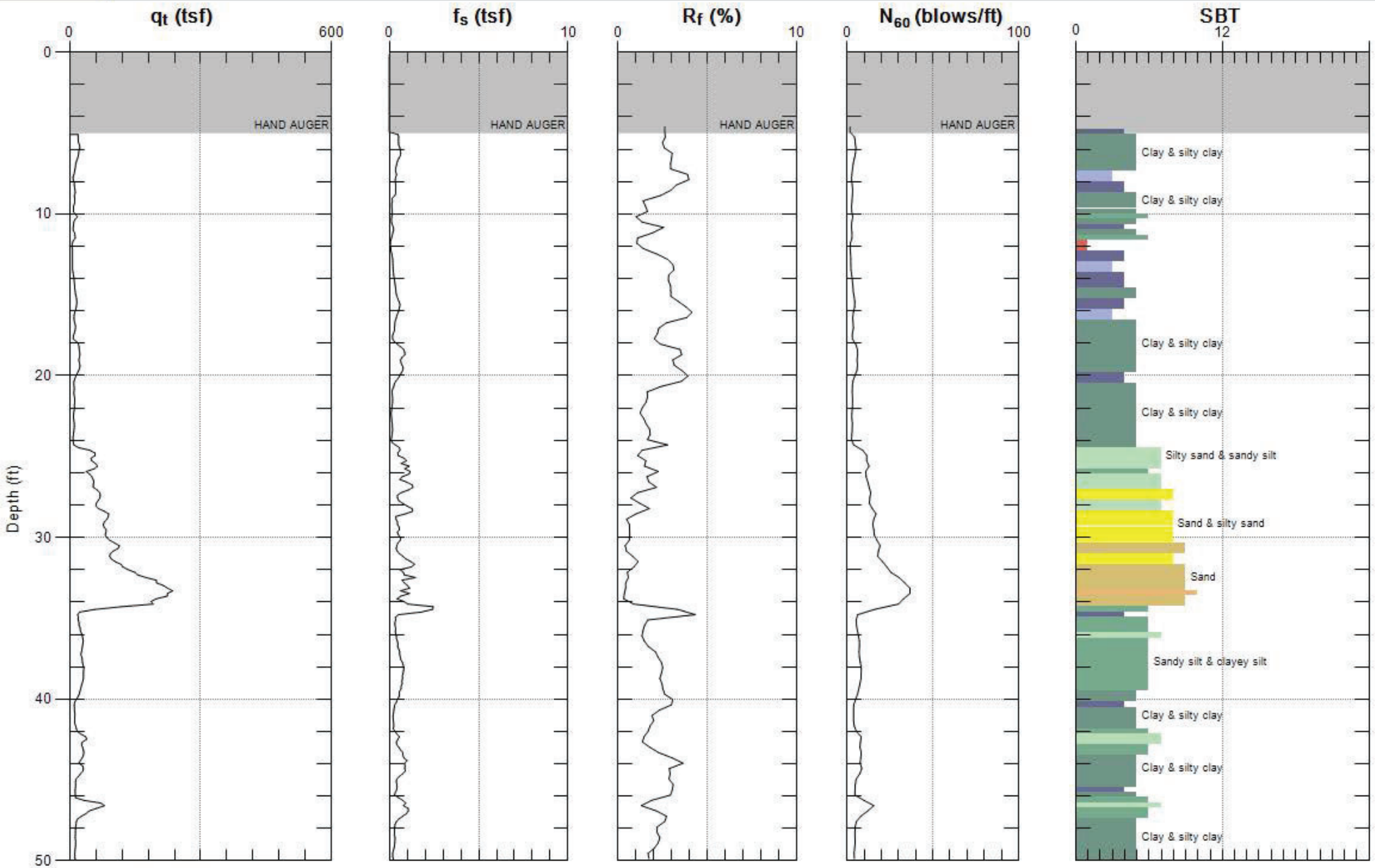
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-4

Engineer: M.HINTZ
Date: 2/5/2018 12:32



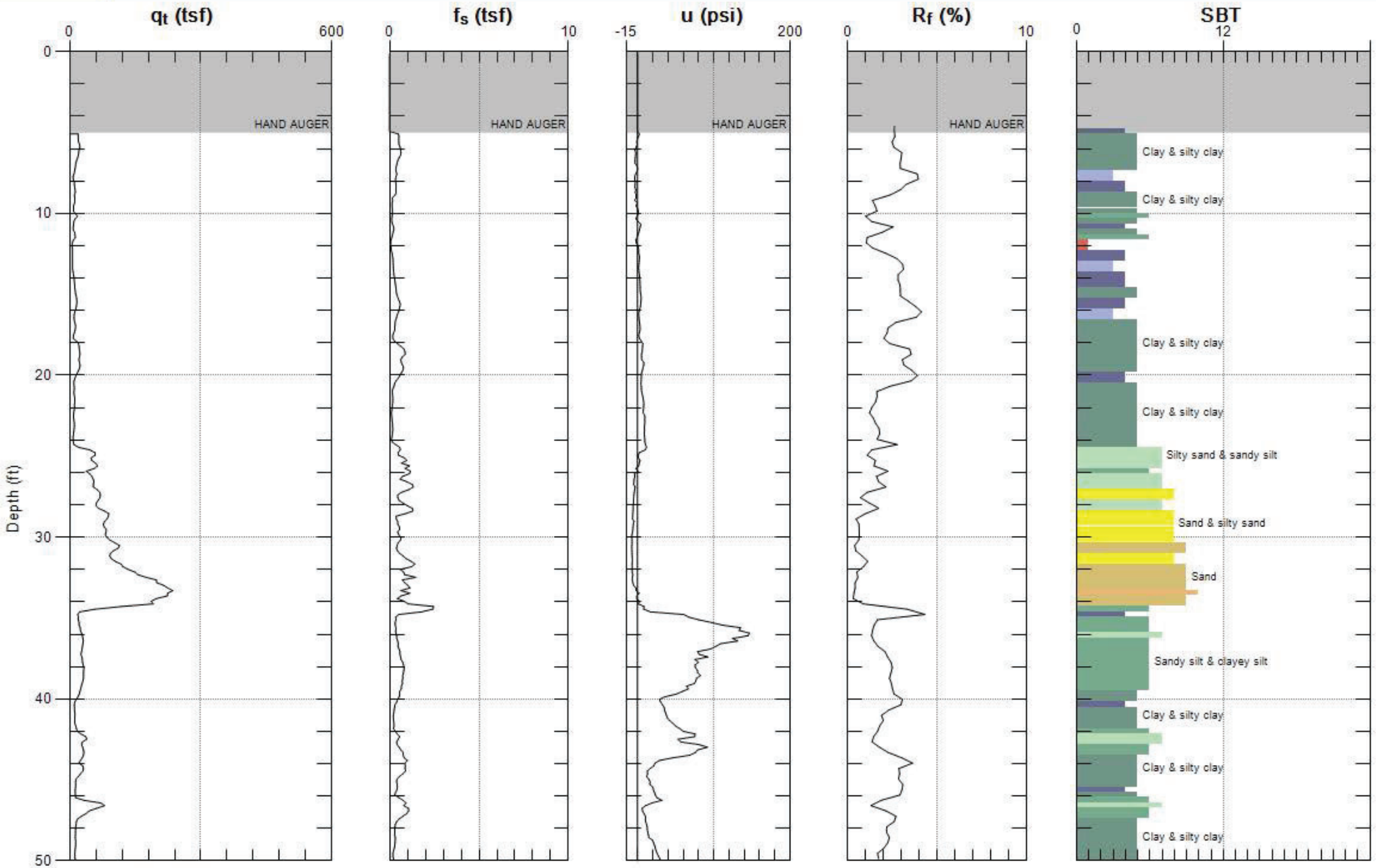
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-4

Engineer: M.HINTZ
Date: 2/5/2018 12:32



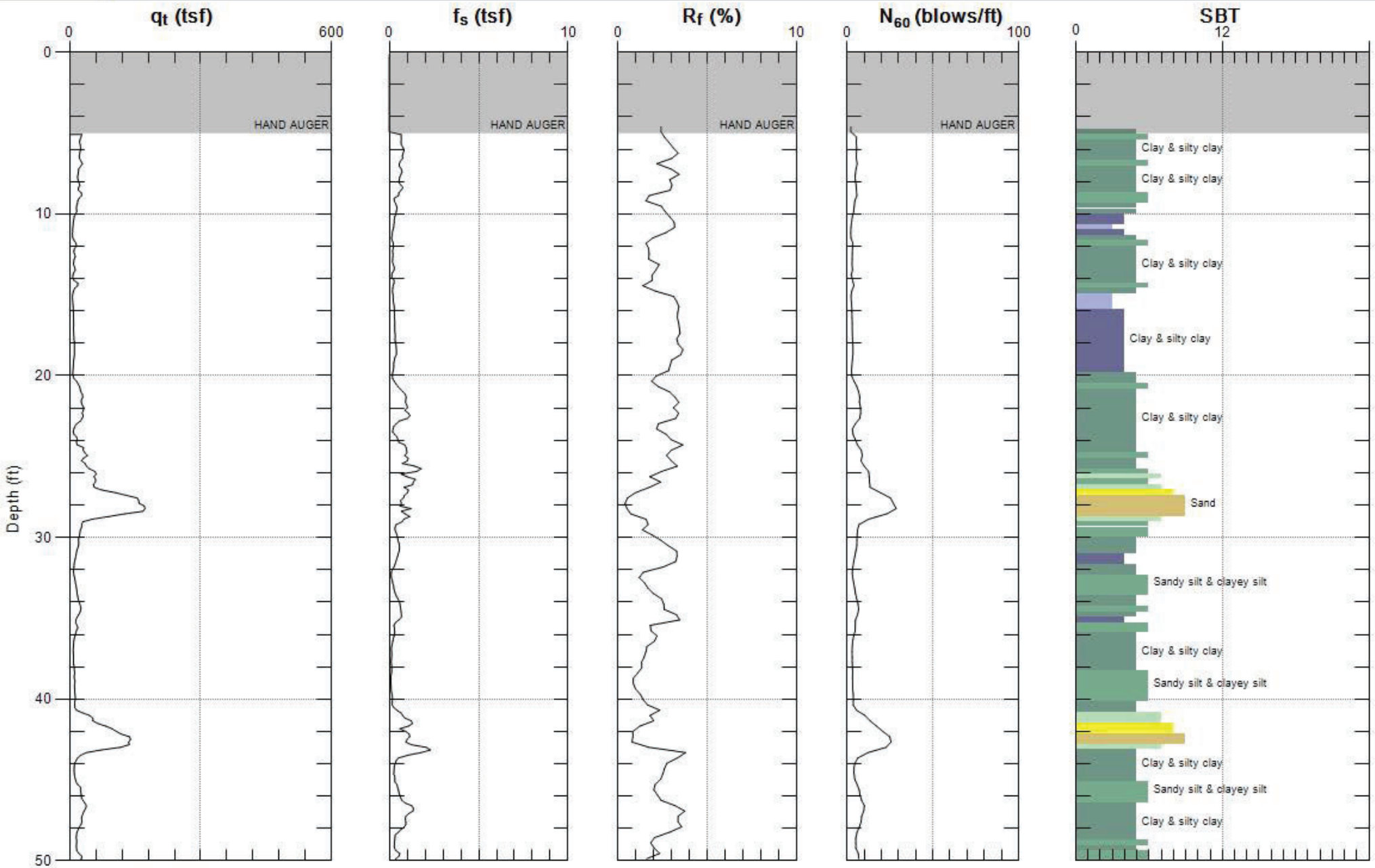
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-5

Engineer: M.HINTZ
Date: 2/6/2018 10:00



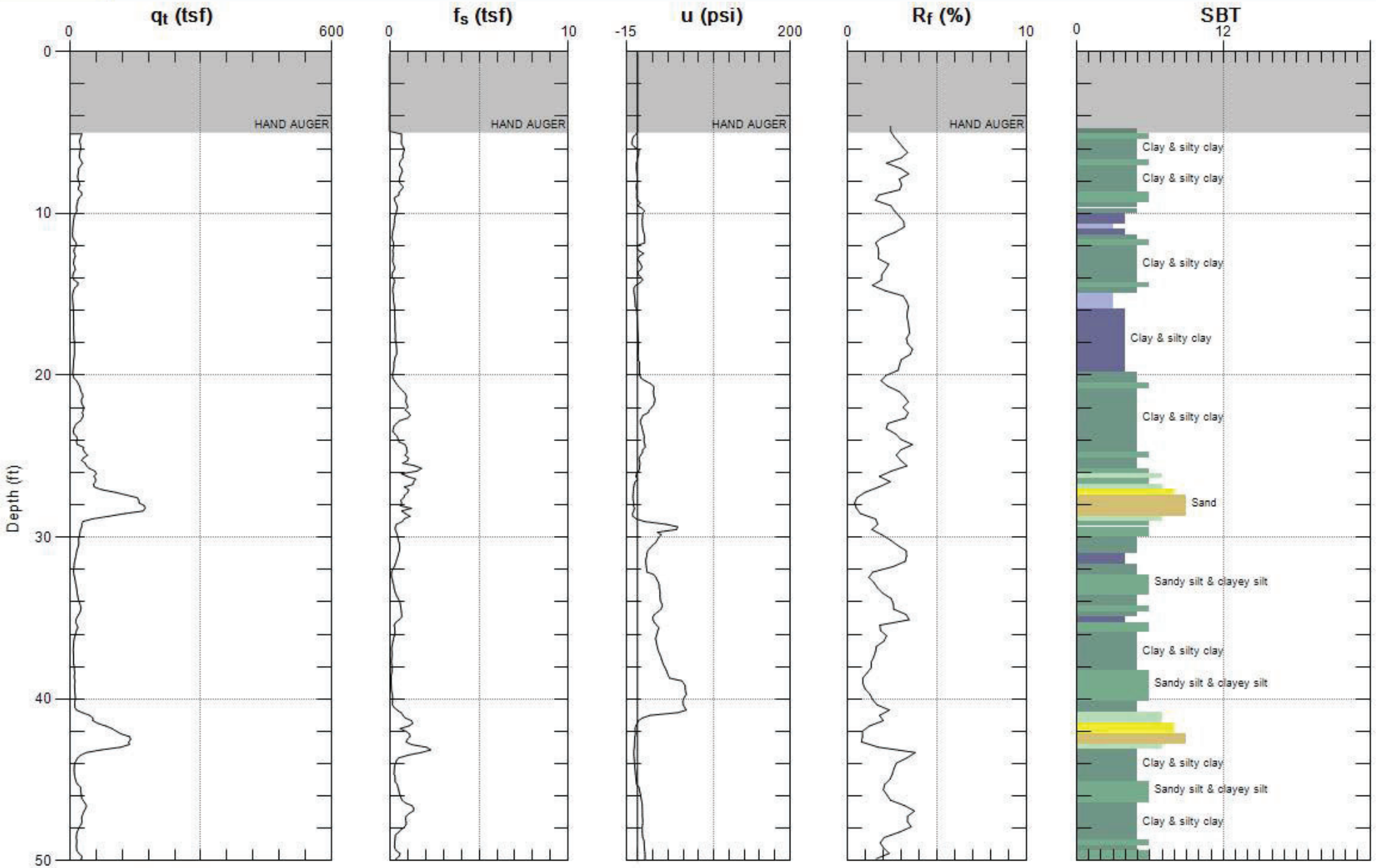
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-5

Engineer: M.HINTZ
Date: 2/6/2018 10:00



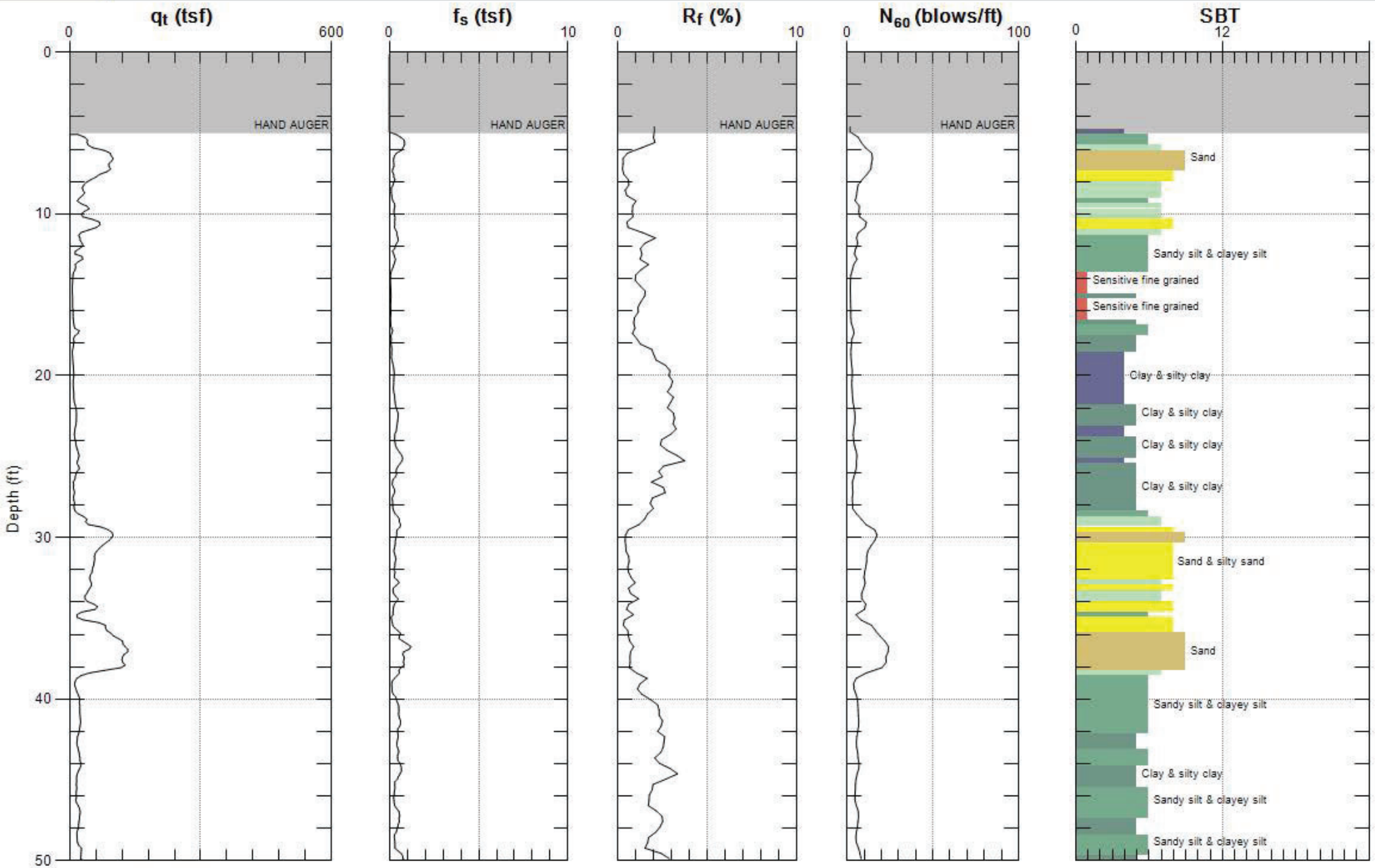
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-6

Engineer: M.HINTZ
Date: 2/5/2018 07:28



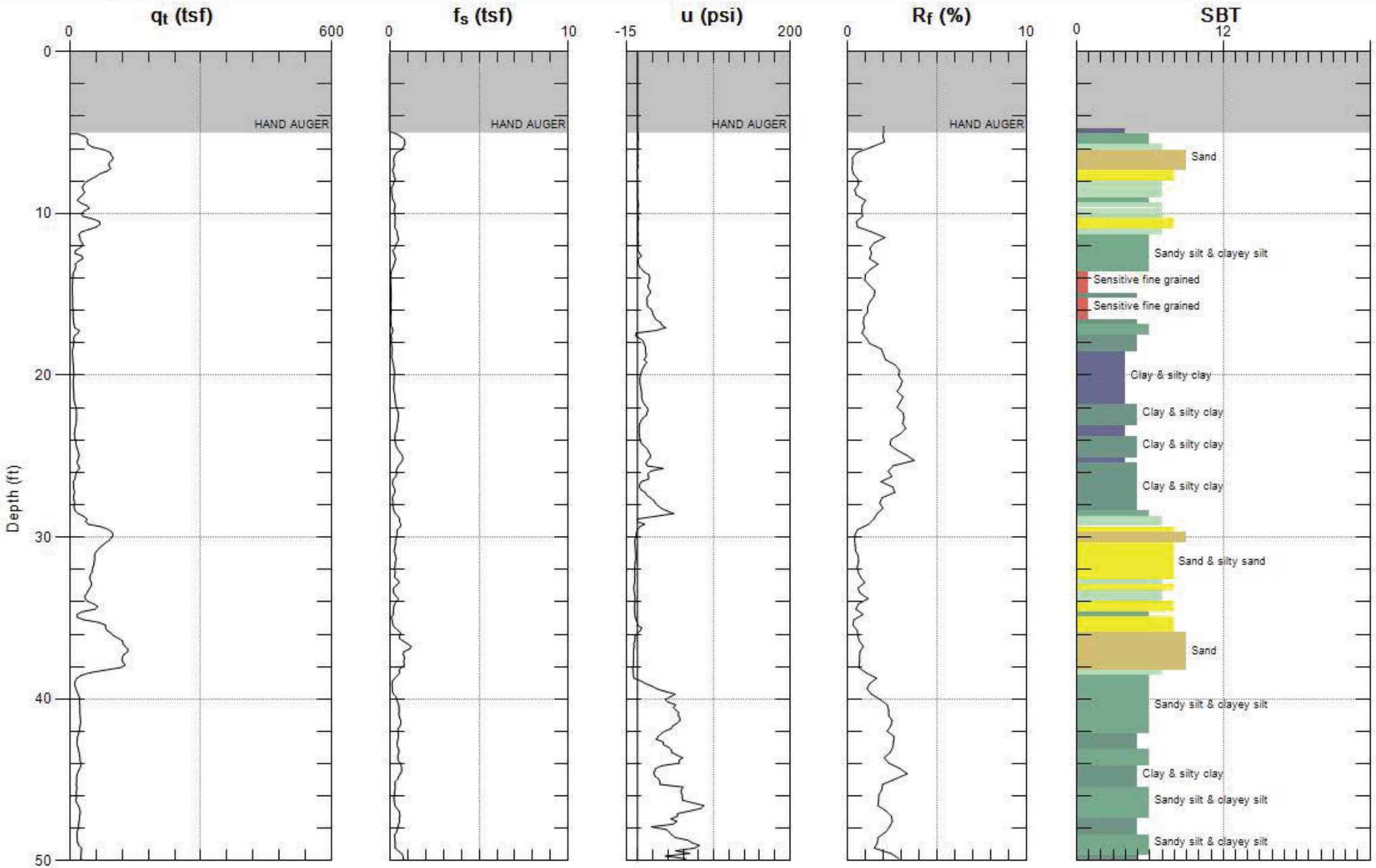
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-6

Engineer: M.HINTZ
Date: 2/5/2018 07:28



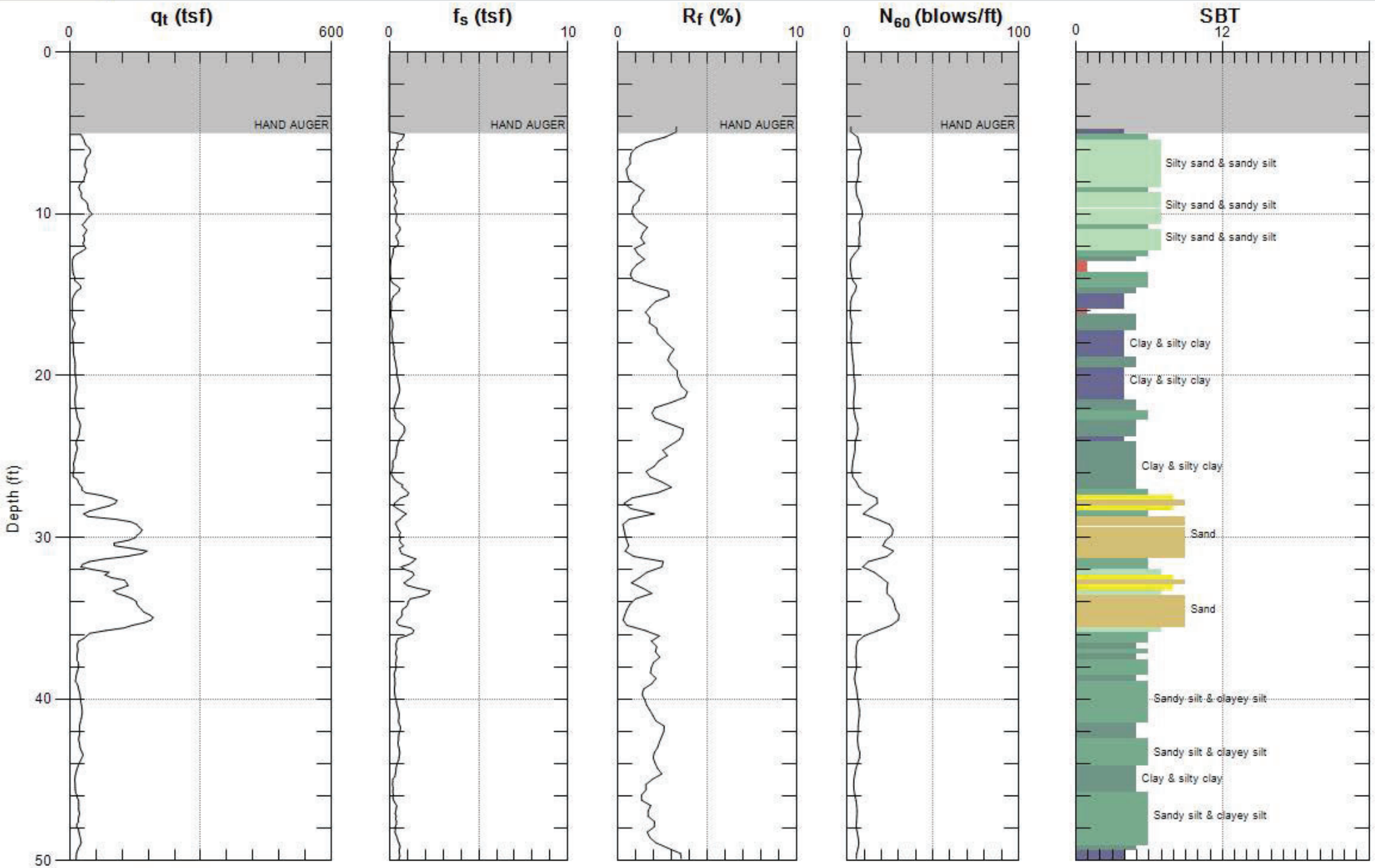
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-7

Engineer: M.HINTZ
Date: 2/5/2018 09:09



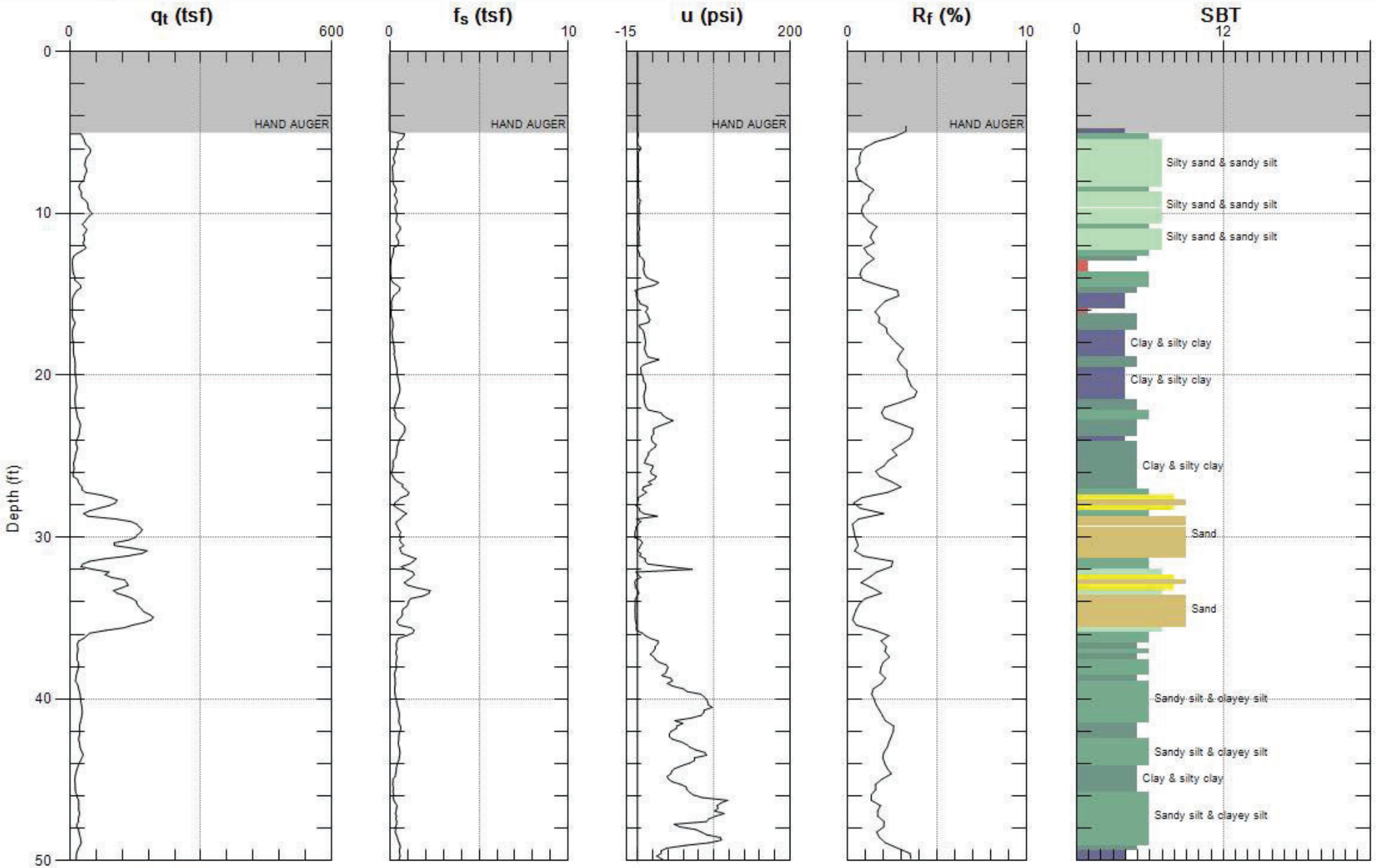
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-7

Engineer: M.HINTZ
Date: 2/5/2018 09:09



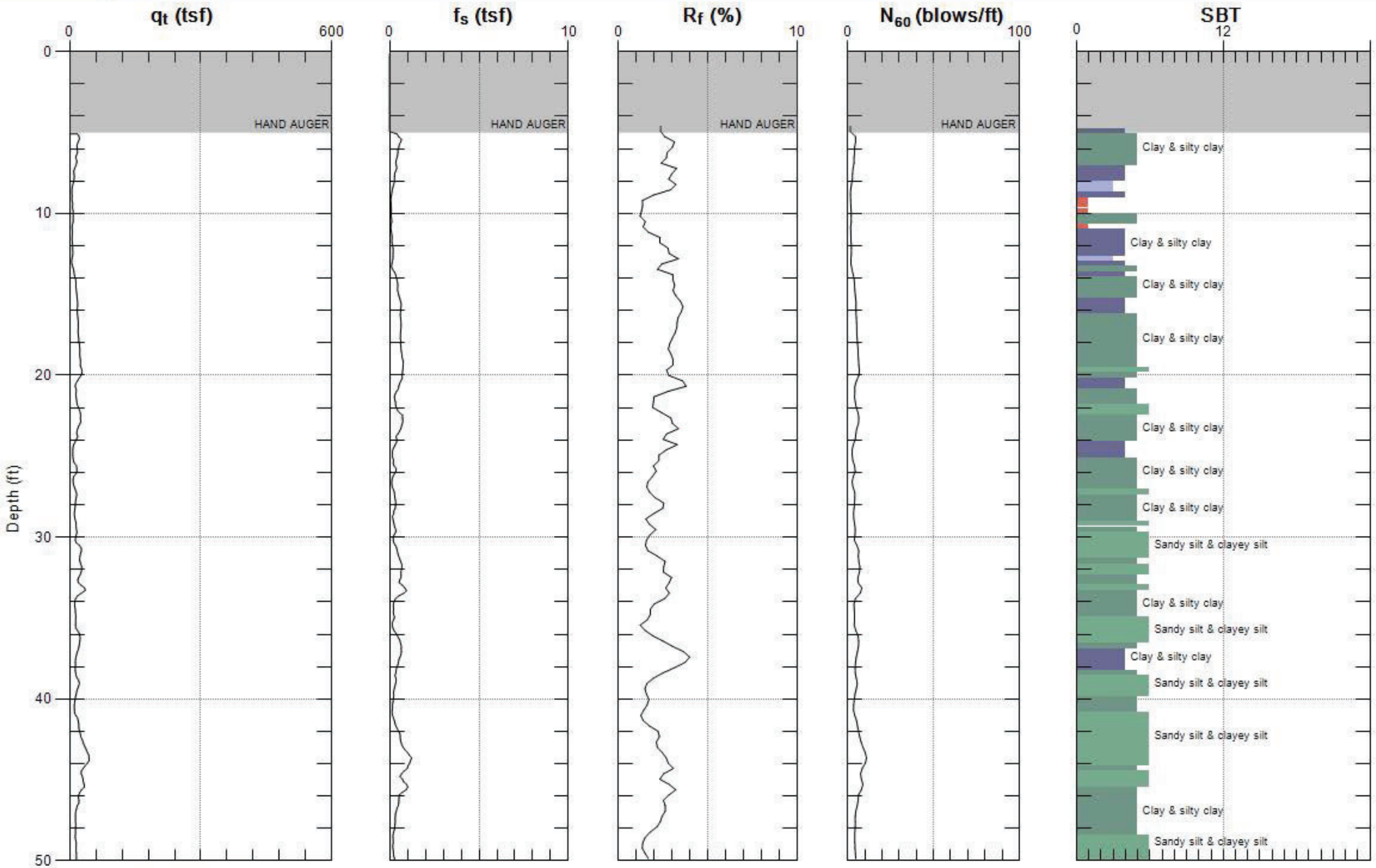
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-8

Engineer: M.HINTZ
Date: 2/5/2018 10:36



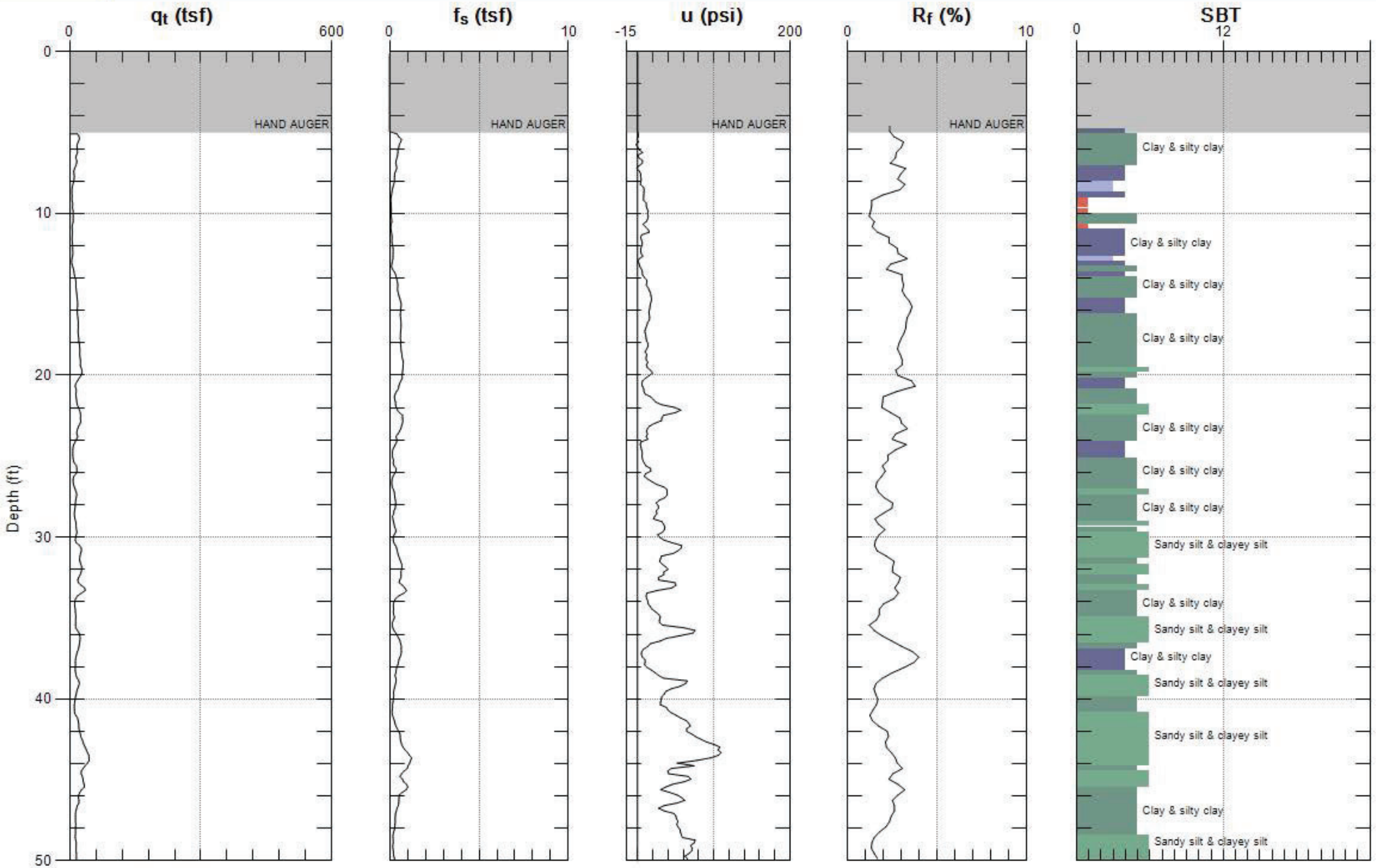
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-8

Engineer: M.HINTZ
Date: 2/5/2018 10:36



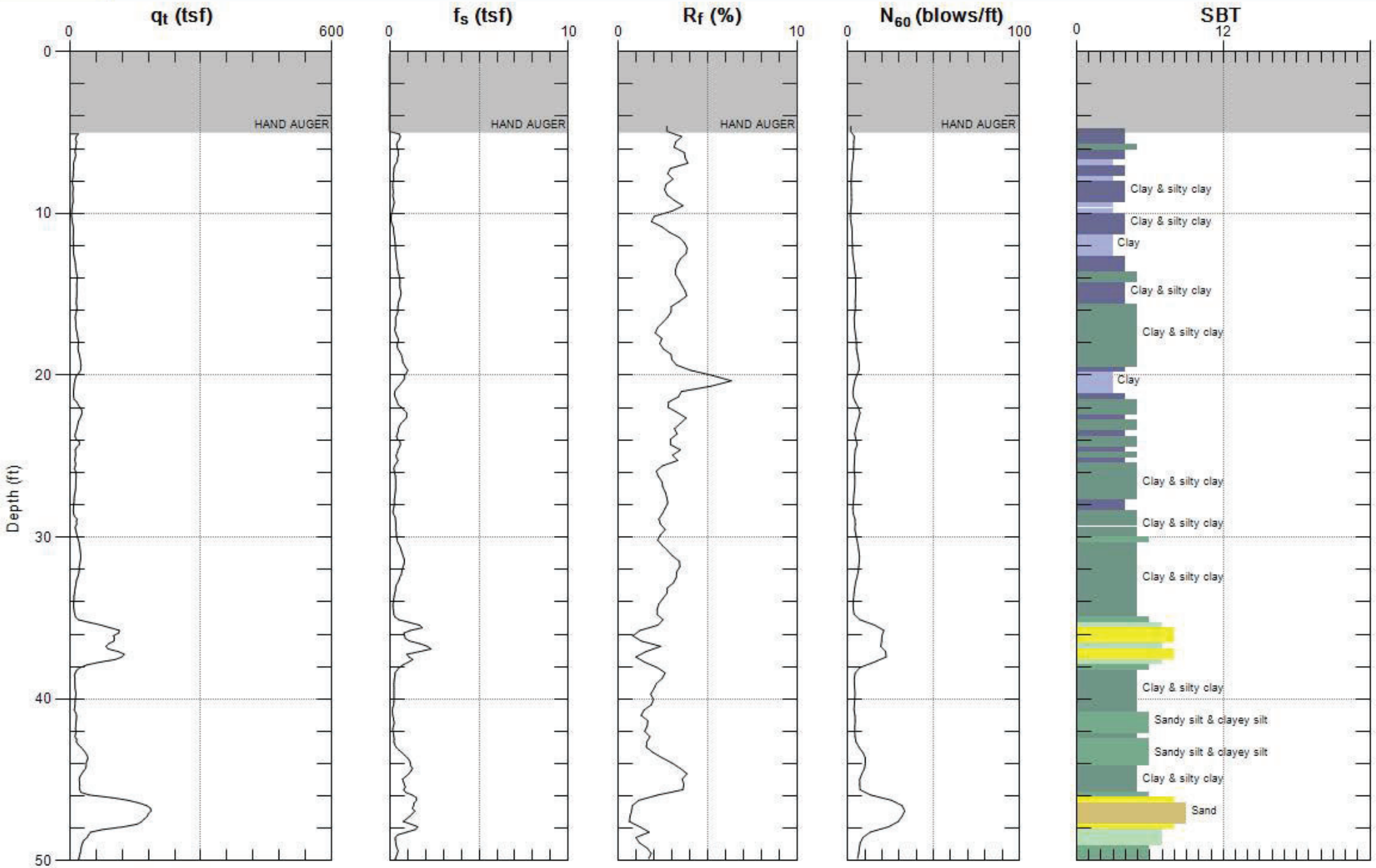
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-9

Engineer: M.HINTZ
Date: 2/6/2018 01:04



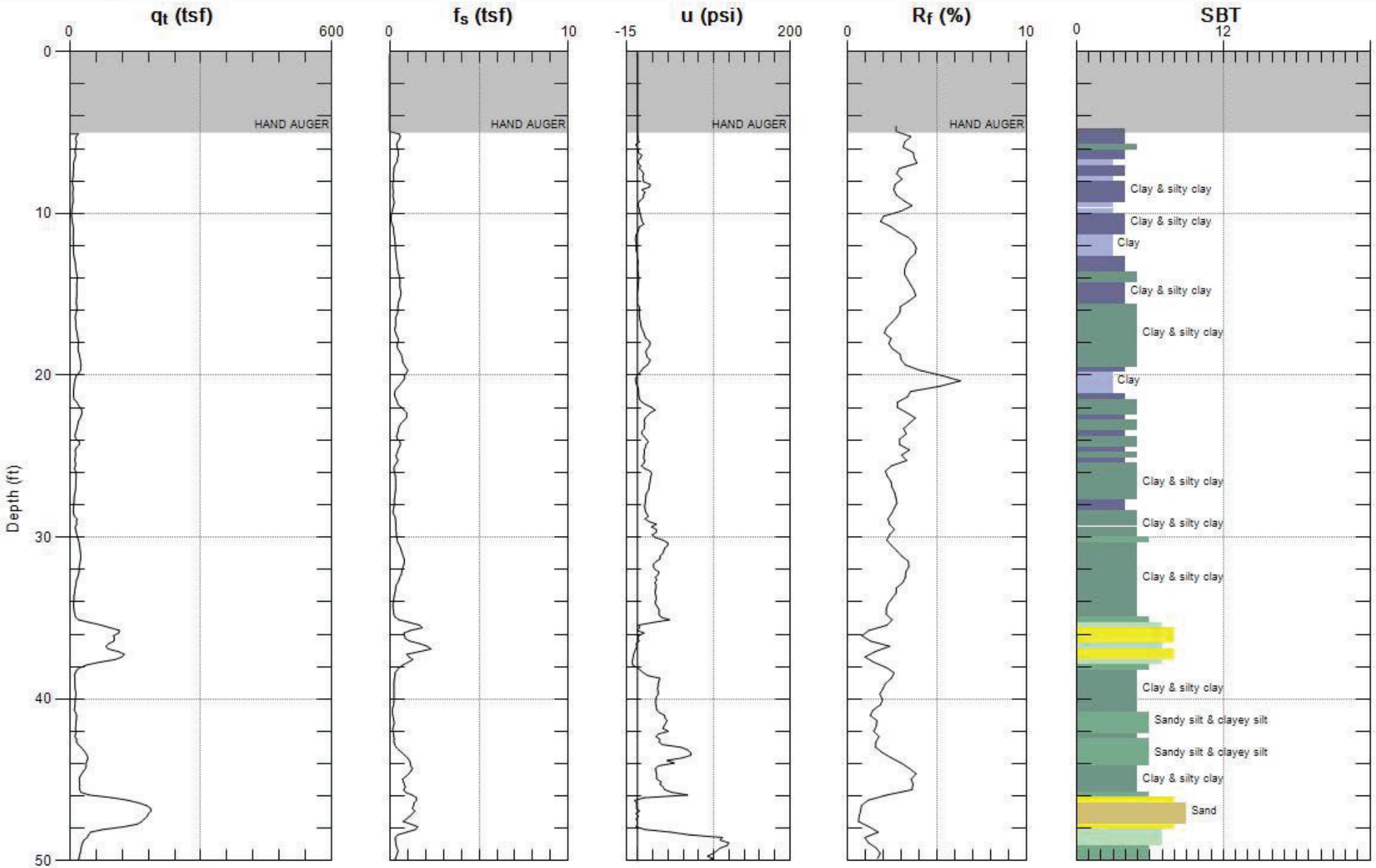
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-9

Engineer: M.HINTZ
Date: 2/6/2018 01:04



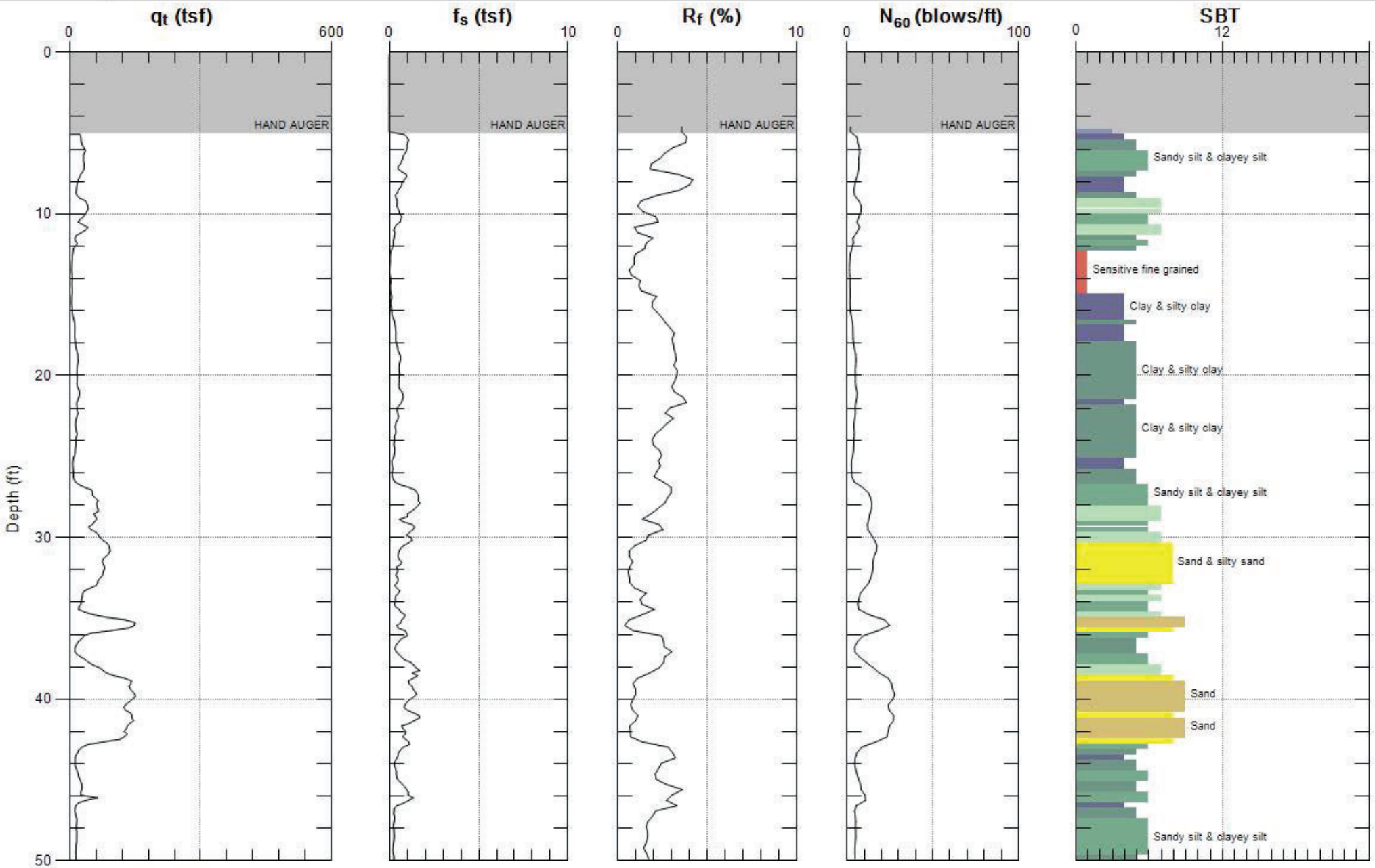
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-10

Engineer: M.HINTZ
Date: 2/6/2018 11:23



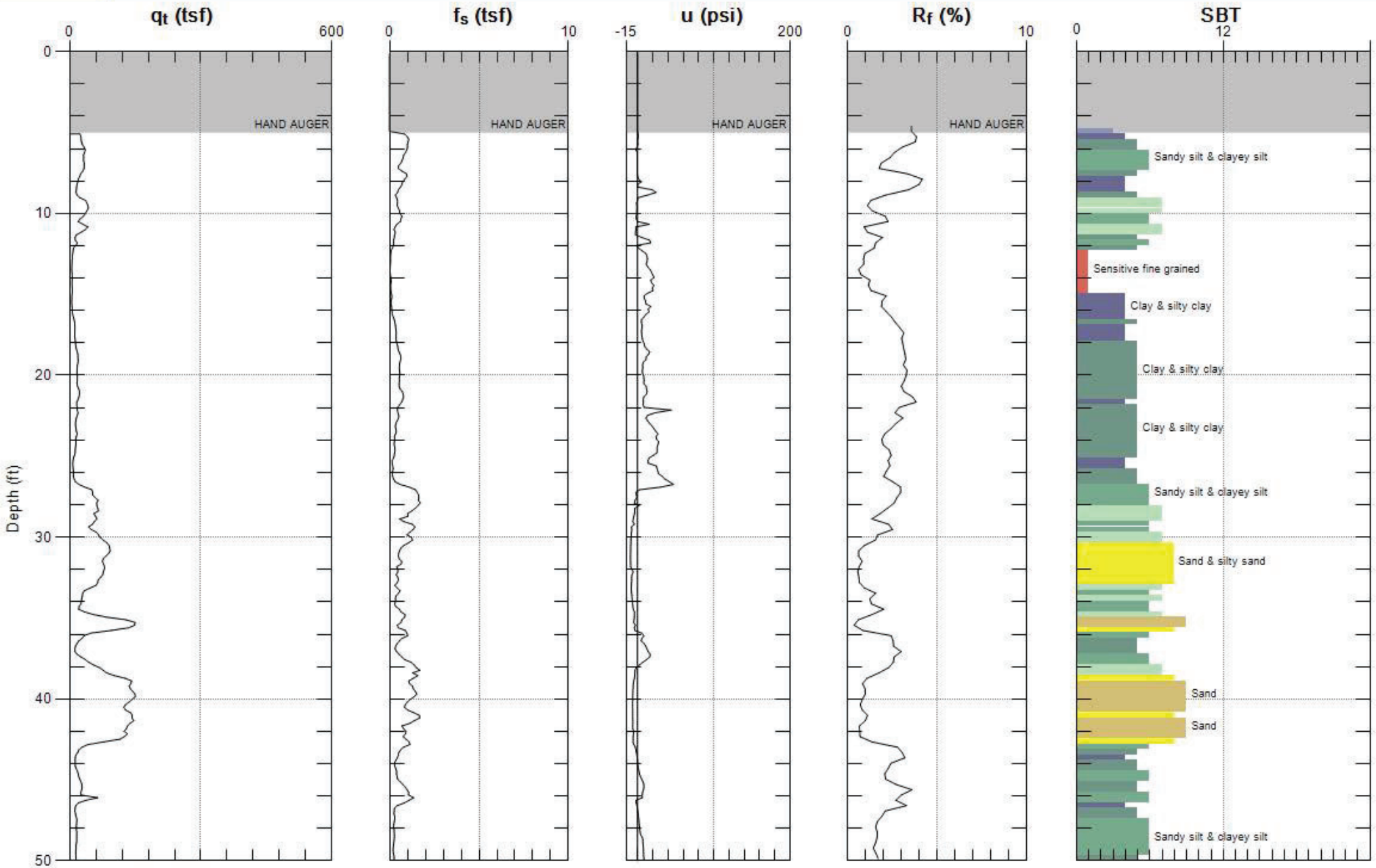
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-10

Engineer: M.HINTZ
Date: 2/6/2018 11:23



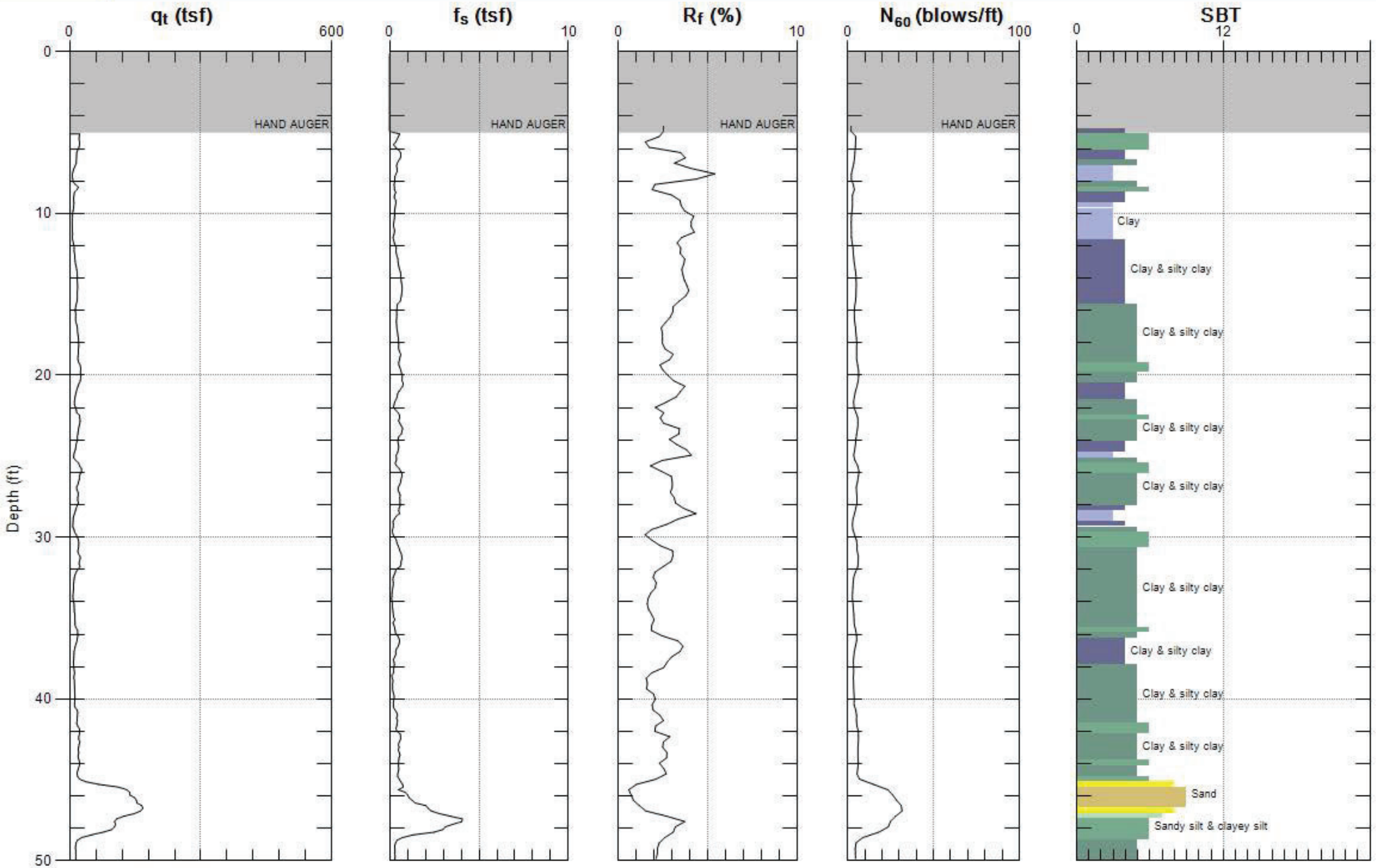
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-11

Engineer: M.HINTZ
Date: 2/6/2018 02:05



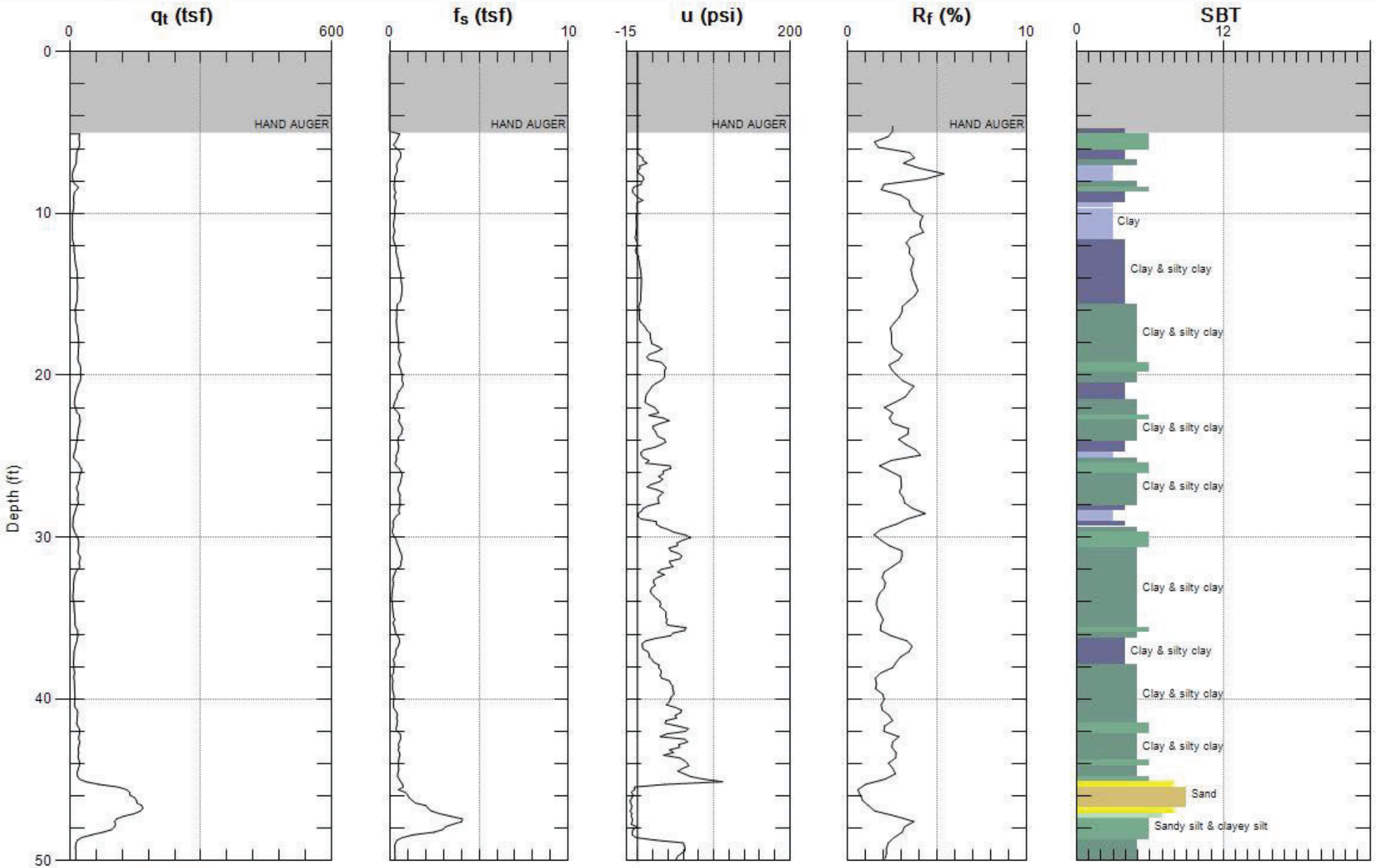
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-11

Engineer: M.HINTZ
Date: 2/6/2018 02:05



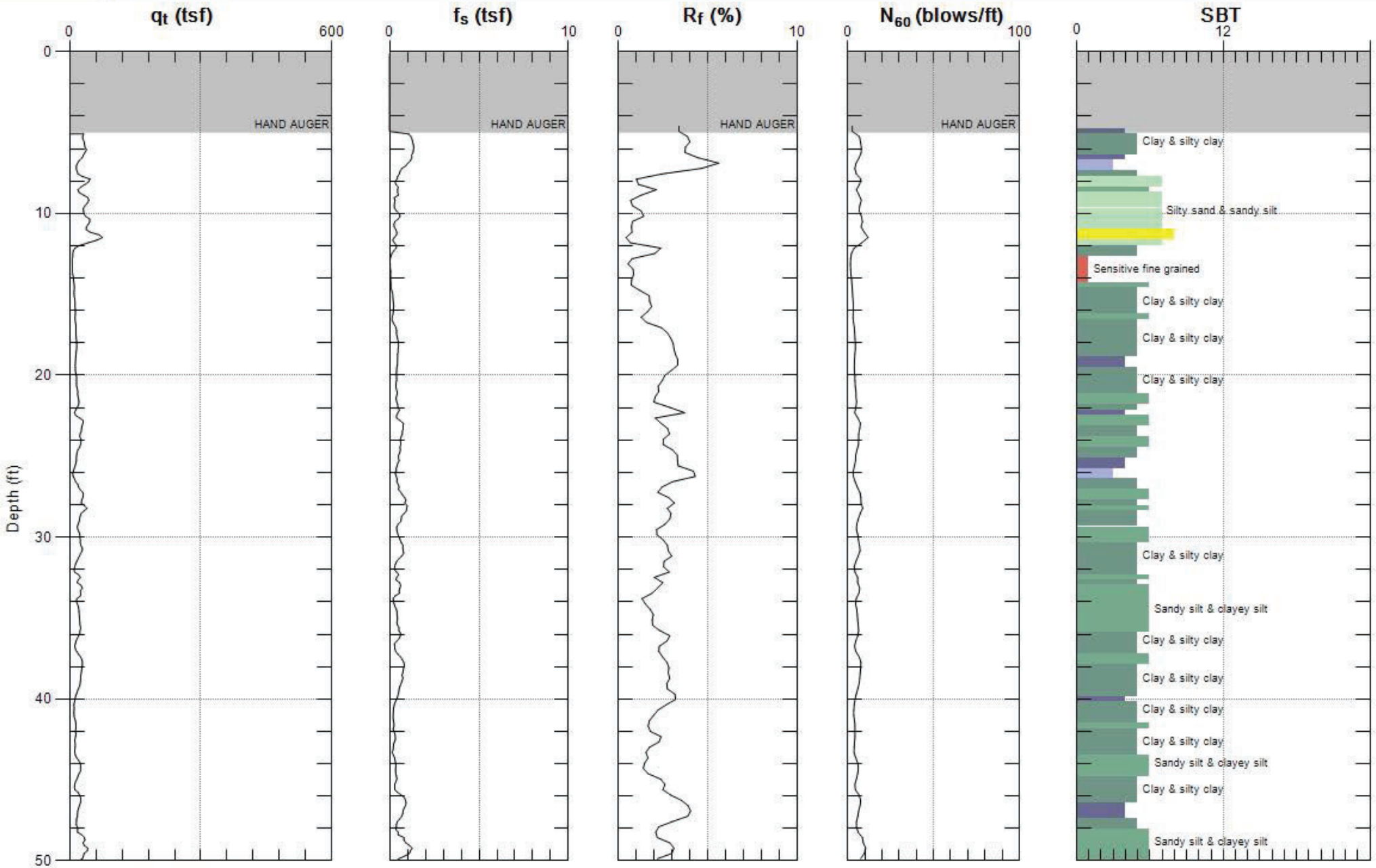
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-12

Engineer: M.HINTZ
Date: 2/6/2018 02:57



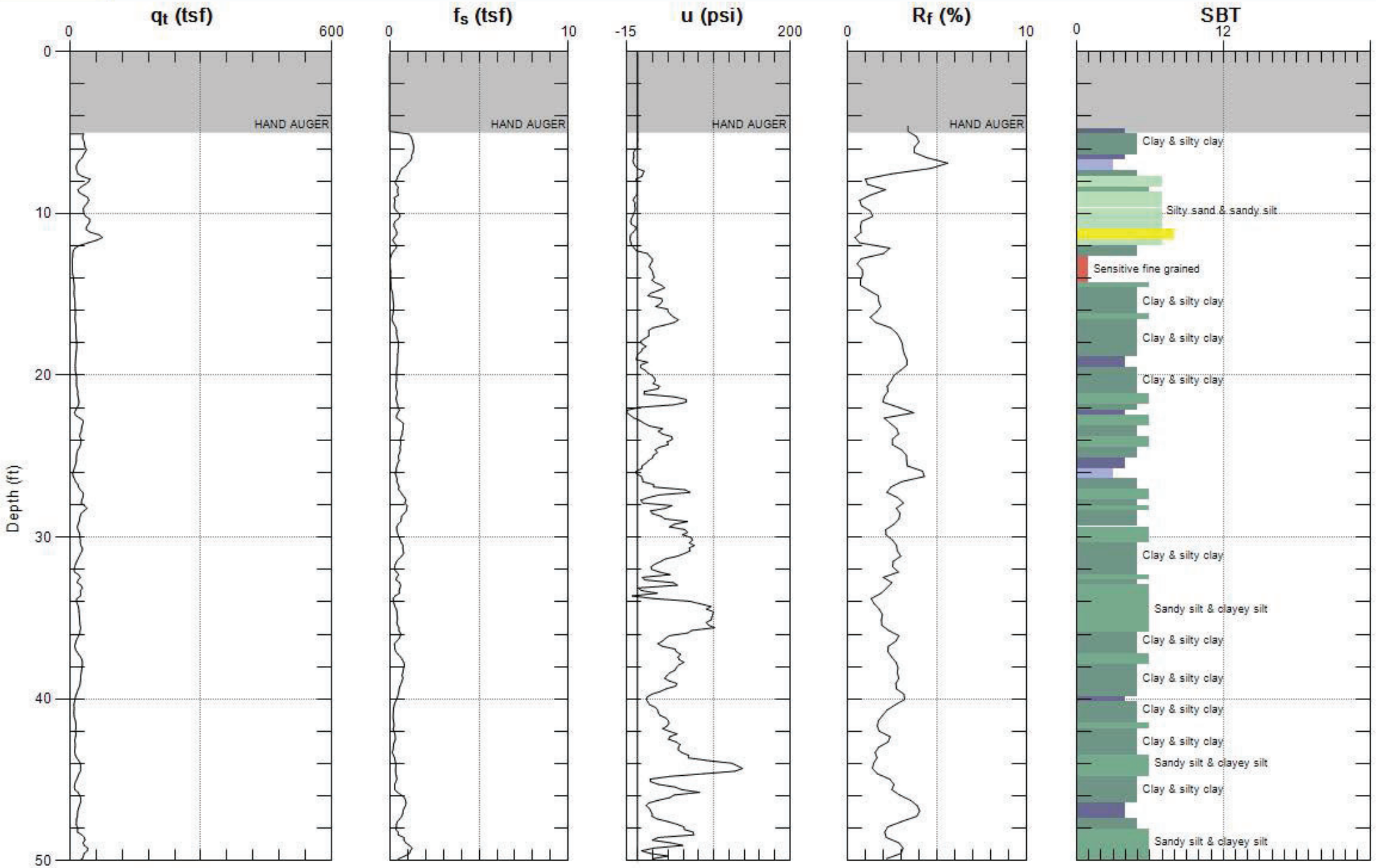
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-12

Engineer: M.HINTZ
Date: 2/6/2018 02:57



Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX D: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.85

Total Settlement: 0.35 (Inches)

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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)
5.085	27.280	0.783	610.2	610.2	47.478	2.903	2.46		Unsaturated	59.7			25.78	1.70	43.83	104.77	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	28.690	0.899	629.9	629.9	49.156	3.168	2.47		Unsaturated	61.0			27.12	1.70	46.10	108.01	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	30.760	0.933	649.6	649.6	51.921	3.066	2.45		Unsaturated	58.8			29.07	1.70	49.43	111.65	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	32.100	0.936	669.2	669.2	53.387	2.947	2.43		Unsaturated	57.2			30.34	1.70	51.58	113.89	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	31.010	1.037	688.9	688.9	50.797	3.382	2.48		Unsaturated	61.7			29.31	1.70	49.72	112.86	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	28.610	1.171	708.7	708.7	46.147	4.144	2.58		Unsaturated	69.1			27.04	1.69	45.62	109.34	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	27.700	0.973	728.4	728.4	44.037	3.559	2.54		Unsaturated	66.5			26.18	1.68	43.87	106.53	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	35.670	0.698	748.1	748.1	56.108	1.978	2.29		Unsaturated	46.5			33.71	1.63	54.90	113.82	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	41.120	0.509	767.8	767.8	63.920	1.250	2.12		Unsaturated	32.8			38.87	1.61	62.56	113.54	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	41.260	0.291	787.4	787.4	63.318	0.712	1.98		Unsaturated	21.7			39.00	1.64	63.89	99.42	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	38.540	0.407	807.1	807.1	58.364	1.067	2.11		Unsaturated	32.0			36.43	1.59	58.00	107.18	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	31.900	0.526	826.8	826.8	47.610	1.671	2.30		Unsaturated	47.1			30.15	1.58	47.66	105.00	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.054	29.800	0.514	846.5	846.5	43.900	1.750	2.34		Unsaturated	50.3			28.17	1.57	44.27	102.11	0.99	0.546	1.099	n.a.	n.a.	n.a.	0.00	0.00
7.218	31.550	0.414	866.2	866.2	45.969	1.330	2.25		Unsaturated	43.2			29.82	1.56	46.40	101.44	0.99	0.546	1.096	n.a.	n.a.	n.a.	0.00	0.00
7.382	30.910	0.296	885.8	885.8	44.507	0.972	2.19		Unsaturated	37.8			29.22	1.55	45.37	96.77	0.99	0.546	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.546	31.260	0.286	905.5	905.5	44.512	0.928	2.17		Unsaturated	37.0			29.55	1.54	45.42	96.20	0.99	0.545	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.710	32.380	0.293	925.2	925.2	45.623	0.918	2.16		Unsaturated	36.0			30.60	1.52	46.49	96.80	0.99	0.545	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.874	33.780	0.307	944.9	944.9	47.111	0.922	2.15		Unsaturated	35.2			31.93	1.50	47.90	97.83	0.99	0.545	1.084	n.a.	n.a.	n.a.	0.00	0.00
8.038	35.830	0.395	964.6	964.6	49.484	1.117	2.18		Unsaturated	37.6			33.87	1.47	49.90	102.16	0.99	0.544	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.202	42.380	0.451	984.2	984.2	58.051	1.077	2.12		Unsaturated	32.3			40.06	1.45	57.93	107.44	0.98	0.544	1.086	n.a.	n.a.	n.a.	0.00	0.00
8.366	46.920	0.461	1003.9	1003.9	63.696	0.993	2.06		Unsaturated	28.0			44.35	1.43	63.37	109.05	0.98	0.544	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.530	48.630	0.425	1023.6	1023.6	65.391	0.883	2.02		Unsaturated	24.9			45.96	1.42	65.30	106.79	0.98	0.544	1.081	n.a.	n.a.	n.a.	0.00	0.00
8.694	39.050	0.513	1043.3	1043.3	51.862	1.331	2.21		Unsaturated	39.9			36.91	1.41	51.99	106.37	0.98	0.543	1.079	n.a.	n.a.	n.a.	0.00	0.00
8.858	27.140	0.537	1063.0	1063.0	35.484	2.018	2.45		Unsaturated	59.2			25.65	1.42	36.42	95.12	0.98	0.543	1.070	n.a.	n.a.	n.a.	0.00	0.00
9.022	23.640	0.522	1082.6	1082.6	30.522	2.260	2.53		Unsaturated	65.7			22.34	1.42	31.65	90.61	0.98	0.543	1.066	n.a.	n.a.	n.a.	0.00	0.00
9.186	30.390	0.412	1102.3	1102.3	39.075	1.381	2.32		Unsaturated	48.5			28.72	1.39	39.99	95.97	0.98	0.542	1.067	n.a.	n.a.	n.a.	0.00	0.00
9.350	35.660	0.288	1122.0	1122.0	45.559	0.821	2.14		Unsaturated	34.0			33.71	1.38	46.55	95.16	0.98	0.542	1.065	n.a.	n.a.	n.a.	0.00	0.00
9.514	35.290	0.258	1141.7	1141.7	44.675	0.743	2.12		Unsaturated	32.8			33.36	1.37	45.80	93.14	0.98	0.542	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.678	37.370	0.310	1161.4	1161.4	46.936	0.843	2.13		Unsaturated	33.6			35.32	1.35	47.86	96.41	0.98	0.542	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.843	36.810	0.459	1181.2	1181.2	45.820	1.267	2.24		Unsaturated	42.3	35.32		35.32	1.33	47.11	101.81	0.98	0.541	1.063	n.a.	n.a.	n.a.	0.00	0.00
10.007	29.580	0.589	1200.8	1200.8	36.360	2.032	2.45		Sand	58.6	35.32		35.32	1.31	46.40	107.72	0.98	0.541	1.064	0.148	0.206	0.38	0.03	0.05
10.171	21.060	0.579	1220.5	1220.5	28.411	2.831	2.62		Mixed	72.6	35.32		35.32	1.30	45.89	110.38	0.98	0.545	1.063	0.153	0.214	0.39	0.03	0.05
10.335	14.490	0.455	1240.2	1240.2	22.367	3.280	2.74		Clay	82.2			13.70	1.15	n.a.	n.a.	0.98	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	12.030	0.397	1259.9	1259.9	18.097	3.482	2.83		Clay	89.3			11.37	1.15	n.a.	n.a.	0.98	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	10.920	0.312	1279.6	1279.6	16.068	3.035	2.83		Clay	89.6			10.32	1.14	n.a.	n.a.	0.98	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	9.970	0.249	1299.2	1299.2	14.347	2.672	2.84		Clay	90.2			9.42	1.14	n.a.	n.a.	0.98	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	9.550	0.251	1318.9	1318.9	13.482	2.823	2.88		Clay	93.0			9.03	1.13	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	10.150	0.237	1338.6	1338.6	14.165	2.500	2.83		Clay	89.2			9.59	1.13	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	13.620	0.217	1358.3	1358.3	19.055	1.677	2.62		Clay	72.9			12.87	1.12	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	18.370	0.284	1378.0	1378.0	20.709	1.606	2.58		Sand	69.6			17.36	1.27	21.97	78.93	0.97	0.577	1.039	0.115	0.140	0.24	0.04	0.06
11.647	15.120	0.349	1397.6	1397.6	20.636	2.420	2.69		Clay	77.9			14.29	1.12	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	11.150	0.356	1417.3	1417.3	14.734	3.410	2.89		Clay	94.4			10.54	1.11	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	10.360	0.288	1437.4	1432.7	13.459	2.987	2.89		Clay	94.2			9.79	1.11	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	9.330	0.233	1457.9	1443.0	11.921	2.709	2.91		Clay	95.7			8.82	1.11	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	9.950	0.123	1478.4	1453.2	12.676	1.335	2.72		Clay	80.8			9.40	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	9.590	0.193	1498.9	1463.5	12.081	2.183	2.85		Clay	91.1			9.06	1.10	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	15.540	0.280	1519.4	1473.8	20.058	1.894	2.63		Clay	73.8			14.69	1.10	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	15.360	0.261	1539.9	1484.0	19.663	1.789	2.63		Clay	73.2			14.52	1.10	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	10.790	0.201	1560.4	1494.3	13.397	2.008	2.79		Clay	86.5			10.20	1.10	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	8.640	0.179	1580.9	1504.6	10.434	2.280	2.92		Clay	96.2			8.17	1.09	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	8.010	0.167	1601.4	1514.8	9.518	2.316	2.95		Clay	99.2			7.57	1.09	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	7.560	0.171	1621.9	1525.1	8.851	2.534	3.00		Clay	100.0			7.15	1.09	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	7.120	0.185	1642.4	1535.4	8.205	2.937	3.06		Clay	100.0			6.73	1.09	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.660	0.169	1663.0	1545.7	7.542	2.900	3.09		Clay	100.0			6.29	1.09	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	6.330	0.143	1683.5	1556.0	7.055	2.606	3.09		Clay	100.0			5.98	1.08	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	5.990	0.131	1704.0	1566.2	6.561	2.550	3.11		Clay	100.0			5.66	1.08	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	6.390	0.111	1724.5	1576.5	7.013	2.008	3.03		Clay	100.0			6.04	1.08	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	7.110	0.131	1745.0	1586.8	7.862	2.100	3.00		Clay	100.0			6.72	1.08	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	7.270	0.170	1765.5	1597.0	7.999	2.662	3.05		Clay	100.0			6.87	1.08	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	6.530	0.177	1786.0	1607.3	7.014	3.140	3.14		Clay	100.0			6.17	1.08	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	5.880	0.164	1806.5	1617.6	6.153	3.295	3.19		Clay	100.0			5.56	1.07	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	5.550	0.143	1827.0	1627.8	5.697	3.084	3.21		Clay	100.0			5.25	1.07	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	5.270	0.111	1847.5	1638.1	5.306	2.554	3.19		Clay	100.0			4.98	1.07	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	5.110	0.099	1868.0	1648.4	5.067	2.371	3.19		Clay	100.0			4.83	1.07	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	5.520	0.060	1888.5	1658.6	5.518	1.311	3.04		Clay	100.0			5.22	1.07	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	5.770	0.091	1909.0	1668.9	5.771	1.890	3.09		Clay	100.0			5.45	1.06	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	6.640	0.106	1929.5	1679.2	6.760	1.868	3.03		Clay	100.0			6.28	1.06	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	6.740	0.118	1950.0	1689.4	6.825	2.047	3.05		Clay	100.0			6.37	1.06	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.85

Total Settlement:	0.35	(Inches)

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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)
16.240	8.500	0.143	1970.5	1699.7	8.843	1.903	2.94		Clay	97.8			8.03	1.06	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	15.340	0.180	1991.0	1710.0	16.778	1.255	2.60		Clay	71.3			14.50	1.06	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	13.060	0.221	2011.5	1720.2	14.015	1.833	2.76		Clay	83.5			12.34	1.06	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	10.220	0.185	2032.0	1730.5	10.637	2.010	2.88		Clay	93.3			9.66	1.05	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	6.990	0.142	2052.5	1740.7	6.852	2.381	3.08		Clay	100.0			6.61	1.05	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	6.600	0.131	2073.0	1751.0	6.355	2.355	3.11		Clay	100.0			6.24	1.05	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	6.300	0.129	2093.5	1761.3	5.965	2.456	3.14		Clay	100.0			5.95	1.05	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	6.590	0.123	2114.0	1771.5	6.247	2.223	3.10		Clay	100.0			6.23	1.05	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	6.790	0.139	2134.5	1781.8	6.424	2.429	3.11		Clay	100.0			6.42	1.05	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	6.740	0.164	2155.1	1792.1	6.319	2.896	3.15		Clay	100.0			6.37	1.04	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	6.060	0.179	2175.6	1802.4	5.517	3.600	3.26		Clay	100.0			5.73	1.04	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	5.470	0.144	2196.1	1812.7	4.824	3.294	3.28		Clay	100.0			5.17	1.04	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	5.260	0.118	2216.6	1822.9	4.555	2.842	3.27		Clay	100.0			4.97	1.04	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	5.550	0.117	2237.1	1833.2	4.835	2.640	3.23		Clay	100.0			5.25	1.04	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	6.250	0.122	2257.6	1843.5	5.556	2.382	3.16		Clay	100.0			5.91	1.04	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	6.190	0.123	2278.1	1853.7	5.449	2.435	3.17		Clay	100.0			5.85	1.04	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	6.390	0.121	2298.6	1864.0	5.623	2.309	3.15		Clay	100.0			6.04	1.03	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	7.420	0.158	2319.1	1874.3	6.680	2.524	3.10		Clay	100.0			7.01	1.03	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	8.930	0.192	2339.6	1884.5	8.236	2.474	3.02		Clay	100.0			8.44	1.03	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	9.780	0.227	2360.1	1894.8	9.077	2.640	3.00		Clay	100.0			9.24	1.03	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	10.020	0.243	2380.6	1905.1	9.270	2.752	3.00		Clay	100.0			9.47	1.03	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	10.500	0.251	2401.1	1915.3	9.710	2.699	2.98		Clay	100.0			9.92	1.03	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	10.370	0.268	2421.6	1925.6	9.513	2.926	3.01		Clay	100.0			9.80	1.03	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	9.460	0.286	2442.1	1935.9	8.512	3.471	3.09		Clay	100.0			8.94	1.02	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	7.780	0.291	2462.6	1946.1	6.730	4.444	3.24		Clay	100.0			7.35	1.02	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	6.810	0.263	2483.1	1956.4	5.693	4.723	3.31		Clay	100.0			6.44	1.02	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	6.230	0.243	2503.6	1966.7	5.063	4.881	3.36		Clay	100.0			5.89	1.02	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	5.720	0.205	2524.1	1976.9	4.510	4.599	3.39		Clay	100.0			5.41	1.02	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	5.810	0.180	2544.6	1987.2	4.567	3.967	3.35		Clay	100.0			5.49	1.02	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	6.180	0.173	2565.1	1997.5	4.904	3.532	3.29		Clay	100.0			5.84	1.02	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	7.170	0.177	2585.6	2007.7	5.855	3.012	3.19		Clay	100.0			6.78	1.01	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	8.560	0.188	2606.1	2018.0	7.192	2.591	3.08		Clay	100.0			8.09	1.01	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	9.940	0.256	2626.8	2028.3	8.506	2.968	3.05		Clay	100.0			9.40	1.01	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	11.830	0.326	2647.3	2038.6	10.307	3.103	2.99		Clay	100.0			11.18	1.01	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	13.290	0.424	2667.8	2048.9	11.671	3.546	2.98		Clay	100.0			12.56	1.01	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	13.810	0.449	2688.3	2059.1	12.108	3.602	2.98		Clay	100.0			13.05	1.01	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	13.900	0.431	2708.8	2069.4	12.125	3.435	2.96		Clay	100.0			13.14	1.01	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	14.150	0.412	2729.3	2079.7	12.296	3.222	2.94		Clay	98.3			13.37	1.00	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	15.030	0.435	2749.8	2089.9	13.068	3.186	2.92		Clay	96.4			14.21	1.00	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	16.130	0.465	2770.3	2100.2	14.041	3.154	2.89		Clay	94.2			15.25	1.00	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	16.340	0.470	2790.8	2110.5	14.162	3.145	2.89		Clay	93.9			15.44	1.00	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	16.670	0.481	2811.3	2120.7	14.395	3.151	2.88		Clay	93.4			15.76	1.00	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	17.630	0.497	2831.8	2131.0	15.217	3.065	2.85		Clay	91.3			16.66	1.00	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	18.810	0.531	2852.3	2141.3	16.237	3.055	2.83		Clay	89.4			17.78	1.00	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	19.880	0.596	2872.8	2151.5	17.145	3.231	2.83		Clay	89.1			18.79	1.00	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	20.100	0.621	2893.3	2161.8	17.257	3.329	2.83		Clay	89.6			19.00	0.99	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	19.800	0.617	2913.8	2172.1	16.890	3.364	2.84		Clay	90.4			18.71	0.99	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	19.810	0.573	2934.3	2182.3	16.810	3.124	2.82		Clay	89.0			18.72	0.99	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	19.400	0.536	2954.8	2192.6	16.348	2.991	2.82		Clay	88.8			18.34	0.99	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	18.430	0.538	2975.3	2202.9	15.382	3.175	2.86		Clay	91.8			17.42	0.99	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	18.490	0.646	2995.8	2213.1	15.356	3.802	2.91		Clay	95.6			17.48	0.99	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	19.160	0.723	3016.3	2223.4	15.878	4.096	2.92		Clay	96.3			18.11	0.99	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	19.570	0.835	3036.8	2233.7	16.163	4.626	2.94		Clay	98.5			18.50	0.99	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	20.010	0.815	3057.3	2243.9	16.472	4.410	2.92		Clay	97.0			18.91	0.98	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	19.810	0.832	3077.8	2254.2	16.211	4.554	2.94		Clay	98.1			18.72	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	18.290	0.763	3098.3	2264.5	14.786	4.558	2.97		Clay	100.0			17.29	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	16.380	0.658	3118.9	2274.8	13.030	4.440	3.01		Clay	100.0			15.48	0.98	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	14.650	0.556	3139.4	2285.1	11.449	4.251	3.04		Clay	100.0			13.85	0.98	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	14.360	0.457	3159.9	2295.3	11.136	3.576	3.00		Clay	100.0			13.57	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	15.060	0.494	3180.4	2305.6	11.684	3.667	2.99		Clay	100.0			14.23	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	15.500	0.474	3200.9	2315.9	12.004	3.410	2.96		Clay	100.0			14.65	0.98	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	14.850	0.431	3221.4	2326.1	11.383	3.255	2.97		Clay	100.0			14.04	0.98	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	14.380	0.442	3241.9	2336.4	10.922	3.464	3.00		Clay	100.0			13.59	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	14.140	0.406	3262.4	2346.7	10.661	3.246	2.99		Clay	100.0			13.36	0.97	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	13.780	0.398	3282.9	2356.9	10.300	3.279	3.01		Clay	100.0			13.02	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	12.720	0.353	3303.4	2367.2	9.351	3.189	3.04		Clay	100.0			12.02	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	12.400	0.316	3323.9	2377.5	9.033	2.943	3.03		Clay	100.0			11.72	0.97	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.85

Total Settlement: 0.35 (Inches)

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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)
27.231	13.320	0.318	3344.4	2387.7	9.756	2.730	2.98		Clay	100.0			12.59	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	14.130	0.335	3364.9	2398.0	10.382	2.691	2.96		Clay	99.6			13.36	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	14.810	0.419	3385.4	2408.3	10.894	3.194	2.98		Clay	100.0			14.00	0.97	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	17.210	0.457	3405.9	2418.5	12.824	2.947	2.90		Clay	95.3			16.27	0.97	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	21.590	0.522	3426.4	2428.8	16.368	2.626	2.79		Clay	86.1			20.41	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	25.290	0.625	3446.9	2439.1	19.324	2.652	2.73		Clay	81.7			23.90	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	26.420	0.752	3467.4	2449.3	20.158	3.046	2.76		Clay	83.4			24.97	0.96	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	28.190	0.816	3487.9	2459.6	21.504	3.086	2.74		Clay	82.0			26.64	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	28.050	0.816	3508.4	2469.9	21.293	3.103	2.74		Clay	82.3			26.51	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	26.800	0.736	3528.9	2480.1	20.189	2.940	2.75		Clay	82.6			25.33	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	26.990	0.725	3549.4	2490.4	20.250	2.875	2.74		Clay	82.1			25.51	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	27.740	0.719	3569.9	2500.7	20.759	2.770	2.72		Clay	80.6			26.22	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	27.420	0.802	3590.4	2510.9	20.411	3.130	2.76		Clay	83.7			25.92	0.96	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	28.000	0.821	3611.0	2521.2	20.779	3.134	2.75		Clay	83.2			26.47	0.95	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	30.910	0.913	3631.5	2531.5	22.986	3.138	2.72		Clay	80.5			29.22	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	31.710	1.026	3652.0	2541.8	23.514	3.433	2.74		Clay	81.9			29.97	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	33.340	1.089	3672.5	2552.0	24.689	3.457	2.72		Clay	80.8			31.51	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	33.000	1.137	3693.0	2562.3	24.317	3.650	2.74		Clay	82.4			31.19	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	33.770	1.050	3713.5	2572.6	24.810	3.290	2.71		Clay	79.5			31.92	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	31.910	1.051	3734.0	2582.8	23.263	3.498	2.75		Clay	82.6			30.16	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	31.500	0.944	3754.5	2593.1	22.847	3.187	2.73		Clay	81.0			29.77	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	30.440	0.924	3775.0	2603.4	21.935	3.236	2.74		Clay	82.5			28.77	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	29.280	0.920	3795.5	2613.6	20.953	3.360	2.77		Clay	84.5			27.67	0.95	n.a.	n.a.	0.90	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	28.090	0.861	3816.0	2623.9	19.956	3.289	2.78		Clay	85.4			26.55	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	26.630	0.846	3836.5	2634.2	18.762	3.423	2.81		Clay	87.9			25.17	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	26.680	0.805	3857.0	2644.4	18.720	3.252	2.80		Clay	86.9			25.22	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	25.250	0.820	3877.5	2654.7	17.562	3.518	2.84		Clay	90.3			23.87	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	24.080	0.789	3898.0	2665.0	16.609	3.565	2.86		Clay	92.1			22.76	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	23.110	0.744	3918.5	2675.2	15.812	3.518	2.88		Clay	93.2			21.84	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	22.430	0.637	3939.0	2685.5	15.238	3.113	2.86		Clay	91.6			21.20	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	21.740	0.635	3959.5	2695.8	14.660	3.214	2.88		Clay	93.3			20.55	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	22.060	0.619	3980.0	2706.0	14.833	3.084	2.86		Clay	92.2			20.85	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	22.540	0.618	4000.5	2716.3	15.123	3.009	2.85		Clay	91.1			21.30	0.94	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	23.310	0.560	4021.0	2726.6	15.624	2.629	2.81		Clay	87.4			22.03	0.94	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	23.670	0.544	4041.5	2736.8	15.821	2.513	2.79		Clay	86.2			22.37	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	24.580	0.540	4062.0	2747.1	16.417	2.395	2.76		Clay	84.1			23.23	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	27.400	0.622	4082.5	2757.4	18.393	2.453	2.73		Clay	81.4			25.90	0.93	n.a.	n.a.	0.89	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	32.000	0.870	4103.1	2767.7	21.641	2.905	2.72		Clay	80.5			30.25	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	34.750	1.076	4123.6	2778.0	23.534	3.292	2.72		Clay	80.9			32.84	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	34.490	1.174	4144.1	2788.2	23.253	3.621	2.75		Clay	83.4			32.60	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	33.390	1.235	4164.6	2798.5	22.375	3.945	2.79		Clay	86.3			31.56	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	31.600	1.262	4185.1	2808.8	21.011	4.277	2.84		Clay	89.8			29.87	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	29.170	1.228	4205.6	2819.0	19.203	4.537	2.88		Clay	93.5			27.57	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	25.920	1.249	4226.1	2829.3	16.829	5.246	2.97		Clay	100.0			24.50	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	23.160	1.164	4246.6	2839.6	14.817	5.533	3.02		Clay	100.0			21.89	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	20.920	1.087	4267.1	2849.8	13.184	5.786	3.07		Clay	100.0			19.77	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	18.470	0.919	4287.6	2860.1	11.417	5.629	3.11		Clay	100.0			17.46	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	17.490	0.755	4308.1	2870.4	10.686	4.923	3.10		Clay	100.0			16.53	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	16.840	0.683	4328.6	2880.6	10.189	4.654	3.10		Clay	100.0			15.92	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	16.480	0.437	4349.1	2890.9	9.897	3.055	3.01		Clay	100.0			15.58	0.92	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	15.410	0.420	4369.6	2901.2	9.117	3.176	3.04		Clay	100.0			14.57	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	15.380	0.340	4390.1	2911.4	9.057	2.579	3.00		Clay	100.0			14.54	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	15.860	0.294	4410.6	2921.7	9.347	2.153	2.94		Clay	98.4			14.99	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	19.000	0.496	4431.1	2932.0	11.449	2.955	2.94		Clay	98.6			17.96	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	27.290	0.650	4451.6	2942.2	17.038	2.593	2.77		Clay	84.7			25.79	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	29.700	0.577	4472.1	2952.5	18.604	2.101	2.69		Clay	78.0			28.07	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	25.270	0.473	4492.6	2962.8	15.542	2.054	2.75		Clay	82.7			23.88	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	20.800	0.594	4513.1	2973.0	12.474	3.203	2.93		Clay	97.8			19.66	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	21.530	0.683	4533.6	2983.3	12.914	3.546	2.95		Clay	98.9			20.35	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	25.930	0.885	4554.1	2993.6	15.803	3.742	2.89		Clay	94.5			24.51	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	30.380	0.936	4574.6	3003.8	18.705	3.332	2.81		Clay	87.4			28.71	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	38.840	1.026	4595.3	3014.2	24.247	2.808	2.67		Clay	76.6			36.71	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	52.830	1.181	4615.8	3024.4	39.942	2.338	2.45		Sand	59.2	95.99		95.99	0.87	83.36	155.19	0.86	0.758	0.940	0.327	0.532	0.70	0.02	0.01
37.566	78.540	1.748	4636.3	3034.7	60.158	2.293	2.31		Sand	48.2	95.99		95.99	0.86	83.00	150.07	0.86	0.758	0.942	0.289	0.455	0.60	0.02	0.01
37.730	86.790	2.353	4656.8	3045.0	66.549	2.786	2.34		Sand	50.3	95.99		95.99	0.86	82.94	151.08	0.86	0.758	0.941	0.296	0.468	0.62	0.02	0.01
37.894	87.860	3.008	4677.3	3055.2	67.271	3.517	2.41		Sand	55.9	95.99		95.99	0.86	82.95	153.47	0.86	0.758	0.939	0.313	0.503	0.66	0.02	0.01
38.058	101.560	2.341	4697.8	3065.5	77.908	2.360	2.24		Sand	42.4			95.99	0.86	82.46	145.98	0.86	0.758	0.943	0.264	0.404	0.53	0.02	0.01

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.85

Total Settlement:	0.35	(Inches)

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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)
38.222	101.070	1.933	4718.3	3075.8	77.386	1.958	2.19		Sand	38.0			95.53	0.86	81.73	141.82	0.86	0.758	0.944	0.243	0.362	0.48	0.02	0.02
38.386	102.260	1.800	4738.8	3086.0	78.180	1.802	2.16		Sand	35.8			96.65	0.85	82.53	140.84	0.86	0.758	0.944	0.238	0.353	0.47	0.02	0.02
38.550	109.920	1.107	4759.3	3096.3	84.028	1.029	1.98		Sand	21.2			103.89	0.84	87.67	125.61	0.86	0.758	0.950	0.185	0.251	0.33	0.03	0.02
38.714	127.270	0.890	4779.8	3106.6	97.415	0.713	1.83		Sand	9.3			120.29	0.83	99.83	105.78	0.86	0.758	0.957	0.145	0.180	0.24	0.03	0.02
38.878	154.330	0.810	4800.3	3116.8	118.320	0.533	1.69		Sand	0.0			145.87	0.84	122.44	122.44	0.86	0.758	0.951	0.177	0.236	0.31	0.03	0.02
39.042	201.800	0.911	4820.8	3127.1	155.026	0.457	1.55		Sand	0.0			190.74	0.86	164.41	164.41	0.86	0.758	0.929	0.422	0.725	0.96	0.01	0.01
39.206	254.860	1.111	4841.3	3137.4	195.951	0.440	1.46		Sand	0.0			240.89	0.88	212.98	212.98	0.86	0.758	0.882	4.264	8.273	10.92	0.00	0.00
39.370	303.420	1.468	4861.8	3147.6	233.255	0.488	1.43		Sand	0.0			286.79	0.90	258.26	258.26	0.86	0.758	0.881	366.155	709.571	936.55	0.00	0.00
39.534	366.160	1.673	4882.3	3157.9	281.410	0.460	1.35		Sand	0.0			346.09	0.90	311.39	311.39	0.85	0.758	0.880	#########	########	#########	0.00	0.00
39.698	466.570	1.839	4902.8	3168.2	358.507	0.396	1.23		Sand	0.0			440.99	0.90	396.45	396.45	0.85	0.757	0.879	#########	########	#########	0.00	0.00
39.862	535.480	3.378	4923.3	3178.4	411.063	0.634	1.33		Sand	0.0			506.12	0.90	454.61	454.61	0.85	0.757	0.878	#########	########	#########	0.00	0.00
40.026	493.030	3.628	4943.8	3188.7	377.708	0.740	1.41		Sand	0.0			466.00	0.90	418.22	418.22	0.85	0.757	0.877	#########	########	#########	0.00	0.00
40.190	460.330	2.670	4964.3	3199.0	351.957	0.583	1.35		Sand	0.0			435.09	0.90	390.15	390.15	0.85	0.757	0.876	#########	########	#########	0.00	0.00
40.354	418.860	2.670	4984.8	3209.2	319.558	0.641	1.41		Sand	0.0			395.90	0.90	354.70	354.70	0.85	0.757	0.875	#########	########	#########	0.00	0.00
40.518	383.710	2.065	5005.3	3219.5	292.106	0.542	1.39		Sand	0.0			362.67	0.90	324.66	324.66	0.85	0.757	0.874	#########	########	#########	0.00	0.00
40.682	326.750	1.073	5025.8	3229.8	248.056	0.331	1.31		Sand	0.0			308.84	0.89	276.23	276.23	0.85	0.757	0.873	5258.580	10101.208	13345.48	0.00	0.00
40.846	296.670	1.459	5046.3	3240.0	224.679	0.496	1.45		Sand	0.0			280.41	0.89	250.13	250.13	0.85	0.757	0.872	132.272	253.805	335.37	0.00	0.00
41.011	284.400	0.965	5066.9	3250.3	214.957	0.342	1.37		Sand	0.0			268.81	0.89	238.17	238.17	0.85	0.757	0.871	35.702	68.430	90.44	0.00	0.00
41.175	242.210	0.899	5087.4	3260.6	182.486	0.375	1.45		Sand	0.0			228.93	0.87	198.34	198.34	0.85	0.757	0.889	1.723	3.368	4.45	0.00	0.00
41.339	212.620	0.732	5107.9	3270.9	159.697	0.348	1.48		Sand	0.0			200.96	0.85	171.03	171.03	0.85	0.756	0.916	0.521	0.930	1.23	0.00	0.00
41.503	193.650	0.724	5128.4	3281.1	145.040	0.379	1.53		Sand	0.0			183.03	0.84	153.77	153.77	0.85	0.756	0.928	0.316	0.501	0.66	0.02	0.01
41.667	211.150	0.810	5148.9	3291.4	158.068	0.388	1.51		Sand	0.0			199.57	0.85	169.26	169.26	0.84	0.756	0.916	0.491	0.864	1.14	0.01	0.00
41.831	241.420	0.892	5169.4	3301.7	180.719	0.373	1.45		Sand	0.0			228.19	0.86	196.68	196.68	0.84	0.756	0.887	1.575	3.075	4.07	0.00	0.00
41.995	271.840	0.843	5189.9	3311.9	203.413	0.313	1.36		Sand	0.0			256.94	0.88	224.84	224.84	0.84	0.756	0.866	10.514	20.021	26.49	0.00	0.00
42.159	273.040	0.762	5210.4	3322.2	203.996	0.282	1.34		Sand	0.0			258.07	0.87	225.74	225.74	0.84	0.756	0.865	11.331	21.556	28.53	0.00	0.00
42.323	274.190	0.662	5230.9	3332.5	204.540	0.244	1.31		Sand	0.0			259.16	0.87	226.59	226.59	0.84	0.756	0.864	12.177	23.140	30.63	0.00	0.00
42.487	240.730	0.486	5251.4	3342.7	179.056	0.204	1.33		Sand	0.0	259.16		259.16	0.87	226.35	226.35	0.84	0.755	0.863	11.937	22.658	30.00	0.00	0.00
42.651	206.980	0.588	5271.9	3353.0	153.432	0.288	1.45		Sand	0.0	259.16		259.16	0.87	226.12	226.12	0.84	0.755	0.862	11.701	22.187	29.38	0.00	0.00
42.815	181.980	0.639	5292.4	3363.3	134.448	0.356	1.55		Sand	0.0	259.16		259.16	0.87	225.88	225.88	0.84	0.755	0.861	11.471	21.728	28.78	0.00	0.00
42.979	126.660	0.889	5312.9	3373.5	92.825	0.717	1.85		Sand	10.8	259.16		259.16	0.88	227.75	242.40	0.84	0.755	0.860	55.344	104.720	138.74	0.00	0.00
43.143	65.760	1.314	5333.4	3383.8	47.158	2.083	2.37		Sand	52.2	259.16		259.16	0.88	228.97	337.22	0.84	0.755	0.859	#########	########	#########	0.00	0.00
43.307	38.580	1.066	5353.9	3394.1	21.156	2.969	2.73		Clay	81.6			36.47	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	23.140	0.912	5374.4	3404.3	12.016	4.459	3.03		Clay	100.0			21.87	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	20.800	0.331	5394.9	3414.6	10.603	1.828	2.86		Clay	91.7			19.66	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	23.090	0.255	5415.4	3424.9	11.903	1.251	2.73		Clay	81.6			21.82	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	23.270	0.324	5435.9	3435.1	11.966	1.576	2.78		Clay	85.4			21.99	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	25.120	0.305	5456.4	3445.4	12.998	1.362	2.72		Clay	80.4			23.74	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	24.620	0.302	5476.9	3455.7	12.664	1.380	2.73		Clay	81.4			23.27	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	22.070	0.266	5497.4	3465.9	11.149	1.377	2.78		Clay	85.2			20.86	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	20.560	0.252	5517.9	3476.2	10.242	1.416	2.82		Clay	88.3			19.43	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	17.980	0.195	5538.4	3486.5	8.726	1.282	2.86		Clay	91.5			16.99	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	16.230	0.178	5559.0	3496.8	7.693	1.323	2.91		Clay	95.9			15.34	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	17.280	0.203	5579.5	3507.1	8.263	1.401	2.90		Clay	94.6			16.33	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	17.030	0.195	5600.0	3517.3	8.091	1.370	2.90		Clay	94.9			16.10	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	17.940	0.193	5620.5	3527.6	8.578	1.276	2.86		Clay	92.0			16.96	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	16.940	0.191	5641.0	3537.9	7.982	1.353	2.90		Clay	95.1			16.01	0.87	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	17.190	0.208	5661.5	3548.1	8.094	1.449	2.91		Clay	95.8			16.25	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	18.560	0.213	5682.0	3558.4	8.835	1.355	2.86		Clay	92.0			17.54	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	19.260	0.241	5702.5	3568.7	9.196	1.469	2.86		Clay	92.2			18.20	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	16.190	0.192	5723.0	3578.9	7.448	1.441	2.94		Clay	98.3			15.30	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	15.610	0.173	5743.5	3589.2	7.098	1.358	2.95		Clay	98.8			14.75	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	17.550	0.179	5764.0	3599.5	8.150	1.220	2.87		Clay	92.8			16.59	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	17.430	0.209	5784.5	3609.7	8.055	1.438	2.91		Clay	95.9			16.47	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	16.830	0.230	5805.0	3620.0	7.695	1.651	2.96		Clay	99.6			15.91	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	16.440	0.244	5825.5	3630.3	7.452	1.804	2.99		Clay	100.0			15.54	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	16.470	0.234	5846.0	3640.5	7.442	1.727	2.98		Clay	100.0			15.57	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	16.480	0.223	5866.5	3650.8	7.421	1.646	2.97		Clay	100.0			15.58	0.87	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	15.970	0.219	5887.0	3661.1	7.116	1.681	2.99		Clay	100.0			15.09	0.87	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	15.840	0.220	5907.5	3671.3	7.020	1.707	3.00		Clay	100.0			14.97	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	15.730	0.222	5928.0	3681.6	6.935	1.739	3.01		Clay	100.0			14.87	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	16.100	0.218	5948.5	3691.9	7.111	1.661	2.99		Clay	100.0			15.22	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	17.200	0.199	5969.0	3702.1	7.680	1.400	2.92		Clay	96.9			16.26	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	19.000	0.189	5989.5	3712.4	8.623	1.181	2.84		Clay	90.6			17.96	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	20.030	0.210	6010.0	3722.7	9.147	1.233	2.83		Clay	89.5			18.93	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	21.340	0.273	6030.5	3732.9	9.818	1.490	2.84		Clay	90.4			20.17	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	20.540	0.358	6051.1	3743.3	9.358	2.044	2.93		Clay	97.4			19.41	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	20.690	0.554	6071.6	3753.5	9.407	3.138	3.03		Clay	100.0			19.56	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 1

PGA (A_{max}) 0.85

Total Settlement: 0.35 (Inches)

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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)
49.213	32.010	0.634	6092.1	3763.8	15.391	2.189	2.76		Clay	84.2			30.26	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	44.520	0.611	6112.6	3774.1	29.345	1.474	2.44		Sand	57.9			42.08	0.74	31.03	87.88	0.81	0.745	0.944	0.123	0.141	0.19	0.04	0.01
49.541	36.520	0.597	6133.1	3784.3	17.680	1.785	2.67		Clay	76.2			34.52	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	32.340	0.642	6153.6	3794.6	15.424	2.194	2.76		Clay	84.2			30.57	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	37.950	0.667	6174.1	3804.9	18.325	1.913	2.67		Clay	76.6			35.87	0.86	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	33.410	0.641	6194.6	3815.1	15.891	2.115	2.75		Clay	82.6			31.58	0.86	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.85

Total Settlement: 0.44 (Inches)

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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)
5.085	38.430	0.290	610.2	610.2	67.103	0.761	1.98		Unsaturated	21.2			36.32	1.70	61.75	96.13	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	51.660	0.269	629.9	629.9	88.949	0.524	1.79		Unsaturated	6.0			48.83	1.70	83.01	83.58	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	61.380	0.254	649.6	649.6	104.156	0.416	1.68		Unsaturated	0.0			58.02	1.70	98.63	98.63	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	69.510	0.244	669.2	669.2	116.261	0.353	1.60		Unsaturated	0.0			65.70	1.70	111.69	111.69	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	73.610	0.224	688.9	688.9	121.363	0.306	1.56		Unsaturated	0.0			69.57	1.68	116.94	116.94	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	72.960	0.241	708.7	708.7	118.578	0.332	1.58		Unsaturated	0.0			68.96	1.67	114.90	114.90	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	66.230	0.270	728.4	728.4	106.108	0.410	1.67		Unsaturated	0.0			62.60	1.68	105.21	105.21	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	59.650	0.248	748.1	748.1	94.227	0.418	1.72		Unsaturated	0.3			56.38	1.70	95.62	95.62	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	53.100	0.259	767.8	767.8	82.719	0.491	1.80		Unsaturated	7.0			50.19	1.70	85.32	86.80	0.99	0.547	1.097	n.a.	n.a.	n.a.	0.00	0.00
6.562	53.730	0.255	788.3	778.1	83.131	0.478	1.79		Unsaturated	6.4			50.78	1.70	86.16	87.02	0.99	0.547	1.096	n.a.	n.a.	n.a.	0.00	0.00
6.726	49.590	0.300	808.8	788.4	76.161	0.610	1.88		Unsaturated	13.4			46.87	1.66	77.66	94.14	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	50.120	0.292	829.3	798.7	76.470	0.587	1.87		Unsaturated	12.6			47.37	1.65	78.28	92.43	0.99	0.546	1.098	n.a.	n.a.	n.a.	0.00	0.00
7.054	48.460	0.278	849.8	808.9	73.430	0.579	1.88		Unsaturated	13.5			45.80	1.64	75.27	91.92	0.99	0.546	1.096	n.a.	n.a.	n.a.	0.00	0.00
7.218	48.430	0.266	870.3	819.2	72.907	0.554	1.87		Unsaturated	12.9			45.78	1.64	75.05	90.06	0.99	0.546	1.093	n.a.	n.a.	n.a.	0.00	0.00
7.382	52.110	0.272	890.8	829.5	77.995	0.526	1.84		Unsaturated	10.0			49.25	1.64	80.65	87.78	0.99	0.546	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.546	56.950	0.324	911.3	839.7	84.763	0.574	1.83		Unsaturated	9.1			53.83	1.61	86.78	91.89	0.99	0.545	1.092	n.a.	n.a.	n.a.	0.00	0.00
7.710	59.870	0.366	931.8	850.0	88.589	0.616	1.83		Unsaturated	9.2			56.59	1.59	89.99	95.33	0.99	0.545	1.093	n.a.	n.a.	n.a.	0.00	0.00
7.874	66.010	0.430	952.3	860.3	97.145	0.656	1.81		Unsaturated	7.7			62.39	1.56	97.64	100.25	0.99	0.545	1.096	n.a.	n.a.	n.a.	0.00	0.00
8.038	71.610	0.337	972.8	870.5	104.807	0.474	1.70		Unsaturated	0.0			67.68	1.54	104.45	104.45	0.99	0.544	1.098	n.a.	n.a.	n.a.	0.00	0.00
8.202	73.600	0.343	993.3	880.8	107.095	0.469	1.69		Unsaturated	0.0			69.57	1.53	106.36	106.36	0.98	0.544	1.098	n.a.	n.a.	n.a.	0.00	0.00
8.366	70.970	0.278	1013.8	891.1	102.631	0.395	1.67		Unsaturated	0.0			67.08	1.53	102.68	102.68	0.98	0.544	1.094	n.a.	n.a.	n.a.	0.00	0.00
8.530	67.490	0.214	1034.3	901.3	96.990	0.320	1.65		Unsaturated	0.0			63.79	1.54	97.96	97.96	0.98	0.544	1.089	n.a.	n.a.	n.a.	0.00	0.00
8.694	62.650	0.240	1054.8	911.6	89.458	0.386	1.72		Unsaturated	0.6			59.22	1.55	91.56	91.56	0.98	0.543	1.084	n.a.	n.a.	n.a.	0.00	0.00
8.858	51.970	0.288	1075.3	921.9	73.650	0.560	1.87		Unsaturated	12.8			49.12	1.54	75.68	90.39	0.98	0.543	1.082	n.a.	n.a.	n.a.	0.00	0.00
9.022	45.630	0.238	1095.8	932.1	64.200	0.528	1.91		Unsaturated	15.9			43.13	1.54	66.27	88.85	0.98	0.543	1.080	n.a.	n.a.	n.a.	0.00	0.00
9.186	44.090	0.256	1116.3	942.4	61.654	0.588	1.95		Unsaturated	19.0			41.67	1.52	63.17	92.96	0.98	0.542	1.081	n.a.	n.a.	n.a.	0.00	0.00
9.350	46.900	0.340	1136.8	952.7	65.265	0.734	1.98		Unsaturated	21.4			44.33	1.49	65.85	101.05	0.98	0.542	1.086	n.a.	n.a.	n.a.	0.00	0.00
9.514	57.350	0.410	1157.3	962.9	79.543	0.722	1.90		Unsaturated	15.3			54.21	1.47	79.92	102.27	0.98	0.542	1.085	n.a.	n.a.	n.a.	0.00	0.00
9.678	70.860	0.355	1177.8	973.2	97.937	0.505	1.74		Unsaturated	2.5			66.98	1.48	98.82	98.82	0.98	0.542	1.082	n.a.	n.a.	n.a.	0.00	0.00
9.843	75.320	0.458	1198.4	983.5	103.590	0.613	1.77		Unsaturated	4.6			71.19	1.46	103.63	103.70	0.98	0.541	1.084	n.a.	n.a.	n.a.	0.00	0.00
10.007	68.690	0.483	1218.9	993.8	93.896	0.709	1.84		Sand	10.3			64.92	1.45	94.21	102.49	0.98	0.541	1.082	0.141	0.194	0.36	0.03	0.05
10.171	61.280	0.412	1239.4	1004.1	83.233	0.679	1.87		Sand	12.8	64.92		64.92	1.43	92.82	108.65	0.98	0.545	1.085	0.150	0.213	0.39	0.03	0.05
10.335	47.500	0.482	1259.9	1014.3	63.985	1.028	2.07		Sand	28.6	64.92		64.92	1.36	88.44	139.80	0.98	0.550	1.100	0.233	0.400	0.73	0.02	0.04
10.499	34.290	0.322	1280.4	1024.6	45.707	0.957	2.17		Sand	36.8	64.92		64.92	1.34	87.23	147.53	0.98	0.554	1.100	0.273	0.493	0.89	0.01	0.02
10.663	25.150	0.313	1300.9	1034.9	33.112	1.278	2.36		Sand	51.7	64.92		64.92	1.33	86.06	155.65	0.98	0.558	1.100	0.331	0.632	1.13	0.01	0.01
10.827	15.610	0.406	1321.4	1045.1	28.608	2.716	2.61		Clay	71.5			14.75	1.20	n.a.	n.a.	0.98	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	11.100	0.347	1341.9	1055.4	19.763	3.327	2.79		Clay	85.9			10.49	1.20	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	7.490	0.266	1362.4	1065.7	12.779	3.907	2.98		Clay	100.0			7.08	1.20	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	5.940	0.186	1382.9	1075.9	9.756	3.544	3.05		Clay	100.0			5.61	1.20	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	5.640	0.126	1403.4	1086.2	9.093	2.551	2.99		Clay	100.0			5.33	1.19	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	5.350	0.108	1423.9	1096.5	8.460	2.329	3.00		Clay	100.0			5.06	1.19	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	5.180	0.122	1444.4	1106.7	8.056	2.737	3.05		Clay	100.0			4.90	1.19	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	5.400	0.113	1464.9	1117.0	8.357	2.421	3.01		Clay	100.0			5.10	1.18	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	5.920	0.103	1485.4	1127.3	9.186	1.989	2.93		Clay	97.5			5.60	1.18	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	6.520	0.088	1505.9	1137.5	10.140	1.526	2.84		Clay	89.9			6.16	1.18	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	6.990	0.086	1526.4	1147.8	10.850	1.381	2.79		Clay	86.1			6.61	1.18	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	6.830	0.085	1546.9	1158.1	10.460	1.403	2.81		Clay	87.5			6.46	1.17	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	6.140	0.092	1567.4	1168.3	9.169	1.718	2.90		Clay	94.9			5.80	1.17	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	5.880	0.112	1587.9	1178.6	8.631	2.202	2.98		Clay	100.0			5.56	1.17	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	6.060	0.097	1608.4	1188.9	8.842	1.846	2.93		Clay	97.3			5.73	1.16	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	5.490	0.089	1628.9	1199.1	7.798	1.904	2.98		Clay	100.0			5.19	1.16	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	5.520	0.087	1649.4	1209.4	7.765	1.853	2.98		Clay	100.0			5.22	1.16	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	5.870	0.094	1669.9	1219.7	8.257	1.867	2.96		Clay	99.5			5.55	1.16	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	7.610	0.140	1690.5	1230.0	11.000	2.070	2.87		Clay	92.9			7.19	1.15	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	12.100	0.121	1711.0	1240.3	15.447	1.076	2.60	Plastic	Clay	71.2	11.45		11.45	1.15	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	12.110	0.113	1731.5	1250.5	15.358	1.005	2.59	Plastic	Clay	70.2			11.45	1.15	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	8.360	0.099	1752.0	1260.8	11.872	1.323	2.75		Clay	82.6			7.90	1.15	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	9.180	0.264	1772.5	1271.1	13.050	3.183	2.92		Clay	96.4			8.68	1.14	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	22.960	0.531	1793.0	1281.3	26.799	2.407	2.59	Plastic	Clay	70.6		1.8	39.06	1.14	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	19.940	0.528	1813.5	1291.6	29.473	2.774	2.60		Clay	71.1			18.85	1.14	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	20.110	0.433	1834.0	1301.9	25.487	2.256	2.60	Plastic	Clay	70.6			19.01	1.14	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	12.680	0.236	1854.5	1312.1	17.914	2.008	2.69		Clay	78.2			11.98	1.13	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	7.810	0.126	1875.0	1322.4	10.394	1.833	2.87		Clay	92.3			7.38	1.13	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	7.020	0.173	1895.5	1332.7	9.113	2.849	3.02		Clay	100.0			6.64	1.13	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	8.380	0.179	1916.0	1342.9	11.054	2.412	2.91		Clay	95.6			7.92	1.13	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	12.970	0.234	1936.5	1353.2	17.739	1.950	2.69		Clay	77.9			12.26	1.13	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	18.160	0.222	1957.0	1363.5	20.231	1.292	2.54	Plastic	Clay	66.3		1.8	30.90	1.12	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	10.730	0.193	1977.5	1373.7	14.182	1.981	2.77		Clay	84.6			10.14	1.12	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.85

Total Settlement:	0.44	(Inches)

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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)
16.240	8.090	0.139	1998.0	1384.0	10.247	1.960	2.89		Clay	94.0			7.65	1.12	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	7.100	0.140	2018.5	1394.3	8.737	2.299	2.98		Clay	100.0			6.71	1.12	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	7.090	0.149	2039.0	1404.5	8.644	2.454	3.00		Clay	100.0			6.70	1.11	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	7.050	0.172	2059.5	1414.8	8.510	2.857	3.04		Clay	100.0			6.66	1.11	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	7.080	0.201	2080.0	1425.0	8.477	3.328	3.08		Clay	100.0			6.69	1.11	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	7.030	0.206	2100.5	1435.3	8.332	3.445	3.10		Clay	100.0			6.64	1.11	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	6.770	0.199	2121.0	1445.6	7.899	3.485	3.12		Clay	100.0			6.40	1.11	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	6.610	0.215	2141.5	1455.8	7.610	3.881	3.16		Clay	100.0			6.25	1.10	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	6.810	0.226	2162.0	1466.1	7.815	3.945	3.15		Clay	100.0			6.44	1.10	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	7.910	0.233	2182.6	1476.4	9.237	3.417	3.06		Clay	100.0			7.48	1.10	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	9.430	0.241	2203.1	1486.7	11.204	2.894	2.95		Clay	98.8			8.91	1.10	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	10.730	0.287	2223.6	1497.0	12.850	2.984	2.91		Clay	95.5			10.14	1.10	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	11.210	0.321	2244.1	1507.2	13.386	3.182	2.91		Clay	95.7			10.60	1.09	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	11.460	0.353	2264.6	1517.5	13.611	3.418	2.92		Clay	96.7			10.83	1.09	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	11.990	0.358	2285.1	1527.8	14.200	3.300	2.90		Clay	94.8			11.33	1.09	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	12.440	0.370	2305.6	1538.0	14.677	3.278	2.88		Clay	93.7			11.76	1.09	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	12.330	0.361	2326.1	1548.3	14.425	3.233	2.89		Clay	93.9			11.65	1.09	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	12.250	0.369	2346.6	1558.6	14.214	3.331	2.90		Clay	95.0			11.58	1.08	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	12.910	0.389	2367.1	1568.8	14.949	3.317	2.88		Clay	93.5			12.20	1.08	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	13.370	0.422	2387.6	1579.1	15.422	3.466	2.88		Clay	93.5			12.64	1.08	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	13.800	0.432	2408.1	1589.4	15.850	3.430	2.87		Clay	92.6			13.04	1.08	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	14.000	0.435	2428.6	1599.6	15.986	3.402	2.86		Clay	92.2			13.23	1.08	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	14.000	0.435	2449.1	1609.9	15.871	3.405	2.87		Clay	92.4			13.23	1.07	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	14.420	0.444	2469.6	1620.2	16.276	3.367	2.86		Clay	91.4			13.63	1.07	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	15.870	0.460	2490.1	1630.4	17.940	3.145	2.80		Clay	87.3			15.00	1.07	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	17.260	0.515	2510.6	1640.7	19.510	3.218	2.78		Clay	85.5			16.31	1.07	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	17.770	0.603	2531.1	1651.0	19.994	3.654	2.81		Clay	87.6			16.80	1.07	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	18.680	0.622	2551.6	1661.2	20.953	3.574	2.79		Clay	85.9			17.66	1.07	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	18.480	0.629	2572.1	1671.5	20.573	3.658	2.80		Clay	86.9			17.47	1.06	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	17.730	0.609	2592.6	1681.8	19.543	3.706	2.82		Clay	88.5			16.76	1.06	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	16.910	0.594	2613.1	1692.0	18.443	3.807	2.85		Clay	90.7			15.98	1.06	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	16.330	0.566	2633.6	1702.3	17.639	3.770	2.86		Clay	91.7			15.43	1.06	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	15.710	0.544	2654.3	1712.6	16.796	3.782	2.88		Clay	93.1			14.85	1.06	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	15.240	0.505	2674.8	1722.9	16.139	3.632	2.88		Clay	93.3			14.40	1.06	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	15.520	0.509	2695.3	1733.2	16.354	3.591	2.87		Clay	92.7			14.67	1.05	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	16.530	0.520	2715.8	1743.4	17.405	3.427	2.84		Clay	90.0			15.62	1.05	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	17.430	0.496	2736.3	1753.7	18.318	3.088	2.79		Clay	86.3			16.47	1.05	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	17.710	0.536	2756.8	1764.0	18.517	3.282	2.80		Clay	87.4			16.74	1.05	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	18.720	0.575	2777.3	1774.2	19.537	3.318	2.79		Clay	86.1			17.69	1.05	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	20.120	0.603	2797.8	1784.5	20.982	3.221	2.76		Clay	83.6			19.02	1.05	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	20.420	0.648	2818.3	1794.8	21.185	3.409	2.77		Clay	84.5			19.30	1.04	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	20.410	0.639	2838.8	1805.0	21.042	3.365	2.77		Clay	84.4			19.29	1.04	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	19.560	0.652	2859.3	1815.3	19.975	3.596	2.80		Clay	87.3			18.49	1.04	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	19.260	0.684	2879.8	1825.6	19.523	3.838	2.83		Clay	89.3			18.20	1.04	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	18.710	0.634	2900.3	1835.8	18.803	3.673	2.83		Clay	89.4			17.68	1.04	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	17.700	0.645	2920.8	1846.1	17.593	3.972	2.87		Clay	92.9			16.73	1.04	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	18.690	0.566	2941.3	1856.4	18.552	3.287	2.80		Clay	87.3			17.67	1.04	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	20.470	0.611	2961.8	1866.6	20.346	3.218	2.77		Clay	84.4			19.35	1.03	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	20.060	0.584	2982.3	1876.9	19.787	3.145	2.77		Clay	84.6			18.96	1.03	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	16.830	0.619	3002.8	1887.2	16.245	4.038	2.91		Clay	95.4			15.91	1.03	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	13.760	0.655	3023.3	1897.4	12.910	5.348	3.06		Clay	100.0			13.01	1.03	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	10.710	0.693	3043.8	1907.7	9.633	7.542	3.25		Clay	100.0			10.12	1.03	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	8.660	0.512	3064.3	1918.0	7.433	7.183	3.33		Clay	100.0			8.19	1.03	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	8.060	0.398	3084.8	1928.2	6.760	6.107	3.32		Clay	100.0			7.62	1.02	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	9.450	0.370	3105.3	1938.5	8.148	4.685	3.18		Clay	100.0			8.93	1.02	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	11.240	0.273	3125.8	1948.8	9.932	2.821	2.98		Clay	100.0			10.62	1.02	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	16.500	0.405	3146.4	1959.1	15.239	2.713	2.82		Clay	88.8			15.60	1.02	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	25.020	0.460	3166.9	1969.4	22.962	1.963	2.60		Sand	70.6			23.65	1.04	24.58	82.48	0.92	0.735	1.007	0.118	0.141	0.19	0.04	0.04
25.755	20.490	0.421	3187.4	1979.6	19.091	2.228	2.69		Clay	78.4			19.37	1.02	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	15.090	0.315	3207.9	1989.9	13.555	2.336	2.83		Clay	89.1			14.26	1.02	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	10.540	0.230	3228.4	2000.2	8.925	2.577	3.00		Clay	100.0			9.96	1.01	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	9.120	0.200	3248.9	2010.4	7.457	2.668	3.08		Clay	100.0			8.62	1.01	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	11.180	0.212	3269.4	2020.7	9.448	2.221	2.95		Clay	98.7			10.57	1.01	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	16.210	0.282	3289.9	2031.0	14.343	1.936	2.76		Clay	83.9			15.32	1.01	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	20.170	0.362	3310.4	2041.2	18.141	1.955	2.68		Clay	77.3			19.06	1.01	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	22.270	0.422	3330.9	2051.5	20.087	2.048	2.65		Clay	75.3			21.05	1.01	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	23.570	0.494	3351.4	2061.8	21.239	2.256	2.66		Clay	75.7			22.28	1.01	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.85

Total Settlement:	0.44	(Inches)

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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)
27.231	24.370	0.542	3371.9	2072.0	21.896	2.389	2.66		Clay	76.0			23.03	1.01	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	24.470	0.660	3392.4	2082.3	21.874	2.898	2.71		Clay	80.1			23.13	1.00	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	25.370	0.675	3412.9	2092.6	22.617	2.852	2.70		Clay	78.9			23.98	1.00	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	25.230	0.639	3433.4	2102.8	22.364	2.718	2.69		Clay	78.1			23.85	1.00	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	26.490	0.638	3453.9	2113.1	23.438	2.576	2.66		Clay	75.7			25.04	1.00	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	27.580	0.669	3474.4	2123.4	24.342	2.589	2.65		Clay	74.8			26.07	1.00	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	26.660	0.787	3494.9	2133.6	23.352	3.159	2.72		Clay	80.2			25.20	1.00	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	26.810	0.884	3515.4	2143.9	23.371	3.529	2.75		Clay	82.7			25.34	1.00	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	27.190	0.943	3535.9	2154.2	23.603	3.709	2.76		Clay	83.5			25.70	1.00	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	27.250	0.891	3556.4	2164.4	23.537	3.498	2.74		Clay	82.3			25.76	0.99	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	28.870	0.933	3576.9	2174.7	24.906	3.445	2.72		Clay	80.4			27.29	0.99	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	30.930	0.985	3597.4	2185.0	26.665	3.381	2.69		Clay	78.2			29.23	0.99	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	30.990	0.985	3617.9	2195.2	26.586	3.375	2.69		Clay	78.3			29.29	0.99	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	30.930	0.887	3638.5	2205.5	26.398	3.047	2.66		Clay	76.2			29.23	0.99	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	30.560	0.842	3659.0	2215.8	25.932	2.931	2.66		Clay	75.8			28.88	0.99	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	31.410	0.825	3679.5	2226.1	26.567	2.790	2.64		Clay	74.0			29.69	0.99	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	29.500	0.819	3700.0	2236.3	24.728	2.962	2.68		Clay	77.3			27.88	0.99	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	30.860	0.847	3720.5	2246.6	25.816	2.921	2.66		Clay	75.8			29.17	0.98	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	34.060	0.919	3741.0	2256.9	28.526	2.855	2.62		Clay	72.6			32.19	0.98	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	35.280	0.997	3761.5	2267.1	29.464	2.985	2.62		Clay	72.8			33.35	0.98	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	32.610	1.034	3782.0	2277.4	26.977	3.366	2.69		Clay	77.8			30.82	0.98	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	30.050	0.942	3802.5	2287.7	24.609	3.347	2.71		Clay	80.1			28.40	0.98	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	38.350	0.963	3823.0	2297.9	33.049	2.643	2.55		Sand	67.0			36.25	0.96	34.76	94.89	0.90	0.752	0.992	0.131	0.161	0.21	0.03	0.03
31.004	37.210	0.858	3843.5	2308.2	31.935	2.431	2.54		Sand	66.1	36.25		36.25	0.96	34.68	94.58	0.89	0.752	0.991	0.131	0.160	0.21	0.03	0.03
31.168	27.980	0.736	3864.0	2318.5	22.470	2.826	2.70		Clay	78.9			26.45	0.98	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	24.880	0.617	3884.5	2328.7	19.700	2.690	2.73		Clay	81.4			23.52	0.98	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	21.200	0.589	3905.0	2339.0	16.458	3.060	2.83		Clay	89.1			20.04	0.97	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	18.010	0.529	3925.5	2349.3	13.661	3.297	2.91		Clay	95.8			17.02	0.97	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	15.050	0.409	3946.0	2359.5	11.084	3.128	2.97		Clay	100.0			14.22	0.97	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	14.550	0.281	3966.5	2369.8	10.606	2.236	2.90		Clay	95.4			13.75	0.97	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	13.670	0.275	3987.0	2380.1	9.812	2.355	2.95		Clay	98.6			12.92	0.97	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	17.110	0.350	4007.5	2390.3	12.639	2.317	2.85		Clay	91.0			16.17	0.97	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	21.090	0.375	4028.0	2400.6	15.893	1.966	2.73		Clay	81.2			19.93	0.97	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	21.830	0.379	4048.5	2410.9	16.430	1.914	2.71		Clay	79.7			20.63	0.97	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	21.490	0.366	4069.0	2421.1	16.071	1.881	2.71		Clay	80.0			20.31	0.97	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	19.060	0.366	4089.5	2431.4	13.996	2.151	2.79		Clay	86.6			18.02	0.96	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	16.320	0.383	4110.0	2441.7	11.685	2.685	2.91		Clay	96.1			15.43	0.96	n.a.	n.a.	0.89	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	13.970	0.432	4130.6	2452.0	9.710	3.629	3.05		Clay	100.0			13.20	0.96	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	12.860	0.394	4151.1	2462.3	8.760	3.653	3.09		Clay	100.0			12.16	0.96	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	15.660	0.344	4171.6	2472.5	10.980	2.534	2.92		Clay	96.8			14.80	0.96	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	24.540	0.342	4192.1	2482.8	18.080	1.524	2.62		Clay	72.6			23.19	0.96	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	26.890	0.398	4212.6	2493.1	21.581	1.606	2.57		Sand	68.4			25.42	0.91	23.24	80.34	0.88	0.756	0.985	0.116	0.135	0.18	0.04	0.03
34.121	26.770	0.522	4233.1	2503.3	19.696	2.117	2.67		Clay	76.5			25.30	0.96	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	25.900	0.623	4253.6	2513.6	18.916	2.621	2.74		Clay	82.0			24.48	0.96	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	23.840	0.618	4274.1	2523.9	17.198	2.848	2.79		Clay	86.4			22.53	0.95	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	20.610	0.610	4294.6	2534.1	14.571	3.304	2.89		Clay	94.1			19.48	0.95	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	17.110	0.606	4315.1	2544.4	11.753	4.053	3.02		Clay	100.0			16.17	0.95	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	16.220	0.624	4335.6	2554.7	11.001	4.441	3.06		Clay	100.0			15.33	0.95	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	17.800	0.573	4356.1	2564.9	12.181	3.668	2.98		Clay	100.0			16.82	0.95	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	17.170	0.368	4376.6	2575.2	11.635	2.456	2.89		Clay	94.5			16.23	0.95	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	16.800	0.494	4397.1	2585.5	11.295	3.383	2.98		Clay	100.0			15.88	0.95	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	21.230	0.540	4417.6	2595.7	14.656	2.839	2.85		Clay	90.8			20.07	0.95	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	20.340	0.667	4438.1	2606.0	13.907	3.681	2.93		Clay	97.7			19.22	0.95	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	22.750	0.655	4458.6	2616.3	15.687	3.192	2.85		Clay	91.3			21.50	0.95	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	25.840	0.731	4479.1	2626.5	17.971	3.097	2.80		Clay	86.9			24.42	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	45.690	0.963	4499.6	2636.8	36.781	2.217	2.47		Sand	60.2	234.55		234.55	0.94	221.32	332.21	0.87	0.758	0.934	#########	########	##########	0.00	0.00
36.417	115.460	1.053	4520.1	2647.1	95.661	0.930	1.91		Sand	15.4	234.55		234.55	0.94	221.09	256.26	0.87	0.758	0.933	282.140	579.011	763.95	0.00	0.00
36.581	150.690	0.958	4540.6	2657.3	125.182	0.645	1.72		Sand	0.3	234.55		234.55	0.93	218.79	218.79	0.87	0.758	0.932	6.502	13.327	17.58	0.00	0.00
36.745	174.420	0.790	4561.1	2667.6	144.908	0.459	1.58		Sand	0.0	234.55		234.55	0.93	218.52	218.52	0.87	0.758	0.931	6.368	13.036	17.20	0.00	0.00
36.909	221.600	0.551	4581.6	2677.9	184.262	0.251	1.35		Sand	0.0	234.55		234.55	0.93	218.24	218.24	0.87	0.758	0.929	6.238	12.754	16.83	0.00	0.00
37.073	248.150	0.715	4602.1	2688.1	206.165	0.291	1.34		Sand	0.0			234.55	0.93	217.97	217.97	0.87	0.758	0.928	6.110	12.476	16.46	0.00	0.00
37.238	237.210	0.447	4622.8	2698.5	196.605	0.190	1.28		Sand	0.0			224.21	0.93	207.44	207.44	0.87	0.758	0.930	2.950	6.037	7.96	0.00	0.00
37.402	200.770	0.809	4643.3	2708.7	165.782	0.408	1.50		Sand	0.0			189.76	0.91	173.33	173.33	0.86	0.758	0.951	0.565	1.065	1.40	0.00	0.00
37.566	161.360	1.053	4663.8	2719.0	132.600	0.662	1.70		Sand	0.0			152.51	0.90	137.09	137.09	0.86	0.758	0.964	0.222	0.328	0.43	0.02	0.02
37.730	132.340	1.951	4684.3	2729.3	108.190	1.501	2.00		Sand	23.2			125.09	0.91	113.33	159.71	0.86	0.758	0.956	0.368	0.630	0.83	0.01	0.01
37.894	100.970	2.624	4704.8	2739.5	81.920	2.661	2.26		Sand	44.2			95.43	0.90	86.06	151.63	0.86	0.758	0.958	0.300	0.485	0.64	0.02	0.01
38.058	95.260	2.258	4725.3	2749.8	77.024	2.431	2.26		Sand	43.4			90.04	0.90	80.82	144.59	0.86	0.758	0.960	0.257	0.396	0.52	0.02	0.02

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.85

Total Settlement:	0.44	(Inches)

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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)
38.222	127.180	1.779	4745.8	2760.1	103.289	1.425	2.00		Sand	23.1			120.21	0.90	108.16	153.54	0.86	0.758	0.956	0.314	0.513	0.68	0.02	0.01
38.386	180.480	0.938	4766.3	2770.3	147.117	0.527	1.61		Sand	16.0			170.59	0.91	155.33	186.69	0.86	0.758	0.939	0.965	1.993	2.63	0.00	0.00
38.550	193.500	0.587	4786.8	2780.6	157.572	0.307	1.46		Sand	16.0			182.89	0.91	167.13	199.61	0.86	0.758	0.929	1.849	3.777	4.98	0.00	0.00
38.714	171.410	0.690	4807.3	2790.9	139.093	0.408	1.57		Sand	16.0			162.01	0.90	146.59	177.12	0.86	0.758	0.943	0.649	1.250	1.65	0.00	0.00
38.878	148.640	0.707	4827.8	2801.1	120.124	0.483	1.66		Sand	16.0			140.49	0.89	125.71	154.25	0.86	0.758	0.953	0.319	0.523	0.69	0.02	0.01
39.042	132.040	0.690	4848.3	2811.4	106.284	0.532	1.73		Sand	16.0			124.80	0.89	110.63	137.74	0.86	0.758	0.959	0.225	0.332	0.44	0.02	0.02
39.206	132.970	0.690	4868.8	2821.7	106.844	0.529	1.72		Sand	16.0			125.68	0.89	111.28	138.44	0.86	0.758	0.958	0.228	0.337	0.44	0.02	0.01
39.370	152.380	0.739	4889.3	2831.9	122.500	0.493	1.66		Sand	16.0			144.03	0.89	128.50	157.30	0.86	0.758	0.950	0.345	0.577	0.76	0.01	0.01
39.534	155.120	0.648	4909.8	2842.2	124.505	0.424	1.62		Sand	16.0			146.62	0.89	130.78	159.80	0.85	0.758	0.949	0.369	0.627	0.83	0.01	0.01
39.698	108.600	1.018	4930.3	2852.5	86.401	0.959	1.95		Sand	18.9	146.62		146.62	0.89	131.16	169.18	0.85	0.757	0.943	0.490	0.887	1.17	0.01	0.00
39.862	58.110	1.528	4950.8	2862.7	45.209	2.746	2.46		Sand	59.7	146.62		146.62	0.91	133.75	219.84	0.85	0.757	0.909	7.045	14.093	18.61	0.00	0.00
40.026	43.790	1.231	4971.3	2873.0	28.754	2.980	2.63		Clay	73.4			41.39	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	28.780	0.977	4991.8	2883.3	18.232	3.717	2.84		Clay	90.5			27.20	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	27.300	0.614	5012.3	2893.5	17.138	2.476	2.76		Clay	83.6			25.80	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	27.670	0.512	5032.8	2903.8	17.325	2.035	2.70		Clay	79.4			26.15	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	28.210	0.497	5053.3	2914.1	17.627	1.935	2.69		Clay	77.9			26.66	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	28.110	0.527	5073.8	2924.3	17.490	2.061	2.70		Clay	79.4			26.57	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	28.400	0.523	5094.4	2934.6	17.619	2.023	2.70		Clay	78.8			26.84	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	28.690	0.514	5114.9	2944.9	17.748	1.967	2.69		Clay	78.0			27.12	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	29.810	0.502	5135.4	2955.2	18.437	1.843	2.66		Clay	75.6			28.18	0.92	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	30.740	0.486	5155.9	2965.4	18.993	1.726	2.63		Clay	73.5			29.05	0.91	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	29.710	0.446	5176.4	2975.7	18.229	1.644	2.63		Clay	73.8			28.08	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	29.290	0.411	5196.9	2986.0	17.878	1.540	2.63		Clay	73.1			27.68	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	29.130	0.448	5217.4	2996.2	17.703	1.689	2.65		Clay	75.2			27.53	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	30.850	0.548	5237.9	3006.5	18.780	1.941	2.66		Clay	76.1			29.16	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	29.240	0.611	5258.4	3016.8	17.642	2.296	2.73		Clay	81.3			27.64	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	27.550	0.708	5278.9	3027.0	16.459	2.842	2.81		Clay	87.6			26.04	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	25.760	0.699	5299.4	3037.3	15.218	3.025	2.85		Clay	91.0			24.35	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	24.120	0.685	5319.9	3047.6	14.083	3.192	2.89		Clay	94.3			22.80	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	24.350	0.640	5340.4	3057.8	14.180	2.952	2.87		Clay	92.5			23.02	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	24.820	0.635	5360.9	3068.1	14.432	2.868	2.86		Clay	91.4			23.46	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	24.650	0.636	5381.4	3078.4	14.267	2.896	2.86		Clay	92.0			23.30	0.91	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	23.570	0.654	5401.9	3088.6	13.513	3.134	2.90		Clay	95.1			22.28	0.91	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	21.540	0.644	5422.4	3098.9	12.152	3.420	2.96		Clay	99.9			20.36	0.90	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	19.060	0.639	5442.9	3109.2	10.510	3.911	3.05		Clay	100.0			18.02	0.90	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	17.260	0.557	5463.4	3119.4	9.315	3.834	3.08		Clay	100.0			16.31	0.90	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	15.740	0.462	5483.9	3129.7	8.306	3.554	3.11		Clay	100.0			14.88	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	16.100	0.421	5504.4	3140.0	8.502	3.154	3.07		Clay	100.0			15.22	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	16.300	0.402	5524.9	3150.2	8.595	2.970	3.05		Clay	100.0			15.41	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	16.100	0.368	5545.4	3160.5	8.434	2.761	3.04		Clay	100.0			15.22	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	18.110	0.379	5565.9	3170.8	9.668	2.473	2.96		Clay	100.0			17.12	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	19.690	0.395	5586.5	3181.1	10.623	2.338	2.91		Clay	96.2			18.61	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	18.420	0.358	5607.0	3191.4	9.787	2.292	2.94		Clay	98.2			17.41	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	18.050	0.396	5627.5	3201.6	9.518	2.599	2.98		Clay	100.0			17.06	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	22.640	0.417	5648.0	3211.9	12.339	2.104	2.84		Clay	89.8			21.40	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	24.960	0.416	5668.5	3222.2	13.733	1.880	2.77		Clay	84.6			23.59	0.89	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	27.190	0.440	5689.0	3232.4	15.063	1.807	2.73		Clay	81.1			25.70	0.89	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	29.300	0.435	5709.5	3242.7	16.311	1.645	2.68		Clay	77.0			27.69	0.89	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	30.270	0.447	5730.0	3253.0	16.849	1.631	2.66		Clay	75.9			28.61	0.89	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	29.460	0.450	5750.5	3263.2	16.293	1.693	2.68		Clay	77.6			27.84	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	28.100	0.468	5771.0	3273.5	15.405	1.856	2.72		Clay	81.0			26.56	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	26.700	0.459	5791.5	3283.8	14.498	1.928	2.76		Clay	83.5			25.24	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	25.060	0.453	5812.0	3294.0	13.451	2.045	2.80		Clay	86.8			23.69	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	22.840	0.445	5832.5	3304.3	12.059	2.234	2.86		Clay	91.6			21.59	0.89	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	19.820	0.415	5853.0	3314.6	10.193	2.457	2.94		Clay	98.3			18.73	0.89	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	16.720	0.368	5873.5	3324.8	8.291	2.670	3.04		Clay	100.0			15.80	0.89	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	15.000	0.347	5894.0	3335.1	7.228	2.879	3.10		Clay	100.0			14.18	0.89	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	14.720	0.287	5914.5	3345.4	7.032	2.440	3.08		Clay	100.0			13.91	0.89	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	15.190	0.302	5935.0	3355.6	7.285	2.471	3.07		Clay	100.0			14.36	0.89	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	15.240	0.252	5955.5	3365.9	7.286	2.055	3.02		Clay	100.0			14.40	0.88	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	16.280	0.283	5976.0	3376.2	7.874	2.129	3.00		Clay	100.0			15.39	0.88	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	15.820	0.294	5996.5	3386.4	7.572	2.293	3.03		Clay	100.0			14.95	0.88	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	20.390	0.249	6017.0	3396.7	10.234	1.433	2.82		Clay	88.5			19.27	0.88	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	23.320	0.318	6037.5	3407.0	11.917	1.566	2.78		Clay	85.5			22.04	0.88	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	25.840	0.419	6058.0	3417.2	13.351	1.837	2.77		Clay	85.0			24.42	0.88	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	23.060	0.556	6078.6	3427.6	11.682	2.777	2.92		Clay	96.8			21.80	0.88	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	20.880	0.491	6099.1	3437.8	10.373	2.754	2.96		Clay	100.0			19.74	0.88	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 2

PGA (A_{max}) 0.85

Total Settlement: 0.44 (Inches)

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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)
49.213	20.210	0.415	6119.6	3448.1	9.948	2.420	2.95		Clay	98.8			19.10	0.88	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	20.550	0.411	6140.1	3458.4	10.109	2.351	2.93		Clay	97.7			19.42	0.88	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	21.190	0.251	6160.6	3468.6	10.442	1.386	2.80		Clay	87.3			20.03	0.88	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	21.690	0.344	6181.1	3478.9	10.693	1.850	2.86		Clay	91.7			20.50	0.88	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	27.280	0.904	6201.6	3489.2	13.860	3.739	2.94		Clay	98.1			25.78	0.88	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	56.280	1.432	6222.1	3499.4	39.078	2.693	2.50		Sand	63.0			53.19	0.78	41.53	102.67	0.80	0.743	0.945	0.141	0.170	0.23	0.03	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.81

Total Settlement:	0.46	(Inches)

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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)
5.085	31.520	0.371	610.2	610.2	54.941	1.189	2.16		Unsaturated	35.9			29.79	1.70	50.65	101.79	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	27.340	0.611	629.9	629.9	46.818	2.261	2.39		Unsaturated	54.3			25.84	1.70	43.93	103.18	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	24.150	0.744	649.6	649.6	40.644	3.123	2.53		Unsaturated	65.4			22.83	1.70	38.80	99.76	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	21.210	0.687	669.2	669.2	35.085	3.291	2.59		Unsaturated	70.4			20.05	1.70	34.08	94.71	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	19.420	0.688	688.9	688.9	39.549	3.607	2.58		Unsaturated	69.5			18.36	1.70	31.20	90.82	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	18.310	0.687	708.7	708.7	36.496	3.826	2.62		Unsaturated	73.0			17.31	1.70	29.42	89.15	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	20.300	0.669	728.4	728.4	39.751	3.356	2.56		Unsaturated	67.7			19.19	1.70	32.62	92.28	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	24.510	0.632	748.1	748.1	38.367	2.618	2.50		Unsaturated	62.8			23.17	1.68	38.95	99.32	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	26.380	0.685	767.8	767.8	40.791	2.635	2.48		Unsaturated	61.4			24.93	1.65	41.15	101.78	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	20.850	0.725	787.4	787.4	38.623	3.544	2.58		Unsaturated	69.7			19.71	1.66	32.77	92.88	0.99	0.521	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.726	17.280	0.694	807.1	807.1	41.819	4.112	2.60		Unsaturated	71.3			16.33	1.67	27.24	86.04	0.99	0.521	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.890	14.230	0.634	826.8	826.8	33.422	4.589	2.71		Unsaturated	79.6			13.45	1.67	22.41	81.08	0.99	0.521	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.054	12.870	0.502	846.5	846.5	29.408	4.033	2.71		Unsaturated	79.7			12.16	1.66	20.15	78.17	0.99	0.520	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.218	12.250	0.424	866.2	866.2	27.286	3.588	2.70		Unsaturated	79.0			11.58	1.64	19.01	76.58	0.99	0.520	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.382	18.290	0.339	885.8	885.8	26.071	1.899	2.54		Unsaturated	66.4			17.29	1.59	27.48	85.39	0.99	0.520	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.546	26.710	0.296	905.5	905.5	37.938	1.127	2.28		Unsaturated	45.3			25.25	1.55	39.03	93.31	0.99	0.520	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.710	18.670	0.318	925.2	925.2	26.026	1.747	2.52		Unsaturated	64.7			17.65	1.55	27.44	84.98	0.99	0.519	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.874	14.790	0.336	944.9	944.9	23.795	2.347	2.63		Unsaturated	73.3			13.98	1.56	21.75	79.27	0.99	0.519	1.073	n.a.	n.a.	n.a.	0.00	0.00
8.038	12.580	0.366	964.6	964.6	25.084	3.025	2.68		Unsaturated	77.4			11.89	1.55	18.43	75.60	0.99	0.519	1.069	n.a.	n.a.	n.a.	0.00	0.00
8.202	11.880	0.331	984.2	984.2	23.140	2.907	2.70		Unsaturated	78.7			11.23	1.54	17.26	74.26	0.98	0.519	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.366	11.200	0.295	1003.9	1003.9	21.313	2.758	2.71		Unsaturated	79.8			10.59	1.52	16.13	72.95	0.98	0.518	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.530	10.850	0.282	1023.6	1023.6	20.200	2.728	2.73		Unsaturated	81.0			10.26	1.51	15.48	72.27	0.98	0.518	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.694	10.930	0.267	1043.3	1043.3	19.953	2.565	2.71		Unsaturated	80.1			10.33	1.49	15.43	72.08	0.98	0.518	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.858	10.780	0.239	1063.0	1063.0	19.283	2.332	2.70		Unsaturated	79.1			10.19	1.48	15.08	71.49	0.98	0.517	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.022	10.950	0.249	1082.6	1082.6	19.228	2.392	2.71		Unsaturated	79.7			10.35	1.46	15.15	71.66	0.98	0.517	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.186	10.670	0.217	1102.3	1102.3	18.359	2.145	2.70		Unsaturated	78.8			10.09	1.45	14.64	70.87	0.98	0.517	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.350	11.090	0.252	1122.0	1122.0	18.768	2.393	2.72		Unsaturated	80.4			10.48	1.43	15.04	71.61	0.98	0.517	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.514	14.200	0.289	1141.7	1141.7	23.876	2.120	2.60		Unsaturated	71.1			13.42	1.41	18.95	75.28	0.98	0.516	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.678	22.250	0.321	1161.4	1161.4	27.646	1.481	2.46		Unsaturated	59.7	38.85	1.5	58.28	1.28	74.66	144.22	0.98	0.516	1.091	n.a.	n.a.	n.a.	0.00	0.00
9.843	31.260	0.321	1181.2	1181.2	38.799	1.047	2.25		Unsaturated	43.2	38.85	1.5	58.28	1.28	74.69	136.82	0.98	0.516	1.083	n.a.	n.a.	n.a.	0.00	0.00
10.007	37.910	0.300	1200.8	1200.8	46.811	0.804	2.12		Sand	32.8	38.85	1.5	58.28	1.28	74.80	128.45	0.98	0.516	1.076	0.193	0.301	0.58	0.02	0.04
10.171	41.100	0.294	1220.5	1220.5	50.390	0.726	2.07		Sand	28.8		1.5	58.27	1.28	74.65	123.46	0.98	0.520	1.070	0.179	0.271	0.52	0.03	0.04
10.335	39.480	0.331	1240.2	1240.2	47.976	0.852	2.13		Sand	33.2		1.5	55.97	1.27	71.13	124.34	0.98	0.524	1.069	0.182	0.275	0.53	0.03	0.04
10.499	38.910	0.406	1259.9	1259.9	46.890	1.061	2.19		Sand	38.0		1.5	55.17	1.26	69.45	126.67	0.98	0.528	1.068	0.188	0.288	0.55	0.03	0.04
10.663	42.970	0.442	1279.6	1279.6	51.451	1.044	2.15		Sand	35.1		1.5	60.92	1.24	75.80	131.94	0.98	0.532	1.069	0.204	0.323	0.61	0.02	0.04
10.827	43.630	0.433	1299.2	1299.2	51.844	1.007	2.14		Sand	34.2		1.5	61.86	1.24	76.46	131.85	0.98	0.535	1.067	0.203	0.322	0.60	0.02	0.04
10.991	29.410	0.342	1318.9	1318.9	34.420	1.190	2.33		Sand	49.2	41.24	1.5	61.86	1.22	75.39	140.97	0.98	0.539	1.070	0.239	0.401	0.74	0.02	0.03
11.155	15.720	0.180	1339.4	1329.7	17.945	1.196	2.57	plastic	Clay	68.4			14.86	1.13	n.a.	n.a.	0.98	0.543	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	9.860	0.129	1359.9	1340.0	13.702	1.405	2.70	plastic	Clay	79.4			9.32	1.13	n.a.	n.a.	0.97	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	9.750	0.076	1380.4	1350.2	13.420	0.839	2.61	plastic	Clay	71.5			9.22	1.13	n.a.	n.a.	0.97	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	10.720	0.078	1400.9	1360.5	12.901	0.778	2.61	plastic	Clay	71.6			10.13	1.12	n.a.	n.a.	0.97	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	16.340	0.204	1421.4	1370.8	18.354	1.305	2.58	plastic	Clay	69.3			15.44	1.12	n.a.	n.a.	0.97	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	29.270	0.283	1441.9	1381.0	33.401	0.991	2.29	plastic	Clay	46.6			27.67	1.12	n.a.	n.a.	0.97	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	28.490	0.288	1462.4	1391.3	32.357	1.038	2.32	plastic	Clay	48.4			26.93	1.12	n.a.	n.a.	0.97	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	20.790	0.328	1482.9	1401.6	23.284	1.636	2.55	plastic	Clay	66.6			19.65	1.11	n.a.	n.a.	0.97	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	15.080	0.346	1503.4	1411.8	20.297	2.415	2.69	plastic	Clay	78.3			14.25	1.11	n.a.	n.a.	0.97	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	25.460	0.281	1523.9	1422.1	28.475	1.138	2.39	plastic	Clay	53.8			24.06	1.11	n.a.	n.a.	0.97	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	28.720	0.182	1544.4	1432.4	32.106	0.651	2.22	plastic	Clay	40.5			27.15	1.11	n.a.	n.a.	0.97	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	22.470	0.230	1564.9	1442.6	24.826	1.061	2.42	plastic	Clay	56.6			21.24	1.11	n.a.	n.a.	0.97	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	13.700	0.248	1585.4	1452.9	17.768	1.921	2.68		Clay	77.5			12.95	1.10	n.a.	n.a.	0.97	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	12.500	0.162	1605.9	1463.2	15.989	1.385	2.64		Clay	74.5			11.81	1.10	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	11.180	0.128	1626.4	1473.4	14.072	1.235	2.67		Clay	76.3			10.57	1.10	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	8.080	0.108	1646.9	1483.7	9.782	1.488	2.84		Clay	90.5			7.64	1.10	n.a.	n.a.	0.97	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	11.100	0.137	1667.5	1494.0	13.743	1.334	2.69		Clay	78.4			10.49	1.10	n.a.	n.a.	0.97	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	9.310	0.099	1688.0	1504.3	11.256	1.169	2.74		Clay	82.2			8.80	1.09	n.a.	n.a.	0.97	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	5.870	0.078	1708.5	1514.6	6.623	1.555	3.00		Clay	100.0			5.55	1.09	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	5.550	0.096	1729.0	1524.8	6.146	2.049	3.09		Clay	100.0			5.25	1.09	n.a.	n.a.	0.96	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	6.390	0.117	1749.5	1535.1	7.186	2.121	3.04		Clay	100.0			6.04	1.09	n.a.	n.a.	0.96	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	7.590	0.164	1770.0	1545.4	8.678	2.446	3.00		Clay	100.0			7.17	1.09	n.a.	n.a.	0.96	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	8.760	0.219	1790.5	1555.6	10.111	2.785	2.97		Clay	100.0			8.28	1.08	n.a.	n.a.	0.96	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	8.900	0.262	1811.0	1565.9	10.211	3.277	3.01		Clay	100.0			8.41	1.08	n.a.	n.a.	0.96	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	8.480	0.271	1831.5	1576.2	9.598	3.583	3.06		Clay	100.0			8.02	1.08	n.a.	n.a.	0.96	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	8.330	0.288	1852.0	1586.4	9.334	3.890	3.09		Clay	100.0			7.87	1.08	n.a.	n.a.	0.96	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.260	0.276	1872.5	1596.7	9.174	3.769	3.08		Clay	100.0			7.81	1.08	n.a.	n.a.	0.96	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	7.890	0.260	1893.0	1607.0	8.642	3.745	3.10		Clay	100.0			7.46	1.08	n.a.	n.a.	0.96	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	7.970	0.254	1913.5	1617.2	8.673	3.622	3.09		Clay	100.0			7.53	1.07	n.a.	n.a.	0.96	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	8.300	0.264	1934.0	1627.5	9.011	3.600	3.08		Clay	100.0			7.84	1.07	n.a.	n.a.	0.96	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	8.570	0.259	1954.5	1637.8	9.272	3.411	3.06		Clay	100.0			8.10	1.07	n.a.	n.a.	0.96	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.81

Total Settlement:	0.46	(Inches)

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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)
16.240	8.310	0.271	1975.0	1648.0	8.886	3.701	3.09		Clay	100.0			7.85	1.07	n.a.	n.a.	0.96	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	8.690	0.289	1995.5	1658.3	9.277	3.757	3.08		Clay	100.0			8.21	1.07	n.a.	n.a.	0.96	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	8.780	0.293	2016.0	1668.6	9.316	3.770	3.08		Clay	100.0			8.30	1.06	n.a.	n.a.	0.96	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	8.020	0.292	2036.5	1678.8	8.341	4.170	3.14		Clay	100.0			7.58	1.06	n.a.	n.a.	0.96	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	7.040	0.230	2057.0	1689.1	7.118	3.826	3.18		Clay	100.0			6.65	1.06	n.a.	n.a.	0.95	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	6.610	0.199	2077.5	1699.4	6.557	3.572	3.19		Clay	100.0			6.25	1.06	n.a.	n.a.	0.95	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	6.820	0.179	2098.0	1709.6	6.751	3.102	3.15		Clay	100.0			6.45	1.06	n.a.	n.a.	0.95	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	7.290	0.201	2118.5	1719.9	7.246	3.226	3.13		Clay	100.0			6.89	1.06	n.a.	n.a.	0.95	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	8.170	0.224	2139.0	1730.2	8.208	3.155	3.08		Clay	100.0			7.72	1.05	n.a.	n.a.	0.95	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	8.240	0.278	2159.6	1740.5	8.228	3.883	3.13		Clay	100.0			7.79	1.05	n.a.	n.a.	0.95	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	8.100	0.273	2180.1	1750.8	8.008	3.894	3.14		Clay	100.0			7.66	1.05	n.a.	n.a.	0.95	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	7.360	0.260	2200.6	1761.0	7.109	4.154	3.20		Clay	100.0			6.96	1.05	n.a.	n.a.	0.95	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	6.960	0.273	2221.1	1771.3	6.605	4.667	3.25		Clay	100.0			6.58	1.05	n.a.	n.a.	0.95	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	6.660	0.277	2241.6	1781.5	6.218	5.001	3.29		Clay	100.0			6.29	1.05	n.a.	n.a.	0.95	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	6.720	0.264	2262.1	1791.8	6.238	4.724	3.28		Clay	100.0			6.35	1.04	n.a.	n.a.	0.95	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	6.530	0.219	2282.6	1802.1	5.981	4.064	3.26		Clay	100.0			6.17	1.04	n.a.	n.a.	0.95	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	6.270	0.171	2303.1	1812.3	5.648	3.341	3.23		Clay	100.0			5.93	1.04	n.a.	n.a.	0.95	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	7.010	0.140	2323.6	1822.6	6.417	2.394	3.11		Clay	100.0			6.63	1.04	n.a.	n.a.	0.95	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	6.400	0.171	2344.1	1832.9	5.705	3.271	3.22		Clay	100.0			6.05	1.04	n.a.	n.a.	0.95	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	6.540	0.174	2364.6	1843.1	5.814	3.248	3.21		Clay	100.0			6.18	1.04	n.a.	n.a.	0.95	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	14.590	0.265	2385.1	1853.4	14.457	1.978	2.76		Clay	84.0			13.79	1.04	n.a.	n.a.	0.94	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	18.300	0.429	2405.6	1863.7	18.348	2.509	2.74		Clay	82.0			17.30	1.03	n.a.	n.a.	0.94	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	19.330	0.612	2426.1	1873.9	19.336	3.378	2.80		Clay	86.8			18.27	1.03	n.a.	n.a.	0.94	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	19.350	0.719	2446.6	1884.2	19.241	3.967	2.84		Clay	90.5			18.29	1.03	n.a.	n.a.	0.94	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	19.750	0.775	2467.1	1894.5	19.548	4.185	2.85		Clay	91.2			18.67	1.03	n.a.	n.a.	0.94	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	19.650	0.864	2487.6	1904.7	19.327	4.694	2.89		Clay	94.1			18.57	1.03	n.a.	n.a.	0.94	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	23.110	0.699	2508.1	1915.0	22.826	3.198	2.73		Clay	81.1			21.84	1.03	n.a.	n.a.	0.94	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	29.000	0.591	2528.6	1925.3	27.483	2.131	2.55	plastic	Clay	67.3			27.41	1.03	n.a.	n.a.	0.94	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	24.710	0.508	2549.1	1935.5	24.216	2.168	2.60		Clay	71.2			23.36	1.02	n.a.	n.a.	0.94	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	20.220	0.562	2569.6	1945.8	19.463	2.968	2.76		Clay	83.8			19.11	1.02	n.a.	n.a.	0.94	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	17.620	0.642	2590.1	1956.1	16.691	3.933	2.89		Clay	94.1			16.65	1.02	n.a.	n.a.	0.94	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	17.310	0.673	2610.6	1966.3	16.279	4.205	2.92		Clay	96.2			16.36	1.02	n.a.	n.a.	0.94	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	16.730	0.572	2631.3	1976.7	15.596	3.711	2.90		Clay	94.7			15.81	1.02	n.a.	n.a.	0.94	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	14.960	0.473	2651.8	1986.9	13.724	3.469	2.92		Clay	96.8			14.14	1.02	n.a.	n.a.	0.94	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	17.930	0.605	2672.3	1997.2	16.617	3.646	2.87		Clay	92.6			16.95	1.02	n.a.	n.a.	0.94	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	42.950	0.635	2692.8	2007.5	40.372	1.526	2.33		Sand	49.7	48.08	1.8	86.54	1.02	88.34	157.58	0.93	0.681	1.009	0.348	0.618	0.91	0.01	0.01
22.146	50.870	0.575	2713.3	2017.7	47.925	1.161	2.20		Sand	39.2		1.8	86.55	1.02	88.22	150.83	0.93	0.682	1.008	0.294	0.497	0.73	0.02	0.02
22.310	28.240	0.457	2733.8	2028.0	25.945	1.701	2.52		Sand	64.3	48.08	1.8	86.54	1.02	87.96	162.69	0.93	0.683	1.008	0.401	0.738	1.08	0.01	0.01
22.474	18.920	0.355	2754.3	2038.3	17.213	2.024	2.71		Clay	79.5			17.88	1.01	n.a.	n.a.	0.93	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	13.820	0.337	2774.8	2048.5	12.138	2.711	2.90		Clay	95.2			13.06	1.01	n.a.	n.a.	0.93	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	11.720	0.251	2795.3	2058.8	10.028	2.432	2.95		Clay	98.6			11.08	1.01	n.a.	n.a.	0.93	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	11.340	0.204	2815.8	2069.1	9.601	2.054	2.92		Clay	96.8			10.72	1.01	n.a.	n.a.	0.93	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	13.690	0.206	2836.3	2079.3	11.804	1.679	2.80		Clay	87.0			12.94	1.00	n.a.	n.a.	0.93	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	15.080	0.227	2856.8	2089.6	13.066	1.663	2.76		Clay	83.8			14.25	1.00	n.a.	n.a.	0.93	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	16.410	0.254	2877.3	2099.9	14.259	1.697	2.73		Clay	81.6			15.51	1.00	n.a.	n.a.	0.93	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	17.600	0.274	2897.8	2110.1	15.308	1.696	2.71		Clay	79.5			16.64	1.00	n.a.	n.a.	0.93	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	20.110	0.383	2918.3	2120.4	17.592	2.054	2.70		Clay	79.1			19.01	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	23.750	0.416	2938.8	2130.7	20.914	1.867	2.62		Clay	72.3			22.45	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	26.810	0.456	2959.3	2140.9	23.802	1.800	2.56		Sand	67.9	33.97	1.72	58.43	0.99	58.12	125.20	0.93	0.693	0.998	0.184	0.262	0.38	0.03	0.03
24.278	30.060	0.534	2979.8	2151.2	26.782	1.869	2.53		Sand	65.3	33.97	1.72	58.43	0.99	58.00	124.42	0.92	0.694	0.998	0.182	0.258	0.37	0.03	0.03
24.442	33.050	0.677	3000.3	2161.5	29.505	2.146	2.53		Sand	65.5	33.97	1.72	58.43	0.99	57.87	124.31	0.92	0.695	0.997	0.181	0.257	0.37	0.03	0.03
24.606	34.310	0.876	3020.8	2171.7	30.601	2.671	2.58		Sand	69.3	33.97	1.72	58.43	0.99	57.75	125.04	0.92	0.696	0.997	0.183	0.260	0.37	0.03	0.03
24.770	35.940	1.012	3041.3	2182.0	32.037	2.940	2.59		Sand	70.2		1.72	58.43	0.99	57.63	125.08	0.92	0.697	0.996	0.183	0.261	0.37	0.03	0.03
24.934	34.710	1.139	3061.8	2192.3	30.269	3.433	2.65		Clay	75.2			32.81	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	33.630	1.268	3082.3	2202.5	29.138	3.952	2.71		Clay	79.5			31.79	0.99	n.a.	n.a.	0.92	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	29.630	1.365	3102.8	2212.8	25.378	4.861	2.81		Clay	87.9			28.01	0.99	n.a.	n.a.	0.92	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	27.220	1.297	3123.4	2223.1	23.083	5.055	2.85		Clay	91.2			25.73	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	23.570	1.153	3143.9	2233.4	19.699	5.241	2.91		Clay	96.2			22.28	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	21.980	0.923	3164.4	2243.7	18.183	4.525	2.90		Clay	94.9			20.78	0.98	n.a.	n.a.	0.92	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	22.230	0.818	3184.9	2253.9	18.313	3.964	2.86		Clay	91.8			21.01	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	21.600	0.708	3205.4	2264.2	17.664	3.540	2.84		Clay	90.3			20.42	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	19.310	0.635	3225.9	2274.5	15.562	3.588	2.89		Clay	94.0			18.25	0.98	n.a.	n.a.	0.92	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	16.530	0.578	3246.4	2284.7	13.049	3.877	2.97		Clay	100.0			15.62	0.98	n.a.	n.a.	0.92	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	13.340	0.544	3266.9	2295.0	10.202	4.647	3.10		Clay	100.0			12.61	0.98	n.a.	n.a.	0.91	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	11.960	0.476	3287.4	2305.3	8.950	4.614	3.14		Clay	100.0			11.30	0.98	n.a.	n.a.	0.91	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	11.610	0.361	3307.9	2315.5	8.599	3.626	3.10		Clay	100.0			10.97	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	13.110	0.371	3328.4	2325.8	9.842	3.241	3.02		Clay	100.0			12.39	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.81

Total Settlement:	0.46	(Inches)

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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)
27.231	14.980	0.305	3348.9	2336.1	11.391	2.292	2.88		Clay	93.8			14.16	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	16.110	0.347	3369.4	2346.3	12.296	2.405	2.87		Clay	92.5			15.23	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	21.390	0.366	3389.9	2356.6	16.715	1.858	2.70		Clay	78.6			20.22	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	17.550	0.412	3410.4	2366.9	13.389	2.600	2.86		Clay	91.6			16.59	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	16.410	0.477	3430.9	2377.1	12.363	3.246	2.94		Clay	98.3			15.51	0.97	n.a.	n.a.	0.91	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	25.120	0.515	3451.4	2387.4	19.598	2.201	2.68		Clay	77.4			23.74	0.97	n.a.	n.a.	0.91	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	27.410	0.567	3471.9	2397.7	21.416	2.208	2.65		Clay	75.0			25.91	0.97	n.a.	n.a.	0.91	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	26.710	0.611	3492.4	2407.9	20.735	2.448	2.69		Clay	78.0			25.25	0.97	n.a.	n.a.	0.91	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	24.710	0.607	3512.9	2418.2	18.984	2.644	2.74		Clay	82.1			23.36	0.97	n.a.	n.a.	0.91	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	22.230	0.607	3533.4	2428.5	16.853	2.966	2.81		Clay	87.8			21.01	0.96	n.a.	n.a.	0.91	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	19.000	0.589	3553.9	2438.7	14.125	3.420	2.91		Clay	95.7			17.96	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	14.330	0.522	3574.4	2449.0	10.243	4.162	3.07		Clay	100.0			13.54	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	11.320	0.396	3594.9	2459.3	7.744	4.159	3.17		Clay	100.0			10.70	0.96	n.a.	n.a.	0.90	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	9.610	0.299	3615.5	2469.6	6.319	3.832	3.22		Clay	100.0			9.08	0.96	n.a.	n.a.	0.90	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	9.050	0.249	3636.0	2479.9	5.833	3.443	3.22		Clay	100.0			8.55	0.96	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	8.370	0.225	3656.5	2490.1	5.254	3.439	3.26		Clay	100.0			7.91	0.96	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	8.340	0.198	3677.0	2500.4	5.200	3.045	3.24		Clay	100.0			7.88	0.96	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	8.670	0.186	3697.5	2510.7	5.434	2.727	3.20		Clay	100.0			8.19	0.96	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	9.380	0.216	3718.0	2520.9	5.967	2.872	3.17		Clay	100.0			8.87	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	10.100	0.211	3738.5	2531.2	6.503	2.564	3.12		Clay	100.0			9.55	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	11.300	0.224	3759.0	2541.5	7.413	2.378	3.05		Clay	100.0			10.68	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	11.770	0.288	3779.5	2551.7	7.744	2.915	3.08		Clay	100.0			11.12	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	14.360	0.368	3800.0	2562.0	9.727	2.953	3.00		Clay	100.0			13.57	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	14.800	0.296	3820.5	2572.3	10.022	2.296	2.93		Clay	97.5			13.99	0.95	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	12.920	0.354	3841.0	2582.5	8.518	3.218	3.07		Clay	100.0			12.21	0.95	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	15.450	0.403	3861.5	2592.8	10.428	2.981	2.98		Clay	100.0			14.60	0.95	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	21.090	0.429	3882.0	2603.0	14.713	2.240	2.79		Clay	85.9			19.93	0.95	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	24.980	0.456	3902.5	2613.3	17.624	1.980	2.69		Clay	78.3			23.61	0.95	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	27.300	0.428	3923.0	2623.6	19.316	1.689	2.62		Clay	72.6			25.80	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	25.680	0.443	3943.5	2633.8	18.003	1.869	2.67		Clay	76.6			24.27	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	25.720	0.518	3964.0	2644.1	17.955	2.182	2.71		Clay	79.7			24.31	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	25.010	0.550	3984.5	2654.4	17.343	2.389	2.74		Clay	82.5			23.64	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	24.360	0.564	4005.0	2664.6	16.781	2.523	2.77		Clay	84.6			23.02	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	22.840	0.565	4025.5	2674.9	15.572	2.713	2.81		Clay	88.2			21.59	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	22.040	0.527	4046.0	2685.2	14.909	2.633	2.82		Clay	88.8			20.83	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	22.250	0.551	4066.5	2695.4	15.001	2.725	2.83		Clay	89.3			21.03	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	21.970	0.546	4087.0	2705.7	14.729	2.740	2.84		Clay	89.9			20.77	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	20.180	0.554	4107.6	2716.0	13.347	3.056	2.90		Clay	94.9			19.07	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	20.290	0.570	4128.1	2726.3	13.370	3.127	2.90		Clay	95.4			19.18	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	20.320	0.560	4148.6	2736.6	13.335	3.069	2.90		Clay	95.0			19.21	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	19.750	0.602	4169.1	2746.8	12.862	3.408	2.94		Clay	98.2			18.67	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	20.180	0.606	4189.6	2757.1	13.119	3.351	2.93		Clay	97.3			19.07	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	21.780	0.573	4210.1	2767.4	14.219	2.912	2.86		Clay	92.2			20.59	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	23.690	0.596	4230.6	2777.6	15.535	2.762	2.82		Clay	88.6			22.39	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	20.600	0.520	4251.1	2787.9	13.253	2.815	2.88		Clay	93.5			19.47	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	18.280	0.496	4271.6	2798.2	11.539	3.072	2.95		Clay	99.1			17.28	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	15.590	0.424	4292.1	2808.4	9.574	3.154	3.02		Clay	100.0			14.74	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	14.460	0.389	4312.6	2818.7	8.730	3.162	3.06		Clay	100.0			13.67	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	17.530	0.308	4333.1	2829.0	10.861	2.005	2.87		Clay	92.7			16.57	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	17.690	0.335	4353.6	2839.2	10.928	2.159	2.89		Clay	93.9			16.72	0.93	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	17.600	0.355	4374.1	2849.5	10.818	2.303	2.90		Clay	95.4			16.64	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	14.350	0.339	4394.6	2859.8	8.499	2.790	3.04		Clay	100.0			13.56	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	13.570	0.345	4415.1	2870.0	7.918	3.036	3.08		Clay	100.0			12.83	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	17.370	0.297	4435.6	2880.3	10.521	1.960	2.88		Clay	93.2			16.42	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	17.530	0.249	4456.1	2890.6	10.587	1.627	2.83		Clay	89.7			16.57	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	12.690	0.219	4476.6	2900.8	7.206	2.095	3.03		Clay	100.0			11.99	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	10.370	0.186	4497.1	2911.1	5.580	2.290	3.15		Clay	100.0			9.80	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	10.190	0.205	4517.6	2921.4	5.430	2.585	3.19		Clay	100.0			9.63	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	11.630	0.207	4538.1	2931.6	6.386	2.211	3.09		Clay	100.0			10.99	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	12.300	0.165	4558.6	2941.9	6.812	1.647	3.00		Clay	100.0			11.63	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	13.270	0.225	4579.1	2952.2	7.439	2.049	3.02		Clay	100.0			12.54	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	17.540	0.323	4599.8	2962.5	10.289	2.119	2.90		Clay	95.3			16.58	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	20.400	0.421	4620.3	2972.8	12.170	2.327	2.86		Clay	92.2			19.28	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	20.700	0.477	4640.8	2983.0	12.323	2.595	2.89		Clay	93.9			19.57	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	21.610	0.517	4661.3	2993.3	12.882	2.682	2.88		Clay	93.3			20.43	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	22.040	0.516	4681.8	3003.6	13.117	2.619	2.87		Clay	92.3			20.83	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	23.840	0.555	4702.3	3013.8	14.260	2.583	2.83		Clay	89.7			22.53	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.81

Total Settlement:	0.46	(Inches)

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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)
38.222	25.670	0.600	4722.8	3024.1	15.415	2.574	2.80		Clay	87.4			24.26	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	26.590	0.717	4743.3	3034.4	15.963	2.961	2.83		Clay	89.3			25.13	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	28.640	0.786	4763.8	3044.6	17.249	2.993	2.80		Clay	87.3			27.07	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	30.070	0.861	4784.3	3054.9	18.120	3.111	2.80		Clay	86.8			28.42	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	31.070	0.887	4804.8	3065.2	18.705	3.094	2.79		Clay	85.8			29.37	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	30.180	0.874	4825.3	3075.4	18.058	3.148	2.80		Clay	87.1			28.53	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	28.780	0.875	4845.8	3085.7	17.083	3.320	2.84		Clay	89.8			27.20	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	27.360	0.883	4866.3	3096.0	16.103	3.542	2.87		Clay	92.8			25.86	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	25.800	0.931	4886.8	3106.2	15.039	3.986	2.93		Clay	97.2			24.39	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	23.970	0.948	4907.3	3116.5	13.808	4.406	2.98		Clay	100.0			22.66	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	21.090	0.848	4927.8	3126.8	11.914	4.553	3.04		Clay	100.0			19.93	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	19.620	0.799	4948.3	3137.0	10.931	4.660	3.08		Clay	100.0			18.54	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	19.800	0.703	4968.8	3147.3	11.004	4.060	3.04		Clay	100.0			18.71	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	17.600	0.682	4989.3	3157.6	9.568	4.515	3.12		Clay	100.0			16.64	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	15.930	0.655	5009.8	3167.8	8.476	4.879	3.18		Clay	100.0			15.06	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	15.880	0.614	5030.3	3178.1	8.411	4.594	3.17		Clay	100.0			15.01	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	16.020	0.592	5050.8	3188.4	8.465	4.387	3.15		Clay	100.0			15.14	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	15.840	0.554	5071.4	3198.7	8.319	4.164	3.14		Clay	100.0			14.97	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	14.650	0.550	5091.9	3209.0	7.544	4.544	3.20		Clay	100.0			13.85	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	13.680	0.536	5112.4	3219.2	6.911	4.818	3.25		Clay	100.0			12.93	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	13.370	0.522	5132.9	3229.5	6.691	4.832	3.26		Clay	100.0			12.64	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	12.710	0.386	5153.4	3239.8	6.256	3.809	3.22		Clay	100.0			12.01	0.89	n.a.	n.a.	0.84	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	11.900	0.378	5173.9	3250.0	5.731	4.059	3.27		Clay	100.0			11.25	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	12.450	0.358	5194.4	3260.3	6.044	3.633	3.22		Clay	100.0			11.77	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	12.030	0.316	5214.9	3270.6	5.762	3.354	3.22		Clay	100.0			11.37	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	11.430	0.283	5235.4	3280.8	5.372	3.211	3.24		Clay	100.0			10.80	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	11.140	0.240	5255.9	3291.1	5.173	2.820	3.22		Clay	100.0			10.53	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	10.970	0.243	5276.4	3301.4	5.048	2.917	3.24		Clay	100.0			10.37	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	11.140	0.256	5296.9	3311.6	5.128	3.015	3.24		Clay	100.0			10.53	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	11.610	0.236	5317.4	3321.9	5.389	2.636	3.19		Clay	100.0			10.97	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	11.470	0.211	5337.9	3332.2	5.283	2.397	3.18		Clay	100.0			10.84	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	11.320	0.238	5358.4	3342.4	5.170	2.754	3.22		Clay	100.0			10.70	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	13.870	0.259	5378.9	3352.7	6.670	2.317	3.08		Clay	100.0			13.11	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	16.120	0.336	5399.4	3363.0	7.981	2.504	3.04		Clay	100.0			15.24	0.88	n.a.	n.a.	0.83	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	17.290	0.360	5419.9	3373.2	8.645	2.469	3.00		Clay	100.0			16.34	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	17.800	0.395	5440.4	3383.5	8.914	2.619	3.01		Clay	100.0			16.82	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	19.110	0.437	5460.9	3393.8	9.653	2.668	2.98		Clay	100.0			18.06	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	19.930	0.525	5481.4	3404.0	10.099	3.054	3.00		Clay	100.0			18.84	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	20.450	0.512	5501.9	3414.3	10.368	2.893	2.97		Clay	100.0			19.33	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	21.560	0.478	5522.4	3424.5	10.979	2.543	2.92		Clay	96.8			20.38	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	24.840	0.507	5542.9	3434.8	12.850	2.297	2.84		Clay	90.3			23.48	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	27.010	0.538	5563.5	3445.1	14.065	2.221	2.80		Clay	87.1			25.53	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	28.160	0.591	5584.0	3455.4	14.683	2.330	2.80		Clay	86.8			26.62	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	37.430	0.637	5604.5	3465.7	19.983	1.840	2.63		Clay	73.3			35.38	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	35.100	0.686	5625.0	3475.9	18.578	2.125	2.69		Clay	78.2			33.18	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	32.100	0.693	5645.5	3486.2	16.796	2.367	2.75		Clay	83.3			30.34	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	29.200	0.730	5666.0	3496.5	15.082	2.769	2.83		Clay	89.5			27.60	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	28.510	0.719	5686.5	3506.7	14.639	2.801	2.84		Clay	90.6			26.95	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	29.100	0.746	5707.0	3517.0	14.925	2.842	2.84		Clay	90.3			27.50	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	28.830	0.760	5727.5	3527.3	14.723	2.927	2.85		Clay	91.3			27.25	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	27.150	0.787	5748.0	3537.5	13.725	3.242	2.90		Clay	95.4			25.66	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	25.200	0.762	5768.5	3547.8	12.580	3.415	2.95		Clay	98.9			23.82	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	24.360	0.752	5789.0	3558.1	12.066	3.503	2.97		Clay	100.0			23.02	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	25.500	0.693	5809.5	3568.3	12.664	3.067	2.92		Clay	96.5			24.10	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	25.640	0.661	5830.0	3578.6	12.700	2.909	2.90		Clay	95.3			24.23	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	22.500	0.590	5850.5	3588.9	10.909	3.014	2.97		Clay	100.0			21.27	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	20.890	0.564	5871.0	3599.1	9.977	3.141	3.01		Clay	100.0			19.74	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	20.450	0.556	5891.5	3609.4	9.699	3.176	3.02		Clay	100.0			19.33	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	22.580	0.643	5912.0	3619.7	10.843	3.277	2.99		Clay	100.0			21.34	0.87	n.a.	n.a.	0.81	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	25.220	0.745	5932.5	3629.9	12.261	3.348	2.95		Clay	99.2			23.84	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	26.340	0.821	5953.0	3640.2	12.836	3.514	2.95		Clay	98.9			24.90	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	24.120	0.627	5973.5	3650.5	11.578	2.967	2.94		Clay	98.3			22.80	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	20.110	0.592	5994.0	3660.7	9.349	3.459	3.06		Clay	100.0			19.01	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	21.180	0.509	6014.5	3671.0	9.901	2.801	2.98		Clay	100.0			20.02	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	22.420	0.536	6035.0	3681.3	10.541	2.763	2.96		Clay	99.6			21.19	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	24.370	0.619	6055.6	3691.6	11.563	2.900	2.94		Clay	97.9			23.03	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	25.440	0.706	6076.1	3701.9	12.103	3.152	2.94		Clay	98.3			24.05	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.81

Total Settlement: 0.46 (Inches)

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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)
49.213	25.660	0.741	6096.6	3712.1	12.183	3.277	2.95		Clay	98.9			24.25	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	24.800	0.718	6117.1	3722.4	11.681	3.302	2.97		Clay	100.0			23.44	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	29.400	0.735	6137.6	3732.7	14.109	2.791	2.86		Clay	91.5			27.79	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	31.010	0.897	6158.1	3742.9	14.925	3.211	2.87		Clay	92.8			29.31	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	36.450	1.350	6178.6	3753.2	17.777	4.047	2.88		Clay	93.0			34.45	0.86	n.a.	n.a.	0.80	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	52.120	1.168	6199.1	3763.5	26.051	2.383	2.60		Clay	71.2			49.26	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.85

Total Settlement: 1.37 (Inches)

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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)
5.085	19.250	0.502	610.2	610.2	33.345	2.650	2.55		Unsaturated	66.8			18.19	1.70	30.93	89.92	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	19.690	0.525	629.9	629.9	33.565	2.710	2.55		Unsaturated	67.1			18.61	1.70	31.64	90.90	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	19.630	0.513	649.6	649.6	32.933	2.657	2.55		Unsaturated	67.2			18.55	1.70	31.54	90.79	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	20.320	0.523	669.2	669.2	33.589	2.617	2.54		Unsaturated	66.3			19.21	1.70	32.65	92.04	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	22.910	0.526	688.9	688.9	37.380	2.331	2.47		Unsaturated	60.9			21.65	1.70	36.81	96.09	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	23.200	0.594	708.7	708.7	37.311	2.600	2.51		Unsaturated	63.4			21.93	1.70	37.28	97.32	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	21.500	0.626	728.4	728.4	34.049	2.962	2.57		Unsaturated	68.8			20.32	1.70	34.55	94.99	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	20.890	0.637	748.1	748.1	32.613	3.105	2.60		Unsaturated	71.0	20.32		20.32	1.70	34.48	95.34	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	19.880	0.618	767.8	767.8	37.468	3.170	2.56		Unsaturated	67.9	20.32		20.32	1.68	34.12	94.25	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	18.250	0.531	787.4	787.4	33.714	2.974	2.58		Unsaturated	69.1	20.32		20.32	1.66	33.70	93.97	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	15.730	0.458	807.1	807.1	28.442	2.988	2.63		Unsaturated	73.7	20.32		20.32	1.64	33.26	94.24	0.99	0.547	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.890	14.070	0.422	826.8	826.8	24.919	3.090	2.69		Unsaturated	78.0	20.32		20.32	1.62	32.84	94.40	0.99	0.546	1.096	n.a.	n.a.	n.a.	0.00	0.00
7.054	13.460	0.388	846.5	846.5	30.802	2.976	2.61		Unsaturated	71.5			12.72	1.66	21.08	78.11	0.99	0.546	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.218	12.360	0.353	866.2	866.2	27.540	2.960	2.64		Unsaturated	74.4			11.68	1.64	19.20	76.15	0.99	0.546	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.382	11.450	0.355	885.8	885.8	24.851	3.225	2.70		Unsaturated	79.0			10.82	1.63	17.63	74.79	0.99	0.546	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.546	10.000	0.412	905.5	905.5	21.087	4.315	2.84		Unsaturated	89.9			9.45	1.62	15.27	73.02	0.99	0.545	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.710	7.790	0.367	925.2	925.2	15.840	5.009	2.97		Unsaturated	100.0			7.36	1.61	11.85	69.46	0.99	0.545	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.874	8.040	0.336	944.9	944.9	16.018	4.440	2.94		Unsaturated	97.9			7.60	1.59	12.08	69.59	0.99	0.545	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.038	10.630	0.343	964.6	964.6	21.041	3.380	2.77		Unsaturated	84.5			10.05	1.56	15.66	72.94	0.99	0.544	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.202	10.690	0.353	984.2	984.2	20.722	3.462	2.78		Unsaturated	85.5			10.10	1.54	15.57	72.93	0.98	0.544	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.366	11.550	0.374	1003.9	1003.9	22.010	3.385	2.75		Unsaturated	83.4			10.92	1.52	16.60	74.02	0.98	0.544	1.065	n.a.	n.a.	n.a.	0.00	0.00
8.530	12.460	0.353	1023.6	1023.6	23.345	2.954	2.70		Unsaturated	78.8			11.78	1.50	17.69	74.83	0.98	0.544	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.694	12.960	0.364	1043.3	1043.3	23.845	2.926	2.69		Unsaturated	78.0			12.25	1.48	18.18	75.37	0.98	0.543	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.858	10.670	0.317	1063.0	1063.0	19.076	3.127	2.78		Unsaturated	85.5			10.09	1.48	14.91	72.07	0.98	0.543	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.022	11.850	0.161	1082.6	1082.6	17.086	1.424	2.63		Unsaturated	73.0	11.23		11.23	1.46	16.42	72.33	0.98	0.543	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.186	11.880	0.176	1102.3	1102.3	16.902	1.554	2.65		Unsaturated	74.9			11.23	1.45	16.25	72.41	0.98	0.542	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.350	11.170	0.148	1122.0	1122.0	15.633	1.395	2.65		Unsaturated	75.3	11.23		11.23	1.43	16.09	72.26	0.98	0.542	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.514	9.050	0.143	1141.7	1141.7	14.854	1.686	2.72		Unsaturated	80.3			8.55	1.43	12.23	67.95	0.98	0.542	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.678	8.960	0.155	1161.4	1161.4	14.430	1.850	2.75		Unsaturated	82.8			8.47	1.42	11.99	67.95	0.98	0.542	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.843	8.780	0.172	1181.2	1181.2	13.867	2.100	2.79		Unsaturated	86.4			8.30	1.40	11.64	67.90	0.98	0.541	1.048	n.a.	n.a.	n.a.	0.00	0.00
10.007	12.710	0.171	1200.8	1200.8	17.016	1.412	2.62	Plastic	Clay	73.0	16.91		16.91	1.16	n.a.	n.a.	0.98	0.541	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	17.890	0.137	1220.5	1220.5	21.505	0.793	2.41	Plastic	Clay	56.0			16.91	1.16	n.a.	n.a.	0.98	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	12.520	0.123	1240.2	1240.2	16.348	1.034	2.57	Plastic	Clay	68.8	16.91		16.91	1.15	n.a.	n.a.	0.98	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	9.680	0.131	1259.9	1259.9	14.367	1.448	2.69		Clay	78.5			9.15	1.15	n.a.	n.a.	0.98	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	9.250	0.169	1279.6	1279.6	13.458	1.963	2.79		Clay	86.0			8.74	1.14	n.a.	n.a.	0.98	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	8.320	0.229	1299.2	1299.2	11.807	2.986	2.94		Clay	97.9			7.86	1.14	n.a.	n.a.	0.98	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	7.880	0.249	1318.9	1318.9	10.949	3.448	3.00		Clay	100.0			7.45	1.13	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	11.340	0.197	1338.6	1338.6	15.943	1.846	2.71		Clay	79.9			10.72	1.13	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	12.390	0.166	1358.3	1358.3	17.244	1.417	2.62		Clay	72.7			11.71	1.12	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	13.240	0.126	1378.0	1378.0	16.017	1.004	2.57	Plastic	Clay	68.9			12.51	1.12	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	8.230	0.078	1397.6	1397.6	10.777	1.036	2.73		Clay	81.6			7.78	1.12	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	6.140	0.065	1417.3	1417.3	7.664	1.197	2.89		Clay	94.4			5.80	1.11	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	5.270	0.062	1437.0	1437.0	6.335	1.362	2.99		Clay	100.0			4.98	1.11	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	6.290	0.090	1456.7	1456.7	7.636	1.618	2.96		Clay	99.4			5.95	1.10	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	6.580	0.103	1476.4	1476.4	7.914	1.763	2.96		Clay	99.8			6.22	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	6.520	0.148	1496.0	1496.0	7.716	2.564	3.05		Clay	100.0			6.16	1.10	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	6.450	0.169	1515.7	1515.7	7.511	2.969	3.10		Clay	100.0			6.10	1.09	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	6.670	0.187	1535.4	1535.4	7.688	3.168	3.10		Clay	100.0			6.30	1.09	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	6.700	0.191	1555.1	1555.1	7.617	3.225	3.11		Clay	100.0			6.33	1.08	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	6.550	0.206	1574.8	1574.8	7.319	3.575	3.15		Clay	100.0			6.19	1.08	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	6.600	0.211	1594.4	1594.4	7.279	3.636	3.16		Clay	100.0			6.24	1.08	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	6.940	0.217	1614.1	1614.1	7.599	3.538	3.14		Clay	100.0			6.56	1.07	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	7.730	0.235	1633.8	1633.8	8.463	3.399	3.09		Clay	100.0			7.31	1.07	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	9.000	0.246	1653.6	1653.6	9.885	3.010	3.00		Clay	100.0			8.51	1.07	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	9.870	0.270	1673.3	1673.3	10.797	2.989	2.97		Clay	100.0			9.33	1.06	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	10.490	0.296	1693.0	1692.5	11.396	3.069	2.96		Clay	99.5			9.91	1.06	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	11.000	0.316	1713.5	1702.8	11.914	3.115	2.94		Clay	98.5			10.40	1.06	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	11.670	0.336	1734.0	1713.0	12.613	3.110	2.92		Clay	96.9			11.03	1.06	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	11.900	0.361	1754.5	1723.3	12.793	3.275	2.93		Clay	97.5			11.25	1.06	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	12.630	0.368	1775.0	1733.6	13.547	3.134	2.90		Clay	95.0			11.94	1.05	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	13.590	0.392	1795.5	1743.8	14.557	3.088	2.87		Clay	92.7			12.84	1.05	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	14.890	0.428	1816.0	1754.1	15.942	3.061	2.84		Clay	90.0			14.07	1.05	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	15.980	0.490	1836.5	1764.4	17.073	3.253	2.83		Clay	89.4			15.10	1.05	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	16.370	0.549	1857.0	1774.6	17.402	3.555	2.85		Clay	90.8			15.47	1.05	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	16.200	0.602	1877.5	1784.9	17.100	3.945	2.88		Clay	93.5			15.31	1.05	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	15.180	0.580	1898.0	1795.2	15.855	4.076	2.92		Clay	96.3			14.35	1.04	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	13.850	0.538	1918.5	1805.4	14.280	4.174	2.96		Clay	99.6			13.09	1.04	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	11.790	0.510	1939.0	1815.7	11.919	4.713	3.05		Clay	100.0			11.14	1.04	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.85

Total Settlement: 1.37 (Inches)

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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)
16.240	10.390	0.438	1959.5	1826.0	10.307	4.654	3.10		Clay	100.0			9.82	1.04	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	10.080	0.401	1980.0	1836.2	9.901	4.411	3.10		Clay	100.0			9.53	1.04	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	10.480	0.345	2000.5	1846.5	10.268	3.639	3.04		Clay	100.0			9.91	1.04	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	11.800	0.314	2021.0	1856.8	11.622	2.910	2.94		Clay	97.9			11.15	1.04	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	13.600	0.308	2041.5	1867.0	13.475	2.448	2.84		Clay	90.2			12.85	1.03	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	13.470	0.298	2062.0	1877.3	13.252	2.396	2.84		Clay	90.3			12.73	1.03	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	12.320	0.288	2082.5	1887.6	11.951	2.553	2.89		Clay	94.5			11.64	1.03	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	10.450	0.218	2103.0	1897.8	9.904	2.320	2.94		Clay	98.1			9.88	1.03	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	8.600	0.183	2123.5	1908.1	7.901	2.428	3.03		Clay	100.0			8.13	1.03	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	8.050	0.188	2144.1	1918.4	7.275	2.694	3.09		Clay	100.0			7.61	1.03	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	15.560	0.280	2164.6	1928.7	15.013	1.934	2.74		Clay	82.5			14.71	1.02	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	20.220	0.437	2185.1	1939.0	19.730	2.285	2.69		Clay	78.0			19.11	1.02	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	21.610	0.637	2205.6	1949.2	21.041	3.106	2.75		Clay	82.7			20.43	1.02	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	21.940	0.803	2226.1	1959.5	21.258	3.856	2.80		Clay	87.2			20.74	1.02	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	23.010	0.860	2246.6	1969.8	22.223	3.929	2.79		Clay	86.4			21.75	1.02	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	23.580	0.876	2267.1	1980.0	22.673	3.903	2.78		Clay	85.7			22.29	1.02	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	22.290	0.712	2287.6	1990.3	21.249	3.367	2.76		Clay	84.2			21.07	1.02	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	21.030	0.632	2308.1	2000.6	19.870	3.180	2.77		Clay	84.8			19.88	1.01	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	22.420	0.661	2328.6	2010.8	21.141	3.110	2.74		Clay	82.6			21.19	1.01	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	23.740	0.728	2349.1	2021.1	22.330	3.226	2.74		Clay	81.9			22.44	1.01	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	23.050	0.785	2369.6	2031.4	21.528	3.590	2.78		Clay	85.2			21.79	1.01	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	20.710	0.747	2390.1	2041.6	19.117	3.828	2.84		Clay	89.8			19.57	1.01	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	17.700	0.663	2410.6	2051.9	16.078	4.019	2.91		Clay	95.6			16.73	1.01	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	14.530	0.585	2431.1	2062.2	12.913	4.394	3.01		Clay	100.0			13.73	1.01	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	12.200	0.485	2451.6	2072.4	10.591	4.419	3.08		Clay	100.0			11.53	1.01	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	10.270	0.370	2472.1	2082.7	8.675	4.096	3.13		Clay	100.0			9.71	1.00	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	9.530	0.280	2492.6	2093.0	7.916	3.380	3.11		Clay	100.0			9.01	1.00	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	10.270	0.261	2513.1	2103.2	8.571	2.896	3.04		Clay	100.0			9.71	1.00	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	10.610	0.183	2533.6	2113.5	8.841	1.959	2.94		Clay	98.3			10.03	1.00	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	10.000	0.147	2554.1	2123.8	8.215	1.685	2.94		Clay	97.9			9.45	1.00	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	10.060	0.169	2574.6	2134.0	8.222	1.926	2.97		Clay	100.0			9.51	1.00	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	11.250	0.184	2595.1	2144.3	9.283	1.849	2.91		Clay	95.9			10.63	1.00	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	11.740	0.189	2615.8	2154.6	9.684	1.812	2.89		Clay	94.2			11.10	1.00	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	11.780	0.179	2636.3	2164.9	9.665	1.711	2.88		Clay	93.3			11.13	0.99	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	10.900	0.166	2656.8	2175.1	8.801	1.734	2.92		Clay	96.3			10.30	0.99	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	10.960	0.142	2677.3	2185.4	8.805	1.476	2.88		Clay	93.6			10.36	0.99	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	10.500	0.129	2697.8	2195.7	8.336	1.410	2.89		Clay	94.5			9.92	0.99	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	9.410	0.105	2718.3	2205.9	7.299	1.304	2.93		Clay	97.3			8.89	0.99	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	9.070	0.120	2738.8	2216.2	6.949	1.558	2.98		Clay	100.0			8.57	0.99	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	9.130	0.134	2759.3	2226.5	6.962	1.729	3.00		Clay	100.0			8.63	0.99	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	9.940	0.149	2779.8	2236.7	7.645	1.743	2.97		Clay	100.0			9.40	0.99	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	10.780	0.168	2800.3	2247.0	8.349	1.791	2.94		Clay	98.5			10.19	0.98	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	10.670	0.174	2820.8	2257.3	8.204	1.879	2.96		Clay	99.8			10.09	0.98	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	10.270	0.184	2841.3	2267.5	7.805	2.079	3.00		Clay	100.0			9.71	0.98	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	9.570	0.175	2861.8	2277.8	7.146	2.150	3.04		Clay	100.0			9.05	0.98	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	8.790	0.159	2882.3	2288.1	6.424	2.164	3.08		Clay	100.0			8.31	0.98	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	8.060	0.139	2902.8	2298.3	5.751	2.103	3.12		Clay	100.0			7.62	0.98	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	7.980	0.115	2923.3	2308.6	5.647	1.764	3.09		Clay	100.0			7.54	0.98	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	8.400	0.146	2943.8	2318.9	5.975	2.107	3.10		Clay	100.0			7.94	0.98	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	9.980	0.338	2964.3	2329.1	7.297	3.977	3.18		Clay	100.0			9.43	0.97	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	19.840	0.574	2984.8	2339.4	15.686	3.128	2.85		Clay	90.9			18.75	0.97	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	45.760	0.601	3005.3	2349.7	39.697	1.358	2.31		Sand	47.7	60.43	1.55	93.67	0.96	89.92	158.56	0.92	0.730	0.982	0.357	0.622	0.85	0.01	0.01
24.770	57.940	0.475	3025.8	2359.9	50.502	0.842	2.11		Sand	31.4	60.43	1.55	93.67	0.96	89.55	144.78	0.92	0.731	0.983	0.258	0.408	0.56	0.02	0.02
24.934	58.510	0.499	3046.3	2370.2	50.892	0.876	2.11		Sand	32.0	60.43	1.55	93.67	0.95	89.40	145.22	0.92	0.732	0.983	0.260	0.413	0.56	0.02	0.02
25.098	48.910	0.831	3066.8	2380.5	42.219	1.754	2.35		Sand	51.4	60.43	1.55	93.67	0.96	89.49	159.87	0.92	0.733	0.979	0.370	0.649	0.89	0.01	0.01
25.262	50.760	0.972	3087.3	2390.7	43.764	1.975	2.38		Sand	53.0	60.43	1.55	93.67	0.95	89.35	160.42	0.92	0.733	0.979	0.376	0.661	0.90	0.01	0.01
25.427	59.310	0.664	3107.9	2401.1	51.247	1.150	2.18		Sand	37.1	60.43	1.55	93.67	0.95	89.01	150.06	0.92	0.734	0.980	0.289	0.473	0.64	0.02	0.02
25.591	63.930	1.124	3128.4	2411.3	55.219	1.802	2.27		Sand	44.8		1.55	93.66	0.95	88.96	155.65	0.92	0.735	0.978	0.331	0.562	0.76	0.02	0.02
25.755	56.500	0.863	3148.9	2421.6	48.528	1.571	2.28		Sand	45.2	60.43	1.55	93.67	0.95	88.82	155.74	0.92	0.736	0.977	0.332	0.563	0.77	0.01	0.02
25.919	37.860	1.177	3169.4	2431.9	29.833	3.245	2.64		Clay	74.3			35.78	0.96	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	45.810	1.109	3189.9	2442.1	38.901	2.508	2.48		Sand	61.5	65.32		65.32	0.94	61.31	127.65	0.92	0.737	0.981	0.190	0.270	0.37	0.02	0.03
26.247	50.990	0.725	3210.4	2452.4	43.358	1.468	2.30		Sand	46.9	65.32		65.32	0.94	61.09	121.81	0.92	0.738	0.981	0.175	0.241	0.33	0.03	0.03
26.411	54.180	0.595	3230.9	2462.7	46.053	1.132	2.21		Sand	39.9	65.32		65.32	0.93	60.90	117.42	0.92	0.738	0.981	0.166	0.222	0.30	0.03	0.03
26.575	55.260	0.970	3251.4	2472.9	46.893	1.809	2.33		Sand	49.2	65.32		65.32	0.93	60.88	122.66	0.91	0.739	0.980	0.177	0.245	0.33	0.03	0.03
26.739	54.310	1.273	3271.9	2483.2	45.958	2.417	2.42		Sand	56.3	65.32		65.32	0.93	60.82	125.39	0.91	0.740	0.979	0.184	0.258	0.35	0.03	0.03
26.903	54.170	1.329	3292.4	2493.5	45.733	2.530	2.43		Sand	57.5	65.32		65.32	0.93	60.71	125.65	0.91	0.740	0.979	0.185	0.259	0.35	0.03	0.03
27.067	63.400	1.073	3312.9	2503.7	53.650	1.738	2.27		Sand	44.7	65.32		65.32	0.93	60.49	119.92	0.91	0.741	0.979	0.171	0.232	0.31	0.03	0.03

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.85

Total Settlement: 1.37 (Inches)

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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)
27.231	69.110	0.656	3333.4	2514.0	58.483	0.973	2.09		Sand	30.0			65.32	0.92	60.12	107.61	0.91	0.742	0.981	0.148	0.189	0.26	0.03	0.03
27.395	70.250	0.454	3353.9	2524.3	59.341	0.662	1.99		Sand	22.2			66.40	0.91	60.74	96.85	0.91	0.742	0.982	0.133	0.163	0.22	0.03	0.03
27.559	69.180	0.462	3374.4	2534.5	58.288	0.685	2.00		Sand	23.4			65.39	0.91	59.71	97.69	0.91	0.743	0.981	0.134	0.165	0.22	0.03	0.03
27.723	65.320	0.531	3394.9	2544.8	54.835	0.835	2.07		Sand	28.9			61.74	0.91	56.36	101.72	0.91	0.743	0.980	0.140	0.174	0.23	0.03	0.03
27.887	60.940	0.741	3415.4	2555.1	50.948	1.251	2.20		Sand	39.1			57.60	0.91	52.58	106.54	0.91	0.744	0.979	0.146	0.186	0.25	0.03	0.03
28.051	60.150	0.992	3435.9	2565.3	50.159	1.698	2.29		Sand	46.0			56.85	0.91	51.86	109.77	0.91	0.744	0.978	0.152	0.195	0.26	0.03	0.03
28.215	66.010	1.271	3456.4	2575.6	55.071	1.977	2.30		Sand	47.0			62.39	0.91	56.96	116.65	0.91	0.745	0.976	0.164	0.218	0.29	0.03	0.03
28.379	79.230	1.309	3476.9	2585.9	66.256	1.689	2.19		Sand	38.5			74.89	0.91	68.49	125.85	0.91	0.746	0.974	0.185	0.259	0.35	0.03	0.03
28.543	89.620	0.907	3497.4	2596.1	74.982	1.032	2.02		Sand	24.3			84.71	0.91	77.14	119.65	0.91	0.746	0.975	0.170	0.230	0.31	0.03	0.03
28.707	88.690	0.361	3517.9	2606.4	74.033	0.415	1.81		Sand	7.5			83.83	0.89	74.67	76.78	0.91	0.746	0.982	0.113	0.129	0.17	0.04	0.04
28.871	85.660	0.384	3538.4	2616.7	71.304	0.458	1.84		Sand	10.3			80.96	0.89	72.09	79.72	0.90	0.747	0.981	0.116	0.133	0.18	0.04	0.04
29.035	79.530	0.456	3558.9	2626.9	65.956	0.586	1.92		Sand	16.9			75.17	0.89	67.25	92.58	0.90	0.747	0.978	0.128	0.154	0.21	0.03	0.03
29.199	76.990	0.464	3579.4	2637.2	63.668	0.617	1.95		Sand	18.9			72.77	0.89	65.04	94.84	0.90	0.748	0.978	0.131	0.158	0.21	0.03	0.03
29.364	78.950	0.552	3600.0	2647.5	65.191	0.715	1.97		Sand	20.9			74.62	0.89	66.78	101.22	0.90	0.748	0.976	0.139	0.172	0.23	0.03	0.03
29.528	83.760	0.563	3620.5	2657.8	69.113	0.687	1.94		Sand	18.4			79.17	0.89	70.67	100.16	0.90	0.749	0.976	0.137	0.169	0.23	0.03	0.03
29.692	83.090	0.451	3641.0	2668.1	68.407	0.555	1.90		Sand	14.8			78.53	0.89	69.58	89.65	0.90	0.749	0.977	0.125	0.148	0.20	0.04	0.04
29.856	81.450	0.519	3661.5	2678.3	66.890	0.652	1.94		Sand	18.4			76.98	0.89	68.37	97.51	0.90	0.750	0.975	0.134	0.163	0.22	0.03	0.03
30.020	85.960	0.648	3682.0	2688.6	70.535	0.770	1.96		Sand	20.1			81.25	0.89	72.33	105.72	0.90	0.750	0.973	0.145	0.183	0.24	0.03	0.03
30.184	92.460	0.610	3702.5	2698.9	75.832	0.673	1.90		Sand	15.4			87.39	0.89	77.40	99.56	0.90	0.750	0.974	0.137	0.168	0.22	0.03	0.03
30.348	103.390	0.481	3723.0	2709.1	84.810	0.474	1.78		Sand	5.6			97.72	0.88	85.71	86.08	0.90	0.751	0.976	0.122	0.142	0.19	0.04	0.04
30.512	114.200	0.426	3743.5	2719.4	93.654	0.379	1.70		Sand	0.0			107.94	0.88	94.99	94.99	0.90	0.751	0.974	0.131	0.158	0.21	0.03	0.03
30.676	111.400	0.387	3764.0	2729.7	91.139	0.353	1.69		Sand	0.0			105.29	0.88	92.34	92.34	0.90	0.751	0.975	0.128	0.153	0.20	0.03	0.03
30.840	100.050	0.446	3784.5	2739.9	81.532	0.454	1.79		Sand	6.1			94.57	0.87	82.28	82.90	0.90	0.752	0.976	0.118	0.137	0.18	0.04	0.04
31.004	93.190	0.570	3805.0	2750.2	75.684	0.624	1.89		Sand	14.0			88.08	0.88	77.09	95.33	0.89	0.752	0.973	0.132	0.159	0.21	0.03	0.03
31.168	91.570	0.764	3825.5	2760.5	74.194	0.852	1.97		Sand	20.6			86.55	0.88	76.31	111.50	0.89	0.752	0.969	0.155	0.199	0.26	0.03	0.03
31.332	95.210	0.934	3846.0	2770.7	77.054	1.001	2.00		Sand	22.9			89.99	0.88	79.56	119.91	0.89	0.753	0.966	0.171	0.229	0.30	0.03	0.02
31.496	104.400	1.208	3866.5	2781.0	84.480	1.179	2.01		Sand	24.0			98.68	0.89	87.60	131.27	0.89	0.753	0.963	0.201	0.287	0.38	0.02	0.02
31.660	117.710	1.420	3887.0	2791.3	95.270	1.227	1.98		Sand	21.7			111.26	0.89	99.03	139.89	0.89	0.753	0.959	0.234	0.350	0.46	0.02	0.02
31.824	122.020	1.240	3907.5	2801.5	98.627	1.033	1.92		Sand	16.9			115.33	0.88	102.05	131.02	0.89	0.754	0.962	0.201	0.285	0.38	0.02	0.02
31.988	133.260	0.606	3928.0	2811.8	107.655	0.462	1.69		Sand	0.0			125.95	0.87	109.99	109.99	0.89	0.754	0.967	0.152	0.194	0.26	0.03	0.03
32.152	149.590	0.785	3948.5	2822.1	120.815	0.532	1.68		Sand	0.0			141.39	0.88	124.26	124.26	0.89	0.754	0.963	0.181	0.248	0.33	0.03	0.02
32.316	155.320	0.845	3969.0	2832.3	125.269	0.551	1.68		Sand	0.0			146.81	0.88	129.15	129.15	0.89	0.754	0.961	0.195	0.273	0.36	0.02	0.02
32.480	174.970	1.465	3989.5	2842.6	141.058	0.847	1.75		Sand	3.0			165.38	0.89	146.57	146.57	0.89	0.755	0.954	0.267	0.416	0.55	0.02	0.02
32.644	198.560	0.720	4010.0	2852.9	159.999	0.366	1.49		Sand	0.0			187.67	0.89	167.77	167.77	0.89	0.755	0.944	0.468	0.839	1.11	0.01	0.01
32.808	199.080	0.842	4030.5	2863.1	160.126	0.427	1.52		Sand	0.0			188.17	0.89	168.00	168.00	0.89	0.755	0.943	0.472	0.846	1.12	0.01	0.01
32.972	214.280	1.020	4051.0	2873.4	172.160	0.481	1.53		Sand	0.0			202.53	0.90	181.70	181.70	0.89	0.755	0.934	0.778	1.540	2.04	0.00	0.00
33.136	224.070	1.145	4071.5	2883.7	179.771	0.516	1.53		Sand	0.0			211.79	0.90	190.49	190.49	0.89	0.756	0.927	1.151	2.347	3.11	0.00	0.00
33.301	235.790	0.643	4092.1	2894.0	188.914	0.275	1.36		Sand	0.0			222.86	0.90	201.11	201.11	0.88	0.756	0.917	2.013	4.059	5.37	0.00	0.00
33.465	224.130	1.140	4112.6	2904.2	179.165	0.513	1.53		Sand	0.0	211.84		211.84	0.90	190.04	190.04	0.88	0.756	0.926	1.127	2.294	3.03	0.00	0.00
33.629	223.470	0.642	4133.1	2914.5	178.309	0.290	1.40		Sand	0.0	211.84		211.84	0.90	189.78	189.78	0.88	0.756	0.925	1.113	2.265	3.00	0.00	0.00
33.793	198.340	0.438	4153.6	2924.8	157.784	0.223	1.39		Sand	0.0	211.84		211.84	0.89	189.53	189.53	0.88	0.756	0.924	1.100	2.237	2.96	0.00	0.00
33.957	186.410	0.808	4174.1	2935.0	147.926	0.438	1.56		Sand	0.0	211.84		211.84	0.89	189.29	189.29	0.88	0.756	0.924	1.087	2.209	2.92	0.00	0.00
34.121	191.030	1.044	4194.6	2945.3	151.361	0.553	1.61		Sand	0.0	211.84		211.84	0.89	189.04	189.04	0.88	0.757	0.923	1.074	2.182	2.88	0.00	0.00
34.285	118.830	2.464	4215.1	2955.6	93.348	2.111	2.15		Sand	35.2	211.84		211.84	0.92	193.96	276.89	0.88	0.757	0.900	5863.250	11606.006	15337.09	0.00	0.00
34.449	58.920	2.422	4235.6	2965.8	38.304	4.264	2.64		Clay	74.4			55.69	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	23.110	1.784	4256.1	2976.1	14.100	8.503	3.16		Clay	100.0			21.84	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	18.430	0.526	4276.6	2986.4	10.911	3.229	2.98		Clay	100.0			17.42	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	19.800	0.337	4297.1	2996.6	11.781	1.909	2.83		Clay	89.4			18.71	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	19.420	0.358	4317.6	3006.9	11.481	2.074	2.86		Clay	91.7			18.36	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	21.510	0.316	4338.1	3017.2	12.821	1.634	2.76		Clay	84.0			20.33	0.91	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	21.410	0.320	4358.6	3027.4	12.704	1.664	2.77		Clay	84.6			20.24	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	24.190	0.360	4379.1	3037.7	14.485	1.636	2.72		Clay	80.4			22.86	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	24.690	0.344	4399.6	3048.0	14.757	1.530	2.70		Clay	78.7			23.34	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	27.130	0.354	4420.1	3058.2	16.297	1.421	2.64		Clay	74.4			25.64	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	29.210	0.395	4440.6	3068.5	17.591	1.464	2.62		Clay	72.7			27.61	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	30.280	0.406	4461.1	3078.8	18.221	1.447	2.61		Clay	71.4			28.62	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	31.220	0.457	4481.6	3089.0	18.763	1.577	2.61		Clay	72.2			29.51	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	30.310	0.483	4502.1	3099.3	18.107	1.721	2.65		Clay	74.9			28.65	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	29.300	0.471	4522.6	3109.6	17.391	1.742	2.67		Clay	76.3			27.69	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	28.560	0.536	4543.1	3119.8	16.852	2.039	2.72		Clay	80.2			26.99	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	27.410	0.586	4563.6	3130.1	16.056	2.332	2.77		Clay	84.2			25.91	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	25.700	0.580	4584.3	3140.4	14.907	2.478	2.81		Clay	87.6			24.29	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	28.230	0.623	4604.8	3150.7	16.458	2.403	2.76		Clay	84.1			26.68	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	28.960	0.646	4625.3	3161.0	16.860	2.424	2.76		Clay	83.6			27.37	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	29.470	0.736	4645.8	3171.2	17.121	2.711	2.78		Clay	85.5			27.85	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	31.170	0.784	4666.3	3181.5	18.128	2.719	2.76		Clay	84.0			29.46	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	32.890	0.813	4686.8	3191.8	19.141	2.662	2.74		Clay	82.0			31.09	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.85

Total Settlement: 1.37 (Inches)

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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)
38.222	31.980	0.796	4707.3	3202.0	18.505	2.687	2.75		Clay	83.1			30.23	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	31.620	0.779	4727.8	3212.3	18.215	2.663	2.75		Clay	83.4			29.89	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	31.810	0.736	4748.3	3222.6	18.269	2.500	2.74		Clay	82.0			30.07	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	31.710	0.742	4768.8	3232.8	18.142	2.530	2.74		Clay	82.4			29.97	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	30.510	0.711	4789.3	3243.1	17.339	2.529	2.76		Clay	83.7			28.84	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	28.360	0.726	4809.8	3253.4	15.956	2.797	2.81		Clay	88.1			26.81	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	26.650	0.660	4830.3	3263.6	14.851	2.723	2.83		Clay	89.6			25.19	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	25.450	0.664	4850.8	3273.9	14.066	2.884	2.87		Clay	92.3			24.05	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	23.340	0.560	4871.3	3284.2	12.730	2.679	2.88		Clay	93.6			22.06	0.89	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	21.880	0.571	4891.8	3294.4	11.798	2.938	2.93		Clay	97.6			20.68	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	19.030	0.537	4912.3	3304.7	10.030	3.240	3.01		Clay	100.0			17.99	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	15.120	0.457	4932.8	3315.0	7.634	3.612	3.14		Clay	100.0			14.29	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	11.500	0.402	4953.3	3325.2	5.427	4.455	3.31		Clay	100.0			10.87	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	10.700	0.302	4973.8	3335.5	4.925	3.677	3.30		Clay	100.0			10.11	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	10.920	0.281	4994.3	3345.8	5.035	3.336	3.27		Clay	100.0			10.32	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	11.190	0.257	5014.8	3356.0	5.174	2.960	3.23		Clay	100.0			10.58	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	11.760	0.241	5035.3	3366.3	5.491	2.608	3.18		Clay	100.0			11.12	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	12.140	0.211	5055.9	3376.6	5.693	2.195	3.13		Clay	100.0			11.47	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	11.710	0.220	5076.4	3386.9	5.416	2.399	3.17		Clay	100.0			11.07	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	11.590	0.223	5096.9	3397.2	5.323	2.466	3.18		Clay	100.0			10.95	0.88	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	11.690	0.253	5117.4	3407.4	5.360	2.771	3.21		Clay	100.0			11.05	0.88	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	13.970	0.257	5137.9	3417.7	6.672	2.254	3.08		Clay	100.0			13.20	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	15.620	0.224	5158.4	3428.0	7.608	1.718	2.97		Clay	100.0			14.76	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	17.620	0.332	5178.9	3438.2	8.743	2.209	2.97		Clay	100.0			16.65	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	25.520	0.427	5199.4	3448.5	13.293	1.863	2.78		Clay	85.4			24.12	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	37.050	0.563	5219.9	3458.8	19.915	1.635	2.60		Clay	71.1			35.02	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	39.060	0.483	5240.4	3469.0	26.900	1.325	2.44		Sand	58.4			36.92	0.77	28.35	84.57	0.84	0.755	0.953	0.120	0.137	0.18	0.04	0.02
42.651	29.280	0.400	5260.9	3479.3	15.319	1.501	2.68		Clay	77.2			27.67	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	27.550	0.417	5281.4	3489.6	14.276	1.674	2.73		Clay	81.3			26.04	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	29.730	0.534	5301.9	3499.8	15.475	1.972	2.74		Clay	82.0			28.10	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	31.840	0.635	5322.4	3510.1	16.626	2.176	2.74		Clay	81.9			30.09	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	32.440	0.768	5342.9	3520.4	16.912	2.580	2.77		Clay	84.8			30.66	0.87	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	31.470	0.762	5363.4	3530.6	16.308	2.647	2.79		Clay	86.4			29.74	0.87	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	28.960	0.816	5383.9	3540.9	14.837	3.106	2.87		Clay	92.3			27.37	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	24.700	1.001	5404.4	3551.2	12.389	4.550	3.03		Clay	100.0			23.35	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	20.890	0.861	5424.9	3561.4	10.208	4.737	3.11		Clay	100.0			19.74	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	29.950	0.880	5445.4	3571.7	15.246	3.232	2.87		Clay	92.4			28.31	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	31.560	0.866	5465.9	3582.0	16.096	3.004	2.83		Clay	89.3			29.83	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	30.610	0.893	5486.4	3592.2	15.515	3.205	2.86		Clay	91.7			28.93	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	24.650	0.747	5506.9	3602.5	12.156	3.411	2.96		Clay	99.8			23.30	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	20.200	0.552	5527.4	3612.8	9.653	3.166	3.02		Clay	100.0			19.09	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	14.440	0.420	5548.0	3623.1	6.440	3.600	3.20		Clay	100.0			13.65	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	13.520	0.395	5568.5	3633.4	5.910	3.679	3.24		Clay	100.0			12.78	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	13.730	0.426	5589.0	3643.6	6.003	3.896	3.24		Clay	100.0			12.98	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	13.540	0.435	5609.5	3653.9	5.876	4.052	3.26		Clay	100.0			12.80	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	12.850	0.414	5630.0	3664.2	5.477	4.126	3.29		Clay	100.0			12.15	0.87	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	12.840	0.339	5650.5	3674.4	5.451	3.385	3.25		Clay	100.0			12.14	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	13.030	0.294	5671.0	3684.7	5.533	2.884	3.20		Clay	100.0			12.32	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	13.900	0.528	5691.5	3694.9	5.983	4.776	3.30		Clay	100.0			13.14	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	32.540	0.754	5712.0	3705.2	16.023	2.540	2.79		Clay	86.0			30.76	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	71.290	0.922	5732.5	3715.5	48.806	1.347	2.23		Sand	41.8	75.43	1.8	135.77	0.82	111.16	181.35	0.82	0.750	0.879	0.767	1.424	1.90	0.00	0.00
46.588	79.800	0.794	5753.0	3725.7	54.793	1.032	2.13		Sand	33.1		1.8	135.77	0.81	110.17	171.77	0.82	0.750	0.890	0.535	0.932	1.24	0.00	0.00
46.752	61.810	1.058	5773.5	3736.0	41.914	1.796	2.36		Sand	52.1	75.43	1.8	135.77	0.82	111.56	188.18	0.82	0.750	0.869	1.033	1.974	2.63	0.00	0.00
46.916	44.360	1.070	5794.0	3746.3	22.136	2.581	2.68		Clay	77.3			41.93	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	37.630	0.959	5814.5	3756.5	18.487	2.762	2.76		Clay	83.7			35.57	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	26.770	0.750	5835.0	3766.8	12.665	3.144	2.92		Clay	97.0			25.30	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	18.560	0.533	5855.5	3777.1	8.277	3.410	3.10		Clay	100.0			17.54	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	15.390	0.407	5876.0	3787.3	6.576	3.269	3.17		Clay	100.0			14.55	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	14.850	0.329	5896.5	3797.6	6.268	2.764	3.15		Clay	100.0			14.04	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	14.050	0.304	5917.0	3807.9	5.826	2.741	3.17		Clay	100.0			13.28	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	13.520	0.293	5937.5	3818.1	5.527	2.777	3.19		Clay	100.0			12.78	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	13.140	0.292	5958.0	3828.4	5.308	2.874	3.22		Clay	100.0			12.42	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	13.320	0.281	5978.5	3838.7	5.382	2.720	3.20		Clay	100.0			12.59	0.85	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	12.880	0.332	5999.0	3848.9	5.134	3.360	3.27		Clay	100.0			12.17	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	13.640	0.316	6019.5	3859.2	5.509	2.973	3.21		Clay	100.0			12.89	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	13.920	0.311	6040.1	3869.5	5.634	2.853	3.19		Clay	100.0			13.16	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	13.740	0.297	6060.6	3879.8	5.521	2.773	3.19		Clay	100.0			12.99	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 4

PGA (A_{max}) 0.85

Total Settlement: 1.37 (Inches)

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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)
49.213	13.060	0.272	6081.1	3890.1	5.151	2.715	3.22		Clay	100.0			12.34	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	12.260	0.220	6101.6	3900.3	4.722	2.389	3.22		Clay	100.0			11.59	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	12.030	0.191	6122.1	3910.6	4.587	2.130	3.21		Clay	100.0			11.37	0.85	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	11.830	0.193	6142.6	3920.9	4.468	2.204	3.22		Clay	100.0			11.18	0.85	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	12.550	0.219	6163.1	3931.1	4.817	2.313	3.21		Clay	100.0			11.86	0.85	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	15.120	0.270	6183.6	3941.4	6.104	2.245	3.11		Clay	100.0			14.29	0.85	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.81

Total Settlement: 0.66 (Inches)

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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)
5.085	28.100	0.674	610.2	610.2	48.922	2.425	2.40		Unsaturated	54.8			26.56	1.70	45.15	104.90	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	25.950	0.664	629.9	629.9	44.410	2.590	2.45		Unsaturated	58.8			24.53	1.70	41.70	101.76	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	23.630	0.671	649.6	649.6	39.757	2.879	2.51		Unsaturated	64.1			22.33	1.70	37.97	98.37	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	22.870	0.659	669.2	669.2	37.874	2.924	2.53		Unsaturated	65.7			21.62	1.70	36.75	97.17	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	24.470	0.682	688.9	688.9	39.964	2.827	2.51		Unsaturated	63.5			23.13	1.70	39.32	99.97	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	25.220	0.783	708.7	708.7	40.610	3.149	2.53		Unsaturated	65.7			23.84	1.70	40.52	102.02	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	24.570	0.822	728.4	728.4	38.995	3.396	2.57		Unsaturated	68.5			23.22	1.70	39.39	101.18	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	23.160	0.779	748.1	748.1	36.221	3.419	2.59		Unsaturated	70.5			21.89	1.69	36.89	98.35	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	22.040	0.733	767.8	767.8	41.620	3.385	2.55		Unsaturated	66.7			20.83	1.68	34.91	95.04	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	22.300	0.753	787.4	787.4	41.361	3.437	2.55		Unsaturated	67.3			21.08	1.65	34.87	95.09	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	26.160	0.629	807.1	807.1	39.417	2.442	2.47		Unsaturated	60.6			24.73	1.62	39.96	100.03	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	29.560	0.555	826.8	826.8	44.072	1.904	2.36		Unsaturated	52.0			27.94	1.59	44.35	102.90	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.054	25.220	0.566	846.5	846.5	37.056	2.283	2.47		Unsaturated	60.7			23.84	1.59	37.83	97.33	0.99	0.520	1.095	n.a.	n.a.	n.a.	0.00	0.00
7.218	20.630	0.674	866.2	866.2	35.673	3.337	2.59		Unsaturated	70.3			19.50	1.59	31.01	90.73	0.99	0.520	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.382	20.290	0.720	885.8	885.8	34.508	3.628	2.63		Unsaturated	73.1			19.18	1.57	30.18	90.16	0.99	0.520	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.546	19.120	0.657	905.5	905.5	31.961	3.520	2.64		Unsaturated	74.4			18.07	1.56	28.25	87.87	0.99	0.520	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.710	18.230	0.589	925.2	925.2	29.966	3.315	2.65		Unsaturated	74.7			17.23	1.55	26.74	85.96	0.99	0.519	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.874	18.960	0.554	944.9	944.9	30.725	2.997	2.61		Unsaturated	71.8			17.92	1.53	27.47	86.41	0.99	0.519	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.038	21.060	0.534	964.6	964.6	28.807	2.595	2.59		Unsaturated	70.3			19.91	1.51	30.01	89.42	0.99	0.519	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.202	23.380	0.646	984.2	984.2	31.720	2.822	2.58		Unsaturated	69.6			22.10	1.48	32.76	92.84	0.98	0.519	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.366	20.460	0.771	1003.9	1003.9	39.760	3.863	2.60		Unsaturated	71.1			19.34	1.48	28.64	87.79	0.98	0.518	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.530	19.880	0.658	1023.6	1023.6	30.435	3.397	2.65		Unsaturated	74.9	26.14	1.66	43.39	1.38	59.74	128.74	0.98	0.518	1.097	n.a.	n.a.	n.a.	0.00	0.00
8.694	26.970	0.531	1043.3	1043.3	35.602	2.008	2.45		Unsaturated	58.9	26.14	1.66	43.39	1.37	59.56	124.65	0.98	0.518	1.091	n.a.	n.a.	n.a.	0.00	0.00
8.858	27.660	0.530	1063.0	1063.0	36.178	1.954	2.44		Unsaturated	57.9		1.66	43.40	1.36	59.14	123.79	0.98	0.517	1.088	n.a.	n.a.	n.a.	0.00	0.00
9.022	21.730	0.270	1082.6	1082.6	27.998	1.274	2.42		Unsaturated	56.5	26.14	1.66	43.39	1.35	58.72	122.77	0.98	0.517	1.085	n.a.	n.a.	n.a.	0.00	0.00
9.186	18.690	0.283	1102.3	1102.3	23.754	1.560	2.53		Unsaturated	65.1	26.14	1.66	43.39	1.34	58.12	124.53	0.98	0.517	1.084	n.a.	n.a.	n.a.	0.00	0.00
9.350	17.900	0.352	1122.0	1122.0	25.551	2.030	2.57		Unsaturated	68.3	26.14	1.66	43.39	1.33	57.65	124.69	0.98	0.517	1.082	n.a.	n.a.	n.a.	0.00	0.00
9.514	15.950	0.413	1141.7	1141.7	26.941	2.685	2.62		Unsaturated	72.8			15.08	1.40	21.17	78.45	0.98	0.516	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.678	15.940	0.433	1161.4	1161.4	26.451	2.819	2.64		Unsaturated	74.4			15.07	1.39	20.96	78.43	0.98	0.516	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.843	16.440	0.397	1181.2	1181.2	26.837	2.505	2.61		Unsaturated	71.4			15.54	1.38	21.41	78.52	0.98	0.516	1.052	n.a.	n.a.	n.a.	0.00	0.00
10.007	13.180	0.363	1200.8	1200.8	20.951	2.886	2.73		Clay	81.2			12.46	1.16	n.a.	n.a.	0.98	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	10.410	0.310	1220.5	1220.5	16.058	3.163	2.84		Clay	90.5			9.84	1.16	n.a.	n.a.	0.98	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	9.530	0.280	1240.2	1240.2	14.368	3.143	2.88		Clay	93.4			9.01	1.15	n.a.	n.a.	0.98	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	8.610	0.280	1259.9	1259.9	12.668	3.509	2.95		Clay	99.2			8.14	1.15	n.a.	n.a.	0.98	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	8.020	0.260	1279.6	1279.6	11.536	3.523	2.99		Clay	100.0			7.58	1.14	n.a.	n.a.	0.98	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	7.460	0.249	1299.2	1299.2	10.484	3.656	3.03		Clay	100.0			7.05	1.14	n.a.	n.a.	0.98	0.535	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	7.050	0.202	1318.9	1318.9	9.691	3.161	3.02		Clay	100.0			6.66	1.13	n.a.	n.a.	0.98	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	6.700	0.173	1338.6	1338.6	9.010	2.869	3.02		Clay	100.0			6.33	1.13	n.a.	n.a.	0.98	0.543	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	6.660	0.168	1358.3	1358.3	8.807	2.809	3.03		Clay	100.0			6.29	1.12	n.a.	n.a.	0.97	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	7.250	0.131	1378.0	1378.0	9.523	1.997	2.92		Clay	96.5			6.85	1.12	n.a.	n.a.	0.97	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	10.560	0.174	1397.6	1397.6	14.111	1.764	2.75		Clay	82.6			9.98	1.12	n.a.	n.a.	0.97	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	14.540	0.230	1417.3	1417.3	19.518	1.663	2.61		Clay	72.0			13.74	1.11	n.a.	n.a.	0.97	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	15.690	0.231	1437.4	1432.7	18.592	1.543	2.61	plastic	Clay	72.0			14.83	1.11	n.a.	n.a.	0.97	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	11.110	0.217	1457.9	1443.0	14.389	2.090	2.78		Clay	85.2			10.50	1.11	n.a.	n.a.	0.97	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	9.830	0.179	1478.4	1453.2	12.511	1.969	2.81		Clay	88.2			9.29	1.10	n.a.	n.a.	0.97	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	10.960	0.209	1498.9	1463.5	13.954	2.047	2.78		Clay	85.7			10.36	1.10	n.a.	n.a.	0.97	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	13.320	0.203	1519.4	1473.8	17.045	1.616	2.66		Clay	75.4			12.59	1.10	n.a.	n.a.	0.97	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	10.540	0.190	1539.9	1484.0	13.167	1.945	2.79		Clay	86.5			9.96	1.10	n.a.	n.a.	0.97	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	9.440	0.175	1560.4	1494.3	11.591	2.021	2.85		Clay	90.9			8.92	1.10	n.a.	n.a.	0.97	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	8.940	0.232	1580.9	1504.6	10.833	2.847	2.96		Clay	99.4			8.45	1.09	n.a.	n.a.	0.97	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	11.570	0.278	1601.4	1514.8	14.219	2.581	2.83		Clay	89.7			10.94	1.09	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	13.060	0.272	1621.9	1525.1	16.063	2.221	2.75		Clay	83.3			12.34	1.09	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	9.730	0.179	1642.4	1535.4	11.605	2.009	2.85		Clay	90.8			9.20	1.09	n.a.	n.a.	0.97	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	7.550	0.142	1663.0	1545.7	8.693	2.114	2.97		Clay	100.0			7.14	1.09	n.a.	n.a.	0.97	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	7.290	0.146	1683.5	1556.0	8.288	2.264	3.00		Clay	100.0			6.89	1.08	n.a.	n.a.	0.97	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	10.240	0.277	1704.0	1566.2	11.988	2.951	2.93		Clay	97.2			9.68	1.08	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	18.740	0.262	1724.5	1576.5	19.577	1.466	2.58	plastic	Clay	69.5		1.8	31.88	1.08	n.a.	n.a.	0.96	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	18.460	0.215	1745.0	1586.8	19.196	1.222	2.55	plastic	Clay	66.8	17.71	1.8	31.88	1.08	n.a.	n.a.	0.96	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	11.480	0.197	1765.5	1597.0	13.271	1.859	2.78		Clay	85.4			10.85	1.08	n.a.	n.a.	0.96	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	8.810	0.177	1786.0	1607.3	9.851	2.236	2.93		Clay	97.6			8.33	1.08	n.a.	n.a.	0.96	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	7.360	0.201	1806.5	1617.6	7.983	3.113	3.09		Clay	100.0			6.96	1.07	n.a.	n.a.	0.96	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	6.420	0.215	1827.0	1627.8	6.765	3.904	3.20		Clay	100.0			6.07	1.07	n.a.	n.a.	0.96	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	6.730	0.217	1847.5	1638.1	7.089	3.737	3.17		Clay	100.0			6.36	1.07	n.a.	n.a.	0.96	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	7.210	0.230	1868.0	1648.4	7.615	3.665	3.14		Clay	100.0			6.81	1.07	n.a.	n.a.	0.96	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	7.610	0.260	1888.5	1658.6	8.038	3.901	3.14		Clay	100.0			7.19	1.07	n.a.	n.a.	0.96	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	8.170	0.276	1909.0	1668.9	8.647	3.825	3.11		Clay	100.0			7.72	1.06	n.a.	n.a.	0.96	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	8.390	0.286	1929.5	1679.2	8.844	3.852	3.10		Clay	100.0			7.93	1.06	n.a.	n.a.	0.96	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	8.760	0.286	1950.0	1689.4	9.216	3.674	3.08		Clay	100.0			8.28	1.06	n.a.	n.a.	0.96	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement:	0.66	(Inches)

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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)
16.240	8.930	0.296	1970.5	1699.7	9.349	3.726	3.07		Clay	100.0			8.44	1.06	n.a.	n.a.	0.96	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	9.010	0.294	1991.0	1710.0	9.374	3.668	3.07		Clay	100.0			8.52	1.06	n.a.	n.a.	0.96	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	9.190	0.307	2011.5	1720.2	9.515	3.751	3.07		Clay	100.0			8.69	1.06	n.a.	n.a.	0.96	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	9.210	0.311	2032.0	1730.5	9.470	3.795	3.07		Clay	100.0			8.71	1.05	n.a.	n.a.	0.96	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	9.190	0.314	2052.5	1740.7	9.380	3.846	3.08		Clay	100.0			8.69	1.05	n.a.	n.a.	0.95	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	8.970	0.308	2073.0	1751.0	9.062	3.882	3.10		Clay	100.0			8.48	1.05	n.a.	n.a.	0.95	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	9.160	0.313	2093.5	1761.3	9.213	3.858	3.09		Clay	100.0			8.66	1.05	n.a.	n.a.	0.95	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	9.420	0.326	2114.0	1771.5	9.441	3.898	3.08		Clay	100.0			8.90	1.05	n.a.	n.a.	0.95	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	9.700	0.339	2134.5	1781.8	9.690	3.927	3.08		Clay	100.0			9.17	1.05	n.a.	n.a.	0.95	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	9.980	0.324	2155.1	1792.1	9.935	3.639	3.05		Clay	100.0			9.43	1.04	n.a.	n.a.	0.95	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	10.860	0.340	2175.6	1802.4	10.843	3.479	3.01		Clay	100.0			10.26	1.04	n.a.	n.a.	0.95	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	11.080	0.374	2196.1	1812.7	11.013	3.747	3.02		Clay	100.0			10.47	1.04	n.a.	n.a.	0.95	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	11.030	0.389	2216.6	1822.9	10.885	3.921	3.03		Clay	100.0			10.43	1.04	n.a.	n.a.	0.95	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	10.800	0.398	2237.1	1833.2	10.562	4.111	3.06		Clay	100.0			10.21	1.04	n.a.	n.a.	0.95	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	11.160	0.406	2257.6	1843.5	10.883	4.047	3.04		Clay	100.0			10.55	1.04	n.a.	n.a.	0.95	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	10.770	0.400	2278.1	1853.7	10.391	4.153	3.07		Clay	100.0			10.18	1.04	n.a.	n.a.	0.95	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	10.210	0.320	2298.6	1864.0	9.722	3.532	3.05		Clay	100.0			9.65	1.03	n.a.	n.a.	0.95	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	9.510	0.291	2319.1	1874.3	8.911	3.485	3.08		Clay	100.0			8.99	1.03	n.a.	n.a.	0.95	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	8.920	0.246	2339.6	1884.5	8.225	3.174	3.08		Clay	100.0			8.43	1.03	n.a.	n.a.	0.95	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	8.670	0.256	2360.1	1894.8	7.906	3.418	3.11		Clay	100.0			8.19	1.03	n.a.	n.a.	0.95	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	8.300	0.248	2380.6	1905.1	7.464	3.488	3.14		Clay	100.0			7.84	1.03	n.a.	n.a.	0.94	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	7.490	0.221	2401.1	1915.3	6.567	3.514	3.19		Clay	100.0			7.08	1.03	n.a.	n.a.	0.94	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	7.240	0.180	2421.6	1925.6	6.262	2.985	3.17		Clay	100.0			6.84	1.03	n.a.	n.a.	0.94	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	8.110	0.175	2442.1	1935.9	7.117	2.540	3.08		Clay	100.0			7.67	1.02	n.a.	n.a.	0.94	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	10.350	0.193	2462.6	1946.1	9.371	2.117	2.94		Clay	98.0			9.78	1.02	n.a.	n.a.	0.94	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	15.750	0.277	2483.1	1956.4	14.832	1.909	2.75		Clay	82.6			14.89	1.02	n.a.	n.a.	0.94	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	19.350	0.381	2503.6	1966.7	18.405	2.105	2.69		Clay	78.3			18.29	1.02	n.a.	n.a.	0.94	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	23.050	0.494	2524.1	1976.9	22.042	2.267	2.65		Clay	74.7			21.79	1.02	n.a.	n.a.	0.94	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	24.320	0.621	2544.6	1987.2	23.196	2.694	2.67		Clay	77.0			22.99	1.02	n.a.	n.a.	0.94	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	25.820	0.772	2565.1	1997.5	24.568	3.146	2.70		Clay	78.8			24.40	1.02	n.a.	n.a.	0.94	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	29.360	0.891	2585.6	2007.7	27.959	3.175	2.66		Clay	75.5			27.75	1.01	n.a.	n.a.	0.94	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	30.120	0.948	2606.1	2018.0	28.560	3.290	2.66		Clay	75.8			28.47	1.01	n.a.	n.a.	0.94	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	27.200	0.921	2626.8	2028.3	25.525	3.558	2.72		Clay	80.5			25.71	1.01	n.a.	n.a.	0.94	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	26.770	0.908	2647.3	2038.6	24.965	3.568	2.73		Clay	81.2			25.30	1.01	n.a.	n.a.	0.94	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	29.020	0.985	2667.8	2048.9	27.026	3.558	2.70		Clay	79.0			27.43	1.01	n.a.	n.a.	0.94	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	32.570	1.019	2688.3	2059.1	30.329	3.263	2.64		Clay	74.0			30.78	1.01	n.a.	n.a.	0.93	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	31.490	0.868	2708.8	2069.4	29.125	2.880	2.62		Clay	72.3			29.76	1.01	n.a.	n.a.	0.93	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	28.750	1.067	2729.3	2079.7	26.336	3.896	2.73		Clay	81.8			27.17	1.00	n.a.	n.a.	0.93	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	31.340	1.159	2749.8	2089.9	28.676	3.868	2.71		Clay	79.4			29.62	1.00	n.a.	n.a.	0.93	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	28.820	1.014	2770.3	2100.2	26.126	3.696	2.72		Clay	80.8			27.24	1.00	n.a.	n.a.	0.93	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	24.880	0.562	2790.8	2110.5	22.255	2.393	2.66		Clay	75.6			23.52	1.00	n.a.	n.a.	0.93	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	16.670	0.393	2811.3	2120.7	14.395	2.575	2.83		Clay	89.3			15.76	1.00	n.a.	n.a.	0.93	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.040	0.251	2831.8	2131.0	9.971	2.363	2.94		Clay	98.2			11.38	1.00	n.a.	n.a.	0.93	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	9.980	0.220	2852.3	2141.3	7.990	2.572	3.04		Clay	100.0			9.43	1.00	n.a.	n.a.	0.93	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	8.280	0.182	2872.8	2151.5	6.362	2.659	3.13		Clay	100.0			7.83	1.00	n.a.	n.a.	0.93	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	9.980	0.296	2893.3	2161.8	7.895	3.469	3.12		Clay	100.0			9.43	0.99	n.a.	n.a.	0.93	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	15.980	0.438	2913.8	2172.1	13.373	3.016	2.90		Clay	94.6			15.10	0.99	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	17.600	0.478	2934.3	2182.3	14.785	2.963	2.86		Clay	91.4			16.64	0.99	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	15.620	0.539	2954.8	2192.6	12.900	3.811	2.97		Clay	100.0			14.76	0.99	n.a.	n.a.	0.93	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	17.590	0.868	2975.3	2202.9	14.619	5.391	3.02		Clay	100.0			16.63	0.99	n.a.	n.a.	0.92	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	31.830	0.949	2995.8	2213.1	27.411	3.129	2.66		Clay	75.7			30.09	0.99	n.a.	n.a.	0.92	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	31.060	0.970	3016.3	2223.4	26.583	3.282	2.68		Clay	77.6			29.36	0.99	n.a.	n.a.	0.92	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	35.110	0.988	3036.8	2233.7	30.078	2.941	2.61		Clay	71.9			33.19	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	40.820	0.868	3057.3	2243.9	36.063	2.209	2.47		Sand	60.7			38.58	0.97	37.45	96.85	0.92	0.697	0.994	0.133	0.165	0.24	0.03	0.04
25.098	31.880	1.061	3077.8	2254.2	26.920	3.497	2.70		Clay	78.7			30.13	0.98	n.a.	n.a.	0.92	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	27.210	1.021	3098.3	2264.5	22.664	3.979	2.79		Clay	86.2			25.72	0.98	n.a.	n.a.	0.92	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	35.600	0.729	3118.9	2274.8	31.031	2.142	2.51		Sand	64.1			33.65	0.96	32.41	91.22	0.92	0.700	0.993	0.127	0.154	0.22	0.04	0.04
25.591	38.650	1.436	3139.4	2285.1	32.455	3.873	2.67		Clay	76.2			36.53	0.98	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	44.970	1.787	3159.9	2295.3	37.807	4.118	2.64		Clay	73.9			42.50	0.98	n.a.	n.a.	0.92	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	58.130	1.531	3180.4	2305.6	51.196	2.708	2.41		Sand	56.2	57.48	1.13	64.95	0.96	62.53	127.54	0.92	0.702	0.989	0.190	0.272	0.39	0.02	0.03
26.083	60.810	0.660	3200.9	2315.9	53.494	1.115	2.15		Sand	35.3		1.13	64.95	0.96	62.28	115.57	0.92	0.702	0.989	0.162	0.217	0.31	0.03	0.03
26.247	55.910	0.996	3221.4	2326.1	48.950	1.834	2.32		Sand	48.4		1.13	59.71	0.96	57.16	117.58	0.92	0.703	0.988	0.166	0.225	0.32	0.03	0.03
26.411	59.540	1.462	3241.9	2336.4	52.098	2.524	2.39		Sand	54.1		1.13	63.59	0.96	60.83	124.61	0.92	0.704	0.987	0.182	0.256	0.36	0.03	0.03
26.575	59.040	1.337	3262.4	2346.7	51.526	2.329	2.37		Sand	52.5		1.13	63.06	0.95	60.19	123.17	0.91	0.704	0.987	0.179	0.249	0.35	0.03	0.03
26.739	54.260	1.318	3282.9	2356.9	47.124	2.505	2.42		Sand	56.5		1.13	57.95	0.95	55.15	118.22	0.91	0.705	0.987	0.167	0.227	0.32	0.03	0.03
26.903	56.800	0.828	3303.4	2367.2	49.282	1.501	2.26		Sand	43.8		1.13	60.67	0.95	57.58	115.77	0.91	0.706	0.986	0.162	0.217	0.31	0.03	0.03
27.067	73.460	1.072	3323.9	2377.5	64.022	1.493	2.17		Sand	36.6		1.13	78.46	0.95	74.59	131.85	0.91	0.706	0.984	0.203	0.297	0.42	0.02	0.03

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement:	0.66	(Inches)

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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)
27.231	105.510	1.018	3344.4	2387.7	92.392	0.980	1.93		Sand	17.5		1.13	112.69	0.95	107.08	138.35	0.91	0.707	0.983	0.227	0.345	0.49	0.02	0.02
27.395	129.380	0.856	3364.9	2398.0	113.379	0.670	1.76		Sand	3.8		1.13	138.18	0.95	130.84	130.86	0.91	0.707	0.983	0.200	0.290	0.41	0.02	0.03
27.559	154.760	0.792	3385.4	2408.3	135.614	0.517	1.63		Sand	0.0		1.13	165.29	0.95	157.12	157.12	0.91	0.708	0.978	0.344	0.590	0.83	0.01	0.01
27.723	158.040	0.630	3405.9	2418.5	138.216	0.403	1.56		Sand	0.0		1.13	168.80	0.95	160.29	160.29	0.91	0.708	0.977	0.374	0.657	0.93	0.01	0.01
27.887	158.920	0.682	3426.4	2428.8	138.691	0.434	1.58		Sand	0.0		1.13	169.73	0.95	160.94	160.94	0.91	0.709	0.976	0.381	0.671	0.95	0.01	0.01
28.051	170.680	0.603	3446.9	2439.1	148.743	0.357	1.51		Sand	0.0		1.13	182.30	0.95	173.02	173.02	0.91	0.709	0.972	0.559	1.074	1.51	0.00	0.00
28.215	172.640	1.215	3467.4	2449.3	150.144	0.711	1.68		Sand	0.0		1.13	184.39	0.95	174.81	174.81	0.91	0.710	0.971	0.595	1.159	1.63	0.00	0.00
28.379	168.310	0.674	3487.9	2459.6	146.025	0.405	1.55		Sand	0.0	163.18	1.13	184.39	0.95	174.54	174.54	0.91	0.710	0.970	0.590	1.145	1.61	0.00	0.00
28.543	126.260	0.887	3508.4	2469.9	108.925	0.712	1.79		Sand	6.2	163.18	1.13	184.39	0.95	174.30	175.25	0.91	0.711	0.969	0.605	1.180	1.66	0.00	0.00
28.707	89.900	1.145	3528.9	2480.1	76.946	1.299	2.07		Sand	28.6	163.18	1.13	184.39	0.96	176.55	245.17	0.91	0.711	0.952	74.883	156.895	220.55	0.00	0.00
28.871	51.440	0.814	3549.4	2490.4	43.271	1.639	2.33		Sand	49.3	163.18	1.13	184.39	0.96	176.64	268.93	0.90	0.712	0.951	1655.799	3464.725	4867.40	0.00	0.00
29.035	30.280	0.720	3569.9	2500.7	22.790	2.527	2.66		Clay	76.1			28.62	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	27.710	0.392	3590.4	2510.9	22.486	1.513	2.54		Sand	66.1			26.19	0.91	23.86	80.67	0.90	0.713	0.984	0.116	0.135	0.19	0.04	0.04
29.364	27.660	0.328	3611.0	2521.2	22.387	1.269	2.50		Sand	62.9	26.19		26.19	0.91	23.80	79.89	0.90	0.713	0.984	0.116	0.134	0.19	0.04	0.04
29.528	24.830	0.320	3631.5	2531.5	19.887	1.390	2.56		Sand	68.1	26.19		26.19	0.91	23.76	80.94	0.90	0.714	0.984	0.117	0.135	0.19	0.04	0.04
29.692	23.540	0.380	3652.0	2541.8	17.086	1.750	2.67		Clay	76.9			22.25	0.95	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	22.810	0.436	3672.5	2552.0	16.437	2.079	2.73		Clay	81.3			21.56	0.95	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	20.930	0.470	3693.0	2562.3	14.896	2.463	2.81		Clay	87.5			19.78	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	20.570	0.490	3713.5	2572.6	14.548	2.618	2.83		Clay	89.4			19.44	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	21.040	0.538	3734.0	2582.8	14.846	2.806	2.84		Clay	90.2			19.89	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	20.280	0.564	3754.5	2593.1	14.194	3.065	2.88		Clay	93.3			19.17	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	18.360	0.567	3775.0	2603.4	12.655	3.442	2.95		Clay	98.9			17.35	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	16.300	0.556	3795.5	2613.6	11.021	3.861	3.03		Clay	100.0			15.41	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	15.170	0.504	3816.0	2623.9	10.109	3.800	3.05		Clay	100.0			14.34	0.94	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	14.240	0.463	3836.5	2634.2	9.355	3.758	3.08		Clay	100.0			13.46	0.94	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	12.930	0.424	3857.0	2644.4	8.320	3.854	3.12		Clay	100.0			12.22	0.94	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	11.470	0.371	3877.5	2654.7	7.181	3.892	3.18		Clay	100.0			10.84	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	10.330	0.321	3898.0	2665.0	6.290	3.830	3.22		Clay	100.0			9.76	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	10.030	0.268	3918.5	2675.2	6.034	3.321	3.20		Clay	100.0			9.48	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	9.450	0.165	3939.0	2685.5	5.571	2.206	3.14		Clay	100.0			8.93	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	8.920	0.122	3959.5	2695.8	5.149	1.758	3.12		Clay	100.0			8.43	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	9.950	0.108	3980.0	2706.0	5.883	1.357	3.02		Clay	100.0			9.40	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	11.360	0.117	4000.5	2716.3	6.892	1.250	2.94		Clay	98.4			10.74	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	12.440	0.173	4021.0	2726.6	7.650	1.659	2.96		Clay	99.8			11.76	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	13.340	0.184	4041.5	2736.8	8.272	1.626	2.93		Clay	97.1			12.61	0.93	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	14.780	0.241	4062.0	2747.1	9.282	1.890	2.92		Clay	96.3			13.97	0.93	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	15.730	0.257	4082.5	2757.4	9.929	1.877	2.89		Clay	94.1			14.87	0.93	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	16.530	0.288	4103.1	2767.7	10.462	1.989	2.88		Clay	93.6			15.62	0.93	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	17.290	0.336	4123.6	2778.0	10.964	2.206	2.89		Clay	94.2			16.34	0.93	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	18.410	0.398	4144.1	2788.2	11.719	2.436	2.89		Clay	94.1			17.40	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	19.590	0.479	4164.6	2798.5	12.512	2.736	2.89		Clay	94.5			18.52	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	21.170	0.558	4185.1	2808.8	13.584	2.925	2.88		Clay	93.5			20.01	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	23.240	0.602	4205.6	2819.0	14.996	2.848	2.84		Clay	90.2			21.97	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	25.510	0.622	4226.1	2829.3	16.539	2.658	2.79		Clay	86.1			24.11	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	25.680	0.642	4246.6	2839.6	16.592	2.725	2.79		Clay	86.5			24.27	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	23.950	0.664	4267.1	2849.8	15.311	3.044	2.85		Clay	91.0			22.64	0.92	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	20.910	0.682	4287.6	2860.1	13.123	3.634	2.95		Clay	99.0			19.76	0.92	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	17.010	0.671	4308.1	2870.4	10.351	4.517	3.09		Clay	100.0			16.08	0.92	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	14.470	0.535	4328.6	2880.6	8.544	4.348	3.15		Clay	100.0			13.68	0.92	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	13.880	0.348	4349.1	2890.9	8.098	2.973	3.07		Clay	100.0			13.12	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	17.170	0.262	4369.6	2901.2	10.330	1.748	2.86		Clay	91.7			16.23	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	18.900	0.289	4390.1	2911.4	11.475	1.730	2.82		Clay	88.4			17.86	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	15.600	0.298	4410.6	2921.7	9.169	2.225	2.96		Clay	99.6			14.74	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	14.130	0.305	4431.1	2932.0	8.127	2.560	3.03		Clay	100.0			13.36	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	12.510	0.272	4451.6	2942.2	6.991	2.645	3.10		Clay	100.0			11.82	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	10.540	0.228	4472.1	2952.5	5.625	2.746	3.19		Clay	100.0			9.96	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	9.740	0.203	4492.6	2962.8	5.059	2.709	3.22		Clay	100.0			9.21	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	9.040	0.165	4513.1	2973.0	4.563	2.432	3.24		Clay	100.0			8.54	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	8.890	0.136	4533.6	2983.3	4.440	2.053	3.21		Clay	100.0			8.40	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	8.450	0.123	4554.1	2993.6	4.124	1.993	3.23		Clay	100.0			7.99	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	8.380	0.135	4574.6	3003.8	4.057	2.216	3.26		Clay	100.0			7.92	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	8.790	0.138	4595.3	3014.2	4.308	2.126	3.23		Clay	100.0			8.31	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	8.990	0.132	4615.8	3024.4	4.419	1.975	3.21		Clay	100.0			8.50	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	8.860	0.116	4636.3	3034.7	4.311	1.773	3.19		Clay	100.0			8.37	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	8.930	0.111	4656.8	3045.0	4.336	1.681	3.18		Clay	100.0			8.44	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	9.600	0.131	4677.3	3055.2	4.753	1.804	3.16		Clay	100.0			9.07	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	10.440	0.139	4697.8	3065.5	5.279	1.718	3.11		Clay	100.0			9.87	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.81

Total Settlement: 0.66 (Inches)

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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)
38.222	11.020	0.140	4718.3	3075.8	5.632	1.616	3.07		Clay	100.0			10.42	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	11.660	0.130	4738.8	3086.0	6.021	1.399	3.02		Clay	100.0			11.02	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	10.810	0.094	4759.3	3096.3	5.445	1.115	3.01		Clay	100.0			10.22	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	10.690	0.094	4779.8	3106.6	5.344	1.133	3.02		Clay	100.0			10.10	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	12.550	0.098	4800.3	3116.8	6.513	0.966	2.92		Clay	96.3			11.86	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	11.470	0.097	4820.8	3127.1	5.794	1.071	2.98		Clay	100.0			10.84	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	11.130	0.102	4841.3	3137.4	5.552	1.171	3.01		Clay	100.0			10.52	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	11.720	0.108	4861.8	3147.6	5.902	1.163	2.99		Clay	100.0			11.08	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	11.720	0.124	4882.3	3157.9	5.877	1.336	3.02		Clay	100.0			11.08	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	12.330	0.157	4902.8	3168.2	6.236	1.589	3.03		Clay	100.0			11.65	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	12.990	0.179	4923.3	3178.4	6.625	1.700	3.02		Clay	100.0			12.28	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	12.800	0.175	4943.8	3188.7	6.478	1.694	3.03		Clay	100.0			12.10	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	11.870	0.169	4964.3	3199.0	5.869	1.800	3.08		Clay	100.0			11.22	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	11.790	0.161	4984.8	3209.2	5.794	1.732	3.07		Clay	100.0			11.14	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	12.040	0.254	5005.3	3219.5	5.925	2.663	3.16		Clay	100.0			11.38	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	15.770	0.425	5025.8	3229.8	8.209	3.206	3.08		Clay	100.0			14.91	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	29.330	0.653	5046.3	3240.0	16.547	2.436	2.77		Clay	84.3			27.72	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	45.590	0.757	5066.9	3250.3	32.836	1.758	2.44		Sand	58.4	50.59	1.28	64.76	0.82	53.05	116.15	0.85	0.721	0.948	0.163	0.210	0.29	0.03	0.02
41.175	53.520	0.882	5087.4	3260.6	38.814	1.730	2.38		Sand	53.4		1.28	64.75	0.82	52.89	114.25	0.85	0.721	0.949	0.160	0.204	0.28	0.03	0.02
41.339	53.420	1.226	5107.9	3270.9	38.669	2.410	2.47		Sand	60.8		1.28	64.63	0.82	52.82	116.56	0.85	0.721	0.947	0.164	0.211	0.29	0.03	0.02
41.503	64.210	1.301	5128.4	3281.1	46.791	2.110	2.37		Sand	52.7		1.28	77.68	0.82	64.01	128.12	0.85	0.721	0.942	0.192	0.262	0.36	0.02	0.01
41.667	82.470	1.082	5148.9	3291.4	60.549	1.354	2.16		Sand	36.0		1.28	99.77	0.83	82.97	141.58	0.84	0.721	0.934	0.242	0.356	0.49	0.02	0.01
41.831	97.310	0.594	5169.4	3301.7	71.675	0.627	1.91		Sand	15.7		1.28	117.73	0.82	96.15	120.90	0.84	0.720	0.944	0.173	0.228	0.32	0.03	0.02
41.995	107.120	0.927	5189.9	3311.9	78.968	0.887	1.96		Sand	19.7		1.28	129.60	0.83	107.78	145.07	0.84	0.720	0.931	0.259	0.389	0.54	0.02	0.01
42.159	117.660	1.114	5210.4	3322.2	86.789	0.968	1.95		Sand	18.9		1.28	142.35	0.84	119.19	155.94	0.84	0.720	0.924	0.333	0.536	0.74	0.02	0.01
42.323	137.040	1.141	5230.9	3332.5	101.243	0.849	1.86		Sand	11.9		1.28	165.80	0.83	138.42	153.63	0.84	0.720	0.925	0.314	0.498	0.69	0.02	0.01
42.487	139.470	1.002	5251.4	3342.7	102.908	0.732	1.82		Sand	8.3		1.28	168.73	0.83	139.68	143.97	0.84	0.720	0.931	0.253	0.378	0.52	0.02	0.01
42.651	135.260	0.928	5271.9	3353.0	99.581	0.700	1.82		Sand	8.3		1.28	163.64	0.82	134.75	138.95	0.84	0.720	0.933	0.230	0.332	0.46	0.02	0.01
42.815	136.410	1.225	5292.4	3363.3	100.283	0.916	1.89		Sand	13.8		1.28	165.03	0.84	137.92	159.94	0.84	0.719	0.919	0.371	0.610	0.85	0.01	0.01
42.979	116.320	2.066	5312.9	3373.5	85.084	1.818	2.14		Sand	33.9	128.93	1.28	165.03	0.86	142.57	212.22	0.84	0.719	0.860	4.045	7.654	10.64	0.00	0.00
43.143	72.050	2.303	5333.4	3383.8	51.859	3.319	2.47		Sand	60.8	128.93	1.28	165.03	0.87	144.21	233.68	0.84	0.719	0.859	23.020	43.512	60.51	0.00	0.00
43.307	38.230	1.782	5353.9	3394.1	20.950	5.012	2.88		Clay	93.5			36.13	0.88	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	25.340	1.028	5374.4	3404.3	13.308	4.538	3.00		Clay	100.0			23.95	0.88	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	18.540	0.520	5394.9	3414.6	9.279	3.282	3.05		Clay	100.0			17.52	0.88	n.a.	n.a.	0.83	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	14.820	0.392	5415.4	3424.9	7.073	3.236	3.14		Clay	100.0			14.01	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	11.650	0.334	5435.9	3435.1	5.200	3.739	3.29		Clay	100.0			11.01	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	10.870	0.288	5456.4	3445.4	4.726	3.537	3.31		Clay	100.0			10.27	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	10.490	0.268	5476.9	3455.7	4.486	3.457	3.32		Clay	100.0			9.91	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	10.490	0.268	5497.4	3465.9	4.467	3.462	3.32		Clay	100.0			9.91	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	10.860	0.248	5517.9	3476.2	4.661	3.061	3.28		Clay	100.0			10.26	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	11.480	0.304	5538.4	3486.5	4.997	3.490	3.28		Clay	100.0			10.85	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	13.450	0.318	5559.0	3496.8	6.103	2.980	3.17		Clay	100.0			12.71	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	14.490	0.311	5579.5	3507.1	6.672	2.658	3.12		Clay	100.0			13.70	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	18.730	0.429	5600.0	3517.3	9.058	2.693	3.01		Clay	100.0			17.70	0.87	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	24.960	0.463	5620.5	3527.6	12.558	2.090	2.83		Clay	89.2			23.59	0.87	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	25.530	0.519	5641.0	3537.9	12.838	2.285	2.84		Clay	90.3			24.13	0.87	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	25.600	0.534	5661.5	3548.1	12.834	2.345	2.85		Clay	90.8			24.20	0.87	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	26.780	0.586	5682.0	3558.4	13.455	2.448	2.84		Clay	90.2			25.31	0.87	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	27.210	0.630	5702.5	3568.7	13.651	2.586	2.85		Clay	90.9			25.72	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	30.610	0.706	5723.0	3578.9	15.507	2.544	2.80		Clay	87.0			28.93	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	34.910	0.888	5743.5	3589.2	17.853	2.772	2.77		Clay	84.8			33.00	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	38.160	1.252	5764.0	3599.5	19.602	3.549	2.81		Clay	87.5			36.07	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	36.840	1.355	5784.5	3609.7	18.809	3.991	2.85		Clay	91.2			34.82	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	33.040	1.325	5805.0	3620.0	16.651	4.397	2.92		Clay	96.6			31.23	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	31.020	1.087	5825.5	3630.3	15.485	3.867	2.91		Clay	95.8			29.32	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	28.190	0.923	5846.0	3640.5	13.881	3.653	2.93		Clay	97.5			26.64	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	27.530	0.898	5866.5	3650.8	13.475	3.651	2.94		Clay	98.4			26.02	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	28.540	0.924	5887.0	3661.1	13.983	3.610	2.93		Clay	97.1			26.98	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	26.320	0.930	5907.5	3671.3	12.729	3.980	2.98		Clay	100.0			24.88	0.86	n.a.	n.a.	0.81	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	22.560	0.845	5928.0	3681.6	10.645	4.312	3.07		Clay	100.0			21.32	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	19.590	0.653	5948.5	3691.9	9.001	3.930	3.10		Clay	100.0			18.52	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	17.010	0.517	5969.0	3702.1	7.577	3.686	3.15		Clay	100.0			16.08	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	15.700	0.336	5989.5	3712.4	6.845	2.645	3.10		Clay	100.0			14.84	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	15.090	0.316	6010.0	3722.7	6.493	2.615	3.12		Clay	100.0			14.26	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	16.340	0.308	6030.5	3732.9	7.139	2.311	3.06		Clay	100.0			15.44	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	16.230	0.284	6051.1	3743.3	7.055	2.151	3.05		Clay	100.0			15.34	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	15.370	0.282	6071.6	3753.5	6.572	2.286	3.09		Clay	100.0			14.53	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement: 0.66 (Inches)

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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)
49.213	15.900	0.288	6092.1	3763.8	6.830	2.241	3.07		Clay	100.0			15.03	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	16.610	0.390	6112.6	3774.1	7.183	2.877	3.11		Clay	100.0			15.70	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	21.240	0.594	6133.1	3784.3	9.605	3.269	3.03		Clay	100.0			20.08	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	27.850	0.542	6153.6	3794.6	13.057	2.188	2.82		Clay	88.9			26.32	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	27.340	0.376	6174.1	3804.9	12.748	1.550	2.75		Clay	83.3			25.84	0.86	n.a.	n.a.	0.80	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	19.580	0.281	6194.6	3815.1	8.641	1.705	2.92		Clay	96.6			18.51	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 6

PGA (A_{max}) 0.85

Total Settlement: 2.37 (Inches)

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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)
5.085	19.710	0.399	610.2	610.2	34.154	2.056	2.47		Unsaturated	60.6			18.63	1.70	31.67	89.42	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	34.470	0.636	629.9	629.9	59.170	1.862	2.26		Unsaturated	43.7			32.58	1.70	55.39	112.97	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	40.760	0.834	649.6	649.6	68.980	2.063	2.24		Unsaturated	42.2			38.53	1.70	65.40	124.54	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	39.950	0.851	669.2	669.2	66.580	2.148	2.26		Unsaturated	44.0			37.76	1.68	63.43	123.21	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	42.500	0.852	688.9	688.9	69.830	2.021	2.23		Unsaturated	41.4			40.17	1.65	66.32	125.18	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	53.880	0.767	708.7	708.7	87.417	1.433	2.06		Unsaturated	27.5			50.93	1.61	82.11	130.66	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	80.010	0.675	728.4	728.4	128.307	0.848	1.78		Unsaturated	5.5			75.62	1.62	122.39	122.74	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	92.790	0.401	748.1	748.1	146.908	0.434	1.56		Unsaturated	0.0			87.70	1.56	136.59	136.59	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	95.260	0.307	767.8	767.8	148.873	0.324	1.49		Unsaturated	0.0			90.04	1.54	138.27	138.27	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	99.880	0.246	787.4	787.4	154.144	0.247	1.42		Unsaturated	0.0			94.40	1.51	142.42	142.42	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	96.020	0.243	807.1	807.1	146.331	0.254	1.45		Unsaturated	0.0			90.76	1.51	136.80	136.80	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	89.870	0.260	826.8	826.8	135.265	0.291	1.50		Unsaturated	0.0			84.94	1.51	128.52	128.52	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.054	89.940	0.264	846.5	846.5	133.773	0.295	1.51		Unsaturated	0.0			85.01	1.50	127.51	127.51	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.218	94.140	0.198	866.2	866.2	138.435	0.211	1.44		Unsaturated	0.0			88.98	1.48	131.30	131.30	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.382	85.320	0.172	885.8	885.8	123.990	0.203	1.47		Unsaturated	0.0			80.64	1.49	120.02	120.02	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.546	68.780	0.255	905.5	905.5	98.723	0.373	1.67		Unsaturated	0.0			65.01	1.53	99.34	99.34	0.99	0.545	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.710	60.540	0.255	925.2	925.2	85.875	0.424	1.75		Unsaturated	3.4			57.22	1.54	88.36	88.36	0.99	0.545	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.874	48.470	0.324	944.9	944.9	67.890	0.675	1.95		Unsaturated	18.6			45.81	1.50	68.66	98.35	0.99	0.545	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.038	38.600	0.256	964.6	964.6	53.362	0.672	2.03		Unsaturated	25.7			36.48	1.49	54.43	95.12	0.99	0.544	1.080	n.a.	n.a.	n.a.	0.00	0.00
8.202	32.610	0.219	984.2	984.2	44.511	0.682	2.10		Unsaturated	31.3			30.82	1.49	45.79	91.75	0.98	0.544	1.076	n.a.	n.a.	n.a.	0.00	0.00
8.366	29.000	0.123	1003.9	1003.9	39.105	0.432	2.06		Unsaturated	28.1			27.41	1.50	41.00	82.39	0.98	0.544	1.069	n.a.	n.a.	n.a.	0.00	0.00
8.530	30.570	0.122	1023.6	1023.6	40.848	0.406	2.04		Unsaturated	25.8			28.89	1.48	42.83	81.66	0.98	0.544	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.694	34.570	0.118	1043.3	1043.3	45.832	0.347	1.96		Unsaturated	20.0			32.67	1.48	48.24	78.16	0.98	0.543	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.858	29.360	0.142	1063.0	1063.0	38.445	0.493	2.09		Unsaturated	30.6			27.75	1.45	40.13	84.11	0.98	0.543	1.065	n.a.	n.a.	n.a.	0.00	0.00
9.022	21.820	0.151	1082.6	1082.6	28.117	0.710	2.29		Unsaturated	46.0			20.62	1.44	29.64	81.83	0.98	0.543	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.186	17.710	0.207	1102.3	1102.3	22.470	1.206	2.49		Unsaturated	61.9			16.74	1.43	23.91	79.80	0.98	0.542	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.350	25.400	0.291	1122.0	1122.0	32.241	1.172	2.35		Unsaturated	50.8			24.01	1.39	33.48	88.65	0.98	0.542	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.514	39.610	0.315	1141.7	1141.7	50.234	0.807	2.10		Unsaturated	45.0			37.44	1.35	50.41	107.43	0.98	0.542	1.070	n.a.	n.a.	n.a.	0.00	0.00
9.678	44.800	0.281	1161.4	1161.4	56.416	0.635	2.00		Unsaturated	45.0			42.34	1.32	56.06	114.51	0.98	0.542	1.071	n.a.	n.a.	n.a.	0.00	0.00
9.843	33.820	0.264	1181.2	1181.2	42.038	0.794	2.16		Unsaturated	45.0			31.97	1.34	42.85	97.95	0.98	0.541	1.061	n.a.	n.a.	n.a.	0.00	0.00
10.007	25.840	0.276	1200.9	1200.4	31.673	1.094	2.34		Sand	45.0			24.42	1.35	33.02	85.61	0.98	0.541	1.054	0.121	0.153	0.28	0.04	0.06
10.171	30.240	0.315	1221.4	1210.7	37.023	1.063	2.27		Sand	45.0			28.58	1.33	38.13	92.03	0.98	0.545	1.056	0.128	0.165	0.30	0.03	0.06
10.335	53.200	0.318	1241.9	1221.0	65.423	0.605	1.93		Sand	45.0			50.28	1.28	64.31	124.86	0.98	0.550	1.071	0.183	0.279	0.51	0.03	0.04
10.499	67.950	0.304	1262.4	1231.2	83.414	0.452	1.78		Sand	45.0			64.22	1.25	80.27	144.88	0.98	0.554	1.083	0.258	0.450	0.81	0.02	0.02
10.663	69.740	0.308	1282.9	1241.5	85.264	0.446	1.77		Sand	45.0			65.92	1.24	81.95	146.99	0.98	0.558	1.083	0.270	0.478	0.86	0.01	0.02
10.827	61.470	0.290	1303.4	1251.8	74.738	0.477	1.83		Sand	45.0			58.10	1.25	72.74	135.44	0.98	0.562	1.074	0.216	0.351	0.63	0.02	0.04
10.991	43.370	0.358	1323.9	1262.0	52.269	0.838	2.09		Sand	45.0			40.99	1.28	52.45	109.98	0.98	0.566	1.059	0.152	0.212	0.38	0.03	0.05
11.155	25.310	0.435	1344.4	1272.3	30.032	1.766	2.47		Sand	60.9			23.92	1.31	31.23	88.94	0.98	0.569	1.050	0.124	0.158	0.28	0.04	0.06
11.319	20.970	0.440	1364.9	1282.6	24.630	2.169	2.60		Sand	70.7			19.82	1.31	25.91	84.21	0.97	0.573	1.047	0.120	0.149	0.26	0.04	0.06
11.483	23.590	0.489	1385.4	1292.8	27.688	2.136	2.55		Sand	67.2			22.30	1.30	28.91	87.39	0.97	0.577	1.047	0.123	0.155	0.27	0.04	0.06
11.647	24.330	0.506	1405.9	1303.1	28.457	2.142	2.54		Sand	66.5			23.00	1.29	29.67	88.22	0.97	0.580	1.047	0.124	0.156	0.27	0.04	0.06
11.811	28.960	0.408	1426.4	1313.4	33.888	1.444	2.38		Sand	53.4			27.37	1.28	35.03	91.58	0.97	0.584	1.047	0.127	0.163	0.28	0.04	0.06
11.975	30.680	0.341	1446.9	1323.6	35.800	1.138	2.30		Sand	47.2			29.00	1.27	36.97	91.58	0.97	0.587	1.047	0.127	0.163	0.28	0.04	0.06
12.139	22.250	0.304	1467.4	1333.9	25.614	1.413	2.48		Sand	61.0	29		29.00	1.26	36.65	95.91	0.97	0.591	1.048	0.132	0.172	0.29	0.03	0.05
12.303	13.210	0.175	1487.9	1344.2	16.188	1.404	2.64	plastic	Clay	74.4	29		29.00	1.13	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	12.420	0.257	1508.4	1354.4	17.226	2.203	2.73		Clay	81.1			11.74	1.12	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	28.620	0.292	1528.9	1364.7	32.784	1.048	2.31		Sand	48.2	28.37	1.8	51.07	1.22	62.19	123.83	0.97	0.601	1.056	0.180	0.270	0.45	0.03	0.04
12.795	30.020	0.347	1549.4	1375.0	34.291	1.187	2.33		Sand	49.2		1.8	51.07	1.21	61.98	124.05	0.97	0.604	1.055	0.181	0.271	0.45	0.03	0.04
12.959	19.370	0.311	1569.9	1385.2	21.711	1.673	2.58		Sand	69.1	28.37	1.8	51.07	1.20	61.49	129.81	0.97	0.607	1.057	0.197	0.305	0.50	0.02	0.04
13.123	12.880	0.262	1590.4	1395.5	17.320	2.168	2.72		Clay	80.6			12.17	1.12	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	14.130	0.214	1610.9	1405.8	18.957	1.606	2.62		Clay	72.2			13.36	1.11	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	12.550	0.143	1631.4	1416.0	16.574	1.219	2.60		Clay	71.2			11.86	1.11	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	9.110	0.098	1651.9	1426.3	11.616	1.183	2.73		Clay	81.4			8.61	1.11	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	7.800	0.072	1672.5	1436.6	9.695	1.034	2.77		Clay	84.9			7.37	1.11	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	7.400	0.069	1693.0	1446.9	9.059	1.053	2.80		Clay	87.3			6.99	1.11	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	7.120	0.065	1713.5	1457.2	8.597	1.038	2.82		Clay	88.7			6.73	1.10	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	6.660	0.068	1734.0	1467.4	7.895	1.174	2.88		Clay	93.2			6.29	1.10	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	6.280	0.076	1754.5	1477.7	7.312	1.407	2.94		Clay	98.5			5.94	1.10	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	5.980	0.086	1775.0	1488.0	6.845	1.689	3.01		Clay	100.0			5.65	1.10	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	6.180	0.095	1795.5	1498.2	7.051	1.798	3.01		Clay	100.0			5.84	1.10	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	6.400	0.099	1816.0	1508.5	7.281	1.803	3.00		Clay	100.0			6.05	1.09	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	6.720	0.102	1836.5	1518.8	7.640	1.758	2.97		Clay	100.0			6.35	1.09	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	6.870	0.095	1857.0	1529.0	7.772	1.599	2.95		Clay	98.7			6.49	1.09	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	6.990	0.094	1877.5	1539.3	7.862	1.553	2.94		Clay	97.9			6.61	1.09	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	6.960	0.076	1898.0	1549.6	7.758	1.264	2.90		Clay	94.9			6.58	1.09	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	7.080	0.079	1918.5	1559.8	7.848	1.291	2.90		Clay	94.9			6.69	1.08	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	7.480	0.083	1939.0	1570.1	8.293	1.275	2.88		Clay	93.0			7.07	1.08	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	7.930	0.095	1959.5	1580.4	8.796	1.367	2.87		Clay	92.3			7.50	1.08	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	6

PGA (A_{max})	0.85

Total Settlement:	2.37	(Inches)

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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)
16.240	7.880	0.083	1980.0	1590.6	8.663	1.205	2.85		Clay	90.8			7.45	1.08	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	8.140	0.071	2000.5	1600.9	8.920	0.994	2.80		Clay	86.9			7.69	1.08	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	8.620	0.069	2021.0	1611.2	9.446	0.907	2.76		Clay	83.7			8.15	1.07	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	9.260	0.088	2041.5	1621.4	10.163	1.068	2.76		Clay	83.9			8.75	1.07	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	10.350	0.089	2062.0	1631.7	11.423	0.955	2.69		Clay	78.5			9.78	1.07	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	11.740	0.133	2082.5	1642.0	13.032	1.243	2.70		Clay	78.8			11.10	1.07	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	22.120	0.195	2103.0	1652.2	22.536	0.926	2.43		Sand	57.2		1.8	37.63	1.13	42.52	102.32	0.95	0.671	1.027	0.140	0.184	0.27	0.03	0.04
17.388	19.190	0.138	2123.5	1662.5	19.331	0.761	2.45		Sand	58.7	20.91	1.8	37.64	1.13	42.39	102.60	0.95	0.673	1.026	0.141	0.184	0.27	0.03	0.04
17.552	11.480	0.091	2144.0	1672.8	12.444	0.874	2.64		Clay	74.5			10.85	1.06	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	8.980	0.116	2164.6	1683.1	9.385	1.469	2.86		Clay	91.5			8.49	1.06	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	9.970	0.111	2185.1	1693.4	10.485	1.250	2.78		Clay	85.5			9.42	1.06	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	9.280	0.104	2205.6	1703.6	9.600	1.272	2.82		Clay	88.5			8.77	1.06	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	8.160	0.126	2226.1	1713.9	8.223	1.788	2.95		Clay	98.9			7.71	1.06	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	7.100	0.143	2246.6	1724.1	6.933	2.393	3.08		Clay	100.0			6.71	1.06	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	6.120	0.132	2267.1	1734.4	5.750	2.647	3.17		Clay	100.0			5.78	1.05	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	6.520	0.140	2287.6	1744.7	6.163	2.604	3.14		Clay	100.0			6.16	1.05	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	6.990	0.119	2308.1	1754.9	6.651	2.039	3.06		Clay	100.0			6.61	1.05	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	7.150	0.156	2328.6	1765.2	6.782	2.606	3.10		Clay	100.0			6.76	1.05	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	7.740	0.190	2349.1	1775.5	7.396	2.894	3.10		Clay	100.0			7.32	1.05	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	8.370	0.216	2369.6	1785.7	8.047	3.006	3.08		Clay	100.0			7.91	1.05	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	8.680	0.252	2390.1	1796.0	8.335	3.367	3.09		Clay	100.0			8.20	1.04	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	9.270	0.265	2410.6	1806.3	8.930	3.286	3.06		Clay	100.0			8.76	1.04	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	9.650	0.280	2431.1	1816.5	9.286	3.320	3.05		Clay	100.0			9.12	1.04	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	9.800	0.267	2451.6	1826.8	9.387	3.114	3.03		Clay	100.0			9.26	1.04	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	8.870	0.261	2472.1	1837.1	8.311	3.419	3.10		Clay	100.0			8.38	1.04	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	8.310	0.254	2492.6	1847.3	7.647	3.596	3.14		Clay	100.0			7.85	1.04	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	8.000	0.253	2513.1	1857.6	7.260	3.752	3.17		Clay	100.0			7.56	1.03	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	8.180	0.243	2533.6	1867.9	7.402	3.515	3.14		Clay	100.0			7.73	1.03	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	8.610	0.235	2554.1	1878.1	7.809	3.205	3.10		Clay	100.0			8.14	1.03	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	9.540	0.252	2574.6	1888.4	8.740	3.054	3.05		Clay	100.0			9.02	1.03	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	9.740	0.283	2595.1	1898.7	8.893	3.352	3.07		Clay	100.0			9.21	1.03	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	9.740	0.315	2615.6	1908.9	8.834	3.736	3.10		Clay	100.0			9.21	1.03	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	9.920	0.312	2636.3	1919.3	8.964	3.627	3.08		Clay	100.0			9.38	1.03	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	11.030	0.335	2656.8	1929.5	10.056	3.453	3.03		Clay	100.0			10.43	1.02	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	12.830	0.342	2677.3	1939.8	11.848	2.976	2.93		Clay	97.8			12.13	1.02	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	14.240	0.392	2697.8	1950.1	13.221	3.041	2.90		Clay	95.1			13.46	1.02	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	15.330	0.435	2718.3	1960.3	14.254	3.114	2.88		Clay	93.5			14.49	1.02	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	15.640	0.502	2738.8	1970.6	14.483	3.518	2.91		Clay	95.6			14.78	1.02	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	15.680	0.503	2759.3	1980.9	14.438	3.517	2.91		Clay	95.7			14.82	1.02	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	15.370	0.488	2779.8	1991.1	14.042	3.491	2.92		Clay	96.3			14.53	1.02	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	15.330	0.469	2800.3	2001.4	13.920	3.367	2.91		Clay	95.8			14.49	1.01	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	14.750	0.449	2820.8	2011.7	13.262	3.366	2.93		Clay	97.1			13.94	1.01	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	13.650	0.424	2841.3	2021.9	12.097	3.467	2.97		Clay	100.0			12.90	1.01	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	12.390	0.408	2861.8	2032.2	10.785	3.723	3.02		Clay	100.0			11.71	1.01	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	11.490	0.382	2882.3	2042.5	9.840	3.801	3.06		Clay	100.0			10.86	1.01	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	10.790	0.310	2902.8	2052.7	9.099	3.320	3.06		Clay	100.0			10.20	1.01	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	11.610	0.304	2923.3	2063.0	9.838	2.996	3.00		Clay	100.0			10.97	1.01	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	12.630	0.302	2943.8	2073.3	10.764	2.707	2.95		Clay	98.6			11.94	1.01	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	14.040	0.324	2964.3	2083.5	12.054	2.580	2.89		Clay	94.4			13.27	1.00	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	14.720	0.342	2984.8	2093.8	12.635	2.585	2.88		Clay	93.1			13.91	1.00	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	16.230	0.397	3005.3	2104.1	13.999	2.696	2.85		Clay	91.0			15.34	1.00	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	18.070	0.495	3025.8	2114.3	15.662	2.990	2.84		Clay	90.0			17.08	1.00	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	20.250	0.599	3046.3	2124.6	17.629	3.199	2.81		Clay	88.1			19.14	1.00	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	21.540	0.703	3066.8	2134.9	18.743	3.514	2.82		Clay	88.5			20.36	1.00	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	20.600	0.749	3087.3	2145.1	17.767	3.930	2.87		Clay	92.4			19.47	1.00	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	18.180	0.718	3107.8	2155.4	15.427	4.319	2.94		Clay	98.3			17.18	1.00	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	17.000	0.608	3128.4	2165.7	14.255	3.939	2.94		Clay	98.4			16.07	0.99	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	21.000	0.496	3148.9	2176.0	17.854	2.553	2.75		Clay	83.1			19.85	0.99	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	22.060	0.414	3169.4	2186.3	18.731	2.022	2.68		Clay	77.0			20.85	0.99	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	16.890	0.380	3189.9	2196.5	13.927	2.484	2.83		Clay	89.6			15.96	0.99	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	14.600	0.419	3210.4	2206.8	11.777	3.224	2.96		Clay	99.5			13.80	0.99	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	13.010	0.352	3230.9	2217.1	10.279	3.089	2.99		Clay	100.0			12.30	0.99	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	12.140	0.211	3251.4	2227.3	9.441	2.007	2.92		Clay	96.8			11.47	0.99	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	8.300	0.175	3271.9	2237.6	5.956	2.626	3.15		Clay	100.0			7.84	0.99	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	9.400	0.169	3292.4	2247.9	6.899	2.180	3.06		Clay	100.0			8.88	0.98	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	8.720	0.238	3312.9	2258.1	6.256	3.369	3.19		Clay	100.0			8.24	0.98	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	9.950	0.300	3333.4	2268.4	7.303	3.622	3.16		Clay	100.0			9.40	0.98	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 6

PGA (A_{max}) 0.85

Total Settlement: 2.37 (Inches)

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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)
27.231	11.270	0.297	3353.9	2278.7	8.420	3.096	3.07		Clay	100.0			10.65	0.98	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	9.780	0.217	3374.4	2288.9	7.071	2.681	3.10		Clay	100.0			9.24	0.98	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	8.980	0.159	3394.9	2299.2	6.335	2.183	3.09		Clay	100.0			8.49	0.98	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	10.000	0.176	3415.4	2309.5	7.181	2.122	3.04		Clay	100.0			9.45	0.98	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	11.290	0.191	3435.9	2319.7	8.253	1.995	2.97		Clay	100.0			10.67	0.98	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	9.970	0.193	3456.4	2330.0	7.075	2.342	3.06		Clay	100.0			9.42	0.97	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	10.450	0.206	3476.9	2340.3	7.445	2.365	3.05		Clay	100.0			9.88	0.97	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	12.860	0.255	3497.4	2350.5	9.454	2.295	2.95		Clay	99.2			12.16	0.97	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	19.930	0.328	3517.9	2360.8	15.394	1.805	2.72		Clay	80.5			18.84	0.97	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	32.010	0.480	3538.4	2371.1	27.002	1.587	2.48		Sand	61.8	91.77		91.77	0.96	87.84	161.77	0.91	0.746	0.980	0.390	0.694	0.93	0.01	0.01
28.871	39.700	0.564	3558.9	2381.3	33.786	1.487	2.39		Sand	54.1	91.77		91.77	0.96	87.65	158.73	0.90	0.747	0.980	0.359	0.624	0.84	0.01	0.01
29.035	36.780	0.554	3579.4	2391.6	31.108	1.583	2.43		Sand	57.7	91.77		91.77	0.95	87.52	159.97	0.90	0.747	0.979	0.371	0.651	0.87	0.01	0.01
29.199	42.580	0.640	3599.9	2401.9	36.178	1.569	2.38		Sand	53.3	91.77		91.77	0.95	87.34	157.99	0.90	0.748	0.978	0.352	0.607	0.81	0.01	0.01
29.364	73.020	0.592	3620.5	2412.2	63.039	0.831	2.02		Sand	25.0	91.77		91.77	0.94	86.70	132.02	0.90	0.748	0.982	0.204	0.297	0.40	0.02	0.02
29.528	88.330	0.441	3641.0	2422.5	76.420	0.510	1.84		Sand	25.0	91.77		91.77	0.94	86.53	131.83	0.90	0.749	0.981	0.203	0.296	0.39	0.02	0.02
29.692	97.090	0.413	3661.5	2432.7	83.972	0.434	1.77		Sand	25.0			91.77	0.94	86.37	131.64	0.90	0.749	0.981	0.203	0.294	0.39	0.02	0.02
29.856	99.320	0.421	3682.0	2443.0	85.748	0.432	1.76		Sand	25.0			93.88	0.94	88.24	133.84	0.90	0.750	0.980	0.210	0.309	0.41	0.02	0.02
30.020	96.110	0.366	3702.5	2453.3	82.741	0.388	1.75		Sand	25.0			90.84	0.94	85.15	130.21	0.90	0.750	0.980	0.198	0.285	0.38	0.02	0.02
30.184	90.440	0.344	3723.0	2463.5	77.593	0.388	1.78		Sand	6.0			85.48	0.92	78.64	79.20	0.90	0.750	0.986	0.115	0.133	0.18	0.04	0.04
30.348	81.900	0.336	3743.5	2473.8	69.958	0.420	1.83		Sand	9.5			77.41	0.92	70.98	76.61	0.90	0.751	0.986	0.113	0.130	0.17	0.04	0.04
30.512	74.510	0.322	3764.0	2484.1	63.357	0.443	1.88		Sand	13.4			70.43	0.92	64.52	80.20	0.90	0.751	0.985	0.116	0.135	0.18	0.04	0.04
30.676	68.120	0.283	3784.5	2494.3	57.655	0.427	1.91		Sand	15.7			64.39	0.91	58.86	80.36	0.90	0.751	0.985	0.116	0.135	0.18	0.04	0.04
30.840	62.490	0.256	3805.0	2504.6	52.637	0.423	1.94		Sand	18.4			59.06	0.91	53.90	81.26	0.90	0.752	0.985	0.117	0.136	0.18	0.04	0.04
31.004	58.290	0.297	3825.5	2514.9	48.879	0.527	2.01		Sand	24.2			55.09	0.91	50.31	88.02	0.89	0.752	0.983	0.124	0.147	0.19	0.04	0.03
31.168	56.900	0.338	3846.0	2525.1	47.568	0.615	2.06		Sand	27.6			53.78	0.91	49.08	91.39	0.89	0.752	0.982	0.127	0.152	0.20	0.04	0.03
31.332	57.370	0.382	3866.5	2535.4	47.868	0.689	2.08		Sand	29.4			54.22	0.91	49.43	93.99	0.89	0.753	0.982	0.130	0.157	0.21	0.03	0.03
31.496	56.300	0.336	3887.0	2545.6	46.841	0.618	2.06		Sand	28.1			53.21	0.91	48.35	91.23	0.89	0.753	0.982	0.127	0.152	0.20	0.04	0.03
31.660	55.760	0.318	3907.5	2555.9	46.273	0.591	2.06		Sand	27.7			52.70	0.91	47.76	90.04	0.89	0.753	0.981	0.126	0.150	0.20	0.04	0.03
31.824	53.830	0.308	3928.0	2566.2	44.515	0.594	2.07		Sand	29.0			50.88	0.90	46.00	89.46	0.89	0.754	0.981	0.125	0.149	0.20	0.04	0.03
31.988	51.890	0.246	3948.5	2576.4	42.756	0.493	2.05		Sand	27.2			49.05	0.90	44.16	85.14	0.89	0.754	0.981	0.121	0.142	0.19	0.04	0.03
32.152	51.610	0.329	3969.0	2586.7	42.423	0.663	2.12		Sand	32.3			48.78	0.90	43.94	90.46	0.89	0.754	0.980	0.126	0.150	0.20	0.04	0.03
32.316	47.470	0.295	3989.5	2597.0	38.798	0.649	2.15		Sand	34.7			44.87	0.90	40.29	88.09	0.89	0.754	0.980	0.124	0.146	0.19	0.04	0.03
32.480	45.890	0.282	4010.0	2607.2	37.368	0.643	2.16		Sand	35.6			43.37	0.90	38.85	87.11	0.89	0.755	0.980	0.123	0.145	0.19	0.04	0.03
32.644	46.930	0.452	4030.5	2617.5	38.170	1.006	2.25		Sand	43.0			44.36	0.90	39.76	93.01	0.89	0.755	0.979	0.129	0.155	0.21	0.03	0.03
32.808	49.840	0.554	4051.0	2627.8	40.554	1.159	2.26		Sand	43.9			47.11	0.90	42.22	96.61	0.89	0.755	0.978	0.133	0.162	0.21	0.03	0.03
32.972	50.090	0.382	4071.5	2638.0	40.678	0.795	2.17		Sand	36.8			47.34	0.89	42.25	92.14	0.89	0.755	0.978	0.128	0.153	0.20	0.03	0.03
33.136	46.330	0.222	4092.0	2648.3	37.414	0.501	2.11		Sand	31.7			43.79	0.89	38.82	83.64	0.89	0.756	0.979	0.119	0.139	0.18	0.04	0.03
33.301	42.490	0.208	4112.6	2658.6	34.095	0.514	2.15		Sand	35.0			40.16	0.88	35.50	82.48	0.88	0.756	0.979	0.118	0.137	0.18	0.04	0.03
33.465	39.450	0.243	4133.1	2668.9	31.462	0.650	2.23		Sand	41.1			37.29	0.88	32.91	83.43	0.88	0.756	0.978	0.119	0.138	0.18	0.04	0.03
33.629	34.780	0.349	4153.6	2679.2	27.470	1.067	2.38		Sand	53.7			32.87	0.88	28.97	83.96	0.88	0.756	0.978	0.119	0.139	0.18	0.04	0.03
33.793	35.340	0.505	4174.1	2689.4	27.879	1.519	2.46		Sand	60.0			33.40	0.88	29.42	86.38	0.88	0.756	0.977	0.122	0.143	0.19	0.04	0.03
33.957	40.470	0.417	4194.6	2699.7	32.110	1.087	2.33		Sand	49.5			38.25	0.88	33.66	88.37	0.88	0.756	0.976	0.124	0.146	0.19	0.04	0.03
34.121	55.340	0.289	4215.1	2710.0	44.460	0.543	2.06		Sand	27.6			52.31	0.88	45.91	87.63	0.88	0.757	0.976	0.123	0.145	0.19	0.04	0.03
34.285	63.960	0.246	4235.6	2720.2	51.553	0.398	1.94		Sand	18.2			60.45	0.87	52.68	79.35	0.88	0.757	0.977	0.115	0.132	0.17	0.04	0.03
34.449	58.190	0.228	4256.1	2730.5	46.646	0.407	1.98		Sand	21.6	60.45		60.45	0.87	52.82	86.61	0.88	0.757	0.976	0.122	0.143	0.19	0.04	0.03
34.613	27.680	0.210	4276.6	2740.8	21.212	0.822	2.43		Sand	57.0	60.45		60.45	0.89	53.62	116.45	0.88	0.757	0.969	0.164	0.216	0.29	0.03	0.02
34.777	16.960	0.213	4297.1	2751.0	10.768	1.438	2.80		Clay	87.0			16.03	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	16.990	0.110	4317.6	2761.3	10.742	0.742	2.67		Clay	76.7			16.06	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	32.220	0.135	4338.1	2771.6	24.818	0.449	2.25		Sand	43.1	114.8		114.80	0.91	103.98	173.33	0.88	0.757	0.947	0.565	1.060	1.40	0.00	0.00
35.269	67.060	0.167	4358.6	2781.8	53.484	0.257	1.85		Sand	11.2	114.8		114.80	0.88	100.88	112.05	0.87	0.757	0.968	0.155	0.200	0.26	0.03	0.02
35.433	82.060	0.199	4379.1	2792.1	65.719	0.249	1.76		Sand	4.1	114.8		114.80	0.87	99.99	100.02	0.87	0.758	0.971	0.137	0.168	0.22	0.03	0.03
35.597	82.190	0.305	4399.6	2802.4	65.697	0.381	1.84		Sand	9.9	114.8		114.80	0.87	100.28	107.76	0.87	0.758	0.968	0.148	0.187	0.25	0.03	0.02
35.761	85.170	0.474	4420.1	2812.6	68.012	0.571	1.91		Sand	15.5	114.8		114.80	0.88	101.13	125.92	0.87	0.758	0.963	0.186	0.256	0.34	0.03	0.02
35.925	94.720	0.634	4440.6	2822.9	75.694	0.685	1.91		Sand	15.8	114.8		114.80	0.88	101.00	126.45	0.87	0.758	0.962	0.187	0.259	0.34	0.03	0.02
36.089	100.620	0.566	4461.1	2833.2	80.368	0.575	1.85		Sand	15.0	114.8		114.80	0.88	100.69	123.79	0.87	0.758	0.963	0.180	0.245	0.32	0.03	0.02
36.253	111.910	0.545	4481.6	2843.4	89.420	0.497	1.77		Sand	15.0	114.8		114.80	0.88	100.51	123.60	0.87	0.758	0.962	0.180	0.244	0.32	0.03	0.02
36.417	121.460	0.765	4502.1	2853.7	97.023	0.642	1.80		Sand	15.0			114.80	0.87	100.34	123.42	0.87	0.758	0.962	0.179	0.243	0.32	0.03	0.02
36.581	121.940	0.998	4522.6	2864.0	97.231	0.834	1.87		Sand	15.0			115.26	0.87	100.59	123.69	0.87	0.758	0.961	0.180	0.245	0.32	0.03	0.02
36.745	126.820	1.207	4543.1	2874.2	101.006	0.969	1.90		Sand	15.0			119.87	0.87	104.71	128.16	0.87	0.758	0.959	0.192	0.267	0.35	0.02	0.02
36.909	133.340	1.124	4563.6	2884.5	106.096	0.858	1.85		Sand	10.9			126.03	0.87	109.39	119.89	0.87	0.758	0.961	0.171	0.228	0.30	0.03	0.02
37.073	133.230	0.809	4584.1	2894.8	105.811	0.618	1.76		Sand	4.1			125.93	0.86	108.33	108.36	0.87	0.758	0.964	0.149	0.188	0.25	0.03	0.02
37.238	124.740	0.757	4604.8	2905.1	98.766	0.618	1.79		Sand	6.1			117.90	0.85	100.78	101.46	0.87	0.758	0.966	0.139	0.171	0.23	0.03	0.02
37.402	120.990	0.840	4625.3	2915.4	95.564	0.708	1.83		Sand	9.7			114.36	0.86	97.81	104.72	0.86	0.758	0.965	0.144	0.179	0.24	0.03	0.02
37.566	119.920	0.822	4645.8	2925.6	94.528	0.699	1.83		Sand	9.8			113.35	0.85	96.71	103.74	0.86	0.758	0.965	0.142	0.176	0.23	0.03	0.02
37.730	121.910	0.783	4666.3	2935.9	95.951	0.655	1.81		Sand	8.1			115.23	0.85	97.96	101.12	0.86	0.758	0.965	0.139	0.170	0.22	0.03	0.02
37.894	126.950	0.849	4686.8	2946.2	99.812	0.681	1.81		Sand	7.7			119.99	0.85	102.10	104.73	0.86	0.758	0.963	0.144	0.178	0.24	0.03	0.02
38.058	117.080	0.650	4707.3	2956.4	91.738	0.567	1.79		Sand	6.5	119.99		119.99	0.85	101.79	102.85	0.86	0.758	0.964	0.141	0.174	0.23	0.03	0.02

CORNERSTONE EARTH GROUP

CPT No. 6

PGA (A_{max}) 0.85

Total Settlement: 2.37 (Inches)

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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)
38.222	79.340	0.534	4727.8	2966.7	61.446	0.694	1.99		Sand	22.1	119.99		119.99	0.87	104.53	147.01	0.86	0.758	0.947	0.270	0.418	0.55	0.02	0.01
38.386	44.430	0.573	4748.3	2977.0	33.513	1.362	2.37		Sand	52.6	119.99		119.99	0.89	106.31	181.76	0.86	0.758	0.926	0.780	1.532	2.02	0.00	0.00
38.550	25.890	0.439	4768.8	2987.2	15.737	1.868	2.72		Clay	80.5			24.47	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	16.550	0.295	4789.3	2997.5	9.445	2.084	2.93		Clay	97.5			15.64	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	13.230	0.168	4809.8	3007.8	7.198	1.552	2.97		Clay	100.0			12.50	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	11.360	0.141	4830.3	3018.0	5.928	1.576	3.05		Clay	100.0			10.74	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	12.430	0.147	4850.8	3028.3	6.607	1.469	2.99		Clay	100.0			11.75	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	14.730	0.161	4871.3	3038.6	8.092	1.310	2.89		Clay	94.2			13.92	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	16.610	0.164	4891.8	3048.8	9.292	1.158	2.81		Clay	88.0			15.70	0.91	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	19.420	0.225	4912.3	3059.1	11.091	1.326	2.77		Clay	84.8			18.36	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	21.720	0.376	4932.8	3069.4	12.546	1.953	2.81		Clay	87.9			20.53	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	23.800	0.388	4953.3	3079.6	13.848	1.820	2.76		Clay	83.7			22.50	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	21.870	0.456	4973.8	3089.9	12.546	2.353	2.86		Clay	91.5			20.67	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	23.190	0.518	4994.3	3100.2	13.350	2.503	2.85		Clay	90.9			21.92	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	23.310	0.534	5014.8	3110.4	13.376	2.567	2.85		Clay	91.4			22.03	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	23.390	0.539	5035.3	3120.7	13.377	2.582	2.86		Clay	91.5			22.11	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	23.380	0.531	5055.8	3131.0	13.320	2.547	2.85		Clay	91.3			22.10	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	23.800	0.531	5076.4	3141.3	13.537	2.497	2.84		Clay	90.5			22.50	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	24.500	0.582	5096.9	3151.6	13.931	2.651	2.85		Clay	90.8			23.16	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	24.970	0.622	5117.4	3161.8	14.176	2.775	2.85		Clay	91.3			23.60	0.90	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	24.750	0.639	5137.9	3172.1	13.985	2.881	2.87		Clay	92.4			23.39	0.90	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	23.890	0.590	5158.4	3182.4	13.393	2.769	2.87		Clay	92.8			22.58	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	22.710	0.481	5178.9	3192.6	12.604	2.391	2.86		Clay	91.7			21.47	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	21.830	0.472	5199.4	3202.9	12.008	2.454	2.88		Clay	93.6			20.63	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	20.450	0.486	5219.9	3213.2	11.104	2.724	2.94		Clay	97.9			19.33	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	17.930	0.507	5240.4	3223.4	9.499	3.312	3.04		Clay	100.0			16.95	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	17.700	0.467	5260.9	3233.7	9.320	3.099	3.03		Clay	100.0			16.73	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	16.990	0.435	5281.4	3244.0	8.847	3.032	3.04		Clay	100.0			16.06	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	17.020	0.424	5301.9	3254.2	8.831	2.951	3.04		Clay	100.0			16.09	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	18.630	0.461	5322.4	3264.5	9.783	2.887	3.00		Clay	100.0			17.61	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	20.140	0.520	5342.9	3274.8	10.669	2.977	2.97		Clay	100.0			19.04	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	21.740	0.530	5363.4	3285.0	11.603	2.781	2.92		Clay	97.0			20.55	0.89	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	22.320	0.470	5383.9	3295.3	11.913	2.395	2.88		Clay	93.3			21.10	0.89	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	23.550	0.464	5404.4	3305.6	12.614	2.226	2.84		Clay	90.3			22.26	0.89	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	23.390	0.479	5424.9	3315.8	12.472	2.317	2.85		Clay	91.4			22.11	0.89	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	26.510	0.608	5445.4	3326.1	14.303	2.556	2.83		Clay	89.4			25.06	0.89	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	25.860	0.652	5465.9	3336.4	13.864	2.819	2.87		Clay	92.2			24.44	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	22.980	0.679	5486.4	3346.6	12.094	3.355	2.96		Clay	99.6			21.72	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	20.180	0.677	5506.9	3356.9	10.383	3.885	3.05		Clay	100.0			19.07	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	17.650	0.602	5527.4	3367.1	8.842	4.044	3.12		Clay	100.0			16.68	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	16.030	0.515	5547.9	3377.4	7.850	3.885	3.15		Clay	100.0			15.15	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	16.030	0.454	5568.5	3387.7	7.820	3.428	3.12		Clay	100.0			15.15	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	16.250	0.311	5589.0	3398.0	7.920	2.311	3.02		Clay	100.0			15.36	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	15.250	0.308	5609.5	3408.3	7.303	2.475	3.07		Clay	100.0			14.41	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	16.410	0.316	5630.0	3418.5	7.954	2.324	3.02		Clay	100.0			15.51	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	15.980	0.309	5650.5	3428.8	7.673	2.349	3.04		Clay	100.0			15.10	0.88	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	15.220	0.278	5671.0	3439.1	7.202	2.245	3.05		Clay	100.0			14.39	0.88	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	15.240	0.272	5691.5	3449.3	7.186	2.195	3.04		Clay	100.0			14.40	0.88	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	15.380	0.247	5712.0	3459.6	7.240	1.972	3.02		Clay	100.0			14.54	0.88	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	14.270	0.265	5732.5	3469.9	6.573	2.324	3.09		Clay	100.0			13.49	0.88	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	15.960	0.276	5753.0	3480.1	7.519	2.110	3.02		Clay	100.0			15.09	0.88	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	19.800	0.307	5773.5	3490.4	9.691	1.815	2.89		Clay	94.2			18.71	0.88	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	22.440	0.403	5794.0	3500.7	11.165	2.062	2.87		Clay	92.4			21.21	0.88	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	23.880	0.532	5814.5	3510.9	11.947	2.537	2.89		Clay	94.4			22.57	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	23.950	0.568	5835.0	3521.2	11.946	2.701	2.91		Clay	95.6			22.64	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	22.720	0.585	5855.5	3531.5	11.209	2.956	2.95		Clay	99.2			21.47	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	22.400	0.540	5876.0	3541.7	10.990	2.775	2.94		Clay	98.5			21.17	0.87	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	21.330	0.563	5896.5	3552.0	10.350	3.063	2.99		Clay	100.0			20.16	0.87	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	20.780	0.505	5917.0	3562.3	10.006	2.834	2.98		Clay	100.0			19.64	0.87	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	20.400	0.473	5937.5	3572.5	9.758	2.714	2.98		Clay	100.0			19.28	0.87	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	18.760	0.425	5958.0	3582.8	8.809	2.693	3.02		Clay	100.0			17.73	0.87	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	16.990	0.398	5978.5	3593.1	7.793	2.843	3.07		Clay	100.0			16.06	0.87	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	16.840	0.285	5999.0	3603.3	7.682	2.059	3.01		Clay	100.0			15.92	0.87	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	17.130	0.283	6019.5	3613.6	7.815	2.004	2.99		Clay	100.0			16.19	0.87	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	17.450	0.308	6040.0	3623.9	7.964	2.134	3.00		Clay	100.0			16.49	0.87	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	18.260	0.318	6060.6	3634.2	8.381	2.088	2.98		Clay	100.0			17.26	0.87	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	21.370	0.316	6081.1	3644.5	10.059	1.724	2.87		Clay	92.2			20.20	0.87	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	6

PGA (A_{max})	0.85

Total Settlement: 2.37 (Inches)

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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)
49.213	27.270	0.320	6101.6	3654.7	13.254	1.321	2.70		Clay	79.3			25.78	0.87	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	26.690	0.485	6122.1	3665.0	12.894	2.053	2.81		Clay	88.1			25.23	0.87	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	26.250	0.666	6142.6	3675.3	12.613	2.873	2.90		Clay	95.3			24.81	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	26.130	0.755	6163.1	3685.5	12.508	3.276	2.94		Clay	98.2			24.70	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	25.110	0.763	6183.6	3695.8	11.915	3.465	2.97		Clay	100.0			23.73	0.86	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	34.980	0.959	6204.1	3706.1	17.203	3.008	2.81		Clay	87.5			33.06	0.86	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	7

PGA (A_{max})	0.85

Total Settlement:	1.16	(Inches)

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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)
5.085	25.900	0.844	610.2	610.2	45.049	3.298	2.51		Unsaturated	64.1			24.48	1.70	41.62	103.06	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	29.450	0.781	629.9	629.9	50.473	2.681	2.42		Unsaturated	56.3			27.84	1.70	47.32	108.18	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	32.940	0.690	649.6	649.6	55.639	2.116	2.32		Unsaturated	48.3			31.13	1.70	52.93	112.19	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	34.570	0.453	669.2	669.2	57.538	1.323	2.17		Unsaturated	36.9			32.67	1.70	55.55	108.61	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	37.570	0.486	688.9	688.9	61.664	1.306	2.15		Unsaturated	34.7			35.51	1.70	60.27	112.58	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	44.770	0.440	708.7	708.7	72.539	0.991	2.02		Unsaturated	24.4			42.32	1.68	70.90	112.42	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	47.870	0.369	728.4	728.4	76.530	0.777	1.94		Unsaturated	17.9			45.25	1.68	76.10	104.87	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	47.000	0.351	748.1	748.1	74.118	0.753	1.94		Unsaturated	18.2			44.42	1.67	74.02	103.27	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	42.770	0.290	768.3	762.1	66.754	0.684	1.95		Unsaturated	19.4			40.43	1.67	67.44	98.68	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	38.170	0.219	788.8	772.4	59.097	0.580	1.96		Unsaturated	20.0			36.08	1.68	60.66	92.35	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	36.440	0.260	809.3	782.7	56.003	0.722	2.03		Unsaturated	25.5			34.44	1.65	56.81	97.73	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	35.120	0.284	829.8	792.9	53.585	0.818	2.08		Unsaturated	29.2			33.19	1.63	54.19	99.48	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.054	34.780	0.180	850.3	803.2	52.705	0.524	1.98		Unsaturated	21.8			32.87	1.66	54.60	88.90	0.99	0.546	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.218	38.150	0.155	870.8	813.5	57.493	0.411	1.90		Unsaturated	15.2			36.06	1.68	60.64	80.96	0.99	0.546	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.382	38.990	0.175	891.3	823.7	58.390	0.454	1.92		Unsaturated	16.3			36.85	1.66	61.07	84.20	0.99	0.546	1.089	n.a.	n.a.	n.a.	0.00	0.00
7.546	36.830	0.185	911.8	834.0	54.762	0.509	1.96		Unsaturated	20.1			34.81	1.63	56.79	88.16	0.99	0.545	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.710	34.050	0.193	932.3	844.3	50.253	0.575	2.02		Unsaturated	24.8			32.18	1.61	51.87	90.76	0.99	0.545	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.874	33.550	0.194	952.8	854.5	49.191	0.587	2.03		Unsaturated	25.7			31.71	1.60	50.77	90.93	0.99	0.545	1.090	n.a.	n.a.	n.a.	0.00	0.00
8.038	28.730	0.193	973.3	864.8	41.757	0.683	2.13		Unsaturated	33.3			27.16	1.59	43.24	90.53	0.99	0.544	1.088	n.a.	n.a.	n.a.	0.00	0.00
8.202	22.710	0.227	993.8	875.1	32.648	1.022	2.31		Unsaturated	47.8			21.47	1.59	34.13	88.30	0.98	0.544	1.086	n.a.	n.a.	n.a.	0.00	0.00
8.366	21.110	0.323	1014.3	885.3	30.106	1.568	2.44		Unsaturated	58.4			19.95	1.58	31.51	88.64	0.98	0.544	1.085	n.a.	n.a.	n.a.	0.00	0.00
8.530	23.640	0.379	1034.8	895.6	33.593	1.639	2.42		Unsaturated	56.3			22.34	1.56	34.82	92.22	0.98	0.544	1.086	n.a.	n.a.	n.a.	0.00	0.00
8.694	27.110	0.348	1055.3	905.9	38.400	1.309	2.31		Unsaturated	47.9			25.62	1.54	39.47	95.07	0.98	0.543	1.087	n.a.	n.a.	n.a.	0.00	0.00
8.858	25.910	0.268	1075.8	916.1	36.446	1.056	2.28		Unsaturated	45.2			24.49	1.54	37.76	91.67	0.98	0.543	1.083	n.a.	n.a.	n.a.	0.00	0.00
9.022	28.150	0.364	1096.3	926.4	39.429	1.319	2.30		Unsaturated	47.3			26.61	1.52	40.45	96.03	0.98	0.543	1.085	n.a.	n.a.	n.a.	0.00	0.00
9.186	36.000	0.419	1116.8	936.7	50.349	1.182	2.19		Unsaturated	38.2			34.03	1.49	50.73	103.67	0.98	0.542	1.089	n.a.	n.a.	n.a.	0.00	0.00
9.350	40.530	0.419	1137.3	946.9	56.462	1.049	2.12		Unsaturated	32.5			38.31	1.48	56.58	106.04	0.98	0.542	1.090	n.a.	n.a.	n.a.	0.00	0.00
9.514	42.130	0.328	1157.8	957.2	58.392	0.789	2.04		Unsaturated	31.0			39.82	1.47	58.44	106.69	0.98	0.542	1.089	n.a.	n.a.	n.a.	0.00	0.00
9.678	42.590	0.312	1178.3	967.5	58.710	0.743	2.02		Unsaturated	31.0			40.26	1.46	58.74	107.05	0.98	0.542	1.088	n.a.	n.a.	n.a.	0.00	0.00
9.843	46.340	0.353	1198.9	977.8	63.599	0.772	2.00		Unsaturated	31.0			43.80	1.44	63.06	112.26	0.98	0.541	1.090	n.a.	n.a.	n.a.	0.00	0.00
10.007	51.830	0.421	1219.4	988.1	70.847	0.822	1.98		Sand	31.0			48.99	1.42	69.38	119.89	0.98	0.541	1.095	0.171	0.259	0.48	0.03	0.04
10.171	44.770	0.404	1239.9	998.3	60.753	0.915	2.06		Sand	31.0			42.32	1.43	60.61	109.30	0.98	0.545	1.086	0.151	0.215	0.39	0.03	0.05
10.335	38.940	0.381	1260.4	1008.6	52.447	0.995	2.13		Sand	33.6			36.81	1.44	53.01	102.67	0.98	0.550	1.080	0.141	0.194	0.35	0.03	0.05
10.499	35.040	0.376	1280.9	1018.9	46.856	1.093	2.20		Sand	38.7			33.12	1.44	47.65	100.17	0.98	0.554	1.078	0.138	0.187	0.34	0.03	0.05
10.663	29.050	0.470	1301.4	1029.1	38.490	1.655	2.37		Sand	52.7			27.46	1.44	39.51	97.00	0.98	0.558	1.075	0.134	0.179	0.32	0.03	0.05
10.827	33.880	0.599	1321.9	1039.4	44.799	1.803	2.34		Sand	50.4			32.02	1.42	45.38	103.56	0.98	0.562	1.078	0.142	0.196	0.35	0.03	0.05
10.991	39.290	0.600	1342.4	1049.7	51.826	1.554	2.25		Sand	43.2			37.14	1.40	51.99	108.43	0.98	0.566	1.080	0.149	0.211	0.37	0.03	0.05
11.155	36.050	0.502	1362.9	1059.9	47.234	1.419	2.26		Sand	43.8			34.07	1.40	47.83	103.55	0.98	0.569	1.076	0.142	0.196	0.34	0.03	0.05
11.319	31.710	0.387	1383.4	1070.2	41.225	1.248	2.27		Sand	44.9			29.97	1.41	42.27	97.19	0.97	0.573	1.071	0.134	0.179	0.31	0.03	0.05
11.483	33.560	0.394	1403.9	1080.5	43.462	1.199	2.25		Sand	42.7			31.72	1.40	44.42	98.66	0.97	0.577	1.071	0.136	0.182	0.32	0.03	0.05
11.647	33.780	0.478	1424.4	1090.7	43.533	1.446	2.29		Sand	46.4			31.93	1.39	44.38	100.57	0.97	0.580	1.071	0.138	0.187	0.32	0.03	0.05
11.811	30.620	0.523	1444.9	1101.0	39.176	1.749	2.38		Sand	53.4			28.94	1.39	40.18	98.10	0.97	0.584	1.068	0.135	0.180	0.31	0.03	0.05
11.975	33.780	0.452	1465.4	1111.3	43.102	1.368	2.28		Sand	45.6			31.93	1.38	44.02	99.70	0.97	0.587	1.068	0.137	0.184	0.31	0.03	0.05
12.139	37.450	0.222	1485.9	1121.5	47.656	0.605	2.05		Sand	27.2			35.40	1.39	49.20	91.10	0.97	0.591	1.063	0.127	0.164	0.28	0.04	0.06
12.303	28.110	0.233	1506.4	1131.8	35.355	0.852	2.24		Sand	42.2	35.4		35.40	1.36	48.15	103.03	0.97	0.594	1.068	0.141	0.193	0.32	0.03	0.05
12.467	16.870	0.205	1526.9	1142.1	20.722	1.273	2.53		Sand	65.3	35.4		35.40	1.34	47.45	110.84	0.97	0.597	1.071	0.153	0.218	0.36	0.03	0.04
12.631	9.900	0.166	1547.4	1152.3	15.840	1.819	2.71		Clay	79.8			9.36	1.17	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	7.130	0.099	1567.9	1162.6	10.917	1.560	2.81		Clay	88.0			6.74	1.17	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	6.430	0.083	1588.4	1172.9	9.610	1.473	2.85		Clay	90.9			6.08	1.17	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	6.430	0.066	1608.9	1183.1	9.510	1.173	2.81		Clay	87.5			6.08	1.17	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	6.820	0.058	1629.4	1193.4	10.064	0.966	2.75		Clay	82.7			6.45	1.16	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	7.280	0.058	1649.9	1203.7	10.726	0.899	2.71		Clay	79.6			6.88	1.16	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	7.770	0.054	1670.4	1213.9	11.425	0.779	2.66		Clay	75.5			7.34	1.16	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	9.580	0.073	1691.0	1224.2	12.109	0.836	2.65	plastic	Clay	74.7			9.05	1.16	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	12.160	0.075	1711.5	1234.5	13.988	0.663	2.55	plastic	Clay	66.8			11.49	1.15	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	11.730	0.104	1732.0	1244.8	14.887	0.957	2.59	plastic	Clay	70.4			11.09	1.15	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	19.420	0.197	1752.5	1255.0	22.758	1.062	2.45		Sand	59.2	24.4	1.8	43.92	1.27	55.76	119.88	0.96	0.630	1.065	0.171	0.252	0.40	0.03	0.04
14.436	24.740	0.431	1773.0	1265.3	29.156	1.807	2.49		Sand	62.2	24.4	1.8	43.92	1.26	55.52	120.44	0.96	0.632	1.064	0.172	0.255	0.40	0.03	0.04
14.600	25.810	0.587	1793.5	1275.6	30.328	2.356	2.55		Sand	66.8		1.8	43.91	1.26	55.26	121.26	0.96	0.635	1.064	0.174	0.258	0.41	0.03	0.04
14.764	16.370	0.549	1814.0	1285.8	24.051	3.550	2.74		Clay	82.0			15.47	1.14	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	12.510	0.392	1834.5	1296.1	17.888	3.381	2.82		Clay	88.9			11.82	1.14	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	8.800	0.233	1855.0	1306.4	12.052	2.960	2.93		Clay	97.2			8.32	1.14	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	6.580	0.167	1875.5	1316.6	8.571	2.960	3.05		Clay	100.0			6.22	1.13	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	6.170	0.114	1896.0	1326.9	7.871	2.183	3.01		Clay	100.0			5.83	1.13	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	6.020	0.111	1916.5	1337.2	7.571	2.193	3.02		Clay	100.0			5.69	1.13	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	6.320	0.124	1937.0	1347.4	7.943	2.317	3.02		Clay	100.0			5.97	1.13	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	6.940	0.110	1957.5	1357.7	8.781	1.845	2.93		Clay	97.5			6.56	1.12	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	5.980	0.087	1978.0	1368.0	7.297	1.743	2.99		Clay	100.0			5.65	1.12	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 7

PGA (A_{max}) 0.85

Total Settlement: 1.16 (Inches)

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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)
16.240	5.760	0.089	1998.5	1378.2	6.908	1.869	3.02		Clay	100.0			5.44	1.12	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	6.480	0.109	2019.0	1388.5	7.880	1.993	2.99		Clay	100.0			6.12	1.12	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	8.300	0.166	2039.5	1398.8	10.409	2.280	2.92		Clay	96.3			7.84	1.12	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	12.480	0.188	2060.0	1409.0	16.252	1.642	2.68		Clay	77.1			11.80	1.11	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	10.590	0.193	2080.5	1419.3	13.457	2.021	2.79		Clay	86.5			10.01	1.11	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	7.890	0.199	2101.0	1429.6	9.569	2.910	3.01		Clay	100.0			7.46	1.11	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	6.690	0.149	2121.5	1439.8	7.819	2.647	3.06		Clay	100.0			6.32	1.11	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	6.340	0.131	2142.0	1450.1	7.267	2.486	3.07		Clay	100.0			5.99	1.10	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	6.440	0.151	2162.5	1460.4	7.339	2.818	3.09		Clay	100.0			6.09	1.10	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	6.810	0.171	2183.1	1470.7	7.776	2.990	3.09		Clay	100.0			6.44	1.10	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	7.490	0.195	2203.6	1481.0	8.627	3.053	3.05		Clay	100.0			7.08	1.10	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	8.250	0.218	2224.1	1491.2	9.573	3.054	3.02		Clay	100.0			7.80	1.10	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	8.520	0.260	2244.6	1501.5	9.854	3.515	3.04		Clay	100.0			8.05	1.09	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	8.480	0.260	2265.1	1511.8	9.720	3.539	3.05		Clay	100.0			8.02	1.09	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	8.610	0.280	2285.6	1522.0	9.812	3.750	3.06		Clay	100.0			8.14	1.09	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	9.300	0.251	2306.1	1532.3	10.634	3.081	2.98		Clay	100.0			8.79	1.09	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	10.420	0.291	2326.6	1542.6	12.002	3.144	2.94		Clay	98.5			9.85	1.09	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	11.890	0.320	2347.1	1552.8	13.802	2.986	2.88		Clay	93.5			11.24	1.09	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	12.600	0.361	2367.6	1563.1	14.607	3.162	2.88		Clay	93.1			11.91	1.08	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	12.770	0.374	2388.1	1573.4	14.715	3.231	2.88		Clay	93.4			12.07	1.08	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	12.610	0.402	2408.6	1583.6	14.404	3.525	2.91		Clay	95.8			11.92	1.08	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	12.420	0.432	2429.1	1593.9	14.060	3.855	2.94		Clay	98.3			11.74	1.08	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	12.670	0.410	2449.6	1604.2	14.269	3.582	2.92		Clay	96.4			11.98	1.08	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	13.150	0.440	2470.1	1614.4	14.761	3.693	2.91		Clay	96.1			12.43	1.07	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	14.200	0.475	2490.6	1624.7	15.947	3.667	2.89		Clay	93.8			13.42	1.07	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	14.740	0.504	2511.1	1635.0	16.495	3.738	2.88		Clay	93.3			13.93	1.07	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	15.300	0.532	2531.6	1645.2	17.060	3.791	2.87		Clay	92.7			14.46	1.07	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	16.120	0.562	2552.1	1655.5	17.933	3.786	2.85		Clay	91.3			15.24	1.07	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	15.780	0.580	2572.6	1665.8	17.402	4.002	2.88		Clay	93.4			14.91	1.07	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	14.230	0.574	2593.1	1676.0	15.433	4.438	2.95		Clay	98.9			13.45	1.06	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	13.320	0.522	2613.6	1686.3	14.248	4.345	2.97		Clay	100.0			12.59	1.06	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	12.530	0.471	2634.1	1696.6	13.218	4.201	2.99		Clay	100.0			11.84	1.06	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	12.340	0.433	2654.8	1706.9	12.904	3.932	2.98		Clay	100.0			11.66	1.06	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	12.710	0.368	2675.3	1717.2	13.246	3.236	2.92		Clay	96.3			12.01	1.06	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	12.860	0.324	2695.8	1727.4	13.329	2.814	2.88		Clay	93.3			12.16	1.05	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	13.920	0.270	2716.3	1737.7	14.458	2.149	2.78		Clay	85.6			13.16	1.05	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	14.740	0.261	2736.8	1748.0	15.300	1.952	2.74		Clay	82.1			13.93	1.05	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	16.300	0.333	2757.3	1758.2	16.973	2.232	2.73		Clay	81.8			15.41	1.05	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	17.200	0.318	2777.8	1768.5	17.881	2.011	2.69		Clay	78.2			16.26	1.05	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	18.370	0.358	2798.3	1778.8	19.082	2.109	2.68		Clay	77.3			17.36	1.05	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	21.510	0.502	2818.8	1789.0	22.471	2.497	2.67		Clay	76.2			20.33	1.05	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	24.160	0.676	2839.3	1799.3	25.277	2.973	2.67		Clay	76.8			22.84	1.04	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	24.420	0.833	2859.8	1809.6	25.410	3.623	2.73		Clay	81.1			23.08	1.04	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	23.440	0.859	2880.3	1819.8	24.178	3.905	2.76		Clay	84.1			22.16	1.04	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	22.010	0.853	2900.8	1830.1	22.468	4.149	2.80		Clay	87.4			20.80	1.04	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	21.960	0.767	2921.3	1840.4	22.278	3.742	2.78		Clay	85.3			20.76	1.04	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	19.760	0.670	2941.8	1850.6	19.765	3.663	2.81		Clay	88.0			18.68	1.04	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	16.630	0.560	2962.3	1860.9	16.281	3.697	2.88		Clay	93.4			15.72	1.03	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	14.830	0.524	2982.8	1871.2	14.257	3.928	2.94		Clay	98.4			14.02	1.03	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	15.420	0.468	3003.3	1881.4	14.796	3.362	2.89		Clay	94.0			14.57	1.03	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	17.810	0.425	3023.8	1891.7	17.231	2.608	2.77		Clay	84.5			16.83	1.03	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	17.040	0.413	3044.3	1902.0	16.318	2.661	2.79		Clay	86.5			16.11	1.03	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	14.670	0.397	3064.8	1912.2	13.741	3.022	2.89		Clay	93.9			13.87	1.03	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	13.150	0.381	3085.3	1922.5	12.075	3.282	2.95		Clay	99.2			12.43	1.03	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	12.750	0.339	3105.8	1932.8	11.587	3.028	2.95		Clay	98.7			12.05	1.02	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	10.850	0.206	3126.3	1943.0	9.559	2.218	2.94		Clay	98.3			10.26	1.02	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	8.930	0.193	3146.9	1953.4	7.532	2.624	3.07		Clay	100.0			8.44	1.02	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	9.400	0.207	3167.4	1963.6	7.961	2.648	3.05		Clay	100.0			8.88	1.02	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	10.340	0.183	3187.9	1973.9	8.862	2.092	2.96		Clay	99.5			9.77	1.02	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	9.380	0.131	3208.4	1984.1	7.838	1.685	2.95		Clay	99.3			8.87	1.02	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	7.680	0.113	3228.9	1994.4	6.083	1.863	3.07		Clay	100.0			7.26	1.02	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	8.450	0.198	3249.4	2004.7	6.809	2.901	3.13		Clay	100.0			7.99	1.01	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	17.580	0.290	3269.9	2014.9	15.827	1.819	2.71		Clay	79.8			16.62	1.01	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	19.900	0.455	3290.4	2025.2	18.028	2.492	2.74		Clay	82.3			18.81	1.01	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	22.730	0.735	3310.9	2035.5	20.707	3.488	2.78		Clay	85.6			21.48	1.01	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	28.660	0.718	3331.4	2045.7	26.391	2.660	2.63		Clay	73.2			27.09	1.01	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	28.220	0.919	3351.9	2056.0	25.821	3.462	2.71		Clay	79.6			26.67	1.01	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	7

PGA (A_{max})	0.85

Total Settlement:	1.16	(Inches)

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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)
27.231	36.390	1.077	3372.4	2066.3	33.194	3.103	2.59		Sand	70.5	102.65	1.55	159.11	1.01	160.11	257.53	0.91	0.742	1.007	332.623	736.990	993.73	0.00	0.00
27.395	71.120	1.029	3392.9	2076.5	66.238	1.482	2.16		Sand	35.6	102.65	1.55	159.11	1.01	159.96	235.64	0.91	0.742	1.006	27.795	61.494	82.85	0.00	0.00
27.559	95.320	0.651	3413.4	2086.8	89.098	0.695	1.85		Sand	11.4	102.65	1.55	159.11	1.01	159.92	174.10	0.91	0.743	1.003	0.580	1.161	1.56	0.00	0.00
27.723	108.600	0.472	3433.9	2097.1	101.478	0.442	1.70		Sand	0.0		1.55	159.10	1.00	159.66	159.66	0.91	0.743	1.002	0.368	0.659	0.89	0.01	0.01
27.887	104.350	0.294	3454.4	2107.3	97.196	0.286	1.63		Sand	0.0	102.65	1.55	159.11	1.00	159.36	159.36	0.91	0.744	1.001	0.365	0.651	0.88	0.01	0.01
28.051	90.220	0.250	3474.9	2117.6	83.600	0.283	1.69		Sand	0.0	102.65	1.55	159.11	1.00	159.06	159.06	0.91	0.744	1.000	0.362	0.644	0.87	0.01	0.01
28.215	66.490	0.455	3495.4	2127.9	61.022	0.703	1.99		Sand	22.5	102.65	1.55	159.11	1.00	158.83	210.76	0.91	0.745	0.998	3.664	8.048	10.80	0.00	0.00
28.379	44.840	0.709	3515.9	2138.1	40.509	1.646	2.35		Sand	51.2	102.65	1.55	159.11	1.00	158.66	247.39	0.91	0.746	0.997	96.113	210.788	282.74	0.00	0.00
28.543	32.330	0.957	3536.4	2148.4	28.451	3.131	2.65		Clay	74.8			30.56	1.00	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	41.920	0.739	3556.9	2158.7	37.564	1.841	2.41		Sand	55.6	156.79	1.15	180.31	0.99	179.36	276.21	0.91	0.746	0.994	5236.962	11452.297	15341.36	0.00	0.00
28.871	104.340	0.606	3577.4	2168.9	95.739	0.591	1.79		Sand	16.0	156.79	1.15	180.31	0.99	178.92	212.53	0.90	0.747	0.993	4.133	9.025	12.08	0.00	0.00
29.035	140.370	0.396	3597.9	2179.2	129.061	0.286	1.52		Sand	16.0	156.79	1.15	180.31	0.99	178.65	212.24	0.90	0.747	0.991	4.051	8.833	11.82	0.00	0.00
29.199	153.760	0.374	3618.4	2189.5	141.190	0.246	1.45		Sand	16.0	156.79	1.15	180.31	0.99	178.39	211.95	0.90	0.748	0.990	3.971	8.647	11.56	0.00	0.00
29.364	158.990	0.451	3639.0	2199.8	145.697	0.287	1.47		Sand	16.0	156.79	1.15	180.31	0.99	178.12	211.65	0.90	0.748	0.988	3.893	8.465	11.31	0.00	0.00
29.528	165.880	0.513	3659.5	2210.1	151.721	0.313	1.47		Sand	16.0		1.15	180.30	0.99	177.85	211.36	0.90	0.749	0.987	3.816	8.287	11.07	0.00	0.00
29.692	162.590	0.627	3680.0	2220.3	148.325	0.390	1.53		Sand	16.0		1.15	176.73	0.98	174.03	207.17	0.90	0.749	0.986	2.901	6.294	8.40	0.00	0.00
29.856	154.910	0.562	3700.5	2230.6	140.903	0.367	1.54		Sand	16.0		1.15	168.38	0.98	165.45	197.78	0.90	0.750	0.986	1.671	3.627	4.84	0.00	0.00
30.020	149.380	0.630	3721.0	2240.9	135.492	0.427	1.59		Sand	16.0		1.15	162.37	0.98	159.22	190.95	0.90	0.750	0.986	1.177	2.554	3.41	0.00	0.00
30.184	134.170	0.566	3741.5	2251.1	121.235	0.428	1.63		Sand	16.0		1.15	145.84	0.98	142.55	172.70	0.90	0.750	0.988	0.552	1.076	1.43	0.00	0.00
30.348	102.050	0.657	3762.0	2261.4	91.583	0.656	1.83		Sand	16.0		1.15	110.92	0.97	107.80	134.63	0.90	0.751	0.991	0.213	0.318	0.42	0.02	0.02
30.512	102.090	0.799	3782.5	2271.7	91.403	0.797	1.88		Sand	16.0		1.15	110.97	0.97	107.63	134.45	0.90	0.751	0.990	0.212	0.317	0.42	0.02	0.02
30.676	141.880	0.572	3803.0	2281.9	127.404	0.409	1.60		Sand	16.0		1.15	154.22	0.97	150.13	181.00	0.90	0.751	0.984	0.756	1.567	2.08	0.00	0.00
30.840	177.090	0.626	3823.5	2292.2	159.084	0.357	1.49		Sand	16.0		1.15	192.49	0.98	187.91	222.38	0.90	0.752	0.976	8.600	18.467	24.56	0.00	0.00
31.004	165.580	0.687	3844.0	2302.5	148.290	0.420	1.55		Sand	16.0	167.38	1.15	192.49	0.97	187.65	222.09	0.89	0.752	0.975	8.407	18.026	23.97	0.00	0.00
31.168	130.910	1.084	3864.5	2312.7	116.607	0.840	1.81		Sand	16.0	167.38	1.15	192.49	0.97	187.39	221.81	0.89	0.752	0.973	8.221	17.603	23.39	0.00	0.00
31.332	80.530	1.488	3885.0	2323.0	70.893	1.893	2.21		Sand	39.4	167.38	1.15	192.49	0.98	187.81	274.44	0.89	0.753	0.972	3924.049	8391.187	11147.31	0.00	0.00
31.496	45.310	1.324	3905.5	2333.3	39.026	3.054	2.54		Sand	66.0	167.38	1.15	192.49	0.97	187.59	291.40	0.89	0.753	0.971	82034.039	########	232629.76	0.00	0.00
31.660	29.870	1.104	3926.0	2343.5	23.816	3.956	2.77		Clay	84.8			28.23	0.97	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	25.810	0.656	3946.5	2353.8	20.254	2.752	2.73		Clay	81.1			24.40	0.97	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	53.590	0.906	3967.0	2364.1	46.147	1.756	2.33		Sand	49.0	126.64		126.64	0.96	122.10	199.87	0.89	0.754	0.971	1.876	4.007	5.31	0.00	0.00
32.152	89.820	1.314	3987.5	2374.3	78.366	1.496	2.10		Sand	31.4	126.64		126.64	0.96	121.60	183.48	0.89	0.754	0.975	0.838	1.755	2.33	0.00	0.00
32.316	80.950	1.383	4008.0	2384.6	70.290	1.752	2.19		Sand	37.8	126.64		126.64	0.96	121.57	190.85	0.89	0.754	0.972	1.171	2.504	3.32	0.00	0.00
32.480	95.180	1.238	4028.5	2394.9	82.773	1.329	2.05		Sand	27.2	126.64		126.64	0.96	121.09	176.50	0.89	0.755	0.975	0.634	1.256	1.66	0.00	0.00
32.644	125.700	1.034	4049.0	2405.1	109.644	0.836	1.83		Sand	9.4	126.64		126.64	0.94	119.63	126.24	0.89	0.755	0.983	0.187	0.263	0.35	0.03	0.02
32.808	130.670	0.824	4069.5	2415.4	113.799	0.641	1.75		Sand	2.8	126.64		126.64	0.94	119.19	119.19	0.89	0.755	0.984	0.169	0.230	0.30	0.03	0.02
32.972	133.990	1.020	4090.0	2425.7	116.479	0.773	1.79		Sand	6.1			126.64	0.94	118.98	119.68	0.89	0.755	0.983	0.171	0.232	0.31	0.03	0.02
33.136	118.080	1.567	4110.5	2435.9	102.209	1.351	1.99		Sand	22.1			111.61	0.94	105.40	148.17	0.89	0.756	0.978	0.277	0.446	0.59	0.02	0.02
33.301	100.380	2.269	4131.1	2446.3	86.425	2.308	2.20		Sand	39.3			94.88	0.94	89.54	152.54	0.88	0.756	0.976	0.306	0.508	0.67	0.02	0.02
33.465	108.620	2.204	4151.6	2456.5	93.463	2.069	2.15		Sand	34.7			102.67	0.94	96.84	157.32	0.88	0.756	0.975	0.345	0.591	0.78	0.01	0.01
33.629	128.640	1.885	4172.1	2466.8	110.785	1.489	1.99		Sand	22.5			121.59	0.94	114.56	159.44	0.88	0.756	0.973	0.366	0.635	0.84	0.01	0.01
33.793	143.830	1.183	4192.6	2477.1	123.816	0.835	1.79		Sand	15.0			135.95	0.94	127.68	153.06	0.88	0.756	0.974	0.310	0.515	0.68	0.02	0.02
33.957	152.420	1.068	4213.1	2487.3	131.040	0.711	1.73		Sand	15.0			144.06	0.94	135.37	161.40	0.88	0.756	0.971	0.386	0.679	0.90	0.01	0.01
34.121	153.990	1.041	4233.6	2497.6	132.127	0.685	1.71		Sand	15.0			145.55	0.94	136.59	162.73	0.88	0.757	0.970	0.401	0.712	0.94	0.01	0.01
34.285	158.140	0.953	4254.1	2507.9	135.451	0.611	1.67		Sand	15.0			149.47	0.94	140.20	166.63	0.88	0.757	0.968	0.451	0.823	1.09	0.01	0.01
34.449	164.660	0.744	4274.6	2518.1	140.814	0.458	1.59		Sand	15.0			155.63	0.94	145.99	172.92	0.88	0.757	0.966	0.556	1.062	1.40	0.00	0.00
34.613	169.870	0.701	4295.1	2528.4	145.024	0.418	1.56		Sand	15.0			160.56	0.94	150.58	177.89	0.88	0.757	0.963	0.668	1.323	1.75	0.00	0.00
34.777	182.290	0.726	4315.6	2538.7	155.439	0.403	1.52		Sand	15.0			172.30	0.94	161.87	190.13	0.88	0.757	0.957	1.131	2.382	3.15	0.00	0.00
34.941	191.280	0.642	4336.1	2548.9	162.859	0.339	1.47		Sand	15.0			180.79	0.94	169.99	198.94	0.88	0.757	0.952	1.781	3.728	4.92	0.00	0.00
35.105	186.940	0.470	4356.6	2559.2	158.793	0.254	1.41		Sand	15.0	180.79		180.79	0.94	169.75	198.68	0.88	0.757	0.951	1.755	3.671	4.85	0.00	0.00
35.269	171.320	0.424	4377.1	2569.5	145.069	0.251	1.45		Sand	15.0	180.79		180.79	0.94	169.52	198.42	0.87	0.757	0.950	1.731	3.616	4.77	0.00	0.00
35.433	143.790	0.540	4397.6	2579.7	121.205	0.381	1.60		Sand	15.0	180.79		180.79	0.94	169.28	198.16	0.87	0.758	0.949	1.706	3.563	4.70	0.00	0.00
35.597	124.820	1.201	4418.1	2590.0	104.750	0.980	1.89		Sand	15.0	180.79		180.79	0.94	169.05	197.91	0.87	0.758	0.948	1.683	3.511	4.63	0.00	0.00
35.761	82.240	1.380	4438.6	2600.3	68.229	1.725	2.19		Sand	38.2	180.79		180.79	0.95	171.17	252.54	0.87	0.758	0.938	176.770	364.852	481.53	0.00	0.00
35.925	47.040	1.297	4459.1	2610.5	38.132	2.894	2.53		Sand	65.3	180.79		180.79	0.95	171.05	269.87	0.87	0.758	0.937	1911.154	3939.622	5199.06	0.00	0.00
36.089	38.980	0.936	4479.6	2620.8	31.203	2.548	2.56		Sand	67.7	180.79		180.79	0.95	170.87	270.50	0.87	0.758	0.936	2106.241	4336.316	5722.10	0.00	0.00
36.253	32.130	0.486	4500.1	2631.1	25.327	1.627	2.51		Sand	64.1	180.79		180.79	0.94	170.69	268.96	0.87	0.758	0.935	1663.481	3420.471	4513.25	0.00	0.00
36.417	21.090	0.443	4520.6	2641.3	14.258	2.353	2.81		Clay	87.8			19.93	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	17.590	0.385	4541.1	2651.6	11.555	2.513	2.90		Clay	95.1			16.63	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	17.980	0.385	4561.6	2661.9	11.796	2.452	2.89		Clay	94.1			16.99	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	18.960	0.406	4582.1	2672.1	12.476	2.436	2.87		Clay	92.3			17.92	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	18.450	0.360	4602.6	2682.4	12.041	2.229	2.86		Clay	91.6			17.44	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	17.240	0.369	4623.3	2692.7	11.088	2.472	2.91		Clay	96.0			16.29	0.94	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	16.870	0.423	4643.8	2703.0	10.764	2.908	2.96		Clay	100.0			15.95	0.94	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	16.900	0.395	4664.3	2713.3	10.738	2.711	2.95		Clay	98.7			15.97	0.94	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	19.940	0.373	4684.8	2723.5	12.923	2.120	2.82		Clay	88.6			18.85	0.94	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	20.770	0.373	4705.3	2733.8	13.474	2.025	2.79		Clay	86.5			19.63	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	19.960	0.381	4725.8	2744.1	12.826	2.165	2.83		Clay	89.2			18.87	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	7

PGA (A_{max})	0.85

Total Settlement:	1.16	(Inches)

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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)
38.222	18.430	0.342	4746.3	2754.3	11.659	2.130	2.86		Clay	91.7			17.42	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	16.620	0.286	4766.8	2764.6	10.299	2.009	2.89		Clay	94.3			15.71	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	14.920	0.275	4787.3	2774.9	9.029	2.195	2.96		Clay	99.8			14.10	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	14.380	0.318	4807.8	2785.1	8.600	2.655	3.02		Clay	100.0			13.59	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	13.040	0.304	4828.3	2795.4	7.602	2.861	3.08		Clay	100.0			12.33	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	17.340	0.330	4848.8	2805.6	10.633	2.212	2.90		Clay	95.1			16.39	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	19.240	0.301	4869.3	2815.9	11.936	1.791	2.81		Clay	87.8			18.19	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	20.610	0.290	4889.8	2826.2	12.855	1.596	2.76		Clay	83.5			19.48	0.93	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	22.310	0.299	4910.3	2836.4	14.000	1.506	2.71		Clay	79.9			21.09	0.93	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	23.770	0.312	4930.8	2846.7	14.968	1.464	2.68		Clay	77.5			22.47	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	24.400	0.332	4951.3	2857.0	15.348	1.514	2.68		Clay	77.3			23.06	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	25.140	0.381	4971.8	2867.2	15.802	1.682	2.69		Clay	78.4			23.76	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	25.620	0.402	4992.3	2877.5	16.072	1.738	2.69		Clay	78.5			24.22	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	27.250	0.422	5012.8	2887.8	17.137	1.705	2.67		Clay	76.3			25.76	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	28.280	0.466	5033.3	2898.0	17.780	1.809	2.67		Clay	76.3			26.73	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	28.600	0.511	5053.8	2908.3	17.930	1.960	2.68		Clay	77.7			27.03	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	28.730	0.535	5074.3	2918.6	17.949	2.043	2.69		Clay	78.4			27.16	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	28.380	0.547	5094.9	2928.9	17.640	2.117	2.71		Clay	79.6			26.82	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	26.700	0.545	5115.4	2939.2	16.428	2.257	2.75		Clay	82.9			25.24	0.92	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	25.500	0.513	5135.9	2949.4	15.550	2.237	2.77		Clay	84.3			24.10	0.92	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	23.770	0.535	5156.4	2959.7	14.320	2.525	2.83		Clay	89.1			22.47	0.92	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	22.460	0.620	5176.9	2970.0	13.382	3.120	2.90		Clay	95.3			21.23	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	23.030	0.626	5197.4	2980.2	13.711	3.064	2.89		Clay	94.2			21.77	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	22.800	0.595	5217.9	2990.5	13.503	2.947	2.89		Clay	93.9			21.55	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	22.930	0.530	5238.4	3000.8	13.537	2.609	2.85		Clay	91.3			21.67	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	21.330	0.522	5258.9	3011.0	12.421	2.791	2.90		Clay	95.1			20.16	0.91	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	20.470	0.522	5279.4	3021.3	11.803	2.928	2.93		Clay	97.5			19.35	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	21.890	0.496	5299.9	3031.6	12.693	2.578	2.87		Clay	92.9			20.69	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	23.090	0.496	5320.4	3041.8	13.433	2.428	2.84		Clay	90.1			21.82	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	23.710	0.538	5340.9	3052.1	13.787	2.557	2.84		Clay	90.4			22.41	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	25.840	0.568	5361.4	3062.4	15.125	2.453	2.80		Clay	86.9			24.42	0.91	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	29.090	0.587	5381.9	3072.6	17.183	2.224	2.73		Clay	81.4			27.50	0.91	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	30.550	0.571	5402.4	3082.9	18.067	2.050	2.69		Clay	78.3			28.88	0.91	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	28.110	0.533	5422.9	3093.2	16.422	2.099	2.73		Clay	81.5			26.57	0.90	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	24.780	0.528	5443.4	3103.4	14.215	2.394	2.82		Clay	88.2			23.42	0.90	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	22.240	0.439	5463.9	3113.7	12.530	2.250	2.85		Clay	90.7			21.02	0.90	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	19.550	0.413	5484.4	3124.0	10.761	2.457	2.92		Clay	96.8			18.48	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	17.290	0.376	5504.9	3134.2	9.277	2.586	2.99		Clay	100.0			16.34	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	15.610	0.368	5525.4	3144.5	8.171	2.864	3.06		Clay	100.0			14.75	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	13.830	0.345	5545.9	3154.8	7.010	3.120	3.13		Clay	100.0			13.07	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	12.580	0.313	5566.4	3165.0	6.191	3.195	3.19		Clay	100.0			11.89	0.90	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	12.100	0.199	5587.0	3175.4	5.862	2.138	3.12		Clay	100.0			11.44	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	12.110	0.195	5607.5	3185.6	5.843	2.095	3.11		Clay	100.0			11.45	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	12.810	0.175	5628.0	3195.9	6.256	1.751	3.05		Clay	100.0			12.11	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	12.770	0.214	5648.5	3206.2	6.204	2.152	3.10		Clay	100.0			12.07	0.90	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	13.150	0.206	5669.0	3216.4	6.414	1.997	3.07		Clay	100.0			12.43	0.90	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	13.790	0.199	5689.5	3226.7	6.784	1.818	3.03		Clay	100.0			13.03	0.89	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	16.740	0.225	5710.0	3237.0	8.579	1.620	2.91		Clay	95.9			15.82	0.89	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	17.450	0.203	5730.5	3247.2	8.983	1.392	2.86		Clay	92.0			16.49	0.89	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	20.690	0.247	5751.0	3257.5	10.938	1.387	2.79		Clay	85.9			19.56	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	20.710	0.324	5771.5	3267.8	10.909	1.818	2.85		Clay	90.7			19.57	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	20.830	0.419	5792.0	3278.0	10.942	2.336	2.90		Clay	95.3			19.69	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	20.540	0.395	5812.5	3288.3	10.725	2.240	2.90		Clay	95.1			19.41	0.89	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	21.290	0.363	5833.0	3298.6	11.140	1.976	2.86		Clay	91.6			20.12	0.89	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	22.930	0.329	5853.5	3308.8	12.091	1.645	2.79		Clay	85.9			21.67	0.89	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	21.300	0.395	5874.0	3319.1	11.065	2.151	2.88		Clay	93.4			20.13	0.89	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	19.640	0.351	5894.5	3329.4	10.028	2.103	2.91		Clay	95.9			18.56	0.89	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	20.490	0.404	5915.0	3339.6	10.500	2.304	2.92		Clay	96.3			19.37	0.89	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	16.380	0.392	5935.5	3349.9	8.008	2.923	3.07		Clay	100.0			15.48	0.89	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	16.320	0.335	5956.0	3360.2	7.941	2.511	3.04		Clay	100.0			15.43	0.89	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	20.370	0.343	5976.5	3370.4	10.314	1.973	2.89		Clay	93.9			19.25	0.88	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	21.270	0.318	5997.0	3380.7	10.809	1.740	2.84		Clay	90.2			20.10	0.88	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	22.880	0.382	6017.5	3391.0	11.720	1.922	2.83		Clay	89.7			21.63	0.88	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	24.280	0.434	6038.0	3401.2	12.502	2.041	2.82		Clay	88.9			22.95	0.88	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	25.420	0.475	6058.5	3411.5	13.127	2.121	2.81		Clay	88.2			24.03	0.88	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	26.450	0.533	6079.1	3421.8	13.683	2.277	2.82		Clay	88.3			25.00	0.88	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	23.990	0.593	6099.6	3432.1	12.203	2.832	2.91		Clay	95.9			22.67	0.88	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 7

PGA (A_{max}) 0.85

Total Settlement: 1.16 (Inches)

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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)
49.213	20.250	0.590	6120.1	3442.4	9.987	3.432	3.03		Clay	100.0			19.14	0.88	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	17.950	0.551	6140.6	3452.6	8.619	3.703	3.10		Clay	100.0			16.97	0.88	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	15.800	0.573	6161.1	3462.9	7.346	4.505	3.21		Clay	100.0			14.93	0.88	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	15.440	0.590	6181.6	3473.2	7.111	4.778	3.23		Clay	100.0			14.59	0.88	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	14.930	0.549	6202.1	3483.4	6.792	4.641	3.24		Clay	100.0			14.11	0.88	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	15.380	0.474	6222.6	3493.7	7.023	3.863	3.19		Clay	100.0			14.54	0.88	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	8

PGA (A_{max})	0.85

Total Settlement:	0.00	(Inches)

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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)
5.085	18.000	0.424	610.2	610.2	31.145	2.396	2.54		Unsaturated	66.4			17.01	1.70	28.92	87.25	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	21.530	0.508	629.9	629.9	36.753	2.395	2.49		Unsaturated	62.0			20.35	1.70	34.59	93.52	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	22.460	0.670	649.6	649.6	37.761	3.027	2.54		Unsaturated	66.6			21.23	1.70	36.09	96.52	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	19.460	0.616	669.2	669.2	40.465	3.221	2.54		Unsaturated	66.3			18.39	1.70	31.27	90.24	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	16.870	0.548	688.9	688.9	34.262	3.316	2.60		Unsaturated	71.2			15.95	1.70	27.11	85.84	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	16.930	0.520	708.7	708.7	33.691	3.137	2.59		Unsaturated	70.4			16.00	1.70	27.20	85.81	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	17.490	0.468	728.4	728.4	34.148	2.733	2.55		Unsaturated	66.9			16.53	1.70	28.10	86.29	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	18.170	0.465	748.1	748.1	28.289	2.613	2.60		Unsaturated	70.9			17.17	1.70	29.20	88.49	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	15.470	0.450	767.8	767.8	28.993	2.983	2.63		Unsaturated	73.2			14.62	1.70	24.86	83.28	0.99	0.547	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.562	13.950	0.408	787.4	787.4	25.595	3.010	2.67		Unsaturated	76.7			13.19	1.70	22.41	80.67	0.99	0.547	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.726	16.500	0.369	807.1	807.1	29.871	2.292	2.54		Unsaturated	66.6			15.60	1.68	26.16	83.73	0.99	0.547	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.890	15.860	0.345	826.8	826.8	28.186	2.234	2.56		Unsaturated	67.6			14.99	1.66	24.90	82.32	0.99	0.546	1.087	n.a.	n.a.	n.a.	0.00	0.00
7.054	14.090	0.390	846.5	846.5	24.531	2.854	2.67		Unsaturated	76.7			13.32	1.65	21.96	80.08	0.99	0.546	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.218	11.220	0.403	866.2	866.2	24.907	3.736	2.74		Unsaturated	82.3			10.60	1.65	17.48	75.03	0.99	0.546	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.382	9.650	0.338	885.8	885.8	20.787	3.671	2.80		Unsaturated	86.7			9.12	1.64	14.95	72.25	0.99	0.546	1.074	n.a.	n.a.	n.a.	0.00	0.00
7.546	10.030	0.288	905.5	905.5	21.153	3.007	2.74		Unsaturated	81.8			9.48	1.62	15.34	72.19	0.99	0.545	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.710	10.760	0.278	925.2	925.2	22.260	2.700	2.69		Unsaturated	78.1			10.17	1.60	16.24	72.86	0.99	0.545	1.071	n.a.	n.a.	n.a.	0.00	0.00
7.874	10.180	0.282	944.9	944.9	20.548	2.905	2.74		Unsaturated	81.9			9.62	1.58	15.21	72.02	0.99	0.545	1.069	n.a.	n.a.	n.a.	0.00	0.00
8.038	9.020	0.280	964.6	964.6	17.703	3.280	2.82		Unsaturated	88.6			8.53	1.57	13.37	70.39	0.99	0.544	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.202	7.140	0.235	984.2	984.2	13.509	3.535	2.93		Unsaturated	97.6			6.75	1.56	10.53	67.53	0.98	0.544	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.366	5.860	0.190	1003.9	1003.9	10.674	3.546	3.02		Unsaturated	100.0			5.54	1.55	8.59	65.18	0.98	0.544	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.530	5.360	0.158	1023.6	1023.6	9.473	3.259	3.04		Unsaturated	100.0			5.07	1.54	7.78	64.13	0.98	0.544	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.694	5.220	0.132	1043.3	1043.3	9.007	2.809	3.02		Unsaturated	100.0			4.93	1.52	7.50	63.76	0.98	0.543	1.056	n.a.	n.a.	n.a.	0.00	0.00
8.858	5.380	0.108	1063.0	1063.0	9.123	2.227	2.96		Unsaturated	99.7			5.09	1.50	7.64	63.93	0.98	0.543	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.022	5.580	0.077	1082.6	1082.6	9.308	1.528	2.87		Unsaturated	92.5			5.27	1.49	7.85	63.57	0.98	0.543	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.186	5.330	0.074	1102.3	1102.3	8.671	1.548	2.90		Unsaturated	94.8			5.04	1.47	7.42	63.23	0.98	0.542	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.350	6.800	0.086	1122.0	1122.0	11.121	1.378	2.78		Unsaturated	85.3			6.43	1.45	9.34	64.79	0.98	0.542	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.514	6.640	0.081	1141.7	1141.7	10.632	1.335	2.79		Unsaturated	86.1			6.28	1.44	9.03	64.48	0.98	0.542	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.678	6.730	0.104	1161.4	1161.4	10.590	1.691	2.84		Unsaturated	90.3			6.36	1.42	9.06	64.95	0.98	0.542	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.843	7.880	0.106	1181.2	1181.2	12.343	1.454	2.75		Unsaturated	83.1			7.45	1.41	10.48	66.02	0.98	0.541	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.007	7.980	0.080	1200.8	1200.8	12.291	1.084	2.69		Clay	78.3			7.54	1.16	n.a.	n.a.	0.98	0.541	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	7.990	0.092	1220.5	1220.5	12.093	1.247	2.73		Clay	81.1			7.55	1.16	n.a.	n.a.	0.98	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	7.780	0.114	1240.2	1240.2	11.546	1.592	2.80		Clay	86.7			7.35	1.15	n.a.	n.a.	0.98	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	8.090	0.126	1259.9	1259.9	11.842	1.689	2.80		Clay	87.0			7.65	1.15	n.a.	n.a.	0.98	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	6.350	0.092	1279.6	1279.6	8.925	1.611	2.90		Clay	94.6			6.00	1.14	n.a.	n.a.	0.98	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	5.500	0.073	1299.2	1299.2	7.466	1.505	2.95		Clay	98.9			5.20	1.14	n.a.	n.a.	0.98	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	5.940	0.079	1318.9	1318.9	8.007	1.496	2.92		Clay	96.7			5.61	1.13	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	6.520	0.105	1338.6	1338.6	8.742	1.795	2.93		Clay	97.1			6.16	1.13	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	6.330	0.129	1358.3	1358.3	8.321	2.283	3.00		Clay	100.0			5.98	1.12	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	5.690	0.147	1378.0	1378.0	7.259	2.939	3.11		Clay	100.0			5.38	1.12	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	5.760	0.134	1397.6	1397.6	7.242	2.648	3.08		Clay	100.0			5.44	1.12	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	6.530	0.137	1417.3	1417.3	8.215	2.353	3.01		Clay	100.0			6.17	1.11	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	6.700	0.167	1437.0	1437.0	8.325	2.792	3.05		Clay	100.0			6.33	1.11	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	6.870	0.196	1457.4	1448.7	8.478	3.192	3.07		Clay	100.0			6.49	1.11	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	7.010	0.204	1477.9	1459.0	8.597	3.253	3.07		Clay	100.0			6.63	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	7.210	0.191	1498.4	1469.2	8.795	2.956	3.04		Clay	100.0			6.81	1.10	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	6.690	0.194	1518.9	1479.5	8.017	3.271	3.10		Clay	100.0			6.32	1.10	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	5.160	0.188	1539.4	1489.8	5.894	4.282	3.27		Clay	100.0			4.88	1.10	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	4.440	0.161	1559.9	1500.0	4.880	4.399	3.35		Clay	100.0			4.20	1.10	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	5.160	0.129	1580.4	1510.3	5.787	2.952	3.19		Clay	100.0			4.88	1.09	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	7.020	0.110	1600.9	1520.6	8.181	1.769	2.95		Clay	98.9			6.64	1.09	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	8.790	0.174	1621.4	1530.8	10.425	2.181	2.91		Clay	95.4			8.31	1.09	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	10.010	0.277	1641.9	1541.1	11.925	3.014	2.94		Clay	97.8			9.46	1.09	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	10.680	0.344	1662.5	1551.4	12.696	3.493	2.95		Clay	99.1			10.09	1.09	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	12.120	0.373	1683.0	1561.7	14.444	3.307	2.89		Clay	94.4			11.46	1.08	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	14.020	0.412	1703.5	1572.0	16.754	3.129	2.83		Clay	89.1			13.25	1.08	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	14.400	0.449	1724.0	1582.2	17.113	3.317	2.83		Clay	89.7			13.61	1.08	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	14.370	0.458	1744.5	1592.5	16.952	3.393	2.84		Clay	90.5			13.58	1.08	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	14.630	0.452	1765.0	1602.8	17.155	3.288	2.83		Clay	89.5			13.83	1.08	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	15.410	0.451	1785.5	1613.0	18.000	3.107	2.80		Clay	87.0			14.57	1.07	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	16.050	0.499	1806.0	1623.3	18.662	3.294	2.80		Clay	87.2			15.17	1.07	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	16.670	0.521	1826.5	1633.6	19.291	3.307	2.79		Clay	86.4			15.76	1.07	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	17.240	0.579	1847.0	1643.8	19.852	3.549	2.80		Clay	87.2			16.29	1.07	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	17.990	0.611	1867.5	1654.1	20.623	3.582	2.79		Clay	86.3			17.00	1.07	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	18.200	0.656	1888.0	1664.4	20.736	3.802	2.81		Clay	87.5			17.20	1.07	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	18.110	0.646	1908.5	1674.6	20.489	3.766	2.81		Clay	87.6			17.12	1.06	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	17.320	0.621	1929.0	1684.9	19.414	3.797	2.83		Clay	89.3			16.37	1.06	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	17.440	0.614	1949.5	1695.2	19.426	3.729	2.82		Clay	88.8			16.48	1.06	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	8

PGA (A_{max})	0.85

Total Settlement:	0.00	(Inches)

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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)
16.240	17.730	0.603	1970.0	1705.4	19.637	3.601	2.81		Clay	87.8			16.76	1.06	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	18.470	0.610	1990.5	1715.7	20.371	3.491	2.79		Clay	86.1			17.46	1.06	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	19.140	0.629	2011.0	1726.0	21.014	3.469	2.78		Clay	85.1			18.09	1.06	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	19.600	0.642	2031.5	1736.2	21.408	3.455	2.77		Clay	84.5			18.53	1.05	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	19.680	0.641	2052.0	1746.5	21.362	3.436	2.77		Clay	84.5			18.60	1.05	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	19.570	0.644	2072.5	1756.8	21.100	3.475	2.78		Clay	85.1			18.50	1.05	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	19.410	0.622	2093.0	1767.0	20.785	3.387	2.77		Clay	84.9			18.35	1.05	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	19.300	0.615	2113.5	1777.3	20.529	3.371	2.78		Clay	85.1			18.24	1.05	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	19.880	0.610	2134.0	1787.6	21.049	3.242	2.76		Clay	83.6			18.79	1.05	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	20.810	0.602	2154.6	1797.9	21.951	3.051	2.73		Clay	81.1			19.67	1.04	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	21.130	0.635	2175.1	1808.2	22.169	3.168	2.73		Clay	81.7			19.97	1.04	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	22.110	0.620	2195.6	1818.4	23.110	2.951	2.70		Clay	79.0			20.90	1.04	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	22.780	0.633	2216.1	1828.7	23.702	2.921	2.69		Clay	78.1			21.53	1.04	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	23.400	0.641	2236.6	1838.9	24.233	2.877	2.68		Clay	77.2			22.12	1.04	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	23.310	0.659	2257.1	1849.2	23.990	2.971	2.69		Clay	78.2			22.03	1.04	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	23.090	0.691	2277.6	1859.5	23.610	3.148	2.71		Clay	79.9			21.82	1.03	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	23.610	0.699	2298.1	1869.7	24.026	3.112	2.70		Clay	79.1			22.32	1.03	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	24.230	0.737	2318.6	1880.0	24.543	3.195	2.70		Clay	79.2			22.90	1.03	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	24.990	0.778	2339.1	1890.3	25.203	3.266	2.70		Clay	78.9			23.62	1.03	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	24.320	0.761	2359.6	1900.5	24.351	3.289	2.71		Clay	80.0			22.99	1.03	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	25.990	0.752	2380.1	1910.8	25.957	3.032	2.67		Clay	76.5			24.57	1.03	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	28.200	0.737	2400.6	1921.1	28.109	2.730	2.61		Clay	72.0			26.65	1.03	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	28.330	0.719	2421.1	1931.3	28.083	2.651	2.61		Clay	71.4			26.78	1.02	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	25.940	0.698	2441.6	1941.6	25.463	2.824	2.66		Clay	75.4			24.52	1.02	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	21.500	0.714	2462.1	1951.9	20.769	3.523	2.78		Clay	85.8			20.32	1.02	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	17.890	0.635	2482.6	1962.1	16.970	3.814	2.87		Clay	93.0			16.91	1.02	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	14.200	0.562	2503.1	1972.4	13.130	4.340	3.00		Clay	100.0			13.42	1.02	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	12.750	0.516	2523.6	1982.7	11.589	4.492	3.05		Clay	100.0			12.05	1.02	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	14.740	0.493	2544.1	1992.9	13.516	3.661	2.94		Clay	98.3			13.93	1.02	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	15.220	0.394	2564.6	2003.2	13.915	2.827	2.86		Clay	92.2			14.39	1.01	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	14.010	0.320	2585.1	2013.5	12.632	2.516	2.87		Clay	92.6			13.24	1.01	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	14.980	0.272	2605.6	2023.7	13.517	1.989	2.79		Clay	86.1			14.16	1.01	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	15.510	0.291	2626.3	2034.1	13.959	2.050	2.78		Clay	85.7			14.66	1.01	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	16.370	0.334	2646.8	2044.3	14.720	2.220	2.78		Clay	85.8			15.47	1.01	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	17.490	0.339	2667.3	2054.6	15.727	2.098	2.75		Clay	82.8			16.53	1.01	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	19.860	0.362	2687.8	2064.9	17.934	1.955	2.68		Clay	77.6			18.77	1.01	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	22.300	0.433	2708.3	2075.1	20.187	2.067	2.65		Clay	75.3			21.08	1.01	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	24.520	0.563	2728.8	2085.4	22.207	2.431	2.66		Clay	76.0			23.18	1.00	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	24.920	0.732	2749.3	2095.7	22.470	3.109	2.72		Clay	80.9			23.55	1.00	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	24.580	0.723	2769.8	2105.9	22.028	3.117	2.73		Clay	81.5			23.23	1.00	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	25.860	0.747	2790.3	2116.2	23.121	3.053	2.71		Clay	79.8			24.44	1.00	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	24.160	0.719	2810.8	2126.5	21.401	3.160	2.74		Clay	82.6			22.84	1.00	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	20.930	0.671	2831.3	2136.7	18.266	3.438	2.82		Clay	88.7			19.78	1.00	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	18.280	0.635	2851.8	2147.0	15.700	3.768	2.90		Clay	94.8			17.28	1.00	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	16.530	0.554	2872.3	2157.3	13.993	3.670	2.93		Clay	97.4			15.62	0.99	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	16.520	0.467	2892.8	2167.5	13.909	3.098	2.89		Clay	94.1			15.61	0.99	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	18.460	0.361	2913.3	2177.8	15.615	2.123	2.75		Clay	83.2			17.45	0.99	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	15.770	0.404	2933.8	2188.1	13.074	2.825	2.89		Clay	93.9			14.91	0.99	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	12.560	0.398	2954.3	2198.3	10.083	3.591	3.04		Clay	100.0			11.87	0.99	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	9.470	0.328	2974.8	2208.6	7.229	4.109	3.19		Clay	100.0			8.95	0.99	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	7.770	0.251	2995.3	2218.9	5.654	4.002	3.27		Clay	100.0			7.34	0.99	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	6.990	0.178	3015.8	2229.1	4.919	3.247	3.27		Clay	100.0			6.61	0.99	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	7.150	0.157	3036.3	2239.4	5.030	2.788	3.23		Clay	100.0			6.76	0.99	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	7.230	0.161	3056.8	2249.7	5.069	2.824	3.23		Clay	100.0			6.83	0.98	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	7.570	0.175	3077.3	2259.9	5.338	2.901	3.22		Clay	100.0			7.16	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	8.730	0.235	3097.8	2270.2	6.326	3.272	3.18		Clay	100.0			8.25	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	10.750	0.201	3118.4	2280.5	8.060	2.187	3.00		Clay	100.0			10.16	0.98	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	15.740	0.254	3138.9	2290.8	12.372	1.792	2.80		Clay	86.8			14.88	0.98	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	16.350	0.374	3159.4	2301.1	12.838	2.532	2.87		Clay	92.3			15.45	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	16.440	0.349	3179.9	2311.3	12.850	2.350	2.85		Clay	90.8			15.54	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	14.800	0.275	3200.4	2321.6	11.371	2.083	2.86		Clay	92.0			13.99	0.98	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	9.630	0.191	3220.9	2331.9	6.878	2.382	3.08		Clay	100.0			9.10	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	7.790	0.143	3241.4	2342.1	5.268	2.318	3.17		Clay	100.0			7.36	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	7.840	0.127	3261.9	2352.4	5.279	2.045	3.15		Clay	100.0			7.41	0.97	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	8.760	0.131	3282.4	2362.7	6.026	1.840	3.07		Clay	100.0			8.28	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	10.780	0.153	3302.9	2372.9	7.694	1.676	2.96		Clay	99.8			10.19	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	12.940	0.225	3323.4	2383.2	9.465	1.995	2.92		Clay	96.6			12.23	0.97	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 8

PGA (A_{max}) 0.85

Total Settlement: 0.00 (Inches)

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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)
27.231	15.490	0.268	3343.9	2393.5	11.547	1.939	2.84		Clay	90.3			14.64	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	16.140	0.284	3364.4	2403.7	12.029	1.964	2.83		Clay	89.3			15.26	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	15.000	0.305	3384.9	2414.0	11.025	2.292	2.90		Clay	94.7			14.18	0.97	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	13.910	0.330	3405.4	2424.3	10.071	2.703	2.97		Clay	100.0			13.15	0.96	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	13.150	0.343	3425.9	2434.5	9.396	2.999	3.02		Clay	100.0			12.43	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	12.830	0.334	3446.4	2444.8	9.086	3.007	3.03		Clay	100.0			12.13	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	12.190	0.316	3466.9	2455.1	8.518	3.022	3.06		Clay	100.0			11.52	0.96	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	11.280	0.248	3487.4	2465.3	7.736	2.601	3.06		Clay	100.0			10.66	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	10.700	0.246	3507.9	2475.6	7.227	2.750	3.09		Clay	100.0			10.11	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	11.190	0.156	3528.4	2485.9	7.584	1.655	2.96		Clay	100.0			10.58	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	12.240	0.199	3548.9	2496.1	8.385	1.901	2.95		Clay	99.4			11.57	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	14.070	0.215	3569.4	2506.4	9.803	1.750	2.88		Clay	93.3			13.30	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	14.870	0.254	3589.9	2516.7	10.391	1.943	2.88		Clay	93.4			14.05	0.96	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	14.660	0.283	3610.5	2527.0	10.174	2.202	2.92		Clay	96.3			13.86	0.95	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	15.500	0.351	3631.0	2537.3	10.787	2.565	2.93		Clay	97.5			14.65	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	16.770	0.344	3651.5	2547.5	11.732	2.302	2.88		Clay	93.0			15.85	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	15.310	0.259	3672.0	2557.8	10.536	1.922	2.87		Clay	92.8			14.47	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	13.700	0.201	3692.5	2568.1	9.232	1.696	2.89		Clay	94.5			12.95	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	12.880	0.209	3713.0	2578.3	8.551	1.896	2.95		Clay	98.8			12.17	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	15.250	0.241	3733.5	2588.6	10.340	1.801	2.86		Clay	92.2			14.41	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	22.740	0.331	3754.0	2598.9	16.056	1.587	2.67		Clay	76.8			21.49	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	26.680	0.396	3774.5	2609.1	19.005	1.597	2.61		Clay	72.0			25.22	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	26.820	0.431	3795.0	2619.4	19.029	1.729	2.63		Clay	73.5			25.35	0.95	n.a.	n.a.	0.90	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	25.050	0.462	3815.5	2629.7	17.601	1.996	2.69		Clay	78.5			23.68	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	23.730	0.504	3836.0	2639.9	16.525	2.311	2.75		Clay	83.2			22.43	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	22.620	0.574	3856.5	2650.2	15.615	2.774	2.82		Clay	88.5			21.38	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	23.500	0.613	3877.0	2660.4	16.209	2.843	2.81		Clay	88.0			22.21	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	25.680	0.680	3897.5	2670.7	17.771	2.865	2.78		Clay	85.6			24.27	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	27.420	0.691	3918.0	2681.0	18.994	2.714	2.75		Clay	82.6			25.92	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	27.750	0.666	3938.5	2691.2	19.159	2.583	2.73		Clay	81.4			26.23	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	26.380	0.640	3959.0	2701.5	18.064	2.623	2.75		Clay	83.3			24.93	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	24.060	0.648	3979.5	2711.8	16.277	2.936	2.82		Clay	88.6			22.74	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	20.730	0.646	4000.0	2722.0	13.762	3.449	2.92		Clay	96.6			19.59	0.94	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	18.440	0.569	4020.5	2732.3	12.026	3.463	2.97		Clay	100.0			17.43	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	19.670	0.534	4041.0	2742.6	12.871	3.026	2.91		Clay	95.7			18.59	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	26.390	0.722	4061.5	2752.8	17.697	2.964	2.79		Clay	86.4			24.94	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	34.380	0.855	4082.0	2763.1	23.408	2.644	2.67		Clay	76.3			32.50	0.93	n.a.	n.a.	0.89	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	35.490	0.950	4102.6	2773.4	24.113	2.841	2.68		Clay	77.1			33.54	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	26.680	0.799	4123.1	2783.7	17.688	3.246	2.82		Clay	88.4			25.22	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	18.060	0.518	4143.6	2794.0	11.445	3.240	2.97		Clay	100.0			17.07	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	13.730	0.344	4164.1	2804.2	8.307	2.953	3.06		Clay	100.0			12.98	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	11.930	0.265	4184.6	2814.5	6.991	2.694	3.10		Clay	100.0			11.28	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	11.270	0.214	4205.1	2824.8	6.491	2.334	3.10		Clay	100.0			10.65	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	11.580	0.217	4225.6	2835.0	6.679	2.292	3.08		Clay	100.0			10.95	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	12.830	0.230	4246.1	2845.3	7.526	2.148	3.02		Clay	100.0			12.13	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	13.000	0.214	4266.6	2855.6	7.611	1.969	3.00		Clay	100.0			12.29	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	13.820	0.233	4287.1	2865.8	8.149	1.995	2.98		Clay	100.0			13.06	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	13.990	0.276	4307.6	2876.1	8.231	2.332	3.01		Clay	100.0			13.22	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	13.670	0.236	4328.1	2886.4	7.973	2.051	2.99		Clay	100.0			12.92	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	13.950	0.157	4348.6	2896.6	8.131	1.333	2.89		Clay	94.3			13.19	0.92	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	13.580	0.156	4369.1	2906.9	7.840	1.369	2.91		Clay	95.9			12.84	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	13.730	0.185	4389.6	2917.2	7.908	1.604	2.94		Clay	98.2			12.98	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	17.810	0.248	4410.1	2927.4	10.661	1.589	2.83		Clay	89.0			16.83	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	21.580	0.352	4430.6	2937.7	13.184	1.818	2.78		Clay	85.2			20.40	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	23.240	0.441	4451.1	2948.0	14.257	2.099	2.78		Clay	85.6			21.97	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	23.880	0.516	4471.6	2958.2	14.633	2.384	2.80		Clay	87.3			22.57	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	23.350	0.587	4492.1	2968.5	14.219	2.781	2.85		Clay	91.2			22.07	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	22.370	0.619	4512.6	2978.8	13.505	3.078	2.90		Clay	94.7			21.14	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	21.400	0.659	4533.1	2989.0	12.802	3.444	2.94		Clay	98.6			20.23	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	20.180	0.650	4553.6	2999.3	11.938	3.631	2.98		Clay	100.0			19.07	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	17.760	0.662	4574.1	3009.6	10.282	4.278	3.08		Clay	100.0			16.79	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	15.980	0.641	4594.8	3019.9	9.062	4.685	3.14		Clay	100.0			15.10	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	14.660	0.587	4615.3	3030.2	8.153	4.752	3.19		Clay	100.0			13.86	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	13.530	0.524	4635.8	3040.4	7.375	4.674	3.22		Clay	100.0			12.79	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	13.140	0.501	4656.3	3050.7	7.088	4.634	3.23		Clay	100.0			12.42	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	13.390	0.464	4676.8	3061.0	7.221	4.198	3.20		Clay	100.0			12.66	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	12.760	0.400	4697.3	3071.2	6.780	3.842	3.20		Clay	100.0			12.06	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 8

PGA (A_{max}) 0.85

Total Settlement: 0.00 (Inches)

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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)
38.222	13.070	0.366	4717.8	3081.5	6.952	3.417	3.16		Clay	100.0			12.35	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	13.530	0.356	4738.3	3091.8	7.220	3.190	3.13		Clay	100.0			12.79	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	14.770	0.304	4758.8	3102.0	7.989	2.453	3.03		Clay	100.0			13.96	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	17.360	0.360	4779.3	3112.3	9.620	2.405	2.96		Clay	99.6			16.41	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	21.080	0.366	4799.8	3122.6	11.965	1.959	2.83		Clay	89.4			19.92	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	22.230	0.342	4820.3	3132.8	12.653	1.726	2.78		Clay	85.4			21.01	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	20.560	0.304	4840.8	3143.1	11.543	1.676	2.81		Clay	87.6			19.43	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	18.200	0.269	4861.3	3153.4	10.002	1.706	2.87		Clay	92.2			17.20	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	16.020	0.230	4881.8	3163.6	8.585	1.694	2.92		Clay	96.7			15.14	0.90	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	15.070	0.234	4902.3	3173.9	7.952	1.854	2.97		Clay	100.0			14.24	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	13.620	0.232	4922.8	3184.2	7.009	2.079	3.04		Clay	100.0			12.87	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	12.410	0.214	4943.3	3194.4	6.222	2.153	3.09		Clay	100.0			11.73	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	11.780	0.192	4963.8	3204.7	5.803	2.065	3.11		Clay	100.0			11.13	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	10.550	0.169	4984.3	3215.0	5.013	2.097	3.17		Clay	100.0			9.97	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	10.690	0.167	5004.8	3225.2	5.077	2.040	3.16		Clay	100.0			10.10	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	10.970	0.151	5025.3	3235.5	5.228	1.785	3.12		Clay	100.0			10.37	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	11.200	0.145	5045.8	3245.8	5.347	1.671	3.10		Clay	100.0			10.59	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	14.040	0.169	5066.4	3256.1	7.068	1.469	2.97		Clay	100.0			13.27	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	17.910	0.223	5086.9	3266.4	9.409	1.451	2.85		Clay	91.3			16.93	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	19.440	0.271	5107.4	3276.6	10.307	1.605	2.84		Clay	90.2			18.37	0.89	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	20.720	0.305	5127.9	3286.9	11.048	1.680	2.82		Clay	89.0			19.58	0.89	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	20.920	0.355	5148.4	3297.2	11.128	1.935	2.85		Clay	91.3			19.77	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	21.440	0.425	5168.9	3307.4	11.402	2.254	2.88		Clay	93.4			20.26	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	22.640	0.508	5189.4	3317.7	12.084	2.534	2.89		Clay	94.0			21.40	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	24.520	0.583	5209.9	3328.0	13.170	2.660	2.87		Clay	92.5			23.18	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	25.500	0.602	5230.4	3338.2	13.711	2.631	2.85		Clay	91.1			24.10	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	28.620	0.606	5250.9	3348.5	15.526	2.331	2.78		Clay	85.2			27.05	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	30.380	0.643	5271.4	3358.8	16.521	2.318	2.75		Clay	83.3			28.71	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	32.610	0.682	5291.9	3369.0	17.788	2.276	2.72		Clay	80.8			30.82	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	35.590	0.755	5312.4	3379.3	19.492	2.292	2.69		Clay	78.4			33.64	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	38.330	0.864	5332.9	3389.6	21.043	2.423	2.68		Clay	77.4			36.23	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	40.910	1.011	5353.4	3399.8	22.491	2.644	2.68		Clay	77.4			38.67	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	43.670	1.106	5373.9	3410.1	24.036	2.699	2.66		Clay	76.0			41.28	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	44.160	1.237	5394.4	3420.4	24.245	2.983	2.69		Clay	78.0			41.74	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	44.370	1.176	5414.9	3430.6	24.289	2.823	2.67		Clay	76.7			41.94	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	40.610	1.126	5435.4	3440.9	22.025	2.972	2.72		Clay	80.5			38.38	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	35.420	1.039	5455.9	3451.2	18.946	3.178	2.79		Clay	86.0			33.48	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	30.610	0.988	5476.4	3461.4	16.104	3.545	2.87		Clay	92.8			28.93	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	26.710	0.810	5496.9	3471.7	13.804	3.380	2.91		Clay	96.1			25.25	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	26.310	0.675	5517.4	3481.9	13.528	2.866	2.88		Clay	93.2			24.87	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	29.120	0.581	5537.9	3492.2	15.091	2.205	2.77		Clay	84.9			27.52	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	30.450	0.724	5558.5	3502.5	15.800	2.616	2.80		Clay	87.0			28.78	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	31.250	0.786	5579.0	3512.8	16.204	2.762	2.81		Clay	87.4			29.54	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	32.980	0.955	5599.5	3523.1	17.133	3.164	2.82		Clay	88.7			31.17	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	33.670	1.021	5620.0	3533.3	17.468	3.308	2.83		Clay	89.1			31.82	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	26.940	0.930	5640.5	3543.6	13.613	3.856	2.95		Clay	99.2			25.46	0.87	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	23.240	0.722	5661.0	3553.9	11.486	3.538	2.99		Clay	100.0			21.97	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	20.700	0.549	5681.5	3564.1	10.022	3.074	3.00		Clay	100.0			19.57	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	20.030	0.526	5702.0	3574.4	9.612	3.062	3.02		Clay	100.0			18.93	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	21.310	0.522	5722.5	3584.7	10.293	2.829	2.97		Clay	100.0			20.14	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	21.170	0.513	5743.0	3594.9	10.180	2.804	2.97		Clay	100.0			20.01	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	17.560	0.494	5763.5	3605.2	8.143	3.366	3.10		Clay	100.0			16.60	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	15.890	0.420	5784.0	3615.5	7.190	3.231	3.13		Clay	100.0			15.02	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	14.180	0.381	5804.5	3625.7	6.221	3.378	3.20		Clay	100.0			13.40	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	13.410	0.333	5825.0	3636.0	5.774	3.172	3.21		Clay	100.0			12.67	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	13.610	0.322	5845.5	3646.3	5.862	3.013	3.19		Clay	100.0			12.86	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	13.230	0.323	5866.0	3656.5	5.632	3.137	3.22		Clay	100.0			12.50	0.87	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	13.490	0.318	5886.5	3666.8	5.753	3.015	3.20		Clay	100.0			12.75	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	13.990	0.308	5907.0	3677.1	6.003	2.791	3.17		Clay	100.0			13.22	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	13.510	0.291	5927.5	3687.3	5.720	2.759	3.18		Clay	100.0			12.77	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	13.130	0.272	5948.0	3697.6	5.493	2.678	3.19		Clay	100.0			12.41	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	13.390	0.232	5968.5	3707.9	5.613	2.230	3.14		Clay	100.0			12.66	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	13.230	0.196	5989.0	3718.1	5.506	1.915	3.12		Clay	100.0			12.50	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	12.840	0.190	6009.5	3728.4	5.276	1.932	3.13		Clay	100.0			12.14	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	13.830	0.206	6030.0	3738.7	5.785	1.905	3.10		Clay	100.0			13.07	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	15.050	0.204	6050.6	3749.0	6.415	1.697	3.03		Clay	100.0			14.22	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	14.870	0.179	6071.1	3759.3	6.296	1.513	3.02		Clay	100.0			14.05	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 8

PGA (A_{max}) 0.85

Total Settlement: 0.00 (Inches)

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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)
49.213	14.560	0.187	6091.6	3769.5	6.109	1.624	3.04		Clay	100.0			13.76	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	14.700	0.215	6112.1	3779.8	6.161	1.846	3.06		Clay	100.0			13.89	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	15.380	0.219	6132.6	3790.1	6.498	1.779	3.04		Clay	100.0			14.54	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	15.350	0.240	6153.1	3800.3	6.459	1.955	3.06		Clay	100.0			14.51	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	15.480	0.281	6173.6	3810.6	6.505	2.267	3.09		Clay	100.0			14.63	0.86	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	15.970	0.259	6194.1	3820.9	6.738	2.012	3.05		Clay	100.0			15.09	0.86	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 9

PGA (A_{max}) 0.85

Total Settlement: 0.19 (Inches)

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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)
5.085	19.810	0.534	610.2	610.2	34.330	2.738	2.55		Unsaturated	66.8			18.72	1.70	31.83	91.07	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	14.940	0.606	629.9	629.9	32.284	4.144	2.69		Unsaturated	78.0			14.12	1.70	24.01	82.92	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	13.150	0.550	649.6	649.6	39.489	4.288	2.63		Unsaturated	73.8			12.43	1.70	21.13	78.55	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	15.920	0.457	669.2	669.2	32.975	2.932	2.58		Unsaturated	69.4			15.05	1.70	25.58	83.54	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	15.040	0.401	688.9	688.9	30.468	2.729	2.59		Unsaturated	69.9			14.22	1.70	24.17	81.80	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	13.980	0.427	708.7	708.7	27.695	3.134	2.66		Unsaturated	75.5			13.21	1.70	22.46	80.55	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	12.920	0.473	728.4	728.4	34.475	3.767	2.64		Unsaturated	74.1			12.21	1.70	20.76	78.12	0.99	0.548	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.234	12.910	0.488	748.1	748.1	33.515	3.893	2.66		Unsaturated	75.6			12.20	1.70	20.74	78.33	0.99	0.547	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.398	14.090	0.505	767.8	767.8	35.704	3.684	2.62		Unsaturated	72.6			13.32	1.70	22.64	80.32	0.99	0.547	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.562	12.810	0.445	787.4	787.4	31.536	3.584	2.65		Unsaturated	75.2			12.11	1.70	20.58	78.06	0.99	0.547	1.088	n.a.	n.a.	n.a.	0.00	0.00
6.726	10.690	0.449	807.1	807.1	25.489	4.365	2.78		Unsaturated	85.3			10.10	1.70	17.18	74.99	0.99	0.547	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.890	8.730	0.376	826.8	826.8	20.118	4.521	2.87		Unsaturated	92.2			8.25	1.70	14.03	71.62	0.99	0.546	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.054	9.190	0.281	846.5	846.5	20.713	3.205	2.76		Unsaturated	83.8			8.69	1.68	14.63	71.51	0.99	0.546	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.218	9.330	0.256	866.2	866.2	20.543	2.877	2.73		Unsaturated	81.7			8.82	1.66	14.67	71.30	0.99	0.546	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.382	8.380	0.241	885.8	885.8	17.920	3.036	2.79		Unsaturated	86.6			7.92	1.65	13.06	69.78	0.99	0.546	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.546	8.270	0.220	905.5	905.5	17.266	2.814	2.79		Unsaturated	86.0			7.82	1.63	12.74	69.30	0.99	0.545	1.071	n.a.	n.a.	n.a.	0.00	0.00
7.710	8.000	0.214	925.2	925.2	16.294	2.839	2.81		Unsaturated	87.8			7.56	1.61	12.19	68.78	0.99	0.545	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.874	7.000	0.233	944.9	944.9	13.817	3.569	2.93		Unsaturated	97.2			6.62	1.60	10.57	67.55	0.99	0.545	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.038	6.170	0.196	964.6	964.6	11.793	3.446	2.97		Unsaturated	100.0			5.83	1.58	9.24	66.04	0.99	0.544	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.202	6.900	0.179	984.2	984.2	13.021	2.793	2.89		Unsaturated	93.8			6.52	1.56	10.19	66.76	0.98	0.544	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.366	8.100	0.185	1003.9	1003.9	15.137	2.435	2.80		Unsaturated	86.8			7.66	1.54	11.79	68.14	0.98	0.544	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.530	7.840	0.198	1023.6	1023.6	14.318	2.702	2.84		Unsaturated	90.4			7.41	1.52	11.29	67.87	0.98	0.544	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.694	7.340	0.216	1043.3	1043.3	13.071	3.168	2.92		Unsaturated	96.3			6.94	1.51	10.47	67.34	0.98	0.543	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.858	7.390	0.183	1063.0	1063.0	12.905	2.668	2.88		Unsaturated	93.1			6.98	1.49	10.43	67.01	0.98	0.543	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.022	7.590	0.208	1082.6	1082.6	13.021	2.951	2.90		Unsaturated	94.9			7.17	1.48	10.59	67.38	0.98	0.543	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.186	8.120	0.244	1102.3	1102.3	13.733	3.224	2.90		Unsaturated	95.2			7.67	1.46	11.19	68.20	0.98	0.542	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.350	7.330	0.265	1122.0	1122.0	12.066	3.915	3.00		Unsaturated	100.0			6.93	1.45	10.02	67.07	0.98	0.542	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.514	6.230	0.231	1141.7	1141.7	9.914	4.082	3.08		Unsaturated	100.0			5.89	1.44	8.47	65.03	0.98	0.542	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.678	5.490	0.190	1161.8	1156.9	8.487	3.870	3.12		Unsaturated	100.0			5.19	1.43	7.42	63.66	0.98	0.542	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.843	4.890	0.146	1182.4	1167.2	7.366	3.396	3.14		Unsaturated	100.0			4.62	1.43	6.59	62.57	0.98	0.541	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.007	4.700	0.116	1202.9	1177.5	6.962	2.830	3.11		Clay	100.0			4.44	1.17	n.a.	n.a.	0.98	0.541	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	4.740	0.091	1223.4	1187.7	6.952	2.204	3.06		Clay	100.0			4.48	1.16	n.a.	n.a.	0.98	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	5.280	0.087	1243.9	1198.0	7.776	1.868	2.98		Clay	100.0			4.99	1.16	n.a.	n.a.	0.98	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	5.750	0.102	1264.4	1208.3	8.471	1.993	2.96		Clay	99.9			5.43	1.16	n.a.	n.a.	0.98	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	7.380	0.148	1284.9	1218.5	11.058	2.197	2.89		Clay	93.8			6.98	1.16	n.a.	n.a.	0.98	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	8.210	0.212	1305.4	1228.8	12.300	2.805	2.91		Clay	95.5			7.76	1.15	n.a.	n.a.	0.98	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	8.650	0.229	1325.9	1239.1	12.892	2.867	2.90		Clay	94.6			8.18	1.15	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	8.520	0.240	1346.4	1249.3	12.562	3.059	2.92		Clay	96.7			8.05	1.15	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	8.400	0.256	1366.9	1259.6	12.252	3.318	2.95		Clay	99.0			7.94	1.15	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	8.010	0.291	1387.4	1269.9	11.523	3.977	3.02		Clay	100.0			7.57	1.14	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	8.340	0.292	1407.9	1280.1	11.930	3.824	3.00		Clay	100.0			7.88	1.14	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	8.570	0.318	1428.4	1290.4	12.176	4.048	3.00		Clay	100.0			8.10	1.14	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	8.800	0.336	1448.9	1300.7	12.417	4.161	3.00		Clay	100.0			8.32	1.14	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	8.600	0.327	1469.4	1310.9	11.999	4.157	3.02		Clay	100.0			8.13	1.13	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	8.660	0.334	1489.9	1321.2	11.982	4.220	3.02		Clay	100.0			8.19	1.13	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	9.210	0.352	1510.4	1331.5	12.700	4.163	3.00		Clay	100.0			8.71	1.13	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	9.970	0.363	1530.9	1341.7	13.720	3.944	2.96		Clay	99.5			9.42	1.13	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	11.090	0.384	1551.4	1352.0	15.258	3.723	2.90		Clay	95.4			10.48	1.13	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	12.620	0.420	1571.9	1362.3	17.374	3.549	2.85		Clay	90.8			11.93	1.12	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	13.200	0.434	1592.4	1372.5	18.074	3.499	2.83		Clay	89.4			12.48	1.12	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	13.790	0.445	1612.9	1382.8	18.779	3.427	2.81		Clay	87.9			13.03	1.12	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	14.230	0.451	1633.4	1393.1	19.257	3.362	2.80		Clay	86.8			13.45	1.12	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	15.360	0.485	1653.9	1403.3	20.712	3.337	2.77		Clay	84.7			14.52	1.11	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	16.400	0.525	1674.5	1413.7	22.018	3.373	2.75		Clay	83.3			15.50	1.11	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	17.800	0.565	1695.0	1423.9	23.811	3.333	2.72		Clay	80.9			16.82	1.11	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	16.830	0.584	1715.5	1434.2	22.273	3.656	2.77		Clay	84.7			15.91	1.11	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	16.660	0.580	1736.0	1444.5	21.866	3.673	2.78		Clay	85.3			15.75	1.11	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	16.180	0.577	1756.5	1454.7	21.037	3.771	2.80		Clay	87.0			15.29	1.10	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	16.600	0.586	1777.0	1465.0	21.449	3.730	2.79		Clay	86.2			15.69	1.10	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	16.640	0.616	1797.5	1475.3	21.340	3.913	2.81		Clay	87.4			15.73	1.10	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	16.470	0.643	1818.0	1485.5	20.950	4.132	2.83		Clay	89.1			15.57	1.10	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	16.220	0.616	1838.5	1495.8	20.458	4.026	2.83		Clay	89.2			15.33	1.10	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	15.720	0.579	1859.0	1506.1	19.641	3.915	2.83		Clay	89.6			14.86	1.09	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	15.380	0.517	1879.5	1516.3	19.046	3.580	2.82		Clay	88.5			14.54	1.09	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	15.380	0.489	1900.0	1526.6	18.905	3.389	2.81		Clay	87.5			14.54	1.09	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	16.650	0.470	1920.5	1536.9	20.418	2.996	2.75		Clay	82.7			15.74	1.09	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	16.540	0.469	1941.0	1547.1	20.127	3.012	2.75		Clay	83.2			15.63	1.09	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	15.610	0.465	1961.5	1557.4	18.787	3.179	2.79		Clay	86.3			14.75	1.08	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	9

PGA (A_{max})	0.85

Total Settlement:	0.19	(Inches)

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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)
16.240	13.930	0.417	1982.0	1567.7	16.507	3.223	2.84		Clay	90.1			13.17	1.08	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	12.980	0.348	2002.5	1577.9	15.183	2.905	2.84		Clay	90.3			12.27	1.08	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	13.330	0.337	2023.0	1588.2	15.513	2.736	2.82		Clay	88.4			12.60	1.08	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	14.210	0.347	2043.5	1598.5	16.501	2.631	2.79		Clay	85.9			13.43	1.08	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	14.130	0.347	2064.0	1608.7	16.284	2.649	2.79		Clay	86.4			13.36	1.07	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	14.170	0.312	2084.5	1619.0	16.217	2.377	2.77		Clay	84.3			13.39	1.07	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	15.590	0.292	2105.0	1629.3	17.845	2.009	2.69		Clay	78.3			14.74	1.07	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	17.320	0.347	2125.5	1639.5	19.832	2.134	2.67		Clay	76.5			16.37	1.07	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	17.840	0.400	2146.0	1649.8	20.326	2.386	2.69		Clay	78.1			16.86	1.07	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	18.650	0.481	2166.6	1660.1	21.163	2.738	2.71		Clay	79.8			17.63	1.07	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	20.140	0.492	2187.1	1670.4	22.805	2.583	2.67		Clay	76.5			19.04	1.06	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	19.900	0.433	2207.6	1680.7	22.368	2.304	2.65		Clay	74.7			18.81	1.06	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	19.100	0.433	2228.1	1690.9	21.274	2.407	2.67		Clay	77.0			18.05	1.06	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	19.170	0.468	2248.6	1701.2	21.215	2.593	2.70		Clay	78.6			18.12	1.06	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	20.210	0.566	2269.1	1711.5	22.291	2.967	2.71		Clay	80.1			19.10	1.06	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	22.080	0.648	2289.6	1721.7	24.319	3.095	2.70		Clay	78.7			20.87	1.06	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	23.100	0.701	2310.1	1732.0	25.341	3.194	2.69		Clay	78.3			21.83	1.05	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	24.410	0.728	2330.6	1742.3	26.683	3.132	2.67		Clay	76.5			23.07	1.05	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	25.190	0.737	2351.1	1752.5	27.406	3.069	2.65		Clay	75.3			23.81	1.05	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	25.970	0.834	2371.6	1762.8	28.119	3.365	2.67		Clay	76.7			24.55	1.05	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	25.670	0.913	2392.1	1773.1	27.607	3.730	2.71		Clay	79.6			24.26	1.05	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	24.960	1.019	2412.6	1783.3	26.640	4.290	2.76		Clay	83.7			23.59	1.05	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	21.110	0.941	2433.1	1793.6	22.183	4.730	2.85		Clay	90.7			19.95	1.04	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	15.510	0.838	2453.6	1803.9	15.836	5.867	3.02		Clay	100.0			14.66	1.04	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	13.300	0.847	2474.1	1814.1	13.299	7.022	3.13		Clay	100.0			12.57	1.04	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	11.790	0.762	2494.6	1824.4	11.558	7.228	3.18		Clay	100.0			11.14	1.04	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	10.640	0.641	2515.1	1834.7	10.228	6.832	3.21		Clay	100.0			10.06	1.04	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	9.910	0.522	2535.6	1844.9	9.369	6.040	3.20		Clay	100.0			9.37	1.04	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	9.480	0.387	2556.1	1855.2	8.842	4.718	3.16		Clay	100.0			8.96	1.04	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	8.990	0.299	2576.6	1865.5	8.257	3.882	3.13		Clay	100.0			8.50	1.03	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	9.040	0.280	2597.1	1875.7	8.254	3.617	3.11		Clay	100.0			8.54	1.03	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	9.190	0.311	2617.6	1886.0	8.358	3.946	3.13		Clay	100.0			8.69	1.03	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	10.770	0.379	2638.3	1896.3	9.968	4.010	3.07		Clay	100.0			10.18	1.03	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	16.250	0.437	2658.8	1906.6	15.652	2.929	2.83		Clay	89.6			15.36	1.03	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	19.610	0.486	2679.3	1916.8	19.063	2.660	2.74		Clay	82.1			18.53	1.03	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	23.600	0.669	2699.8	1927.1	23.092	3.007	2.71		Clay	79.5			22.31	1.02	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	27.620	0.807	2720.3	1937.4	27.109	3.073	2.66		Clay	75.6			26.11	1.02	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	28.420	0.964	2740.8	1947.6	27.777	3.564	2.69		Clay	78.3			26.86	1.02	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	26.750	0.966	2761.3	1957.9	25.915	3.808	2.73		Clay	81.7			25.28	1.02	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	23.760	0.938	2781.8	1968.2	22.731	4.193	2.80		Clay	87.3			22.46	1.02	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	20.660	0.787	2802.3	1978.4	19.469	4.086	2.85		Clay	90.8			19.53	1.02	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	19.190	0.648	2822.8	1988.7	17.880	3.645	2.84		Clay	90.6			18.14	1.02	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	17.810	0.555	2843.3	1999.0	16.397	3.387	2.85		Clay	91.4			16.83	1.02	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	16.720	0.502	2863.8	2009.2	15.218	3.284	2.87		Clay	92.8			15.80	1.01	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	14.790	0.484	2884.3	2019.5	13.219	3.626	2.95		Clay	98.7			13.98	1.01	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	12.800	0.435	2904.8	2029.8	11.181	3.833	3.02		Clay	100.0			12.10	1.01	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	12.540	0.393	2925.3	2040.0	10.860	3.548	3.01		Clay	100.0			11.85	1.01	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	15.100	0.457	2945.8	2050.3	13.293	3.354	2.92		Clay	97.0			14.27	1.01	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	22.170	0.591	2966.3	2060.6	20.079	2.857	2.74		Clay	82.2			20.95	1.01	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	22.320	0.608	2986.8	2070.8	20.114	2.919	2.74		Clay	82.6			21.10	1.01	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	16.150	0.557	3007.3	2081.1	14.076	3.803	2.94		Clay	98.0			15.26	1.00	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	12.790	0.470	3027.8	2091.4	10.783	4.168	3.05		Clay	100.0			12.09	1.00	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	13.580	0.441	3048.3	2101.6	11.473	3.658	3.00		Clay	100.0			12.84	1.00	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	13.770	0.366	3068.8	2111.9	11.587	2.991	2.94		Clay	98.5			13.02	1.00	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	12.470	0.392	3089.3	2122.2	10.296	3.588	3.03		Clay	100.0			11.79	1.00	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	12.070	0.473	3109.8	2132.4	9.862	4.498	3.10		Clay	100.0			11.41	1.00	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	13.480	0.391	3130.4	2142.8	11.121	3.282	2.98		Clay	100.0			12.74	1.00	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	13.460	0.280	3150.9	2153.0	11.040	2.356	2.90		Clay	95.2			12.72	1.00	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	10.470	0.245	3171.4	2163.3	8.214	2.758	3.05		Clay	100.0			9.90	0.99	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	13.550	0.267	3191.9	2173.6	10.999	2.234	2.89		Clay	94.3			12.81	0.99	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	14.780	0.302	3212.4	2183.8	12.065	2.292	2.86		Clay	92.1			13.97	0.99	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	14.650	0.335	3232.9	2194.1	11.881	2.570	2.90		Clay	94.8			13.85	0.99	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	14.510	0.338	3253.4	2204.4	11.689	2.624	2.91		Clay	95.6			13.71	0.99	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	14.130	0.352	3273.9	2214.6	11.282	2.818	2.94		Clay	98.1			13.36	0.99	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	14.180	0.345	3294.4	2224.9	11.266	2.753	2.93		Clay	97.6			13.40	0.99	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	14.140	0.348	3314.9	2235.2	11.169	2.788	2.94		Clay	98.1			13.36	0.99	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	13.520	0.340	3335.4	2245.4	10.557	2.869	2.97		Clay	100.0			12.78	0.98	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	9

PGA (A_{max})	0.85

Total Settlement:	0.19	(Inches)

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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)
27.231	12.480	0.326	3355.9	2255.7	9.578	3.018	3.01		Clay	100.0			11.80	0.98	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	11.030	0.305	3376.4	2266.0	8.245	3.265	3.09		Clay	100.0			10.43	0.98	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	10.460	0.283	3396.9	2276.2	7.698	3.230	3.11		Clay	100.0			9.89	0.98	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	10.240	0.265	3417.4	2286.5	7.462	3.106	3.11		Clay	100.0			9.68	0.98	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	9.840	0.276	3437.9	2296.8	7.072	3.399	3.15		Clay	100.0			9.30	0.98	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	9.040	0.259	3458.4	2307.0	6.338	3.543	3.20		Clay	100.0			8.54	0.98	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	8.710	0.229	3478.9	2317.3	6.016	3.285	3.20		Clay	100.0			8.23	0.98	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	8.610	0.197	3499.4	2327.6	5.895	2.872	3.18		Clay	100.0			8.14	0.98	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	8.880	0.203	3519.9	2337.8	6.091	2.851	3.16		Clay	100.0			8.39	0.97	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	11.190	0.302	3540.4	2348.1	8.023	3.206	3.09		Clay	100.0			10.58	0.97	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	16.780	0.336	3560.9	2358.4	12.720	2.240	2.84		Clay	90.1			15.86	0.97	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	15.570	0.342	3581.4	2368.6	11.635	2.482	2.90		Clay	94.7			14.72	0.97	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	16.320	0.350	3601.9	2378.9	12.207	2.411	2.87		Clay	92.7			15.43	0.97	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	12.900	0.357	3622.5	2389.2	9.282	3.219	3.04		Clay	100.0			12.19	0.97	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	13.530	0.345	3643.0	2399.5	9.759	2.947	3.00		Clay	100.0			12.79	0.97	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	15.290	0.385	3663.5	2409.8	11.170	2.861	2.95		Clay	98.6			14.45	0.97	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	16.690	0.379	3684.0	2420.0	12.271	2.553	2.88		Clay	93.7			15.78	0.97	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	17.990	0.407	3704.5	2430.3	13.281	2.522	2.85		Clay	91.2			17.00	0.96	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	20.120	0.427	3725.0	2440.6	14.962	2.339	2.79		Clay	86.3			19.02	0.96	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	21.530	0.467	3745.5	2450.8	16.041	2.376	2.77		Clay	84.6			20.35	0.96	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	22.170	0.560	3766.0	2461.1	16.486	2.760	2.80		Clay	86.9			20.95	0.96	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	23.630	0.624	3786.5	2471.4	17.591	2.871	2.79		Clay	85.9			22.33	0.96	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	24.060	0.659	3807.0	2481.6	17.856	2.974	2.79		Clay	86.3			22.74	0.96	n.a.	n.a.	0.90	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	24.930	0.709	3827.5	2491.9	18.473	3.080	2.79		Clay	86.1			23.56	0.96	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	25.330	0.755	3848.0	2502.2	18.709	3.226	2.80		Clay	86.7			23.94	0.96	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	25.060	0.812	3868.5	2512.4	18.409	3.511	2.82		Clay	89.0			23.69	0.96	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	24.370	0.832	3889.0	2522.7	17.779	3.710	2.85		Clay	91.1			23.03	0.95	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	23.020	0.810	3909.5	2533.0	16.633	3.845	2.88		Clay	93.7			21.76	0.95	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	21.790	0.755	3930.0	2543.2	15.590	3.808	2.90		Clay	95.2			20.60	0.95	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	21.870	0.717	3950.5	2553.5	15.582	3.604	2.89		Clay	94.1			20.67	0.95	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	21.360	0.682	3971.0	2563.8	15.114	3.520	2.89		Clay	94.4			20.19	0.95	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	20.140	0.655	3991.5	2574.0	14.098	3.610	2.92		Clay	96.9			19.04	0.95	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	18.350	0.566	4012.0	2584.3	12.649	3.463	2.95		Clay	99.0			17.34	0.95	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	15.910	0.531	4032.5	2594.6	10.710	3.822	3.03		Clay	100.0			15.04	0.95	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	14.700	0.465	4053.0	2604.8	9.731	3.669	3.06		Clay	100.0			13.89	0.95	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	13.990	0.373	4073.5	2615.1	9.142	3.120	3.04		Clay	100.0			13.22	0.95	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	12.870	0.342	4094.0	2625.4	8.245	3.160	3.08		Clay	100.0			12.16	0.94	n.a.	n.a.	0.89	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	11.710	0.333	4114.6	2635.7	7.325	3.450	3.14		Clay	100.0			11.07	0.94	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	11.230	0.295	4135.1	2645.9	6.926	3.220	3.15		Clay	100.0			10.61	0.94	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	10.180	0.266	4155.6	2656.2	6.101	3.283	3.20		Clay	100.0			9.62	0.94	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	10.020	0.235	4176.1	2666.5	5.949	2.963	3.18		Clay	100.0			9.47	0.94	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	9.500	0.233	4196.6	2676.7	5.530	3.148	3.22		Clay	100.0			8.98	0.94	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	9.220	0.195	4217.1	2687.0	5.293	2.742	3.21		Clay	100.0			8.71	0.94	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	9.020	0.195	4237.6	2697.3	5.117	2.826	3.23		Clay	100.0			8.53	0.94	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	9.790	0.207	4258.1	2707.5	5.659	2.702	3.18		Clay	100.0			9.25	0.94	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	10.690	0.233	4278.6	2717.8	6.292	2.725	3.14		Clay	100.0			10.10	0.94	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	12.060	0.240	4299.1	2728.1	7.266	2.422	3.06		Clay	100.0			11.40	0.94	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	13.690	0.316	4319.6	2738.3	8.421	2.741	3.04		Clay	100.0			12.94	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	19.990	0.522	4340.1	2748.6	12.966	2.929	2.90		Clay	94.9			18.89	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	45.400	1.120	4360.6	2758.9	35.776	2.591	2.52		Sand	64.5	107.84	1.18	127.25	0.92	116.58	199.52	0.87	0.757	0.931	1.840	3.767	4.97	0.00	0.00
35.433	72.110	1.673	4381.1	2769.1	57.769	2.393	2.34		Sand	50.2	107.84	1.18	127.25	0.91	116.16	193.03	0.87	0.758	0.935	1.304	2.682	3.54	0.00	0.00
35.597	92.860	1.833	4401.6	2779.4	74.767	2.022	2.21		Sand	39.7	107.84	1.18	127.25	0.91	115.67	185.22	0.87	0.758	0.939	0.903	1.849	2.44	0.00	0.00
35.761	114.100	1.168	4422.1	2789.7	92.105	1.044	1.95		Sand	19.0		1.18	127.26	0.89	113.83	150.00	0.87	0.758	0.956	0.289	0.460	0.61	0.02	0.02
35.925	111.710	0.800	4442.6	2799.9	89.964	0.731	1.86		Sand	12.1		1.18	124.59	0.88	109.88	124.23	0.87	0.758	0.964	0.181	0.248	0.33	0.03	0.02
36.089	100.460	0.844	4463.1	2810.2	80.564	0.859	1.94		Sand	18.5		1.18	112.04	0.88	99.06	132.08	0.87	0.758	0.961	0.204	0.291	0.38	0.02	0.02
36.253	102.460	0.880	4483.6	2820.5	82.046	0.878	1.94		Sand	18.4		1.18	114.27	0.88	100.97	134.07	0.87	0.758	0.960	0.211	0.304	0.40	0.02	0.02
36.417	101.310	1.116	4504.1	2830.7	80.949	1.127	2.01		Sand	24.1		1.18	112.99	0.89	100.30	146.36	0.87	0.758	0.955	0.266	0.414	0.55	0.02	0.02
36.581	89.570	1.701	4524.6	2841.0	71.218	1.948	2.21		Sand	40.0		1.18	99.90	0.89	88.80	152.15	0.87	0.758	0.952	0.303	0.489	0.65	0.02	0.02
36.745	82.920	2.113	4545.1	2851.3	65.666	2.620	2.33		Sand	49.2		1.18	92.48	0.89	81.97	149.28	0.87	0.758	0.953	0.284	0.449	0.59	0.02	0.02
36.909	88.050	2.319	4565.6	2861.5	69.710	2.704	2.32		Sand	48.5		1.18	98.20	0.89	87.18	155.51	0.87	0.758	0.949	0.330	0.543	0.72	0.02	0.01
37.073	111.570	1.678	4586.1	2871.8	88.659	1.536	2.07		Sand	28.8		1.18	124.44	0.89	110.92	166.92	0.87	0.758	0.943	0.456	0.811	1.07	0.01	0.01
37.238	125.320	0.966	4606.8	2882.1	99.627	0.785	1.85		Sand	10.7		1.18	139.77	0.87	122.27	132.75	0.87	0.758	0.957	0.206	0.294	0.39	0.02	0.02
37.402	119.330	1.093	4627.3	2892.4	94.600	0.934	1.91		Sand	15.8	118.45	1.18	139.77	0.88	123.28	151.03	0.86	0.758	0.950	0.295	0.472	0.62	0.02	0.01
37.566	103.680	1.302	4647.8	2902.7	81.794	1.285	2.05		Sand	26.8	118.45	1.18	139.77	0.89	124.86	180.18	0.86	0.758	0.933	0.731	1.428	1.88	0.00	0.00
37.730	67.220	1.037	4668.3	2912.9	52.271	1.598	2.26		Sand	43.6	118.45	1.18	139.77	0.90	125.85	201.04	0.86	0.758	0.915	2.005	4.035	5.32	0.00	0.00
37.894	39.500	0.753	4688.8	2923.2	29.879	2.027	2.51		Sand	64.0	118.45	1.18	139.77	0.90	126.28	211.83	0.86	0.758	0.903	3.939	7.827	10.32	0.00	0.00
38.058	23.440	0.530	4709.3	2933.5	14.376	2.514	2.82		Clay	88.9			22.16	0.92	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 9

PGA (A_{max}) 0.85

Total Settlement: 0.19 (Inches)

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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)
38.222	15.890	0.416	4729.8	2943.7	9.189	3.076	3.03		Clay	100.0			15.02	0.92	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	13.060	0.307	4750.3	2954.0	7.234	2.873	3.10		Clay	100.0			12.34	0.92	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	11.030	0.315	4770.8	2964.3	5.833	3.644	3.24		Clay	100.0			10.43	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	12.020	0.275	4791.3	2974.5	6.471	2.857	3.14		Clay	100.0			11.36	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	11.780	0.260	4811.8	2984.8	6.281	2.774	3.15		Clay	100.0			11.13	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	12.160	0.248	4832.3	2995.1	6.507	2.545	3.11		Clay	100.0			11.49	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	12.180	0.253	4852.8	3005.3	6.491	2.594	3.12		Clay	100.0			11.51	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	12.480	0.257	4873.3	3015.6	6.661	2.559	3.11		Clay	100.0			11.80	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	14.030	0.253	4893.8	3025.9	7.656	2.184	3.02		Clay	100.0			13.26	0.91	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	14.460	0.249	4914.3	3036.1	7.907	2.075	3.00		Clay	100.0			13.67	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	13.600	0.253	4934.8	3046.4	7.309	2.273	3.05		Clay	100.0			12.85	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	12.870	0.265	4955.3	3056.7	6.800	2.550	3.10		Clay	100.0			12.16	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	12.530	0.243	4975.8	3066.9	6.549	2.420	3.10		Clay	100.0			11.84	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	12.340	0.238	4996.3	3077.2	6.397	2.418	3.11		Clay	100.0			11.66	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	11.500	0.185	5016.8	3087.5	5.825	2.057	3.11		Clay	100.0			10.87	0.91	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	10.390	0.155	5037.3	3097.7	5.082	1.969	3.15		Clay	100.0			9.82	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	13.660	0.166	5057.8	3108.0	7.163	1.491	2.96		Clay	100.0			12.91	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	15.970	0.180	5078.4	3118.3	8.614	1.340	2.87		Clay	92.6			15.09	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	15.540	0.224	5098.9	3128.6	8.304	1.724	2.94		Clay	98.0			14.69	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	15.040	0.238	5119.4	3138.9	7.952	1.907	2.98		Clay	100.0			14.22	0.90	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	14.200	0.267	5139.9	3149.1	7.386	2.296	3.04		Clay	100.0			13.42	0.90	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	14.030	0.217	5160.4	3159.4	7.248	1.895	3.01		Clay	100.0			13.26	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	13.420	0.183	5180.9	3169.7	6.833	1.690	3.01		Clay	100.0			12.68	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	14.200	0.195	5201.4	3179.9	7.295	1.681	2.98		Clay	100.0			13.42	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	13.700	0.226	5221.9	3190.2	6.952	2.038	3.04		Clay	100.0			12.95	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	12.280	0.243	5242.4	3200.5	6.036	2.516	3.14		Clay	100.0			11.61	0.90	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	16.050	0.265	5262.9	3210.7	8.359	1.975	2.96		Clay	100.0			15.17	0.90	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	15.560	0.251	5283.4	3221.0	8.021	1.943	2.98		Clay	100.0			14.71	0.90	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	19.480	0.287	5303.9	3231.3	10.416	1.705	2.85		Clay	91.0			18.41	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	25.840	0.368	5324.4	3241.5	14.301	1.588	2.72		Clay	80.3			24.42	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	30.870	0.524	5344.9	3251.8	17.343	1.858	2.68		Clay	77.6			29.18	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	35.850	0.690	5365.4	3262.1	20.335	2.080	2.65		Clay	75.2			33.88	0.89	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	39.890	0.845	5385.9	3272.3	22.734	2.272	2.64		Clay	73.9			37.70	0.89	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	41.500	1.004	5406.4	3282.6	23.638	2.588	2.66		Clay	75.6			39.22	0.89	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	40.090	1.112	5426.9	3292.9	22.702	2.975	2.71		Clay	79.7			37.89	0.89	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	37.510	1.164	5447.4	3303.1	21.063	3.346	2.77		Clay	84.3			35.45	0.89	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	37.630	1.180	5467.9	3313.4	21.064	3.381	2.77		Clay	84.5			35.57	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	36.620	1.281	5488.4	3323.7	20.385	3.781	2.81		Clay	87.9			34.61	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	31.860	1.198	5508.9	3333.9	17.460	4.116	2.89		Clay	93.9			30.11	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	27.760	1.076	5529.4	3344.2	14.949	4.305	2.95		Clay	99.0			26.24	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	23.840	0.914	5549.9	3354.5	12.559	4.339	3.01		Clay	100.0			22.53	0.89	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	21.970	0.727	5570.5	3364.8	11.403	3.789	3.01		Clay	100.0			20.77	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	22.410	0.779	5591.0	3375.1	11.623	3.972	3.02		Clay	100.0			21.18	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	22.810	0.823	5611.5	3385.3	11.818	4.114	3.02		Clay	100.0			21.56	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	22.870	0.883	5632.0	3395.6	11.812	4.403	3.04		Clay	100.0			21.62	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	23.070	0.787	5652.5	3405.9	11.888	3.888	3.00		Clay	100.0			21.81	0.88	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	25.610	0.896	5673.0	3416.1	13.333	3.934	2.97		Clay	100.0			24.21	0.88	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	44.650	1.262	5693.5	3426.4	24.401	3.019	2.69		Clay	78.1			42.20	0.88	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	97.130	1.503	5714.0	3436.6	69.918	1.594	2.16		Sand	35.8	176.08	1.18	207.77	0.88	182.82	263.98	0.82	0.751	0.855	801.350	1506.474	2007.03	0.00	0.00
46.260	133.700	1.504	5734.5	3446.9	96.889	1.150	1.96		Sand	19.8	176.08	1.18	207.77	0.87	179.90	227.04	0.82	0.750	0.854	12.663	23.780	31.69	0.00	0.00
46.424	158.530	1.375	5755.0	3457.2	115.098	0.883	1.83		Sand	9.3	176.08	1.18	207.77	0.84	174.62	182.16	0.82	0.750	0.894	0.793	1.507	2.01	0.00	0.00
46.588	176.150	1.353	5775.5	3467.4	127.930	0.781	1.76		Sand	3.8	176.08	1.18	207.77	0.83	173.34	173.35	0.82	0.750	0.902	0.565	1.011	1.35	0.00	0.00
46.752	184.890	1.274	5796.0	3477.7	134.177	0.700	1.71		Sand	0.1	176.08	1.18	207.77	0.83	173.12	173.12	0.82	0.750	0.902	0.561	1.001	1.33	0.00	0.00
46.916	186.290	1.420	5816.5	3488.0	135.002	0.774	1.74		Sand	2.1		1.18	207.77	0.83	172.91	172.91	0.82	0.749	0.901	0.556	0.991	1.32	0.00	0.00
47.080	180.060	1.275	5837.0	3498.2	130.217	0.720	1.73		Sand	1.5		1.18	200.82	0.83	166.08	166.08	0.82	0.749	0.907	0.444	0.755	1.01	0.01	0.00
47.244	177.610	1.131	5857.5	3508.5	128.220	0.647	1.71		Sand	0.0		1.18	198.09	0.82	163.29	163.29	0.82	0.749	0.909	0.408	0.681	0.91	0.01	0.00
47.408	170.930	0.957	5878.0	3518.8	123.129	0.570	1.69		Sand	0.0	167.87	1.18	198.09	0.82	163.08	163.08	0.82	0.748	0.909	0.405	0.675	0.90	0.01	0.00
47.572	164.670	0.770	5898.5	3529.0	118.361	0.476	1.66		Sand	0.0	167.87	1.18	198.09	0.82	162.87	162.87	0.82	0.748	0.908	0.403	0.670	0.90	0.01	0.00
47.736	154.420	1.214	5919.0	3539.3	110.691	0.802	1.82		Sand	8.2	167.87	1.18	198.09	0.82	163.30	167.67	0.81	0.748	0.903	0.467	0.800	1.07	0.01	0.00
47.900	122.410	1.584	5939.5	3549.6	87.163	1.326	2.04		Sand	25.8	167.87	1.18	198.09	0.86	170.60	232.38	0.81	0.748	0.845	20.399	37.912	50.72	0.00	0.00
48.064	75.900	1.451	5960.0	3559.8	53.138	1.990	2.31		Sand	48.0	167.87	1.18	198.09	0.87	172.68	263.10	0.81	0.747	0.844	708.013	1314.551	1759.18	0.00	0.00
48.228	48.060	0.957	5980.5	3570.1	32.796	2.123	2.49		Sand	62.4	167.87	1.18	198.09	0.87	172.55	270.67	0.81	0.747	0.843	2161.474	4009.046	5367.20	0.00	0.00
48.392	43.220	0.459	6001.0	3580.4	29.224	1.141	2.38		Sand	53.1	167.87	1.18	198.09	0.87	172.42	266.01	0.81	0.747	0.842	1073.416	1988.910	2663.78	0.00	0.00
48.556	40.010	0.326	6021.5	3590.6	26.846	0.881	2.35		Sand	51.0	167.87	1.18	198.09	0.87	172.29	264.57	0.81	0.746	0.841	872.634	1615.235	2164.20	0.00	0.00
48.720	32.850	0.331	6042.0	3600.9	21.612	1.110	2.48		Sand	61.6	167.87	1.18	198.09	0.87	172.16	269.82	0.81	0.746	0.841	1897.176	3508.077	4702.29	0.00	0.00
48.885	29.570	0.348	6062.6	3611.2	14.698	1.311	2.66		Clay	76.0			27.95	0.87	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	27.660	0.370	6083.1	3621.5	13.596	1.503	2.72		Clay	80.8			26.14	0.87	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	9

PGA (A_{max})	0.85

Total Settlement:	0.19	(Inches)

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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)
49.213	26.240	0.417	6103.6	3631.8	12.770	1.798	2.79		Clay	85.9			24.80	0.87	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	25.450	0.480	6124.1	3642.0	12.294	2.144	2.84		Clay	90.3			24.05	0.87	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	23.960	0.440	6144.6	3652.3	11.438	2.107	2.86		Clay	92.1			22.65	0.87	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	22.270	0.382	6165.1	3662.6	10.478	1.991	2.88		Clay	93.6			21.05	0.87	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	21.130	0.332	6185.6	3672.8	9.822	1.841	2.89		Clay	94.1			19.97	0.86	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	19.110	0.332	6206.1	3683.1	8.692	2.074	2.96		Clay	99.9			18.06	0.86	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	10

PGA (A_{max})	0.85

Total Settlement:	1.67	(Inches)

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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)
5.085	23.430	0.834	610.2	610.2	40.702	3.607	2.57		Unsaturated	68.8			22.15	1.70	37.65	99.00	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	25.930	0.993	629.9	629.9	44.375	3.877	2.57		Unsaturated	68.4			24.51	1.70	41.66	104.09	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	26.110	1.074	649.6	649.6	43.988	4.165	2.59		Unsaturated	70.4			24.68	1.70	41.95	104.87	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	27.040	1.039	669.2	669.2	44.883	3.891	2.57		Unsaturated	68.2			25.56	1.70	43.45	106.35	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	29.200	0.997	688.9	688.9	47.799	3.455	2.51		Unsaturated	63.8			27.60	1.70	46.92	109.79	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	32.790	1.007	708.7	708.7	52.973	3.105	2.45		Unsaturated	58.6			30.99	1.67	51.69	114.48	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	36.030	0.962	728.4	728.4	57.456	2.697	2.38		Unsaturated	53.2			34.05	1.64	55.69	117.74	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	33.860	0.898	748.1	748.1	53.231	2.682	2.40		Unsaturated	55.0			32.00	1.63	52.11	113.84	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	31.620	0.790	767.8	767.8	49.014	2.529	2.41		Unsaturated	55.7			29.89	1.62	48.51	109.49	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	31.900	0.764	787.4	787.4	48.816	2.425	2.40		Unsaturated	54.8			30.15	1.61	48.40	109.05	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	32.020	0.696	807.1	807.1	48.386	2.201	2.37		Unsaturated	52.8			30.26	1.59	48.11	107.97	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	33.390	0.638	826.8	826.8	49.863	1.935	2.33		Unsaturated	49.1			31.56	1.57	49.56	108.30	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.054	32.970	0.504	846.5	846.5	48.638	1.549	2.27		Unsaturated	44.8	31.56		31.56	1.56	49.24	105.87	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.218	32.860	0.489	866.2	866.2	47.905	1.508	2.27		Unsaturated	44.7	31.56		31.56	1.54	48.75	105.19	0.99	0.546	1.099	n.a.	n.a.	n.a.	0.00	0.00
7.382	30.060	0.698	885.8	885.8	43.265	2.357	2.43		Unsaturated	57.3	31.56		31.56	1.52	47.87	109.19	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.546	24.980	0.950	905.5	905.5	41.995	3.873	2.58		Unsaturated	69.8	31.56		31.56	1.49	47.18	111.49	0.99	0.545	1.099	n.a.	n.a.	n.a.	0.00	0.00
7.710	23.060	0.977	925.2	925.2	38.113	4.324	2.65		Unsaturated	74.8	31.56		31.56	1.48	46.68	111.81	0.99	0.545	1.097	n.a.	n.a.	n.a.	0.00	0.00
7.874	19.800	0.853	944.9	944.9	40.910	4.413	2.63		Unsaturated	73.6			18.71	1.53	28.59	88.18	0.99	0.545	1.078	n.a.	n.a.	n.a.	0.00	0.00
8.038	18.620	0.735	964.6	964.6	37.608	4.052	2.63		Unsaturated	73.6			17.60	1.52	26.72	85.76	0.99	0.544	1.075	n.a.	n.a.	n.a.	0.00	0.00
8.202	16.830	0.699	984.2	984.2	33.199	4.278	2.69		Unsaturated	78.0			15.91	1.51	24.02	82.96	0.98	0.544	1.071	n.a.	n.a.	n.a.	0.00	0.00
8.366	15.860	0.610	1003.9	1003.9	30.596	3.972	2.69		Unsaturated	78.4			14.99	1.50	22.48	81.00	0.98	0.544	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.530	15.350	0.499	1023.6	1023.6	28.992	3.363	2.66		Unsaturated	75.9			14.51	1.49	21.59	79.48	0.98	0.544	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.694	14.720	0.457	1043.3	1043.3	27.219	3.219	2.67		Unsaturated	76.6			13.91	1.48	20.54	78.22	0.98	0.543	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.858	16.890	0.326	1063.0	1063.0	25.036	1.993	2.57		Unsaturated	68.5	40.56	1.45	58.81	1.32	77.59	150.46	0.98	0.543	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.022	23.460	0.397	1082.6	1082.6	30.284	1.732	2.47		Unsaturated	60.3	40.56	1.45	58.81	1.31	77.25	147.73	0.98	0.543	1.100	n.a.	n.a.	n.a.	0.00	0.00
9.186	36.190	0.440	1102.3	1102.3	46.670	1.235	2.23		Unsaturated	41.2	40.56	1.45	58.81	1.32	77.44	138.93	0.98	0.542	1.095	n.a.	n.a.	n.a.	0.00	0.00
9.350	39.340	0.441	1122.0	1122.0	50.335	1.137	2.18		Unsaturated	37.4	40.56	1.45	58.81	1.31	77.15	135.67	0.98	0.542	1.090	n.a.	n.a.	n.a.	0.00	0.00
9.514	42.120	0.425	1141.7	1141.7	53.464	1.023	2.13		Unsaturated	33.6	40.56	1.45	58.81	1.31	76.90	131.82	0.98	0.542	1.085	n.a.	n.a.	n.a.	0.00	0.00
9.678	42.910	0.496	1161.4	1161.4	54.005	1.172	2.16		Unsaturated	36.1		1.45	58.81	1.30	76.20	133.33	0.98	0.542	1.083	n.a.	n.a.	n.a.	0.00	0.00
9.843	39.290	0.568	1181.2	1181.2	48.958	1.468	2.26		Unsaturated	43.5	40.56	1.45	58.81	1.28	75.31	137.77	0.98	0.541	1.084	n.a.	n.a.	n.a.	0.00	0.00
10.007	35.760	0.571	1200.8	1200.8	44.114	1.624	2.32		Sand	48.5	40.56	1.45	58.81	1.27	74.64	139.71	0.98	0.541	1.083	0.233	0.393	0.73	0.02	0.04
10.171	31.470	0.700	1220.5	1220.5	38.405	2.268	2.46		Sand	59.6	40.56	1.45	58.81	1.26	73.89	143.18	0.98	0.545	1.083	0.249	0.430	0.79	0.02	0.03
10.335	23.710	0.636	1240.2	1240.2	31.721	2.754	2.58		Mixed	69.0	40.56	1.45	58.81	1.25	73.28	145.01	0.98	0.550	1.082	0.259	0.452	0.82	0.02	0.02
10.499	19.360	0.613	1259.9	1259.9	29.733	3.273	2.65		Clay	74.6			18.30	1.15	n.a.	n.a.	0.98	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	30.340	0.406	1279.6	1279.6	36.100	1.367	2.34		Sand	50.5	39.58	1.78	70.45	1.22	85.95	154.98	0.98	0.558	1.084	0.325	0.609	1.09	0.01	0.01
10.827	41.880	0.323	1299.2	1299.2	49.733	0.783	2.09		Sand	30.5		1.78	70.46	1.23	86.49	139.98	0.98	0.562	1.072	0.234	0.392	0.70	0.02	0.04
10.991	36.110	0.253	1318.9	1318.9	42.441	0.714	2.13		Sand	33.6	39.58	1.78	70.45	1.22	85.75	142.59	0.98	0.566	1.071	0.246	0.419	0.74	0.02	0.03
11.155	26.350	0.326	1338.6	1338.6	30.518	1.269	2.39		Sand	53.9	39.58	1.78	70.45	1.20	84.45	154.58	0.98	0.569	1.076	0.322	0.597	1.05	0.01	0.01
11.319	15.570	0.288	1358.3	1358.3	21.926	1.934	2.61		Clay	71.6			14.72	1.12	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	12.330	0.270	1378.0	1378.0	16.896	2.319	2.75		Clay	82.7			11.65	1.12	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	12.810	0.236	1397.6	1397.6	17.331	1.949	2.69		Clay	78.5			12.11	1.12	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	17.390	0.236	1417.3	1417.3	19.265	1.415	2.58		Sand	69.4		1.8	29.59	1.22	36.21	97.25	0.97	0.584	1.042	0.134	0.174	0.30	0.03	0.05
11.975	14.520	0.225	1437.0	1437.0	19.209	1.630	2.61		Clay	72.1			13.72	1.11	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	8.700	0.151	1456.7	1456.7	10.945	1.894	2.85		Clay	91.4			8.22	1.10	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	7.900	0.084	1476.4	1476.4	9.702	1.173	2.80		Clay	86.8			7.47	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	6.850	0.064	1496.0	1496.0	8.158	1.049	2.84		Clay	90.5			6.47	1.10	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	6.310	0.054	1515.7	1515.7	7.326	0.973	2.87		Clay	92.7			5.96	1.09	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	6.100	0.049	1535.4	1535.4	6.946	0.919	2.88		Clay	93.6			5.77	1.09	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	5.530	0.057	1555.1	1555.1	6.112	1.199	2.98		Clay	100.0			5.23	1.08	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	5.180	0.049	1574.8	1574.8	5.579	1.116	3.00		Clay	100.0			4.90	1.08	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	4.920	0.034	1594.4	1594.4	5.171	0.825	2.98		Clay	100.0			4.65	1.08	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	4.860	0.030	1614.1	1614.1	5.022	0.740	2.98		Clay	100.0			4.59	1.07	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	5.160	0.028	1633.8	1633.8	5.317	0.645	2.93		Clay	97.5			4.88	1.07	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	5.770	0.041	1653.6	1653.6	5.979	0.829	2.92		Clay	96.9			5.45	1.07	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	6.220	0.058	1673.3	1673.3	6.434	1.077	2.94		Clay	98.3			5.88	1.06	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	5.880	0.083	1693.5	1686.8	5.968	1.649	3.05		Clay	100.0			5.56	1.06	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	5.580	0.079	1714.0	1697.0	5.566	1.673	3.08		Clay	100.0			5.27	1.06	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	5.550	0.058	1734.5	1707.3	5.486	1.239	3.03		Clay	100.0			5.25	1.06	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	6.050	0.063	1755.0	1717.6	6.023	1.218	2.99		Clay	100.0			5.72	1.06	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	6.230	0.074	1775.5	1727.8	6.184	1.385	3.00		Clay	100.0			5.89	1.05	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	5.850	0.099	1796.0	1738.1	5.698	1.999	3.11		Clay	100.0			5.53	1.05	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	5.170	0.130	1816.5	1748.4	4.875	3.050	3.26		Clay	100.0			4.89	1.05	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	5.000	0.116	1837.0	1758.6	4.642	2.842	3.26		Clay	100.0			4.73	1.05	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	4.720	0.086	1857.5	1768.9	4.287	2.268	3.25		Clay	100.0			4.46	1.05	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	4.810	0.077	1878.0	1779.2	4.351	1.989	3.21		Clay	100.0			4.55	1.05	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	5.680	0.112	1898.5	1789.4	5.287	2.367	3.18		Clay	100.0			5.37	1.05	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	5.940	0.121	1919.0	1799.7	5.535	2.429	3.16		Clay	100.0			5.61	1.04	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	6.240	0.140	1939.5	1810.0	5.824	2.656	3.17		Clay	100.0			5.90	1.04	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 10

PGA (A_{max}) 0.85

Total Settlement: 1.67 (Inches)

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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)
16.240	6.880	0.153	1960.0	1820.2	6.483	2.593	3.12		Clay	100.0			6.50	1.04	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	8.580	0.213	1980.5	1830.5	8.293	2.806	3.05		Clay	100.0			8.11	1.04	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	10.330	0.266	2001.0	1840.8	10.137	2.851	2.98		Clay	100.0			9.76	1.04	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	11.500	0.297	2021.5	1851.0	11.333	2.831	2.94		Clay	98.0			10.87	1.04	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	11.800	0.332	2042.0	1861.3	11.582	3.080	2.95		Clay	99.1			11.15	1.03	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	12.110	0.347	2062.5	1871.6	11.839	3.132	2.95		Clay	98.8			11.45	1.03	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	11.780	0.358	2083.0	1881.8	11.413	3.334	2.98		Clay	100.0			11.13	1.03	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	11.700	0.376	2103.5	1892.1	11.256	3.531	3.00		Clay	100.0			11.06	1.03	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	11.680	0.369	2124.0	1902.4	11.163	3.475	2.99		Clay	100.0			11.04	1.03	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	12.140	0.364	2144.6	1912.7	11.573	3.289	2.97		Clay	100.0			11.47	1.03	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	13.070	0.379	2165.1	1923.0	12.468	3.162	2.93		Clay	97.5			12.35	1.03	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	13.570	0.416	2185.6	1933.2	12.908	3.334	2.93		Clay	97.7			12.83	1.02	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	14.090	0.461	2206.1	1943.5	13.365	3.550	2.94		Clay	98.0			13.32	1.02	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	15.330	0.478	2226.6	1953.7	14.553	3.362	2.89		Clay	94.5			14.49	1.02	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	17.290	0.523	2247.1	1964.0	16.463	3.235	2.84		Clay	90.3			16.34	1.02	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	18.700	0.599	2267.6	1974.3	17.795	3.410	2.83		Clay	89.3			17.67	1.02	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	18.790	0.637	2288.1	1984.5	17.783	3.610	2.84		Clay	90.5			17.76	1.02	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	19.160	0.631	2308.6	1994.8	18.052	3.504	2.83		Clay	89.5			18.11	1.02	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	19.020	0.577	2329.1	2005.1	17.810	3.232	2.81		Clay	88.1			17.98	1.01	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	17.750	0.562	2349.6	2015.3	16.449	3.391	2.85		Clay	91.3			16.78	1.01	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	17.240	0.542	2370.1	2025.6	15.852	3.376	2.87		Clay	92.2			16.29	1.01	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	16.540	0.555	2390.6	2035.9	15.074	3.617	2.90		Clay	95.1			15.63	1.01	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	16.710	0.576	2411.1	2046.1	15.155	3.715	2.91		Clay	95.5			15.79	1.01	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	17.480	0.568	2431.6	2056.4	15.818	3.492	2.87		Clay	93.0			16.52	1.01	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	17.520	0.545	2452.1	2066.7	15.768	3.345	2.86		Clay	92.2			16.56	1.01	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	17.320	0.552	2472.6	2076.9	15.488	3.432	2.88		Clay	93.2			16.37	1.00	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	16.700	0.533	2493.1	2087.2	14.808	3.449	2.89		Clay	94.5			15.78	1.00	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	17.890	0.536	2513.6	2097.5	15.860	3.222	2.85		Clay	91.2			16.91	1.00	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	20.900	0.592	2534.1	2107.7	18.629	3.015	2.78		Clay	85.4			19.75	1.00	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	22.340	0.709	2554.6	2118.0	19.889	3.366	2.79		Clay	86.0			21.12	1.00	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	22.410	0.762	2575.1	2128.3	19.849	3.608	2.81		Clay	87.5			21.18	1.00	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	21.330	0.783	2595.6	2138.5	18.734	3.909	2.85		Clay	90.9			20.16	1.00	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	19.300	0.736	2616.3	2148.9	16.745	4.091	2.90		Clay	94.9			18.24	1.00	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	16.250	0.678	2636.8	2159.1	13.831	4.541	2.99		Clay	100.0			15.36	0.99	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	16.210	0.563	2657.3	2169.4	13.719	3.783	2.95		Clay	98.6			15.32	0.99	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	16.880	0.455	2677.8	2179.7	14.260	2.928	2.86		Clay	92.2			15.95	0.99	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	17.250	0.437	2698.3	2189.9	14.522	2.748	2.84		Clay	90.4			16.30	0.99	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	19.300	0.472	2718.8	2200.2	16.308	2.631	2.79		Clay	86.2			18.24	0.99	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	17.420	0.518	2739.3	2210.5	14.522	3.227	2.88		Clay	93.7			16.47	0.99	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	15.370	0.507	2759.8	2220.7	12.600	3.624	2.96		Clay	100.0			14.53	0.99	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	14.110	0.425	2780.3	2231.0	11.403	3.341	2.98		Clay	100.0			13.34	0.99	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	13.310	0.359	2800.8	2241.3	10.628	3.014	2.98		Clay	100.0			12.58	0.98	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	13.780	0.327	2821.3	2251.5	10.987	2.644	2.93		Clay	97.6			13.02	0.98	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	14.460	0.351	2841.8	2261.8	11.530	2.692	2.92		Clay	96.5			13.67	0.98	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	15.530	0.379	2862.3	2272.1	12.411	2.688	2.89		Clay	94.4			14.68	0.98	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	17.230	0.334	2882.8	2282.3	13.835	2.115	2.80		Clay	86.6			16.29	0.98	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	15.110	0.278	2903.3	2292.6	11.915	2.035	2.84		Clay	90.2			14.28	0.98	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	14.340	0.288	2923.8	2302.9	11.184	2.236	2.89		Clay	93.8			13.55	0.98	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	14.630	0.274	2944.3	2313.1	11.377	2.082	2.86		Clay	92.0			13.83	0.98	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	14.360	0.261	2964.8	2323.4	11.085	2.027	2.87		Clay	92.3			13.57	0.98	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	13.430	0.300	2985.3	2333.7	10.231	2.513	2.95		Clay	98.7			12.69	0.97	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	12.810	0.305	3005.8	2343.9	9.648	2.697	2.98		Clay	100.0			12.11	0.97	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	12.670	0.293	3026.3	2354.2	9.478	2.626	2.98		Clay	100.0			11.98	0.97	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	11.140	0.267	3046.8	2364.5	8.134	2.776	3.05		Clay	100.0			10.53	0.97	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	8.910	0.234	3067.3	2374.7	6.212	3.172	3.18		Clay	100.0			8.42	0.97	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	7.680	0.147	3087.8	2385.0	5.146	2.396	3.19		Clay	100.0			7.26	0.97	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	6.870	0.148	3108.4	2395.3	4.438	2.784	3.28		Clay	100.0			6.49	0.97	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	7.380	0.175	3128.9	2405.6	4.835	3.009	3.26		Clay	100.0			6.98	0.97	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	7.930	0.201	3149.4	2415.9	5.261	3.163	3.24		Clay	100.0			7.50	0.97	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	8.340	0.177	3169.9	2426.1	5.569	2.620	3.18		Clay	100.0			7.88	0.96	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	8.550	0.157	3190.4	2436.4	5.709	2.257	3.14		Clay	100.0			8.08	0.96	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	8.840	0.172	3210.9	2446.7	5.914	2.377	3.13		Clay	100.0			8.36	0.96	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	10.410	0.230	3231.4	2456.9	7.159	2.615	3.09		Clay	100.0			9.84	0.96	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	13.350	0.308	3251.9	2467.2	9.504	2.627	2.98		Clay	100.0			12.62	0.96	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	20.990	0.591	3272.4	2477.5	15.624	3.054	2.84		Clay	90.5			19.84	0.96	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	34.240	1.090	3292.9	2487.7	26.203	3.344	2.69		Clay	78.4			32.36	0.96	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	50.950	1.452	3313.4	2498.0	42.881	2.946	2.50		Sand	62.7	61.84	1.28	79.16	0.93	73.91	144.17	0.91	0.741	0.975	0.254	0.398	0.54	0.02	0.02

CORNERSTONE EARTH GROUP

CPT No. 10

PGA (A_{max}) 0.85

Total Settlement: 1.67 (Inches)

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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)
27.231	52.520	1.549	3333.9	2508.3	44.147	3.046	2.50		Sand	62.7	61.84	1.28	79.16	0.93	73.78	144.02	0.91	0.742	0.974	0.254	0.396	0.53	0.02	0.02
27.395	53.020	1.625	3354.4	2518.5	44.481	3.165	2.51		Sand	63.5	61.84	1.28	79.16	0.93	73.66	144.07	0.91	0.742	0.974	0.254	0.396	0.53	0.02	0.02
27.559	58.650	1.640	3374.9	2528.8	49.250	2.879	2.45		Sand	58.6	61.84	1.28	79.16	0.93	73.50	142.37	0.91	0.743	0.973	0.245	0.378	0.51	0.02	0.02
27.723	65.430	1.612	3395.4	2539.1	54.991	2.529	2.37		Sand	52.8		1.28	79.16	0.93	73.32	139.96	0.91	0.743	0.973	0.234	0.356	0.48	0.02	0.02
27.887	61.850	1.722	3415.9	2549.3	51.789	2.863	2.43		Sand	57.2		1.28	74.83	0.92	69.11	136.29	0.91	0.744	0.974	0.219	0.325	0.44	0.02	0.02
28.051	62.390	1.591	3436.4	2559.6	52.140	2.622	2.40		Sand	55.0		1.28	75.48	0.92	69.59	136.09	0.91	0.744	0.973	0.218	0.323	0.43	0.02	0.02
28.215	64.550	1.433	3456.9	2569.9	53.880	2.281	2.35		Sand	50.8		1.28	78.09	0.92	71.91	137.34	0.91	0.745	0.972	0.223	0.333	0.45	0.02	0.02
28.379	65.450	1.238	3477.4	2580.1	54.534	1.943	2.30		Sand	46.8		1.28	79.18	0.92	72.76	136.47	0.91	0.746	0.972	0.220	0.326	0.44	0.02	0.02
28.543	55.330	1.009	3497.9	2590.4	45.772	1.883	2.35		Sand	50.8		1.28	66.94	0.91	61.12	123.64	0.91	0.746	0.974	0.180	0.248	0.33	0.03	0.03
28.707	59.430	1.037	3518.4	2600.7	49.168	1.798	2.31		Sand	47.8		1.28	71.90	0.91	65.64	128.01	0.91	0.746	0.973	0.191	0.270	0.36	0.02	0.03
28.871	62.200	0.570	3538.9	2610.9	51.420	0.943	2.13		Sand	33.1		1.28	75.25	0.91	68.39	120.95	0.90	0.747	0.974	0.173	0.235	0.31	0.03	0.03
29.035	56.530	0.792	3559.4	2621.2	46.495	1.447	2.27		Sand	44.6	58.79	1.28	75.25	0.91	68.51	129.93	0.90	0.747	0.971	0.197	0.281	0.38	0.02	0.02
29.199	52.250	1.270	3579.9	2631.5	42.768	2.517	2.45		Sand	59.1	58.79	1.28	75.25	0.91	68.57	136.22	0.90	0.748	0.969	0.219	0.323	0.43	0.02	0.02
29.364	43.510	1.417	3600.5	2641.8	31.577	3.397	2.64		Clay	73.9			41.12	0.94	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	49.200	1.324	3621.0	2652.1	40.010	2.794	2.50		Sand	63.2	87.64		87.64	0.91	80.08	152.25	0.90	0.749	0.963	0.304	0.496	0.66	0.02	0.02
29.692	61.320	1.132	3641.5	2662.3	50.136	1.903	2.32		Sand	48.6	87.64		87.64	0.91	79.77	146.20	0.90	0.749	0.964	0.265	0.416	0.56	0.02	0.02
29.856	66.110	0.972	3662.0	2672.6	54.060	1.512	2.23		Sand	42.0	87.64		87.64	0.91	79.52	142.04	0.90	0.750	0.965	0.244	0.372	0.50	0.02	0.02
30.020	70.140	1.234	3682.5	2682.9	57.331	1.807	2.26		Sand	42.0	87.64		87.64	0.91	79.38	141.88	0.90	0.750	0.965	0.243	0.370	0.49	0.02	0.02
30.184	76.950	1.277	3703.0	2693.1	62.918	1.700	2.21		Sand	42.0	87.64		87.64	0.90	79.25	141.71	0.90	0.750	0.964	0.242	0.368	0.49	0.02	0.02
30.348	85.010	1.061	3723.5	2703.4	69.530	1.276	2.10		Sand	42.0	87.64		87.64	0.90	79.12	141.55	0.90	0.751	0.964	0.241	0.367	0.49	0.02	0.02
30.512	90.110	0.796	3744.0	2713.7	73.646	0.902	1.99		Sand	22.0	87.64		87.64	0.89	78.09	116.41	0.90	0.751	0.970	0.164	0.216	0.29	0.03	0.03
30.676	91.450	0.628	3764.5	2723.9	74.615	0.701	1.92		Sand	16.6	87.64		87.64	0.88	77.41	103.00	0.90	0.751	0.973	0.141	0.176	0.23	0.03	0.03
30.840	92.720	0.558	3785.0	2734.2	75.522	0.614	1.88		Sand	13.8			87.64	0.88	76.88	94.42	0.90	0.752	0.974	0.130	0.157	0.21	0.03	0.03
31.004	89.130	0.509	3805.5	2744.5	72.393	0.584	1.89		Sand	14.1			84.24	0.87	73.65	91.82	0.89	0.752	0.974	0.128	0.152	0.20	0.04	0.03
31.168	83.130	0.496	3826.0	2754.7	67.279	0.611	1.93		Sand	17.1			78.57	0.87	68.67	94.51	0.89	0.752	0.973	0.131	0.157	0.21	0.03	0.03
31.332	77.050	0.534	3846.5	2765.0	62.118	0.711	1.99		Sand	22.2			72.83	0.88	63.75	100.26	0.89	0.753	0.972	0.138	0.169	0.22	0.03	0.03
31.496	74.810	0.680	3867.0	2775.2	60.146	0.933	2.07		Sand	28.4			70.71	0.88	62.06	107.95	0.89	0.753	0.969	0.149	0.188	0.25	0.03	0.03
31.660	77.590	0.651	3887.5	2785.5	62.317	0.861	2.03		Sand	25.8			73.34	0.88	64.21	106.85	0.89	0.753	0.969	0.147	0.185	0.25	0.03	0.03
31.824	79.690	0.401	3908.0	2795.8	63.921	0.516	1.91		Sand	15.6			75.32	0.86	65.00	86.77	0.89	0.754	0.973	0.122	0.143	0.19	0.04	0.03
31.988	79.180	0.469	3928.5	2806.0	63.377	0.607	1.95		Sand	18.7	75.32		75.32	0.87	65.22	94.70	0.89	0.754	0.971	0.131	0.157	0.21	0.03	0.03
32.152	76.630	0.458	3949.0	2816.3	61.164	0.613	1.96		Sand	20.0	75.32		75.32	0.87	65.21	97.45	0.89	0.754	0.970	0.134	0.162	0.22	0.03	0.03
32.316	75.710	0.372	3969.5	2826.6	60.292	0.505	1.93		Sand	17.0	75.32		75.32	0.86	64.78	90.13	0.89	0.754	0.972	0.126	0.148	0.20	0.04	0.03
32.480	70.690	0.465	3990.0	2836.8	56.076	0.677	2.02		Sand	24.3	75.32		75.32	0.87	65.33	105.83	0.89	0.755	0.967	0.145	0.182	0.24	0.03	0.03
32.644	65.190	0.504	4010.5	2847.1	51.485	0.798	2.09		Sand	29.9	75.32		75.32	0.87	65.54	113.92	0.89	0.755	0.965	0.159	0.206	0.27	0.03	0.02
32.808	64.470	0.429	4031.0	2857.4	50.799	0.687	2.06		Sand	27.5	75.32		75.32	0.87	65.30	110.64	0.89	0.755	0.965	0.153	0.195	0.26	0.03	0.03
32.972	60.260	0.299	4051.5	2867.6	47.281	0.513	2.02		Sand	24.8	75.32		75.32	0.86	65.00	106.18	0.89	0.755	0.966	0.146	0.183	0.24	0.03	0.03
33.136	47.370	0.426	4072.0	2877.9	36.742	0.940	2.25		Sand	42.8	75.32		75.32	0.87	65.65	125.26	0.89	0.756	0.960	0.184	0.252	0.33	0.03	0.02
33.301	33.890	0.594	4092.6	2888.2	25.762	1.865	2.54		Sand	66.4	75.32		75.32	0.88	65.91	134.86	0.88	0.756	0.956	0.214	0.309	0.41	0.02	0.02
33.465	29.720	0.505	4113.1	2898.5	19.088	1.826	2.64		Clay	74.5			28.09	0.92	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	29.200	0.360	4133.6	2908.8	21.873	1.327	2.52		Sand	64.4			27.60	0.84	23.19	79.44	0.88	0.756	0.971	0.115	0.132	0.17	0.04	0.03
33.793	27.770	0.329	4154.1	2919.0	20.676	1.281	2.53		Sand	65.4	27.6		27.60	0.84	23.14	79.61	0.88	0.756	0.971	0.115	0.132	0.17	0.04	0.03
33.957	26.460	0.345	4174.6	2929.3	16.641	1.416	2.63		Clay	73.7			25.01	0.92	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	25.930	0.284	4195.1	2939.6	16.215	1.192	2.61		Clay	71.4			24.51	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	21.740	0.347	4215.6	2949.8	13.311	1.768	2.77		Clay	84.4			20.55	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	20.600	0.549	4236.1	2960.1	12.487	2.970	2.92		Clay	96.2			19.47	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	33.530	0.635	4256.6	2970.4	21.143	2.022	2.63		Clay	73.6			31.69	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	53.990	0.868	4277.1	2980.6	41.293	1.674	2.35		Sand	51.0	141.3	1.55	219.02	0.91	200.09	299.77	0.88	0.757	0.897	#########	########	1210106.19	0.00	0.00
34.941	84.580	0.847	4297.6	2990.9	65.533	1.028	2.06		Sand	28.0	141.3	1.55	219.02	0.91	199.91	271.69	0.88	0.757	0.896	2533.200	4994.477	6595.70	0.00	0.00
35.105	128.360	0.687	4318.1	3001.2	100.159	0.544	1.75		Sand	3.2	141.3	1.55	219.02	0.89	194.71	194.71	0.88	0.757	0.914	1.420	2.855	3.77	0.00	0.00
35.269	149.500	0.649	4338.6	3011.4	116.729	0.441	1.65		Sand	0.0		1.55	219.02	0.89	194.47	194.47	0.87	0.757	0.913	1.403	2.817	3.72	0.00	0.00
35.433	148.790	0.438	4359.1	3021.7	115.961	0.299	1.57		Sand	0.0	141.3	1.55	219.02	0.89	194.21	194.21	0.87	0.758	0.912	1.385	2.779	3.67	0.00	0.00
35.597	135.340	0.486	4379.6	3032.0	105.136	0.365	1.65		Sand	0.0	141.3	1.55	219.02	0.89	193.97	193.97	0.87	0.758	0.912	1.367	2.743	3.62	0.00	0.00
35.761	95.400	0.882	4400.1	3042.2	73.467	0.946	2.00		Sand	23.1	141.3	1.55	219.02	0.91	199.01	258.77	0.87	0.758	0.891	391.860	768.193	1013.86	0.00	0.00
35.925	48.800	0.967	4420.6	3052.5	36.663	2.076	2.45		Sand	58.9	141.3	1.55	219.02	0.91	198.83	302.75	0.87	0.758	0.890	#########	########	2314191.48	0.00	0.00
36.089	32.790	1.012	4441.1	3062.8	19.962	3.310	2.78		Clay	85.5			30.99	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	28.460	0.695	4461.6	3073.0	17.071	2.650	2.78		Clay	85.1			26.90	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	20.520	0.552	4482.1	3083.3	11.857	3.020	2.94		Clay	98.0			19.40	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	16.660	0.420	4502.6	3093.6	9.315	2.915	3.02		Clay	100.0			15.75	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	13.210	0.345	4523.1	3103.8	7.055	3.151	3.13		Clay	100.0			12.49	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	11.920	0.310	4543.6	3114.1	6.196	3.213	3.19		Clay	100.0			11.27	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	12.420	0.397	4564.1	3124.4	6.490	3.916	3.22		Clay	100.0			11.74	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	16.990	0.527	4584.8	3134.7	9.377	3.586	3.06		Clay	100.0			16.06	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	26.260	0.696	4605.3	3145.0	15.235	2.905	2.84		Clay	90.2			24.82	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	35.980	0.840	4625.8	3155.2	21.341	2.495	2.68		Clay	77.6			34.01	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	43.830	1.210	4646.3	3165.5	26.225	2.915	2.65		Clay	75.4			41.43	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	54.590	1.377	4666.8	3175.8	40.317	2.635	2.48		Sand	61.7	133.79		133.79	0.87	116.98	199.11	0.86	0.758	0.894	1.798	3.537	4.67	0.00	0.00
38.058	68.030	1.483	4687.3	3186.0	50.597	2.258	2.37		Sand	52.2	133.79		133.79	0.87	116.57	194.60	0.86	0.758	0.899	1.413	2.793	3.69	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 10

PGA (A_{max}) 0.85

Total Settlement: 1.67 (Inches)

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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)
38.222	76.770	1.706	4707.8	3196.3	57.229	2.293	2.33		Sand	49.4	133.79		133.79	0.87	116.32	192.81	0.86	0.758	0.900	1.290	2.554	3.37	0.00	0.00
38.386	84.340	1.297	4728.3	3206.6	62.942	1.582	2.19		Sand	38.4	133.79		133.79	0.86	115.61	184.01	0.86	0.758	0.908	0.857	1.681	2.22	0.00	0.00
38.550	101.450	1.591	4748.8	3216.8	75.950	1.606	2.14		Sand	33.8	133.79		133.79	0.86	115.11	178.66	0.86	0.758	0.913	0.689	1.299	1.71	0.00	0.00
38.714	126.660	1.334	4769.3	3227.1	95.115	1.073	1.95		Sand	18.7	133.79		133.79	0.84	112.70	148.06	0.86	0.758	0.934	0.276	0.425	0.56	0.02	0.01
38.878	141.550	1.076	4789.8	3237.4	106.335	0.773	1.82		Sand	8.6			133.79	0.82	109.62	114.00	0.86	0.758	0.950	0.159	0.203	0.27	0.03	0.02
39.042	139.970	1.114	4810.3	3247.6	104.953	0.810	1.84		Sand	9.9			132.30	0.82	108.43	116.16	0.86	0.758	0.948	0.163	0.210	0.28	0.03	0.02
39.206	136.100	1.291	4830.8	3257.9	101.832	0.966	1.89		Sand	14.6			128.64	0.83	106.37	128.58	0.86	0.758	0.942	0.193	0.265	0.35	0.02	0.02
39.370	138.930	1.332	4851.3	3268.2	103.817	0.976	1.89		Sand	14.3			131.31	0.83	108.55	130.01	0.86	0.758	0.941	0.197	0.273	0.36	0.02	0.02
39.534	144.560	1.448	4871.8	3278.4	107.921	1.019	1.89		Sand	14.2			136.64	0.83	113.23	134.83	0.85	0.758	0.938	0.214	0.303	0.40	0.02	0.02
39.698	149.630	1.527	4892.3	3288.7	111.589	1.037	1.88		Sand	13.7			141.43	0.83	117.30	137.64	0.85	0.757	0.937	0.224	0.323	0.43	0.02	0.01
39.862	149.880	1.375	4912.8	3299.0	111.597	0.933	1.85		Sand	11.3			141.66	0.82	116.51	128.81	0.85	0.757	0.941	0.194	0.266	0.35	0.02	0.02
40.026	142.540	1.155	4933.3	3309.2	105.868	0.825	1.84		Sand	10.1			134.73	0.81	109.63	117.80	0.85	0.757	0.945	0.167	0.216	0.28	0.03	0.02
40.190	135.840	0.991	4953.8	3319.5	100.640	0.743	1.83		Sand	9.3			128.39	0.81	103.53	109.43	0.85	0.757	0.948	0.151	0.188	0.25	0.03	0.02
40.354	127.470	0.872	4974.3	3329.8	94.171	0.698	1.84		Sand	9.9			120.48	0.80	96.48	103.69	0.85	0.757	0.950	0.142	0.173	0.23	0.03	0.02
40.518	123.630	0.837	4994.8	3340.0	91.129	0.691	1.84		Sand	10.6			116.85	0.80	93.31	102.44	0.85	0.757	0.951	0.141	0.170	0.22	0.03	0.02
40.682	128.030	1.015	5015.3	3350.3	94.287	0.809	1.87		Sand	12.8			121.01	0.81	97.54	113.67	0.85	0.757	0.946	0.158	0.201	0.27	0.03	0.02
40.846	139.350	1.355	5035.8	3360.6	102.625	0.990	1.90		Sand	14.9			131.71	0.82	107.66	131.08	0.85	0.757	0.937	0.201	0.278	0.37	0.02	0.01
41.011	143.210	1.671	5056.4	3370.9	105.351	1.188	1.94		Sand	18.4			135.36	0.83	111.84	146.04	0.85	0.757	0.928	0.264	0.399	0.53	0.02	0.01
41.175	142.710	1.675	5076.9	3381.2	104.809	1.195	1.95		Sand	18.6			134.89	0.83	111.33	146.22	0.85	0.757	0.927	0.265	0.400	0.53	0.02	0.01
41.339	146.800	1.388	5097.4	3391.4	107.696	0.962	1.87		Sand	13.0			138.75	0.81	112.90	130.41	0.85	0.756	0.936	0.199	0.273	0.36	0.02	0.01
41.503	138.230	1.136	5117.9	3401.7	101.137	0.837	1.86		Sand	11.7			130.65	0.80	104.96	117.71	0.85	0.756	0.942	0.166	0.215	0.28	0.03	0.02
41.667	132.260	0.679	5138.4	3412.0	96.534	0.524	1.76		Sand	3.6			125.01	0.79	98.36	98.37	0.84	0.756	0.950	0.135	0.161	0.21	0.03	0.02
41.831	129.680	0.790	5158.9	3422.2	94.464	0.622	1.81		Sand	7.5			122.57	0.79	96.31	98.49	0.84	0.756	0.949	0.135	0.161	0.21	0.03	0.02
41.995	124.880	0.922	5179.4	3432.5	90.753	0.754	1.87		Sand	12.5			118.03	0.79	93.56	108.28	0.84	0.756	0.945	0.149	0.184	0.24	0.03	0.02
42.159	132.140	0.895	5199.9	3442.8	95.989	0.691	1.83		Sand	9.1			124.90	0.79	98.40	103.81	0.84	0.756	0.947	0.142	0.173	0.23	0.03	0.02
42.323	125.120	0.754	5220.4	3453.0	90.645	0.615	1.82		Sand	8.5	124.9		124.90	0.79	98.08	102.06	0.84	0.756	0.947	0.140	0.169	0.22	0.03	0.02
42.487	114.810	0.927	5240.9	3463.3	82.886	0.826	1.92		Sand	16.9	124.9		124.90	0.81	100.60	129.36	0.84	0.755	0.934	0.195	0.267	0.35	0.02	0.01
42.651	76.990	1.103	5261.4	3473.6	54.856	1.483	2.22		Sand	40.6	124.9		124.90	0.83	103.99	171.53	0.84	0.755	0.903	0.530	0.937	1.24	0.00	0.00
42.815	41.480	1.133	5281.9	3483.8	22.297	2.917	2.71		Clay	79.8			39.21	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	28.390	0.779	5302.4	3494.1	14.733	3.027	2.86		Clay	92.0			26.83	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	20.930	0.619	5322.9	3504.4	10.426	3.388	3.01		Clay	100.0			19.78	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	18.530	0.523	5343.4	3514.6	9.024	3.298	3.06		Clay	100.0			17.51	0.87	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	14.300	0.492	5363.9	3524.9	6.592	4.235	3.23		Clay	100.0			13.52	0.87	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	12.830	0.432	5384.4	3535.2	5.735	4.261	3.28		Clay	100.0			12.13	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	12.630	0.348	5404.9	3545.4	5.600	3.505	3.24		Clay	100.0			11.94	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	12.440	0.280	5425.4	3555.7	5.471	2.878	3.21		Clay	100.0			11.76	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	12.700	0.286	5445.9	3566.0	5.596	2.867	3.20		Clay	100.0			12.00	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	14.980	0.346	5466.4	3576.2	6.849	2.825	3.12		Clay	100.0			14.16	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	17.700	0.392	5486.9	3586.5	8.341	2.621	3.03		Clay	100.0			16.73	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	19.670	0.387	5507.4	3596.7	9.406	2.288	2.95		Clay	99.3			18.59	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	20.560	0.423	5527.9	3607.0	9.867	2.377	2.95		Clay	98.7			19.43	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	23.220	0.451	5548.5	3617.3	11.304	2.206	2.88		Clay	93.3			21.95	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	25.650	0.601	5569.0	3627.6	12.606	2.628	2.88		Clay	93.5			24.24	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	27.800	0.738	5589.5	3637.9	13.747	2.951	2.88		Clay	93.4			26.28	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	28.530	0.877	5610.0	3648.1	14.103	3.409	2.91		Clay	95.7			26.97	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	27.880	0.986	5630.5	3658.4	13.703	3.934	2.96		Clay	99.5			26.35	0.87	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	25.370	1.070	5651.0	3668.7	12.290	4.746	3.04		Clay	100.0			23.98	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	26.200	1.063	5671.5	3678.9	12.702	4.550	3.02		Clay	100.0			24.76	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	64.270	1.347	5692.0	3689.2	43.969	2.193	2.40		Sand	55.2		1.8	109.34	0.81	88.16	159.84	0.82	0.751	0.903	0.370	0.597	0.80	0.01	0.01
46.260	36.920	1.090	5712.5	3699.5	18.415	3.200	2.80		Clay	87.0			34.90	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	19.700	0.812	5733.0	3709.7	9.075	4.824	3.15		Clay	100.0			18.62	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	14.020	0.429	5753.5	3720.0	5.991	3.850	3.24		Clay	100.0			13.25	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	12.490	0.276	5774.0	3730.3	5.149	2.874	3.23		Clay	100.0			11.81	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	11.970	0.262	5794.5	3740.5	4.851	2.888	3.25		Clay	100.0			11.31	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	13.120	0.253	5815.0	3750.8	5.445	2.477	3.17		Clay	100.0			12.40	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	14.330	0.295	5835.5	3761.1	6.069	2.585	3.14		Clay	100.0			13.54	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	16.410	0.292	5856.0	3771.3	7.150	2.166	3.04		Clay	100.0			15.51	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	16.330	0.267	5876.5	3781.6	7.083	1.994	3.03		Clay	100.0			15.43	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	15.830	0.245	5897.0	3791.9	6.794	1.902	3.03		Clay	100.0			14.96	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	15.280	0.224	5917.5	3802.1	6.481	1.818	3.04		Clay	100.0			14.44	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	15.480	0.257	5938.0	3812.4	6.563	2.054	3.06		Clay	100.0			14.63	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	16.410	0.265	5958.5	3822.7	7.027	1.973	3.03		Clay	100.0			15.51	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	16.080	0.269	5979.0	3832.9	6.831	2.055	3.05		Clay	100.0			15.20	0.85	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	16.310	0.268	5999.5	3843.2	6.927	2.013	3.04		Clay	100.0			15.42	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	16.240	0.261	6020.0	3853.5	6.867	1.973	3.04		Clay	100.0			15.35	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	15.540	0.239	6040.6	3863.8	6.481	1.909	3.05		Clay	100.0			14.69	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	14.560	0.221	6061.1	3874.1	5.952	1.917	3.09		Clay	100.0			13.76	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	10

PGA (A_{max})	0.85

Total Settlement: 1.67 (Inches)

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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)
49.213	14.650	0.200	6081.6	3884.3	5.977	1.723	3.06		Clay	100.0			13.85	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	14.090	0.198	6102.1	3894.6	5.669	1.794	3.09		Clay	100.0			13.32	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	14.290	0.219	6122.6	3904.9	5.751	1.950	3.10		Clay	100.0			13.51	0.85	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	14.100	0.256	6143.1	3915.1	5.634	2.321	3.15		Clay	100.0			13.33	0.85	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	14.890	0.259	6163.6	3925.4	6.016	2.193	3.11		Clay	100.0			14.07	0.85	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	13.850	0.214	6184.1	3935.7	5.467	1.989	3.13		Clay	100.0			13.09	0.85	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	11

PGA (A_{max})	0.85

Total Settlement:	0.07	(Inches)

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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)
5.085	22.720	0.570	610.2	610.2	39.452	2.543	2.48		Unsaturated	61.4			21.47	1.70	36.51	95.84	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	21.850	0.497	629.9	629.9	37.307	2.308	2.47		Unsaturated	60.7			20.65	1.70	35.11	93.86	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	21.460	0.424	649.6	649.6	36.055	2.006	2.44		Unsaturated	58.6			20.28	1.70	34.48	92.48	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	22.380	0.345	669.2	669.2	37.051	1.565	2.37		Unsaturated	52.6			21.15	1.70	35.96	92.46	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	22.550	0.222	688.9	688.9	36.783	1.000	2.26		Unsaturated	43.9			21.31	1.70	36.23	89.11	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	21.370	0.338	708.7	708.7	34.322	1.608	2.40		Unsaturated	55.3			20.20	1.70	34.34	91.30	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	18.400	0.505	728.4	728.4	35.963	2.800	2.54		Unsaturated	66.1			17.39	1.70	29.57	88.00	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	16.250	0.616	748.1	748.1	31.071	3.880	2.68		Unsaturated	77.4			15.36	1.70	26.11	85.57	0.99	0.547	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.398	15.830	0.626	767.8	767.8	40.237	4.053	2.61		Unsaturated	71.9			14.96	1.70	25.44	83.81	0.99	0.547	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.562	15.960	0.610	787.4	787.4	39.536	3.919	2.61		Unsaturated	71.5			15.09	1.70	25.62	83.98	0.99	0.547	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.726	15.120	0.514	807.1	807.1	27.310	3.493	2.69		Unsaturated	78.3			14.29	1.68	24.01	82.99	0.99	0.547	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.890	15.250	0.430	826.8	826.8	27.073	2.898	2.64		Unsaturated	74.4			14.41	1.66	23.95	82.29	0.99	0.546	1.087	n.a.	n.a.	n.a.	0.00	0.00
7.054	12.560	0.394	846.5	846.5	28.676	3.246	2.65		Unsaturated	75.4			11.87	1.66	19.73	76.98	0.99	0.546	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.218	10.110	0.424	866.2	866.2	22.344	4.382	2.82		Unsaturated	88.8			9.56	1.65	15.81	73.60	0.99	0.546	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.382	7.960	0.426	885.8	885.8	16.972	5.667	2.99		Unsaturated	100.0			7.52	1.65	12.39	70.17	0.99	0.546	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.546	6.390	0.368	905.5	905.5	13.113	6.198	3.10		Unsaturated	100.0			6.04	1.64	9.90	66.91	0.99	0.545	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.710	6.120	0.307	925.2	925.2	12.230	5.427	3.08		Unsaturated	100.0			5.78	1.62	9.38	66.23	0.99	0.545	1.067	n.a.	n.a.	n.a.	0.00	0.00
7.874	7.040	0.290	944.9	944.9	13.901	4.416	2.98		Unsaturated	100.0			6.65	1.60	10.62	67.85	0.99	0.545	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.038	7.360	0.292	964.6	964.6	14.261	4.246	2.96		Unsaturated	100.0			6.96	1.58	10.96	68.30	0.99	0.544	1.065	n.a.	n.a.	n.a.	0.00	0.00
8.202	12.870	0.252	984.2	984.2	19.992	2.036	2.65		Unsaturated	75.3			12.16	1.53	18.65	75.57	0.98	0.544	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.366	19.940	0.272	1003.9	1003.9	26.673	1.399	2.46		Unsaturated	59.7			18.85	1.49	28.07	84.57	0.98	0.544	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.530	16.880	0.275	1023.6	1023.6	22.244	1.680	2.57		Unsaturated	68.4			15.95	1.48	23.68	80.91	0.98	0.544	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.694	10.950	0.350	1043.3	1043.3	19.991	3.356	2.78		Unsaturated	85.8			10.35	1.49	15.44	72.79	0.98	0.543	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.858	9.980	0.277	1063.0	1063.0	17.778	2.932	2.79		Unsaturated	86.1			9.43	1.48	13.98	70.92	0.98	0.543	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.022	9.200	0.266	1082.6	1082.6	15.995	3.072	2.84		Unsaturated	90.0			8.70	1.47	12.78	69.77	0.98	0.543	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.186	9.180	0.348	1102.3	1102.3	15.656	4.033	2.92		Unsaturated	96.4			8.68	1.45	12.61	70.15	0.98	0.542	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.350	10.020	0.357	1122.0	1122.0	16.861	3.774	2.87		Unsaturated	92.9			9.47	1.44	13.60	71.13	0.98	0.542	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.514	9.290	0.329	1141.7	1141.7	15.274	3.773	2.91		Unsaturated	95.6			8.78	1.42	12.51	69.96	0.98	0.542	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.678	9.090	0.305	1161.4	1161.4	14.654	3.584	2.91		Unsaturated	95.6			8.59	1.41	12.13	69.46	0.98	0.542	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.843	7.780	0.285	1181.2	1181.2	12.173	3.964	3.00		Unsaturated	100.0			7.35	1.40	10.32	67.46	0.98	0.541	1.048	n.a.	n.a.	n.a.	0.00	0.00
10.007	6.790	0.284	1200.8	1200.8	10.309	4.588	3.09		Clay	100.0			6.42	1.16	n.a.	n.a.	0.98	0.541	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	6.670	0.280	1220.5	1220.5	9.930	4.621	3.11		Clay	100.0			6.30	1.16	n.a.	n.a.	0.98	0.545	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	6.280	0.266	1240.2	1240.2	9.127	4.700	3.14		Clay	100.0			5.94	1.15	n.a.	n.a.	0.98	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	6.060	0.247	1259.9	1259.9	8.620	4.549	3.15		Clay	100.0			5.73	1.15	n.a.	n.a.	0.98	0.554	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	6.000	0.229	1279.6	1279.6	8.378	4.272	3.15		Clay	100.0			5.67	1.14	n.a.	n.a.	0.98	0.558	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	6.120	0.232	1299.2	1299.2	8.421	4.241	3.14		Clay	100.0			5.78	1.14	n.a.	n.a.	0.98	0.562	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	6.050	0.277	1318.9	1318.9	8.174	5.139	3.20		Clay	100.0			5.72	1.13	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	6.300	0.273	1338.6	1338.6	8.413	4.848	3.18		Clay	100.0			5.95	1.13	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	6.530	0.249	1358.3	1358.3	8.615	4.256	3.14		Clay	100.0			6.17	1.12	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	6.090	0.199	1378.0	1378.0	7.839	3.684	3.13		Clay	100.0			5.76	1.12	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	6.830	0.236	1397.6	1397.6	8.774	3.849	3.11		Clay	100.0			6.46	1.12	n.a.	n.a.	0.97	0.580	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	8.560	0.267	1417.3	1417.3	11.079	3.401	2.99		Clay	100.0			8.09	1.11	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	10.020	0.329	1437.0	1437.0	12.946	3.537	2.95		Clay	98.8			9.47	1.11	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	10.450	0.381	1457.4	1448.7	13.421	3.919	2.96		Clay	100.0			9.88	1.11	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	10.130	0.353	1477.9	1459.0	12.874	3.759	2.97		Clay	100.0			9.57	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	11.180	0.379	1498.4	1469.2	14.199	3.633	2.92		Clay	96.8			10.57	1.10	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	11.960	0.413	1518.9	1479.5	15.141	3.687	2.90		Clay	95.4			11.30	1.10	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	12.010	0.464	1539.4	1489.8	15.090	4.128	2.94		Clay	97.9			11.35	1.10	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	12.690	0.474	1559.9	1500.0	15.880	3.980	2.91		Clay	95.7			11.99	1.10	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	13.400	0.497	1580.4	1510.3	16.698	3.941	2.89		Clay	94.1			12.67	1.09	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	14.840	0.518	1600.9	1520.6	18.466	3.690	2.84		Clay	90.0			14.03	1.09	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	16.050	0.562	1621.4	1530.8	19.910	3.688	2.81		Clay	87.9			15.17	1.09	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	17.040	0.611	1641.9	1541.1	21.049	3.767	2.80		Clay	86.9			16.11	1.09	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	17.520	0.628	1662.5	1551.4	21.514	3.763	2.79		Clay	86.3			16.56	1.09	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	17.690	0.639	1683.0	1561.7	21.577	3.793	2.79		Clay	86.4			16.72	1.08	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	17.670	0.643	1703.5	1572.0	21.398	3.823	2.80		Clay	86.8			16.70	1.08	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	17.660	0.663	1724.0	1582.2	21.233	3.947	2.81		Clay	87.7			16.69	1.08	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	18.140	0.695	1744.5	1592.5	21.686	4.025	2.81		Clay	87.6			17.15	1.08	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	18.250	0.701	1765.0	1602.8	21.672	4.036	2.81		Clay	87.7			17.25	1.08	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	17.380	0.698	1785.5	1613.0	20.443	4.234	2.84		Clay	90.3			16.43	1.07	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	17.380	0.679	1806.0	1623.3	20.301	4.121	2.84		Clay	89.9			16.43	1.07	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	17.570	0.662	1826.5	1633.6	20.393	3.974	2.82		Clay	89.0			16.61	1.07	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	17.600	0.628	1847.0	1643.8	20.290	3.766	2.81		Clay	87.9			16.64	1.07	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	16.870	0.602	1867.5	1654.1	19.269	3.778	2.83		Clay	89.3			15.95	1.07	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	15.280	0.449	1888.0	1664.4	17.227	3.132	2.82		Clay	88.3			14.44	1.07	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	13.830	0.422	1908.5	1674.6	15.377	3.277	2.87		Clay	92.4			13.07	1.06	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	13.120	0.419	1929.0	1684.9	14.429	3.447	2.90		Clay	95.3			12.40	1.06	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	13.200	0.401	1949.5	1695.2	14.424	3.280	2.89		Clay	94.2			12.48	1.06	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	11

PGA (A_{max})	0.85

Total Settlement:	0.07	(Inches)

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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)
16.240	14.070	0.405	1970.0	1705.4	15.345	3.095	2.85		Clay	91.3			13.30	1.06	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	13.710	0.403	1990.5	1715.7	14.822	3.170	2.87		Clay	92.8			12.96	1.06	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	13.570	0.383	2011.0	1726.0	14.559	3.048	2.87		Clay	92.4			12.83	1.06	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	14.410	0.384	2031.5	1736.2	15.429	2.867	2.83		Clay	89.6			13.62	1.05	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	16.590	0.399	2052.0	1746.5	17.823	2.564	2.75		Clay	83.2			15.68	1.05	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	17.660	0.405	2072.5	1756.8	18.926	2.436	2.72		Clay	80.5			16.69	1.05	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	17.830	0.435	2093.0	1767.0	18.996	2.592	2.73		Clay	81.7			16.85	1.05	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	18.420	0.452	2113.5	1777.3	19.539	2.603	2.72		Clay	81.0			17.41	1.05	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	19.320	0.467	2134.0	1787.6	20.422	2.558	2.70		Clay	79.4			18.26	1.05	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	19.990	0.502	2154.6	1797.9	21.039	2.654	2.70		Clay	79.3			18.89	1.04	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	20.490	0.499	2175.1	1808.2	21.461	2.572	2.69		Clay	78.1			19.37	1.04	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	20.720	0.516	2195.6	1818.4	21.582	2.630	2.69		Clay	78.4			19.58	1.04	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	20.870	0.504	2216.1	1828.7	21.613	2.550	2.68		Clay	77.7			19.73	1.04	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	19.760	0.513	2236.6	1838.9	20.274	2.752	2.73		Clay	81.1			18.68	1.04	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	19.800	0.555	2257.1	1849.2	20.194	2.972	2.75		Clay	82.9			18.71	1.04	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	19.750	0.637	2277.6	1859.5	20.018	3.423	2.79		Clay	86.1			18.67	1.03	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	18.890	0.589	2298.1	1869.7	18.977	3.320	2.80		Clay	86.9			17.85	1.03	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	18.790	0.558	2318.6	1880.0	18.756	3.165	2.79		Clay	86.2			17.76	1.03	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	20.760	0.520	2339.1	1890.3	20.728	2.654	2.71		Clay	79.7			19.62	1.03	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	23.910	0.523	2359.6	1900.5	23.920	2.301	2.62		Clay	72.8			22.60	1.03	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	25.530	0.578	2380.1	1910.8	25.476	2.375	2.61		Clay	71.7			24.13	1.03	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	25.420	0.629	2400.6	1921.1	25.215	2.597	2.64		Clay	73.9			24.03	1.03	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	24.630	0.667	2421.1	1931.3	24.252	2.848	2.67		Clay	77.0			23.28	1.02	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	25.610	0.714	2441.6	1941.6	25.123	2.928	2.67		Clay	76.6			24.21	1.02	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	25.070	0.707	2462.1	1951.9	24.427	2.966	2.68		Clay	77.6			23.70	1.02	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	24.220	0.699	2482.6	1962.1	23.422	3.042	2.70		Clay	79.3			22.89	1.02	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	21.330	0.769	2503.1	1972.4	20.359	3.830	2.81		Clay	88.2			20.16	1.02	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	19.050	0.733	2523.6	1982.7	17.944	4.121	2.88		Clay	93.2			18.01	1.02	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	17.140	0.626	2544.1	1992.9	15.924	3.945	2.91		Clay	95.4			16.20	1.02	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	15.250	0.526	2564.6	2003.2	13.945	3.766	2.94		Clay	98.1			14.41	1.01	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	13.960	0.445	2585.1	2013.5	12.583	3.513	2.96		Clay	99.4			13.19	1.01	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	12.560	0.425	2605.6	2023.7	11.125	3.775	3.02		Clay	100.0			11.87	1.01	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	11.670	0.361	2626.3	2034.1	10.183	3.486	3.03		Clay	100.0			11.03	1.01	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	10.840	0.284	2646.8	2044.3	9.310	2.984	3.02		Clay	100.0			10.25	1.01	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	11.200	0.254	2667.3	2054.6	9.604	2.574	2.97		Clay	100.0			10.59	1.01	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	13.400	0.222	2687.8	2064.9	11.677	1.841	2.82		Clay	89.0			12.67	1.01	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	15.440	0.343	2708.3	2075.1	13.576	2.435	2.84		Clay	89.9			14.59	1.01	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	16.290	0.483	2728.8	2085.4	14.314	3.236	2.89		Clay	94.2			15.40	1.00	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	23.110	0.558	2749.3	2095.7	20.743	2.567	2.70		Clay	79.0			21.84	1.00	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	22.810	0.570	2769.8	2105.9	20.347	2.660	2.72		Clay	80.3			21.56	1.00	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	23.990	0.501	2790.3	2116.2	21.354	2.217	2.65		Clay	75.2			22.67	1.00	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	23.320	0.576	2810.8	2126.5	20.611	2.628	2.71		Clay	79.7			22.04	1.00	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	21.760	0.662	2831.3	2136.7	19.042	3.254	2.79		Clay	86.4			20.57	1.00	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	20.470	0.734	2851.8	2147.0	17.740	3.854	2.86		Clay	92.0			19.35	1.00	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	19.300	0.693	2872.3	2157.3	16.562	3.879	2.89		Clay	94.0			18.24	0.99	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	18.820	0.663	2892.8	2167.5	16.031	3.816	2.89		Clay	94.5			17.79	0.99	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	17.420	0.518	2913.3	2177.8	14.660	3.245	2.88		Clay	93.5			16.47	0.99	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	17.980	0.480	2933.8	2188.1	15.094	2.907	2.84		Clay	90.5			16.99	0.99	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	16.500	0.470	2954.3	2198.3	13.667	3.129	2.90		Clay	94.7			15.60	0.99	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	14.590	0.499	2974.8	2208.6	11.865	3.808	3.00		Clay	100.0			13.79	0.99	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	14.530	0.518	2995.3	2218.9	11.747	3.975	3.01		Clay	100.0			13.73	0.99	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	12.960	0.484	3015.8	2229.1	10.275	4.226	3.07		Clay	100.0			12.25	0.99	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	10.880	0.457	3036.3	2239.4	8.361	4.882	3.18		Clay	100.0			10.28	0.99	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	9.620	0.366	3056.8	2249.7	7.194	4.523	3.22		Clay	100.0			9.09	0.98	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	9.210	0.387	3077.3	2259.9	6.789	5.045	3.26		Clay	100.0			8.71	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	14.370	0.377	3097.8	2270.2	11.295	2.940	2.95		Clay	98.9			13.58	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	20.770	0.316	3118.4	2280.5	16.848	1.645	2.66		Clay	76.1			19.63	0.98	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	22.580	0.393	3138.9	2290.8	18.343	1.870	2.66		Clay	76.1			21.34	0.98	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	26.770	0.537	3159.4	2301.1	21.895	2.132	2.63		Clay	73.7			25.30	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	27.210	0.624	3179.9	2311.3	22.169	2.436	2.66		Clay	76.1			25.72	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	24.220	0.695	3200.4	2321.6	19.486	3.073	2.77		Clay	84.5			22.89	0.98	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	22.450	0.687	3220.9	2331.9	17.874	3.297	2.82		Clay	88.4			21.22	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	22.190	0.648	3241.4	2342.1	17.565	3.150	2.81		Clay	87.9			20.97	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	20.610	0.623	3261.9	2352.4	16.136	3.283	2.85		Clay	91.1			19.48	0.97	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	19.060	0.579	3282.4	2362.7	14.745	3.324	2.89		Clay	93.9			18.02	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	15.840	0.490	3302.9	2372.9	11.959	3.453	2.97		Clay	100.0			14.97	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	16.420	0.471	3323.4	2383.2	12.385	3.191	2.94		Clay	97.9			15.52	0.97	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 11

PGA (A_{max}) 0.85

Total Settlement: 0.07 (Inches)

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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)
27.231	19.420	0.531	3343.9	2393.5	14.830	2.992	2.86		Clay	91.5			18.36	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	19.590	0.598	3364.4	2403.7	14.900	3.339	2.88		Clay	93.7			18.52	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	18.540	0.575	3384.9	2414.0	13.958	3.413	2.91		Clay	96.0			17.52	0.97	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	18.540	0.590	3405.4	2424.3	13.891	3.504	2.92		Clay	96.6			17.52	0.96	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	19.800	0.584	3425.9	2434.5	14.859	3.229	2.88		Clay	93.1			18.71	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	17.280	0.595	3446.4	2444.8	12.726	3.825	2.97		Clay	100.0			16.33	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	14.930	0.532	3466.9	2455.1	10.751	4.031	3.05		Clay	100.0			14.11	0.96	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	13.220	0.517	3487.4	2465.3	9.310	4.505	3.13		Clay	100.0			12.50	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	10.960	0.563	3507.9	2475.6	7.437	6.116	3.28		Clay	100.0			10.36	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	9.260	0.369	3528.4	2485.9	6.031	4.923	3.30		Clay	100.0			8.75	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	7.880	0.275	3548.9	2496.1	4.892	4.504	3.35		Clay	100.0			7.45	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	7.970	0.191	3569.4	2506.4	4.936	3.088	3.26		Clay	100.0			7.53	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	7.440	0.215	3589.9	2516.7	4.486	3.809	3.34		Clay	100.0			7.03	0.96	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	7.460	0.215	3610.5	2527.0	4.475	3.802	3.34		Clay	100.0			7.05	0.95	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	10.070	0.162	3631.0	2537.3	6.507	1.963	3.06		Clay	100.0			9.52	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	11.330	0.155	3651.5	2547.5	7.462	1.631	2.97		Clay	100.0			10.71	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	15.230	0.204	3672.0	2557.8	10.473	1.523	2.82		Clay	88.8			14.40	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	18.040	0.300	3692.5	2568.1	12.612	1.853	2.80		Clay	86.8			17.05	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	20.110	0.379	3713.0	2578.3	14.159	2.076	2.78		Clay	85.6			19.01	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	20.690	0.415	3733.5	2588.6	14.543	2.205	2.79		Clay	86.0			19.56	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	20.880	0.472	3754.0	2598.9	14.624	2.484	2.81		Clay	88.2			19.74	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	20.260	0.532	3774.5	2609.1	14.083	2.896	2.87		Clay	92.3			19.15	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	18.640	0.579	3795.0	2619.4	12.784	3.458	2.95		Clay	98.7			17.62	0.95	n.a.	n.a.	0.90	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	19.460	0.653	3815.5	2629.7	13.349	3.720	2.95		Clay	99.0			18.39	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	23.590	0.680	3836.0	2639.9	16.419	3.138	2.83		Clay	89.7			22.30	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	24.220	0.702	3856.5	2650.2	16.823	3.149	2.83		Clay	89.1			22.89	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	22.170	0.643	3877.0	2660.4	15.209	3.178	2.86		Clay	92.1			20.95	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	21.380	0.643	3897.5	2670.7	14.551	3.309	2.89		Clay	94.2			20.21	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	23.960	0.594	3918.0	2681.0	16.413	2.700	2.79		Clay	86.6			22.65	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	18.940	0.356	3938.5	2691.2	12.612	2.098	2.83		Clay	89.1			17.90	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	15.010	0.327	3959.0	2701.5	9.647	2.509	2.97		Clay	100.0			14.19	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	12.670	0.270	3979.5	2711.8	7.877	2.528	3.04		Clay	100.0			11.98	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	11.000	0.198	4000.0	2722.0	6.613	2.200	3.08		Clay	100.0			10.40	0.94	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	10.030	0.183	4020.5	2732.3	5.870	2.282	3.13		Clay	100.0			9.48	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	9.430	0.210	4041.0	2742.6	5.403	2.834	3.21		Clay	100.0			8.91	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	9.100	0.206	4061.5	2752.8	5.136	2.914	3.23		Clay	100.0			8.60	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	8.870	0.180	4082.0	2763.1	4.943	2.636	3.22		Clay	100.0			8.38	0.93	n.a.	n.a.	0.89	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	8.620	0.158	4102.6	2773.4	4.737	2.405	3.22		Clay	100.0			8.15	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	7.990	0.139	4123.1	2783.7	4.259	2.345	3.26		Clay	100.0			7.55	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	7.450	0.133	4143.6	2794.0	3.850	2.473	3.31		Clay	100.0			7.04	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	7.670	0.113	4164.1	2804.2	3.985	2.022	3.25		Clay	100.0			7.25	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	8.820	0.148	4184.6	2814.5	4.781	2.200	3.20		Clay	100.0			8.34	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	9.960	0.160	4205.1	2824.8	5.563	2.036	3.12		Clay	100.0			9.41	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	10.450	0.159	4225.6	2835.0	5.882	1.907	3.09		Clay	100.0			9.88	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	10.490	0.175	4246.1	2845.3	5.881	2.092	3.11		Clay	100.0			9.91	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	10.820	0.197	4266.6	2855.6	6.084	2.268	3.11		Clay	100.0			10.23	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	11.880	0.213	4287.1	2865.8	6.795	2.188	3.06		Clay	100.0			11.23	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	12.160	0.233	4307.6	2876.1	6.958	2.329	3.07		Clay	100.0			11.49	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	11.900	0.302	4328.1	2886.4	6.746	3.102	3.15		Clay	100.0			11.25	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	12.590	0.195	4348.6	2896.6	7.192	1.872	3.01		Clay	100.0			11.90	0.92	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	12.340	0.248	4369.1	2906.9	6.987	2.442	3.08		Clay	100.0			11.66	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	14.640	0.288	4389.6	2917.2	8.532	2.314	2.99		Clay	100.0			13.84	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	18.170	0.315	4410.1	2927.4	10.907	1.973	2.87		Clay	92.2			17.17	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	18.290	0.334	4430.6	2937.7	10.944	2.078	2.88		Clay	93.1			17.29	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	18.720	0.451	4451.1	2948.0	11.190	2.734	2.93		Clay	97.7			17.69	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	17.470	0.531	4471.6	2958.2	10.300	3.486	3.02		Clay	100.0			16.51	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	16.760	0.562	4492.1	2968.5	9.779	3.872	3.07		Clay	100.0			15.84	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	14.540	0.531	4512.6	2978.8	8.247	4.323	3.16		Clay	100.0			13.74	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	12.810	0.480	4533.1	2989.0	7.055	4.553	3.22		Clay	100.0			12.11	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	11.420	0.384	4553.6	2999.3	6.097	4.200	3.26		Clay	100.0			10.79	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	10.250	0.344	4574.1	3009.6	5.292	4.320	3.31		Clay	100.0			9.69	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	9.860	0.351	4594.8	3019.9	5.009	4.641	3.35		Clay	100.0			9.32	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	9.720	0.288	4615.3	3030.2	4.892	3.885	3.32		Clay	100.0			9.19	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	9.210	0.210	4635.8	3040.4	4.534	3.047	3.29		Clay	100.0			8.71	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	8.740	0.259	4656.3	3050.7	4.204	4.039	3.38		Clay	100.0			8.26	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	9.180	0.267	4676.8	3061.0	4.470	3.903	3.35		Clay	100.0			8.68	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	9.530	0.238	4697.3	3071.2	4.677	3.314	3.30		Clay	100.0			9.01	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	11

PGA (A_{max})	0.85

Total Settlement:	0.07	(Inches)

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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)
38.222	10.410	0.230	4717.8	3081.5	5.225	2.857	3.22		Clay	100.0			9.84	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	11.120	0.236	4738.3	3091.8	5.661	2.697	3.18		Clay	100.0			10.51	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	10.260	0.121	4758.8	3102.0	5.081	1.535	3.10		Clay	100.0			9.70	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	9.650	0.155	4779.3	3112.3	4.666	2.135	3.20		Clay	100.0			9.12	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	10.920	0.198	4799.8	3122.6	5.457	2.324	3.16		Clay	100.0			10.32	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	11.130	0.167	4820.3	3132.8	5.567	1.915	3.11		Clay	100.0			10.52	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	11.230	0.169	4840.8	3143.1	5.606	1.918	3.11		Clay	100.0			10.61	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	11.280	0.169	4861.3	3153.4	5.613	1.910	3.11		Clay	100.0			10.66	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	11.410	0.191	4881.8	3163.6	5.670	2.130	3.13		Clay	100.0			10.78	0.90	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	11.840	0.234	4902.3	3173.9	5.916	2.492	3.15		Clay	100.0			11.19	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	12.100	0.267	4922.8	3184.2	6.054	2.770	3.16		Clay	100.0			11.44	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	11.850	0.237	4943.3	3194.4	5.872	2.527	3.15		Clay	100.0			11.20	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	11.460	0.220	4963.8	3204.7	5.603	2.450	3.16		Clay	100.0			10.83	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	11.050	0.213	4984.3	3215.0	5.324	2.489	3.18		Clay	100.0			10.44	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	12.680	0.224	5004.8	3225.2	6.311	2.201	3.09		Clay	100.0			11.98	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	17.250	0.308	5025.3	3235.5	9.110	2.090	2.95		Clay	98.6			16.30	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	18.350	0.400	5045.8	3245.8	9.752	2.527	2.96		Clay	100.0			17.34	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	17.800	0.441	5066.4	3256.1	9.377	2.889	3.01		Clay	100.0			16.82	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	17.180	0.392	5086.9	3266.4	8.962	2.678	3.01		Clay	100.0			16.24	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	17.040	0.453	5107.4	3276.6	8.842	3.127	3.05		Clay	100.0			16.11	0.89	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	16.150	0.417	5127.9	3286.9	8.267	3.069	3.07		Clay	100.0			15.26	0.89	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	18.260	0.405	5148.4	3297.2	9.515	2.582	2.98		Clay	100.0			17.26	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	22.280	0.350	5168.9	3307.4	11.910	1.777	2.81		Clay	87.7			21.06	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	23.010	0.419	5189.4	3317.7	12.307	2.052	2.83		Clay	89.4			21.75	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	22.320	0.596	5209.9	3328.0	11.848	3.023	2.94		Clay	98.1			21.10	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	21.020	0.624	5230.4	3338.2	11.027	3.390	2.99		Clay	100.0			19.87	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	20.780	0.614	5250.9	3348.5	10.843	3.382	3.00		Clay	100.0			19.64	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	23.250	0.546	5271.4	3358.8	12.275	2.649	2.89		Clay	94.4			21.98	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	21.680	0.490	5291.9	3369.0	11.299	2.574	2.92		Clay	96.2			20.49	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	20.570	0.539	5312.4	3379.3	10.602	3.009	2.98		Clay	100.0			19.44	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	19.460	0.490	5332.9	3389.6	9.909	2.918	2.99		Clay	100.0			18.39	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	21.130	0.547	5353.4	3399.8	10.855	2.964	2.96		Clay	100.0			19.97	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	19.410	0.583	5373.9	3410.1	9.808	3.486	3.04		Clay	100.0			18.35	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	19.590	0.533	5394.4	3420.4	9.878	3.155	3.01		Clay	100.0			18.52	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	21.700	0.509	5414.9	3430.6	11.072	2.680	2.93		Clay	97.6			20.51	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	22.960	0.515	5435.4	3440.9	11.766	2.544	2.90		Clay	94.9			21.70	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	22.120	0.497	5455.9	3451.2	11.238	2.563	2.92		Clay	96.3			20.91	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	20.100	0.524	5476.4	3461.4	10.032	3.018	3.00		Clay	100.0			19.00	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	18.130	0.500	5496.9	3471.7	8.861	3.251	3.06		Clay	100.0			17.14	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	16.990	0.461	5517.4	3481.9	8.174	3.239	3.09		Clay	100.0			16.06	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	18.230	0.461	5537.9	3492.2	8.855	2.982	3.04		Clay	100.0			17.23	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	22.390	0.538	5558.5	3502.5	11.198	2.743	2.93		Clay	97.7			21.16	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	37.240	0.629	5579.0	3512.8	19.614	1.826	2.63		Clay	73.7			35.20	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	67.310	0.731	5599.5	3523.1	47.254	1.133	2.20		Sand	39.1	158.36	1.13	178.95	0.86	154.50	232.86	0.83	0.752	0.847	21.317	39.725	52.84	0.00	0.00
45.440	111.170	0.769	5620.0	3533.3	79.259	0.710	1.90		Sand	15.1	158.36	1.13	178.95	0.83	148.57	176.10	0.83	0.752	0.896	0.624	1.133	1.51	0.00	0.00
45.604	130.390	0.502	5640.5	3543.6	93.174	0.394	1.71		Sand	0.0	158.36	1.13	178.95	0.81	144.69	144.69	0.83	0.751	0.921	0.257	0.381	0.51	0.02	0.01
45.768	137.410	0.875	5661.0	3553.9	98.152	0.650	1.80		Sand	7.3	158.36	1.13	178.95	0.81	144.81	147.02	0.82	0.751	0.919	0.270	0.406	0.54	0.02	0.01
45.932	137.820	1.017	5681.5	3564.1	98.302	0.753	1.84		Sand	10.2	158.36	1.13	178.95	0.81	145.67	155.35	0.82	0.751	0.913	0.328	0.519	0.69	0.02	0.01
46.096	148.710	1.087	5702.0	3574.4	106.073	0.745	1.81		Sand	7.9	158.36	1.13	178.95	0.81	144.58	147.90	0.82	0.751	0.918	0.275	0.416	0.55	0.02	0.01
46.260	152.780	1.259	5722.5	3584.7	108.869	0.840	1.83		Sand	9.7	158.36	1.13	178.95	0.81	145.07	153.12	0.82	0.750	0.913	0.311	0.484	0.64	0.02	0.01
46.424	153.870	1.435	5743.0	3594.9	109.496	0.950	1.87		Sand	12.3	158.36	1.13	178.95	0.82	146.11	163.00	0.82	0.750	0.905	0.404	0.671	0.89	0.01	0.00
46.588	165.050	2.034	5763.5	3605.2	117.428	1.254	1.92		Sand	16.9	158.36	1.13	178.95	0.83	148.13	181.77	0.82	0.750	0.885	0.780	1.464	1.95	0.00	0.00
46.752	167.540	2.156	5784.0	3615.5	119.055	1.309	1.93		Sand	17.5		1.13	178.94	0.83	148.25	184.19	0.82	0.750	0.882	0.864	1.646	2.20	0.00	0.00
46.916	161.960	2.332	5804.5	3625.7	114.849	1.466	1.98		Sand	21.2		1.13	172.98	0.83	143.80	189.95	0.82	0.749	0.874	1.122	2.156	2.88	0.00	0.00
47.080	148.130	2.776	5825.0	3636.0	104.708	1.912	2.09		Sand	30.0		1.13	158.21	0.83	131.76	193.73	0.82	0.749	0.867	1.351	2.578	3.44	0.00	0.00
47.244	123.430	3.410	5845.5	3646.3	86.768	2.830	2.27		Sand	44.4		1.13	131.83	0.82	108.54	179.93	0.82	0.749	0.885	0.724	1.338	1.79	0.00	0.00
47.408	107.740	4.067	5866.0	3656.5	75.358	3.880	2.41		Sand	55.8		1.13	115.07	0.81	93.67	167.09	0.82	0.748	0.898	0.458	0.777	1.04	0.01	0.00
47.572	102.610	4.037	5886.5	3666.8	71.561	4.050	2.44		Sand	58.1		1.13	109.59	0.81	88.70	161.63	0.82	0.748	0.902	0.389	0.636	0.85	0.01	0.00
47.736	105.080	3.553	5907.0	3677.1	73.225	3.479	2.38		Sand	53.7		1.13	112.23	0.81	90.81	162.56	0.81	0.748	0.901	0.399	0.657	0.88	0.01	0.00
47.900	102.590	3.118	5927.5	3687.3	71.333	3.130	2.36		Sand	51.6	99.32	1.13	112.23	0.81	90.63	161.39	0.81	0.748	0.902	0.386	0.630	0.84	0.01	0.00
48.064	96.660	2.982	5948.0	3697.6	66.986	3.183	2.38		Sand	53.5	99.32	1.13	112.23	0.81	90.59	162.22	0.81	0.747	0.900	0.395	0.649	0.87	0.01	0.00
48.228	76.830	2.497	5968.5	3707.9	52.727	3.381	2.47		Sand	60.8	99.32	1.13	112.23	0.81	90.73	165.16	0.81	0.747	0.897	0.431	0.721	0.96	0.01	0.00
48.392	50.190	1.335	5989.0	3718.1	25.387	2.829	2.66		Clay	75.6			47.44	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	27.760	0.731	6009.5	3728.4	13.279	2.953	2.89		Clay	94.4			26.24	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	18.120	0.422	6030.0	3738.7	8.080	2.794	3.06		Clay	100.0			17.13	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	14.640	0.344	6050.6	3749.0	6.196	2.962	3.17		Clay	100.0			13.84	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	13.850	0.294	6071.1	3759.3	5.753	2.719	3.18		Clay	100.0			13.09	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	11

PGA (A_{max})	0.85

Total Settlement:	0.07	(Inches)

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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)
49.213	13.420	0.297	6091.6	3769.5	5.504	2.863	3.20		Clay	100.0			12.68	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	13.980	0.305	6112.1	3779.8	5.780	2.792	3.18		Clay	100.0			13.21	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	13.970	0.296	6132.6	3790.1	5.754	2.715	3.17		Clay	100.0			13.20	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	14.150	0.311	6153.1	3800.3	5.828	2.809	3.18		Clay	100.0			13.37	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	14.100	0.305	6173.6	3810.6	5.780	2.769	3.18		Clay	100.0			13.33	0.86	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	14.460	0.272	6194.1	3820.9	5.948	2.394	3.13		Clay	100.0			13.67	0.86	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	12

PGA (A_{max})	0.85

Total Settlement:	0.72	(Inches)

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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)
5.085	31.970	1.076	610.2	610.2	55.733	3.398	2.46		Unsaturated	59.6			30.22	1.70	51.37	114.37	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	29.700	1.199	629.9	629.9	50.906	4.080	2.54		Unsaturated	66.3			28.07	1.70	47.72	111.44	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	30.290	1.261	649.6	649.6	51.119	4.208	2.55		Unsaturated	67.0			28.63	1.70	48.67	112.82	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	33.360	1.295	669.2	669.2	55.505	3.921	2.50		Unsaturated	63.3			31.53	1.70	53.56	118.19	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	33.980	1.329	688.9	688.9	55.717	3.951	2.50		Unsaturated	63.4			32.12	1.67	53.79	118.52	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	35.220	1.355	708.7	708.7	56.942	3.886	2.49		Unsaturated	62.4			33.29	1.65	54.90	119.69	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	38.420	1.330	728.4	728.4	61.307	3.495	2.44		Unsaturated	58.0			36.31	1.62	58.71	123.26	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	34.890	1.318	748.1	748.1	54.868	3.819	2.50		Unsaturated	62.9			32.98	1.62	53.27	117.72	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	31.230	1.227	767.8	767.8	48.402	3.978	2.55		Unsaturated	66.9			29.52	1.62	47.71	111.56	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	28.760	1.249	787.4	787.4	53.558	4.403	2.55		Unsaturated	67.0			27.18	1.61	43.85	106.62	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	21.710	1.167	807.1	807.1	52.796	5.477	2.62		Unsaturated	73.0			20.52	1.64	33.57	94.51	0.99	0.547	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.890	18.000	1.023	826.8	826.8	42.541	5.817	2.71		Unsaturated	79.6			17.01	1.64	27.88	88.18	0.99	0.546	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.054	15.590	0.908	846.5	846.5	35.835	5.987	2.77		Unsaturated	84.4			14.74	1.63	24.08	83.89	0.99	0.546	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.218	15.260	0.691	866.2	866.2	34.236	4.660	2.70		Unsaturated	79.3			14.42	1.62	23.37	82.29	0.99	0.546	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.382	16.680	0.592	885.8	885.8	36.659	3.646	2.61		Unsaturated	71.7			15.77	1.60	25.17	83.43	0.99	0.546	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.546	19.040	0.546	905.5	905.5	31.824	2.937	2.59		Unsaturated	70.4			18.00	1.57	28.18	87.07	0.99	0.545	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.710	29.080	0.457	925.2	925.2	40.906	1.597	2.34		Unsaturated	50.3			27.49	1.51	41.60	98.73	0.99	0.545	1.087	n.a.	n.a.	n.a.	0.00	0.00
7.874	46.700	0.418	944.9	944.9	65.386	0.904	2.03		Unsaturated	25.4			44.14	1.48	65.12	107.33	0.99	0.545	1.091	n.a.	n.a.	n.a.	0.00	0.00
8.038	43.330	0.309	964.6	964.6	59.984	0.721	2.01		Unsaturated	23.5			40.95	1.48	60.68	99.02	0.99	0.544	1.083	n.a.	n.a.	n.a.	0.00	0.00
8.202	35.210	0.353	984.2	984.2	48.114	1.017	2.17		Unsaturated	36.5			33.28	1.46	48.74	99.91	0.98	0.544	1.081	n.a.	n.a.	n.a.	0.00	0.00
8.366	25.320	0.486	1003.9	1003.9	34.056	1.958	2.46		Unsaturated	59.6			23.93	1.47	35.08	93.53	0.98	0.544	1.075	n.a.	n.a.	n.a.	0.00	0.00
8.530	18.790	0.452	1023.6	1023.6	28.722	2.473	2.58		Unsaturated	69.3			17.76	1.47	26.20	84.31	0.98	0.544	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.694	21.480	0.448	1043.3	1043.3	28.212	2.138	2.55		Unsaturated	66.7			20.30	1.45	29.45	87.98	0.98	0.543	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.858	31.700	0.509	1063.0	1063.0	41.565	1.633	2.34		Unsaturated	50.3			29.96	1.41	42.25	99.56	0.98	0.543	1.073	n.a.	n.a.	n.a.	0.00	0.00
9.022	41.710	0.259	1082.6	1082.6	54.400	0.629	2.01		Unsaturated	23.9			39.42	1.41	55.57	93.77	0.98	0.543	1.068	n.a.	n.a.	n.a.	0.00	0.00
9.186	43.900	0.308	1102.3	1102.3	56.767	0.711	2.02		Unsaturated	24.8			41.49	1.39	57.62	97.64	0.98	0.542	1.068	n.a.	n.a.	n.a.	0.00	0.00
9.350	40.750	0.280	1122.0	1122.0	52.165	0.697	2.05		Unsaturated	27.0			38.52	1.38	53.17	95.50	0.98	0.542	1.065	n.a.	n.a.	n.a.	0.00	0.00
9.514	35.220	0.265	1141.7	1141.7	44.585	0.765	2.13		Unsaturated	33.3			33.29	1.37	45.68	93.52	0.98	0.542	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.678	31.340	0.280	1161.4	1161.4	39.243	0.910	2.22		Unsaturated	40.3			29.62	1.36	40.37	92.21	0.98	0.542	1.060	n.a.	n.a.	n.a.	0.00	0.00
9.843	31.840	0.398	1181.2	1181.2	39.533	1.274	2.29		Unsaturated	46.5			30.09	1.34	40.46	95.70	0.98	0.541	1.060	n.a.	n.a.	n.a.	0.00	0.00
10.007	32.420	0.528	1200.8	1200.8	39.923	1.659	2.36		Sand	51.7			30.64	1.33	40.73	98.20	0.98	0.541	1.059	0.135	0.179	0.33	0.03	0.05
10.171	36.500	0.598	1220.5	1220.5	44.665	1.666	2.32		Sand	48.7			34.50	1.31	45.23	102.69	0.98	0.545	1.060	0.141	0.190	0.35	0.03	0.05
10.335	45.600	0.483	1240.2	1240.2	55.532	1.074	2.13		Sand	33.5			43.10	1.30	55.85	106.07	0.98	0.550	1.060	0.146	0.200	0.36	0.03	0.05
10.499	46.040	0.306	1259.9	1259.9	55.624	0.674	2.02		Sand	24.5			43.52	1.30	56.61	95.89	0.98	0.554	1.053	0.132	0.173	0.31	0.03	0.05
10.663	42.640	0.246	1279.6	1279.6	51.050	0.586	2.02		Sand	24.6			40.30	1.30	52.32	91.05	0.98	0.558	1.050	0.127	0.162	0.29	0.04	0.06
10.827	38.460	0.264	1299.2	1299.2	45.608	0.698	2.10		Sand	31.0			36.35	1.29	46.73	92.58	0.98	0.562	1.049	0.128	0.165	0.29	0.03	0.06
10.991	37.980	0.347	1318.9	1318.9	44.680	0.930	2.17		Sand	36.9			35.90	1.27	45.61	96.37	0.98	0.566	1.049	0.133	0.173	0.31	0.03	0.05
11.155	46.730	0.407	1338.6	1338.6	54.737	0.884	2.09		Sand	30.0			44.17	1.25	55.38	101.91	0.98	0.569	1.049	0.140	0.187	0.33	0.03	0.05
11.319	67.750	0.392	1358.3	1358.3	79.125	0.584	1.86		Sand	11.5			64.04	1.26	80.54	91.64	0.97	0.573	1.044	0.127	0.162	0.28	0.04	0.06
11.483	74.970	0.266	1378.0	1378.0	87.002	0.358	1.72		Sand	0.2			70.86	1.25	88.73	88.73	0.97	0.577	1.042	0.124	0.157	0.27	0.04	0.06
11.647	61.920	0.179	1397.6	1397.6	71.199	0.292	1.76		Sand	3.6	70.86		70.86	1.24	88.12	88.13	0.97	0.580	1.040	0.124	0.155	0.27	0.04	0.06
11.811	42.180	0.271	1417.3	1417.3	47.895	0.653	2.07		Sand	28.4	70.86		70.86	1.19	84.19	134.38	0.97	0.584	1.056	0.212	0.337	0.58	0.02	0.04
11.975	22.250	0.397	1437.0	1437.0	24.696	1.844	2.55		Sand	67.3	70.86		70.86	1.16	82.49	156.47	0.97	0.587	1.066	0.338	0.629	1.07	0.01	0.01
12.139	12.570	0.378	1457.4	1448.7	16.347	3.192	2.84		Clay	90.2			11.88	1.11	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	8.300	0.242	1477.9	1459.0	10.365	3.201	3.00		Clay	100.0			7.84	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	7.250	0.135	1498.4	1469.2	8.849	2.077	2.95		Clay	99.4			6.85	1.10	n.a.	n.a.	0.97	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	6.980	0.078	1518.9	1479.5	8.409	1.254	2.87		Clay	92.3			6.60	1.10	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	6.190	0.040	1539.4	1489.8	7.277	0.738	2.83		Clay	89.1			5.85	1.10	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	6.020	0.026	1559.9	1500.0	6.987	0.496	2.78		Clay	85.5			5.69	1.10	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	6.100	0.035	1580.4	1510.3	7.031	0.659	2.82		Clay	88.7			5.77	1.09	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	6.190	0.036	1600.9	1520.6	7.089	0.668	2.82		Clay	88.6			5.85	1.09	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	6.140	0.052	1621.4	1530.8	6.963	0.976	2.89		Clay	94.4			5.80	1.09	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	6.200	0.063	1641.9	1541.1	6.981	1.171	2.93		Clay	97.0			5.86	1.09	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	7.020	0.056	1662.5	1551.4	7.978	0.905	2.82		Clay	89.0			6.64	1.09	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	8.670	0.065	1683.0	1561.7	10.026	0.830	2.72		Clay	80.5			8.19	1.08	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	8.930	0.062	1703.5	1572.0	10.278	0.767	2.70		Clay	78.6			8.44	1.08	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	9.800	0.071	1724.0	1582.2	11.298	0.794	2.66		Clay	76.1			9.26	1.08	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	10.570	0.076	1744.5	1592.5	12.179	0.784	2.63		Clay	73.5			9.99	1.08	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	10.710	0.074	1765.0	1602.8	12.263	0.753	2.62		Clay	72.7			10.12	1.08	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	10.470	0.131	1785.5	1613.0	11.875	1.368	2.75		Clay	83.2			9.90	1.07	n.a.	n.a.	0.96	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	10.080	0.174	1806.0	1623.3	11.307	1.896	2.84		Clay	90.5			9.53	1.07	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	10.370	0.182	1826.5	1633.6	11.578	1.925	2.84		Clay	90.0			9.80	1.07	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	11.440	0.191	1847.0	1643.8	12.795	1.816	2.79		Clay	86.0			10.81	1.07	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	12.180	0.203	1867.5	1654.1	13.598	1.805	2.76		Clay	84.1			11.51	1.07	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	12.420	0.230	1888.0	1664.4	13.790	2.004	2.78		Clay	85.7			11.74	1.07	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	12.250	0.233	1908.5	1674.6	13.490	2.063	2.80		Clay	86.9			11.58	1.06	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	12.780	0.228	1929.0	1684.9	14.025	1.930	2.77		Clay	84.5			12.08	1.06	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	13.020	0.210	1949.5	1695.2	14.211	1.743	2.74		Clay	82.2			12.31	1.06	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 12

PGA (A_{max}) 0.85

Total Settlement: 0.72 (Inches)

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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)
16.240	12.890	0.185	1970.0	1705.4	13.961	1.554	2.72		Clay	80.6			12.18	1.06	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	12.480	0.156	1990.5	1715.7	13.388	1.358	2.71		Clay	79.5			11.80	1.06	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	12.570	0.138	2011.0	1726.0	13.401	1.193	2.68		Clay	77.2			11.88	1.06	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	13.380	0.203	2031.5	1736.2	14.243	1.642	2.73		Clay	81.0			12.65	1.05	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	14.150	0.285	2052.0	1746.5	15.029	2.172	2.77		Clay	84.7			13.37	1.05	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	14.610	0.364	2072.5	1756.8	15.453	2.682	2.81		Clay	88.1			13.81	1.05	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	14.590	0.391	2093.0	1767.0	15.329	2.887	2.84		Clay	89.9			13.79	1.05	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	14.470	0.395	2113.5	1777.3	15.094	2.945	2.85		Clay	90.7			13.68	1.05	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	14.670	0.409	2134.0	1787.6	15.220	3.007	2.85		Clay	90.9			13.87	1.05	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	15.130	0.448	2154.6	1797.9	15.632	3.188	2.85		Clay	91.4			14.30	1.04	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	15.890	0.477	2175.1	1808.2	16.373	3.222	2.84		Clay	90.3			15.02	1.04	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	16.160	0.496	2195.6	1818.4	16.566	3.293	2.84		Clay	90.5			15.27	1.04	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	16.350	0.501	2216.1	1828.7	16.670	3.287	2.84		Clay	90.3			15.45	1.04	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	15.890	0.481	2236.6	1838.9	16.065	3.256	2.85		Clay	91.1			15.02	1.04	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	15.080	0.481	2257.1	1849.2	15.089	3.448	2.89		Clay	94.0			14.25	1.04	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	14.540	0.446	2277.6	1859.5	14.414	3.328	2.89		Clay	94.5			13.74	1.03	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	13.970	0.456	2298.1	1869.7	13.714	3.557	2.93		Clay	97.3			13.20	1.03	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	13.420	0.443	2318.6	1880.0	13.043	3.613	2.95		Clay	99.0			12.68	1.03	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	13.160	0.444	2339.1	1890.3	12.686	3.703	2.97		Clay	100.0			12.44	1.03	n.a.	n.a.	0.95	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	12.670	0.438	2359.6	1900.5	12.091	3.812	2.99		Clay	100.0			11.98	1.03	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	13.000	0.405	2380.1	1910.8	12.361	3.429	2.96		Clay	99.4			12.29	1.03	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	13.090	0.397	2400.6	1921.1	12.378	3.339	2.95		Clay	98.9			12.37	1.03	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	14.010	0.384	2421.1	1931.3	13.254	3.000	2.90		Clay	94.7			13.24	1.02	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	15.470	0.391	2441.6	1941.6	14.678	2.744	2.84		Clay	90.1			14.62	1.02	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	15.870	0.396	2462.1	1951.9	15.000	2.705	2.83		Clay	89.2			15.00	1.02	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	15.770	0.398	2482.6	1962.1	14.809	2.739	2.83		Clay	89.8			14.91	1.02	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	15.700	0.358	2503.1	1972.4	14.651	2.478	2.81		Clay	88.1			14.84	1.02	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	15.910	0.364	2523.6	1982.7	14.776	2.485	2.81		Clay	87.9			15.04	1.02	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	17.590	0.366	2544.1	1992.9	16.376	2.243	2.75		Clay	82.9			16.63	1.02	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	18.680	0.430	2564.6	2003.2	17.370	2.472	2.75		Clay	83.2			17.66	1.01	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	18.140	0.430	2585.1	2013.5	16.735	2.552	2.77		Clay	84.9			17.15	1.01	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	19.090	0.382	2605.6	2023.7	17.578	2.148	2.71		Clay	80.0			18.04	1.01	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	20.780	0.370	2626.3	2034.1	19.141	1.901	2.65		Clay	75.2			19.64	1.01	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	21.230	0.409	2646.8	2044.3	19.475	2.055	2.67		Clay	76.2			20.07	1.01	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	20.550	0.454	2667.3	2054.6	18.706	2.363	2.71		Clay	80.2			19.42	1.01	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	17.260	0.467	2687.8	2064.9	15.416	2.934	2.84		Clay	90.1			16.31	1.01	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	13.930	0.555	2708.3	2075.1	12.121	4.413	3.03		Clay	100.0			13.17	1.01	n.a.	n.a.	0.93	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	10.640	0.468	2728.8	2085.4	8.896	5.045	3.17		Clay	100.0			10.06	1.00	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	13.930	0.397	2749.3	2095.7	11.982	3.162	2.95		Clay	98.7			13.17	1.00	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	23.380	0.399	2769.8	2105.9	20.889	1.814	2.61		Clay	71.8			22.10	1.00	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	31.290	0.603	2790.3	2116.2	28.255	2.017	2.53		Sand	65.4			29.57	1.00	29.57	87.87	0.93	0.720	1.000	0.123	0.149	0.21	0.04	0.04
22.966	30.660	0.777	2810.8	2126.5	27.515	2.656	2.61		Clay	72.0			28.98	1.00	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	27.880	0.761	2831.3	2136.7	24.771	2.876	2.67		Clay	76.6			26.35	1.00	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	27.230	0.763	2851.8	2147.0	24.037	2.957	2.69		Clay	78.0			25.74	1.00	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	26.670	0.716	2872.3	2157.3	23.394	2.837	2.69		Clay	77.8			25.21	0.99	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	23.890	0.720	2892.8	2167.5	20.709	3.208	2.76		Clay	83.8			22.58	0.99	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	22.920	0.651	2913.3	2177.8	19.711	3.033	2.76		Clay	84.0			21.66	0.99	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	26.240	0.606	2933.8	2188.1	22.644	2.446	2.66		Clay	75.6			24.80	0.99	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	25.830	0.618	2954.3	2198.3	22.156	2.538	2.67		Clay	77.0			24.41	0.99	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	24.880	0.638	2974.8	2208.6	21.183	2.727	2.71		Clay	79.7			23.52	0.99	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	23.080	0.586	2995.3	2218.9	19.453	2.715	2.74		Clay	82.0			21.81	0.99	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	18.800	0.602	3015.8	2229.1	15.515	3.481	2.88		Clay	93.5			17.77	0.99	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	16.850	0.578	3036.3	2239.4	13.693	3.770	2.94		Clay	98.6			15.93	0.99	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	15.880	0.504	3056.8	2249.7	12.759	3.512	2.95		Clay	99.1			15.01	0.98	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	15.410	0.497	3077.3	2259.9	12.276	3.583	2.97		Clay	100.0			14.57	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	15.390	0.537	3097.8	2270.2	12.194	3.880	2.99		Clay	100.0			14.55	0.98	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	14.620	0.461	3118.4	2280.5	11.454	3.530	2.99		Clay	100.0			13.82	0.98	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	12.440	0.417	3138.9	2290.8	9.491	3.836	3.08		Clay	100.0			11.76	0.98	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	10.500	0.373	3159.4	2301.1	7.753	4.181	3.17		Clay	100.0			9.92	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	8.520	0.381	3179.9	2311.3	5.997	5.498	3.33		Clay	100.0			8.05	0.98	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	6.850	0.328	3200.4	2321.6	4.523	6.248	3.46		Clay	100.0			6.47	0.98	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	8.140	0.377	3220.9	2331.9	5.600	5.774	3.37		Clay	100.0			7.69	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	11.330	0.422	3241.4	2342.1	8.291	4.346	3.16		Clay	100.0			10.71	0.97	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	13.770	0.406	3261.9	2352.4	10.321	3.345	3.01		Clay	100.0			13.02	0.97	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	18.620	0.489	3282.4	2362.7	14.373	2.880	2.86		Clay	91.6			17.60	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	20.110	0.528	3302.9	2372.9	15.558	2.860	2.83		Clay	89.3			19.01	0.97	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	24.120	0.505	3323.4	2383.2	18.847	2.249	2.70		Clay	79.0			22.80	0.97	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	12

PGA (A_{max})	0.85

Total Settlement:	0.72	(Inches)

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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)
27.231	30.020	0.640	3343.9	2393.5	23.688	2.258	2.62		Clay	72.6			28.37	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	31.440	0.732	3364.4	2403.7	24.760	2.460	2.63		Clay	73.2			29.72	0.97	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	29.840	0.851	3384.9	2414.0	23.320	3.023	2.70		Clay	79.3			28.20	0.97	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	27.740	0.909	3405.4	2424.3	21.481	3.491	2.77		Clay	84.7			26.22	0.96	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	26.520	0.853	3425.9	2434.5	20.379	3.439	2.78		Clay	85.8			25.07	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	33.760	0.987	3446.4	2444.8	26.208	3.081	2.67		Clay	76.6			31.91	0.96	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	39.950	0.962	3466.9	2455.1	33.535	2.517	2.53		Sand	65.5			37.76	0.93	35.01	94.89	0.91	0.745	0.985	0.131	0.160	0.21	0.03	0.03
28.379	32.350	0.940	3487.4	2465.3	24.829	3.071	2.69		Clay	78.0			30.58	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	26.200	0.811	3507.9	2475.6	19.750	3.318	2.79		Clay	85.8			24.76	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	24.060	0.672	3528.4	2485.9	17.938	3.014	2.79		Clay	86.4			22.74	0.96	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	22.460	0.650	3548.9	2496.1	16.574	3.142	2.83		Clay	89.5			21.23	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	21.870	0.635	3569.4	2506.4	16.027	3.162	2.84		Clay	90.5			20.67	0.96	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	19.050	0.476	3589.9	2516.7	13.713	2.759	2.86		Clay	92.1			18.01	0.96	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	17.470	0.401	3610.5	2527.0	12.398	2.560	2.88		Clay	93.5			16.51	0.95	n.a.	n.a.	0.90	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	18.650	0.401	3631.0	2537.3	13.270	2.382	2.84		Clay	90.1			17.63	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	21.650	0.429	3651.5	2547.5	15.564	2.164	2.76		Clay	83.7			20.46	0.95	n.a.	n.a.	0.90	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	23.210	0.481	3672.0	2557.8	16.713	2.250	2.74		Clay	82.4			21.94	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	23.340	0.547	3692.5	2568.1	16.739	2.545	2.77		Clay	84.8			22.06	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	24.650	0.602	3713.0	2578.3	17.681	2.641	2.76		Clay	84.1			23.30	0.95	n.a.	n.a.	0.90	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	24.310	0.663	3733.5	2588.6	17.340	2.954	2.80		Clay	86.9			22.98	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	25.640	0.755	3754.0	2598.9	18.287	3.177	2.80		Clay	87.0			24.23	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	29.190	0.740	3774.5	2609.1	20.929	2.710	2.71		Clay	79.9			27.59	0.95	n.a.	n.a.	0.90	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	28.730	0.767	3795.0	2619.4	20.488	2.858	2.73		Clay	81.6			27.16	0.95	n.a.	n.a.	0.90	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	25.150	0.791	3815.5	2629.7	17.677	3.403	2.83		Clay	89.4			23.77	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	22.270	0.672	3836.0	2639.9	15.419	3.302	2.87		Clay	92.5			21.05	0.94	n.a.	n.a.	0.89	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	19.420	0.525	3856.5	2650.2	13.200	3.001	2.90		Clay	94.9			18.36	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	16.330	0.399	3877.0	2660.4	10.819	2.772	2.95		Clay	98.9			15.43	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	13.700	0.332	3897.5	2670.7	8.800	2.825	3.03		Clay	100.0			12.95	0.94	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	11.550	0.292	3918.0	2681.0	7.155	3.045	3.12		Clay	100.0			10.92	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	10.350	0.270	3938.5	2691.2	6.228	3.222	3.19		Clay	100.0			9.78	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	11.110	0.399	3959.0	2701.5	6.760	4.370	3.23		Clay	100.0			10.50	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	20.310	0.513	3979.5	2711.8	13.512	2.800	2.87		Clay	92.8			19.20	0.94	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	24.630	0.406	4000.0	2722.0	16.627	1.794	2.69		Clay	78.1			23.28	0.94	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	19.550	0.363	4020.5	2732.3	12.839	2.070	2.82		Clay	88.4			18.48	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	17.180	0.560	4041.0	2742.6	11.055	3.694	3.01		Clay	100.0			16.24	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	25.800	0.624	4061.5	2752.8	17.269	2.625	2.77		Clay	84.6			24.39	0.93	n.a.	n.a.	0.89	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	29.290	0.586	4082.0	2763.1	19.723	2.151	2.67		Clay	76.8			27.68	0.93	n.a.	n.a.	0.89	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	24.670	0.531	4102.6	2773.4	16.311	2.348	2.76		Clay	83.9			23.32	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	25.330	0.552	4123.1	2783.7	16.718	2.372	2.76		Clay	83.4			23.94	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	24.780	0.312	4143.6	2794.0	16.255	1.374	2.64		Clay	73.9			23.42	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	16.660	0.196	4164.1	2804.2	10.397	1.344	2.80		Clay	86.9			15.75	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	15.180	0.232	4184.6	2814.5	9.300	1.773	2.90		Clay	95.1			14.35	0.93	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	17.520	0.254	4205.1	2824.8	10.916	1.647	2.82		Clay	89.0			16.56	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	19.990	0.300	4225.6	2835.0	12.612	1.678	2.78		Clay	85.0			18.89	0.93	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	21.050	0.383	4246.1	2845.3	13.304	2.024	2.80		Clay	86.9			19.90	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	21.350	0.413	4266.6	2855.6	13.459	2.149	2.81		Clay	87.7			20.18	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	21.950	0.420	4287.1	2865.8	13.822	2.121	2.80		Clay	86.7			20.75	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	22.300	0.441	4307.6	2876.1	14.009	2.189	2.80		Clay	86.9			21.08	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	22.800	0.440	4328.1	2886.4	14.299	2.132	2.79		Clay	85.8			21.55	0.92	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	23.490	0.406	4348.6	2896.6	14.718	1.905	2.75		Clay	82.8			22.20	0.92	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	23.720	0.441	4369.1	2906.9	14.817	2.048	2.76		Clay	84.0			22.42	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	25.380	0.530	4389.6	2917.2	15.896	2.286	2.76		Clay	84.1			23.99	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	23.740	0.512	4410.1	2927.4	14.712	2.378	2.80		Clay	87.1			22.44	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	23.470	0.614	4430.6	2937.7	14.470	2.889	2.86		Clay	91.5			22.18	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	20.720	0.608	4451.1	2948.0	12.547	3.287	2.94		Clay	98.2			19.58	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	17.390	0.536	4471.6	2958.2	10.245	3.537	3.03		Clay	100.0			16.44	0.92	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	14.730	0.409	4492.1	2968.5	8.411	3.276	3.08		Clay	100.0			13.92	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	13.050	0.273	4512.6	2978.8	7.247	2.529	3.07		Clay	100.0			12.33	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	11.870	0.288	4533.1	2989.0	6.426	2.999	3.16		Clay	100.0			11.22	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	12.950	0.300	4553.6	2999.3	7.117	2.811	3.10		Clay	100.0			12.24	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	16.480	0.350	4574.1	3009.6	9.432	2.466	2.97		Clay	100.0			15.58	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	20.590	0.477	4594.8	3019.9	12.115	2.608	2.89		Clay	94.5			19.46	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	25.080	0.617	4615.3	3030.2	15.030	2.709	2.83		Clay	89.1			23.71	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	27.910	0.714	4635.8	3040.4	16.835	2.790	2.79		Clay	86.6			26.38	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	29.110	0.793	4656.3	3050.7	17.558	2.961	2.80		Clay	86.6			27.51	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	29.250	0.826	4676.8	3061.0	17.584	3.069	2.80		Clay	87.3			27.65	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	28.220	0.791	4697.3	3071.2	16.848	3.057	2.82		Clay	88.4			26.67	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 12

PGA (A_{max}) 0.85

Total Settlement: 0.72 (Inches)

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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)
38.222	27.370	0.766	4717.8	3081.5	16.233	3.063	2.83		Clay	89.5			25.87	0.91	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	26.690	0.737	4738.3	3091.8	15.733	3.030	2.84		Clay	90.2			25.23	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	25.320	0.699	4758.8	3102.0	14.791	3.047	2.86		Clay	92.0			23.93	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	25.170	0.755	4779.3	3112.3	14.639	3.314	2.89		Clay	94.0			23.79	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	24.740	0.695	4799.8	3122.6	14.309	3.111	2.88		Clay	93.3			23.38	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	23.910	0.646	4820.3	3132.8	13.726	3.005	2.88		Clay	93.8			22.60	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	22.960	0.585	4840.8	3143.1	13.070	2.848	2.89		Clay	94.1			21.70	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	19.730	0.533	4861.3	3153.4	10.972	3.081	2.97		Clay	100.0			18.65	0.90	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	17.520	0.520	4881.8	3163.6	9.533	3.448	3.05		Clay	100.0			16.56	0.90	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	15.630	0.493	4902.3	3173.9	8.305	3.741	3.12		Clay	100.0			14.77	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	13.220	0.445	4922.8	3184.2	6.758	4.136	3.22		Clay	100.0			12.50	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	12.180	0.390	4943.3	3194.4	6.078	4.017	3.25		Clay	100.0			11.51	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	11.010	0.324	4963.8	3204.7	5.322	3.799	3.28		Clay	100.0			10.41	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	9.980	0.264	4984.3	3215.0	4.658	3.526	3.31		Clay	100.0			9.43	0.90	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	10.300	0.243	5004.8	3225.2	4.835	3.116	3.27		Clay	100.0			9.74	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	10.100	0.217	5025.3	3235.5	4.690	2.860	3.26		Clay	100.0			9.55	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	10.140	0.211	5045.8	3245.8	4.694	2.770	3.26		Clay	100.0			9.58	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	10.030	0.200	5066.4	3256.1	4.605	2.668	3.25		Clay	100.0			9.48	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	11.180	0.201	5086.9	3266.4	5.288	2.327	3.17		Clay	100.0			10.57	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	13.410	0.212	5107.4	3276.6	6.627	1.953	3.05		Clay	100.0			12.67	0.89	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	13.810	0.249	5127.9	3286.9	6.843	2.214	3.06		Clay	100.0			13.05	0.89	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	14.710	0.254	5148.4	3297.2	7.361	2.093	3.02		Clay	100.0			13.90	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	14.030	0.201	5168.9	3307.4	6.921	1.756	3.01		Clay	100.0			13.26	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	13.240	0.237	5189.4	3317.7	6.417	2.226	3.09		Clay	100.0			12.51	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	14.640	0.305	5209.9	3328.0	7.233	2.534	3.07		Clay	100.0			13.84	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	13.640	0.321	5230.4	3338.2	6.605	2.912	3.14		Clay	100.0			12.89	0.89	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	11.900	0.327	5250.9	3348.5	5.540	3.526	3.25		Clay	100.0			11.25	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	11.940	0.268	5271.4	3358.8	5.540	2.880	3.20		Clay	100.0			11.29	0.89	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	12.790	0.232	5291.9	3369.0	6.022	2.287	3.12		Clay	100.0			12.09	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	12.650	0.213	5312.4	3379.3	5.915	2.131	3.11		Clay	100.0			11.96	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	11.720	0.197	5332.9	3389.6	5.342	2.176	3.15		Clay	100.0			11.08	0.88	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	11.450	0.140	5353.4	3399.8	5.161	1.596	3.10		Clay	100.0			10.82	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	13.260	0.221	5373.9	3410.1	6.201	2.090	3.09		Clay	100.0			12.53	0.88	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	16.170	0.284	5394.4	3420.4	7.878	2.108	3.00		Clay	100.0			15.28	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	20.560	0.315	5414.9	3430.6	10.408	1.764	2.86		Clay	91.6			19.43	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	24.490	0.346	5435.4	3440.9	12.655	1.589	2.76		Clay	83.9			23.15	0.88	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	24.940	0.352	5455.9	3451.2	12.872	1.585	2.75		Clay	83.4			23.57	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	25.040	0.341	5476.4	3461.4	12.886	1.529	2.75		Clay	82.7			23.67	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	24.930	0.339	5496.9	3471.7	12.779	1.528	2.75		Clay	82.9			23.56	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	21.250	0.349	5517.4	3481.9	10.621	1.887	2.87		Clay	92.2			20.09	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	18.840	0.393	5537.9	3492.2	9.204	2.445	2.98		Clay	100.0			17.81	0.88	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	16.620	0.408	5558.5	3502.5	7.903	2.948	3.08		Clay	100.0			15.71	0.88	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	13.420	0.350	5579.0	3512.8	6.052	3.292	3.20		Clay	100.0			12.68	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	11.490	0.294	5599.5	3523.1	4.933	3.383	3.28		Clay	100.0			10.86	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	11.050	0.288	5620.0	3533.3	4.664	3.495	3.31		Clay	100.0			10.44	0.87	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	12.010	0.299	5640.5	3543.6	5.187	3.254	3.25		Clay	100.0			11.35	0.87	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	19.240	0.457	5661.0	3553.9	9.235	2.785	3.01		Clay	100.0			18.19	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	22.270	0.650	5681.5	3564.1	10.903	3.345	2.99		Clay	100.0			21.05	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	25.400	0.833	5702.0	3574.4	12.617	3.694	2.97		Clay	100.0			24.01	0.87	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	25.440	0.892	5722.5	3584.7	12.597	3.951	2.99		Clay	100.0			24.05	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	24.610	0.923	5743.0	3594.9	12.094	4.246	3.02		Clay	100.0			23.26	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	22.320	0.892	5763.5	3605.2	10.783	4.589	3.08		Clay	100.0			21.10	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	20.530	0.805	5784.0	3615.5	9.757	4.564	3.11		Clay	100.0			19.40	0.87	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	18.570	0.751	5804.5	3625.7	8.643	4.793	3.17		Clay	100.0			17.55	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	17.920	0.737	5825.0	3636.0	8.255	4.911	3.19		Clay	100.0			16.94	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	17.900	0.686	5845.5	3646.3	8.215	4.580	3.17		Clay	100.0			16.92	0.87	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	15.830	0.572	5866.0	3656.5	7.054	4.435	3.22		Clay	100.0			14.96	0.87	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	15.500	0.436	5886.5	3666.8	6.849	3.472	3.17		Clay	100.0			14.65	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	15.170	0.390	5907.0	3677.1	6.645	3.192	3.16		Clay	100.0			14.34	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	16.930	0.380	5927.5	3687.3	7.575	2.721	3.07		Clay	100.0			16.00	0.86	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	18.280	0.358	5948.0	3697.6	8.279	2.339	3.01		Clay	100.0			17.28	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	18.000	0.486	5968.5	3707.9	8.099	3.237	3.09		Clay	100.0			17.01	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	27.900	0.483	5989.0	3718.1	13.397	1.939	2.79		Clay	85.9			26.37	0.86	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	33.730	0.811	6009.5	3728.4	16.482	2.640	2.79		Clay	86.0			31.88	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	35.270	0.802	6030.0	3738.7	17.255	2.486	2.76		Clay	83.5			33.34	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	30.460	0.911	6050.6	3749.0	14.636	3.321	2.89		Clay	94.1			28.79	0.86	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	32.990	1.114	6071.1	3759.3	15.936	3.719	2.89		Clay	94.1			31.18	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 12

PGA (A_{max}) 0.85

Total Settlement: 0.72 (Inches)

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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)
49.213	41.600	1.261	6091.6	3769.5	20.456	3.271	2.77		Clay	84.6			39.32	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	40.310	1.170	6112.1	3779.8	19.712	3.141	2.77		Clay	84.7			38.10	0.86	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	33.120	1.107	6132.6	3790.1	15.859	3.683	2.89		Clay	94.1			31.30	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	31.340	0.850	6153.1	3800.3	14.874	3.007	2.86		Clay	91.6			29.62	0.86	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	29.230	0.520	6173.6	3810.6	13.721	1.989	2.78		Clay	85.7			27.63	0.86	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	19.500	0.370	6194.1	3820.9	8.586	2.256	2.98		Clay	100.0			18.43	0.86	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160	479.490	0.929	19.2	19.2	4757.649	0.194	0.55		Unsaturated	0.0			453.20	1.70	770.45	770.45	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.330	310.280	1.393	39.6	39.6	2143.634	0.449	0.88		Unsaturated	0.0			293.27	1.70	498.56	498.56	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.490	185.880	1.759	58.8	58.8	1053.774	0.946	1.28		Unsaturated	0.0			175.69	1.70	298.67	298.67	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.660	140.100	2.138	79.2	79.2	684.266	1.526	1.54		Unsaturated	0.0			132.42	1.70	225.11	225.11	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.820	114.710	2.256	98.4	98.4	502.562	1.967	1.70		Unsaturated	0.0			108.42	1.70	184.32	184.32	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	80.000	1.962	117.6	117.6	320.508	2.454	1.88		Unsaturated	13.1			75.61	1.70	128.54	147.49	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	44.890	1.767	138.0	138.0	165.888	3.943	2.20		Unsaturated	39.4			42.43	1.70	72.13	130.99	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	36.740	1.445	157.2	157.2	127.132	3.943	2.27		Unsaturated	44.8			34.73	1.70	59.03	118.12	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	29.510	1.197	177.6	177.6	95.987	4.070	2.36		Unsaturated	51.6			27.89	1.70	47.42	106.65	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	27.010	0.958	196.8	196.8	83.406	3.559	2.35		Unsaturated	51.2			25.53	1.70	43.40	101.39	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	25.560	0.962	216.0	216.0	75.295	3.780	2.40		Unsaturated	55.2			24.16	1.70	41.07	99.84	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	25.270	1.033	236.4	236.4	71.124	4.105	2.45		Unsaturated	58.6			23.88	1.70	40.60	100.31	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	25.350	1.280	255.6	255.6	68.592	5.073	2.53		Unsaturated	65.0			23.96	1.70	40.73	102.14	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	26.020	1.392	276.0	276.0	67.735	5.380	2.55		Unsaturated	66.8			24.59	1.70	41.81	103.94	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	26.750	1.528	295.2	295.2	67.319	5.745	2.57		Unsaturated	68.7			25.28	1.70	42.98	105.86	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	27.540	1.581	314.4	314.4	67.144	5.773	2.57		Unsaturated	68.9			26.03	1.70	44.25	107.54	1.00	0.553	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	28.620	1.567	334.8	334.8	67.609	5.507	2.56		Unsaturated	67.5			27.05	1.70	45.99	109.47	1.00	0.552	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	27.950	1.593	354.0	354.0	64.179	5.737	2.58		Unsaturated	69.8			26.42	1.70	44.91	108.56	1.00	0.552	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	26.850	1.587	374.4	374.4	84.712	5.951	2.52		Unsaturated	64.7			25.38	1.70	43.14	105.16	1.00	0.552	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	26.580	1.640	393.6	393.6	80.940	6.215	2.55		Unsaturated	66.9			25.12	1.70	42.71	105.10	1.00	0.552	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	26.360	1.665	412.8	412.8	77.605	6.367	2.57		Unsaturated	68.4			24.91	1.70	42.36	104.98	1.00	0.552	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	26.960	1.694	433.2	433.2	76.720	6.333	2.57		Unsaturated	68.5			25.48	1.70	43.32	106.25	1.00	0.551	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	27.520	1.775	452.4	452.4	75.958	6.505	2.58		Unsaturated	69.5			26.01	1.70	44.22	107.61	1.00	0.551	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	28.180	1.878	472.8	472.8	75.402	6.720	2.59		Unsaturated	70.5			26.64	1.70	45.28	109.19	1.00	0.551	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	28.940	2.044	492.0	492.0	75.299	7.123	2.61		Unsaturated	72.1			27.35	1.70	46.50	111.09	1.00	0.551	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	28.790	2.163	512.4	512.4	72.779	7.580	2.64		Unsaturated	74.6			27.21	1.70	46.26	111.23	1.00	0.550	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	28.060	2.239	531.6	531.6	69.091	8.055	2.68		Unsaturated	77.3			26.52	1.70	45.09	110.18	1.00	0.550	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	28.400	2.093	550.8	550.8	68.197	7.442	2.66		Unsaturated	75.5			26.84	1.70	45.63	110.57	1.00	0.550	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	29.600	2.138	571.2	571.2	69.295	7.292	2.64		Unsaturated	74.6			27.98	1.70	47.56	112.91	0.99	0.550	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	32.040	2.035	590.4	590.4	73.324	6.411	2.59		Unsaturated	69.8			30.28	1.70	51.48	117.06	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	33.360	1.764	610.8	610.8	58.151	5.335	2.59		Unsaturated	70.1			31.53	1.70	53.60	119.85	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	38.650	1.452	630.0	630.0	66.404	3.787	2.44		Unsaturated	58.1			36.53	1.70	62.10	127.64	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	41.740	1.161	649.2	649.2	70.672	2.803	2.33		Unsaturated	49.0			39.45	1.68	66.28	129.39	0.99	0.549	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	45.990	0.963	669.6	669.6	76.710	2.110	2.21		Unsaturated	40.0			43.47	1.65	71.79	131.06	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	48.560	0.964	688.8	688.8	79.875	1.999	2.18		Unsaturated	37.7			45.90	1.63	74.61	132.78	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	48.210	1.042	709.2	709.2	78.130	2.177	2.22		Unsaturated	40.3			45.57	1.60	73.12	132.93	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	48.460	1.011	728.4	728.4	77.481	2.102	2.21		Unsaturated	39.7			45.80	1.59	72.78	132.04	0.99	0.548	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	62.280	0.943	747.6	747.6	98.440	1.523	2.04		Unsaturated	26.0			58.87	1.55	91.29	139.06	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	75.100	0.746	768.0	768.0	117.221	0.998	1.86		Unsaturated	11.6			70.98	1.57	111.77	124.61	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	93.330	0.718	787.2	787.2	144.018	0.773	1.72		Unsaturated	0.4			88.21	1.53	134.85	134.85	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	95.520	0.662	807.6	807.6	145.522	0.695	1.68		Unsaturated	0.0			90.28	1.51	136.19	136.19	0.99	0.547	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	93.010	0.612	826.8	826.8	140.013	0.661	1.68		Unsaturated	0.0			87.91	1.50	132.18	132.18	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.050	95.230	0.624	846.0	846.0	141.719	0.658	1.68		Unsaturated	0.0			90.01	1.48	133.66	133.66	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.220	89.550	0.544	866.4	866.4	131.635	0.610	1.68		Unsaturated	0.0			84.64	1.49	125.98	125.98	0.99	0.546	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.380	74.930	0.502	885.6	885.6	108.827	0.674	1.78		Unsaturated	5.1			70.82	1.52	107.69	107.87	0.99	0.546	1.099	n.a.	n.a.	n.a.	0.00	0.00
7.550	71.480	0.540	906.0	906.0	102.596	0.760	1.83		Unsaturated	9.2			67.56	1.51	101.71	107.38	0.99	0.545	1.096	n.a.	n.a.	n.a.	0.00	0.00
7.710	71.040	0.504	925.2	925.2	100.883	0.715	1.82		Unsaturated	8.4			67.15	1.50	100.58	104.44	0.99	0.545	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.870	62.650	0.476	944.4	944.4	87.969	0.766	1.88		Unsaturated	13.7			59.22	1.48	87.63	105.66	0.99	0.545	1.090	n.a.	n.a.	n.a.	0.00	0.00
8.040	50.400	0.505	964.8	964.8	69.873	1.012	2.04		Unsaturated	25.9			47.64	1.45	68.98	112.58	0.99	0.544	1.092	n.a.	n.a.	n.a.	0.00	0.00
8.200	42.400	0.710	984.0	984.0	58.086	1.695	2.24		Unsaturated	42.1			40.08	1.43	57.33	114.43	0.98	0.544	1.091	n.a.	n.a.	n.a.	0.00	0.00
8.370	32.790	0.891	1004.4	1004.4	44.295	2.758	2.47		Unsaturated	60.3			30.99	1.44	44.50	105.78	0.98	0.544	1.083	n.a.	n.a.	n.a.	0.00	0.00
8.530	25.210	0.887	1023.6	1023.6	38.811	3.592	2.59		Unsaturated	69.9			23.83	1.45	34.49	95.14	0.98	0.544	1.074	n.a.	n.a.	n.a.	0.00	0.00
8.690	23.610	0.765	1042.8	1042.8	35.812	3.312	2.59		Unsaturated	70.1			22.32	1.44	32.15	92.15	0.98	0.543	1.071	n.a.	n.a.	n.a.	0.00	0.00
8.860	26.600	0.643	1063.2	1063.2	34.760	2.468	2.51		Unsaturated	64.1			25.14	1.42	35.68	95.43	0.98	0.543	1.071	n.a.	n.a.	n.a.	0.00	0.00
9.020	26.500	0.668	1082.4	1082.4	34.305	2.574	2.53		Unsaturated	65.4			25.05	1.41	35.23	95.16	0.98	0.543	1.069	n.a.	n.a.	n.a.	0.00	0.00
9.190	22.330	0.778	1102.8	1102.8	32.483	3.573	2.64		Unsaturated	74.3			21.11	1.41	29.66	89.68	0.98	0.542	1.064	n.a.	n.a.	n.a.	0.00	0.00
9.350	22.120	0.674	1122.0	1122.0	31.769	3.127	2.61		Unsaturated	71.8			20.91	1.39	29.16	88.61	0.98	0.542	1.062	n.a.	n.a.	n.a.	0.00	0.00
9.510	24.270	0.649	1141.2	1141.2	30.502	2.739	2.59		Unsaturated	69.9			22.94	1.38	31.58	91.39	0.98	0.542	1.061	n.a.	n.a.	n.a.	0.00	0.00
9.680	37.640	0.644	1161.6	1161.6	47.276	1.737	2.31		Unsaturated	48.1			35.58	1.34	47.63	105.43	0.98	0.542	1.067	n.a.	n.a.	n.a.	0.00	0.00
9.840	49.620	0.699	1180.8	1180.8	62.036	1.425	2.17		Unsaturated	36.5			46.90	1.31	61.53	115.62	0.98	0.541	1.070	n.a.	n.a.	n.a.	0.00	0.00
10.010	51.820	0.701	1201.2	1201.2	64.254	1.369	2.15		Sand	34.6			48.98	1.30	63.67	116.67	0.98	0.541	1.069	0.164	0.239	0.44	0.03	0.04
10.170	46.190	0.758	1220.4	1220.4	56.727	1.663	2.24		Sand	42.3	48.98		48.98	1.28	62.88	121.47	0.98	0.545	1.069	0.175	0.261	0.48	0.03	0.04
10.330	43.830	0.776	1239.6	1239.6	53.360	1.796	2.28		Sand	45.6	48.98		48.98	1.27	62.35	122.74	0.98	0.550	1.068	0.178	0.267	0.49	0.03	0.04
10.500	40.030	0.765	1260.0	1260.0	48.260	1.942	2.34		Sand	50.0	48.98		48.98	1.26	61.81	124.20	0.98	0.554	1.067	0.181	0.274	0.50	0.03	0.04
10.660	34.460	0.799	1279.2	1279.2	41.113	2.363	2.45		Sand	58.7	48.98		48.98	1.25	61.24	126.73	0.98	0.558	1.066	0.188	0.288	0.52	0.03	0.04
10.830	29.440	0.829	1299.6	1299.6	34.723	2.878	2.56		Sand	67.6	48.98		48.98	1.24	60.72	128.48	0.98	0.562	1.065	0.193	0.299	0.53	0.02	0.04
10.990	23.780	0.811	1318.8	1318.8	35.063	3.506	2.61		Clay	71.9			22.48	1.13	n.a.	n.a.	0.98	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	18.210	0.742	1338.0	1338.0	26.220	4.228	2.76		Clay	83.8			17.21	1.13	n.a.	n.a.	0.98	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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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)
11.320	19.060	0.661	1358.4	1358.4	27.062	3.596	2.70		Clay	79.2			18.02	1.12	n.a.	n.a.	0.97	0.573	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	20.270	0.626	1377.6	1377.6	28.428	3.196	2.65		Clay	75.3			19.16	1.12	n.a.	n.a.	0.97	0.577	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	26.230	0.681	1398.0	1398.0	29.688	2.666	2.59		Sand	70.1			24.79	1.24	30.76	90.35	0.97	0.581	1.041	0.126	0.159	0.27	0.04	0.05
11.810	17.550	0.437	1417.2	1417.2	23.767	2.593	2.66		Clay	75.5			16.59	1.11	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	11.260	0.423	1437.6	1437.6	14.665	4.011	2.94		Clay	98.0			10.64	1.11	n.a.	n.a.	0.97	0.588	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	9.600	0.411	1456.8	1456.8	12.180	4.633	3.04		Clay	100.0			9.07	1.10	n.a.	n.a.	0.97	0.591	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	15.280	0.464	1476.0	1476.0	19.705	3.188	2.78		Clay	85.0			14.44	1.10	n.a.	n.a.	0.97	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	16.640	0.400	1496.4	1496.4	21.240	2.515	2.69		Clay	77.9			15.73	1.10	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	9.680	0.335	1515.6	1515.6	11.774	3.754	3.00		Clay	100.0			9.15	1.09	n.a.	n.a.	0.97	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	8.000	0.387	1536.0	1536.0	9.417	5.357	3.17		Clay	100.0			7.56	1.09	n.a.	n.a.	0.97	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	11.270	0.376	1555.2	1555.2	13.493	3.583	2.94		Clay	97.9			10.65	1.08	n.a.	n.a.	0.97	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	11.310	0.306	1574.4	1574.4	13.367	2.910	2.89		Clay	93.9			10.69	1.08	n.a.	n.a.	0.97	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	7.370	0.228	1594.8	1594.8	8.243	3.472	3.10		Clay	100.0			6.97	1.08	n.a.	n.a.	0.97	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	6.610	0.234	1614.0	1614.0	7.191	4.031	3.19		Clay	100.0			6.25	1.07	n.a.	n.a.	0.97	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	6.550	0.255	1634.4	1634.4	7.015	4.439	3.22		Clay	100.0			6.19	1.07	n.a.	n.a.	0.97	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	6.830	0.264	1653.6	1653.6	7.261	4.403	3.21		Clay	100.0			6.46	1.07	n.a.	n.a.	0.97	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	6.540	0.259	1672.8	1672.8	6.819	4.534	3.24		Clay	100.0			6.18	1.06	n.a.	n.a.	0.97	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	6.400	0.235	1693.2	1693.2	6.560	4.237	3.23		Clay	100.0			6.05	1.06	n.a.	n.a.	0.97	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	6.250	0.210	1712.4	1712.4	6.300	3.899	3.23		Clay	100.0			5.91	1.06	n.a.	n.a.	0.96	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	6.130	0.204	1732.8	1732.8	6.075	3.874	3.24		Clay	100.0			5.79	1.05	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	6.090	0.161	1752.0	1752.0	5.952	3.078	3.19		Clay	100.0			5.76	1.05	n.a.	n.a.	0.96	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	5.900	0.167	1771.2	1771.2	5.662	3.328	3.23		Clay	100.0			5.58	1.05	n.a.	n.a.	0.96	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	5.540	0.168	1791.6	1791.6	5.184	3.613	3.28		Clay	100.0			5.24	1.04	n.a.	n.a.	0.96	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	5.720	0.156	1811.3	1805.6	5.333	3.242	3.24		Clay	100.0			5.41	1.04	n.a.	n.a.	0.96	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	5.610	0.139	1832.5	1816.3	5.169	2.966	3.23		Clay	100.0			5.30	1.04	n.a.	n.a.	0.96	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	5.310	0.118	1852.5	1826.3	4.801	2.683	3.24		Clay	100.0			5.02	1.04	n.a.	n.a.	0.96	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	5.300	0.109	1872.5	1836.3	4.753	2.493	3.23		Clay	100.0			5.01	1.04	n.a.	n.a.	0.96	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	5.590	0.113	1893.8	1847.0	5.028	2.436	3.20		Clay	100.0			5.28	1.04	n.a.	n.a.	0.96	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	6.330	0.109	1913.8	1857.0	5.787	2.021	3.11		Clay	100.0			5.98	1.04	n.a.	n.a.	0.96	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	6.310	0.107	1935.0	1867.6	5.721	2.007	3.11		Clay	100.0			5.96	1.03	n.a.	n.a.	0.96	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	6.000	0.106	1955.0	1877.6	5.350	2.111	3.15		Clay	100.0			5.67	1.03	n.a.	n.a.	0.96	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	6.080	0.074	1975.0	1887.6	5.396	1.451	3.07		Clay	100.0			5.75	1.03	n.a.	n.a.	0.96	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	6.730	0.190	1996.3	1898.3	6.039	3.320	3.20		Clay	100.0			6.36	1.03	n.a.	n.a.	0.96	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	8.980	0.265	2016.3	1908.3	8.355	3.322	3.09		Clay	100.0			8.49	1.03	n.a.	n.a.	0.96	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	7.660	0.294	2037.5	1918.9	6.922	4.431	3.22		Clay	100.0			7.24	1.03	n.a.	n.a.	0.95	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	11.490	0.206	2057.5	1929.0	10.847	1.971	2.87		Clay	92.4			10.86	1.02	n.a.	n.a.	0.95	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	9.260	0.171	2077.5	1939.0	8.480	2.079	2.97		Clay	100.0			8.75	1.02	n.a.	n.a.	0.95	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	7.230	0.170	2098.8	1949.6	6.340	2.744	3.14		Clay	100.0			6.83	1.02	n.a.	n.a.	0.95	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	6.560	0.190	2118.8	1959.6	5.614	3.447	3.24		Clay	100.0			6.20	1.02	n.a.	n.a.	0.95	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	7.160	0.235	2140.0	1970.3	6.182	3.852	3.23		Clay	100.0			6.77	1.02	n.a.	n.a.	0.95	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	7.620	0.264	2160.0	1980.3	6.605	4.035	3.22		Clay	100.0			7.20	1.02	n.a.	n.a.	0.95	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	7.180	0.275	2180.0	1990.3	6.120	4.517	3.27		Clay	100.0			6.79	1.02	n.a.	n.a.	0.95	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	7.120	0.293	2201.3	2000.9	6.017	4.861	3.30		Clay	100.0			6.73	1.01	n.a.	n.a.	0.95	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	7.360	0.312	2221.3	2011.0	6.215	4.996	3.29		Clay	100.0			6.96	1.01	n.a.	n.a.	0.95	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	7.300	0.295	2242.5	2021.6	6.113	4.776	3.29		Clay	100.0			6.90	1.01	n.a.	n.a.	0.95	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	7.040	0.286	2262.5	2031.6	5.817	4.834	3.31		Clay	100.0			6.65	1.01	n.a.	n.a.	0.95	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	7.440	0.314	2282.5	2041.6	6.170	4.988	3.30		Clay	100.0			7.03	1.01	n.a.	n.a.	0.95	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	8.660	0.357	2303.8	2052.3	7.317	4.752	3.22		Clay	100.0			8.19	1.01	n.a.	n.a.	0.95	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	10.090	0.414	2323.8	2062.3	8.658	4.637	3.16		Clay	100.0			9.54	1.01	n.a.	n.a.	0.95	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	10.580	0.429	2345.0	2072.9	9.076	4.555	3.14		Clay	100.0			10.00	1.01	n.a.	n.a.	0.95	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	10.800	0.438	2365.0	2083.0	9.234	4.554	3.13		Clay	100.0			10.21	1.00	n.a.	n.a.	0.94	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	10.440	0.390	2386.3	2093.6	8.833	4.221	3.13		Clay	100.0			9.87	1.00	n.a.	n.a.	0.94	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	9.760	0.357	2406.3	2103.6	8.135	4.176	3.15		Clay	100.0			9.22	1.00	n.a.	n.a.	0.94	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	9.000	0.353	2426.3	2113.6	7.368	4.533	3.21		Clay	100.0			8.51	1.00	n.a.	n.a.	0.94	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	8.700	0.349	2447.5	2124.3	7.039	4.665	3.23		Clay	100.0			8.22	1.00	n.a.	n.a.	0.94	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	8.770	0.377	2467.5	2134.3	7.062	4.997	3.25		Clay	100.0			8.29	1.00	n.a.	n.a.	0.94	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	9.260	0.387	2488.8	2144.9	7.474	4.833	3.22		Clay	100.0			8.75	1.00	n.a.	n.a.	0.94	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	9.750	0.398	2508.8	2154.9	7.885	4.682	3.19		Clay	100.0			9.22	1.00	n.a.	n.a.	0.94	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	9.520	0.399	2528.8	2165.0	7.627	4.833	3.21		Clay	100.0			9.00	0.99	n.a.	n.a.	0.94	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	9.960	0.398	2550.0	2175.6	7.984	4.578	3.18		Clay	100.0			9.41	0.99	n.a.	n.a.	0.94	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	11.120	0.449	2570.0	2185.6	9.000	4.562	3.14		Clay	100.0			10.51	0.99	n.a.	n.a.	0.94	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	12.370	0.530	2591.3	2196.3	10.085	4.781	3.11		Clay	100.0			11.69	0.99	n.a.	n.a.	0.94	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	14.100	0.655	2611.3	2206.3	11.598	5.116	3.08		Clay	100.0			13.33	0.99	n.a.	n.a.	0.94	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	15.110	0.695	2631.3	2216.3	12.448	5.039	3.06		Clay	100.0			14.28	0.99	n.a.	n.a.	0.94	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	15.880	0.669	2652.5	2226.9	13.071	4.593	3.01		Clay	100.0			15.01	0.99	n.a.	n.a.	0.94	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	15.910	0.638	2672.5	2236.9	13.030	4.375	3.00		Clay	100.0			15.04	0.99	n.a.	n.a.	0.93	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	15.540	0.605	2693.8	2247.6	12.630	4.265	3.01		Clay	100.0			14.69	0.98	n.a.	n.a.	0.93	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	13

PGA (A_{max})	0.85

Total Settlement:	0.94	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.310	14.950	0.553	2713.8	2257.6	12.042	4.070	3.01		Clay	100.0			14.13	0.98	n.a.	n.a.	0.93	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	14.020	0.490	2733.8	2267.6	11.160	3.869	3.02		Clay	100.0			13.25	0.98	n.a.	n.a.	0.93	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	12.630	0.434	2755.0	2278.3	9.878	3.854	3.06		Clay	100.0			11.94	0.98	n.a.	n.a.	0.93	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	11.440	0.406	2775.0	2288.3	8.786	4.037	3.12		Clay	100.0			10.81	0.98	n.a.	n.a.	0.93	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	10.180	0.373	2796.3	2298.9	7.640	4.251	3.18		Clay	100.0			9.62	0.98	n.a.	n.a.	0.93	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	9.400	0.385	2816.3	2308.9	6.923	4.821	3.25		Clay	100.0			8.88	0.98	n.a.	n.a.	0.93	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	10.250	0.361	2836.3	2319.0	7.617	4.084	3.17		Clay	100.0			9.69	0.98	n.a.	n.a.	0.93	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	12.320	0.414	2857.5	2329.6	9.350	3.804	3.08		Clay	100.0			11.64	0.97	n.a.	n.a.	0.93	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	14.140	0.467	2877.5	2339.6	10.858	3.675	3.02		Clay	100.0			13.36	0.97	n.a.	n.a.	0.93	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	16.480	0.608	2898.8	2350.3	12.791	4.044	2.99		Clay	100.0			15.58	0.97	n.a.	n.a.	0.93	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	18.750	0.718	2918.8	2360.3	14.651	4.153	2.95		Clay	98.8			17.72	0.97	n.a.	n.a.	0.93	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	20.160	0.837	2938.8	2370.3	15.771	4.480	2.94		Clay	98.5			19.05	0.97	n.a.	n.a.	0.93	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	20.710	0.877	2960.0	2380.9	16.153	4.562	2.94		Clay	98.2			19.57	0.97	n.a.	n.a.	0.92	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	21.640	0.913	2980.0	2390.9	16.855	4.533	2.92		Clay	97.0			20.45	0.97	n.a.	n.a.	0.92	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	20.570	0.939	3001.3	2401.6	15.881	4.926	2.97		Clay	100.0			19.44	0.97	n.a.	n.a.	0.92	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	18.410	0.807	3021.3	2411.6	14.015	4.774	3.00		Clay	100.0			17.40	0.97	n.a.	n.a.	0.92	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	17.440	0.682	3041.3	2421.6	13.148	4.283	2.99		Clay	100.0			16.48	0.97	n.a.	n.a.	0.92	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	17.480	0.605	3062.5	2432.3	13.114	3.793	2.96		Clay	99.9			16.52	0.96	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	13.400	0.439	3082.5	2442.3	9.711	3.703	3.06		Clay	100.0			12.67	0.96	n.a.	n.a.	0.92	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	11.250	0.360	3103.8	2452.9	7.907	3.710	3.13		Clay	100.0			10.63	0.96	n.a.	n.a.	0.92	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	9.200	0.354	3123.8	2462.9	6.202	4.635	3.28		Clay	100.0			8.70	0.96	n.a.	n.a.	0.92	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	9.160	0.365	3143.8	2473.0	6.137	4.808	3.29		Clay	100.0			8.66	0.96	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	8.490	0.253	3165.0	2483.6	5.563	3.668	3.26		Clay	100.0			8.02	0.96	n.a.	n.a.	0.92	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	7.480	0.195	3185.0	2493.6	4.722	3.319	3.29		Clay	100.0			7.07	0.96	n.a.	n.a.	0.92	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	7.680	0.221	3206.3	2504.3	4.853	3.632	3.30		Clay	100.0			7.26	0.96	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	8.810	0.223	3226.3	2514.3	5.725	3.104	3.21		Clay	100.0			8.33	0.96	n.a.	n.a.	0.92	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	10.730	0.205	3246.3	2524.3	7.215	2.251	3.05		Clay	100.0			10.14	0.95	n.a.	n.a.	0.91	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	11.660	0.189	3267.5	2534.9	7.910	1.889	2.98		Clay	100.0			11.02	0.95	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	10.730	0.224	3287.5	2544.9	7.141	2.460	3.07		Clay	100.0			10.14	0.95	n.a.	n.a.	0.91	0.740	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	10.650	0.173	3308.8	2555.6	7.040	1.922	3.02		Clay	100.0			10.07	0.95	n.a.	n.a.	0.91	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	11.710	0.139	3328.8	2565.6	7.831	1.384	2.91		Clay	96.1			11.07	0.95	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	9.460	0.159	3350.0	2576.2	6.044	2.036	3.09		Clay	100.0			8.94	0.95	n.a.	n.a.	0.91	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	8.300	0.239	3370.0	2586.3	5.116	3.607	3.28		Clay	100.0			7.84	0.95	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	8.300	0.281	3390.0	2596.3	5.088	4.256	3.32		Clay	100.0			7.84	0.95	n.a.	n.a.	0.91	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	10.960	0.245	3411.3	2606.9	7.100	2.648	3.09		Clay	100.0			10.36	0.95	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	11.840	0.305	3431.3	2616.9	7.738	3.015	3.09		Clay	100.0			11.19	0.95	n.a.	n.a.	0.91	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.220	12.930	0.235	3452.5	2627.6	8.528	2.097	2.97		Clay	100.0			12.22	0.94	n.a.	n.a.	0.91	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.380	15.750	0.356	3472.5	2637.6	10.626	2.540	2.93		Clay	97.8			14.89	0.94	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.540	13.910	0.749	3492.5	2647.6	9.188	6.154	3.21		Clay	100.0			13.15	0.94	n.a.	n.a.	0.91	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.710	20.250	1.078	3513.8	2658.2	13.914	5.829	3.06		Clay	100.0			19.14	0.94	n.a.	n.a.	0.91	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	32.520	1.230	3533.8	2668.3	23.051	3.999	2.79		Clay	85.9			30.74	0.94	n.a.	n.a.	0.90	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	44.090	1.138	3555.0	2678.9	35.544	2.689	2.53		Sand	65.5	54.44	1.21	65.87	0.90	59.31	126.15	0.90	0.747	0.969	0.186	0.259	0.35	0.03	0.02
29.200	52.260	0.948	3575.0	2688.9	42.319	1.877	2.37		Sand	52.8	54.44	1.21	65.87	0.90	59.10	121.91	0.90	0.748	0.970	0.176	0.239	0.32	0.03	0.03
29.360	56.180	0.552	3595.0	2698.9	45.513	1.015	2.19		Sand	38.0	54.44	1.21	65.87	0.89	58.76	113.45	0.90	0.748	0.971	0.158	0.206	0.27	0.03	0.03
29.530	57.600	0.576	3616.3	2709.6	46.601	1.032	2.18		Sand	37.7		1.21	65.88	0.89	58.64	113.05	0.90	0.749	0.971	0.157	0.204	0.27	0.03	0.03
29.690	56.480	0.378	3636.3	2719.6	45.573	0.691	2.10		Sand	30.9		1.21	64.59	0.88	57.16	104.99	0.90	0.749	0.972	0.144	0.181	0.24	0.03	0.03
29.860	54.490	0.374	3657.5	2730.2	43.819	0.709	2.12		Sand	32.5		1.21	62.32	0.88	55.01	104.10	0.90	0.750	0.972	0.143	0.178	0.24	0.03	0.03
30.020	48.740	0.341	3677.5	2740.3	38.955	0.727	2.17		Sand	36.5		1.21	55.74	0.88	49.01	100.25	0.90	0.750	0.972	0.138	0.169	0.23	0.03	0.03
30.180	42.010	0.403	3697.5	2750.3	33.296	1.004	2.30		Sand	46.9		1.21	48.05	0.88	42.11	97.94	0.90	0.750	0.973	0.135	0.164	0.22	0.03	0.03
30.350	36.020	0.388	3718.8	2760.9	28.266	1.136	2.39		Sand	54.0		1.21	41.19	0.87	35.93	92.92	0.90	0.751	0.973	0.129	0.154	0.20	0.03	0.03
30.510	34.550	0.456	3738.8	2770.9	26.993	1.395	2.45		Sand	59.3		1.21	39.51	0.87	34.39	92.55	0.90	0.751	0.973	0.128	0.153	0.20	0.03	0.03
30.680	33.920	0.338	3760.0	2781.6	26.413	1.054	2.40		Sand	54.7		1.21	38.79	0.87	33.64	90.22	0.90	0.751	0.973	0.126	0.149	0.20	0.04	0.03
30.840	35.140	0.265	3780.0	2791.6	27.361	0.798	2.32		Sand	48.7		1.21	40.19	0.87	34.77	89.49	0.90	0.752	0.973	0.125	0.148	0.20	0.04	0.03
31.000	38.120	0.329	3800.0	2801.6	29.752	0.907	2.32		Sand	48.4		1.21	43.60	0.87	37.74	93.10	0.89	0.752	0.972	0.129	0.154	0.20	0.03	0.03
31.170	39.550	0.283	3821.3	2812.2	30.859	0.752	2.26		Sand	44.1		1.21	45.23	0.86	39.07	92.75	0.89	0.752	0.971	0.129	0.153	0.20	0.03	0.03
31.330	37.710	0.247	3841.3	2822.3	29.291	0.690	2.27		Sand	44.3	37.38	1.21	45.23	0.86	39.00	92.74	0.89	0.753	0.971	0.129	0.153	0.20	0.03	0.03
31.500	31.830	0.285	3862.5	2832.9	24.424	0.952	2.40		Sand	55.2	37.38	1.21	45.23	0.86	39.04	97.27	0.89	0.753	0.970	0.134	0.162	0.22	0.03	0.03
31.660	25.270	0.324	3882.5	2842.9	16.412	1.388	2.63		Clay	73.8			23.88	0.93	n.a.	n.a.	0.89	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.820	19.880	0.395	3902.5	2852.9	12.569	2.204	2.84		Clay	90.2			18.79	0.92	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.990	16.110	0.269	3923.8	2863.6	9.881	1.900	2.89		Clay	94.5			15.23	0.92	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.150	17.690	0.178	3943.8	2873.6	10.940	1.134	2.74		Clay	82.6			16.72	0.92	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.320	20.040	0.246	3965.0	2884.2	12.522	1.363	2.73		Clay	81.5			18.94	0.92	n.a.	n.a.	0.89	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	28.230	0.344	3985.0	2894.2	21.204	1.309	2.53		Sand	65.1	36.7	1.66	60.92	0.87	52.72	117.59	0.89	0.755	0.962	0.166	0.219	0.29	0.03	0.02
32.640	34.210	0.422	4005.0	2904.3	25.984	1.309	2.45		Sand	59.1	36.7	1.66	60.92	0.86	52.58	115.79	0.89	0.755	0.962	0.162	0.212	0.28	0.03	0.03
32.810	38.830	0.500	4026.3	2914.9	29.649	1.359	2.41		Sand	56.1		1.66	60.92	0.86	52.45	114.64	0.89	0.755	0.962	0.160	0.208	0.28	0.03	0.02
32.970	37.070	0.461	4046.3	2924.9	28.175	1.316	2.42		Sand	56.9	36.7	1.66	60.92	0.86	52.37	114.82	0.89	0.755	0.961	0.161	0.208	0.28	0.03	0.03
33.140	36.630	0.273	4067.5	2935.6	27.762	0.790	2.31		Sand	48.1	36.7	1.66	60.92	0.86	52.16	111.16	0.88	0.756	0.962	0.154	0.196	0.26	0.03	0.02

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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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)
33.300	35.290	0.490	4087.5	2945.6	26.634	1.472	2.47		Sand	60.7	36.7	1.66	60.92	0.86	52.24	115.80	0.88	0.756	0.960	0.162	0.212	0.28	0.03	0.02
33.460	27.090	0.661	4107.5	2955.6	16.942	2.639	2.78		Clay	85.2			25.60	0.92	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	16.320	0.487	4128.8	2966.2	9.612	3.417	3.04		Clay	100.0			15.43	0.91	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	11.370	0.282	4148.8	2976.3	6.247	3.036	3.17		Clay	100.0			10.75	0.91	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	6.890	0.158	4170.0	2986.9	3.217	3.286	3.43		Clay	100.0			6.51	0.91	n.a.	n.a.	0.88	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	5.500	0.127	4190.0	2996.9	2.272	3.727	3.59		Clay	100.0			5.20	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	6.260	0.109	4210.0	3006.9	2.764	2.621	3.44		Clay	100.0			5.92	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	5.310	0.078	4231.3	3017.6	2.117	2.454	3.53		Clay	100.0			5.02	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	4.480	0.088	4251.3	3027.6	1.555	3.729	3.74		Clay	100.0			4.23	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	4.420	0.077	4272.5	3038.2	1.503	3.367	3.73		Clay	100.0			4.18	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	5.260	0.083	4292.5	3048.2	2.043	2.653	3.56		Clay	100.0			4.97	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	6.180	0.088	4312.5	3058.3	2.631	2.177	3.42		Clay	100.0			5.84	0.91	n.a.	n.a.	0.88	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	6.650	0.092	4333.8	3068.9	2.922	2.059	3.37		Clay	100.0			6.29	0.91	n.a.	n.a.	0.87	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	6.290	0.123	4353.8	3078.9	2.672	2.981	3.48		Clay	100.0			5.95	0.91	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	6.440	0.139	4375.0	3089.6	2.753	3.271	3.49		Clay	100.0			6.09	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	7.470	0.211	4395.0	3099.6	3.402	4.006	3.46		Clay	100.0			7.06	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	8.430	0.305	4416.3	3110.2	4.001	4.897	3.45		Clay	100.0			7.97	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	9.100	0.288	4436.3	3120.2	4.411	4.181	3.37		Clay	100.0			8.60	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	10.100	0.281	4456.3	3130.3	5.030	3.573	3.29		Clay	100.0			9.55	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	9.460	0.430	4477.5	3140.9	4.598	5.955	3.44		Clay	100.0			8.94	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	8.630	0.669	4497.5	3150.9	4.050	10.485	3.64		Clay	100.0			8.16	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	18.930	0.843	4518.8	3161.6	10.546	5.056	3.11		Clay	100.0			17.89	0.90	n.a.	n.a.	0.87	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	50.880	0.698	4538.8	3171.6	37.529	1.436	2.34		Sand	50.4	126.55	1.72	217.67	0.90	195.62	293.74	0.87	0.758	0.879	#########	########	334021.08	0.00	0.00
37.070	103.060	0.656	4558.8	3181.6	77.683	0.651	1.89		Sand	14.0	126.55	1.72	217.67	0.88	192.19	218.92	0.87	0.758	0.878	6.567	12.680	16.73	0.00	0.00
37.240	133.890	1.118	4580.0	3192.2	101.270	0.849	1.86		Sand	11.9		1.72	217.67	0.88	190.99	208.78	0.87	0.758	0.880	3.216	6.225	8.21	0.00	0.00
37.400	111.990	0.984	4600.0	3202.2	84.278	0.897	1.94		Sand	18.1	126.55	1.72	217.67	0.89	193.53	236.72	0.86	0.758	0.876	30.892	59.516	78.51	0.00	0.00
37.570	57.240	1.298	4621.3	3212.9	42.134	2.362	2.44		Sand	58.0	126.55	1.72	217.67	0.90	194.96	297.37	0.86	0.758	0.875	#########	########	705309.89	0.00	0.00
37.730	33.230	1.155	4641.3	3222.9	19.181	3.738	2.83		Clay	89.2			31.41	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	20.490	0.884	4661.3	3232.9	11.234	4.870	3.08		Clay	100.0			19.37	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	13.870	0.637	4682.5	3243.6	7.109	5.524	3.27		Clay	100.0			13.11	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	10.690	0.565	4702.5	3253.6	5.126	6.776	3.44		Clay	100.0			10.10	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	9.650	0.622	4723.8	3264.2	4.465	8.529	3.55		Clay	100.0			9.12	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	10.010	0.647	4743.8	3274.2	4.666	8.475	3.53		Clay	100.0			9.46	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	10.980	0.681	4763.8	3284.2	5.236	7.920	3.47		Clay	100.0			10.38	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	12.270	0.569	4785.0	3294.9	5.996	5.758	3.34		Clay	100.0			11.60	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	12.640	0.491	4805.0	3304.9	6.195	4.792	3.28		Clay	100.0			11.95	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	14.070	0.431	4826.3	3315.5	7.032	3.699	3.17		Clay	100.0			13.30	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	13.270	0.472	4846.3	3325.6	6.523	4.351	3.24		Clay	100.0			12.54	0.89	n.a.	n.a.	0.86	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	15.420	0.492	4866.3	3335.6	7.787	3.788	3.14		Clay	100.0			14.57	0.89	n.a.	n.a.	0.85	0.758	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	16.970	0.617	4887.5	3346.2	8.682	4.250	3.13		Clay	100.0			16.04	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	19.100	0.740	4907.5	3356.2	9.920	4.442	3.10		Clay	100.0			18.05	0.89	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	21.310	0.814	4928.8	3366.9	11.195	4.321	3.05		Clay	100.0			20.14	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	23.310	0.792	4948.8	3376.9	12.340	3.799	2.98		Clay	100.0			22.03	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	22.930	0.791	4968.8	3386.9	12.073	3.869	3.00		Clay	100.0			21.67	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	23.610	0.804	4990.0	3397.6	12.430	3.808	2.98		Clay	100.0			22.32	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	23.640	0.714	5010.0	3407.6	12.405	3.379	2.95		Clay	99.0			22.34	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	23.770	0.721	5031.3	3418.2	12.436	3.393	2.95		Clay	99.1			22.47	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	23.320	0.698	5051.3	3428.2	12.131	3.358	2.96		Clay	99.5			22.04	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	23.200	0.624	5071.3	3438.2	12.020	3.020	2.93		Clay	97.6			21.93	0.88	n.a.	n.a.	0.85	0.757	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	21.530	0.561	5092.5	3448.9	11.009	2.956	2.96		Clay	99.7			20.35	0.88	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	20.880	0.506	5112.5	3458.9	10.595	2.759	2.96		Clay	99.5			19.74	0.88	n.a.	n.a.	0.85	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	19.950	0.478	5133.8	3469.5	10.020	2.750	2.97		Clay	100.0			18.86	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	19.980	0.473	5153.8	3479.6	10.003	2.719	2.97		Clay	100.0			18.88	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	20.060	0.482	5173.8	3489.6	10.014	2.756	2.98		Clay	100.0			18.96	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	19.800	0.444	5195.0	3500.2	9.829	2.578	2.97		Clay	100.0			18.71	0.88	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	18.940	0.473	5215.0	3510.2	9.306	2.896	3.01		Clay	100.0			17.90	0.87	n.a.	n.a.	0.84	0.756	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	19.010	0.494	5236.3	3520.9	9.311	3.012	3.02		Clay	100.0			17.97	0.87	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	19.200	0.559	5256.3	3530.9	9.387	3.372	3.05		Clay	100.0			18.15	0.87	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	19.820	0.646	5276.3	3540.9	9.705	3.757	3.06		Clay	100.0			18.73	0.87	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	21.030	0.724	5297.5	3551.5	10.351	3.940	3.05		Clay	100.0			19.88	0.87	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	22.100	0.854	5317.5	3561.6	10.917	4.390	3.06		Clay	100.0			20.89	0.87	n.a.	n.a.	0.84	0.755	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	22.680	0.813	5338.8	3572.2	11.204	4.064	3.03		Clay	100.0			21.44	0.87	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	22.450	0.770	5358.8	3582.2	11.038	3.895	3.03		Clay	100.0			21.22	0.87	n.a.	n.a.	0.84	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	20.980	0.906	5380.0	3592.9	10.181	4.954	3.12		Clay	100.0			19.83	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	21.400	1.110	5400.0	3602.9	10.381	5.933	3.16		Clay	100.0			20.23	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	24.190	1.049	5420.0	3612.9	11.891	4.882	3.06		Clay	100.0			22.86	0.87	n.a.	n.a.	0.83	0.754	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	23.120	1.049	5441.3	3623.5	11.259	5.143	3.09		Clay	100.0			21.85	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	24.770	0.988	5461.3	3633.6	12.131	4.481	3.03		Clay	100.0			23.41	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	24.400	1.044	5482.5	3644.2	11.887	4.819	3.06		Clay	100.0			23.06	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	26.060	1.101	5502.5	3654.2	12.757	4.724	3.03		Clay	100.0			24.63	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	28.830	1.043	5522.5	3664.2	14.229	4.001	2.95		Clay	98.8			27.25	0.87	n.a.	n.a.	0.83	0.753	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	28.740	1.105	5543.8	3674.9	14.133	4.257	2.97		Clay	100.0			27.16	0.86	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	31.790	1.016	5563.8	3684.9	15.744	3.502	2.88		Clay	93.2			30.05	0.86	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	26.500	0.709	5585.0	3695.5	12.830	2.989	2.91		Clay	95.6			25.05	0.86	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	21.260	0.536	5605.0	3705.5	9.962	2.906	2.99		Clay	100.0			20.09	0.86	n.a.	n.a.	0.83	0.752	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	19.900	0.412	5625.0	3715.6	9.198	2.410	2.97		Clay	100.0			18.81	0.86	n.a.	n.a.	0.83	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	21.150	0.457	5646.3	3726.2	9.837	2.494	2.96		Clay	99.6			19.99	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	23.300	0.569	5666.3	3736.2	10.956	2.778	2.95		Clay	98.6			22.02	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	23.920	0.638	5687.5	3746.9	11.250	3.025	2.96		Clay	99.6			22.61	0.86	n.a.	n.a.	0.82	0.751	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	24.120	0.666	5707.5	3756.9	11.321	3.133	2.96		Clay	100.0			22.80	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	22.580	0.644	5727.5	3766.9	10.468	3.264	3.00		Clay	100.0			21.34	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	21.200	0.577	5748.8	3777.5	9.702	3.150	3.02		Clay	100.0			20.04	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	19.840	0.523	5768.8	3787.6	8.953	3.082	3.04		Clay	100.0			18.75	0.86	n.a.	n.a.	0.82	0.750	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	18.660	0.437	5790.0	3798.2	8.301	2.771	3.04		Clay	100.0			17.64	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	18.660	0.313	5810.0	3808.2	8.274	1.983	2.97		Clay	100.0			17.64	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	19.190	0.329	5830.0	3818.2	8.525	2.023	2.96		Clay	100.0			18.14	0.86	n.a.	n.a.	0.82	0.749	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	19.900	0.358	5851.3	3828.9	8.867	2.106	2.96		Clay	99.6			18.81	0.86	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	21.220	0.539	5871.3	3838.9	9.526	2.947	3.01		Clay	100.0			20.06	0.85	n.a.	n.a.	0.82	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	24.390	0.724	5892.5	3849.5	11.141	3.375	2.99		Clay	100.0			23.05	0.85	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	25.470	0.897	5912.5	3859.5	11.667	3.984	3.01		Clay	100.0			24.07	0.85	n.a.	n.a.	0.81	0.748	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	37.830	0.901	5932.5	3869.6	18.020	2.585	2.75		Clay	83.1			35.76	0.85	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	36.840	1.109	5953.8	3880.2	17.454	3.276	2.82		Clay	88.9			34.82	0.85	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	27.400	1.147	5973.8	3890.2	12.551	4.696	3.03		Clay	100.0			25.90	0.85	n.a.	n.a.	0.81	0.747	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	33.930	1.377	5995.0	3900.9	15.859	4.452	2.94		Clay	98.2			32.07	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	38.040	1.579	6015.0	3910.9	17.915	4.508	2.90		Clay	95.2			35.95	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	38.340	1.606	6035.0	3920.9	18.018	4.548	2.90		Clay	95.3			36.24	0.85	n.a.	n.a.	0.81	0.746	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	41.340	1.563	6056.3	3931.5	19.490	4.080	2.85		Clay	90.8			39.07	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	36.130	1.334	6076.3	3941.5	16.791	4.030	2.89		Clay	94.5			34.15	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	34.250	1.103	6097.5	3952.2	15.789	3.534	2.88		Clay	93.3			32.37	0.85	n.a.	n.a.	0.81	0.745	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	32.580	0.960	6117.5	3962.2	14.901	3.251	2.88		Clay	93.1			30.79	0.85	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	31.790	1.795	6137.5	3972.2	14.461	6.251	3.07		Clay	100.0			30.05	0.85	n.a.	n.a.	0.81	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	45.430	1.591	6158.8	3982.9	21.266	3.757	2.79		Clay	86.6			42.94	0.85	n.a.	n.a.	0.80	0.744	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	42.420	1.374	6178.8	3992.9	19.700	3.493	2.80		Clay	87.0			40.09	0.85	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	22.320	0.850	6200.0	4003.5	9.602	4.424	3.11		Clay	100.0			21.10	0.85	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	21.480	0.967	6220.0	4013.5	9.154	5.262	3.17		Clay	100.0			20.30	0.84	n.a.	n.a.	0.80	0.743	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	19.850	1.127	6240.0	4023.6	8.316	6.739	3.27		Clay	100.0			18.76	0.84	n.a.	n.a.	0.80	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	22.840	1.249	6261.3	4034.2	9.771	6.337	3.20		Clay	100.0			21.59	0.84	n.a.	n.a.	0.80	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	36.000	0.681	6281.3	4044.2	16.250	2.073	2.73		Clay	81.6			34.03	0.84	n.a.	n.a.	0.80	0.742	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	45.970	0.993	6302.5	4054.9	21.120	2.319	2.67		Clay	76.4			43.45	0.84	n.a.	n.a.	0.80	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.180	33.820	1.554	6322.5	4064.9	15.085	5.070	2.99		Clay	100.0			31.97	0.84	n.a.	n.a.	0.80	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.350	34.500	2.178	6343.8	4075.5	15.374	6.953	3.08		Clay	100.0			32.61	0.84	n.a.	n.a.	0.80	0.741	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.510	76.880	2.323	6363.8	4085.5	50.131	3.151	2.47		Sand	60.4			72.67	0.74	53.63	117.49	0.80	0.740	0.920	0.166	0.209	0.28	0.03	0.00
51.670	79.970	2.259	6383.8	4095.5	52.162	2.942	2.43		Sand	57.7			75.59	0.74	55.87	119.55	0.80	0.740	0.918	0.170	0.216	0.29	0.03	0.00
51.840	81.430	1.908	6405.0	4106.2	53.078	2.439	2.37		Sand	52.8			76.97	0.74	56.78	118.98	0.80	0.740	0.918	0.169	0.214	0.29	0.03	0.00
52.000	75.850	1.556	6425.0	4116.2	49.225	2.142	2.36		Sand	51.7			71.69	0.73	52.42	113.02	0.79	0.739	0.922	0.157	0.194	0.26	0.03	0.00
52.170	61.470	1.526	6446.3	4126.8	28.228	2.619	2.60		Clay	71.0			58.10	0.84	n.a.	n.a.	0.79	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.330	48.520	0.867	6466.3	4136.9	21.894	1.914	2.61		Clay	71.5			45.86	0.84	n.a.	n.a.	0.79	0.739	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.490	41.700	0.758	6486.3	4146.9	18.547	1.972	2.67		Clay	76.8			39.41	0.84	n.a.	n.a.	0.79	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.660	30.060	0.728	6507.5	4157.5	12.895	2.717	2.88		Clay	93.5			28.41	0.84	n.a.	n.a.	0.79	0.738	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.820	18.980	0.504	6527.5	4167.5	7.542	3.207	3.11		Clay	100.0			17.94	0.84	n.a.	n.a.	0.79	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
52.990	16.690	0.393	6548.8	4178.2	6.422	2.927	3.15		Clay	100.0			15.78	0.84	n.a.	n.a.	0.79	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.150	17.050	0.477	6568.8	4188.2	6.574	3.467	3.18		Clay	100.0			16.12	0.84	n.a.	n.a.	0.79	0.737	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.310	17.960	0.542	6588.8	4198.2	6.987	3.694	3.18		Clay	100.0			16.98	0.83	n.a.	n.a.	0.79	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.480	18.200	0.544	6610.0	4208.8	7.078	3.650	3.17		Clay	100.0			17.20	0.83	n.a.	n.a.	0.79	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.640	19.690	0.739	6630.0	4218.9	7.763	4.512	3.19		Clay	100.0			18.61	0.83	n.a.	n.a.	0.79	0.736	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.810	20.310	1.097	6651.3	4229.5	8.031	6.457	3.27		Clay	100.0			19.20	0.83	n.a.	n.a.	0.79	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
53.970	24.680	1.361	6671.3	4239.5	10.069	6.378	3.19		Clay	100.0			23.33	0.83	n.a.	n.a.	0.79	0.735	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.130	29.760	1.206	6691.3	4249.5	12.432	4.567	3.03		Clay	100.0			28.13	0.83	n.a.	n.a.	0.78	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.300	36.620	0.705	6712.5	4260.2	15.616	2.120	2.75		Clay	83.2			34.61	0.83	n.a.	n.a.	0.78	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.460	29.700	0.467	6732.5	4270.2	12.334	1.773	2.80		Clay	86.7			28.07	0.83	n.a.	n.a.	0.78	0.734	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.630	23.000	0.372	6753.8	4280.8	9.168	1.896	2.92		Clay	96.7			21.74	0.83	n.a.	n.a.	0.78	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.790	18.970	0.365	6773.8	4290.9	7.263	2.340	3.05		Clay	100.0			17.93	0.83	n.a.	n.a.	0.78	0.733	n.a.	n.a.	n.a.	n.a.	0.00	0.00
54.950	17.380	0.396	6793.8	4300.9	6.502	2.835	3.14		Clay	100.0			16.43	0.83	n.a.	n.a.	0.78	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.120	17.710	0.403	6815.0	4311.5	6.635	2.820	3.13		Clay	100.0			16.74	0.83	n.a.	n.a.	0.78	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
55.280	18.650	0.365	6835.0	4321.5	7.050	2.398	3.07		Clay	100.0			17.63	0.83	n.a.	n.a.	0.78	0.732	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.450	19.050	0.467	6856.3	4332.2	7.212	2.989	3.11		Clay	100.0			18.01	0.83	n.a.	n.a.	0.78	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.610	18.560	0.578	6876.3	4342.2	6.965	3.822	3.19		Clay	100.0			17.54	0.83	n.a.	n.a.	0.78	0.731	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.770	21.370	0.614	6896.3	4352.2	8.236	3.428	3.10		Clay	100.0			20.20	0.83	n.a.	n.a.	0.78	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.940	23.600	0.627	6917.5	4362.8	9.233	3.115	3.03		Clay	100.0			22.31	0.83	n.a.	n.a.	0.78	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.100	21.290	0.462	6937.5	4372.9	8.151	2.593	3.04		Clay	100.0			20.12	0.83	n.a.	n.a.	0.77	0.730	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.270	18.540	0.423	6958.8	4383.5	6.872	2.807	3.12		Clay	100.0			17.52	0.83	n.a.	n.a.	0.77	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.430	17.660	0.529	6978.8	4393.5	6.451	3.734	3.21		Clay	100.0			16.69	0.82	n.a.	n.a.	0.77	0.729	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.590	18.490	0.653	6998.8	4403.5	6.808	4.355	3.23		Clay	100.0			17.48	0.82	n.a.	n.a.	0.77	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.760	22.070	0.433	7020.0	4414.2	8.409	2.331	3.00		Clay	100.0			20.86	0.82	n.a.	n.a.	0.77	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.920	27.150	0.644	7040.0	4424.2	10.682	2.726	2.95		Clay	99.0			25.66	0.82	n.a.	n.a.	0.77	0.728	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.090	24.110	0.654	7061.3	4434.8	9.281	3.177	3.04		Clay	100.0			22.79	0.82	n.a.	n.a.	0.77	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.250	22.250	0.518	7081.3	4444.9	8.418	2.770	3.04		Clay	100.0			21.03	0.82	n.a.	n.a.	0.77	0.727	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.410	21.670	0.461	7101.3	4454.9	8.135	2.545	3.03		Clay	100.0			20.48	0.82	n.a.	n.a.	0.77	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.580	20.600	0.594	7122.5	4465.5	7.631	3.485	3.13		Clay	100.0			19.47	0.82	n.a.	n.a.	0.77	0.726	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.740	24.840	0.792	7142.5	4475.5	9.504	3.725	3.07		Clay	100.0			23.48	0.82	n.a.	n.a.	0.77	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.910	26.270	1.004	7163.8	4486.2	10.115	4.427	3.09		Clay	100.0			24.83	0.82	n.a.	n.a.	0.77	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.070	26.930	1.024	7183.8	4496.2	10.381	4.388	3.08		Clay	100.0			25.45	0.82	n.a.	n.a.	0.77	0.725	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.230	27.670	0.958	7203.8	4506.2	10.682	3.982	3.05		Clay	100.0			26.15	0.82	n.a.	n.a.	0.77	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.400	27.480	0.860	7225.0	4516.8	10.568	3.605	3.02		Clay	100.0			25.97	0.82	n.a.	n.a.	0.76	0.724	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.560	24.340	0.792	7245.0	4526.9	9.153	3.825	3.09		Clay	100.0			23.01	0.82	n.a.	n.a.	0.76	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.730	23.520	0.702	7266.3	4537.5	8.766	3.529	3.08		Clay	100.0			22.23	0.82	n.a.	n.a.	0.76	0.723	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.890	23.400	0.781	7286.3	4547.5	8.689	3.953	3.12		Clay	100.0			22.12	0.82	n.a.	n.a.	0.76	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.060	23.800	0.759	7307.5	4558.2	8.840	3.767	3.10		Clay	100.0			22.50	0.82	n.a.	n.a.	0.76	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.220	24.250	0.788	7327.5	4568.2	9.013	3.827	3.09		Clay	100.0			22.92	0.82	n.a.	n.a.	0.76	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.380	24.560	0.785	7347.5	4578.2	9.124	3.759	3.09		Clay	100.0			23.21	0.82	n.a.	n.a.	0.76	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.550	26.300	0.854	7368.8	4588.8	9.857	3.778	3.06		Clay	100.0			24.86	0.82	n.a.	n.a.	0.76	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.710	28.820	1.057	7388.8	4598.8	10.927	4.206	3.05		Clay	100.0			27.24	0.81	n.a.	n.a.	0.76	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.880	31.880	1.333	7410.0	4609.5	12.225	4.731	3.04		Clay	100.0			30.13	0.81	n.a.	n.a.	0.76	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.040	34.370	1.416	7430.0	4619.5	13.272	4.620	3.01		Clay	100.0			32.49	0.81	n.a.	n.a.	0.76	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.200	32.550	1.373	7450.0	4629.5	12.453	4.762	3.04		Clay	100.0			30.77	0.81	n.a.	n.a.	0.76	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.370	32.190	1.208	7471.3	4640.2	12.264	4.247	3.01		Clay	100.0			30.43	0.81	n.a.	n.a.	0.76	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.530	32.170	1.175	7491.3	4650.2	12.225	4.132	3.01		Clay	100.0			30.41	0.81	n.a.	n.a.	0.75	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.700	31.770	1.187	7512.5	4660.8	12.021	4.236	3.02		Clay	100.0			30.03	0.81	n.a.	n.a.	0.75	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.860	32.050	1.211	7532.5	4670.8	12.111	4.281	3.02		Clay	100.0			30.29	0.81	n.a.	n.a.	0.75	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.020	31.480	1.178	7552.5	4680.9	11.837	4.251	3.03		Clay	100.0			29.75	0.81	n.a.	n.a.	0.75	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.190	32.110	1.143	7573.8	4691.5	12.074	4.035	3.01		Clay	100.0			30.35	0.81	n.a.	n.a.	0.75	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.350	33.240	1.094	7593.8	4701.5	12.525	3.716	2.97		Clay	100.0			31.42	0.81	n.a.	n.a.	0.75	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.520	33.230	1.132	7615.0	4712.2	12.488	3.847	2.98		Clay	100.0			31.41	0.81	n.a.	n.a.	0.75	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.680	32.230	1.037	7635.0	4722.2	12.034	3.649	2.98		Clay	100.0			30.46	0.81	n.a.	n.a.	0.75	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.840	30.740	1.007	7655.0	4732.2	11.374	3.740	3.01		Clay	100.0			29.05	0.81	n.a.	n.a.	0.75	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.010	28.940	0.938	7676.3	4742.8	10.585	3.736	3.03		Clay	100.0			27.35	0.81	n.a.	n.a.	0.75	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.170	26.720	0.878	7696.3	4752.8	9.625	3.837	3.07		Clay	100.0			25.26	0.81	n.a.	n.a.	0.75	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.340	24.470	0.806	7717.5	4763.5	8.654	3.912	3.11		Clay	100.0			23.13	0.81	n.a.	n.a.	0.75	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.500	23.060	0.744	7737.5	4773.5	8.041	3.875	3.14		Clay	100.0			21.80	0.81	n.a.	n.a.	0.75	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.660	24.370	0.536	7757.5	4783.5	8.567	2.618	3.02		Clay	100.0			23.03	0.81	n.a.	n.a.	0.74	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.830	24.400	0.436	7778.8	4794.2	8.557	2.125	2.97		Clay	100.0			23.06	0.81	n.a.	n.a.	0.74	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.990	21.730	0.447	7798.8	4804.2	7.423	2.509	3.06		Clay	100.0			20.54	0.81	n.a.	n.a.	0.74	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.160	21.500	0.442	7820.0	4814.8	7.307	2.511	3.07		Clay	100.0			20.32	0.81	n.a.	n.a.	0.74	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.320	22.430	0.608	7840.0	4824.8	7.673	3.284	3.11		Clay	100.0			21.20	0.80	n.a.	n.a.	0.74	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.480	23.210	0.720	7860.0	4834.8	7.975	3.737	3.13		Clay	100.0			21.94	0.80	n.a.	n.a.	0.74	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.650	26.890	0.803	7881.3	4845.5	9.472	3.499	3.05		Clay	100.0			25.42	0.80	n.a.	n.a.	0.74	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.810	24.920	0.859	7901.3	4855.5	8.637	4.096	3.13		Clay	100.0			23.55	0.80	n.a.	n.a.	0.74	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.980	25.740	0.755	7922.5	4866.1	8.951	3.468	3.07		Clay	100.0			24.33	0.80	n.a.	n.a.	0.74	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.140	23.310	0.686	7942.5	4876.2	7.932	3.545	3.12		Clay	100.0			22.03	0.80	n.a.	n.a.	0.74	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.300	22.590	0.638	7962.5	4886.2	7.617	3.426	3.13		Clay	100.0			21.35	0.80	n.a.	n.a.	0.74	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.470	23.280	0.688	7983.8	4896.8	7.878	3.567	3.12		Clay	100.0			22.00	0.80	n.a.	n.a.	0.74	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.630	23.910	0.656	8003.8	4906.8	8.114	3.296	3.09		Clay	100.0			22.60	0.80	n.a.	n.a.	0.74	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.800	25.130	0.679	8025.0	4917.5	8.589	3.217	3.07		Clay	100.0			23.75	0.80	n.a.	n.a.	0.74	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.960	24.720	0.829	8045.0	4927.5	8.401	4.006	3.13		Clay	100.0			23.36	0.80	n.a.	n.a.	0.73	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.120	26.530	0.738	8065.0	4937.5	9.113	3.280	3.05		Clay	100.0			25.08	0.80	n.a.	n.a.	0.73	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.290	25.380	0.586	8086.3	4948.2	8.624	2.745	3.03		Clay	100.0			23.99	0.80	n.a.	n.a.	0.73	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.450	20.140	0.459	8106.3	4958.2	6.489	2.853	3.14		Clay	100.0			19.04	0.80	n.a.	n.a.	0.73	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.620	18.360	0.417	8127.5	4968.8	5.754	2.918	3.19		Clay	100.0			17.35	0.80	n.a.	n.a.	0.73	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.780	21.000	0.402	8147.5	4978.8	6.799	2.377	3.08		Clay	100.0			19.85	0.80	n.a.	n.a.	0.73	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.940	23.490	0.640	8167.5	4988.8	7.780	3.300	3.11		Clay	100.0			22.20	0.80	n.a.	n.a.	0.73	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.110	23.220	1.332	8188.8	4999.5	7.651	6.965	3.31		Clay	100.0			21.95	0.80	n.a.	n.a.	0.73	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
66.270	31.480	2.117	8208.8	5009.5	10.929	7.732	3.22		Clay	100.0			29.75	0.80	n.a.	n.a.	0.73	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.440	64.590	1.802	8230.0	5020.1	24.093	2.979	2.69		Clay	78.1			61.05	0.80	n.a.	n.a.	0.73	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.600	97.270	2.264	8250.0	5030.2	57.101	2.431	2.35		Sand	50.9			91.94	0.68	62.46	125.38	0.73	0.701	0.887	0.184	0.233	0.33	0.03	0.00
66.770	108.580	3.042	8271.3	5040.8	63.960	2.913	2.37		Sand	52.4			102.63	0.69	70.92	136.76	0.73	0.701	0.876	0.221	0.296	0.42	0.02	0.00
66.930	97.680	3.409	8291.3	5050.8	37.037	3.645	2.61		Clay	71.5			92.33	0.79	n.a.	n.a.	0.73	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.090	82.740	2.907	8311.3	5060.8	31.056	3.700	2.67		Clay	76.3			78.20	0.79	n.a.	n.a.	0.73	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.260	51.540	1.815	8332.5	5071.5	18.682	3.832	2.84		Clay	90.5			48.71	0.79	n.a.	n.a.	0.72	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.420	39.740	1.300	8352.5	5081.5	13.997	3.654	2.93		Clay	97.3			37.56	0.79	n.a.	n.a.	0.72	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.590	31.260	1.122	8373.8	5092.1	10.633	4.144	3.06		Clay	100.0			29.55	0.79	n.a.	n.a.	0.72	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.750	29.910	0.971	8393.8	5102.2	10.079	3.777	3.05		Clay	100.0			28.27	0.79	n.a.	n.a.	0.72	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.910	29.560	0.998	8413.8	5112.2	9.919	3.935	3.07		Clay	100.0			27.94	0.79	n.a.	n.a.	0.72	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.080	30.890	0.939	8435.0	5122.8	10.413	3.519	3.02		Clay	100.0			29.20	0.79	n.a.	n.a.	0.72	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.240	30.050	1.162	8455.0	5132.8	10.062	4.501	3.10		Clay	100.0			28.40	0.79	n.a.	n.a.	0.72	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.410	28.870	1.062	8476.3	5143.5	9.578	4.312	3.10		Clay	100.0			27.29	0.79	n.a.	n.a.	0.72	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.570	30.330	1.058	8496.3	5153.5	10.122	4.057	3.07		Clay	100.0			28.67	0.79	n.a.	n.a.	0.72	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.730	30.500	1.053	8516.3	5163.5	10.164	4.011	3.06		Clay	100.0			28.83	0.79	n.a.	n.a.	0.72	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.900	30.010	0.975	8537.5	5174.1	9.950	3.789	3.06		Clay	100.0			28.36	0.79	n.a.	n.a.	0.72	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.060	27.060	0.907	8557.5	5184.2	8.789	3.983	3.11		Clay	100.0			25.58	0.79	n.a.	n.a.	0.72	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.230	25.080	0.721	8578.8	5194.8	8.004	3.470	3.11		Clay	100.0			23.71	0.79	n.a.	n.a.	0.72	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.390	23.990	0.679	8598.8	5204.8	7.566	3.448	3.13		Clay	100.0			22.67	0.79	n.a.	n.a.	0.72	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.550	23.100	0.842	8618.8	5214.8	7.207	4.480	3.21		Clay	100.0			21.83	0.79	n.a.	n.a.	0.72	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.720	24.560	0.865	8640.0	5225.5	7.747	4.271	3.18		Clay	100.0			23.21	0.79	n.a.	n.a.	0.71	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.880	24.390	0.928	8660.0	5235.5	7.663	4.624	3.20		Clay	100.0			23.05	0.79	n.a.	n.a.	0.71	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.050	23.190	0.924	8681.3	5246.1	7.186	4.904	3.24		Clay	100.0			21.92	0.79	n.a.	n.a.	0.71	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.210	23.180	0.745	8701.3	5256.1	7.165	3.956	3.18		Clay	100.0			21.91	0.79	n.a.	n.a.	0.71	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.370	20.650	0.567	8721.3	5266.2	6.186	3.480	3.21		Clay	100.0			19.52	0.79	n.a.	n.a.	0.71	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.540	19.430	0.387	8742.5	5276.8	5.708	2.567	3.17		Clay	100.0			18.36	0.79	n.a.	n.a.	0.71	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.700	18.950	0.355	8762.5	5286.8	5.511	2.437	3.17		Clay	100.0			17.91	0.79	n.a.	n.a.	0.71	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.870	18.060	0.493	8783.8	5297.5	5.160	3.604	3.28		Clay	100.0			17.07	0.78	n.a.	n.a.	0.71	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.030	20.900	0.827	8803.8	5307.5	6.217	5.011	3.29		Clay	100.0			19.75	0.78	n.a.	n.a.	0.71	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.190	27.130	0.837	8823.8	5317.5	8.545	3.686	3.10		Clay	100.0			25.64	0.78	n.a.	n.a.	0.71	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.360	29.960	0.774	8845.0	5328.1	9.586	3.030	3.01		Clay	100.0			28.32	0.78	n.a.	n.a.	0.71	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.520	27.510	0.678	8865.0	5338.2	8.646	2.937	3.04		Clay	100.0			26.00	0.78	n.a.	n.a.	0.71	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.690	23.800	0.694	8886.3	5348.8	7.238	3.583	3.16		Clay	100.0			22.50	0.78	n.a.	n.a.	0.71	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.850	24.130	0.767	8906.3	5358.8	7.344	3.896	3.17		Clay	100.0			22.81	0.78	n.a.	n.a.	0.71	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.010	28.500	0.781	8926.3	5368.8	8.954	3.250	3.06		Clay	100.0			26.94	0.78	n.a.	n.a.	0.71	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.180	29.350	0.810	8947.5	5379.5	9.249	3.255	3.04		Clay	100.0			27.74	0.78	n.a.	n.a.	0.70	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.340	27.740	0.760	8967.5	5389.5	8.630	3.267	3.07		Clay	100.0			26.22	0.78	n.a.	n.a.	0.70	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.510	27.370	0.800	8988.8	5400.1	8.472	3.496	3.09		Clay	100.0			25.87	0.78	n.a.	n.a.	0.70	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.670	29.810	0.856	9008.8	5410.1	9.355	3.383	3.05		Clay	100.0			28.18	0.78	n.a.	n.a.	0.70	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.830	30.050	0.936	9028.8	5420.2	9.422	3.667	3.07		Clay	100.0			28.40	0.78	n.a.	n.a.	0.70	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.000	30.050	0.773	9050.0	5430.8	9.400	3.026	3.02		Clay	100.0			28.40	0.78	n.a.	n.a.	0.70	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.160	29.440	0.667	9070.0	5440.8	9.155	2.679	3.00		Clay	100.0			27.83	0.78	n.a.	n.a.	0.70	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.330	26.530	0.714	9091.3	5451.5	8.066	3.247	3.09		Clay	100.0			25.08	0.78	n.a.	n.a.	0.70	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.490	26.440	1.410	9111.3	5461.5	8.014	6.444	3.27		Clay	100.0			24.99	0.78	n.a.	n.a.	0.70	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.650	40.260	2.280	9131.3	5471.5	13.047	6.389	3.11		Clay	100.0			38.05	0.78	n.a.	n.a.	0.70	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.820	62.800	2.538	9152.5	5482.1	21.241	4.360	2.84		Clay	90.0			59.36	0.78	n.a.	n.a.	0.70	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.980	62.170	2.582	9172.5	5492.1	20.969	4.484	2.85		Clay	90.9			58.76	0.78	n.a.	n.a.	0.70	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.150	65.560	2.067	9193.8	5502.8	22.157	3.390	2.75		Clay	83.2			61.97	0.78	n.a.	n.a.	0.70	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.310	49.040	2.336	9213.8	5512.8	16.120	5.258	2.98		Clay	100.0			46.35	0.78	n.a.	n.a.	0.70	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.480	47.080	2.176	9235.0	5523.4	15.375	5.124	2.99		Clay	100.0			44.50	0.78	n.a.	n.a.	0.70	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.640	41.150	1.675	9255.0	5533.5	13.201	4.587	3.01		Clay	100.0			38.89	0.78	n.a.	n.a.	0.69	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.800	32.200	1.388	9275.0	5543.5	9.944	5.037	3.13		Clay	100.0			30.43	0.78	n.a.	n.a.	0.69	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.970	32.180	1.010	9296.3	5554.1	9.914	3.670	3.05		Clay	100.0			30.42	0.78	n.a.	n.a.	0.69	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.130	37.470	0.842	9316.3	5564.1	11.794	2.565	2.90		Clay	94.9			35.42	0.77	n.a.	n.a.	0.69	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.300	28.290	0.759	9337.5	5574.8	8.474	3.213	3.07		Clay	100.0			26.74	0.77	n.a.	n.a.	0.69	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.460	26.360	0.692	9357.5	5584.8	7.764	3.191	3.10		Clay	100.0			24.91	0.77	n.a.	n.a.	0.69	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.620	26.920	0.750	9377.5	5594.8	7.947	3.373	3.11		Clay	100.0			25.44	0.77	n.a.	n.a.	0.69	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.790	28.260	0.825	9398.8	5605.5	8.406	3.499	3.10		Clay	100.0			26.71	0.77	n.a.	n.a.	0.69	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.950	27.200	0.876	9418.8	5615.5	8.010	3.896	3.14		Clay	100.0			25.71	0.77	n.a.	n.a.	0.69	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.120	25.290	0.766	9440.0	5626.1	7.312	3.726	3.16		Clay	100.0			23.90	0.77	n.a.	n.a.	0.69	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.280	24.540	0.589	9460.0	5636.1	7.030	2.973	3.12		Clay	100.0			23.19	0.77	n.a.	n.a.	0.69	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.440	25.060	0.625	9480.0	5646.1	7.198	3.076	3.12		Clay	100.0			23.69	0.77	n.a.	n.a.	0.69	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.610	25.540	0.922	9501.3	5656.8	7.350	4.435	3.20		Clay	100.0			24.14	0.77	n.a.	n.a.	0.69	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.770	29.610	1.039	9521.3	5666.8	8.770	4.182	3.13		Clay	100.0			27.99	0.77	n.a.	n.a.	0.69	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.940	33.600	1.193	9542.5	5677.4	10.156	4.140	3.07		Clay	100.0			31.76	0.77	n.a.	n.a.	0.69	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.100	35.240	1.809	9562.5	5687.5	10.711	5.939	3.15		Clay	100.0			33.31	0.77	n.a.	n.a.	0.69	0.672	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
77.260	40.640	2.119	9582.5	5697.5	12.584	5.912	3.10		Clay	100.0			38.41	0.77	n.a.	n.a.	0.68	0.672	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.430	52.830	2.145	9603.8	5708.1	16.828	4.467	2.92		Clay	96.7			49.93	0.77	n.a.	n.a.	0.68	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.590	39.890	1.825	9623.8	5718.1	12.269	5.203	3.07		Clay	100.0			37.70	0.77	n.a.	n.a.	0.68	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.760	35.350	1.622	9645.0	5728.8	10.658	5.312	3.12		Clay	100.0			33.41	0.77	n.a.	n.a.	0.68	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.920	34.270	1.321	9665.0	5738.8	10.259	4.488	3.09		Clay	100.0			32.39	0.77	n.a.	n.a.	0.68	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.080	36.760	1.367	9685.0	5748.8	11.104	4.284	3.05		Clay	100.0			34.74	0.77	n.a.	n.a.	0.68	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.250	32.240	1.516	9706.3	5759.5	9.510	5.534	3.17		Clay	100.0			30.47	0.77	n.a.	n.a.	0.68	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.410	31.990	1.373	9726.3	5769.5	9.404	5.061	3.15		Clay	100.0			30.24	0.77	n.a.	n.a.	0.68	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.580	40.430	1.546	9747.5	5780.1	12.303	4.347	3.02		Clay	100.0			38.21	0.77	n.a.	n.a.	0.68	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.740	44.060	1.950	9767.5	5790.1	13.532	4.977	3.02		Clay	100.0			41.64	0.77	n.a.	n.a.	0.68	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.900	45.820	2.254	9787.5	5800.1	14.112	5.507	3.04		Clay	100.0			43.31	0.77	n.a.	n.a.	0.68	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.070	50.320	2.508	9808.8	5810.8	15.632	5.522	3.01		Clay	100.0			47.56	0.77	n.a.	n.a.	0.68	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.230	60.180	2.765	9828.8	5820.8	18.989	5.003	2.91		Clay	96.0			56.88	0.77	n.a.	n.a.	0.68	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.400	63.460	2.360	9850.0	5831.4	20.076	4.031	2.83		Clay	89.7			59.98	0.77	n.a.	n.a.	0.68	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.560	59.870	2.578	9870.0	5841.5	18.809	4.693	2.90		Clay	94.8			56.59	0.76	n.a.	n.a.	0.68	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.720	45.270	2.813	9890.0	5851.5	13.783	6.975	3.11		Clay	100.0			42.79	0.76	n.a.	n.a.	0.68	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.890	43.350	1.866	9911.3	5862.1	13.099	4.860	3.03		Clay	100.0			40.97	0.76	n.a.	n.a.	0.68	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.050	44.380	2.254	9931.3	5872.1	13.424	5.718	3.07		Clay	100.0			41.95	0.76	n.a.	n.a.	0.67	0.664	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.220	40.840	2.372	9952.5	5882.8	12.193	6.614	3.14		Clay	100.0			38.60	0.76	n.a.	n.a.	0.67	0.664	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.380	81.140	2.784	9972.5	5892.8	25.846	3.655	2.72		Clay	80.8			76.69	0.76	n.a.	n.a.	0.67	0.664	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.540	183.100	3.413	9992.5	5902.8	100.790	1.916	2.10		Sand	31.0			173.06	0.69	120.18	181.21	0.67	0.663	0.780	0.762	1.255	1.89	0.00	0.00
80.710	232.400	3.669	10013.8	5913.4	128.567	1.614	1.97		Sand	20.8			219.66	0.72	157.55	204.65	0.67	0.663	0.715	2.481	3.900	5.88	0.00	0.00
80.870	245.530	4.333	10033.8	5923.5	135.870	1.801	1.99		Sand	22.3			232.07	0.73	170.55	223.71	0.67	0.662	0.691	9.581	14.568	22.00	0.00	0.00
81.040	263.060	3.616	10055.0	5934.1	145.636	1.402	1.89		Sand	14.3			248.64	0.72	178.19	204.88	0.67	0.662	0.713	2.516	3.945	5.96	0.00	0.00
81.200	256.910	2.907	10075.0	5944.1	142.039	1.154	1.84		Sand	10.1			242.83	0.69	167.17	177.04	0.67	0.661	0.788	0.647	1.041	1.57	0.00	0.00
81.360	234.730	3.143	10095.0	5954.1	129.417	1.368	1.92		Sand	16.5			221.86	0.70	155.24	188.50	0.67	0.661	0.761	1.048	1.753	2.65	0.00	0.00
81.530	218.740	3.547	10116.3	5964.8	120.294	1.660	2.00		Sand	23.1			206.75	0.71	146.53	197.99	0.67	0.661	0.734	1.690	2.729	4.13	0.00	0.00
81.690	214.650	3.388	10136.3	5974.8	117.887	1.616	2.00		Sand	22.9			202.88	0.70	142.74	193.18	0.67	0.660	0.747	1.314	2.161	3.27	0.00	0.00
81.860	192.950	4.286	10157.5	5985.4	105.581	2.281	2.14		Sand	34.3			182.37	0.71	128.71	195.79	0.67	0.660	0.740	1.503	2.445	3.71	0.00	0.00
82.020	179.830	4.671	10177.5	5995.5	98.120	2.673	2.21		Sand	40.0			169.97	0.70	118.81	189.44	0.67	0.659	0.757	1.095	1.823	2.77	0.00	0.00
82.190	132.260	4.278	10198.8	6006.1	71.339	3.364	2.38		Sand	53.4			125.01	0.66	82.31	151.65	0.67	0.659	0.831	0.300	0.420	0.64	0.02	0.00
82.350	116.220	3.666	10218.8	6016.1	62.283	3.299	2.41		Sand	56.2			109.85	0.64	70.52	137.72	0.67	0.659	0.850	0.225	0.294	0.45	0.02	0.00
82.510	142.860	3.430	10238.8	6026.1	77.146	2.490	2.26		Sand	44.0			135.03	0.66	89.40	155.69	0.67	0.658	0.824	0.331	0.474	0.72	0.02	0.00
82.680	158.100	3.397	10260.0	6036.8	85.600	2.221	2.19		Sand	38.6			149.43	0.67	100.46	165.46	0.67	0.658	0.807	0.435	0.656	1.00	0.01	0.00
82.840	172.000	3.310	10280.0	6046.8	93.296	1.984	2.13		Sand	33.7			162.57	0.68	110.53	172.94	0.66	0.657	0.793	0.557	0.873	1.33	0.00	0.00
83.010	159.970	3.148	10301.3	6057.4	86.488	2.033	2.16		Sand	36.2			151.20	0.67	101.33	164.30	0.66	0.657	0.809	0.420	0.629	0.96	0.01	0.00
83.170	142.180	3.073	10321.3	6067.4	76.481	2.242	2.23		Sand	41.6			134.39	0.66	88.28	152.69	0.66	0.657	0.828	0.307	0.432	0.66	0.02	0.00
83.330	110.080	3.373	10341.3	6077.5	58.509	3.215	2.43		Sand	57.0			104.05	0.63	65.80	132.00	0.66	0.656	0.855	0.204	0.259	0.39	0.02	0.00
83.500	62.570	2.752	10362.5	6088.1	18.853	4.795	2.90		Clay	95.3			59.14	0.76	n.a.	n.a.	0.66	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.660	41.190	1.618	10382.5	6098.1	11.807	4.494	3.04		Clay	100.0			38.93	0.76	n.a.	n.a.	0.66	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.830	34.680	1.413	10403.8	6108.8	9.651	4.793	3.13		Clay	100.0			32.78	0.76	n.a.	n.a.	0.66	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.990	27.340	1.113	10423.8	6118.8	7.233	5.029	3.24		Clay	100.0			25.84	0.76	n.a.	n.a.	0.66	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.150	27.280	1.011	10443.8	6128.8	7.198	4.582	3.22		Clay	100.0			25.78	0.76	n.a.	n.a.	0.66	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.320	26.520	0.930	10465.0	6139.4	6.935	4.366	3.22		Clay	100.0			25.07	0.76	n.a.	n.a.	0.66	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.480	24.680	0.957	10485.0	6149.4	6.322	4.925	3.28		Clay	100.0			23.33	0.75	n.a.	n.a.	0.66	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.650	26.160	0.988	10506.3	6160.1	6.788	4.726	3.25		Clay	100.0			24.73	0.75	n.a.	n.a.	0.66	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.810	25.500	0.984	10526.3	6170.1	6.560	4.860	3.27		Clay	100.0			24.10	0.75	n.a.	n.a.	0.66	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.970	23.860	0.987	10546.3	6180.1	6.015	5.311	3.32		Clay	100.0			22.55	0.75	n.a.	n.a.	0.66	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.140	24.240	0.980	10567.5	6190.8	6.124	5.170	3.31		Clay	100.0			22.91	0.75	n.a.	n.a.	0.66	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.300	25.330	0.844	10587.5	6200.8	6.462	4.212	3.24		Clay	100.0			23.94	0.75	n.a.	n.a.	0.66	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.470	21.850	0.691	10608.8	6211.4	5.327	4.174	3.30		Clay	100.0			20.65	0.75	n.a.	n.a.	0.66	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.630	21.610	0.660	10628.8	6221.4	5.239	4.048	3.30		Clay	100.0			20.43	0.75	n.a.	n.a.	0.66	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.790	23.300	0.732	10648.8	6231.5	5.769	4.074	3.27		Clay	100.0			22.02	0.75	n.a.	n.a.	0.66	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.960	25.080	1.043	10670.0	6242.1	6.326	5.284	3.30		Clay	100.0			23.71	0.75	n.a.	n.a.	0.65	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.120	29.840	1.656	10690.0	6252.1	7.836	6.759	3.29		Clay	100.0			28.20	0.75	n.a.	n.a.	0.65	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.290	40.630	1.827	10711.3	6262.8	11.265	5.180	3.10		Clay	100.0			38.40	0.75	n.a.	n.a.	0.65	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.450	40.860	2.223	10731.3	6272.8	11.317	6.264	3.15		Clay	100.0			38.62	0.75	n.a.	n.a.	0.65	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.610	42.570	1.884	10751.3	6282.8	11.840	5.066	3.07		Clay	100.0			40.24	0.75	n.a.	n.a.	0.65	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.780	33.230	1.399	10772.5	6293.4	8.849	5.023	3.17		Clay	100.0			31.41	0.75	n.a.	n.a.	0.65	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.940	26.190	1.212	10792.5	6303.4	6.598	5.829	3.31		Clay	100.0			24.75	0.75	n.a.	n.a.	0.65	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.110	28.010	1.346	10813.8	6314.1	7.160	5.954	3.29		Clay	100.0			26.47	0.75	n.a.	n.a.	0.65	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.270	30.760	1.486	10833.8	6324.1	8.015	5.865	3.25		Clay	100.0			29.07	0.75	n.a.	n.a.	0.65	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.430	29.640	1.167	10853.8	6334.1	7.645	4.821	3.21		Clay	100.0			28.02	0.75	n.a.	n.a.	0.65	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.600	24.830	0.994	10875.0	6344.8	6.113	5.126	3.31		Clay	100.0			23.47	0.75	n.a.	n.a.	0.65	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.760	23.000	0.933	10895.0	6354.8	5.524	5.317	3.35		Clay	100.0			21.74	0.75	n.a.	n.a.	0.65	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.930	25.860	0.825	10916.3	6365.4	6.410	4.044	3.23		Clay	100.0			24.44	0.75	n.a.	n.a.	0.65	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.090	29.090	0.731	10936.3	6375.4	7.410	3.094	3.11		Clay	100.0			27.50	0.75	n.a.	n.a.	0.65	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 13

PGA (A_{max}) 0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
88.250	25.170	0.796	10956.3	6385.5	6.168	4.040	3.24		Clay	100.0			23.79	0.75	n.a.	n.a.	0.65	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.420	23.870	0.735	10977.5	6396.1	5.748	3.999	3.27		Clay	100.0			22.56	0.75	n.a.	n.a.	0.65	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.580	27.750	0.897	10997.5	6406.1	6.947	4.031	3.20		Clay	100.0			26.23	0.75	n.a.	n.a.	0.65	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.750	28.810	0.881	11018.8	6416.8	7.262	3.783	3.17		Clay	100.0			27.23	0.75	n.a.	n.a.	0.65	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.910	29.580	0.849	11038.8	6426.8	7.488	3.527	3.14		Clay	100.0			27.96	0.75	n.a.	n.a.	0.65	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.070	29.080	0.845	11058.8	6436.8	7.318	3.589	3.15		Clay	100.0			27.49	0.75	n.a.	n.a.	0.65	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.240	29.440	0.816	11080.0	6447.4	7.414	3.415	3.14		Clay	100.0			27.83	0.75	n.a.	n.a.	0.64	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.400	29.790	0.866	11100.0	6457.4	7.508	3.571	3.14		Clay	100.0			28.16	0.75	n.a.	n.a.	0.64	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.570	30.280	1.331	11121.3	6468.1	7.643	5.384	3.24		Clay	100.0			28.62	0.74	n.a.	n.a.	0.64	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.730	32.700	1.650	11141.3	6478.1	8.376	6.083	3.24		Clay	100.0			30.91	0.74	n.a.	n.a.	0.64	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.900	55.620	1.477	11162.5	6488.7	15.423	2.952	2.84		Clay	90.2			52.57	0.74	n.a.	n.a.	0.64	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.060	47.560	1.145	11182.5	6498.8	12.916	2.729	2.88		Clay	93.6			44.95	0.74	n.a.	n.a.	0.64	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.220	37.360	0.973	11202.5	6508.8	9.759	3.064	3.01		Clay	100.0			35.31	0.74	n.a.	n.a.	0.64	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.390	31.630	0.817	11223.8	6519.4	7.982	3.139	3.09		Clay	100.0			29.90	0.74	n.a.	n.a.	0.64	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.550	31.450	0.902	11243.8	6529.4	7.911	3.490	3.12		Clay	100.0			29.73	0.74	n.a.	n.a.	0.64	0.640	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.720	34.200	1.049	11265.0	6540.1	8.736	3.672	3.10		Clay	100.0			32.33	0.74	n.a.	n.a.	0.64	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.880	39.470	1.084	11285.0	6550.1	10.329	3.204	3.00		Clay	100.0			37.31	0.74	n.a.	n.a.	0.64	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.040	36.210	0.991	11305.0	6560.1	9.316	3.244	3.04		Clay	100.0			34.22	0.74	n.a.	n.a.	0.64	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.210	29.770	0.793	11326.3	6570.7	7.338	3.290	3.13		Clay	100.0			28.14	0.74	n.a.	n.a.	0.64	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.370	27.440	0.756	11346.3	6580.8	6.615	3.474	3.18		Clay	100.0			25.94	0.74	n.a.	n.a.	0.64	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.540	27.000	0.772	11367.5	6591.4	6.468	3.622	3.20		Clay	100.0			25.52	0.74	n.a.	n.a.	0.64	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.700	28.850	0.794	11387.5	6601.4	7.016	3.427	3.16		Clay	100.0			27.27	0.74	n.a.	n.a.	0.64	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.860	29.290	0.820	11407.5	6611.4	7.135	3.475	3.15		Clay	100.0			27.68	0.74	n.a.	n.a.	0.64	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.030	28.960	0.725	11428.8	6622.1	7.021	3.117	3.13		Clay	100.0			27.37	0.74	n.a.	n.a.	0.64	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.190	30.260	0.784	11448.8	6632.1	7.399	3.195	3.12		Clay	100.0			28.60	0.74	n.a.	n.a.	0.64	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.360	31.860	1.070	11470.0	6642.7	7.866	4.097	3.16		Clay	100.0			30.11	0.74	n.a.	n.a.	0.64	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.520	37.610	1.031	11490.0	6652.8	9.579	3.237	3.03		Clay	100.0			35.55	0.74	n.a.	n.a.	0.64	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.680	41.780	1.051	11510.0	6662.8	10.814	2.917	2.96		Clay	100.0			39.49	0.74	n.a.	n.a.	0.64	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.850	35.270	1.039	11531.3	6673.4	8.842	3.520	3.08		Clay	100.0			33.34	0.74	n.a.	n.a.	0.63	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.010	30.960	0.890	11551.3	6683.4	7.536	3.532	3.14		Clay	100.0			29.26	0.74	n.a.	n.a.	0.63	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.180	28.700	0.803	11572.5	6694.1	6.846	3.505	3.17		Clay	100.0			27.13	0.74	n.a.	n.a.	0.63	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.340	28.060	0.716	11592.5	6704.1	6.642	3.218	3.16		Clay	100.0			26.52	0.74	n.a.	n.a.	0.63	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.500	27.130	0.732	11612.5	6714.1	6.352	3.432	3.19		Clay	100.0			25.64	0.74	n.a.	n.a.	0.63	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.670	27.210	0.760	11633.8	6724.7	6.363	3.554	3.20		Clay	100.0			25.72	0.74	n.a.	n.a.	0.63	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.830	29.070	0.712	11653.8	6734.8	6.902	3.062	3.14		Clay	100.0			27.48	0.74	n.a.	n.a.	0.63	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.000	28.520	0.608	11675.0	6745.4	6.725	2.682	3.11		Clay	100.0			26.96	0.74	n.a.	n.a.	0.63	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.160	26.600	0.501	11695.0	6755.4	6.144	2.416	3.12		Clay	100.0			25.14	0.74	n.a.	n.a.	0.63	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.320	24.480	0.397	11715.0	6765.4	5.505	2.133	3.14		Clay	100.0			23.14	0.74	n.a.	n.a.	0.63	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.490	23.520	0.441	11736.3	6776.1	5.210	2.497	3.19		Clay	100.0			22.23	0.74	n.a.	n.a.	0.63	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.650	23.420	0.450	11756.3	6786.1	5.170	2.566	3.20		Clay	100.0			22.14	0.74	n.a.	n.a.	0.63	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.820	25.150	0.519	11777.5	6796.7	5.668	2.693	3.18		Clay	100.0			23.77	0.74	n.a.	n.a.	0.63	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.980	26.080	0.586	11797.5	6806.7	5.930	2.906	3.18		Clay	100.0			24.65	0.73	n.a.	n.a.	0.63	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.140	26.480	0.655	11817.5	6816.8	6.035	3.184	3.19		Clay	100.0			25.03	0.73	n.a.	n.a.	0.63	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.310	27.010	0.708	11838.8	6827.4	6.178	3.359	3.20		Clay	100.0			25.53	0.73	n.a.	n.a.	0.63	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.470	27.150	0.763	11858.8	6837.4	6.207	3.597	3.21		Clay	100.0			25.66	0.73	n.a.	n.a.	0.63	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.640	27.790	0.805	11880.0	6848.1	6.381	3.684	3.21		Clay	100.0			26.27	0.73	n.a.	n.a.	0.63	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.800	28.490	0.843	11900.0	6858.1	6.573	3.741	3.20		Clay	100.0			26.93	0.73	n.a.	n.a.	0.63	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.960	29.280	0.818	11920.0	6868.1	6.791	3.506	3.17		Clay	100.0			27.67	0.73	n.a.	n.a.	0.63	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.130	30.020	0.869	11941.3	6878.7	6.992	3.613	3.17		Clay	100.0			28.37	0.73	n.a.	n.a.	0.63	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.290	29.930	0.875	11961.3	6888.8	6.953	3.655	3.18		Clay	100.0			28.29	0.73	n.a.	n.a.	0.63	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.460	30.800	0.797	11982.5	6899.4	7.192	3.214	3.13		Clay	100.0			29.11	0.73	n.a.	n.a.	0.63	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.620	31.910	0.806	12002.5	6909.4	7.500	3.111	3.11		Clay	100.0			30.16	0.73	n.a.	n.a.	0.63	0.628	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.780	32.210	1.113	12022.5	6919.4	7.573	4.248	3.18		Clay	100.0			30.44	0.73	n.a.	n.a.	0.63	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.950	32.590	1.297	12043.8	6930.1	7.667	4.883	3.21		Clay	100.0			30.80	0.73	n.a.	n.a.	0.62	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.110	33.900	1.258	12063.8	6940.1	8.031	4.513	3.18		Clay	100.0			32.04	0.73	n.a.	n.a.	0.62	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.280	40.720	1.004	12085.0	6950.7	9.978	2.894	2.99		Clay	100.0			38.49	0.73	n.a.	n.a.	0.62	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.440	35.700	0.869	12105.0	6960.7	8.518	2.930	3.05		Clay	100.0			33.74	0.73	n.a.	n.a.	0.62	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.600	31.420	0.853	12125.0	6970.8	7.275	3.365	3.14		Clay	100.0			29.70	0.73	n.a.	n.a.	0.62	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.770	32.040	0.754	12146.3	6981.4	7.439	2.904	3.10		Clay	100.0			30.28	0.73	n.a.	n.a.	0.62	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.930	31.980	0.607	12166.3	6991.4	7.408	2.342	3.05		Clay	100.0			30.23	0.73	n.a.	n.a.	0.62	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.100	32.680	0.612	12187.5	7002.1	7.594	2.303	3.03		Clay	100.0			30.89	0.73	n.a.	n.a.	0.62	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.260	30.330	1.122	12207.5	7012.1	6.910	4.631	3.24		Clay	100.0			28.67	0.73	n.a.	n.a.	0.62	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.430	36.230	1.036	12228.8	7022.7	8.577	3.441	3.09		Clay	100.0			34.24	0.73	n.a.	n.a.	0.62	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.590	29.260	1.012	12248.8	7032.7	6.579	4.374	3.24		Clay	100.0			27.66	0.73	n.a.	n.a.	0.62	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.750	25.670	0.831	12268.8	7042.8	5.548	4.254	3.29		Clay	100.0			24.26	0.73	n.a.	n.a.	0.62	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.920	26.260	0.693	12290.0	7053.4	5.704	3.443	3.23		Clay	100.0			24.82	0.73	n.a.	n.a.	0.62	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.080	26.840	0.751	12310.0	7063.4	5.857	3.633	3.24		Clay	100.0			25.37	0.73	n.a.	n.a.	0.62	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	13

PGA (A_{max})	0.85

Total Settlement: 0.94 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
99.250	28.080	0.687	12331.3	7074.1	6.196	3.133	3.18		Clay	100.0			26.54	0.73	n.a.	n.a.	0.62	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.410	29.660	0.754	12351.3	7084.1	6.630	3.212	3.16		Clay	100.0			28.03	0.73	n.a.	n.a.	0.62	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.570	30.160	0.824	12371.3	7094.1	6.759	3.437	3.17		Clay	100.0			28.51	0.73	n.a.	n.a.	0.62	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.740	30.430	1.265	12392.5	7104.7	6.822	5.220	3.27		Clay	100.0			28.76	0.73	n.a.	n.a.	0.62	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.900	30.610	1.744	12412.5	7114.7	6.860	7.148	3.35		Clay	100.0			28.93	0.73	n.a.	n.a.	0.62	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.070	32.570	1.730	12433.8	7125.4	7.397	6.564	3.30		Clay	100.0			30.78	0.73	n.a.	n.a.	0.62	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160			19.2	19.2					Unsaturated					1.70										
0.330			39.6	39.6					Unsaturated					1.70										
0.490			58.8	58.8					Unsaturated					1.70										
0.660			79.2	79.2					Unsaturated					1.70										
0.820	27.760	1.621	98.4	98.4	121.457	5.848	2.42		Unsaturated	56.8			26.24	1.70	44.60	104.87	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	36.550	2.043	117.6	117.6	146.304	5.598	2.36		Unsaturated	51.9			34.55	1.70	58.73	121.09	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	34.170	1.924	138.0	138.0	126.212	5.641	2.40		Unsaturated	55.0			32.30	1.70	54.90	117.40	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	31.570	1.768	157.2	157.2	109.204	5.616	2.43		Unsaturated	57.8			29.84	1.70	50.73	113.00	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	29.030	1.776	177.6	177.6	94.421	6.135	2.50		Unsaturated	63.3			27.44	1.70	46.65	109.31	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	32.510	1.540	196.8	196.8	100.452	4.750	2.40		Unsaturated	54.9			30.73	1.70	52.24	113.96	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	27.970	1.219	216.0	216.0	82.425	4.374	2.42		Unsaturated	56.9			26.44	1.70	44.94	105.35	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	25.840	1.135	236.4	236.4	72.736	4.413	2.46		Unsaturated	60.0			24.42	1.70	41.52	101.87	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	30.460	1.609	255.6	255.6	82.489	5.304	2.49		Unsaturated	62.1			28.79	1.70	48.94	111.97	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	34.330	2.154	276.0	276.0	89.483	6.300	2.53		Unsaturated	65.1			32.45	1.70	55.16	120.73	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	55.160	2.365	295.2	295.2	139.211	4.298	2.28		Unsaturated	45.3			52.14	1.70	88.63	155.56	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	36.650	2.171	314.4	314.4	89.482	5.949	2.51		Unsaturated	63.5			34.64	1.70	58.89	125.11	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	28.610	1.597	334.8	334.8	67.585	5.614	2.56		Unsaturated	68.0			27.04	1.70	45.97	109.56	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	25.690	1.422	354.0	354.0	58.957	5.573	2.60		Unsaturated	70.9			24.28	1.70	41.28	104.10	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	26.500	1.331	374.4	374.4	59.125	5.058	2.57		Unsaturated	68.3			25.05	1.70	42.58	105.25	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	24.230	1.315	393.6	393.6	73.731	5.470	2.53		Unsaturated	65.4			22.90	1.70	38.93	99.91	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	20.060	1.229	412.8	412.8	58.911	6.190	2.63		Unsaturated	73.7			18.96	1.70	32.23	92.91	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	17.190	1.122	433.2	433.2	48.693	6.610	2.71		Unsaturated	79.7			16.25	1.70	27.62	87.87	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	15.790	1.063	452.4	452.4	68.805	6.829	2.62		Unsaturated	72.9			14.92	1.70	25.37	83.90	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	15.070	1.067	472.8	472.8	62.748	7.196	2.67		Unsaturated	76.3			14.24	1.70	24.21	82.95	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	14.100	1.153	492.0	492.0	56.317	8.325	2.75		Unsaturated	82.6			13.33	1.70	22.66	81.81	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	15.080	1.332	512.4	512.4	57.860	8.984	2.76		Unsaturated	84.1			14.25	1.70	24.23	84.04	1.00	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	21.150	1.440	531.6	531.6	51.914	6.897	2.70		Unsaturated	79.4			19.99	1.70	33.98	96.09	1.00	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	24.160	1.578	550.8	550.8	57.916	6.608	2.66		Unsaturated	75.8			22.84	1.70	38.82	101.80	1.00	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	24.250	1.458	571.2	571.2	56.649	6.086	2.64		Unsaturated	74.1			22.92	1.70	38.97	101.70	0.99	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	24.640	1.697	590.4	590.4	56.231	6.969	2.69		Unsaturated	77.9			23.29	1.70	39.59	103.14	0.99	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	26.460	1.858	610.8	610.8	58.992	7.102	2.68		Unsaturated	77.3			25.01	1.70	42.52	106.85	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	26.260	1.993	630.0	630.0	82.365	7.682	2.62		Unsaturated	72.4			24.82	1.70	42.19	105.56	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	28.440	2.046	649.2	649.2	60.765	7.276	2.68		Unsaturated	77.3			26.88	1.70	45.70	110.97	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	29.230	2.173	669.6	669.6	61.113	7.522	2.69		Unsaturated	78.1			27.63	1.70	46.97	112.75	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	30.320	2.298	688.8	688.8	87.037	7.666	2.60		Unsaturated	71.2			28.66	1.69	48.54	113.54	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	30.690	2.325	709.2	709.2	85.548	7.666	2.61		Unsaturated	71.5			29.01	1.67	48.47	113.51	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	35.680	2.236	728.4	728.4	70.418	6.331	2.59		Unsaturated	70.4			33.72	1.62	54.73	121.37	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	39.260	1.953	747.6	747.6	61.835	5.023	2.55		Unsaturated	67.1			37.11	1.59	58.96	126.10	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	38.360	1.433	768.0	768.0	59.580	3.773	2.47		Unsaturated	60.6			36.26	1.58	57.34	122.31	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	34.050	0.895	787.2	787.2	52.155	2.659	2.40		Unsaturated	55.3			32.18	1.59	51.27	112.87	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	33.230	0.364	807.6	807.6	50.222	1.108	2.17		Unsaturated	37.0			31.41	1.61	50.49	102.45	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	30.090	0.286	826.8	826.8	44.873	0.963	2.18		Unsaturated	37.4			28.44	1.61	45.72	96.91	0.99	0.521	1.098	n.a.	n.a.	n.a.	0.00	0.00
7.050	26.350	0.235	846.0	846.0	38.756	0.906	2.22		Unsaturated	40.6			24.91	1.61	39.99	91.92	0.99	0.520	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.220	18.500	0.235	866.4	866.4	26.687	1.301	2.44		Unsaturated	58.3			17.49	1.61	28.20	84.35	0.99	0.520	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.380	14.900	0.361	885.6	885.6	25.142	2.494	2.63		Unsaturated	73.1			14.08	1.61	22.64	80.40	0.99	0.520	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.550	13.260	0.605	906.0	906.0	28.272	4.722	2.77		Unsaturated	84.5			12.53	1.59	19.98	78.55	0.99	0.520	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.710	14.730	0.705	925.2	925.2	30.842	4.939	2.75		Unsaturated	83.3			13.92	1.57	21.84	80.83	0.99	0.519	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.870	19.790	0.772	944.4	944.4	40.910	3.996	2.60		Unsaturated	71.2			18.71	1.53	28.61	87.77	0.99	0.519	1.078	n.a.	n.a.	n.a.	0.00	0.00
8.040	22.670	0.807	964.8	964.8	36.340	3.638	2.61		Unsaturated	71.9			21.43	1.50	32.12	92.44	0.99	0.519	1.079	n.a.	n.a.	n.a.	0.00	0.00
8.200	17.850	0.862	984.0	984.0	35.280	4.965	2.71		Unsaturated	80.1			16.87	1.50	25.38	85.02	0.98	0.519	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.370	14.240	0.898	1004.4	1004.4	27.355	6.538	2.88		Unsaturated	93.1			13.46	1.50	20.23	79.82	0.98	0.518	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.530	12.200	0.692	1023.6	1023.6	22.837	5.922	2.90		Unsaturated	95.2			11.53	1.50	17.27	76.15	0.98	0.518	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.690	11.510	0.500	1042.8	1042.8	21.075	4.554	2.85		Unsaturated	91.2			10.88	1.49	16.19	74.34	0.98	0.518	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.860	10.480	0.556	1063.2	1063.2	18.714	5.593	2.95		Unsaturated	99.0			9.91	1.48	14.61	73.00	0.98	0.517	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.020	10.540	0.624	1082.4	1082.4	18.475	6.241	2.99		Unsaturated	100.0			9.96	1.46	14.55	73.00	0.98	0.517	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.190	10.250	0.526	1102.8	1102.8	17.589	5.426	2.96		Unsaturated	99.9			9.69	1.45	14.02	72.30	0.98	0.517	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.350	14.270	0.540	1122.0	1122.0	24.437	3.939	2.76		Unsaturated	84.0			13.49	1.42	19.16	77.42	0.98	0.517	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.510	20.450	0.570	1141.2	1141.2	28.948	2.868	2.62		Unsaturated	72.3			19.33	1.39	26.84	85.70	0.98	0.516	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.680	18.140	0.641	1161.6	1161.6	30.233	3.648	2.67		Unsaturated	76.7			17.15	1.38	23.70	82.34	0.98	0.516	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.840	12.910	0.715	1180.8	1180.8	20.867	5.803	2.93		Unsaturated	97.1			12.20	1.38	16.89	75.82	0.98	0.516	1.051	n.a.	n.a.	n.a.	0.00	0.00
10.010	9.920	0.685	1201.2	1201.2	15.517	7.346	3.09		Clay	100.0			9.38	1.16	n.a.	n.a.	0.98	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	10.670	0.554	1220.4	1220.4	16.486	5.505	2.99		Clay	100.0			10.09	1.16	n.a.	n.a.	0.98	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	9.330	0.545	1239.6	1239.6	14.053	6.258	3.08		Clay	100.0			8.82	1.15	n.a.	n.a.	0.98	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	11.640	0.505	1260.0	1260.0	17.476	4.589	2.92		Clay	96.3			11.00	1.15	n.a.	n.a.	0.98	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	9.200	0.453	1279.2	1279.2	13.384	5.286	3.04		Clay	100.0			8.70	1.14	n.a.	n.a.	0.98	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	8.080	0.347	1299.6	1299.6	11.435	4.670	3.06		Clay	100.0			7.64	1.14	n.a.	n.a.	0.98	0.535	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	7.560	0.317	1318.8	1318.8	10.465	4.598	3.09		Clay	100.0			7.15	1.13	n.a.	n.a.	0.98	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	7.510	0.290	1338.8	1329.4	10.291	4.235	3.07		Clay	100.0			7.10	1.13	n.a.	n.a.	0.98	0.543	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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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)
11.320	6.790	0.253	1360.0	1340.0	9.119	4.137	3.11		Clay	100.0			6.42	1.13	n.a.	n.a.	0.97	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	6.020	0.220	1380.0	1350.0	7.896	4.135	3.16		Clay	100.0			5.69	1.13	n.a.	n.a.	0.97	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	5.610	0.192	1401.3	1360.7	7.216	3.907	3.18		Clay	100.0			5.30	1.12	n.a.	n.a.	0.97	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	5.470	0.186	1421.3	1370.7	6.944	3.898	3.19		Clay	100.0			5.17	1.12	n.a.	n.a.	0.97	0.556	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	5.450	0.168	1442.5	1381.3	6.847	3.559	3.17		Clay	100.0			5.15	1.12	n.a.	n.a.	0.97	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	5.500	0.128	1462.5	1391.4	6.855	2.682	3.11		Clay	100.0			5.20	1.12	n.a.	n.a.	0.97	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	5.610	0.116	1482.5	1401.4	6.949	2.383	3.08		Clay	100.0			5.30	1.11	n.a.	n.a.	0.97	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	5.680	0.148	1503.8	1412.0	6.980	2.999	3.13		Clay	100.0			5.37	1.11	n.a.	n.a.	0.97	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	6.060	0.188	1523.8	1422.0	7.451	3.539	3.14		Clay	100.0			5.73	1.11	n.a.	n.a.	0.97	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	7.080	0.273	1545.0	1432.7	8.805	4.335	3.13		Clay	100.0			6.69	1.11	n.a.	n.a.	0.97	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	7.460	0.361	1565.0	1442.7	9.257	5.412	3.18		Clay	100.0			7.05	1.11	n.a.	n.a.	0.97	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	6.440	0.310	1585.0	1452.7	7.775	5.496	3.24		Clay	100.0			6.09	1.10	n.a.	n.a.	0.97	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	5.340	0.222	1606.3	1463.4	6.201	4.882	3.29		Clay	100.0			5.05	1.10	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	4.430	0.160	1626.3	1473.4	4.910	4.410	3.35		Clay	100.0			4.19	1.10	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	4.220	0.148	1647.5	1484.0	4.577	4.358	3.37		Clay	100.0			3.99	1.10	n.a.	n.a.	0.97	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	4.410	0.139	1667.5	1494.0	4.787	3.890	3.33		Clay	100.0			4.17	1.10	n.a.	n.a.	0.97	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	4.320	0.136	1687.5	1504.0	4.623	3.912	3.34		Clay	100.0			4.08	1.09	n.a.	n.a.	0.97	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	4.310	0.141	1708.8	1514.7	4.563	4.092	3.36		Clay	100.0			4.07	1.09	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	4.750	0.176	1728.8	1524.7	5.097	4.524	3.34		Clay	100.0			4.49	1.09	n.a.	n.a.	0.96	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	5.170	0.203	1750.0	1535.3	5.595	4.724	3.32		Clay	100.0			4.89	1.09	n.a.	n.a.	0.96	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	5.460	0.217	1770.0	1545.4	5.921	4.748	3.30		Clay	100.0			5.16	1.09	n.a.	n.a.	0.96	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	5.150	0.207	1790.0	1555.4	5.471	4.860	3.33		Clay	100.0			4.87	1.08	n.a.	n.a.	0.96	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	5.910	0.261	1811.3	1566.0	6.391	5.209	3.29		Clay	100.0			5.59	1.08	n.a.	n.a.	0.96	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	6.540	0.283	1831.3	1576.0	7.137	5.032	3.25		Clay	100.0			6.18	1.08	n.a.	n.a.	0.96	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	6.820	0.242	1852.5	1586.7	7.429	4.109	3.18		Clay	100.0			6.45	1.08	n.a.	n.a.	0.96	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.900	0.262	1872.5	1596.7	9.975	3.292	3.02		Clay	100.0			8.41	1.08	n.a.	n.a.	0.96	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	8.280	0.331	1892.5	1606.7	9.129	4.513	3.13		Clay	100.0			7.83	1.08	n.a.	n.a.	0.96	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	8.200	0.410	1913.8	1617.4	8.957	5.654	3.20		Clay	100.0			7.75	1.07	n.a.	n.a.	0.96	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	10.270	0.490	1933.8	1627.4	11.433	5.266	3.10		Clay	100.0			9.71	1.07	n.a.	n.a.	0.96	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	12.240	0.547	1955.0	1638.0	13.751	4.857	3.01		Clay	100.0			11.57	1.07	n.a.	n.a.	0.96	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	13.910	0.633	1975.0	1648.0	15.682	4.899	2.97		Clay	100.0			13.15	1.07	n.a.	n.a.	0.96	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	15.150	0.704	1995.0	1658.0	17.071	4.972	2.95		Clay	98.7			14.32	1.07	n.a.	n.a.	0.96	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	16.360	0.808	2016.3	1668.7	18.400	5.261	2.94		Clay	98.0			15.46	1.06	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	17.310	0.883	2036.3	1678.7	19.410	5.417	2.93		Clay	97.3			16.36	1.06	n.a.	n.a.	0.96	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	17.600	0.902	2057.5	1689.3	19.619	5.444	2.93		Clay	97.1			16.64	1.06	n.a.	n.a.	0.95	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	17.990	0.921	2077.5	1699.4	19.950	5.431	2.92		Clay	96.7			17.00	1.06	n.a.	n.a.	0.95	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	18.430	0.908	2097.5	1709.4	20.336	5.225	2.90		Clay	95.3			17.42	1.06	n.a.	n.a.	0.95	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	18.970	0.859	2118.8	1720.0	20.826	4.793	2.87		Clay	92.7			17.93	1.06	n.a.	n.a.	0.95	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	19.190	0.813	2138.8	1730.0	20.948	4.484	2.85		Clay	91.0			18.14	1.05	n.a.	n.a.	0.95	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	18.880	0.785	2160.0	1740.7	20.452	4.412	2.85		Clay	91.2			17.84	1.05	n.a.	n.a.	0.95	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	19.290	0.811	2180.0	1750.7	20.792	4.454	2.85		Clay	91.0			18.23	1.05	n.a.	n.a.	0.95	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	20.040	0.822	2200.0	1760.7	21.514	4.338	2.83		Clay	89.5			18.94	1.05	n.a.	n.a.	0.95	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	19.810	0.782	2221.3	1771.3	21.113	4.184	2.83		Clay	89.2			18.72	1.05	n.a.	n.a.	0.95	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	19.100	0.745	2241.3	1781.4	20.186	4.145	2.84		Clay	90.2			18.05	1.05	n.a.	n.a.	0.95	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	18.260	0.724	2262.5	1792.0	19.117	4.227	2.86		Clay	92.1			17.26	1.04	n.a.	n.a.	0.95	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	17.700	0.703	2282.5	1802.0	18.378	4.244	2.88		Clay	93.2			16.73	1.04	n.a.	n.a.	0.95	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	17.620	0.633	2302.5	1812.0	18.177	3.842	2.85		Clay	91.3			16.65	1.04	n.a.	n.a.	0.95	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	16.530	0.554	2323.8	1822.7	16.863	3.602	2.86		Clay	91.9			15.62	1.04	n.a.	n.a.	0.95	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	15.480	0.473	2343.8	1832.7	15.614	3.306	2.86		Clay	92.2			14.63	1.04	n.a.	n.a.	0.95	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	14.660	0.497	2365.0	1843.3	14.623	3.685	2.92		Clay	96.3			13.86	1.04	n.a.	n.a.	0.95	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	15.300	0.641	2385.0	1853.4	15.224	4.541	2.96		Clay	99.7			14.46	1.04	n.a.	n.a.	0.94	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	17.890	0.968	2406.3	1864.0	17.904	5.799	2.97		Clay	100.0			16.91	1.03	n.a.	n.a.	0.94	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	20.540	1.101	2426.3	1874.0	20.626	5.694	2.92		Clay	96.9			19.41	1.03	n.a.	n.a.	0.94	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	20.990	1.051	2446.3	1884.0	20.984	5.314	2.90		Clay	94.9			19.84	1.03	n.a.	n.a.	0.94	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	19.390	0.971	2467.5	1894.7	19.166	5.350	2.93		Clay	97.3			18.33	1.03	n.a.	n.a.	0.94	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	17.100	0.812	2487.5	1904.7	16.650	5.123	2.96		Clay	100.0			16.16	1.03	n.a.	n.a.	0.94	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	14.550	0.675	2508.8	1915.3	13.883	5.073	3.02		Clay	100.0			13.75	1.03	n.a.	n.a.	0.94	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	12.710	0.580	2528.8	1925.3	11.889	5.064	3.07		Clay	100.0			12.01	1.03	n.a.	n.a.	0.94	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	11.420	0.497	2548.8	1935.4	10.484	4.899	3.11		Clay	100.0			10.79	1.02	n.a.	n.a.	0.94	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.870	0.482	2570.0	1946.0	9.851	5.032	3.13		Clay	100.0			10.27	1.02	n.a.	n.a.	0.94	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	10.660	0.478	2590.0	1956.0	9.576	5.106	3.15		Clay	100.0			10.08	1.02	n.a.	n.a.	0.94	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	10.770	0.518	2611.3	1966.7	9.625	5.470	3.16		Clay	100.0			10.18	1.02	n.a.	n.a.	0.94	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	14.330	0.536	2631.3	1976.7	13.168	4.118	2.98		Clay	100.0			13.54	1.02	n.a.	n.a.	0.94	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	13.320	0.499	2651.3	1986.7	12.075	4.159	3.01		Clay	100.0			12.59	1.02	n.a.	n.a.	0.94	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	11.910	0.522	2672.5	1997.3	10.588	4.935	3.10		Clay	100.0			11.26	1.02	n.a.	n.a.	0.94	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	10.860	0.596	2692.5	2007.3	9.479	6.264	3.21		Clay	100.0			10.26	1.01	n.a.	n.a.	0.93	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	14.740	0.612	2713.8	2018.0	13.264	4.574	3.01		Clay	100.0			13.93	1.01	n.a.	n.a.	0.93	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.310	22.090	0.601	2733.8	2028.0	20.437	2.901	2.74		Clay	82.0			20.88	1.01	n.a.	n.a.	0.93	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	15.010	0.488	2753.8	2038.0	13.379	3.582	2.94		Clay	98.2			14.19	1.01	n.a.	n.a.	0.93	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	12.900	0.362	2775.0	2048.7	11.239	3.140	2.97		Clay	100.0			12.19	1.01	n.a.	n.a.	0.93	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	10.090	0.231	2795.0	2058.7	8.445	2.661	3.03		Clay	100.0			9.54	1.01	n.a.	n.a.	0.93	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	9.010	0.193	2816.3	2069.3	7.347	2.544	3.07		Clay	100.0			8.52	1.01	n.a.	n.a.	0.93	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	9.540	0.189	2836.3	2079.3	7.812	2.330	3.03		Clay	100.0			9.02	1.00	n.a.	n.a.	0.93	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	11.070	0.244	2856.3	2089.4	9.230	2.533	2.98		Clay	100.0			10.46	1.00	n.a.	n.a.	0.93	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	11.580	0.281	2877.5	2100.0	9.658	2.772	2.99		Clay	100.0			10.95	1.00	n.a.	n.a.	0.93	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	11.710	0.319	2897.5	2110.0	9.726	3.113	3.02		Clay	100.0			11.07	1.00	n.a.	n.a.	0.93	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	12.340	0.319	2918.8	2120.7	10.262	2.928	2.98		Clay	100.0			11.66	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	12.330	0.345	2938.8	2130.7	10.195	3.180	3.00		Clay	100.0			11.65	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	11.600	0.373	2958.8	2140.7	9.455	3.689	3.07		Clay	100.0			10.96	1.00	n.a.	n.a.	0.93	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	10.980	0.381	2980.0	2151.3	8.822	4.017	3.11		Clay	100.0			10.38	1.00	n.a.	n.a.	0.92	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	10.190	0.380	3000.0	2161.3	8.041	4.372	3.17		Clay	100.0			9.63	0.99	n.a.	n.a.	0.92	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	10.050	0.307	3021.3	2172.0	7.863	3.597	3.13		Clay	100.0			9.50	0.99	n.a.	n.a.	0.92	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	10.420	0.360	3041.3	2182.0	8.157	4.045	3.14		Clay	100.0			9.85	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	10.770	0.404	3061.3	2192.0	8.430	4.376	3.15		Clay	100.0			10.18	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	12.420	0.421	3082.5	2202.7	9.878	3.873	3.07		Clay	100.0			11.74	0.99	n.a.	n.a.	0.92	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	12.300	0.364	3102.5	2212.7	9.716	3.386	3.04		Clay	100.0			11.63	0.99	n.a.	n.a.	0.92	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	11.330	0.296	3123.8	2223.3	8.787	3.030	3.05		Clay	100.0			10.71	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	10.110	0.212	3143.8	2233.3	7.646	2.488	3.05		Clay	100.0			9.56	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	9.720	0.191	3163.8	2243.4	7.255	2.341	3.06		Clay	100.0			9.19	0.98	n.a.	n.a.	0.92	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	9.800	0.175	3185.0	2254.0	7.283	2.130	3.03		Clay	100.0			9.26	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	11.230	0.165	3205.0	2264.0	8.505	1.718	2.93		Clay	97.2			10.61	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	12.220	0.191	3226.3	2274.7	9.326	1.799	2.90		Clay	95.2			11.55	0.98	n.a.	n.a.	0.92	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	10.990	0.321	3246.3	2284.7	8.200	3.423	3.10		Clay	100.0			10.39	0.98	n.a.	n.a.	0.92	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	13.010	0.493	3266.3	2294.7	9.916	4.335	3.09		Clay	100.0			12.30	0.98	n.a.	n.a.	0.91	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	18.050	0.621	3287.5	2305.3	14.233	3.788	2.93		Clay	97.6			17.06	0.98	n.a.	n.a.	0.91	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	27.860	0.901	3307.5	2315.3	22.637	3.438	2.75		Clay	82.9			26.33	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	28.090	1.499	3328.8	2326.0	22.722	5.672	2.89		Clay	94.3			26.55	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	28.630	1.488	3348.8	2336.0	23.078	5.519	2.88		Clay	93.3			27.06	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	38.020	1.401	3370.0	2346.6	30.968	3.855	2.68		Clay	77.3			35.94	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	46.310	1.634	3390.0	2356.7	37.863	3.662	2.60		Clay	71.0			43.77	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	35.210	1.537	3410.0	2366.7	28.314	4.587	2.76		Clay	83.7			33.28	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	36.490	1.655	3431.3	2377.3	29.255	4.760	2.76		Clay	83.8			34.49	0.97	n.a.	n.a.	0.91	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	53.260	1.611	3451.3	2387.3	45.858	3.125	2.49		Sand	62.4	62.16		62.16	0.95	58.89	124.81	0.91	0.709	0.984	0.183	0.256	0.36	0.03	0.03
28.220	65.760	1.557	3472.5	2398.0	56.845	2.432	2.35		Sand	51.0			62.16	0.94	58.71	120.69	0.91	0.710	0.984	0.173	0.237	0.33	0.03	0.03
28.380	65.190	1.745	3492.5	2408.0	56.213	2.751	2.39		Sand	54.2	62.16		62.16	0.94	58.62	121.85	0.91	0.710	0.984	0.175	0.242	0.34	0.03	0.03
28.540	57.010	1.881	3512.5	2418.0	48.855	3.404	2.50		Sand	62.9	62.16		62.16	0.94	58.55	124.50	0.91	0.711	0.983	0.182	0.254	0.36	0.03	0.03
28.710	45.250	1.848	3533.8	2428.6	35.809	4.251	2.66		Clay	76.0			42.77	0.96	n.a.	n.a.	0.91	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	43.240	1.776	3553.8	2438.7	34.005	4.283	2.68		Clay	77.5			40.87	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	49.880	1.766	3575.0	2449.3	42.250	3.672	2.57		Sand	68.3	50.71		50.71	0.93	47.31	111.36	0.90	0.712	0.983	0.154	0.201	0.28	0.03	0.03
29.200	50.030	1.787	3595.0	2459.3	42.287	3.705	2.57		Sand	68.5	50.71		50.71	0.93	47.22	111.28	0.90	0.713	0.983	0.154	0.201	0.28	0.03	0.03
29.360	50.840	1.678	3615.0	2469.3	42.901	3.421	2.54		Sand	66.2	50.71		50.71	0.93	47.12	110.64	0.90	0.713	0.982	0.153	0.199	0.28	0.03	0.03
29.530	47.640	1.536	3636.3	2480.0	40.006	3.353	2.56		Sand	67.5	50.71		50.71	0.93	47.03	110.81	0.90	0.714	0.982	0.153	0.199	0.28	0.03	0.03
29.690	50.260	1.461	3656.3	2490.0	42.199	3.016	2.51		Sand	63.7	50.71		50.71	0.93	46.92	109.77	0.90	0.714	0.981	0.152	0.196	0.27	0.03	0.03
29.860	53.650	1.314	3677.5	2500.6	45.048	2.535	2.44		Sand	57.9			50.71	0.92	46.80	108.02	0.90	0.714	0.981	0.149	0.191	0.27	0.03	0.03
30.020	55.300	0.940	3697.5	2510.7	46.381	1.759	2.32		Sand	48.9			52.27	0.92	48.11	106.40	0.90	0.715	0.981	0.146	0.186	0.26	0.03	0.03
30.180	58.840	0.842	3717.5	2520.7	49.345	1.478	2.26		Sand	43.4			55.61	0.92	51.12	107.47	0.90	0.715	0.980	0.148	0.189	0.26	0.03	0.03
30.350	58.070	0.924	3738.8	2531.3	48.567	1.644	2.29		Sand	46.2			54.89	0.92	50.35	107.96	0.90	0.715	0.980	0.149	0.190	0.27	0.03	0.03
30.510	56.220	0.887	3758.8	2541.3	46.867	1.632	2.30		Sand	47.0			53.14	0.92	48.62	106.17	0.90	0.716	0.980	0.146	0.185	0.26	0.03	0.03
30.680	55.040	0.892	3780.0	2552.0	45.744	1.678	2.32		Sand	48.2			52.02	0.91	47.49	105.32	0.90	0.716	0.979	0.145	0.183	0.26	0.03	0.03
30.840	55.600	1.033	3800.0	2562.0	46.127	1.924	2.35		Sand	51.0			52.55	0.91	47.92	107.04	0.90	0.716	0.979	0.147	0.187	0.26	0.03	0.03
31.000	58.410	1.005	3820.0	2572.0	48.438	1.778	2.31		Sand	48.0			55.21	0.91	50.28	108.71	0.89	0.717	0.978	0.150	0.192	0.27	0.03	0.03
31.170	56.390	1.413	3841.3	2582.6	46.601	2.594	2.43		Sand	57.6			53.30	0.91	48.47	110.05	0.89	0.717	0.977	0.152	0.196	0.27	0.03	0.03
31.330	57.910	1.632	3861.3	2592.7	47.800	2.916	2.46		Sand	59.7			54.74	0.91	49.73	112.30	0.89	0.717	0.976	0.156	0.203	0.28	0.03	0.03
31.500	63.310	1.493	3882.5	2603.3	52.295	2.433	2.38		Sand	53.1			59.84	0.91	54.35	116.00	0.89	0.718	0.975	0.163	0.216	0.30	0.03	0.02
31.660	78.460	1.174	3902.5	2613.3	65.071	1.534	2.17		Sand	36.8			74.16	0.91	67.43	123.19	0.89	0.718	0.973	0.179	0.245	0.34	0.03	0.02
31.820	136.510	1.057	3922.5	2623.3	114.216	0.785	1.80		Sand	7.0			129.03	0.91	116.89	118.47	0.89	0.718	0.974	0.168	0.225	0.31	0.03	0.03
31.990	191.050	0.955	3943.8	2634.0	160.180	0.505	1.57		Sand	0.0			180.58	0.92	166.25	166.25	0.89	0.718	0.959	0.446	0.804	1.12	0.01	0.01
32.150	194.010	1.332	3963.8	2644.0	162.370	0.693	1.65		Sand	0.0			183.37	0.92	168.72	168.72	0.89	0.719	0.958	0.483	0.885	1.23	0.00	0.00
32.320	124.350	2.229	3985.0	2654.6	103.253	1.821	2.08		Sand	29.1	183.37		183.37	0.94	172.13	240.77	0.89	0.719	0.932	46.579	95.503	132.84	0.00	0.00
32.480	68.730	2.038	4005.0	2664.6	56.203	3.055	2.42		Sand	56.8	183.37		183.37	0.94	172.55	268.11	0.89	0.719	0.931	1464.516	2999.095	4170.41	0.00	0.00
32.640	36.170	1.672	4025.0	2674.7	25.542	4.895	2.81		Clay	87.9			34.19	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	17.640	0.649	4046.3	2685.3	11.631	4.154	3.03		Clay	100.0			16.67	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	15.090	0.360	4066.3	2695.3	9.689	2.759	2.99		Clay	100.0			14.26	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	15.330	0.396	4087.5	2706.0	9.820	2.978	3.00		Clay	100.0			14.49	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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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)
33.300	15.480	0.345	4107.5	2716.0	9.887	2.569	2.96		Clay	100.0			14.63	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	14.650	0.343	4127.5	2726.0	9.234	2.722	3.00		Clay	100.0			13.85	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	13.870	0.355	4148.8	2736.6	8.621	3.013	3.05		Clay	100.0			13.11	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	15.300	0.365	4168.8	2746.7	9.623	2.762	2.99		Clay	100.0			14.46	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	15.470	0.386	4190.0	2757.3	9.702	2.885	3.00		Clay	100.0			14.62	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	15.210	0.401	4210.0	2767.3	9.471	3.058	3.02		Clay	100.0			14.38	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	15.580	0.408	4230.0	2777.3	9.696	3.031	3.01		Clay	100.0			14.73	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	16.860	0.458	4251.3	2788.0	10.570	3.106	2.99		Clay	100.0			15.94	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	18.300	0.451	4271.3	2798.0	11.554	2.788	2.93		Clay	97.2			17.30	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	18.890	0.451	4292.5	2808.6	11.923	2.691	2.91		Clay	95.6			17.85	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	18.760	0.445	4312.5	2818.6	11.781	2.680	2.91		Clay	95.8			17.73	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	16.990	0.396	4332.5	2828.7	10.481	2.674	2.95		Clay	99.2			16.06	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	14.580	0.320	4353.8	2839.3	8.737	2.582	3.01		Clay	100.0			13.78	0.93	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	12.590	0.267	4373.8	2849.3	7.302	2.564	3.07		Clay	100.0			11.90	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	11.780	0.223	4395.0	2860.0	6.701	2.325	3.08		Clay	100.0			11.13	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	11.590	0.238	4415.0	2870.0	6.538	2.536	3.11		Clay	100.0			10.95	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.570	0.232	4436.3	2880.6	7.187	2.239	3.05		Clay	100.0			11.88	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	12.740	0.261	4456.3	2890.6	7.273	2.486	3.07		Clay	100.0			12.04	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	12.430	0.260	4476.3	2900.7	7.027	2.551	3.09		Clay	100.0			11.75	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	12.550	0.234	4497.5	2911.3	7.077	2.269	3.06		Clay	100.0			11.86	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	11.390	0.245	4517.5	2921.3	6.251	2.686	3.14		Clay	100.0			10.77	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	11.360	0.261	4538.8	2932.0	6.201	2.871	3.16		Clay	100.0			10.74	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	13.820	0.284	4558.8	2942.0	7.846	2.460	3.04		Clay	100.0			13.06	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	15.950	0.388	4578.8	2952.0	9.255	2.839	3.01		Clay	100.0			15.08	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	19.270	0.587	4600.0	2962.6	11.456	3.458	2.98		Clay	100.0			18.21	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	22.650	0.771	4620.0	2972.6	13.685	3.792	2.95		Clay	98.7			21.41	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	26.680	0.877	4641.3	2983.3	16.331	3.599	2.87		Clay	92.8			25.22	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	28.950	0.940	4661.3	2993.3	17.786	3.532	2.84		Clay	90.0			27.36	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	28.600	0.959	4681.3	3003.3	17.487	3.652	2.85		Clay	91.2			27.03	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	28.010	0.879	4702.5	3014.0	17.027	3.427	2.84		Clay	90.6			26.47	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	27.370	1.043	4722.5	3024.0	16.540	4.172	2.91		Clay	95.6			25.87	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	26.070	1.024	4743.8	3034.6	15.619	4.319	2.94		Clay	97.9			24.64	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	21.270	0.950	4763.8	3044.6	12.408	5.030	3.06		Clay	100.0			20.10	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	23.300	0.821	4783.8	3054.6	13.689	3.928	2.96		Clay	99.5			22.02	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	21.040	0.712	4805.0	3065.3	12.160	3.818	2.99		Clay	100.0			19.89	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	19.320	0.582	4825.0	3075.3	10.996	3.439	3.00		Clay	100.0			18.26	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	18.220	0.525	4846.3	3085.9	10.238	3.326	3.01		Clay	100.0			17.22	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	16.660	0.483	4866.3	3096.0	9.191	3.395	3.06		Clay	100.0			15.75	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	15.880	0.460	4886.3	3106.0	8.652	3.420	3.08		Clay	100.0			15.01	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	15.570	0.425	4907.5	3116.6	8.417	3.243	3.08		Clay	100.0			14.72	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	14.750	0.401	4927.5	3126.6	7.859	3.261	3.10		Clay	100.0			13.94	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	13.090	0.388	4948.8	3137.3	6.767	3.657	3.19		Clay	100.0			12.37	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	12.040	0.311	4968.8	3147.3	6.072	3.251	3.20		Clay	100.0			11.38	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	11.030	0.275	4988.8	3157.3	5.407	3.222	3.24		Clay	100.0			10.43	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	11.180	0.272	5010.0	3168.0	5.477	3.130	3.23		Clay	100.0			10.57	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	11.930	0.424	5030.0	3178.0	5.925	4.508	3.28		Clay	100.0			11.28	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	12.210	0.435	5051.3	3188.6	6.074	4.496	3.27		Clay	100.0			11.54	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	13.320	0.285	5071.3	3198.6	6.743	2.644	3.11		Clay	100.0			12.59	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	16.260	0.351	5091.3	3208.6	8.548	2.562	3.02		Clay	100.0			15.37	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	13.870	0.350	5112.5	3219.3	7.029	3.094	3.13		Clay	100.0			13.11	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	13.490	0.398	5132.5	3229.3	6.765	3.644	3.18		Clay	100.0			12.75	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	13.840	0.421	5153.8	3239.9	6.953	3.738	3.18		Clay	100.0			13.08	0.89	n.a.	n.a.	0.84	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	15.330	0.435	5173.8	3250.0	7.842	3.414	3.12		Clay	100.0			14.49	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	15.290	0.442	5193.8	3260.0	7.787	3.480	3.12		Clay	100.0			14.45	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	15.080	0.424	5215.0	3270.6	7.627	3.397	3.12		Clay	100.0			14.25	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	14.590	0.372	5235.0	3280.6	7.299	3.107	3.12		Clay	100.0			13.79	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	13.460	0.379	5256.3	3291.3	6.582	3.496	3.18		Clay	100.0			12.72	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	12.770	0.304	5276.3	3301.3	6.138	2.998	3.17		Clay	100.0			12.07	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	11.620	0.291	5296.3	3311.3	5.419	3.245	3.24		Clay	100.0			10.98	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	11.110	0.294	5317.5	3321.9	5.088	3.473	3.28		Clay	100.0			10.50	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	12.770	0.286	5337.5	3332.0	6.063	2.827	3.16		Clay	100.0			12.07	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	13.760	0.302	5358.8	3342.6	6.630	2.723	3.12		Clay	100.0			13.01	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	13.450	0.287	5378.8	3352.6	6.419	2.668	3.13		Clay	100.0			12.71	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	13.660	0.297	5400.0	3363.3	6.517	2.705	3.13		Clay	100.0			12.91	0.88	n.a.	n.a.	0.83	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	13.050	0.275	5420.0	3373.3	6.131	2.662	3.15		Clay	100.0			12.33	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	11.890	0.253	5440.0	3383.3	5.421	2.755	3.20		Clay	100.0			11.24	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	10.770	0.250	5461.3	3393.9	4.737	3.115	3.28		Clay	100.0			10.18	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	10.930	0.227	5481.3	3404.0	4.812	2.777	3.25		Clay	100.0			10.33	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	11.090	0.246	5502.5	3414.6	4.884	2.949	3.25		Clay	100.0			10.48	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	10.620	0.222	5522.5	3424.6	4.590	2.822	3.27		Clay	100.0			10.04	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	10.550	0.256	5542.5	3434.6	4.530	3.295	3.31		Clay	100.0			9.97	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	10.420	0.311	5563.8	3445.3	4.434	4.077	3.36		Clay	100.0			9.85	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	14.890	0.401	5583.8	3455.3	7.003	3.317	3.15		Clay	100.0			14.07	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	15.550	0.487	5605.0	3465.9	7.356	3.821	3.17		Clay	100.0			14.70	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	13.360	0.514	5625.0	3475.9	6.069	4.869	3.30		Clay	100.0			12.63	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	12.470	0.408	5645.0	3486.0	5.535	4.226	3.29		Clay	100.0			11.79	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	11.600	0.324	5666.3	3496.6	5.015	3.690	3.30		Clay	100.0			10.96	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	11.320	0.277	5686.3	3506.6	4.835	3.264	3.28		Clay	100.0			10.70	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	10.770	0.238	5707.5	3517.3	4.501	3.000	3.29		Clay	100.0			10.18	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	9.840	0.213	5727.5	3527.3	3.956	3.049	3.34		Clay	100.0			9.30	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	9.340	0.197	5747.5	3537.3	3.656	3.042	3.37		Clay	100.0			8.83	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	9.460	0.201	5768.8	3547.9	3.707	3.058	3.37		Clay	100.0			8.94	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	9.440	0.199	5788.8	3558.0	3.679	3.037	3.37		Clay	100.0			8.92	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	9.390	0.216	5810.0	3568.6	3.634	3.335	3.39		Clay	100.0			8.88	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	9.420	0.221	5830.0	3578.6	3.635	3.404	3.40		Clay	100.0			8.90	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	9.680	0.254	5850.0	3588.6	3.765	3.766	3.41		Clay	100.0			9.15	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	10.050	0.337	5871.3	3599.3	3.953	4.733	3.44		Clay	100.0			9.50	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	11.250	0.429	5891.3	3609.3	4.602	5.166	3.41		Clay	100.0			10.63	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	12.460	0.485	5912.5	3619.9	5.251	5.099	3.36		Clay	100.0			11.78	0.87	n.a.	n.a.	0.81	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	13.600	0.510	5932.5	3629.9	5.859	4.794	3.30		Clay	100.0			12.85	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	15.350	0.513	5952.5	3640.0	6.799	4.147	3.21		Clay	100.0			14.51	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	15.610	0.519	5973.8	3650.6	6.916	4.109	3.21		Clay	100.0			14.75	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	16.900	0.533	5993.8	3660.6	7.596	3.837	3.16		Clay	100.0			15.97	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	17.300	0.545	6015.0	3671.3	7.786	3.816	3.15		Clay	100.0			16.35	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	16.390	0.496	6035.0	3681.3	7.265	3.711	3.16		Clay	100.0			15.49	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	15.250	0.441	6055.0	3691.3	6.622	3.611	3.19		Clay	100.0			14.41	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	14.960	0.372	6076.3	3701.9	6.441	3.119	3.17		Clay	100.0			14.14	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	15.120	0.353	6096.3	3711.9	6.504	2.927	3.15		Clay	100.0			14.29	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	15.480	0.396	6117.5	3722.6	6.673	3.186	3.16		Clay	100.0			14.63	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	17.030	0.456	6137.5	3732.6	7.481	3.263	3.12		Clay	100.0			16.10	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	18.890	0.626	6157.5	3742.6	8.449	3.957	3.13		Clay	100.0			17.85	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	20.940	0.747	6178.8	3753.3	9.512	4.186	3.10		Clay	100.0			19.79	0.86	n.a.	n.a.	0.80	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	20.960	0.785	6198.8	3763.3	9.492	4.397	3.11		Clay	100.0			19.81	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	23.260	0.599	6220.0	3773.9	10.679	2.970	2.97		Clay	100.0			21.98	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	25.440	0.468	6240.0	3783.9	11.797	2.095	2.85		Clay	91.1			24.05	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	20.770	0.768	6260.0	3794.0	9.299	4.353	3.12		Clay	100.0			19.63	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	18.140	1.216	6281.3	3804.6	7.885	8.106	3.34		Clay	100.0			17.15	0.86	n.a.	n.a.	0.80	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	43.230	1.483	6301.3	3814.6	21.014	3.700	2.79		Clay	86.6			40.86	0.86	n.a.	n.a.	0.80	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	83.290	1.907	6322.5	3825.3	56.329	2.380	2.35		Sand	50.7			78.72	0.77	60.24	122.51	0.80	0.707	0.925	0.177	0.230	0.33	0.03	0.00
51.180	97.850	2.625	6342.5	3835.3	66.470	2.773	2.34		Sand	50.3			92.49	0.78	71.81	136.96	0.80	0.706	0.915	0.222	0.310	0.44	0.02	0.00
51.350	111.760	2.795	6363.8	3845.9	76.123	2.574	2.28		Sand	45.1			105.63	0.78	82.87	148.21	0.80	0.706	0.906	0.277	0.414	0.59	0.02	0.00
51.510	131.420	2.883	6383.8	3855.9	89.782	2.248	2.18		Sand	37.8			124.22	0.79	98.70	162.53	0.80	0.706	0.893	0.399	0.650	0.92	0.01	0.00
51.670	158.130	2.352	6403.8	3865.9	108.336	1.518	2.01		Sand	23.5			149.46	0.80	119.12	166.97	0.80	0.705	0.888	0.456	0.765	1.08	0.01	0.00
51.840	181.150	1.761	6425.0	3876.6	124.255	0.990	1.84		Sand	9.9			171.22	0.78	132.92	141.12	0.80	0.705	0.910	0.239	0.343	0.49	0.02	0.00
52.000	196.440	1.182	6445.0	3886.6	134.752	0.612	1.68		Sand	0.0			185.67	0.78	144.49	144.49	0.79	0.705	0.907	0.256	0.373	0.53	0.02	0.00
52.170	207.050	1.057	6466.3	3897.2	141.949	0.518	1.62		Sand	0.0			195.70	0.78	153.51	153.51	0.79	0.704	0.899	0.314	0.482	0.68	0.02	0.00
52.330	206.090	1.061	6486.3	3907.3	141.093	0.523	1.62		Sand	0.0			194.79	0.78	152.49	152.49	0.79	0.704	0.900	0.306	0.467	0.66	0.02	0.00
52.490	193.720	1.145	6506.3	3917.3	132.312	0.601	1.68		Sand	0.0			183.10	0.77	141.60	141.60	0.79	0.703	0.908	0.242	0.346	0.49	0.02	0.00
52.660	183.000	1.250	6527.5	3927.9	124.689	0.695	1.74		Sand	2.0			172.97	0.76	132.26	132.26	0.79	0.703	0.915	0.205	0.278	0.40	0.02	0.00
52.820	181.120	1.353	6547.5	3937.9	123.220	0.761	1.77		Sand	4.2			171.19	0.76	130.50	130.54	0.79	0.703	0.916	0.199	0.268	0.38	0.02	0.00
52.990	190.010	1.262	6568.8	3948.6	129.198	0.676	1.72		Sand	0.4			179.59	0.77	137.87	137.87	0.79	0.702	0.910	0.225	0.316	0.45	0.02	0.00
53.150	217.130	1.284	6588.8	3958.6	147.769	0.601	1.64		Sand	0.0			205.23	0.79	161.22	161.22	0.79	0.702	0.889	0.384	0.618	0.88	0.01	0.00
53.310	232.060	1.182	6608.8	3968.6	157.879	0.517	1.58		Sand	0.0			219.34	0.79	174.30	174.30	0.79	0.702	0.874	0.585	1.021	1.46	0.00	0.00
53.480	232.750	0.916	6630.0	3979.2	158.136	0.399	1.51		Sand	0.0			219.99	0.79	174.71	174.71	0.79	0.701	0.873	0.593	1.039	1.48	0.00	0.00
53.640	237.740	0.990	6650.0	3989.3	161.366	0.422	1.52		Sand	0.0			224.71	0.80	179.00	179.00	0.79	0.701	0.867	0.698	1.255	1.79	0.00	0.00
53.810	224.470	1.036	6671.3	3999.9	152.021	0.469	1.57		Sand	0.0			212.16	0.79	166.94	166.94	0.79	0.701	0.881	0.456	0.758	1.08	0.01	0.00
53.970	184.560	1.043	6691.3	4009.9	124.422	0.575	1.69		Sand	0.0			174.44	0.76	132.18	132.18	0.79	0.700	0.912	0.204	0.277	0.40	0.02	0.00
54.130	175.990	1.282	6711.3	4019.9	118.383	0.743	1.77		Sand	4.8			166.34	0.75	124.84	124.95	0.78	0.700	0.917	0.183	0.239	0.34	0.03	0.00
54.300	177.690	1.421	6732.5	4030.6	119.384	0.815	1.79		Sand	6.6			167.95	0.75	126.27	127.45	0.78	0.699	0.915	0.190	0.251	0.36	0.02	0.00
54.460	181.110	1.654	6752.5	4040.6	121.568	0.930	1.83		Sand	9.0			171.18	0.76	129.79	135.58	0.78	0.699	0.909	0.216	0.298	0.43	0.02	0.00
54.630	181.500	1.493	6773.8	4051.2	121.667	0.838	1.80		Sand	6.7			171.55	0.75	129.15	130.44	0.78	0.699	0.912	0.199	0.267	0.38	0.02	0.00
54.790	169.120	1.183	6793.8	4061.3	113.064	0.714	1.78		Sand	5.2			159.85	0.74	118.49	118.72	0.78	0.698	0.920	0.168	0.213	0.31	0.03	0.00
54.950	157.850	0.944	6813.8	4071.3	105.239	0.611	1.76		Sand	4.1			149.20	0.73	109.08	109.10	0.78	0.698	0.925	0.151	0.183	0.26	0.03	0.00
55.120	141.530	1.488	6835.0	4081.9	93.988	1.077	1.95		Sand	19.1			133.77	0.76	101.04	136.00	0.78	0.698	0.907	0.218	0.301	0.43	0.02	0.00

CORNERSTONE EARTH GROUP

TYPE OF SERVICES	Geotechnical Investigation
PROJECT NAME	25800 Clawiter Development – Building 4
LOCATION	25800 Clawiter Road Hayward, California
CLIENT	Hines
PROJECT NUMBER	1076-1-2
DATE	January 24, 2020

CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**25800 Clawiter Development – Building 4**
Location	**25800 Clawiter Road** **Hayward, California**
Client	**Hines**
Client Address	**101 California Street, Suite 1000** **San Francisco, California**
Project Number	**1076-1-2**
Date	**January 24, 2020**

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

Danh T. Tran, P.E.
Senior Principal Engineer
Quality Assurance Reviewer

1259 Oakmead Parkway | Sunnyvale, CA 94085
T 408 245 4600 | F 408 245 4620

1220 Oakland Boulevard, Suite 220 | Walnut Creek, CA 94596
T 925 988 9500 | F 925 988 9501

www.cornerstoneearth.com

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CORNERSTONE EARTH GROUP

Type of Services	**Geotechnical Investigation**
Project Name	**25800 Clawiter Development – Building 4**
Location	**25800 Clawiter Road** **Hayward, California**

SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of Hines for Building 4 at the 25800 Clawiter Development in Hayward, California. The location of the site is shown on the Vicinity Map, Figure 1. For our use, we were provided with the following documents:

- A Conceptual Site Plan titled, "Overall Site Plan, Sheet DAB-A1.1," prepared by HPA Architecture, dated September 30, 2019.
- A report titled, "CPT Site Investigation, 25800 Clawiter Road, Hayward, California, GREGG Project Number: 18-0020MA," by Gregg Drilling & Testing, Inc. dated February 9, 2018.
- A report titled, "Preliminary Geotechnical Investigation, 25800 Clawiter Road, Hayward, California, File No. 131520-002," by Haley & Aldrich, Inc. dated February 14, 2018.

1.1 PROJECT DESCRIPTION

The overall project will consist of redeveloping the approximately 25½-acre site for a new commercial/industrial development. A new stand-alone data center, Building 4, will be included as a separate phase. Building 4 will be located north of the existing rail bisecting the site (east-west direction). Appurtenant parking, utilities, landscaping, stormwater management areas, and other improvements necessary for overall site development will also be planned.

Building loads were provided by the structural engineer, KPW. The combined dead plus live loads provided for interior and perimeter columns are 1,575 kips and 900 kips, respectively. Site grading with cuts and fills on the order of 2 to 5 feet are estimated.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated September 30, 2019 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. . We previously completed a geotechnical report with recommendations for the proposed warehouse buildings dated November 14, 2018. Our scope of services herein focuses solely on providing recommendations for Building 4 as described above. Brief descriptions of our exploration and laboratory programs are presented below.

1.3 CURRENT EXPLORATION PROGRAM

Field exploration consisted of two borings drilled on October 16, 2019 with track-mounted, limited-access, hollow-stem auger drilling equipment and two Cone Penetration Tests (CPTs) advanced on November 20, 2019. The borings were drilled to depths of 29½ and 35 feet; the CPTs were advanced to depths of approximately 100 feet each. Seismic shear wave velocity measurements were collected from CPT-13 and CPT-14. Boring EB-9 was advanced adjacent to CPT-14 for direct evaluation of physical samples to correlated soil behavior.

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

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

1.3.1 Previous Explorations

Previous field exploration at the site consisted of seven borings drilled on October 17, 18, and 19 with limited-access, hollow-stem auger drilling equipment. The borings were drilled to depths ranging from 15 to 40 feet. The borings were backfilled with cement grout in accordance with Alameda County requirements; exploration permits were obtained as required by Alameda County.

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

1.3.2 CPT Exploration by Haley and Aldrich, Inc.

Prior to our field exploration, we reviewed a report titled, “Preliminary Geotechnical Investigation, 25800 Clawiter Road, Hayward, California, File No. 131520-002,” by Haley and Aldrich, Inc. dated February 14, 2018. In addition to the report, we were also provided the results of Cone Penetration Tests (CPTs) advanced by Gregg Drilling & Testing, Inc. on February 5 and 6, 2018. The CPTs were advance to depths of approximately 50 feet below the ground surface.

The approximate locations of the CPT explorations by Haley and Aldrich, Inc. are shown on the Site Plan, Figure 2.

1.4 LABORATORY TESTING PROGRAM

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

1.5 ENVIRONMENTAL SERVICES

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

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located approximately 1¾ mile east of the San Francisco Bay. Based on our site exploration and review of recent geologic maps of the area (Graymer 2000; Helley and Graymer, 1997), the site is underlain by Holocene age fan or basin (Qhaf and Qhb). The fan deposits (Qhaf) are generally described by Graymer (2000) as medium dense to dense, gravelly sand or sandy gravel, grading upward to sandy or silty clay. It may contain localized layers, lenses and stringers of silt and sand. The basin deposits (Qhb) are generally very fine silty clays and clays deposited near the distal edge of alluvial fans and adjacent to Bay Mud, which may extend partially onto the western or southern edge of the site. The young sediments are generally underlain by older alluvial fan deposits collectively referred to Older Bay Mud or Old Bay Clay. These older alluvial soils generally consist of clays, sands, silts and localized gravel layers.

2.2 REGIONAL SEISMICITY

The San Francisco Bay area region is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities 2015 revises earlier estimates from their 2008 (2008, UCERF2) publication. Compared to the previous assessment issued in 2008, the estimated rate of earthquakes around magnitude 6.7 (the size of the destructive 1994 Northridge earthquake) has gone down by about 30 percent. The expected frequency of such events statewide has dropped from an average of one per 4.8 years to about one per 6.3 years. However, in the new study, the estimate for the likelihood that California will experience a magnitude 8 or larger earthquake in the next 30 years has increased from about 4.7 percent for UCERF2 to about 7.0 percent for UCERF3.

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

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

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Hayward (Total Length)	3.5	5.6
Calaveras	11	17.7
San Andreas (1906)	14.9	23.9
Monte Vista-Shannon	15.2	24.4

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

SECTION 3: SITE CONDITIONS

3.1 SITE BACKGROUND AND SURFACE DESCRIPTION

The total project site consists of six parcels totaling approximately 25½ acres and is located in an industrial park area. The site is currently occupied by approximately 280,000 square feet of existing office and industrial buildings and was previously used as a bus manufacturing facility. The site is relatively level but graded to drain to storm drainage facilities. Building 4 is proposed to be located on the north side of the existing rail and the northweastern portion of the total project site.

Surface pavements at Borings EB-3, EB-8 and EB-9 generally consisted of 5½ to 7 inches of Portland Cement Concrete (PCC) over subgrade or 8 to 12 inches of aggregate base. Based on visual observations, the existing pavements are in fair to poor shape with some significant cracking and minor alligator cracking in both the asphalt and concrete pavements.

3.2 SUBSURFACE CONDITIONS

Undocumented fill was encountered in boring EB-9 to a depth of approximately 3½ feet below existing ground surface. The fill consisted of lean clay with sand. Fill was not encountered in borings EB-3 and EB-8. Below the surface pavements and fill, borings EB-3, -8 and-9 generally encountered medium stiff to hard lean clay with variable amounts of sand, interbedded with loose sand with variable amounts of silt to the maximum depths explored of 25 to 35 feet below the existing ground surface.

3.2.1 Plasticity/Expansion Potential

We performed Plasticity Index (PI) tests on representative samples. Test results were used to evaluate expansion potential of surficial soils and the plasticity of the fines in potentially liquefiable layers. The results of the surficial PI tests ranged from 17 to 22, indicating low to moderate expansion potential to wetting and drying cycles.

3.2.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 12 to 26 percent. In our opinion, we estimated this corresponds to about near optimum to 5 percent above the optimum moisture content.

3.3 GROUNDWATER

Groundwater was encountered in our explorations EB-1 through EB-4, and EB-6 EB-7, and EB-8 at depths ranging from 13½ to 20 feet below current grades. Pore pressure dissipation testing was conducted at CPT-1, -2, -4, -5, -6, -7, -9, -10, -11, -13, and -14 and groundwater was estimated to be at depths ranging from 6.4 to 15 feet below current grades. All measurements were taken at the time of drilling and may not represent the stabilized levels that can be higher than the initial levels encountered.

Table 2: Depth to Groundwater

Boring/CPT Number	Date Drilled	Depth to Groundwater (feet)	Depth of Boring/CPT (feet)
EB-1	10/19/18	13.5	40
EB-2	10/17/2018	15	40
EB-3	10/19/2018	18	25
EB-4	10/18/2018	18	30
EB-5	10/19/2018	Not Encountered	15
EB-6	10/17/2018	17	40
EB-7	10/18/2018	20	40
EB-8	10/16/2019	14	29½
EB-9	10/16/2019	Not Encountered	35
CPT-1	2/6/2018	11.9	50
CPT-2	2/6/2018	6.6	50
CPT-4	2/6/2018	14.2	50
CPT-5	2/6/2018	11.9	50
CPT-6	2/6/2018	10.1	50
CPT-7	2/6/2018	6.4	50
CPT-9	2/6/2018	9.7	50
CPT-10	2/6/2018	14.3	50
CPT-11	2/6/2018	13.7	50
CPT-13	11/20/2019	15.0	100
CPT-14	11/20/2019	13.5	100

Based on depth to groundwater maps, the historic high groundwater level is mapped at about 10 feet below the ground surface (CGS, 2003). In general, fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors. For our analysis, a design groundwater level of 10 feet below existing ground surface was selected based on the depth to groundwater maps, depth of groundwater encountered in our borings and our previous experience in the area.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone. Based on review of geologic map as summarized in Figure 3, no known surface expression of fault traces

is thought to cross the site; therefore, fault rupture hazard is not a significant geologic hazard at the site.

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A peak ground acceleration was estimated for analysis as allowed in the 2019 edition of the California Building Code. For our liquefaction analysis we used a site-specific peak ground acceleration PGA_M of 0.81g.

4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, Hayward Quadrangle, 2003). Our field and laboratory programs addressed this issue by testing and sampling potentially liquefiable layers to depths of at least 50 feet, performing visual classification on sampled materials, evaluating CPT data, and performing various tests to further classify soil properties.

4.3.1 Background

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

4.3.2 Analysis

As discussed in the “Subsurface” section above, several sand layers were encountered below the design groundwater depth of 10 feet. Following the liquefaction analysis framework in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008), incorporating updates in *CPT and SPT Based Liquefaction Triggering Procedures* (Boulanger and Idriss, 2014), and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic shaking (Cyclic Stress Ratio - CSR) to the soil’s estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation (i.e. settlement).

The CSR for each layer quantifies the stresses anticipated to be generated due to a design-level seismic event, is based on the peak horizontal acceleration generated at the ground

surface discussed in the “Estimated Ground Shaking” section above, and is corrected for overburden and stress reduction factors as discussed in the procedure developed by Seed and Idriss (1971) and updated in the 2008 Idriss and Boulanger monograph.

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

The results of our CPT analyses (CPT-3, -5, and CPT-14) are presented on Figures 4A through 4C of this report and summarized on Table 5 below. Calculations for these CPTs are attached as Appendix D.

Table 3: Summary of Seismic Settlements

CPT Number	Estimated Dry Sand Settlement (inches)	Estimated Liquefaction Settlement (inches)	Total Seismic Settlement (inches)
CPT-3	0.19	0.46	0.7
CPT-5	0.18	0.66	0.8
CPT-14	0.36	0.61	1.0

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 0.46 to 0.66 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. Total differential seismic settlements are anticipated to be on the order of ¾-inch between foundation elements or estimated to be over a horizontal distance of 40 to 60 feet.

4.3.4 Ground Rupture Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground rupture or sand boils. For ground rupture to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation

and settlement. The work of Youd and Garris (1995) indicates that the 10-foot thick layer of non-liquefiable cap is sufficient to prevent ground rupture; therefore the above total settlement estimates are reasonable.

4.4 LATERAL SPREADING

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

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

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. We evaluated the potential for seismic compaction of loose, unsaturated sandy soils above the design groundwater depth of 10 feet based on the work by Pradell (1998). Our analyses indicate that the in-situ, loose and unsaturated sandy soils could experience up to 0.36 inches of movement after strong seismic shaking.

4.6 TSUNAMI/SEICHE

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

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

A tsunami or seiche originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Based on the study of tsunami inundation potential for the San Francisco Bay Area (Ritter and Dupre, 1972), areas most likely to be inundated are marshlands, tidal flats, and former bay margin lands that are now artificially filled, but are still at or below sea level, and are generally within 1½ miles of the shoreline. The site is approximately 1¾ miles

inland from the San Francisco Bay shoreline, and is approximately 23 to 27 feet above mean sea level. Therefore, the potential for inundation due to tsunami or seiche is considered low.

4.7 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone X, described as "Area of Minimal Flood Hazard". We recommend the project civil engineer be retained to confirm this information and verify the base flood elevation, if appropriate.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

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

- Potential for significant static settlement
- Potential for seismic and liquefaction-induced settlements
- Presence of moderately expansive soils
- Presence of undocumented fill
- Shallow groundwater
- Wet, unstable trench bottoms

5.1.1 Potential for Significant Static Settlement

We evaluated immediate and long-term consolidation settlement due to static building loads using an interior column loading and a perimeter column loading of about 1,575 and 900 kips, respectively. For a conventional footing, total static settlement was estimated to range from 1¼- to 2 inches for perimeter and interior columns, respectively, resulting in approximately ¾- to 1 inch of differential settlement between foundation elements.

Approximately 1 inch of the total settlement discussed above is due to primary consolidation of saturated clay layers. The time to the achieve about 90 to 95 percent of the primary consolidation is anticipated to take several months to a year after all the dead and live loads are in place based on the encountered alluvial conditions. The contractor should take this into consideration when scheduling the construction of sensitive finishes.

5.1.2 Potential for Seismic and Liquefaction-Induced Settlements

As discussed, our liquefaction analysis indicates that there is a potential for liquefaction of localized sand layers during a significant seismic event. Although the potential for liquefied sands to vent to the ground surface through cracks in the surficial soils is considered low, our analysis indicates that liquefaction-induced settlement on the order of 0.7 to 1 inch could occur, resulting in differential settlement up to ¾-inch. Foundations should be designed to tolerate the anticipated total and differential settlements. Based on our review of the preliminary foundation loads, it should be feasible to support the proposed buildings on shallow foundations; however, the building foundations will need to be designed to tolerate total and differential settlement due to static loads and liquefaction-induced settlement. Based on our discussions with the design team and structural engineer and to mitigate the combined total and differential seismic and static settlements, we have provided additional recommendations for reinforced concrete mat foundations over ground improvement and deep foundations. Detailed foundation recommendations are presented in the "Foundations" section.

5.1.3 Expansive Soils

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

5.1.4 Presence of Undocumented Fill

Undocumented fill was encountered in boring EB-9 to a depth of approximately 3½ feet below existing ground surface. The fill consisted of lean clay with sand. All fills should be completely removed from within building areas. Detailed grading recommendations are presented in Section 6.3 below.

5.1.5 Shallow Groundwater

Shallow groundwater has been measured at the site at depths ranging from approximately 13½ to 20 feet below the existing ground surface in our borings, and inferred at shallower depths in our CPTs. Our experience with similar sites in the vicinity indicates that shallow groundwater could significantly impact grading and underground construction. These impacts typically consist of potentially wet and unstable pavement subgrade, difficulty achieving compaction, and difficult underground utility installation. Dewatering and shoring of utility trenches may be required in some areas of the site, depending on the depth of the trenches. Detailed recommendations addressing this concern are presented in the "Earthwork" section of this report.

5.1.6 Wet, Unstable Trench Bottoms

The proposed utility excavations may extend into saturated clay and sand with varying strength. Due to the high moisture content of this material, it will likely be unstable. The contractor should anticipate that in addition to dewatering, it may be necessary to remove an additional approximately 12 to 18 inches of native soil beneath the trench bottoms and replace it with a bridging layer, such as crushed rock to avoid delays. 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.

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.

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

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

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

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. Although not currently present, if vegetation is encountered, it should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight.

6.2.2 Tree and Shrub Removal

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

6.3 REMOVAL OF EXISTING FILLS

All fills 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. We should evaluate the fill material to be reused for fill at the time of construction.

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

6.4 TEMPORARY CUT AND FILL SLOPES

The contractor is responsible for maintaining all temporary slopes and providing temporary shoring where required. Temporary shoring, bracing, and cuts/fills should be performed in

accordance with the strictest government safety standards. On a preliminary basis, the upper 10 feet at the site may be classified as OSHA Site C materials.

Excavations performed during site demolition and fill removal should be sloped at 3:1 (horizontal:vertical) within the upper 5 feet below building subgrade. Excavations extending more than 5 feet below building subgrade and excavations in pavement and flatwork areas should be sloped in accordance with the OSHA soil classification.

6.5 CONSTRUCTION DEWATERING

Design groundwater levels are estimated to be about 10 feet below existing site grades; therefore temporary dewatering may be necessary during underground utility installation. Selection of the equipment and dewatering method, and construction of temporary dewatering should be the responsibility of the contractor. Depending on the groundwater quality and previous environmental impacts to the site and surrounding area, environmental testing may be required prior to discharge, either into storm or sanitary, or trucked to an off-site facility.

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 SUBGRADE STABILIZATION MEASURES

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

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

6.7.1 Chemical Treatment

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

6.7.2 Scarification and Drying

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

6.7.3 Removal and Replacement

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

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

We anticipate that significant quantities of asphalt concrete (AC) grindings and aggregate base (AB) and Portland Cement Concrete (PCC) will be generated during site demolition. If the AC grindings are mixed with the underlying AB to meet Class 2 AB specifications, they may be reused within the new pavement and flatwork structural sections. AC/AB grindings may not be reused within the building areas. Laboratory testing will be required to confirm the grindings meet project specifications. The grinding operation for the AC may leave significant oversize chunks and won't meet the Class 2 AB gradation requirements but may meet Caltrans subbase requirements. Depending on the quantities of oversized material, the grindings may still be used within the structural section; however, the pavement design will need to be modified to account for the difference, typically resulting in the addition of about 1 inch to the structural section.

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 habitable building areas, excluding the capillary break layer; as typically pulverized PCC comes close to or meets Class 2 AB specifications, the recycled PCC may likely be used within the pavement structural sections. PCC grindings also make good winter construction access roads, similar to a cement-treated base (CTB) section.

6.8.3 Potential Import Sources

Imported and non-expansive material should be inorganic with a Plasticity Index (PI) of 15 or less, and not contain recycled asphalt concrete where it will be used within the 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.

6.8.4 Non-Expansive Fill Using Chemical Treatment

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

6.9 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 consolidated in place with vibratory equipment. Each lift of fill and all subgrade should be firm and unyielding under construction equipment loading in addition to meeting the compaction requirements to be approved. The contractor (with input from a Cornerstone representative) should evaluate the in-situ moisture conditions, as the use of vibratory equipment on soils with high moistures can cause unstable conditions. General recommendations for soil stabilization are provided in the "Subgrade Stabilization Measures" section of this report. Where the soil's PI is 20 or greater, the expansive soil criteria should be used.

Table 4: Compaction Requirements

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

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

6.9.1 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.

6.9.2 Shrinkage

Shrinkage results when a volume of in-situ material removed at one density is compacted to a higher density. A shrinkage factor of between 5 to 10 percent should be anticipated when excavating the upper 5 feet of existing in-situ native soils on the site and compacting to an average relative compaction of 90 percent and a maximum dry density of 120 pounds per cubic foot.

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.

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

6.11 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.

- The near-surface soils at the site are clayey, and categorized as Hydrologic Soil Group D, and is expected to have infiltration rates of less than 0.2 inches per hour. In our opinion, these clayey soils will significantly limit the infiltration of stormwater.
- Locally, seasonal high groundwater is mapped at a depth of 10 feet, and therefore is expected to be within 10 feet of the base of the infiltration measure.
- No groundwater production wells are within 100 feet of potential locations for infiltration facilities.
- The site is not known, to our knowledge, to have pollutants with the potential for mobilization as a result of stormwater infiltration.
- The site has a known geotechnical hazard consisting of soils subject to liquefaction; therefore, stormwater infiltration facilities may not be feasible.

- In our opinion, infiltration locations within 15 feet of the buildings would create a geotechnical hazard.

- Infiltration devices are not approved as a stand-alone measure for treating stormwater runoff from land uses that pose a high threat to water quality, including but not limited to industrial and light industrial activities, high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway), automotive repair shops, car washes, fleet storage areas, or nurseries (per Provision C.3.d.iv.(2)(d)).

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

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

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

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

- Avoid placing bioswales or basins within 15 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 and potentially liquefiable sand layers.

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

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

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

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

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

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

6.12.1.3 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: FOUNDATIONS

7.1 SUMMARY OF RECOMMENDATIONS

Due to the high anticipated foundation loads, and significant anticipated static and seismic settlements, the proposed structure may be supported on a reinforced concrete mat foundation

over ground improvement provided the recommendations in the “Earthwork” section and the sections below are followed. As an alternative to ground improvement, the structure may also be supported by deep foundation systems such as auger-cast piles. If ground improvement is selected, we recommend a design-build ground improvement contractor design the mitigation using an appropriate ground improvement technique to meet the project requirements and recommendations provided herein.

7.2 SEISMIC DESIGN CRITERIA

We are providing updated Seismic Design Parameters for the project in accordance with the 2019 California Building Code (2019 CBC), which will be effective for projects that are submitted to the local building department starting January 1, 2020. The new 2019 CBC includes major changes to the procedures used determine the seismic design parameters and has added new requirements for design of foundations for structures constructed on sites with liquefiable soils. The analysis used to provide the requested 2019 CBC seismic design parameters was based on Chapters 16/16A and 18/18A of 2019 CBC and Chapter 11 of ASCE 7-16 (including Supplement 1).

The analysis considered mapped spectral acceleration parameters based on distance to the controlling seismic source/fault system. Based on our explorations and review of local geology, the site is underlain by deep alluvial soils. Shear wave velocity (V_s) measurements were performed while advancing CPT-13, resulting in a time-averaged shear wave velocity for the top 30 meters (V_{s30}) of 227 meters per second (744 feet per second). Therefore, the site was classified as Site Class D.

Based on the site coordinates and classification, as well as the Risk Category, Building Period and Importance factor provided by the structural engineer (see Table 4), the following table lists the various factors or site data used for this analysis.

Table 5: 2019 CBC Site Data

Site Data	Design Value
Site Class (Per Chapter 20 ASCE 7-16)	D
Design Shear Wave Velocity, V_{S30}	227
Site Latitude	37.632185
Site Longitude	-122.116187
Risk Category	II
Importance Factor, I_e	1
0.2-second Period Mapped Spectral Acceleration[1], S_S	1.720g
1-second Period Mapped Spectral Acceleration[1], S_1	0.652g

[1]Assumed for Site Class B, 5 percent damped.

In accordance with Section 11.4.8 of ASCE 7-16, we performed a ground motion hazards analysis in accordance with Chapter 21, Section 21.2 of ASCE 7-16. Following the

methodology outlined in Section 21.2, we evaluated both Probabilistic MCE_R Ground Motions in accordance with Method 1 and Deterministic MCE_R Ground Motions to generate our recommended design response spectrum for the project. Our recommended Design Response Spectrum is presented graphically on Figure 6.

The structural engineer can use the design response spectrum presented in Figure 6 to evaluate the design acceleration parameters in accordance with Section 21.4 of ASCE 7-16. In accordance with Section 21.5 of ASCE 7-16, we recommend a site-specific MCE_G peak ground acceleration, PGA_M of 0.81g for this project.

7.3 REINFORCED CONCRETE MAT FOUNDATION OVER GROUND IMPROVEMENT

As discussed, to minimize potentially high static and seismic total and differential settlements in addition to improve soil bearing capacities based on the preliminary assumed loads, the structure may be supported on a reinforced concrete mat foundation overlying ground improvement. Ground improvement should be designed to provide adequate bearing capacity and reduce total settlement due to static and seismic conditions to tolerable levels as described below. Additional ground improvement recommendations are provided in the following sections.

On a preliminary basis and for your project forward planning, we anticipate Drill Displacement Column™ (DDC) ground improvement or other similar ground densification elements could be utilized to manage settlement under a mat foundation. We estimate DDC column spacing on the order of 4 to 5 feet on-center (square layout) with allowable capacities on the order of 50 to 70 kips each. The above DDC ground improvement element is based on estimated depths of 30 to 40 feet below the ground surface. The improved bearing pressures are estimated to be on the order of 5,000 psf. The above estimates are preliminary, and during design the design-build ground improvement contractor should collaborate with the structural engineer for the mat design.

7.3.1 Settlement

Ground improvement should be designed to reduce total settlement due to static and seismic conditions to tolerable levels. As discussed in the “Ground Improvement” section below, the ground improvement design should be such that the total foundation settlement (static and seismic) is reduced to about 2 inches, or less, from the center of the mat to an edge with no more than about 1½ inches for either the static or seismic components.

7.3.2 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. We recommend using a variable modulus of soil subgrade reaction to provide a more accurate soil response and prediction of shears and moments in the mat. This will require at least one iteration between our soil model and the structural SAFE (or similar) analysis for the mat. As the mat foundation will be underlain by ground improvement, the modulus of subgrade reaction will be affected by the ground

improvement method and the bearing pressure across the mat. Once ground improvement design has been confirmed and initial bearing pressures determined, 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. An initial soil subgrade modulus of 10 pci can be used for the initial analysis until additional design details are provided for our review.

7.3.3 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 0.4 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.

7.3.4 Mat Foundation Construction Considerations

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.

7.4 GROUND IMPROVEMENT

7.4.1 Ground Improvement Requirements

As discussed above, mat foundations may be used in combination with ground improvement to improve bearing capacities of the soils beneath the structure as well as reduce the total differential settlements (static and seismic) to tolerable levels. Ground improvement should be designed to increase the soils bearing capacities and improve the subsurface soils such that the combined static and seismic settlement is reduced to 2 inches or less, and no more than 1½ inches for either the static or seismic component, enabling the structure to be supported on a mat foundation if determined feasible. Ground improvement should provide adequate confining improvement around all foundations. We anticipate that the ground improvement construction will be a design-build process where Cornerstone Earth Group will review preliminary design-build ground improvement designs, including proposed spacing and layout relative to the foundation plans and installation lengths, and anticipated bearing capacity and densification improvement of the surrounding soils prepared by prospective contractors, provide comments, and come to a general agreement with the contractor on the intended design approach.

Ground improvement should consist of densification techniques to improve the ground's resistance to liquefaction, reduce static settlement, and improve bearing capacity and seismic performance. We anticipate Drill Displacement Column™ (DDC) ground improvement or other

similar ground densification elements could be utilized to manage settlement under a mat foundation. Ground densification techniques could potentially consist of vibro replacement (i.e. stone columns), granular compaction piles (i.e. rammed aggregate), grouted displacement columns (i.e. CLSM), or similar densification techniques. The intent of the ground improvement design would be to increase the bearing capacity of the underlying soils, increase the density of the potentially liquefiable layers, and increase the density of the compressible clays to help reduce post-construction consolidation settlements. The degree to which the density is increased will depend on the improvement method, spacing, and depth.

Based on the chosen ground improvement technique, the upper 1 to 2 feet or more of the working pad will likely need to be re-compacted after ground improvement installation, due to surface disturbance and potential ground heave. For this reason, we do not recommend preparation of the final pad, placement of non-expansive fill, or the construction of utilities prior to ground improvement.

Contractors to perform recommended ground improvement should have adequate experience for the proposed methods to address the requirements herein. All construction quality control and quality assurance records should be supplied to the design team for review on completion of the ground improvement. Adequate quality control readings must be available at the time of installation so that real time oversight can be provided. The instrumentation provided will depend on the ground improvement method chosen. Once a method is chosen, the geotechnical engineer should modify the project design guideline specification for the appropriate method.

We recommend that the ground improvement design include, but not be limited to: 1) drawings showing the ground improvement layout, spacing and diameter, 2) the foundation layout plan, 3) proposed ground improvement length, 4) top and bottom elevations. We should be retained to review the ground improvement contractor's plan and settlement estimates prior to construction, and to review and confirm that the contractor's ground improvement design will satisfactorily meet the design criteria based on the performance testing. Following the completion of the Ground Improvement Performance Testing indicated below, a final ground improvement design report and calculation package, including support for the ground improvement design and indicating that the design criteria will be met, should be submitted to the design team for review and approval.

7.4.2 Ground Improvement Performance Testing

Performance testing typically consists of a pre-construction test section with post-installation load testing and CPT testing to confirm that the necessary soil strength and densification increases were achieved to meet the bearing capacity and settlement criteria. We should observe and monitor installation of the test arrays and production ground improvement on a full-time basis and review the post-test array settlement analyses provided by the contractor. Working with the structural engineer, the team will evaluate whether differential settlement estimates and bearing capacities are tolerable and adequate or whether additional ground improvement is required.

The proposed design capacity of the ground improvement will be confirmed prior to construction by the installation of at least two test array sections of four ground improvement columns with installation lengths and spacing as initially agreed to between the ground improvement contractor and Cornerstone Earth Group. Testing of arrays should include CPT testing at center of array, sampling for strength consolidation testing, and a modulus test of at least one pier in each test array.

The ground improvement contractor shall make their own interpretation of strength parameters and other characteristics for the soil, obtained or derived from the soil boring logs, cone penetration tests, and any geotechnical laboratory testing data provided in the Geotechnical Report and these specifications for bearing capacity analysis. Static settlement shall be assessed using appropriate soil parameters for an elastic settlement analysis based on an area replacement ratio considering the stiffness of the native soils, and the densification columns. Liquefaction and seismic settlement estimates shall be performed using the methodology presented in the project geotechnical report, which followed the procedures in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008). Liquefaction and settlement shall be evaluated for the upper 50 feet of the soil profile. Any additional subsurface information needed to design the ground improvement shall be the responsibility of the Contractor.

7.5 DEEP FOUNDATIONS

As an alternative to mat foundations over ground improvements or if the estimated settlements exceed the structural requirements, the structure can also be supported on deep foundations. We have estimated the downward allowable vertical pile capacity 16-inch and 18-inch auger-cast piles and summarized our results on Figure 5.

7.5.1 Augercast Piles

ACIP piles are concrete piles that are cast in-place using a hollow-stem auger that drills to the design depth and then sand-cement grout (4,000 to 6,000 psi grout) is pumped through the hollow-stem as the drill stem is extracted. Two types of augercast piles are available: ACIP piles, which like piers, remove the soil column and replace it with grout; and displacement ACIP piles, which displace the soil column as the drill stem is advanced, similar to driven piles, prior to pumping the grout. If there are environmental conditions at the site, conventional ACIP piles where the soil column is removed and replaced with grout will likely not be feasible and therefore displacement ACIP piles may be preferred. However, it should be noted that displacement ACIP piles are generally limited to a depth of approximately 85 feet.

ACIP piles are a low noise and vibration installation compared to driven piles. Various types of steel reinforcing, including rebar cages or H-piles may be installed into the still-wet grout after drilling to satisfy bending moment requirements.

7.5.2 Vertical Capacity

Adjacent pile centers should be spaced at least three diameters apart; otherwise, a reduction for vertical group effects may be required. Piles within nine pile diameters of each other should not be installed on the same day. Grade beams should span between piles and/or pile caps in accordance with structural requirements.

Pile support is expected to come predominantly from frictional resistance. We evaluated the allowable vertical capacity for 16- and 18-inch diameter displacement ACIP piles and present the results in Figure 5. We assumed that the top of pile/bottom of pile cap occurs at 3 feet below existing grades; however, we do not expect the capacities to change significantly with small variations in pile cap elevation. The allowable capacities are for dead plus live loads; dead loads should not exceed two-thirds of the allowable capacities. The allowable capacities may be increased by one-third for wind and seismic loads. Uplift loads should not exceed 75 percent of the downward vertical capacity under seismic loading. Gross capacity of the piles should be less than the structural capacity of the piles.

7.5.3 Lateral Capacity

Lateral load resistance is developed by the soil's resistance to pile bending. The magnitude of the shear and bending moment developed within the pile are dependent on the pile stiffness, embedment length, the fixity of the pile into the pile cap (free or fixed-head conditions), the surrounding soil properties, the tolerable lateral deflection, and yield moment capacity of the pile.

We utilized the computer program L-Pile to model the load-deflection (p-y) curves representing the soil conditions surrounding the pile, and estimate the ultimate lateral load capacity of the pile. The following table presents the probable response of the piles under short-term loading conditions; the structural engineer should apply an appropriate factor of safety on the shears and moments presented. We assumed a concrete compressive strength of 4,000 psi for the concrete modulus calculations. We should be retained to re-evaluate the lateral load capacity for piles with a stiffness significantly different from what was assumed.

Table 6: Ultimate Lateral Load Capacity for Augercast Pile

Pile Type	Fixity Condition	Lateral Deflection (inches)	Maximum Shear (kips)	Maximum Moment (kip-feet)	Depth to Maximum Moment (feet)	Depth to Zero Moment (feet)
16-inch ACIP	Free-Head	0.25	12.5	36.9	5¼	29
		0.50	15.6	48.6	6	37
16-inch ACIP	Fixed-Head	0.25	22.6	67.3	0	39
		0.50	28.8	91.9	0	39
18-inch ACIP	Free-Head	0.25	14.9	47.4	6	36
		0.50	18.4	61.5	6	41
18-inch ACIP	Fixed-Head	0.25	26.9	86.8	0	43
		0.50	34.3	119.1	0	44

The above lateral capacities are for single piles and may not be representative of piles in groups. Group effects, including the layout of the piles within a group, can significantly reduce the overall lateral capacity. Therefore, the load deflection behavior of pile groups should be modeled by applying a reduction ratio (group efficiency) factor, which is the ratio of the load carried by piles in a group as compared to the same number of isolated piles under similar conditions.

7.5.4 Passive Resistance Against Pile Caps and Grade Beams

Passive resistance against pile caps poured neat against native or engineered fill may also be considered; however, as the allowable lateral deflections of the piles are limited, full allowable passive pressures will not be developed. The design-build pile contractor should evaluate appropriate allowable passive pressures that maintain strain compatibility between the piles and pile caps, if additional passive resistance is required.

7.5.5 Pre-Production Test Program

One field pile load test should be performed per 150 to 250 piles, and at least one test pile per building area, and at location(s) recommended by the geotechnical engineer. Static load tests include installing a test pile, which can either be in a production pile location or not, with four surrounding piles that serve as anchor piles to resist the jacking pressure. During test pile installation, the contractor should allow for monitoring of strains within 5 feet of the pile tip to determine the amount of loading due to skin friction and end bearing. A member of our staff should be present during test pile installation and testing. All test pile information should be submitted to the geotechnical engineer for evaluation and modification, if necessary, of the recommended capacities. It is preferable that two to four weeks, or more if possible, be allowed in the schedule following test pile installation prior to testing.

7.5.6 Construction Considerations

The installation of all test and production piles should be observed on a full-time basis by a Cornerstone representative to confirm that the piles are constructed in accordance with our recommendations and project requirements. Since the piles will primarily derive their capacity from skin friction, the production piles should be installed to the design tip elevation. The geotechnical project engineer should review the installation records for conformance. We may recommend additional testing of piles, or additional installations, if any pile installations vary from normal installation practices. Pile contractors should meet all the requirements of the ACIP pile specification for the project. We recommend that ACIP pile contractors have at least 3 years of installation experience.

SECTION 8: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

8.1 INTERIOR SLABS MOISTURE PROTECTION CONSIDERATIONS

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

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

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

- The 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.

8.2 EXTERIOR FLATWORK

Exterior slabs-on-grade, such as pedestrian walkways, patios, driveways, and sidewalks, may experience seasonal movement due to the native expansive soils; therefore, some cracking or vertical movement of conventional slabs should be anticipated where imported fill is not planned in flatwork areas. There are several alternatives for mitigating the impacts of expansive soils beneath concrete flatwork. We are providing recommendations to reduce distress to concrete flatwork that includes moisture conditioning the subgrade soils, using non-expansive fill, and providing adequate construction and control joints to control cracks that do occur. It should be noted that minor slab movement or localized cracking and/or distress could still occur.

- The minimum recommendation for concrete flatwork constructed on moderately to highly expansive soils is to properly prepare the clayey soils prior to placing concrete. This is typically achieved by scarifying, moisture conditioning, and re-compacting the subgrade soil. Subgrade soil should be moisture conditioned to at least 3 percent over the laboratory optimum and compacted using moderate compaction effort to a relative compaction of 87 to 92 percent (ASTM Test Method D1557). Where the soils PI is less than 20, the minimum relative compaction requirements in Section 6.8, Table 6 should be applied. Since the near surface soils may have been previously compacted and tested, the subgrade soils could possibly be moisture conditioned by gradually wetting the soil, depending on the time of year slab construction occurs. This should not include flooding or excessively watering the soil, which would likely result in a soft, unstable subgrade condition, and possible delays in the construction while waiting for the soil to dry out. In general, the subgrade should be relatively firm and non-yielding prior to construction.

- Concrete flatwork, excluding pavements that would be subject to wheel loads, should be at least 4 inches thick and supported on at least 6 inches of Class 2 aggregate base overlying subgrade prepared in accordance with the "Earthwork" recommendations of this report. Aggregate base should be compacted to at least 90 percent relative compaction. 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.

- We recommend a maximum control joint spacing of about 2 feet in each direction for each inch of concrete thickness and a construction joint spacing of 10 to 12 feet. Construction joints that abut the foundations or garage slabs should include a felt strip, or approved equivalent, that extends the full depth of the exterior slab. This will help to reduce the potential for permanent vertical offset between the slabs due to friction

between the concrete edges. We recommend that exterior slabs be isolated from adjacent foundations.

At the owner's option, if desired to reduce the potential for vertical offset or widening of concrete cracks, consideration should be given to using reinforcing steel, such as No. 3 rebar spaced at 18 inches on center each direction.

SECTION 9: VEHICULAR PAVEMENTS

9.1 ASPHALT CONCRETE

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

Table 7: Asphalt Concrete Pavement Recommendations (Untreated Subgrade)

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

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

Table 8: Asphalt Concrete Pavement Recommendations (Chemical-Treated Subgrade)

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

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

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

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

9.2 PORTLAND CEMENT CONCRETE

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

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

Table 9: PCC Pavement Recommendations (Untreated Subgrade)

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

Table 10: PCC Pavement Recommendations (Chemical-Treated Subgrade)

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

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

9.2.1 Stress Pads for Trash Enclosures

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

9.3 PAVEMENT CUTOFF

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

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

SECTION 10: RETAINING WALLS

10.1 STATIC LATERAL EARTH PRESSURES

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

Table 11: 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.

10.2 SEISMIC LATERAL EARTH PRESSURES

The 2019 CBC states that lateral pressures from earthquakes should be considered in the design of basements and retaining walls. At this time, we are not aware of any retaining walls greater than 6 feet in height for the project. However, minor landscaping walls (i.e. walls 6 feet or less in height) may be proposed. In our opinion, design of these walls for seismic lateral earth pressures in addition to static earth pressures is not warranted.

10.3 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.

10.4 BACKFILL

Where surface improvements will be located over the retaining wall backfill, backfill placed behind the walls should be compacted to at least 95 percent relative compaction using light compaction equipment. Where no surface improvements are planned, backfill should be compacted to at least 90 percent. If heavy compaction equipment is used, the walls should be temporarily braced.

10.5 FOUNDATIONS

Minor site retaining walls and decorative walls may be supported on a continuous spread footing on natural, undisturbed soil or engineered fill, be at least 15 inches wide, and extend at least 18 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscape topsoil.

Footings constructed to the above dimensions and in accordance with the "Earthwork" recommendations of this report are capable of supporting maximum allowable bearing pressures of 2,000 psf for dead loads, 3,000 psf for combined dead plus live loads, and 4,000 psf for all loads including wind and seismic. These pressures are based on factors of safety of 3.0, 2.0, and 1.5 applied to the ultimate bearing pressure for dead, dead plus live, and all loads, respectively. These pressures are net values; the weight of the footing may be neglected for the portion of the footing extending below grade (typically, the full footing depth). Top and bottom mats of reinforcing steel should be included in continuous footings to help span irregularities and differential settlement.

SECTION 11: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of Hines specifically to support the design of Building 4 for the 25800 Clawiter Development project in Hayward, 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.

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

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

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

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

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

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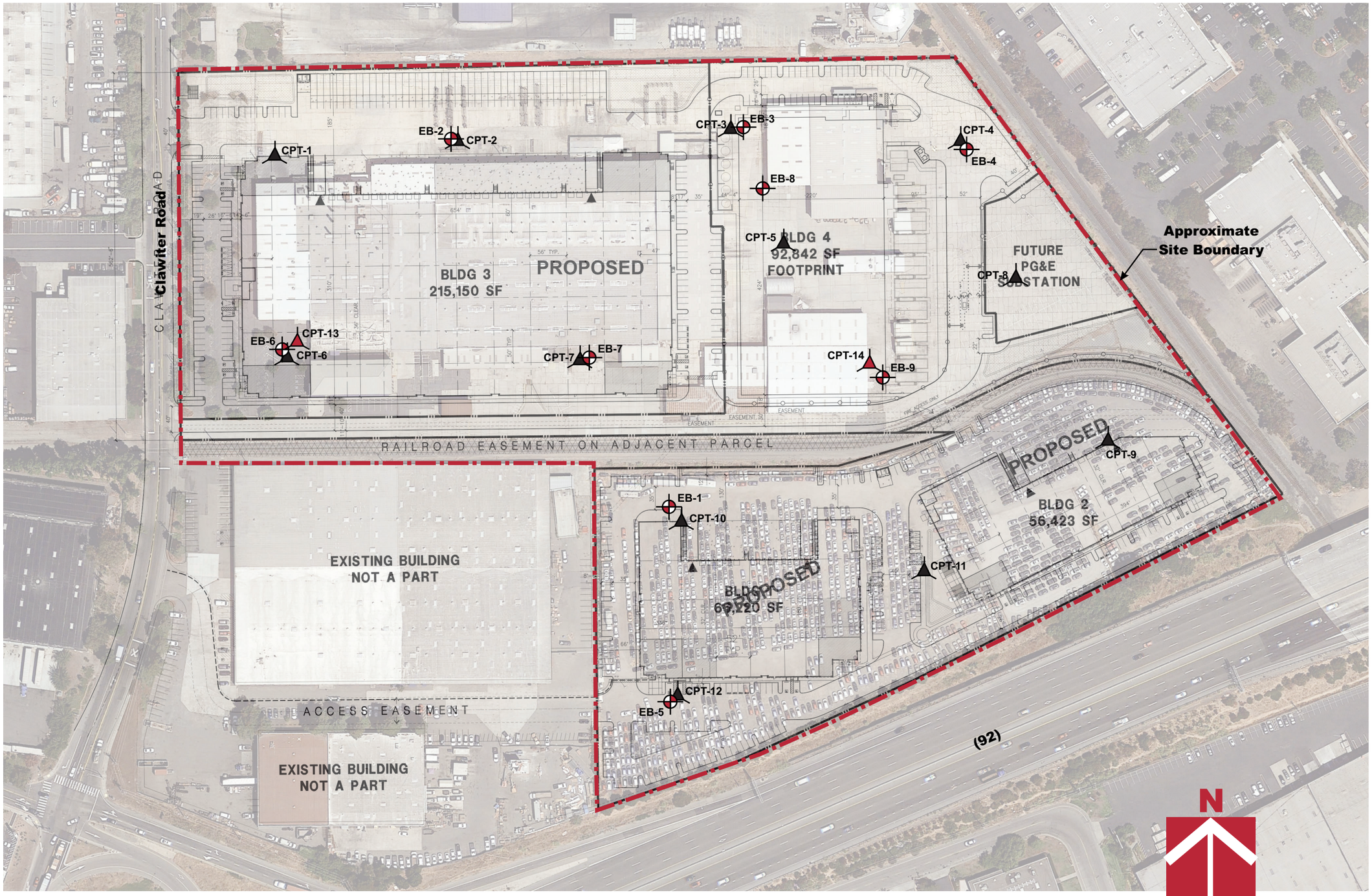
Vicinity Map

25800 Clawiter Road
Hayward, CA

Project Number	1076-1-2
Figure Number	Figure 1
Date	November 2019
Drawn By	KLG



Legend

- Approximate location of exploratory boring (EB)
- Approximate location of cone penetration (CPT)
- Approximate location of previous cone penetration test (CPT) (By others)

Base by Google Earth, dated 8/9/2018
Overlay by Ware Malcomb, Scheme: 9 - Conceptual Site Plan - Sheet 1, dated 2/16/2018

Project Number 1076-1-2
Figure Number Figure 2
Date November 2019
Drawn By KLG

Site Plan

25800 Clawiter Road
Hayward, CA

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SITE

Geologic Time Scale			Years Before Present (Approx.)	Fault Symbol	Recency of Movement	DESCRIPTION	
						ON LAND	OFFSHORE
Quaternary	Late Quaternary	Historic	200			Displacement during historic time (e.g. San Andreas fault 1906). Includes areas of known fault creep.	
		Holocene			? ? ?	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'			Faults without recognized Quaternary displacement or showing evidence of no displacement during Quaternary time. Not necessarily inactive.	Fault cuts strata of Pliocene or older age.
			4.5 billion (Age of Earth)				

N

0 5 10

APPROXIMATE SCALE (MILES)

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

Project Number 1076-1-2

Figure Number Figure 3

Drawn By KLG

Date November 2019

Regional Fault Map

25800 Clawiter Road
Hayward, CA

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FIGURE 4A

CPT NO. 3

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-2
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.81	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.19	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.46	(Inches)
TOTAL SEISMIC SETTLEMENT	**0.7**	**INCHES**

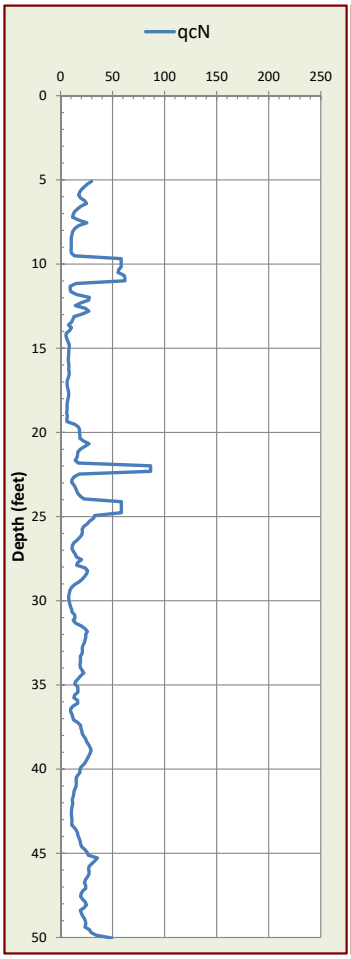
POTENTIAL LATERAL DISPLACEMENT

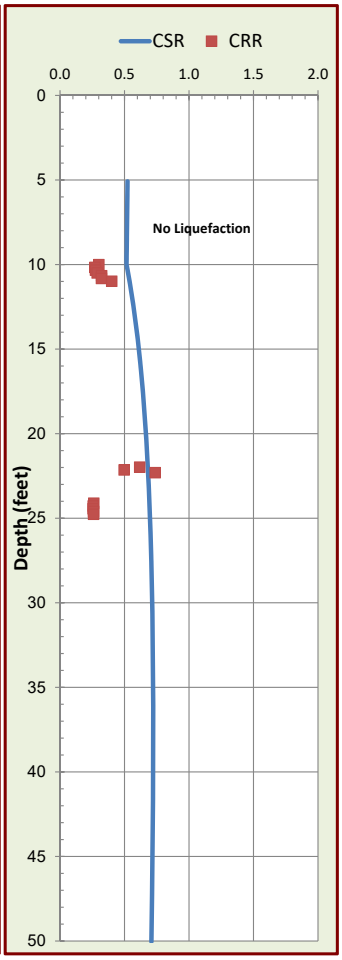
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

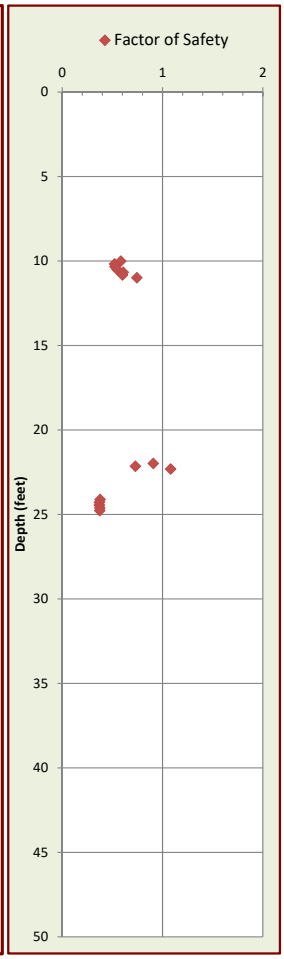
EXPECTED RANGE OF DISPLACEMENT

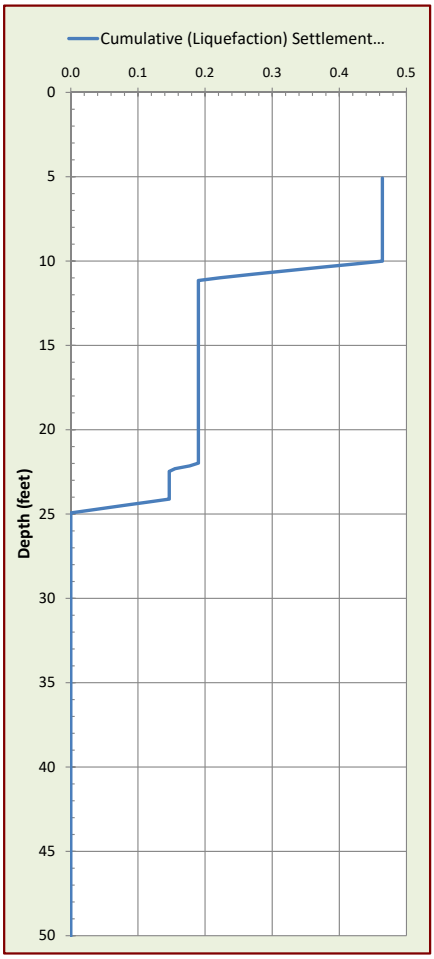
0.0 to 0.0 feet

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









CORNERSTONE EARTH GROUP

FIGURE 4B

CPT NO. 5

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PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-2
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.81	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11.9
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM 10 FEET

0.18 (Inches)

LIQUEFACTION SETTLEMENT FROM 50 FEET

0.66 (Inches)

TOTAL SEISMIC SETTLEMENT 0.8 **INCHES**

POTENTIAL LATERAL DISPLACEMENT

LDI[2] 0.00 L/H 1000.0

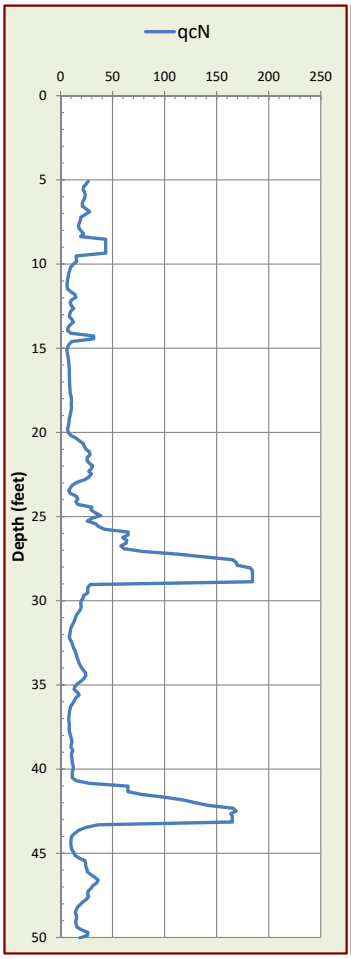
LDI[1] Corrected for Distance 0.00 (4 < L/H < 40)

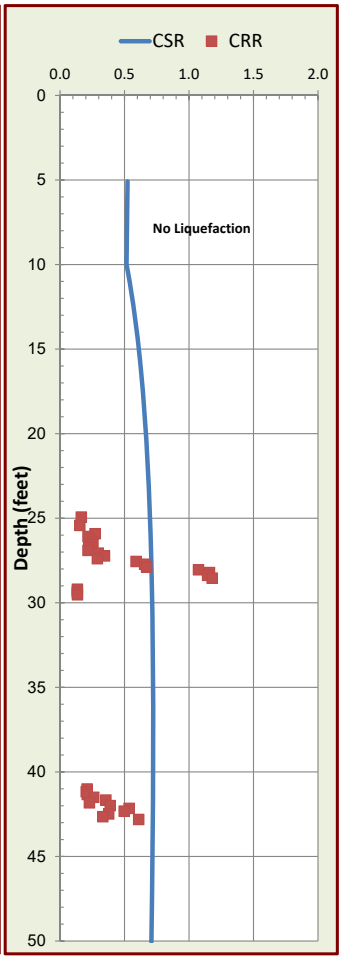
EXPECTED RANGE OF DISPLACEMENT

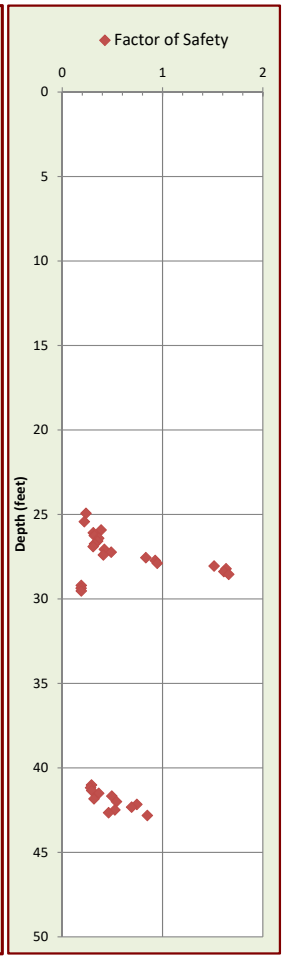
0.0 to 0.0 feet

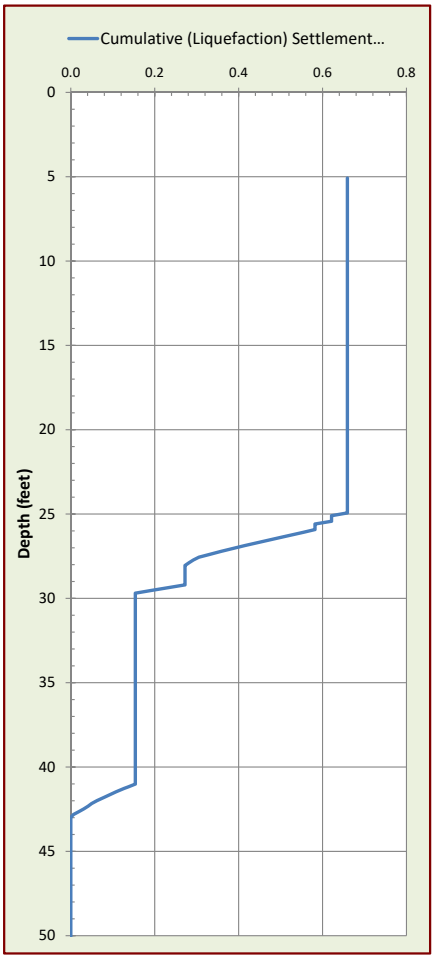
[1]Not Valid for L/H Values < 4 and > 40.

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









CORNERSTONE EARTH GROUP

FIGURE 4C

CPT NO. 14

© 2014 Cornerstone Earth Group, Inc.

PROJECT/CPT DATA

Project Title	25800 Clawiter Rd
Project No.	1076-1-2
Project Manager	RSM

SEISMIC PARAMETERS

Controlling Fault	Hayward	
Earthquake Magnitude (Mw)	7.36	
PGA (Amax)	0.81	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	11
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	120
Ave. Unit Weight Below GW (pcf)	125

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.36	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.61	(Inches)
TOTAL SEISMIC SETTLEMENT	**1.0**	**INCHES**

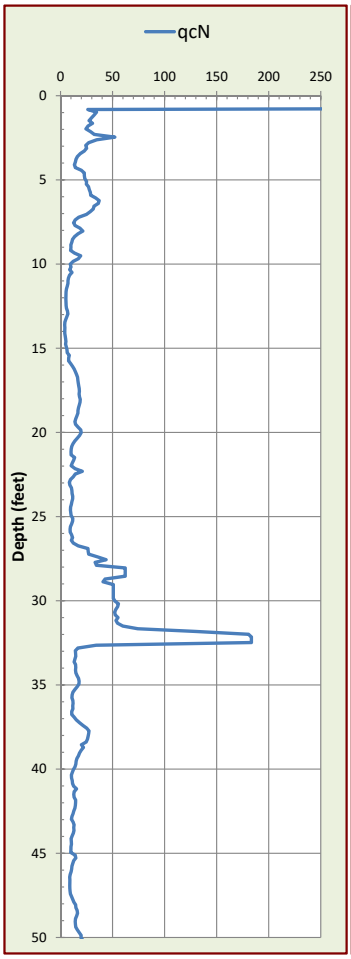
POTENTIAL LATERAL DISPLACEMENT

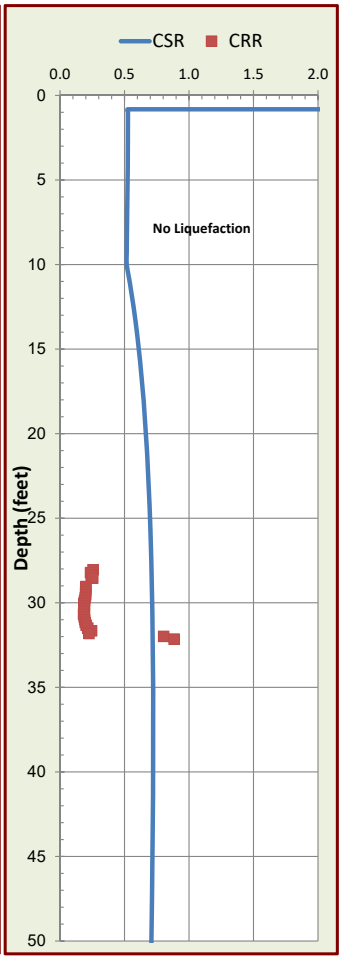
LDI[2]	0.00	L/H	1000.0
LDI[1] Corrected for Distance	0.00	(4 < L/H < 40)	

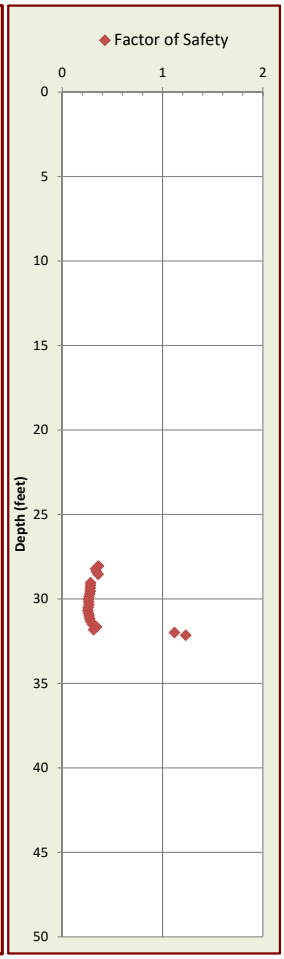
EXPECTED RANGE OF DISPLACEMENT

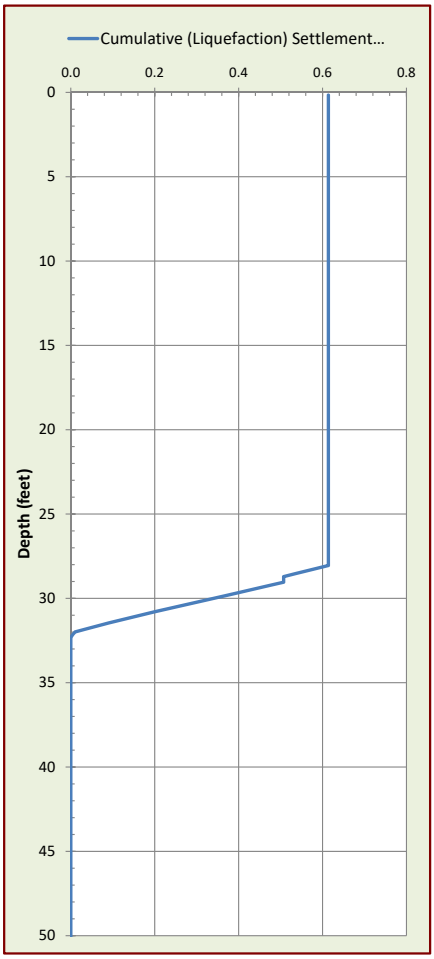
0.0 to 0.0 feet

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



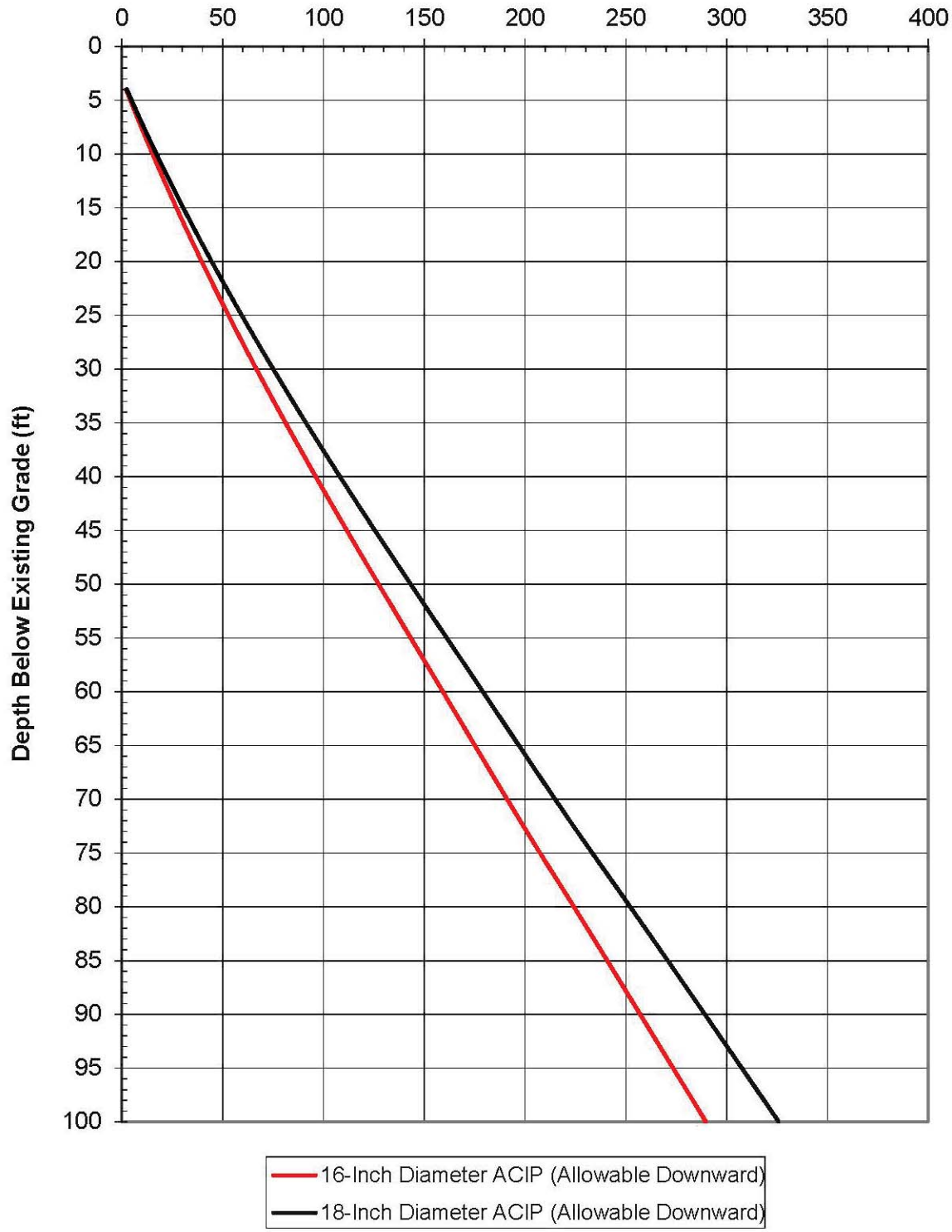






Allowable Downward Vertical Capacity

(Dead plus Live Load) (Kips)

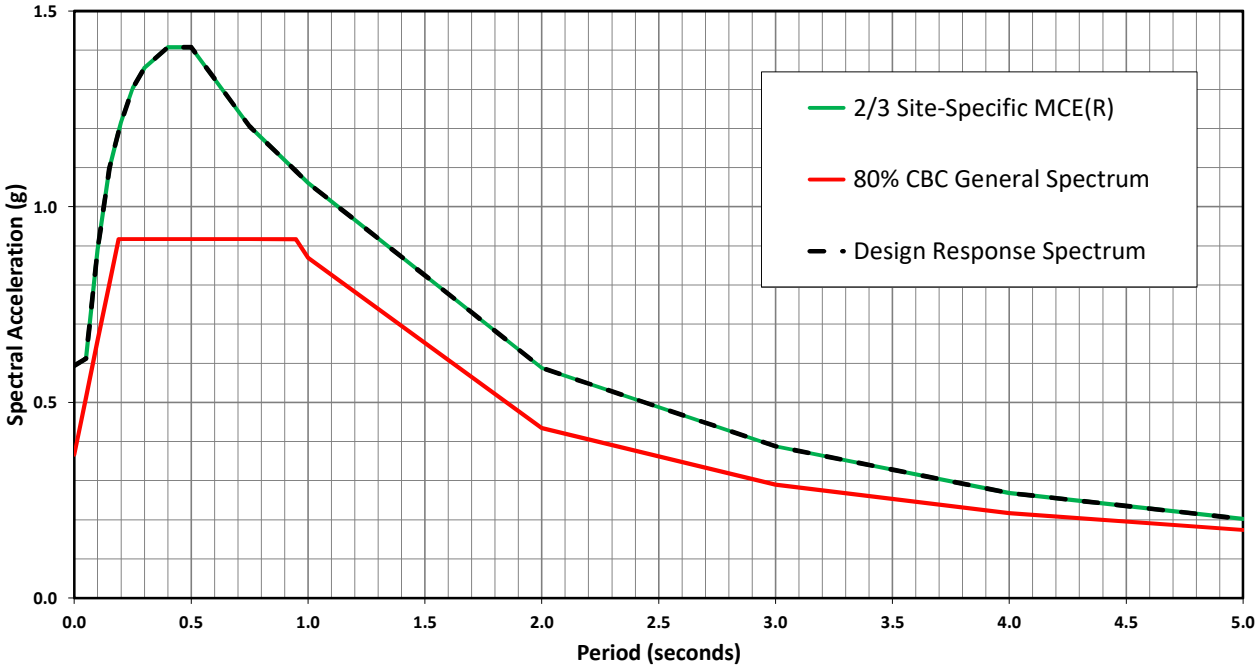


CORNERSTONE EARTH GROUP

Vertical Pile Capacity

25800 Clawiter Road
Hayward, CA

Project Number	1076-1-2
Figure Number	Figure 5
Date	November 2019
Drawn By	FLL



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	0.594
0.05	0.612
0.10	0.889
0.15	1.098
0.19	1.192
0.20	1.216
0.25	1.303
0.30	1.355
0.40	1.407
0.50	1.407
0.75	1.206
0.95	1.091
1.00	1.061
2.00	0.588
3.00	0.388
4.00	0.269
5.00	0.202

Site Design	Design Values
Site Class (Per Chapter 20 ASCE 7-16)	D
Shear Wave Velocity, V_{S30} (m/sec)	227
Site Latitude (degrees)	37.632185
Site Longitude (degrees)	-122.116187
Risk Category	II
Building Period (sec)	Unknown
Importance Factor, I_e	1
[1]Site Specific PGA_M (g)	0.81

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

Design Acceleration Parameters	
S_{DS}	1.267
S_{D1}	1.176
S_{MS}	1.900
S_{M1}	1.764

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

25800 Clawiter Road GI Update
25800 Clawiter Road
Hayward, California

PROJECT NO. 1076-1-2

November 25, 2019 | RSM

APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using track-mounted, hollow-stem auger drilling equipment and 20-ton truck-mounted Cone Penetration Test equipment. Two 6½-inch-diameter exploratory borings were drilled on October 16, 2019 to depths of 29½ and 35 feet. Two CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on November 20, 2019, to depths of approximately 100 feet each. The approximate locations of exploratory borings and CPTs are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). Boring logs, as well as a key to the classification of the soil, are included as part of this appendix.

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

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

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

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

Attached boring and CPT logs and related information depict subsurface conditions at the locations indicated and on the date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring and CPT locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition,

any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

UNIFIED SOIL CLASSIFICATION (ASTM D-2487-10)

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

OTHER MATERIAL SYMBOLS

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

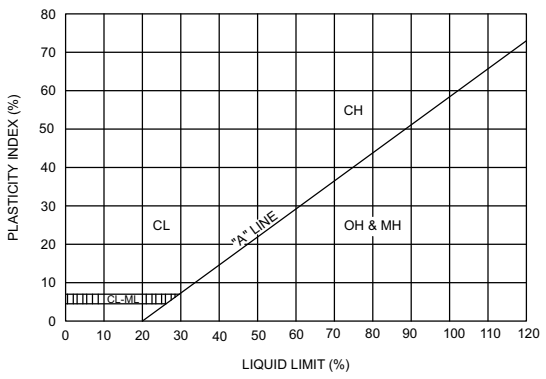
SAMPLER TYPES

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

ADDITIONAL TESTS

CA	-	CHEMICAL ANALYSIS (CORROSIVITY)	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-8

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-2
PROJECT LOCATION Hayward, CA

DATE STARTED 10/16/19 **DATE COMPLETED** 10/16/19
GROUND ELEVATION _____ **BORING DEPTH** 29.5 ft.
DRILLING CONTRACTOR Cuesta Geo **LATITUDE** 37.63236° **LONGITUDE** -122.11656°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger **GROUNDWATER LEVELS:**
LOGGED BY JLC ▽ **AT TIME OF DRILLING** 14 ft.
NOTES _____ ▼ **AT END OF DRILLING** 14 ft.

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

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0	5½ inches Portland cement concrete over 12 inches aggregate base						
		Lean Clay (CL) very stiff, moist, dark brown, trace fine to medium sand, moderate plasticity Liquid Limit = 39, Plastic Limit = 17	15	MC-1B	112	21	22	
			14	MC-2B	100	21		
	5	becomes brown	20	MC-3B	113	15		
		Sandy Silty Clay (CL-ML) very stiff, moist, brown, fine sand, low plasticity	14	MC-4B	100	18		
		Silty Sand (SM) loose, moist, light brown, fine sand	8	MC-5B	104	23		
	10	**Lean Clay (CL)** very stiff, moist, brown, some fine sand, moderate to high plasticity						
▼		**Sandy Silt (ML)** stiff, moist, brown, fine sand, low plasticity	5	6A MC	103	32		
				6B	99	27		
	15	**Sandy Lean Clay (CL)** stiff, moist, brown, fine to medium sand, low to moderate plasticity		ST-7	96	28		
		Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	8	MC-8B	99	27		
	20							
		Silty Sand (SM) loose, wet, brown, fine to medium sand some thin clay layers	6	MC-9B	103	24		
	25		9	SPT-10B		23		29

Continued Next Page

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

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-8

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-2

PROJECT LOCATION Hayward, CA

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

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Silty Sand (SM) loose, wet, brown, fine to medium sand some thin clay layers	8	SPT-11		23			
			Lean Clay with Sand (CL) very stiff, moist, brown, fine sand, moderate plasticity	9	SPT-12		23			○
	30		Bottom of Boring at 29.5 feet.							
	35									
	40									
	45									
	50									
	55									

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-9

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-2
PROJECT LOCATION Hayward, CA

DATE STARTED 10/16/19 **DATE COMPLETED** 10/16/19
GROUND ELEVATION _____ **BORING DEPTH** 35 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE 37.63162° **LONGITUDE** -122.11592°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUNDWATER LEVELS:
LOGGED BY JLC
▽ **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		7 inches Portland cement concrete over 8 inches aggregate base							
			Lean Clay with Sand (CL) [Fill] hard, moist, dark brown with brown mottles, fine sand, some coarse subangular gravel, low plasticity	19	MC-1B	106	12	17		>4.5
			Liquid Limit = 33, Plastic Limit = 16	18	MC-2B	104	19			>4.5
	5		**Lean Clay with Sand (CL)** hard, moist, dark brown, fine sand, moderate plasticity	17	MC-3B	113	12			
			Sandy Silty Clay (CL-ML) very stiff, moist, brown, fine sand, low plasticity	11	MC-4B	98	20			
			Lean Clay with Sand (CL) very stiff, moist, brown, fine sand, moderate plasticity	8	MC-5B	99	26			
	10									
				5	MC-6A	95	30			
	15		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to coarse sand	5	SPT-7		27			
			Lean Clay (CL) very stiff, moist, brown, some fine sand, moderate plasticity		ST-8		consol			
	20									
				9	MC-9B	99	26			
	25									
			Continued Next Page							

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

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-9

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-2

PROJECT LOCATION Hayward, CA

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

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
			Sandy Lean Clay (CL) stiff, moist, brown, fine to medium sand, trace fine gravel, low plasticity		ST-10		consol		
			Silty Sand (SM) loose, wet, brown, fine sand	10	SPT				
	30			15	SPT-12		22		17
				5	SPT-13B		25		
			Lean Clay (CL) very stiff, moist, brown, some fine to coarse sand, moderate plasticity	13	MC-14B	103	23		
	35		Bottom of Boring at 35.0 feet.						
	40								
	45								
	50								
	55								

UNDRAINED SHEAR STRENGTH, ksf

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

1.0 2.0 3.0 4.0

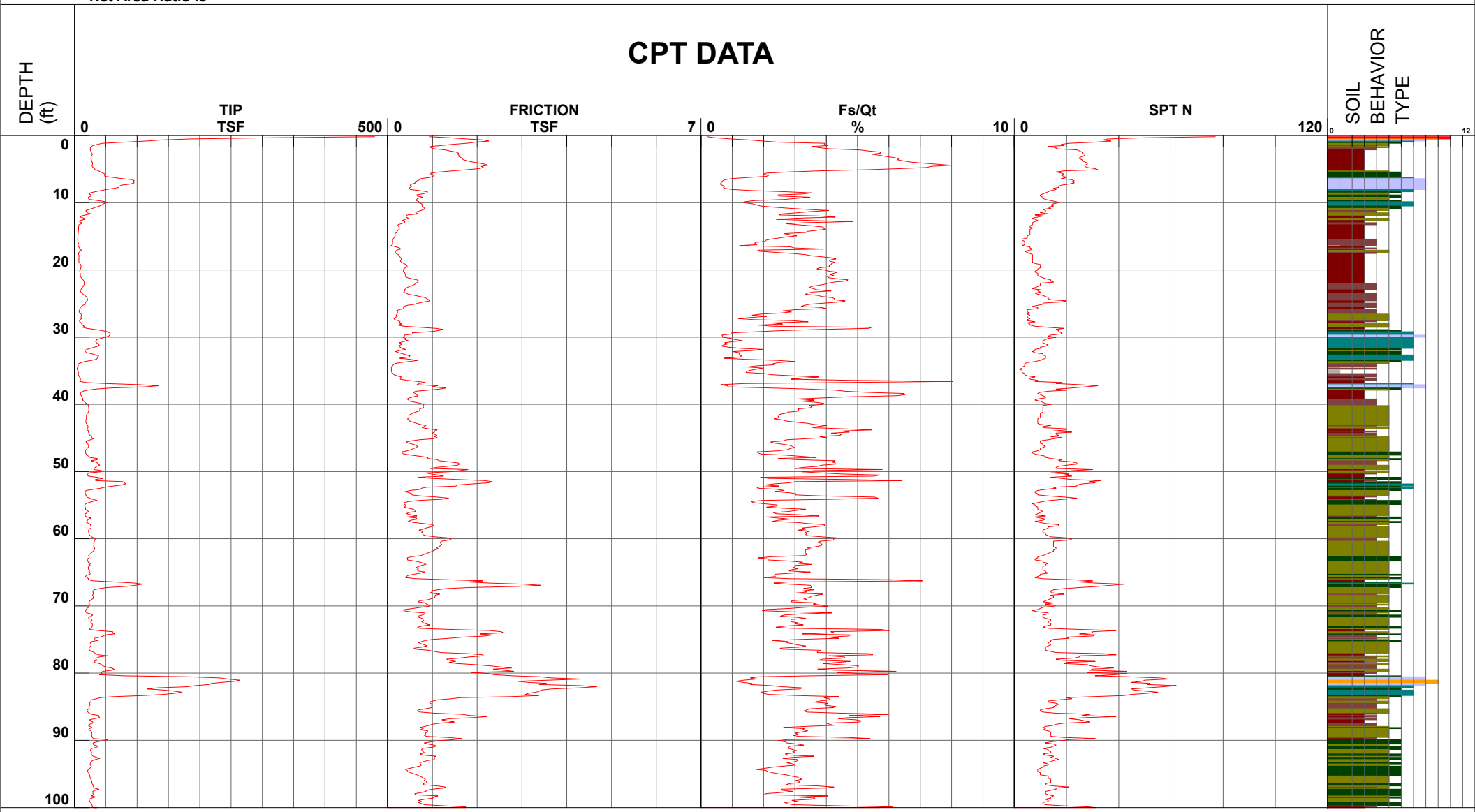
CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 10/29/19 11:14 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

Cornerstone Earth Group

Project	25800 Clawiter Road GI Update	Operator	JM-AJ	Filename	SDF(371).cpt
Job Number	1076-1-2	Cone Number	DDG1489	GPS	
Hole Number	CPT-13	Date and Time	11/20/2019 2:28:00 PM	Maximum Depth	100.56 ft
EST GW Depth During Test		15.00 ft			

Net Area Ratio .8

CPT DATA



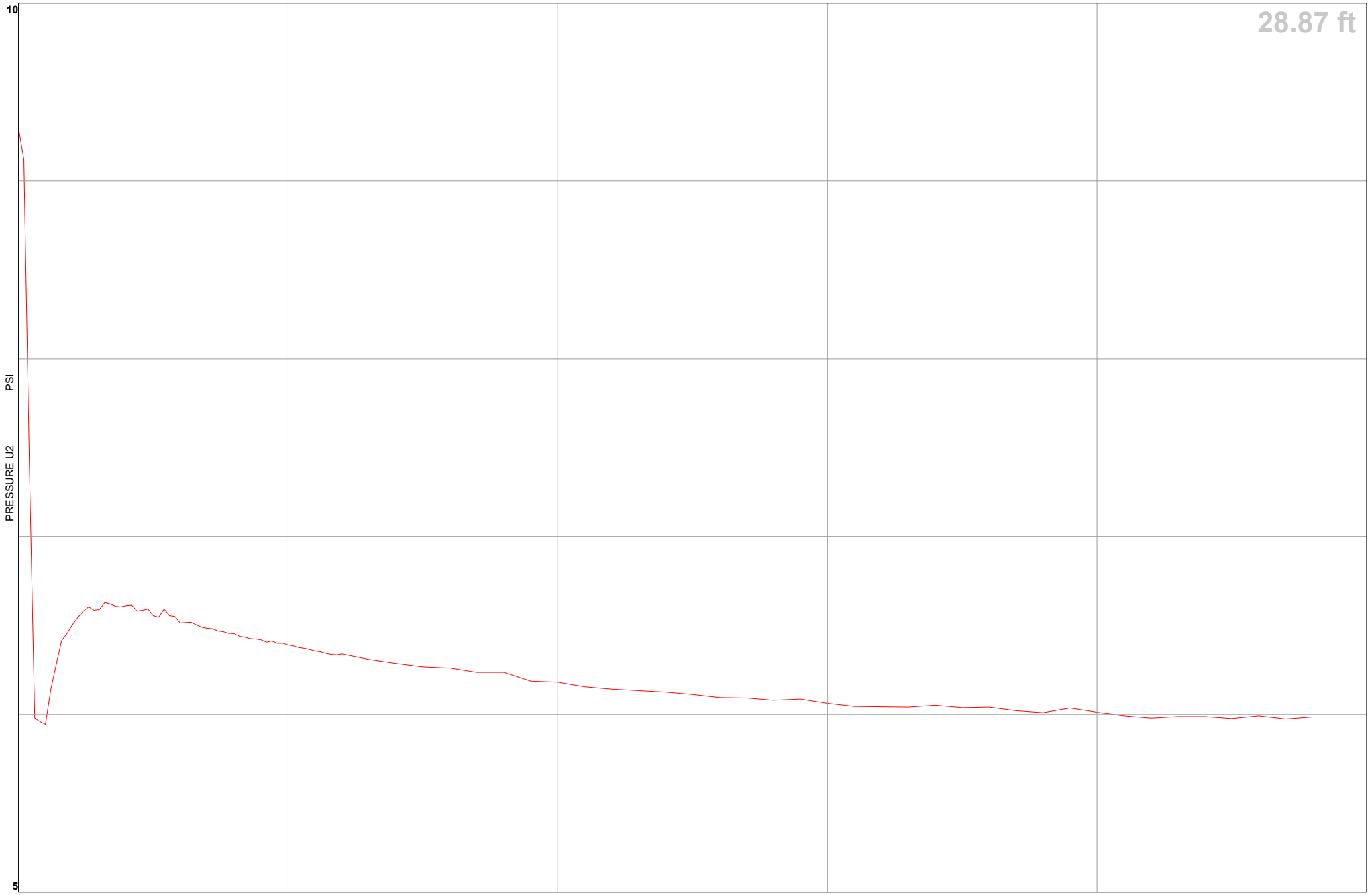
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

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

Cornerstone Earth Group

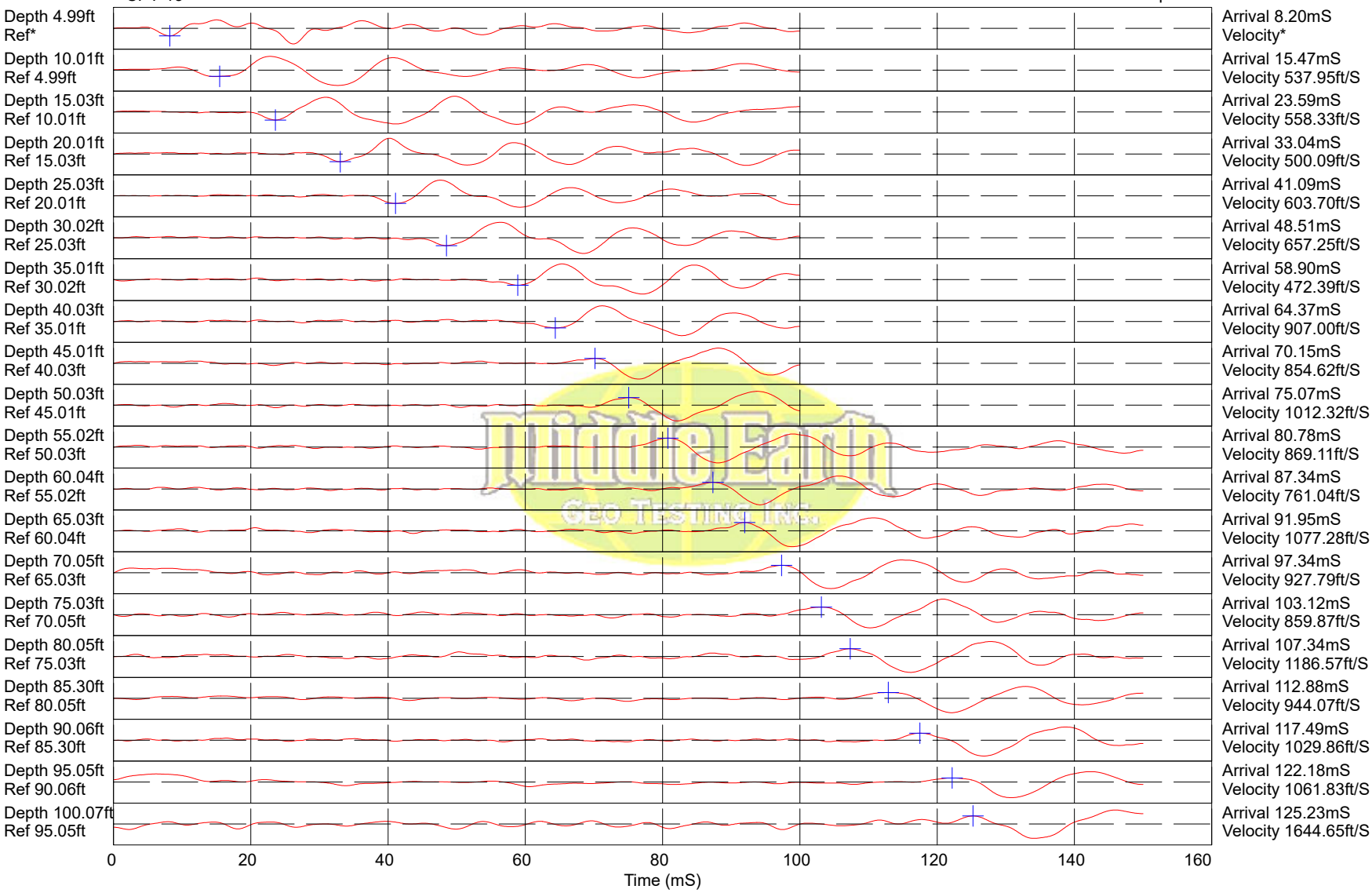
Location	25800 Clawiter Road GI Update	Operator	JM-AJ	GPS	
Job Number	1076-1-2	Cone Number	DDG1489		
Hole Number	CPT-13	Date and Time	11/20/2019 2:28:00 PM		
Equilized Pressure	6.0	EST GW Depth During Test	15.0		



CPT-13

Cornerstone Earth Group

25800 Clawiter Road GI Update



Hammer to Rod String Distance (ft): 5.83

* = Not Determined

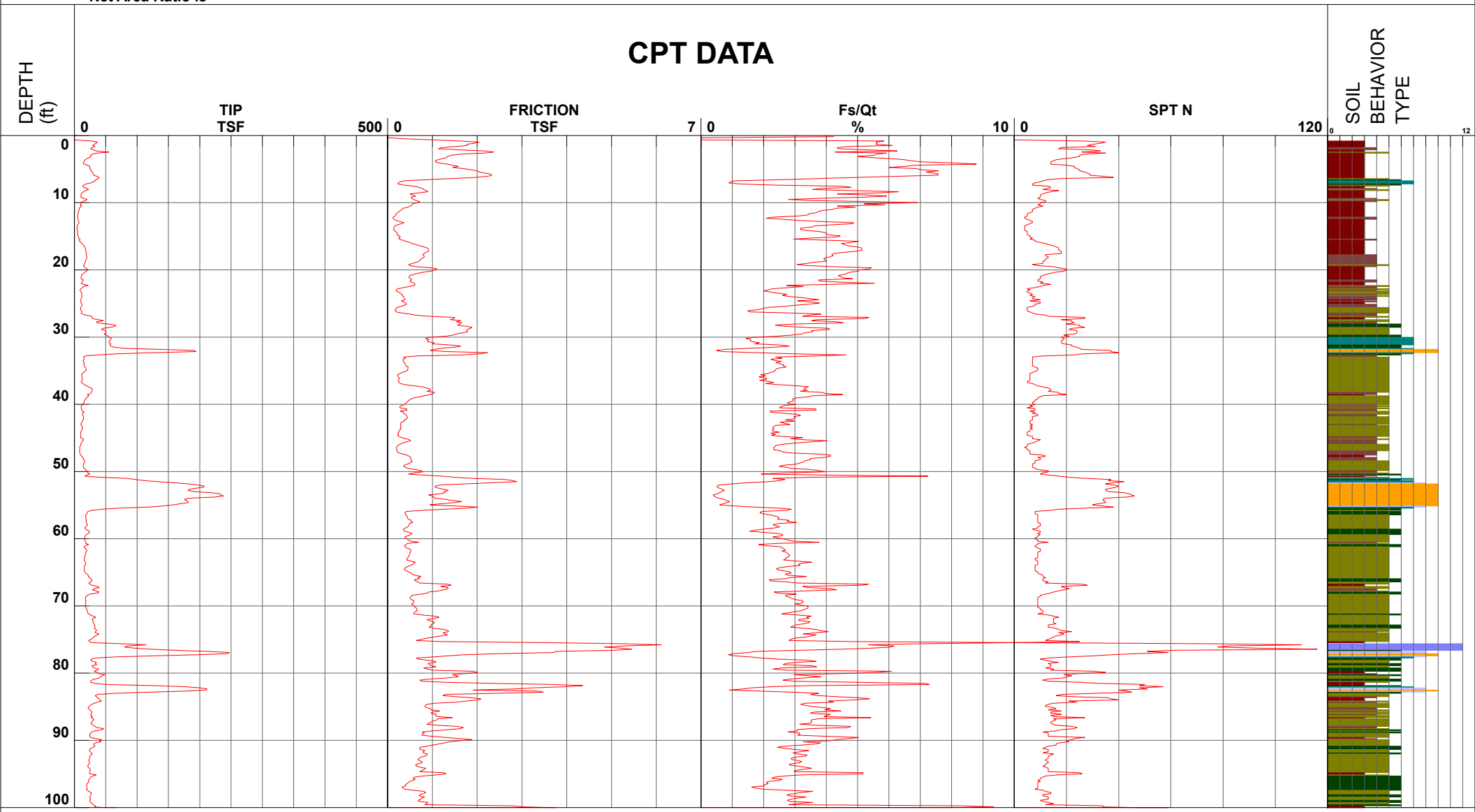
COMMENT:

Cornerstone Earth Group

Project	25800 Clawiter Road GI Update	Operator	JM-AJ	Filename	SDF(372).cpt
Job Number	1076-1-2	Cone Number	DDG1489	GPS	
Hole Number	CPT-14	Date and Time	11/20/2019 5:01:24 PM	Maximum Depth	100.72 ft
EST GW Depth During Test		13.50 ft			

Net Area Ratio .8

CPT DATA



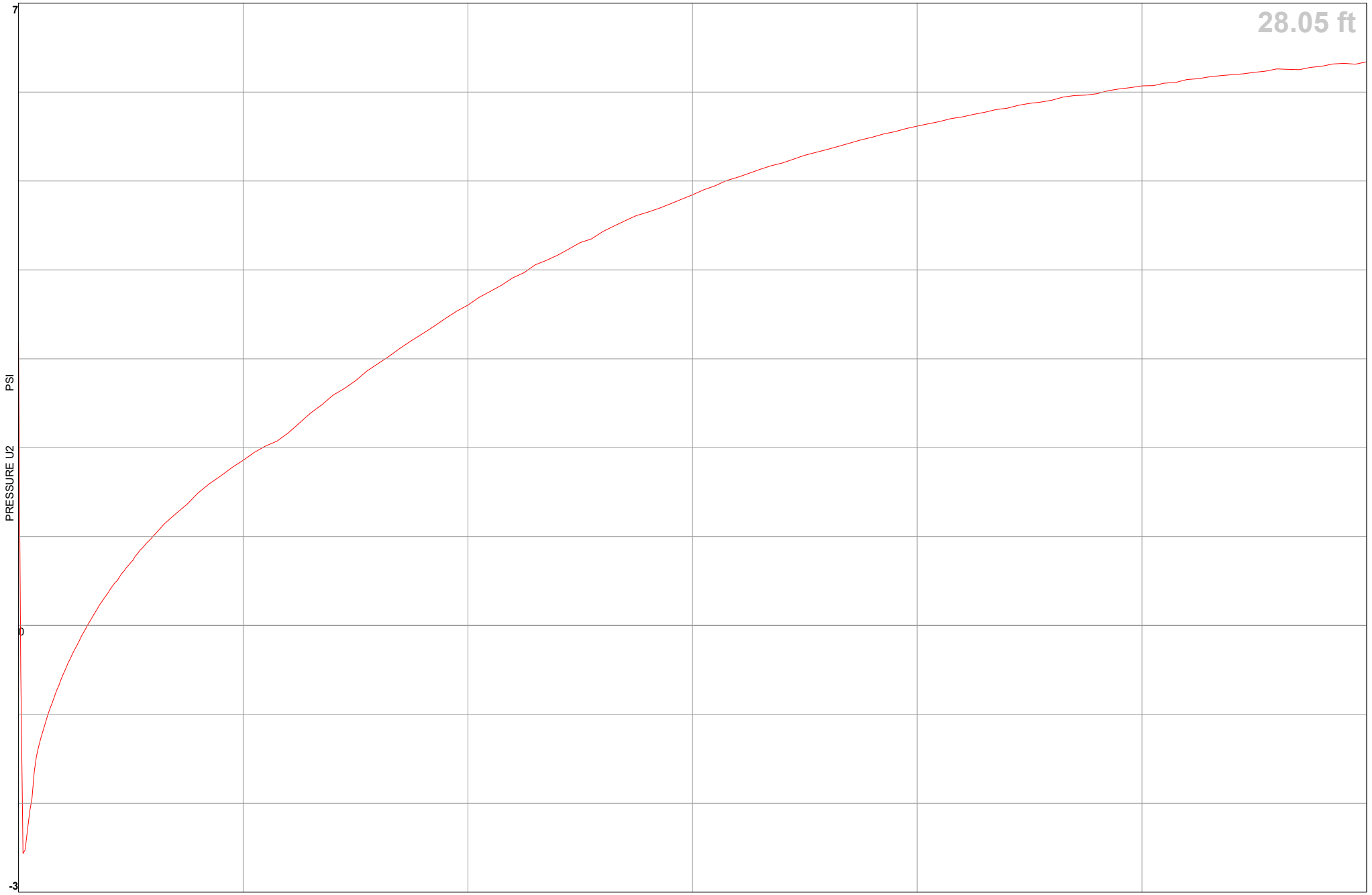
1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

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

Cornerstone Earth Group

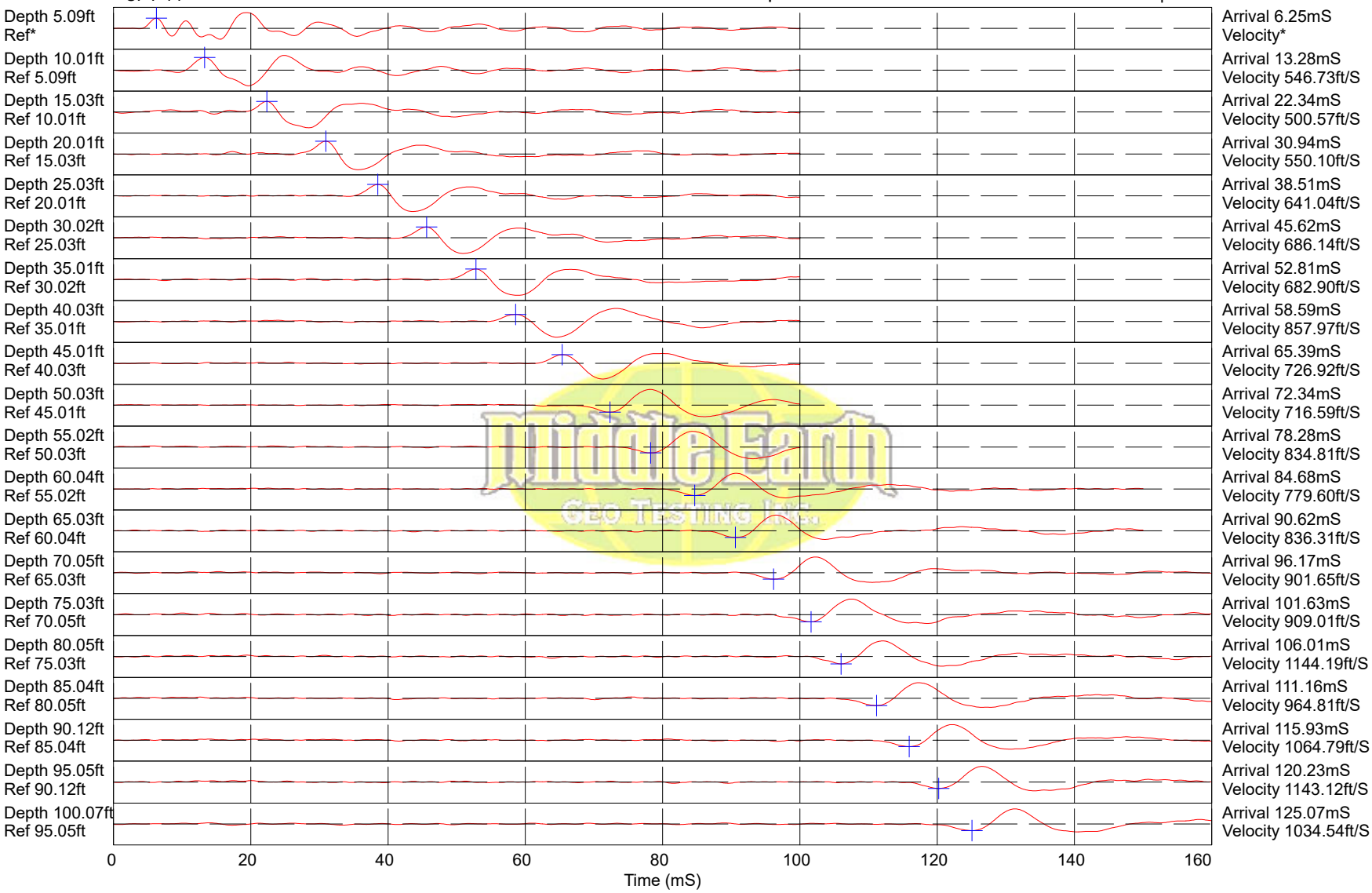
Location	25800 Clawiter Road GI Update	Operator	JM-AJ	
Job Number	1076-1-2	Cone Number	DDG1489	GPS
Hole Number	CPT-14	Date and Time	11/20/2019 5:01:24 PM	
Equilized Pressure	6.2	EST GW Depth During Test	13.5	



CPT-14

Cornerstone Earth Group

25800 Clawiter Road GI Update



Hammer to Rod String Distance (ft): 5.83

* = Not Determined

COMMENT:

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 24 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 18 samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

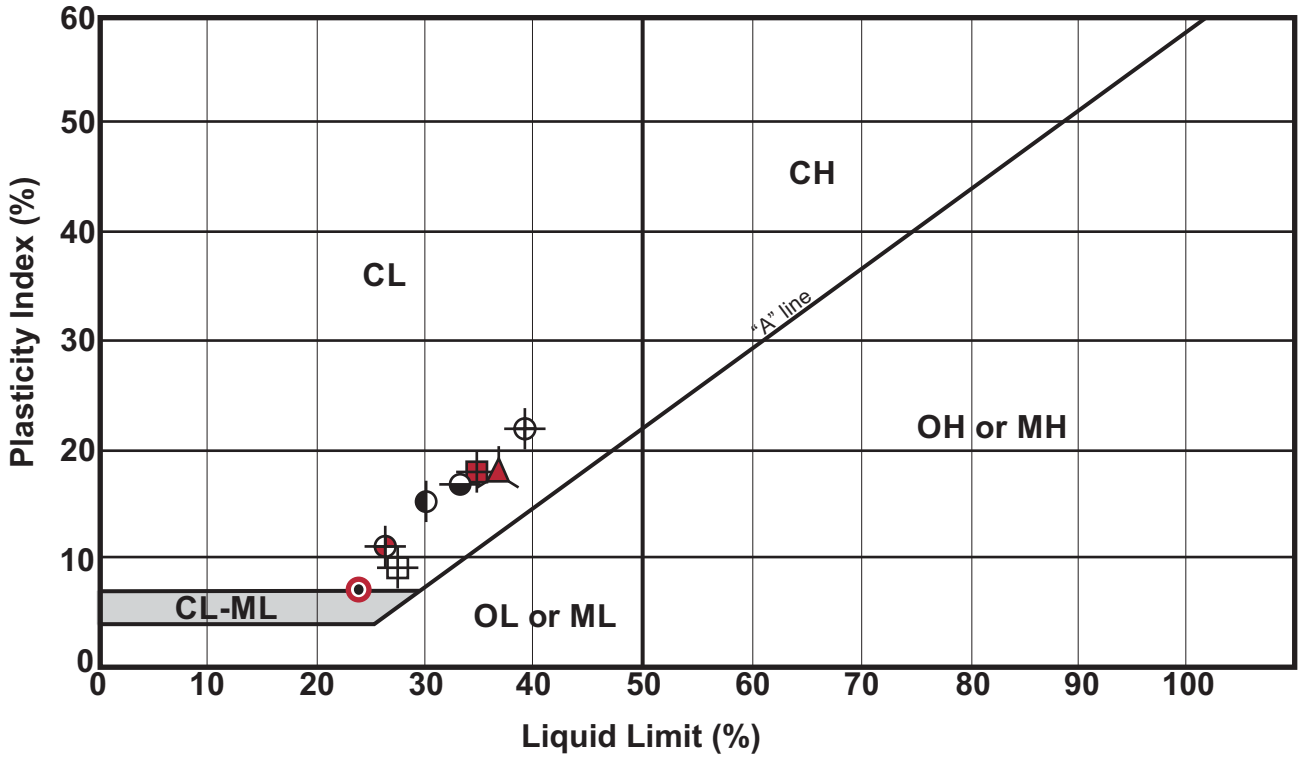
Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on two samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Plasticity Index: 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 three relatively undisturbed sample(s) by unconsolidated-undrained triaxial shear strength testing (ASTM D2850). The results of this test are included as part of this appendix.

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

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	6.0	16	26	15	11	57	Sandy Lean Clay (CL)
⊞	EB-2	2.0	17	34	16	18	—	Lean Clay with Sand (CL)
◎	EB-2	14.0	20	24	17	7	37	Silty, Clayey Sand (SC-SM)(CL-ML fines)
▲	EB-3	11.0	31	36	18	18	71	Lean Clay with Sand (CL)
◐	EB-4	10.5	27	30	15	15	55	Sandy Lean Clay (CL)
⊞	EB-5	6.0	15	27	18	9	55	Sandy Lean Clay (CL)
⊕	EB-8	2.0	21	39	17	22	—	Lean Clay (CL)
◒	EB-9	2.0	12	33	16	17	—	Lean Clay with Sand (CL) [Fill]

CORNERSTONE EARTH GROUP

Plasticity Index Testing Summary

25800 Clawiter Road
Hayward, CA

Project Number: 1076-1-2

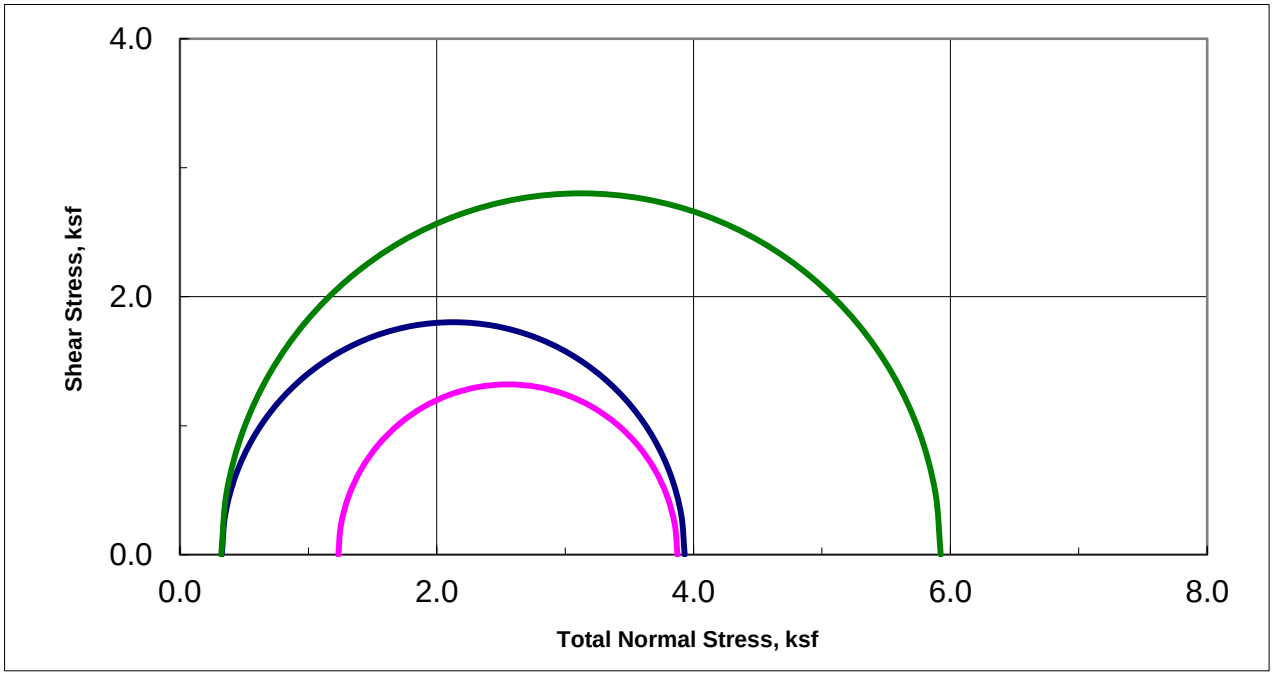
Figure Number: Figure B1

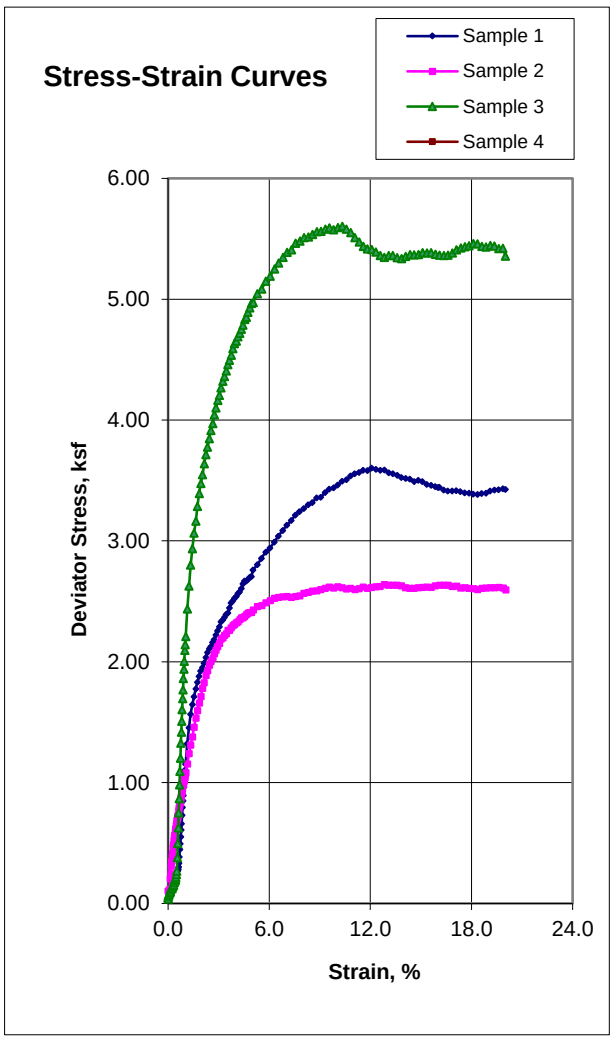
Date: November 2019

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 %	20.6	27.8	19.1	
Dry Den,pcf	99.6	96.0	103.6	
Void Ratio	0.692	0.756	0.627	
Saturation %	80.4	99.4	82.1	
Height in	4.99	5.96	5.00	
Diameter in	2.41	2.85	2.41	
Cell psi	2.3	8.6	2.2	
Strain %	12.07	12.83	10.33	
Deviator, ksf	3.605	2.641	5.603	
Rate %/min	1.00	1.00	0.95	
in/min	0.050	0.059	0.048	
Job No.:	640-1361			
Client:	Cornerstone Earth Group			
Project:	1076-1-2			
Boring:	EB-8	EB-8	EB-9	
Sample:	2B	7	2B	
Depth ft:	4.0	15.0(Tip-4")	4.0	

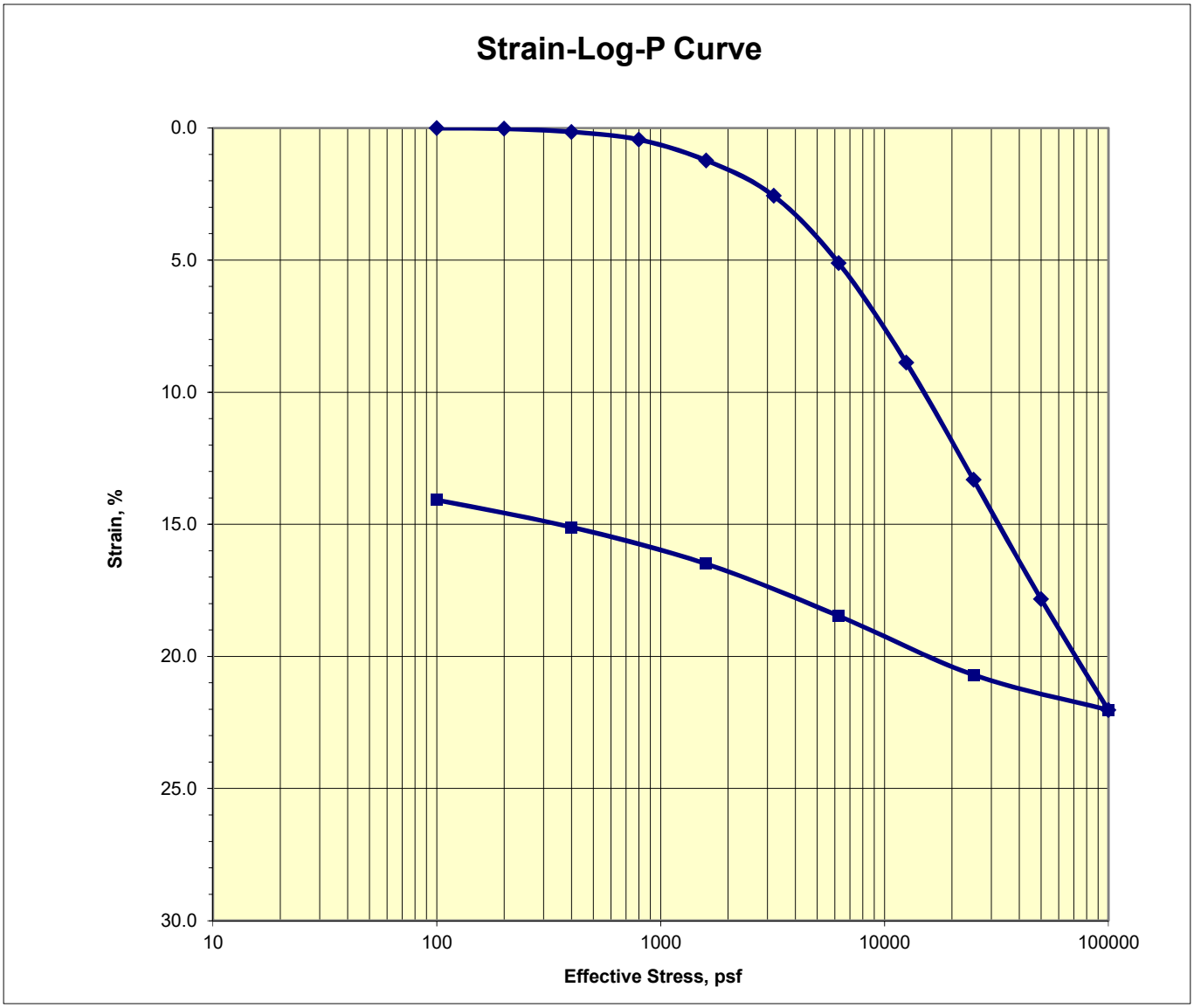
Visual Soil Description	
Sample #	
1	Dark Brown Sandy CLAY
2	Grayish Brown CLAY w/ Sand
3	Dark Brown CLAY w/ Sand
4	

Remarks:

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

Consolidation Test
ASTM D2435

Job No.:	640-1361	**Boring:**	EB-8	**Run By:**	MD
Client:	Cornerstone Earth Group	**Sample:**	7	**Reduced:**	PJ
Project:	1076-1-2	**Depth, ft.:**	15.0(Tip-3")	**Checked:**	PJ/DC
Soil Type:	Grayish Brown CLAY w/ Sand			**Date:**	11/5/2019



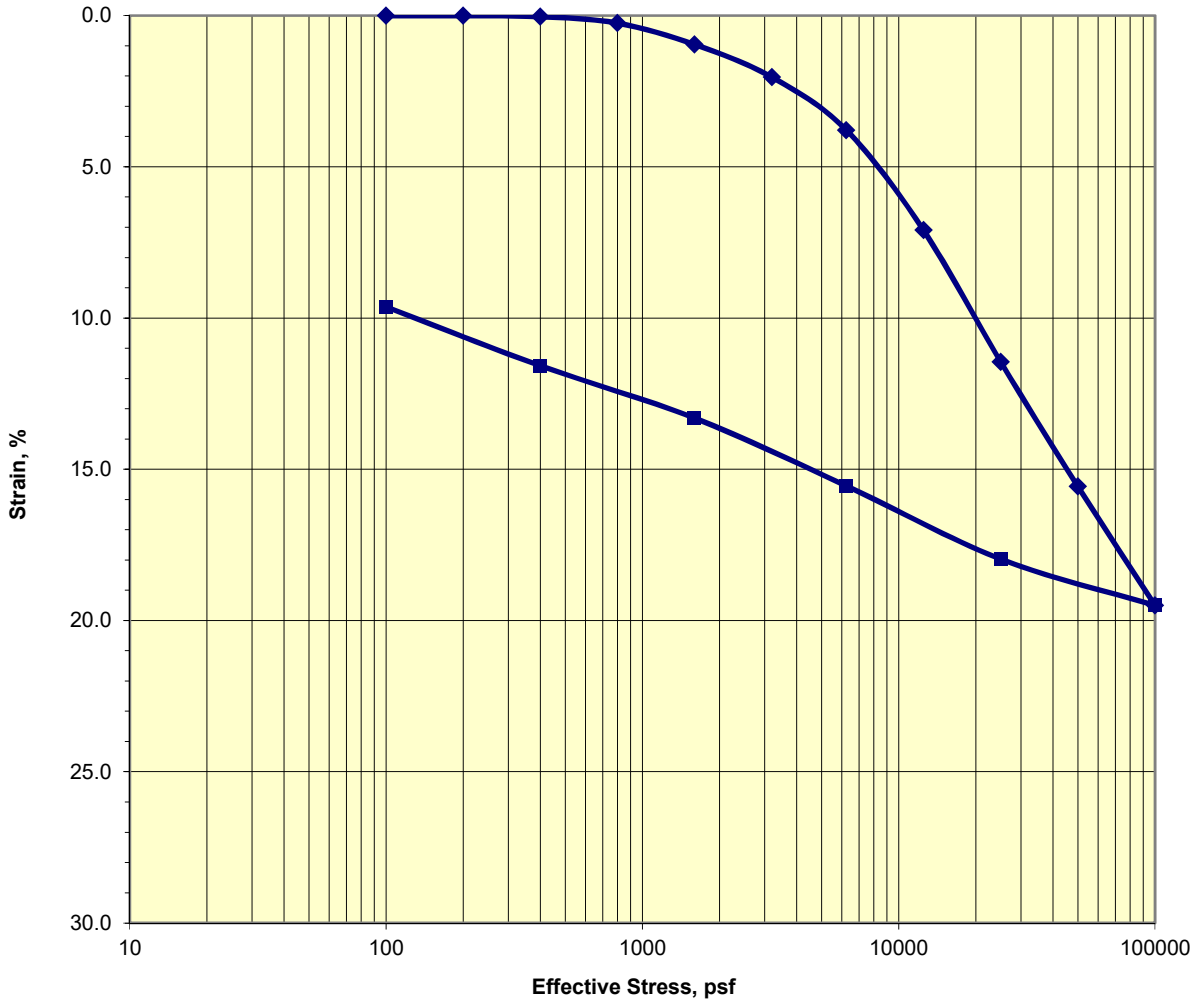
Assumed Gs 2.75	Initial	Final
Moisture %:	26.3	19.7
Dry Density, pcf:	95.8	111.3
Void Ratio:	0.792	0.542
% Saturation:	91.3	100.0

Remarks:

Consolidation Test
ASTM D2435

Job No.:	640-1361	**Boring:**	EB-9	**Run By:**	MD
Client:	Cornerstone Earth Group	**Sample:**	8	**Reduced:**	PJ
Project:	1076-1-2	**Depth, ft.:**	16.5(Tip-3")	**Checked:**	PJ/DC
Soil Type:	Dark Brown CLAY w/ Sand			**Date:**	11/6/2019

Strain-Log-P Curve



Assumed Gs 2.75	Initial	Final
Moisture %:	22.5	19.2
Dry Density, pcf:	101.6	112.3
Void Ratio:	0.689	0.529
% Saturation:	89.7	100.0

Remarks:

APPENDIX C: PREVIOUS FIELD EXPLORATION PROGRAM

BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/19/18 **DATE COMPLETED** 10/19/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 13.5 ft.
NOTES _____
▼ **AT END OF DRILLING** 13.5 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		**Sandy Lean Clay (CL) [Fill]** hard, moist, brown, fine to coarse sand, fine to coarse subangular gravel, low plasticity							
			Lean Clay (CL) hard, moist, dark brown to brown, some fine to medium sand, moderate plasticity	14	MC-1B	104	19			>4.5 ○
				17	MC					>4.5 ○
	5		**Sandy Lean Clay (CL)** hard, moist, brown, fine sand, low plasticity Liquid Limit = 26, Plastic Limit = 15	7	MC-3B	100	16	11	57	>4.5 ○
			Lean Clay with Sand (CL) very stiff, moist, brown, fine to medium sand, low plasticity	8	MC					○
	10		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine sand	7	MC-5B	98	21			
			Clayey Sand (SC) loose, moist, brown, fine to medium sand							
			Lean Clay with Sand (CL) medium stiff to stiff, moist, brown, fine sand, low plasticity	6	MC-6B	102	22			○
	15		**Lean Clay (CL)** stiff, moist, brown, some fine sand, moderate plasticity							
				13	MC-7B	98	25			○
	20									
			becomes medium stiff	7	MC-8B	96	27			○
	25									
			Continued Next Page							

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BORING NUMBER EB-1

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, CA

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

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	30		**Silty Sand (SM)** medium dense, moist, brown, fine to medium sand	22	MC-9A	108	20		42	
			Poorly Graded Sand with Silt and Gravel (SP-SM) medium dense, moist, brown, fine to coarse sand, fine subangular to subrounded gravel	23	MC-10B	128	7		11	
	35		**Lean Clay with Sand (CL)** stiff, moist, brown, fine to medium sand, low to moderate plasticity							
	40		Bottom of Boring at 40.0 feet.	13	MC-11B	107	20			○
	45									
	50									
	55									

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/17/18 **DATE COMPLETED** 10/17/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo **LATITUDE** 37.63265° **LONGITUDE** -122.11802°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger **GROUND WATER LEVELS:**
LOGGED BY BCG ▽ **AT TIME OF DRILLING** 15 ft.
NOTES _____ ▼ **AT END OF DRILLING** 16 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0		6 inches Portland cement concrete						
			Lean Clay with Sand (CL) very stiff, moist, dark brown to brown, fine to medium sand, low plasticity Liquid Limit = 34, Plastic Limit = 16	19	MC-1B	108	17	18	
				16	MC				
	5		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to coarse sand, some fine to coarse subangular to subrounded gravel	6	MC-3B	93	9		
			Poorly Graded Sand (SP) loose, moist, brown, fine to coarse sand	11	MC-4A	90	4		3
	10			5	MC-5B	98	24		
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine to medium sand, moderate plasticity						
			Silty, Clayey Sand (SC-SM) loose, moist, brwn, fine to medium sand Liquid Limit = 24, Plastic Limit = 17	6	MC-6B	110	20	7	37
▽	15			5	MC				
▼			**Lean Clay with Sand (CL)** medium stiff, moist, brown, fine to medium sand, moderate plasticity						
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	7	MC-8B	98	26		
	20								
				9	MC-9B	103	23		
	25								
			Continued Next Page						

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

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-2

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, 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
	30		**Lean Clay (CL)** very stiff, moist, brown, some fine sand, moderate plasticity	21	MC-10B	109	20		
	35		**Lean Clay with Sand (CL)** stiff, moist, brown, fine to medium sand, moderate plasticity	12	MC-11B	105	21		
			Silty Sand (SM) medium dense, moist, brown, fine to medium sand	23	MC				
	40		**Lean Clay with Sand (CL)** very stiff, moist, brown, fine to medium sand, moderate plasticity	11	SPT-13A		23		16
			Bottom of Boring at 40.0 feet.						
	45								
	50								
	55								

UNDRAINED SHEAR STRENGTH, ksf

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

1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-3

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/19/18 **DATE COMPLETED** 10/19/18
GROUND ELEVATION _____ **BORING DEPTH** 25 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 18 ft.
NOTES _____
▼ **AT END OF DRILLING** 18 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf
	0		6 inches Portland cement concrete							
			Lean Clay (CL) hard, moist, dark brown, some fine to medium sand, moderate plasticity	12	MC-1B	98	21			>4.5
			Lean Clay (CL) very stiff, moist, brown, some fine sand, moderate plasticity	11	MC-2B	100	18			
	5			12	MC-3B	102	20			
			Lean Clay with Sand (CL) stiff, moist, brown, fine to medium sand, low plasticity	9	MC-4B	102	21			
			Poorly Graded Sand with Silt (SP-SM) loose, moist, brown, fine sand							
	10			5	5B MC 5C	101 93	23 31	18	12 71	
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine to medium sand, moderate plasticity Liquid Limit = 36, Plastic Limit = 18							
			Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity	5	MC-6B	88	34			
	15									
				15	MC-7B	105	22			
	20									
				21	MC-8B	108	20			
	25		Bottom of Boring at 25.0 feet.							

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

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/18/18 **DATE COMPLETED** 10/18/18
GROUND ELEVATION _____ **BORING DEPTH** 30 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 18 ft.
NOTES _____
▼ **AT END OF DRILLING** 15 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		6 inches Portland cement concrete over 12 inches aggregate base							
			Sandy Lean Clay (CL) [Fill] hard, moist, brown, fine to coarse sand, fine to coarse subangular gravel, low plasticity	30	MC-1B	106	20			>4.5 ○
			Lean Clay (CL) hard, moist, dark brown, some fine sand, moderate plasticity	15	MC-2B	94	24			○
	5		**Lean Clay with Sand (CL)** very stiff, moist, brown, fine sand, moderate plasticity	15	MC-3B	105	17			○
			becomes medium stiff	12	MC					○
			Sandy Lean Clay (CL) medium stiff, moist, brown, fine to medium sand, low plasticity							
	10		Liquid Limit = 30, Plastic Limit = 15	4	MC-5A	92	27	15	55	○
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity							
				10	MC-6B	93	29			○
▼	15									
▽										
			becomes very stiff	14	MC-7B	100	25			○
	20									

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CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-4

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, 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
			Silty Sand (SM) loose, moist, brown, fine to medium sand						
	25		**Lean Clay with Sand (CL)** medium stiff, moist, brown, fine sand, low plasticity	11	MC-8B	95	28		
			Silty Sand (SM) loose, moist, brown, fine to medium sand	13	MC-9B		22		19
	30		Bottom of Boring at 30.0 feet.						
	35								
	40								
	45								

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

1.0 2.0 3.0 4.0

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

BORING NUMBER EB-5

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/19/18 **DATE COMPLETED** 10/19/18
GROUND ELEVATION _____ **BORING DEPTH** 15 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** Not Encountered
NOTES _____
▼ **AT END OF DRILLING** Not Encountered

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		**Sandy Lean Clay (CL) [Fill]** hard, moist, brown, fine to coarse sand, fine to coarse subangular gravel							
			Lean Clay (CL) hard, moist, dark brown to brown, some fine to medium sand, moderate plasticity	21	MC-1B	106	15			>4.5 ○
				13	MC-2B	103	17			>4.5 ○
	5		**Sandy Lean Clay (CL)** very stiff, moist, brown, fine sand, low plasticity Liquid Limit = 27, Plastic Limit = 18	6	MC-3B	107	15	9	55	○
				14	MC-4B	106	12			○
			Poorly Graded Sand with Silt (SP-SM) loose, moist, brown, fine to medium sand							
	10			4	5A MC	94	12		7	
			Silty Sand (SM) loose, moist, brown, fine sand		5B	92	25		49	
			Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity	6	MC-6B	92	30			○
	15		Bottom of Boring at 15.0 feet.							
	20									
	25									

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BORING NUMBER EB-6

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/17/18 **DATE COMPLETED** 10/17/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE 37.63175° **LONGITUDE** -122.11911°
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY BCG
▽ **AT TIME OF DRILLING** 17 ft.
NOTES _____
▼ **AT END OF DRILLING** 13 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE
	0		5 inches asphalt concrete over 1 inch aggregate base						
			Lean Clay (CL) very stiff, moist, dark brown to brown, some fine to medium sand, moderate plasticity	17	MC-1B	99	22		
				19	MC-2B	107	19		
	5		**Clayey Sand (SC)** loose, moist, brown, fine to coarse sand	16	MC-3B	103	6		
			Poorly Graded Sand with Silt (SP-SM) loose, moist, brown, fine to coarse sand, some fine subangular to subrounded gravel	9	MC-4B	96	5		6
	10		**Silty Sand (SM)** loose, moist, brown, fine sand	5	MC-5B	94	20		45
			Sandy Lean Clay (CL) medium stiff, moist, brown, fine sand, moderate plasticity	5	MC				
			Lean Clay (CL) medium stiff, moist, brown, some fine sand, moderate plasticity	5	MC				
	15								
				8	MC-8B	94	29		
	20								
			becomes stiff	10	MC				
	25								

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

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BORING NUMBER EB-6

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, CA

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Silty Sand (SM) loose, moist, brown, fine sand	10	MC-10B	102	23		25	
	30		**Poorly Graded Sand with Silt (SP-SM)** loose, moist, brown, fine to medium sand	12	MC-11B	99	24		6	
			Silty Sand (SM) loose, moist, gray, fine to medium sand	10	MC					
	35			5	SPT-13		23		15	
			Lean Clay with Sand (CL) medium stiff, moist, brown, fine sand, moderate plasticity	8	MC-14B	103	22			○
	40		Bottom of Boring at 40.0 feet.							
	45									
	50									
	55									

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BORING NUMBER EB-7

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road
PROJECT NUMBER 1076-1-1
PROJECT LOCATION Hayward, CA

DATE STARTED 10/18/18 **DATE COMPLETED** 10/18/18
GROUND ELEVATION _____ **BORING DEPTH** 40 ft.
DRILLING CONTRACTOR Cuesta Geo
LATITUDE _____ **LONGITUDE** _____
DRILLING METHOD MPP LAD, 6½ inch Hollow-Stem Auger
GROUND WATER LEVELS:
LOGGED BY SCO
▽ **AT TIME OF DRILLING** 20 ft.
NOTES _____
▼ **AT END OF DRILLING** 16 ft.

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ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
	0		4½ inches asphalt concrete over 3 inch aggregate base							
			Lean Clay (CL) very stiff, moist, dark brown to brown, some fine to medium sand, moderate plasticity	21	MC-1B	101	20			>4.5 ○
				18	MC-2B	103	20			○
	5		**Clayey Sand (SC)** loose, moist, brown, fine to coarse sand	12	MC-3B	102	12			○
			Silty Sand (SM) loose, moist, brown, fine sand							
	10			10	MC-4B	98	15		31	
			Sandy Lean Clay (CL) medium stiff, moist, brown, fine sand, low plasticity	7	MC					○
	15									
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	10	MC-6B	95	27			○
	20									
			becomes very stiff	15	MC-7B	106	21			○
	25									

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BORING NUMBER EB-7

CORNERSTONE EARTH GROUP

PROJECT NAME 25800 Clawiter Road

PROJECT NUMBER 1076-1-1

PROJECT LOCATION Hayward, CA

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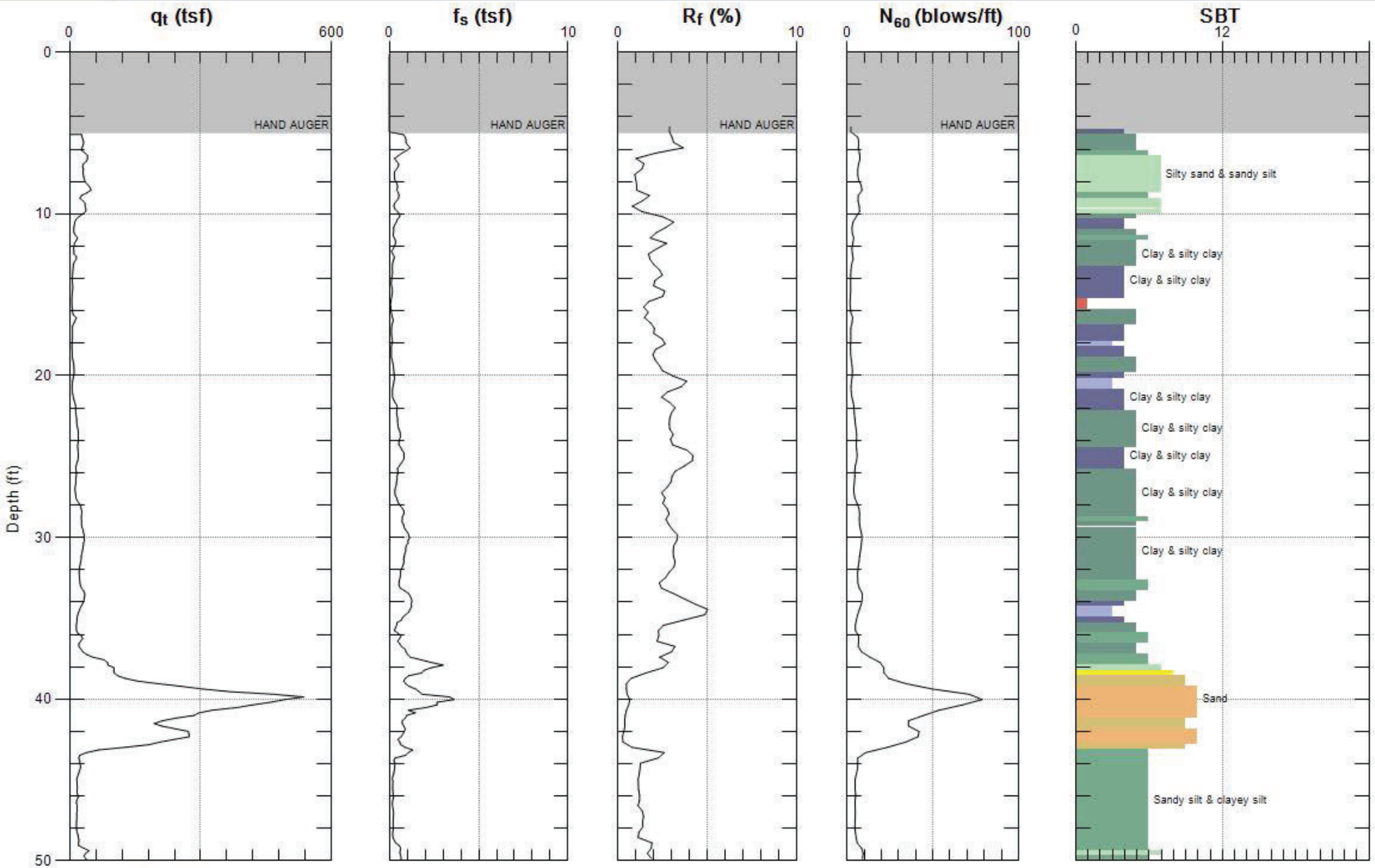
ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	SAMPLES TYPE AND NUMBER	DRY UNIT WEIGHT PCF	NATURAL MOISTURE CONTENT	PLASTICITY INDEX, %	PERCENT PASSING No. 200 SIEVE	UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0)
			Silty Sand (SM) medium dense, moist, brown, fine to coarse sand	20	MC-8B	121	13		16	
	30		decreasing medium to coarse sand	22	MC-9B	109	20		15	
	35									
			Lean Clay (CL) stiff, moist, brown, some fine sand, moderate plasticity	12	MC-10B	106	21			○
	40		Bottom of Boring at 40.0 feet.							
	45									
	50									
	55									

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 11/6/18 12:49 - P:\DRAFTING\GINT FILES\1076-1-1 25800 CLAWITER ROAD.GPJ

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-1

Engineer: M.HINTZ
Date: 2/6/2018 07:04



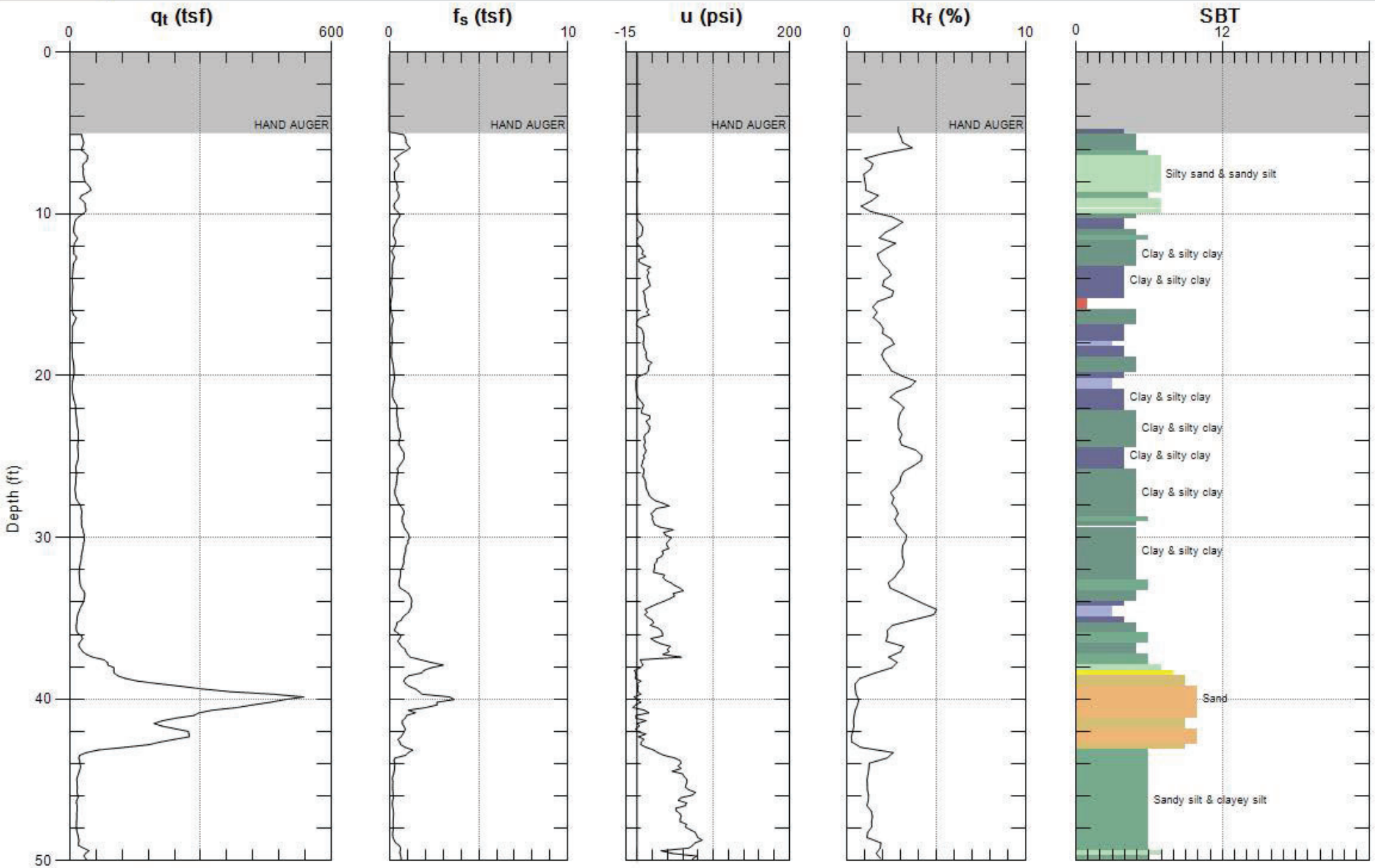
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-1

Engineer: M.HINTZ
Date: 2/6/2018 07:04



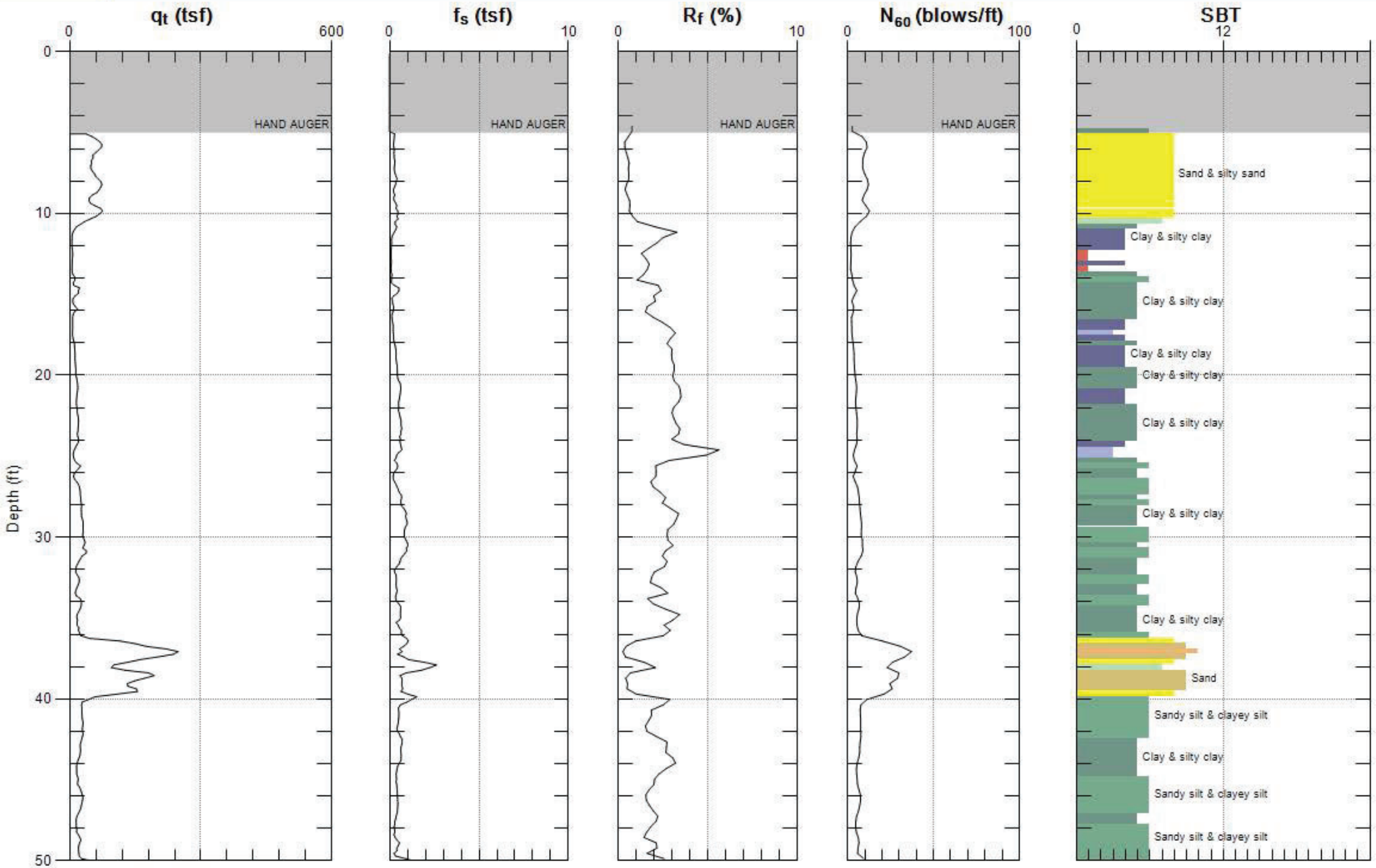
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-2

Engineer: M.HINTZ
Date: 2/6/2018 08:27



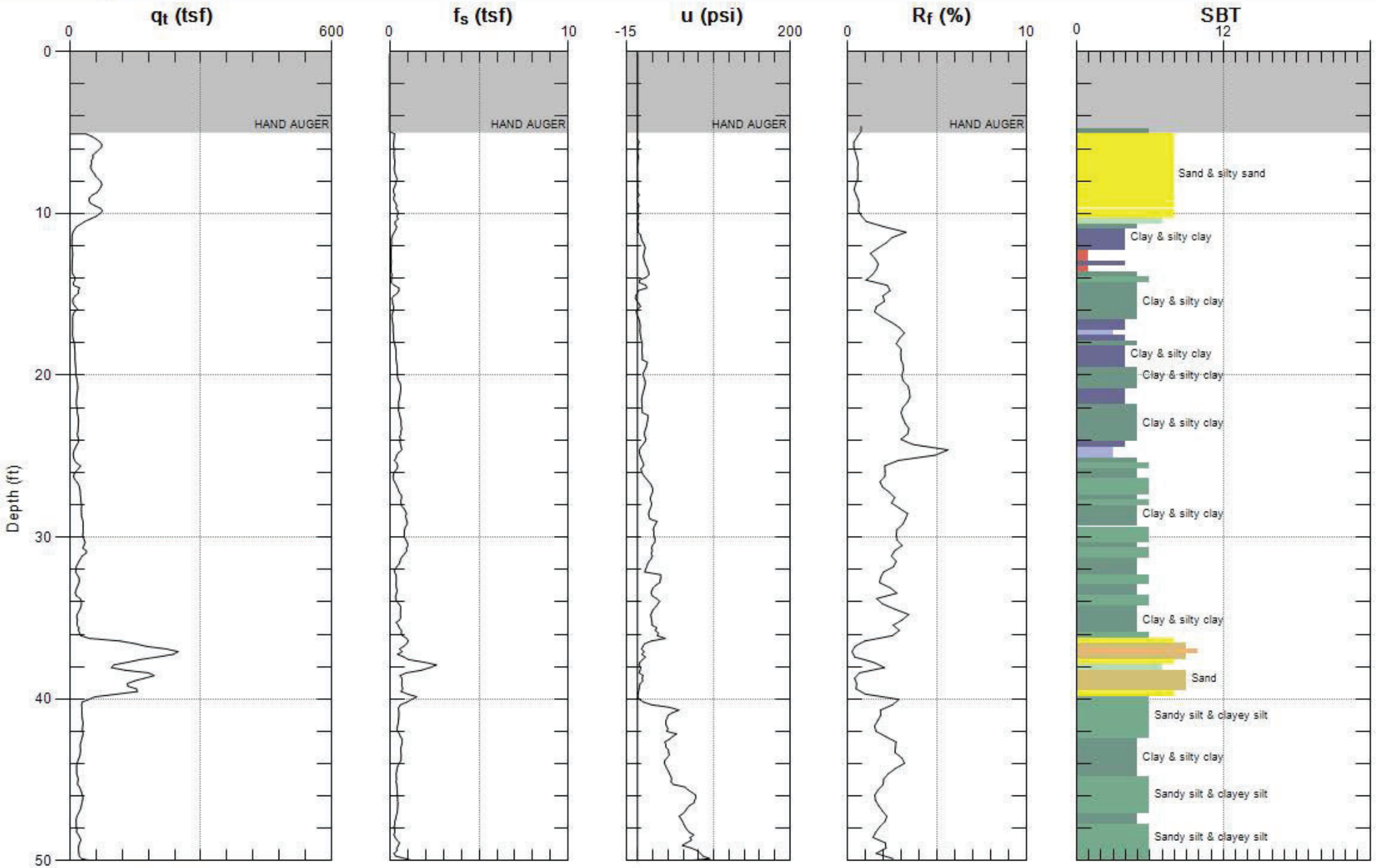
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-2

Engineer: M.HINTZ
Date: 2/6/2018 08:27



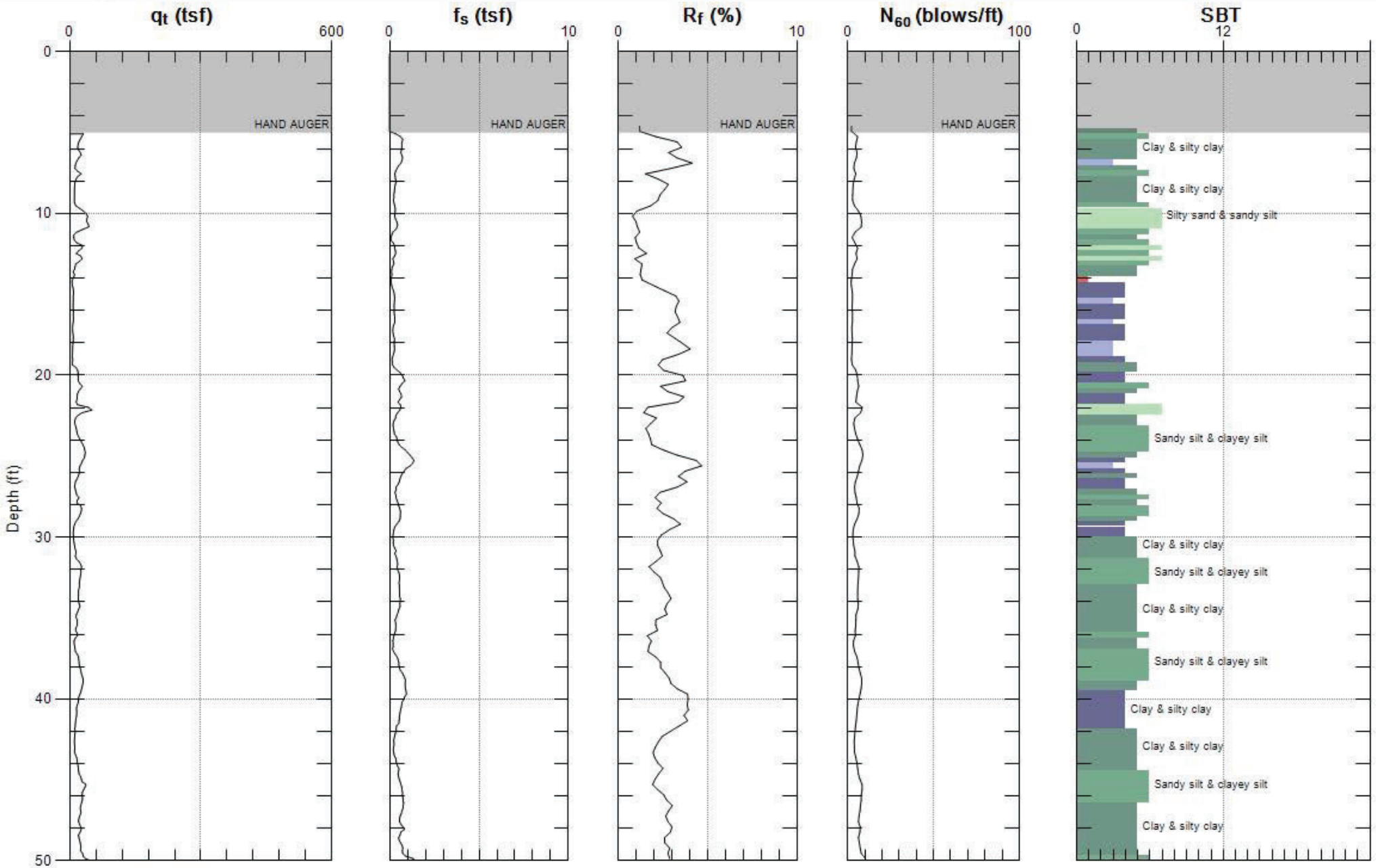
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-3

Engineer: M.HINTZ
Date: 2/5/2018 01:54



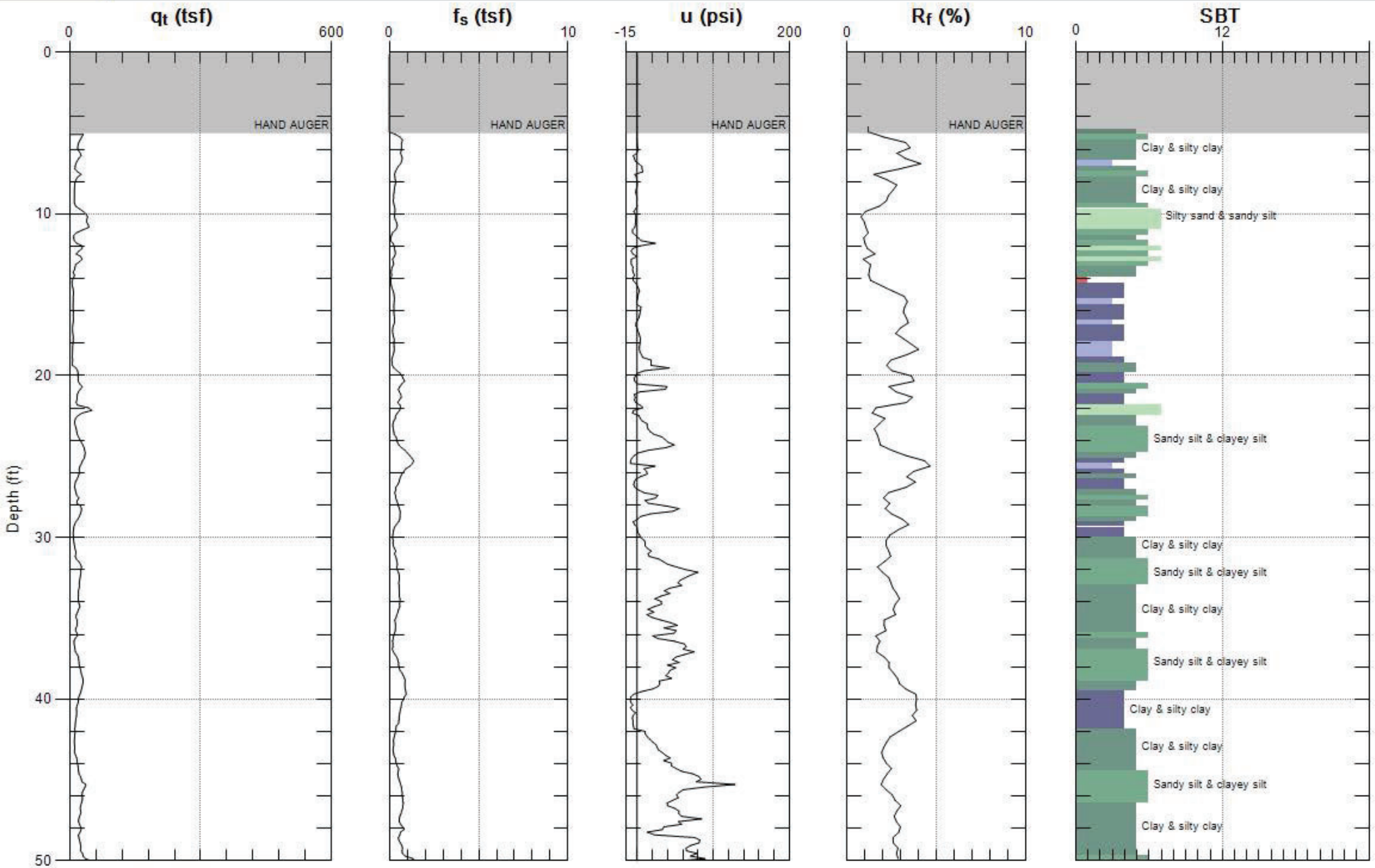
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-3

Engineer: M.HINTZ
Date: 2/5/2018 01:54



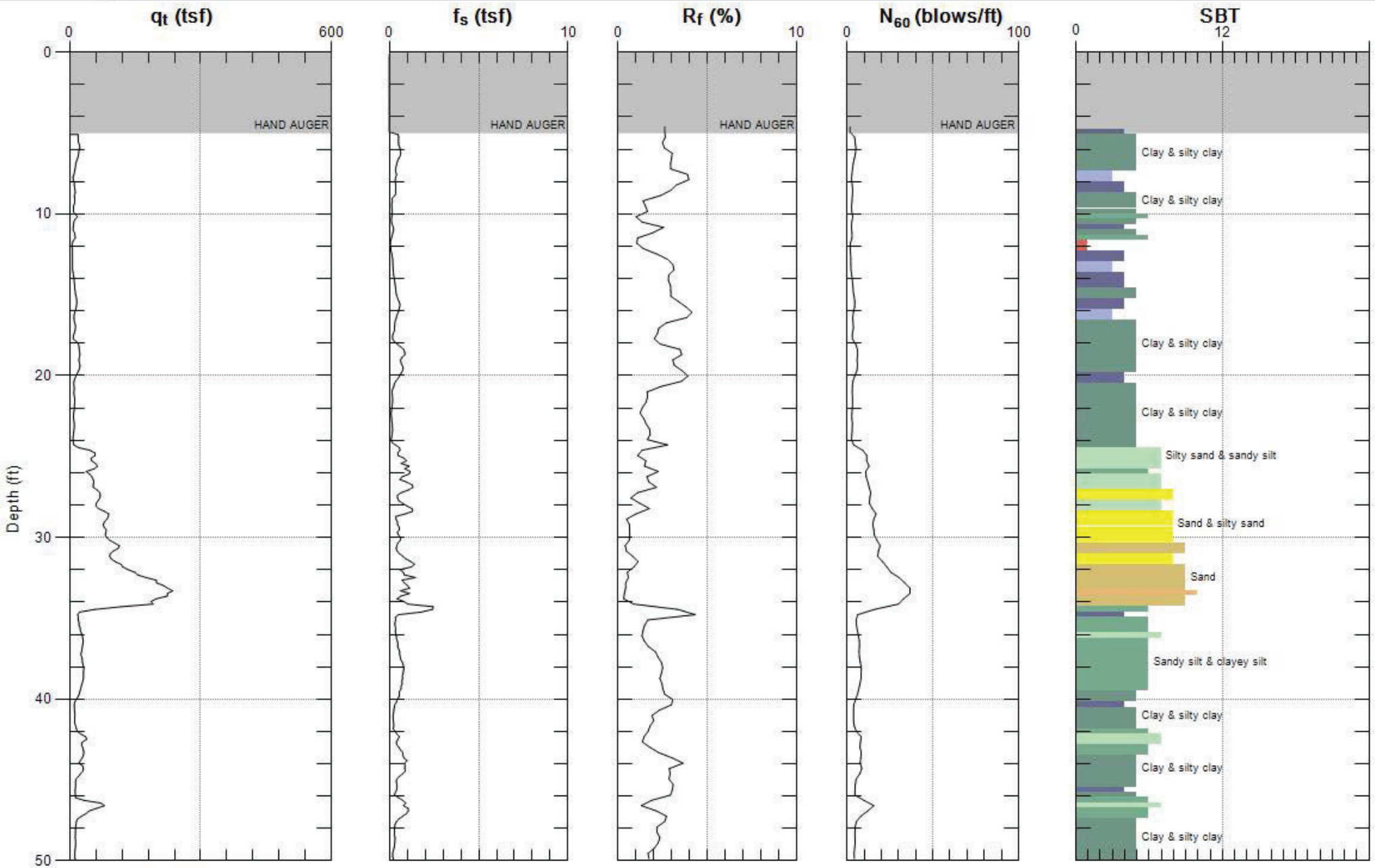
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-4

Engineer: M.HINTZ
Date: 2/5/2018 12:32



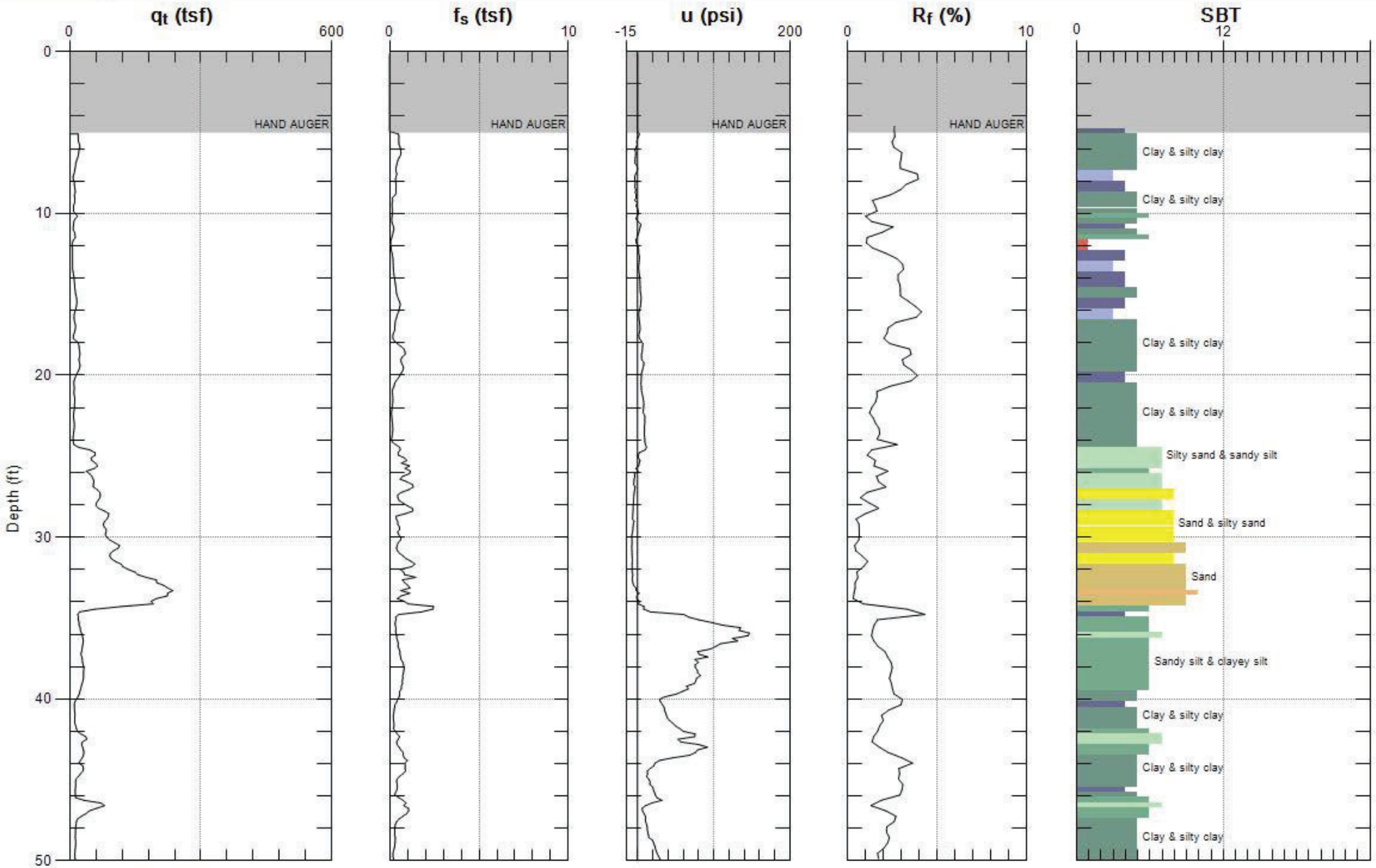
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-4

Engineer: M.HINTZ
Date: 2/5/2018 12:32



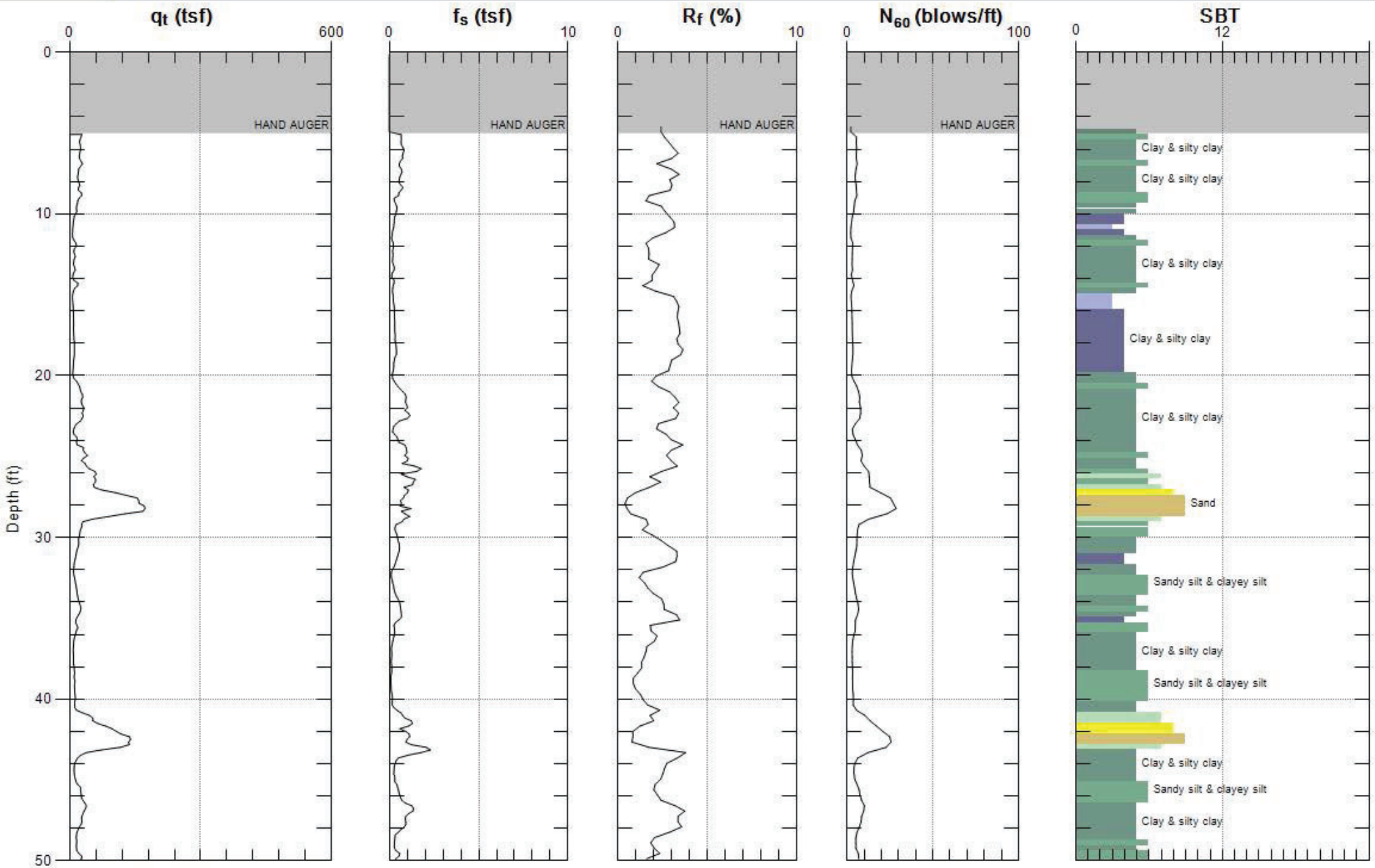
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-5

Engineer: M.HINTZ
Date: 2/6/2018 10:00



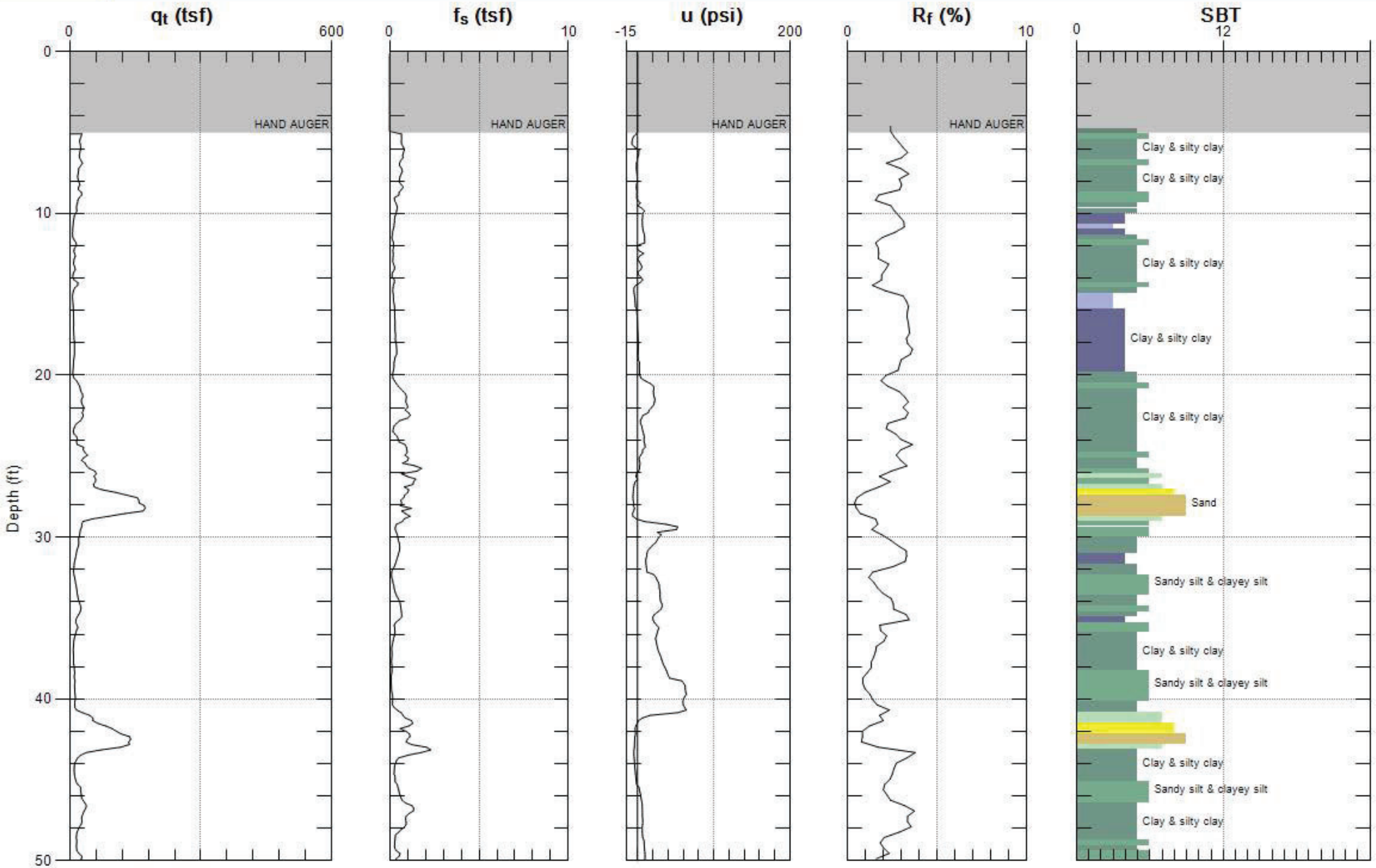
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-5

Engineer: M.HINTZ
Date: 2/6/2018 10:00



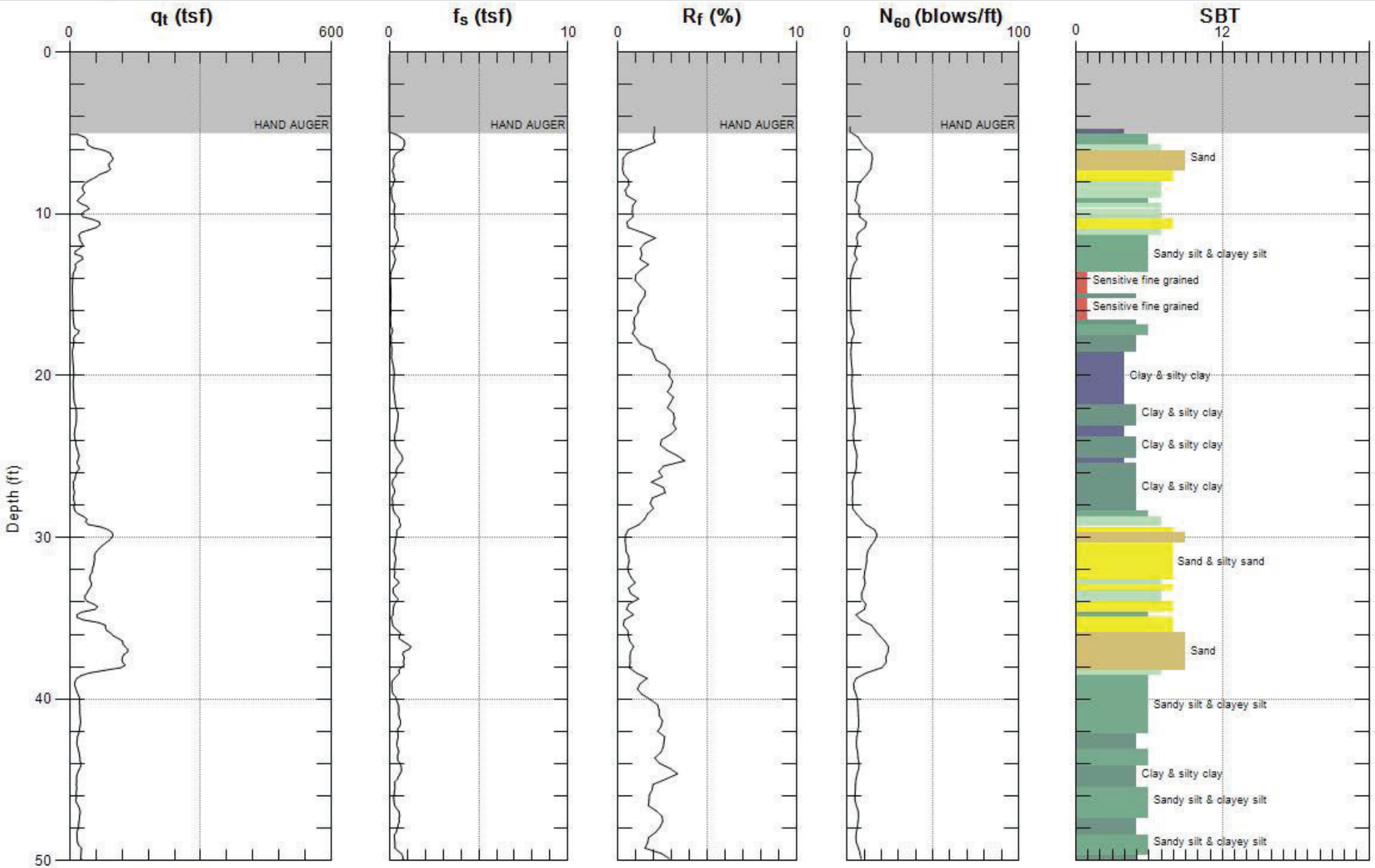
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-6

Engineer: M.HINTZ
Date: 2/5/2018 07:28



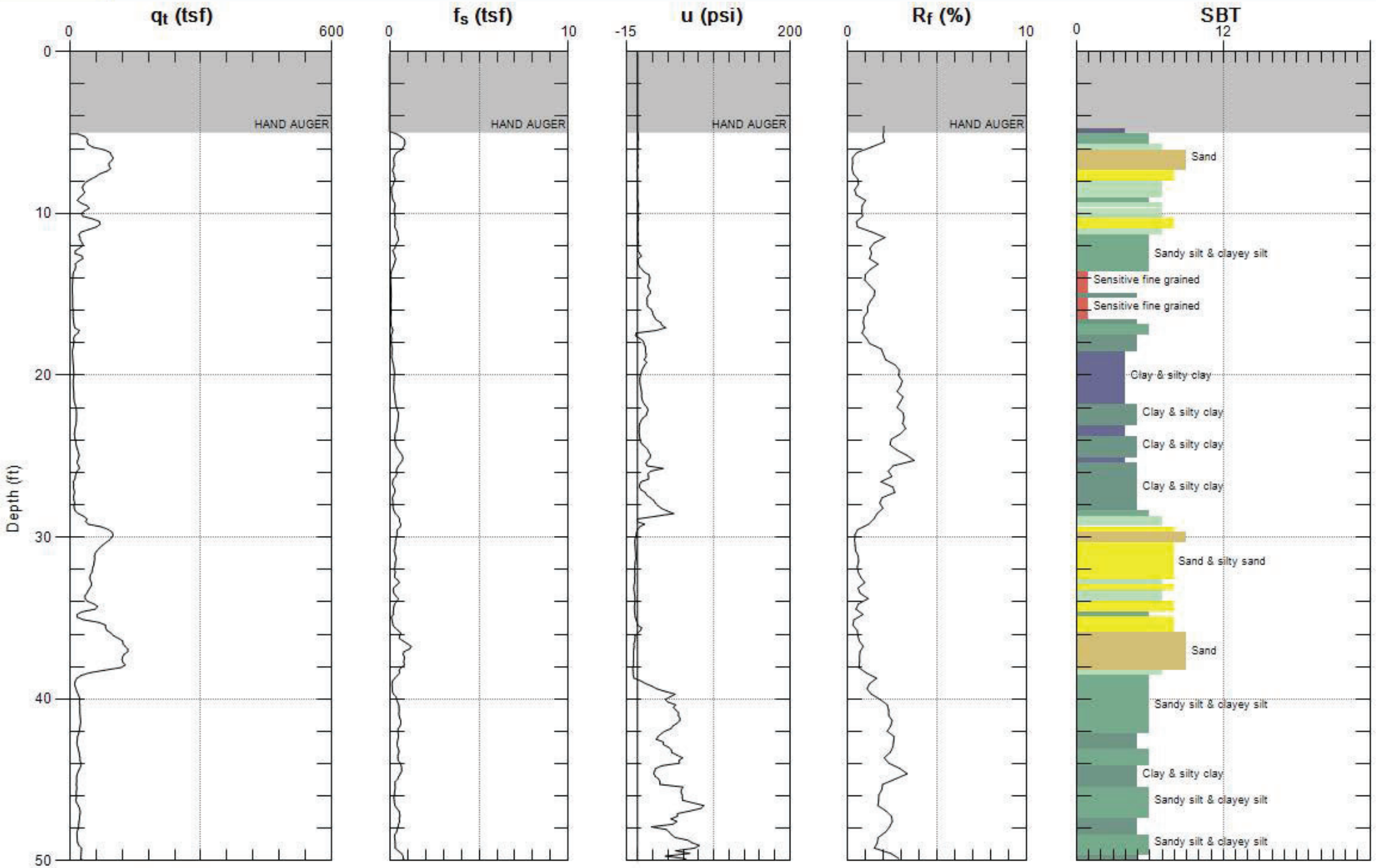
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-6

Engineer: M.HINTZ
Date: 2/5/2018 07:28



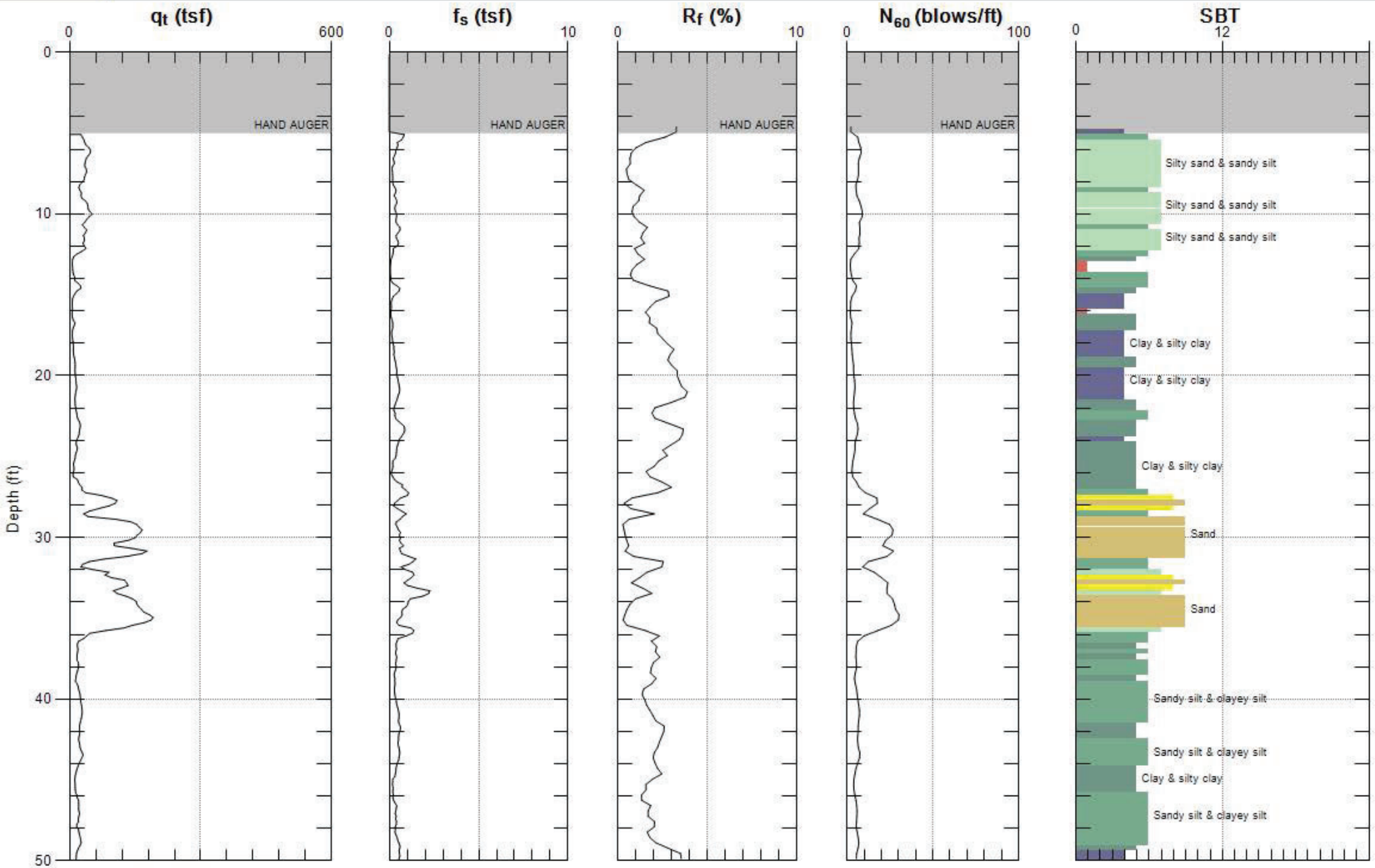
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-7

Engineer: M.HINTZ
Date: 2/5/2018 09:09



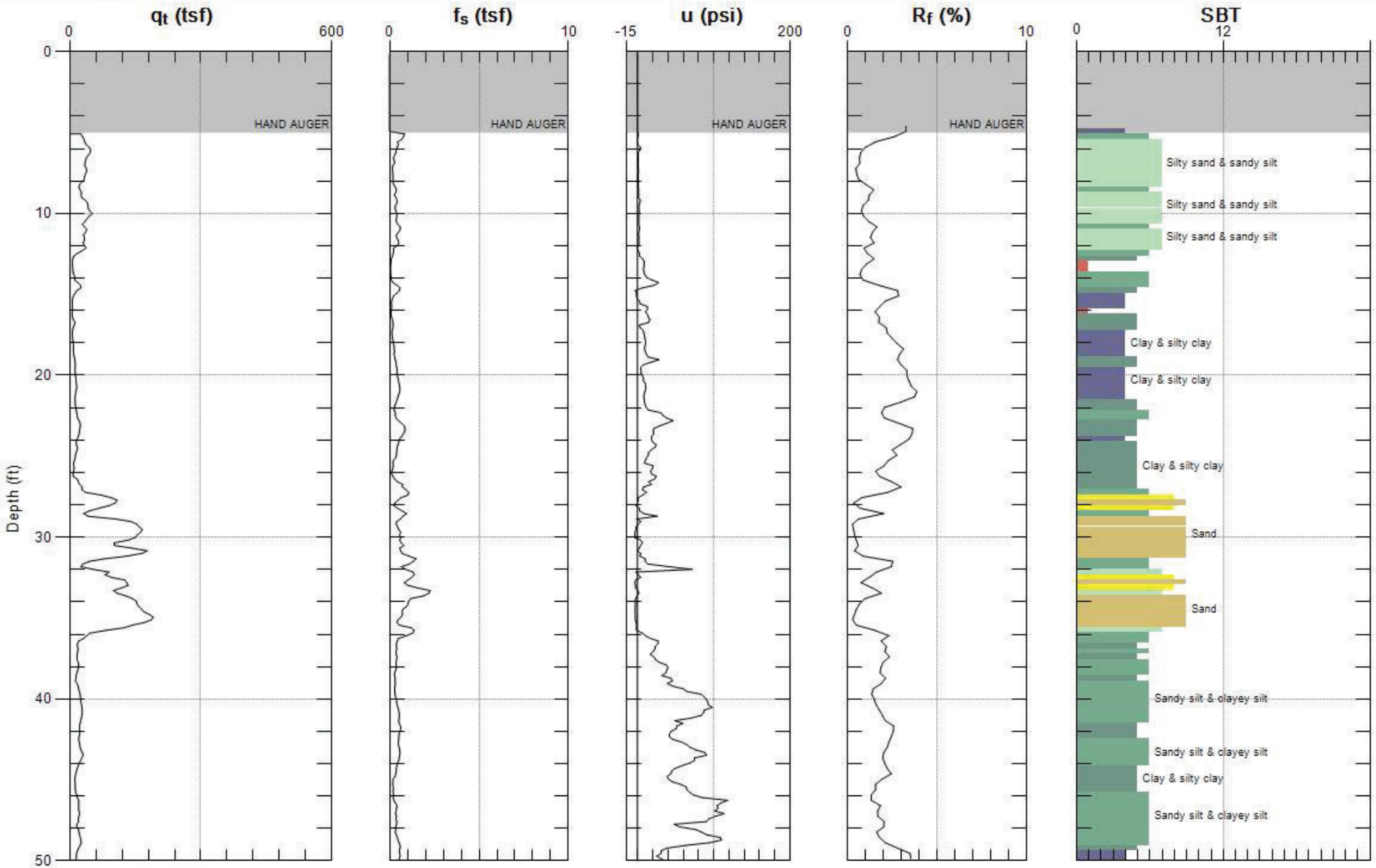
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-7

Engineer: M.HINTZ
Date: 2/5/2018 09:09



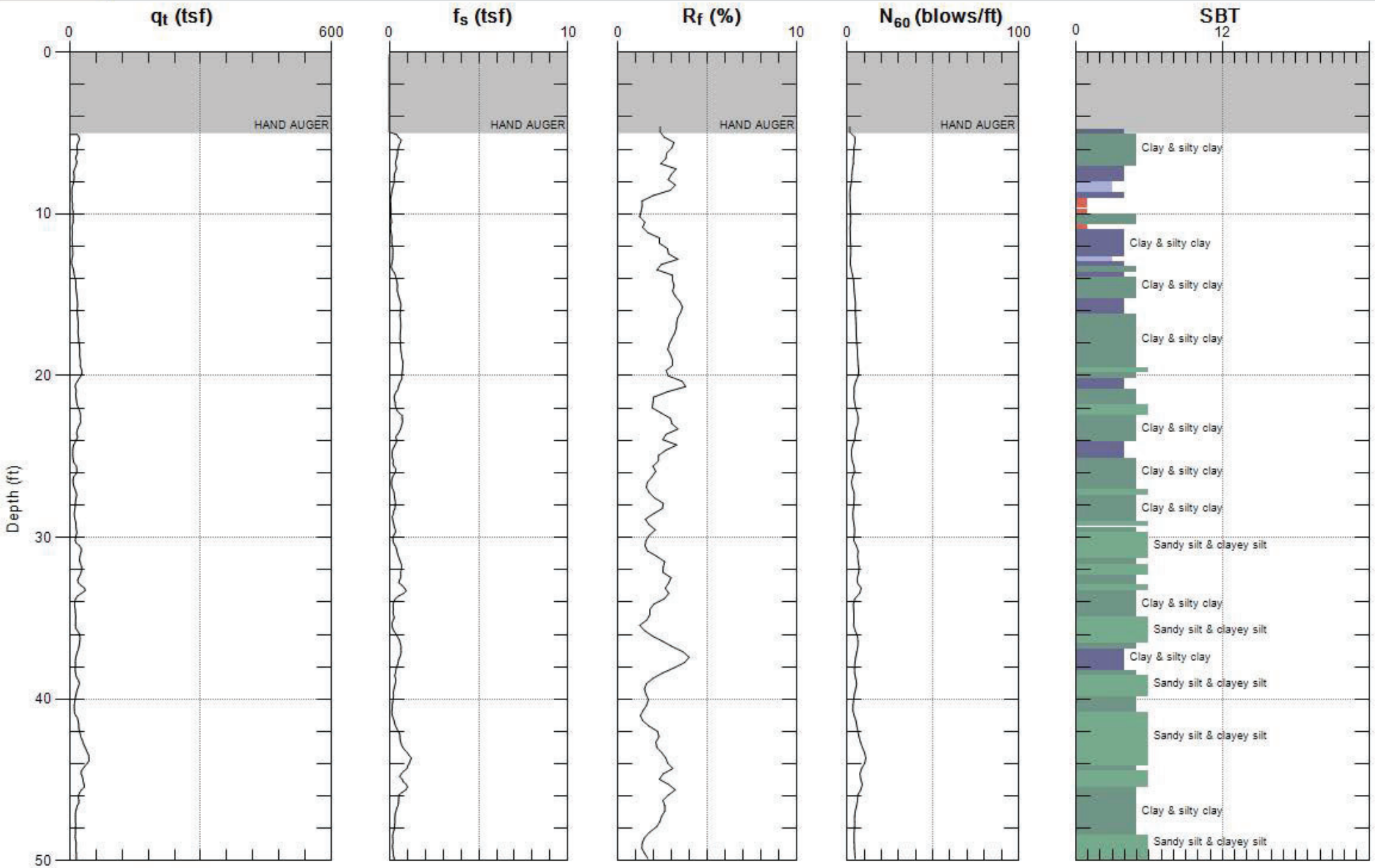
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-8

Engineer: M.HINTZ
Date: 2/5/2018 10:36



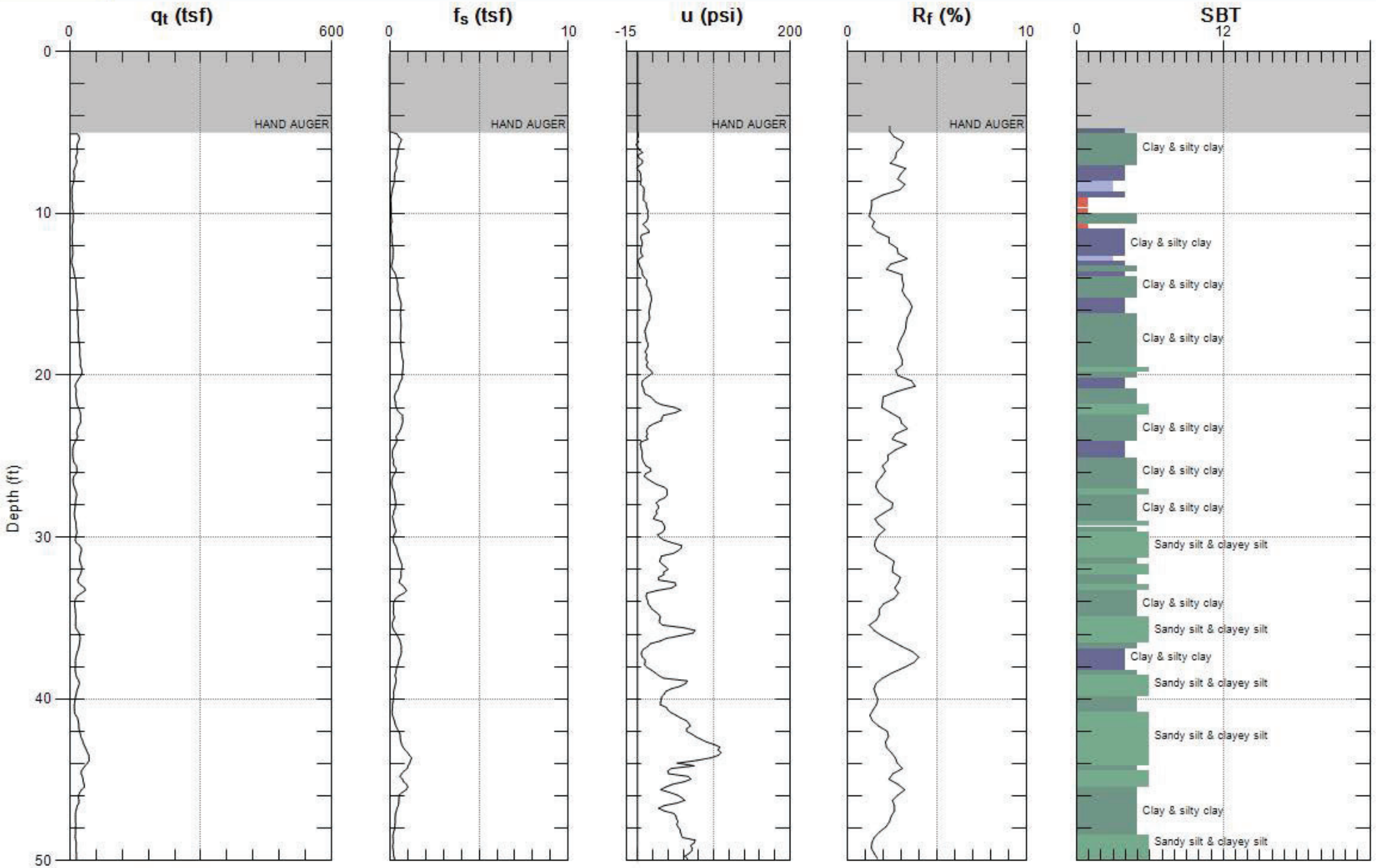
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-8

Engineer: M.HINTZ
Date: 2/5/2018 10:36



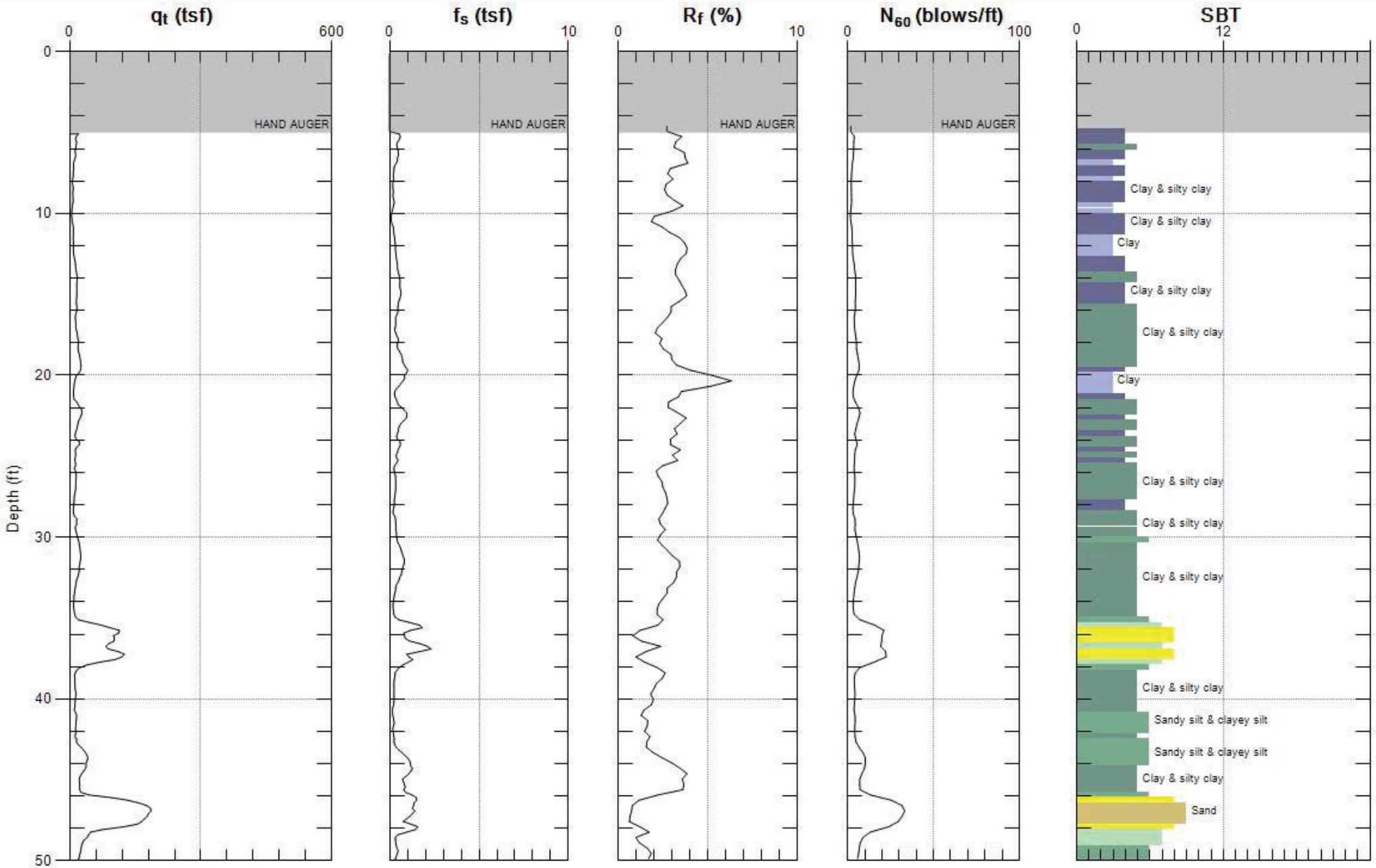
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-9

Engineer: M.HINTZ
Date: 2/6/2018 01:04



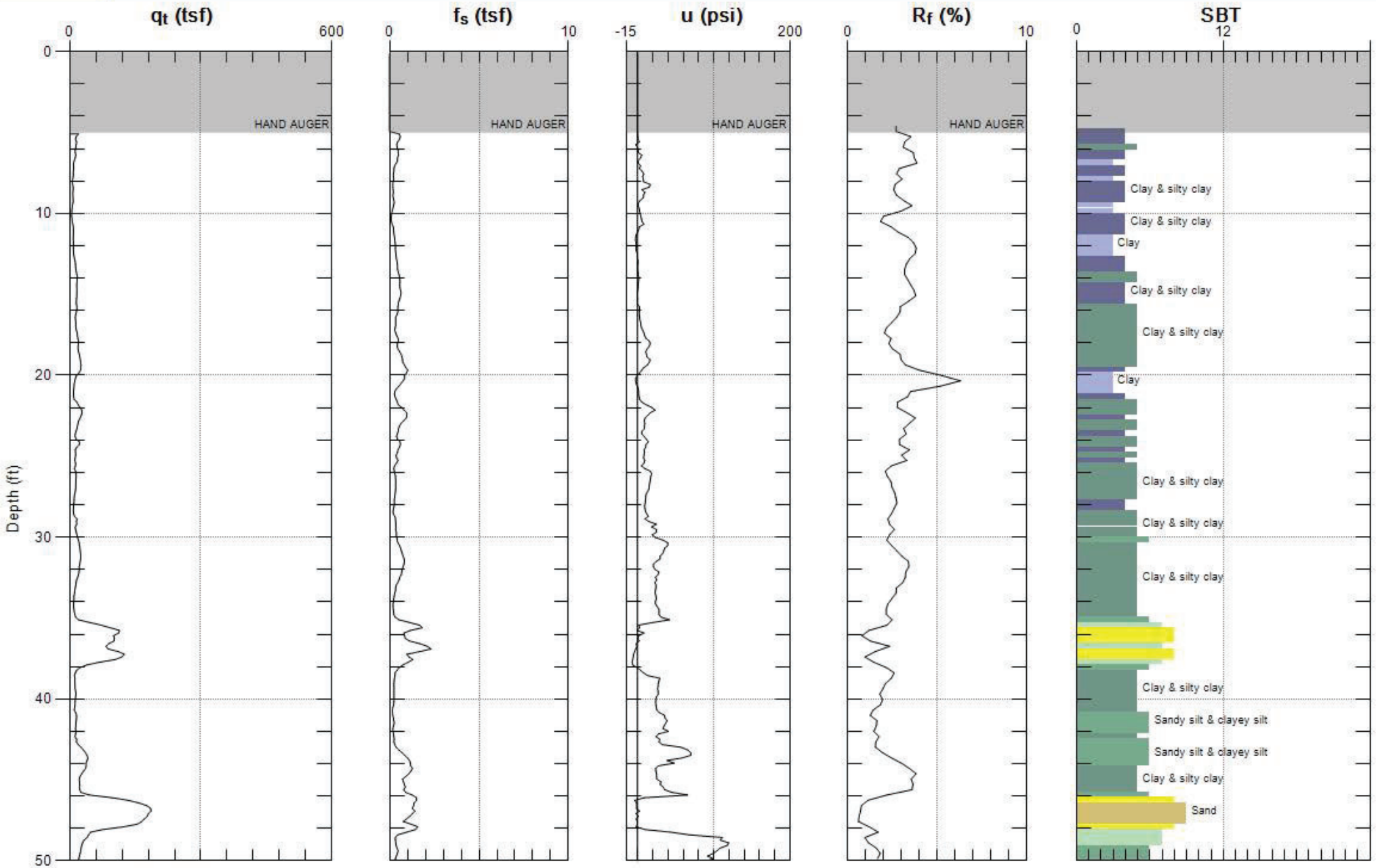
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-9

Engineer: M.HINTZ
Date: 2/6/2018 01:04



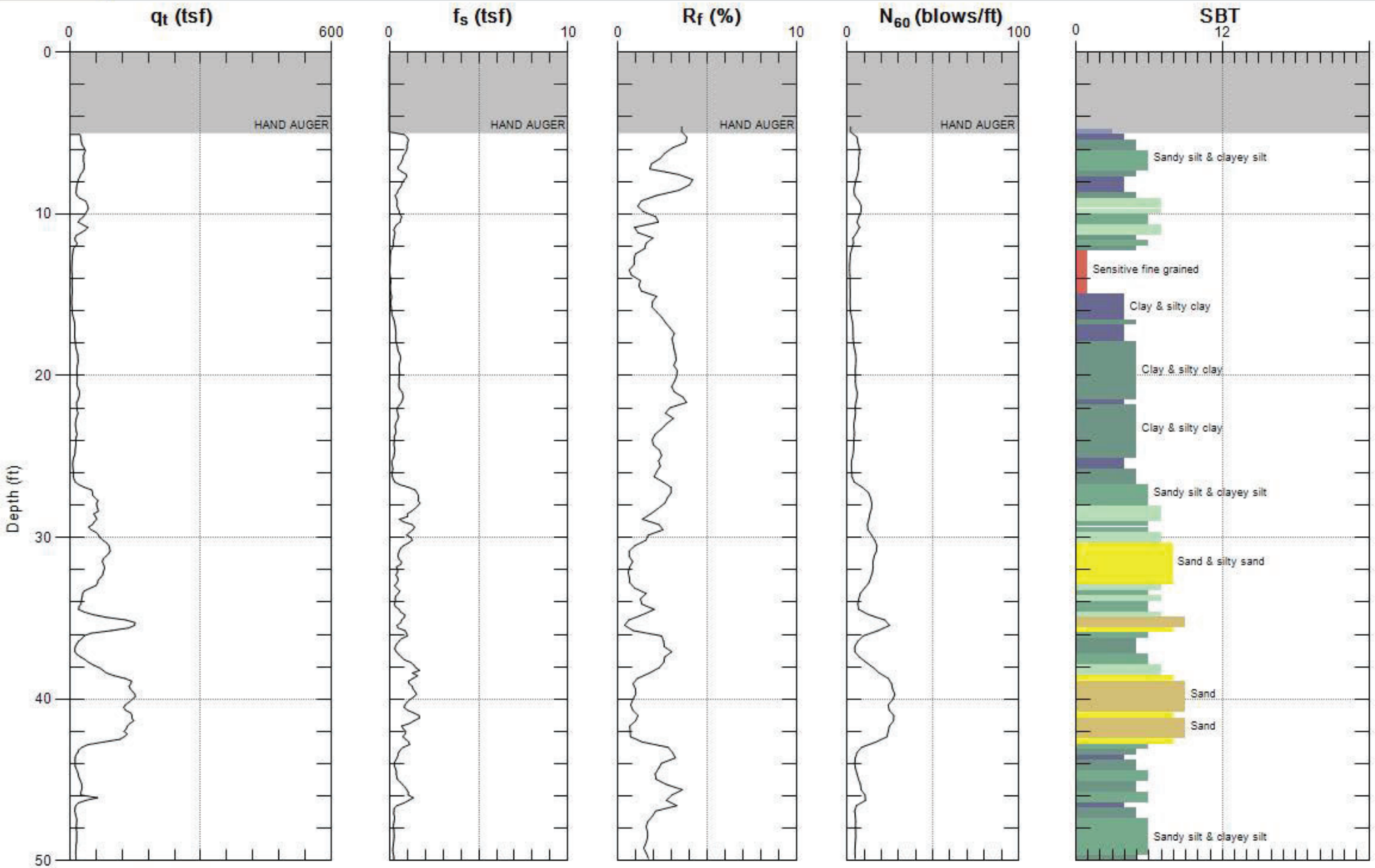
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-10

Engineer: M.HINTZ
Date: 2/6/2018 11:23



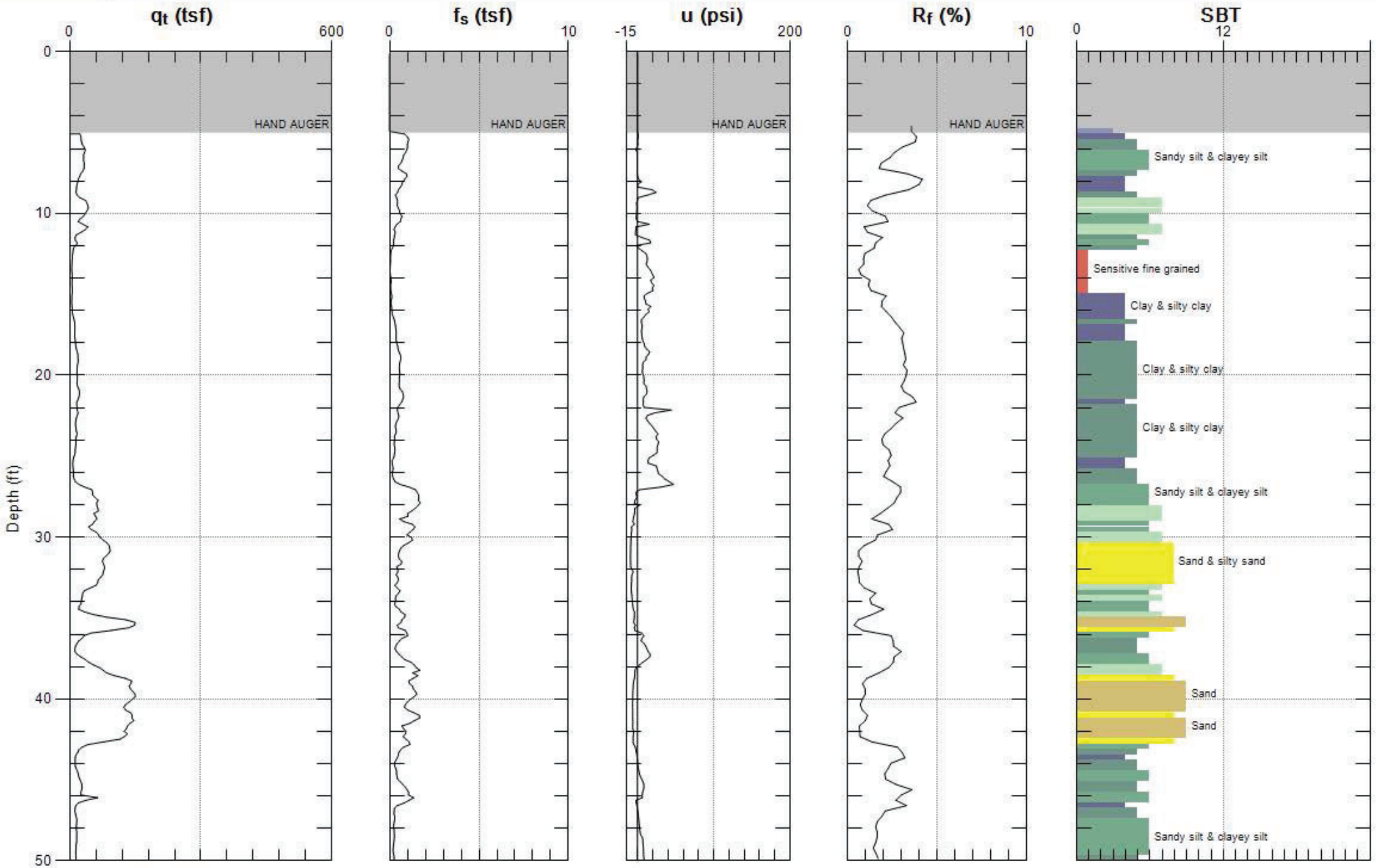
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-10

Engineer: M.HINTZ
Date: 2/6/2018 11:23



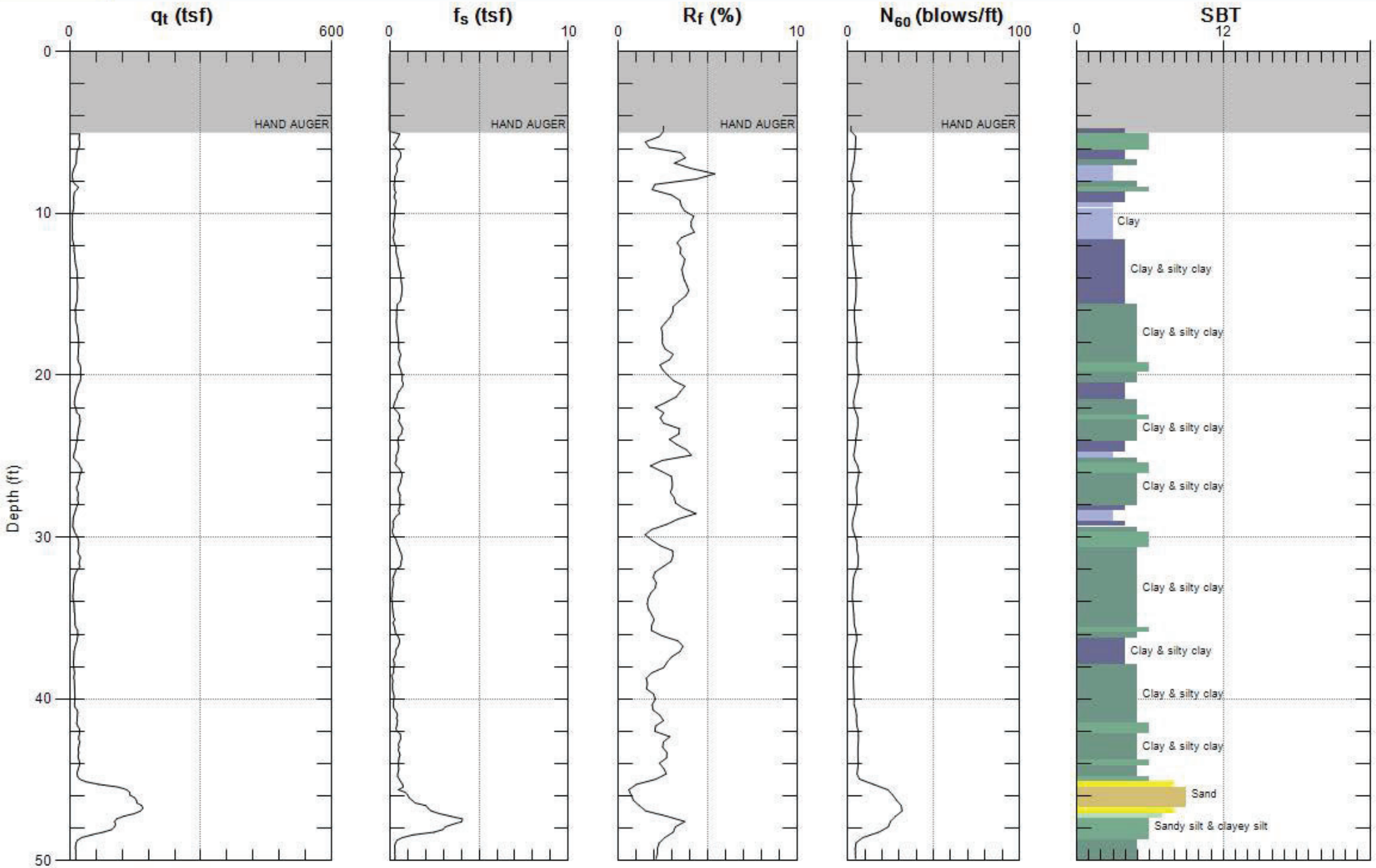
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-11

Engineer: M.HINTZ
Date: 2/6/2018 02:05



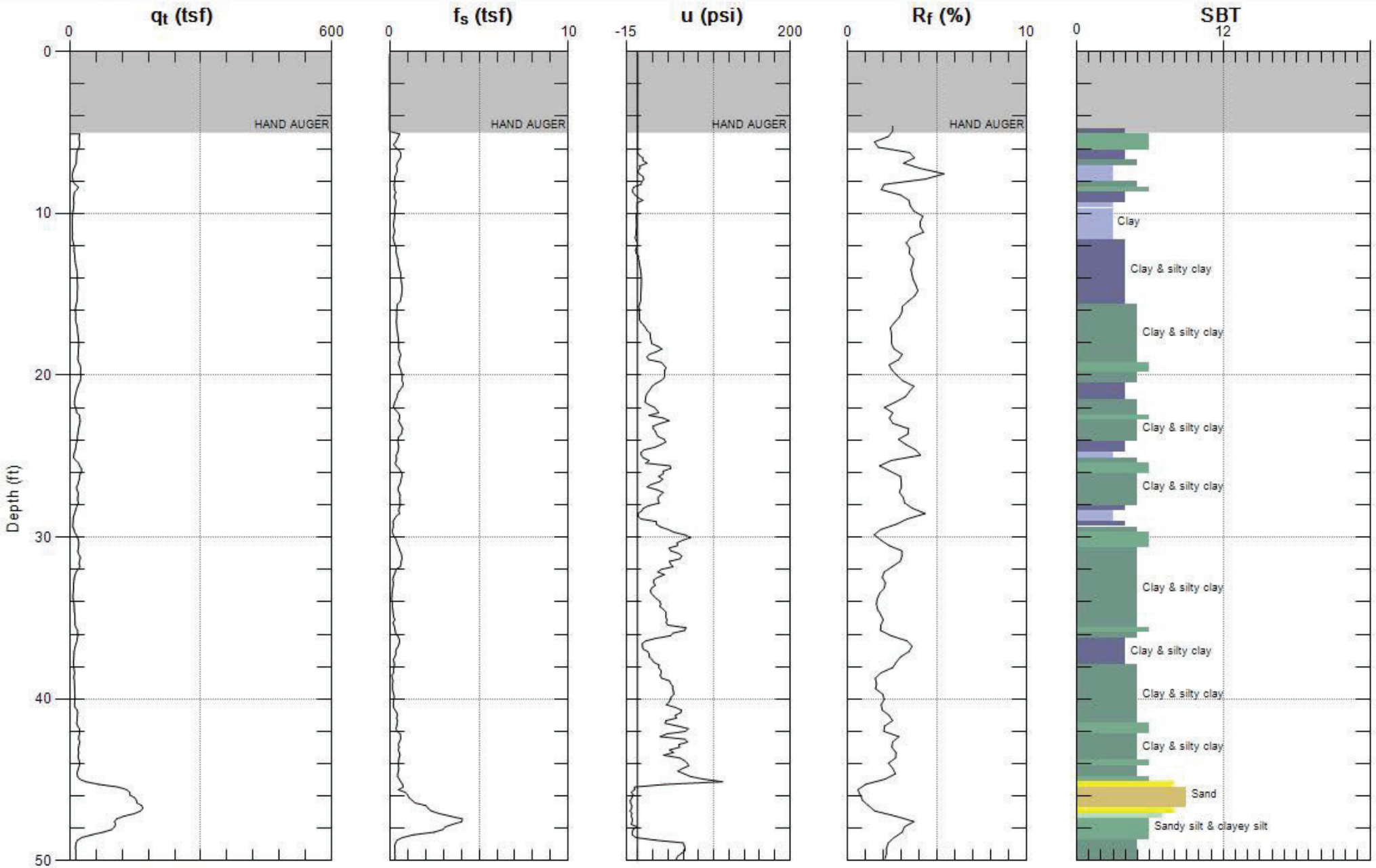
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-11

Engineer: M.HINTZ
Date: 2/6/2018 02:05



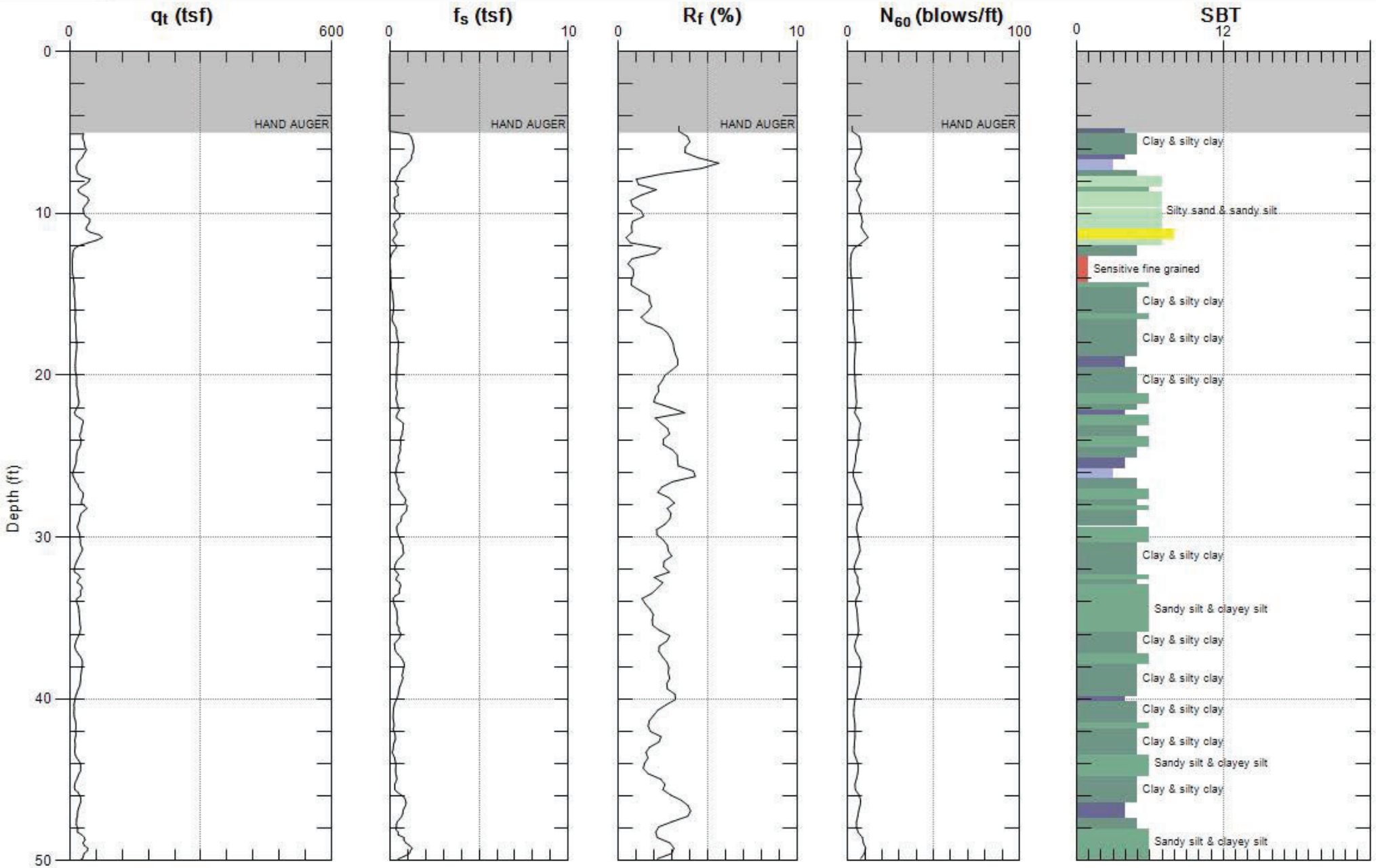
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-12

Engineer: M.HINTZ
Date: 2/6/2018 02:57



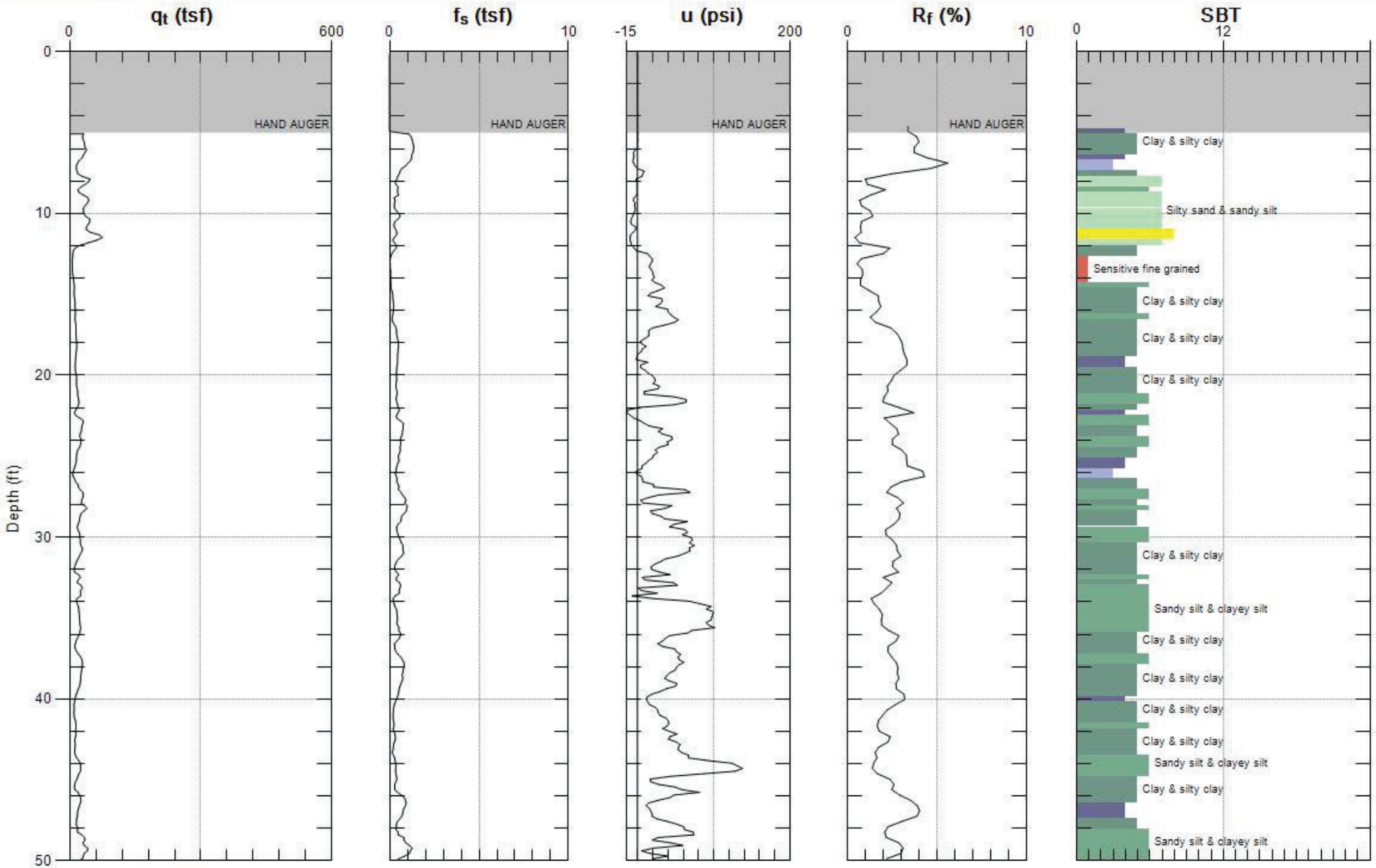
Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

HALEY & ALDRICH

Site: 25800 CLAWITER RD.
Sounding: CPT-12

Engineer: M.HINTZ
Date: 2/6/2018 02:57



Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX D: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.81

Total Settlement:	0.46	(Inches)

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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)
5.085	31.520	0.371	610.2	610.2	54.941	1.189	2.16		Unsaturated	35.9			29.79	1.70	50.65	101.79	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	27.340	0.611	629.9	629.9	46.818	2.261	2.39		Unsaturated	54.3			25.84	1.70	43.93	103.18	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	24.150	0.744	649.6	649.6	40.644	3.123	2.53		Unsaturated	65.4			22.83	1.70	38.80	99.76	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	21.210	0.687	669.2	669.2	35.085	3.291	2.59		Unsaturated	70.4			20.05	1.70	34.08	94.71	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	19.420	0.688	688.9	688.9	39.549	3.607	2.58		Unsaturated	69.5			18.36	1.70	31.20	90.82	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	18.310	0.687	708.7	708.7	36.496	3.826	2.62		Unsaturated	73.0			17.31	1.70	29.42	89.15	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	20.300	0.669	728.4	728.4	39.751	3.356	2.56		Unsaturated	67.7			19.19	1.70	32.62	92.28	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	24.510	0.632	748.1	748.1	38.367	2.618	2.50		Unsaturated	62.8			23.17	1.68	38.95	99.32	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	26.380	0.685	767.8	767.8	40.791	2.635	2.48		Unsaturated	61.4			24.93	1.65	41.15	101.78	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	20.850	0.725	787.4	787.4	38.623	3.544	2.58		Unsaturated	69.7			19.71	1.66	32.77	92.88	0.99	0.521	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.726	17.280	0.694	807.1	807.1	41.819	4.112	2.60		Unsaturated	71.3			16.33	1.67	27.24	86.04	0.99	0.521	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.890	14.230	0.634	826.8	826.8	33.422	4.589	2.71		Unsaturated	79.6			13.45	1.67	22.41	81.08	0.99	0.521	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.054	12.870	0.502	846.5	846.5	29.408	4.033	2.71		Unsaturated	79.7			12.16	1.66	20.15	78.17	0.99	0.520	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.218	12.250	0.424	866.2	866.2	27.286	3.588	2.70		Unsaturated	79.0			11.58	1.64	19.01	76.58	0.99	0.520	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.382	18.290	0.339	885.8	885.8	26.071	1.899	2.54		Unsaturated	66.4			17.29	1.59	27.48	85.39	0.99	0.520	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.546	26.710	0.296	905.5	905.5	37.938	1.127	2.28		Unsaturated	45.3			25.25	1.55	39.03	93.31	0.99	0.520	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.710	18.670	0.318	925.2	925.2	26.026	1.747	2.52		Unsaturated	64.7			17.65	1.55	27.44	84.98	0.99	0.519	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.874	14.790	0.336	944.9	944.9	23.795	2.347	2.63		Unsaturated	73.3			13.98	1.56	21.75	79.27	0.99	0.519	1.073	n.a.	n.a.	n.a.	0.00	0.00
8.038	12.580	0.366	964.6	964.6	25.084	3.025	2.68		Unsaturated	77.4			11.89	1.55	18.43	75.60	0.99	0.519	1.069	n.a.	n.a.	n.a.	0.00	0.00
8.202	11.880	0.331	984.2	984.2	23.140	2.907	2.70		Unsaturated	78.7			11.23	1.54	17.26	74.26	0.98	0.519	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.366	11.200	0.295	1003.9	1003.9	21.313	2.758	2.71		Unsaturated	79.8			10.59	1.52	16.13	72.95	0.98	0.518	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.530	10.850	0.282	1023.6	1023.6	20.200	2.728	2.73		Unsaturated	81.0			10.26	1.51	15.48	72.27	0.98	0.518	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.694	10.930	0.267	1043.3	1043.3	19.953	2.565	2.71		Unsaturated	80.1			10.33	1.49	15.43	72.08	0.98	0.518	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.858	10.780	0.239	1063.0	1063.0	19.283	2.332	2.70		Unsaturated	79.1			10.19	1.48	15.08	71.49	0.98	0.517	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.022	10.950	0.249	1082.6	1082.6	19.228	2.392	2.71		Unsaturated	79.7			10.35	1.46	15.15	71.66	0.98	0.517	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.186	10.670	0.217	1102.3	1102.3	18.359	2.145	2.70		Unsaturated	78.8			10.09	1.45	14.64	70.87	0.98	0.517	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.350	11.090	0.252	1122.0	1122.0	18.768	2.393	2.72		Unsaturated	80.4			10.48	1.43	15.04	71.61	0.98	0.517	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.514	14.200	0.289	1141.7	1141.7	23.876	2.120	2.60		Unsaturated	71.1			13.42	1.41	18.95	75.28	0.98	0.516	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.678	22.250	0.321	1161.4	1161.4	27.646	1.481	2.46		Unsaturated	59.7	38.85	1.5	58.28	1.28	74.66	144.22	0.98	0.516	1.091	n.a.	n.a.	n.a.	0.00	0.00
9.843	31.260	0.321	1181.2	1181.2	38.799	1.047	2.25		Unsaturated	43.2	38.85	1.5	58.28	1.28	74.69	136.82	0.98	0.516	1.083	n.a.	n.a.	n.a.	0.00	0.00
10.007	37.910	0.300	1200.8	1200.8	46.811	0.804	2.12		Sand	32.8	38.85	1.5	58.28	1.28	74.80	128.45	0.98	0.516	1.076	0.193	0.301	0.58	0.02	0.04
10.171	41.100	0.294	1220.5	1220.5	50.390	0.726	2.07		Sand	28.8		1.5	58.27	1.28	74.65	123.46	0.98	0.520	1.070	0.179	0.271	0.52	0.03	0.04
10.335	39.480	0.331	1240.2	1240.2	47.976	0.852	2.13		Sand	33.2		1.5	55.97	1.27	71.13	124.34	0.98	0.524	1.069	0.182	0.275	0.53	0.03	0.04
10.499	38.910	0.406	1259.9	1259.9	46.890	1.061	2.19		Sand	38.0		1.5	55.17	1.26	69.45	126.67	0.98	0.528	1.068	0.188	0.288	0.55	0.03	0.04
10.663	42.970	0.442	1279.6	1279.6	51.451	1.044	2.15		Sand	35.1		1.5	60.92	1.24	75.80	131.94	0.98	0.532	1.069	0.204	0.323	0.61	0.02	0.04
10.827	43.630	0.433	1299.2	1299.2	51.844	1.007	2.14		Sand	34.2		1.5	61.86	1.24	76.46	131.85	0.98	0.535	1.067	0.203	0.322	0.60	0.02	0.04
10.991	29.410	0.342	1318.9	1318.9	34.420	1.190	2.33		Sand	49.2	41.24	1.5	61.86	1.22	75.39	140.97	0.98	0.539	1.070	0.239	0.401	0.74	0.02	0.03
11.155	15.720	0.180	1339.4	1329.7	17.945	1.196	2.57	plastic	Clay	68.4			14.86	1.13	n.a.	n.a.	0.98	0.543	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	9.860	0.129	1359.9	1340.0	13.702	1.405	2.70	plastic	Clay	79.4			9.32	1.13	n.a.	n.a.	0.97	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	9.750	0.076	1380.4	1350.2	13.420	0.839	2.61	plastic	Clay	71.5			9.22	1.13	n.a.	n.a.	0.97	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	10.720	0.078	1400.9	1360.5	12.901	0.778	2.61	plastic	Clay	71.6			10.13	1.12	n.a.	n.a.	0.97	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	16.340	0.204	1421.4	1370.8	18.354	1.305	2.58	plastic	Clay	69.3			15.44	1.12	n.a.	n.a.	0.97	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	29.270	0.283	1441.9	1381.0	33.401	0.991	2.29	plastic	Clay	46.6			27.67	1.12	n.a.	n.a.	0.97	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	28.490	0.288	1462.4	1391.3	32.357	1.038	2.32	plastic	Clay	48.4			26.93	1.12	n.a.	n.a.	0.97	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	20.790	0.328	1482.9	1401.6	23.284	1.636	2.55	plastic	Clay	66.6			19.65	1.11	n.a.	n.a.	0.97	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	15.080	0.346	1503.4	1411.8	20.297	2.415	2.69	plastic	Clay	78.3			14.25	1.11	n.a.	n.a.	0.97	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	25.460	0.281	1523.9	1422.1	28.475	1.138	2.39	plastic	Clay	53.8			24.06	1.11	n.a.	n.a.	0.97	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	28.720	0.182	1544.4	1432.4	32.106	0.651	2.22	plastic	Clay	40.5			27.15	1.11	n.a.	n.a.	0.97	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	22.470	0.230	1564.9	1442.6	24.826	1.061	2.42	plastic	Clay	56.6			21.24	1.11	n.a.	n.a.	0.97	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	13.700	0.248	1585.4	1452.9	17.768	1.921	2.68		Clay	77.5			12.95	1.10	n.a.	n.a.	0.97	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	12.500	0.162	1605.9	1463.2	15.989	1.385	2.64		Clay	74.5			11.81	1.10	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	11.180	0.128	1626.4	1473.4	14.072	1.235	2.67		Clay	76.3			10.57	1.10	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	8.080	0.108	1646.9	1483.7	9.782	1.488	2.84		Clay	90.5			7.64	1.10	n.a.	n.a.	0.97	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	11.100	0.137	1667.5	1494.0	13.743	1.334	2.69		Clay	78.4			10.49	1.10	n.a.	n.a.	0.97	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	9.310	0.099	1688.0	1504.3	11.256	1.169	2.74		Clay	82.2			8.80	1.09	n.a.	n.a.	0.97	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	5.870	0.078	1708.5	1514.6	6.623	1.555	3.00		Clay	100.0			5.55	1.09	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	5.550	0.096	1729.0	1524.8	6.146	2.049	3.09		Clay	100.0			5.25	1.09	n.a.	n.a.	0.96	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	6.390	0.117	1749.5	1535.1	7.186	2.121	3.04		Clay	100.0			6.04	1.09	n.a.	n.a.	0.96	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	7.590	0.164	1770.0	1545.4	8.678	2.446	3.00		Clay	100.0			7.17	1.09	n.a.	n.a.	0.96	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	8.760	0.219	1790.5	1555.6	10.111	2.785	2.97		Clay	100.0			8.28	1.08	n.a.	n.a.	0.96	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	8.900	0.262	1811.0	1565.9	10.211	3.277	3.01		Clay	100.0			8.41	1.08	n.a.	n.a.	0.96	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	8.480	0.271	1831.5	1576.2	9.598	3.583	3.06		Clay	100.0			8.02	1.08	n.a.	n.a.	0.96	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	8.330	0.288	1852.0	1586.4	9.334	3.890	3.09		Clay	100.0			7.87	1.08	n.a.	n.a.	0.96	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.260	0.276	1872.5	1596.7	9.174	3.769	3.08		Clay	100.0			7.81	1.08	n.a.	n.a.	0.96	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	7.890	0.260	1893.0	1607.0	8.642	3.745	3.10		Clay	100.0			7.46	1.08	n.a.	n.a.	0.96	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	7.970	0.254	1913.5	1617.2	8.673	3.622	3.09		Clay	100.0			7.53	1.07	n.a.	n.a.	0.96	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	8.300	0.264	1934.0	1627.5	9.011	3.600	3.08		Clay	100.0			7.84	1.07	n.a.	n.a.	0.96	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	8.570	0.259	1954.5	1637.8	9.272	3.411	3.06		Clay	100.0			8.10	1.07	n.a.	n.a.	0.96	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.81

Total Settlement: 0.46 (Inches)

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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)
16.240	8.310	0.271	1975.0	1648.0	8.886	3.701	3.09		Clay	100.0			7.85	1.07	n.a.	n.a.	0.96	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	8.690	0.289	1995.5	1658.3	9.277	3.757	3.08		Clay	100.0			8.21	1.07	n.a.	n.a.	0.96	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	8.780	0.293	2016.0	1668.6	9.316	3.770	3.08		Clay	100.0			8.30	1.06	n.a.	n.a.	0.96	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	8.020	0.292	2036.5	1678.8	8.341	4.170	3.14		Clay	100.0			7.58	1.06	n.a.	n.a.	0.96	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	7.040	0.230	2057.0	1689.1	7.118	3.826	3.18		Clay	100.0			6.65	1.06	n.a.	n.a.	0.95	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	6.610	0.199	2077.5	1699.4	6.557	3.572	3.19		Clay	100.0			6.25	1.06	n.a.	n.a.	0.95	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	6.820	0.179	2098.0	1709.6	6.751	3.102	3.15		Clay	100.0			6.45	1.06	n.a.	n.a.	0.95	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	7.290	0.201	2118.5	1719.9	7.246	3.226	3.13		Clay	100.0			6.89	1.06	n.a.	n.a.	0.95	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	8.170	0.224	2139.0	1730.2	8.208	3.155	3.08		Clay	100.0			7.72	1.05	n.a.	n.a.	0.95	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	8.240	0.278	2159.6	1740.5	8.228	3.883	3.13		Clay	100.0			7.79	1.05	n.a.	n.a.	0.95	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	8.100	0.273	2180.1	1750.8	8.008	3.894	3.14		Clay	100.0			7.66	1.05	n.a.	n.a.	0.95	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	7.360	0.260	2200.6	1761.0	7.109	4.154	3.20		Clay	100.0			6.96	1.05	n.a.	n.a.	0.95	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	6.960	0.273	2221.1	1771.3	6.605	4.667	3.25		Clay	100.0			6.58	1.05	n.a.	n.a.	0.95	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	6.660	0.277	2241.6	1781.5	6.218	5.001	3.29		Clay	100.0			6.29	1.05	n.a.	n.a.	0.95	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	6.720	0.264	2262.1	1791.8	6.238	4.724	3.28		Clay	100.0			6.35	1.04	n.a.	n.a.	0.95	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	6.530	0.219	2282.6	1802.1	5.981	4.064	3.26		Clay	100.0			6.17	1.04	n.a.	n.a.	0.95	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	6.270	0.171	2303.1	1812.3	5.648	3.341	3.23		Clay	100.0			5.93	1.04	n.a.	n.a.	0.95	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	7.010	0.140	2323.6	1822.6	6.417	2.394	3.11		Clay	100.0			6.63	1.04	n.a.	n.a.	0.95	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	6.400	0.171	2344.1	1832.9	5.705	3.271	3.22		Clay	100.0			6.05	1.04	n.a.	n.a.	0.95	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	6.540	0.174	2364.6	1843.1	5.814	3.248	3.21		Clay	100.0			6.18	1.04	n.a.	n.a.	0.95	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	14.590	0.265	2385.1	1853.4	14.457	1.978	2.76		Clay	84.0			13.79	1.04	n.a.	n.a.	0.94	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	18.300	0.429	2405.6	1863.7	18.348	2.509	2.74		Clay	82.0			17.30	1.03	n.a.	n.a.	0.94	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	19.330	0.612	2426.1	1873.9	19.336	3.378	2.80		Clay	86.8			18.27	1.03	n.a.	n.a.	0.94	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	19.350	0.719	2446.6	1884.2	19.241	3.967	2.84		Clay	90.5			18.29	1.03	n.a.	n.a.	0.94	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	19.750	0.775	2467.1	1894.5	19.548	4.185	2.85		Clay	91.2			18.67	1.03	n.a.	n.a.	0.94	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	19.650	0.864	2487.6	1904.7	19.327	4.694	2.89		Clay	94.1			18.57	1.03	n.a.	n.a.	0.94	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	23.110	0.699	2508.1	1915.0	22.826	3.198	2.73		Clay	81.1			21.84	1.03	n.a.	n.a.	0.94	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	29.000	0.591	2528.6	1925.3	27.483	2.131	2.55	plastic	Clay	67.3			27.41	1.03	n.a.	n.a.	0.94	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	24.710	0.508	2549.1	1935.5	24.216	2.168	2.60		Clay	71.2			23.36	1.02	n.a.	n.a.	0.94	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	20.220	0.562	2569.6	1945.8	19.463	2.968	2.76		Clay	83.8			19.11	1.02	n.a.	n.a.	0.94	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	17.620	0.642	2590.1	1956.1	16.691	3.933	2.89		Clay	94.1			16.65	1.02	n.a.	n.a.	0.94	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	17.310	0.673	2610.6	1966.3	16.279	4.205	2.92		Clay	96.2			16.36	1.02	n.a.	n.a.	0.94	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	16.730	0.572	2631.3	1976.7	15.596	3.711	2.90		Clay	94.7			15.81	1.02	n.a.	n.a.	0.94	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	14.960	0.473	2651.8	1986.9	13.724	3.469	2.92		Clay	96.8			14.14	1.02	n.a.	n.a.	0.94	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	17.930	0.605	2672.3	1997.2	16.617	3.646	2.87		Clay	92.6			16.95	1.02	n.a.	n.a.	0.94	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	42.950	0.635	2692.8	2007.5	40.372	1.526	2.33		Sand	49.7	48.08	1.8	86.54	1.02	88.34	157.58	0.93	0.681	1.009	0.348	0.618	0.91	0.01	0.01
22.146	50.870	0.575	2713.3	2017.7	47.925	1.161	2.20		Sand	39.2		1.8	86.55	1.02	88.22	150.83	0.93	0.682	1.008	0.294	0.497	0.73	0.02	0.02
22.310	28.240	0.457	2733.8	2028.0	25.945	1.701	2.52		Sand	64.3	48.08	1.8	86.54	1.02	87.96	162.69	0.93	0.683	1.008	0.401	0.738	1.08	0.01	0.01
22.474	18.920	0.355	2754.3	2038.3	17.213	2.024	2.71		Clay	79.5			17.88	1.01	n.a.	n.a.	0.93	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	13.820	0.337	2774.8	2048.5	12.138	2.711	2.90		Clay	95.2			13.06	1.01	n.a.	n.a.	0.93	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	11.720	0.251	2795.3	2058.8	10.028	2.432	2.95		Clay	98.6			11.08	1.01	n.a.	n.a.	0.93	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	11.340	0.204	2815.8	2069.1	9.601	2.054	2.92		Clay	96.8			10.72	1.01	n.a.	n.a.	0.93	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	13.690	0.206	2836.3	2079.3	11.804	1.679	2.80		Clay	87.0			12.94	1.00	n.a.	n.a.	0.93	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	15.080	0.227	2856.8	2089.6	13.066	1.663	2.76		Clay	83.8			14.25	1.00	n.a.	n.a.	0.93	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	16.410	0.254	2877.3	2099.9	14.259	1.697	2.73		Clay	81.6			15.51	1.00	n.a.	n.a.	0.93	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	17.600	0.274	2897.8	2110.1	15.308	1.696	2.71		Clay	79.5			16.64	1.00	n.a.	n.a.	0.93	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	20.110	0.383	2918.3	2120.4	17.592	2.054	2.70		Clay	79.1			19.01	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	23.750	0.416	2938.8	2130.7	20.914	1.867	2.62		Clay	72.3			22.45	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	26.810	0.456	2959.3	2140.9	23.802	1.800	2.56		Sand	67.9	33.97	1.72	58.43	0.99	58.12	125.20	0.93	0.693	0.998	0.184	0.262	0.38	0.03	0.03
24.278	30.060	0.534	2979.8	2151.2	26.782	1.869	2.53		Sand	65.3	33.97	1.72	58.43	0.99	58.00	124.42	0.92	0.694	0.998	0.182	0.258	0.37	0.03	0.03
24.442	33.050	0.677	3000.3	2161.5	29.505	2.146	2.53		Sand	65.5	33.97	1.72	58.43	0.99	57.87	124.31	0.92	0.695	0.997	0.181	0.257	0.37	0.03	0.03
24.606	34.310	0.876	3020.8	2171.7	30.601	2.671	2.58		Sand	69.3	33.97	1.72	58.43	0.99	57.75	125.04	0.92	0.696	0.997	0.183	0.260	0.37	0.03	0.03
24.770	35.940	1.012	3041.3	2182.0	32.037	2.940	2.59		Sand	70.2		1.72	58.43	0.99	57.63	125.08	0.92	0.697	0.996	0.183	0.261	0.37	0.03	0.03
24.934	34.710	1.139	3061.8	2192.3	30.269	3.433	2.65		Clay	75.2			32.81	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.098	33.630	1.268	3082.3	2202.5	29.138	3.952	2.71		Clay	79.5			31.79	0.99	n.a.	n.a.	0.92	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	29.630	1.365	3102.8	2212.8	25.378	4.861	2.81		Clay	87.9			28.01	0.99	n.a.	n.a.	0.92	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	27.220	1.297	3123.4	2223.1	23.083	5.055	2.85		Clay	91.2			25.73	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.591	23.570	1.153	3143.9	2233.4	19.699	5.241	2.91		Clay	96.2			22.28	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	21.980	0.923	3164.4	2243.7	18.183	4.525	2.90		Clay	94.9			20.78	0.98	n.a.	n.a.	0.92	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	22.230	0.818	3184.9	2253.9	18.313	3.964	2.86		Clay	91.8			21.01	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.083	21.600	0.708	3205.4	2264.2	17.664	3.540	2.84		Clay	90.3			20.42	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.247	19.310	0.635	3225.9	2274.5	15.562	3.588	2.89		Clay	94.0			18.25	0.98	n.a.	n.a.	0.92	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.411	16.530	0.578	3246.4	2284.7	13.049	3.877	2.97		Clay	100.0			15.62	0.98	n.a.	n.a.	0.92	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.575	13.340	0.544	3266.9	2295.0	10.202	4.647	3.10		Clay	100.0			12.61	0.98	n.a.	n.a.	0.91	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.739	11.960	0.476	3287.4	2305.3	8.950	4.614	3.14		Clay	100.0			11.30	0.98	n.a.	n.a.	0.91	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.903	11.610	0.361	3307.9	2315.5	8.599	3.626	3.10		Clay	100.0			10.97	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.067	13.110	0.371	3328.4	2325.8	9.842	3.241	3.02		Clay	100.0			12.39	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.81

Total Settlement: 0.46 (Inches)

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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)
27.231	14.980	0.305	3348.9	2336.1	11.391	2.292	2.88		Clay	93.8			14.16	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.395	16.110	0.347	3369.4	2346.3	12.296	2.405	2.87		Clay	92.5			15.23	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.559	21.390	0.366	3389.9	2356.6	16.715	1.858	2.70		Clay	78.6			20.22	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.723	17.550	0.412	3410.4	2366.9	13.389	2.600	2.86		Clay	91.6			16.59	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.887	16.410	0.477	3430.9	2377.1	12.363	3.246	2.94		Clay	98.3			15.51	0.97	n.a.	n.a.	0.91	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.051	25.120	0.515	3451.4	2387.4	19.598	2.201	2.68		Clay	77.4			23.74	0.97	n.a.	n.a.	0.91	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.215	27.410	0.567	3471.9	2397.7	21.416	2.208	2.65		Clay	75.0			25.91	0.97	n.a.	n.a.	0.91	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.379	26.710	0.611	3492.4	2407.9	20.735	2.448	2.69		Clay	78.0			25.25	0.97	n.a.	n.a.	0.91	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.543	24.710	0.607	3512.9	2418.2	18.984	2.644	2.74		Clay	82.1			23.36	0.97	n.a.	n.a.	0.91	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.707	22.230	0.607	3533.4	2428.5	16.853	2.966	2.81		Clay	87.8			21.01	0.96	n.a.	n.a.	0.91	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.871	19.000	0.589	3553.9	2438.7	14.125	3.420	2.91		Clay	95.7			17.96	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.035	14.330	0.522	3574.4	2449.0	10.243	4.162	3.07		Clay	100.0			13.54	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	11.320	0.396	3594.9	2459.3	7.744	4.159	3.17		Clay	100.0			10.70	0.96	n.a.	n.a.	0.90	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.364	9.610	0.299	3615.5	2469.6	6.319	3.832	3.22		Clay	100.0			9.08	0.96	n.a.	n.a.	0.90	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.528	9.050	0.249	3636.0	2479.9	5.833	3.443	3.22		Clay	100.0			8.55	0.96	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.692	8.370	0.225	3656.5	2490.1	5.254	3.439	3.26		Clay	100.0			7.91	0.96	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	8.340	0.198	3677.0	2500.4	5.200	3.045	3.24		Clay	100.0			7.88	0.96	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	8.670	0.186	3697.5	2510.7	5.434	2.727	3.20		Clay	100.0			8.19	0.96	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	9.380	0.216	3718.0	2520.9	5.967	2.872	3.17		Clay	100.0			8.87	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	10.100	0.211	3738.5	2531.2	6.503	2.564	3.12		Clay	100.0			9.55	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	11.300	0.224	3759.0	2541.5	7.413	2.378	3.05		Clay	100.0			10.68	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	11.770	0.288	3779.5	2551.7	7.744	2.915	3.08		Clay	100.0			11.12	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	14.360	0.368	3800.0	2562.0	9.727	2.953	3.00		Clay	100.0			13.57	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	14.800	0.296	3820.5	2572.3	10.022	2.296	2.93		Clay	97.5			13.99	0.95	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	12.920	0.354	3841.0	2582.5	8.518	3.218	3.07		Clay	100.0			12.21	0.95	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	15.450	0.403	3861.5	2592.8	10.428	2.981	2.98		Clay	100.0			14.60	0.95	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	21.090	0.429	3882.0	2603.0	14.713	2.240	2.79		Clay	85.9			19.93	0.95	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	24.980	0.456	3902.5	2613.3	17.624	1.980	2.69		Clay	78.3			23.61	0.95	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	27.300	0.428	3923.0	2623.6	19.316	1.689	2.62		Clay	72.6			25.80	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	25.680	0.443	3943.5	2633.8	18.003	1.869	2.67		Clay	76.6			24.27	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	25.720	0.518	3964.0	2644.1	17.955	2.182	2.71		Clay	79.7			24.31	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	25.010	0.550	3984.5	2654.4	17.343	2.389	2.74		Clay	82.5			23.64	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	24.360	0.564	4005.0	2664.6	16.781	2.523	2.77		Clay	84.6			23.02	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	22.840	0.565	4025.5	2674.9	15.572	2.713	2.81		Clay	88.2			21.59	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	22.040	0.527	4046.0	2685.2	14.909	2.633	2.82		Clay	88.8			20.83	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	22.250	0.551	4066.5	2695.4	15.001	2.725	2.83		Clay	89.3			21.03	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	21.970	0.546	4087.0	2705.7	14.729	2.740	2.84		Clay	89.9			20.77	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	20.180	0.554	4107.6	2716.0	13.347	3.056	2.90		Clay	94.9			19.07	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	20.290	0.570	4128.1	2726.3	13.370	3.127	2.90		Clay	95.4			19.18	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	20.320	0.560	4148.6	2736.6	13.335	3.069	2.90		Clay	95.0			19.21	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	19.750	0.602	4169.1	2746.8	12.862	3.408	2.94		Clay	98.2			18.67	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	20.180	0.606	4189.6	2757.1	13.119	3.351	2.93		Clay	97.3			19.07	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	21.780	0.573	4210.1	2767.4	14.219	2.912	2.86		Clay	92.2			20.59	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	23.690	0.596	4230.6	2777.6	15.535	2.762	2.82		Clay	88.6			22.39	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	20.600	0.520	4251.1	2787.9	13.253	2.815	2.88		Clay	93.5			19.47	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	18.280	0.496	4271.6	2798.2	11.539	3.072	2.95		Clay	99.1			17.28	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	15.590	0.424	4292.1	2808.4	9.574	3.154	3.02		Clay	100.0			14.74	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	14.460	0.389	4312.6	2818.7	8.730	3.162	3.06		Clay	100.0			13.67	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	17.530	0.308	4333.1	2829.0	10.861	2.005	2.87		Clay	92.7			16.57	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	17.690	0.335	4353.6	2839.2	10.928	2.159	2.89		Clay	93.9			16.72	0.93	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	17.600	0.355	4374.1	2849.5	10.818	2.303	2.90		Clay	95.4			16.64	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	14.350	0.339	4394.6	2859.8	8.499	2.790	3.04		Clay	100.0			13.56	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	13.570	0.345	4415.1	2870.0	7.918	3.036	3.08		Clay	100.0			12.83	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	17.370	0.297	4435.6	2880.3	10.521	1.960	2.88		Clay	93.2			16.42	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	17.530	0.249	4456.1	2890.6	10.587	1.627	2.83		Clay	89.7			16.57	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	12.690	0.219	4476.6	2900.8	7.206	2.095	3.03		Clay	100.0			11.99	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	10.370	0.186	4497.1	2911.1	5.580	2.290	3.15		Clay	100.0			9.80	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	10.190	0.205	4517.6	2921.4	5.430	2.585	3.19		Clay	100.0			9.63	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	11.630	0.207	4538.1	2931.6	6.386	2.211	3.09		Clay	100.0			10.99	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	12.300	0.165	4558.6	2941.9	6.812	1.647	3.00		Clay	100.0			11.63	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	13.270	0.225	4579.1	2952.2	7.439	2.049	3.02		Clay	100.0			12.54	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	17.540	0.323	4599.8	2962.5	10.289	2.119	2.90		Clay	95.3			16.58	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	20.400	0.421	4620.3	2972.8	12.170	2.327	2.86		Clay	92.2			19.28	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	20.700	0.477	4640.8	2983.0	12.323	2.595	2.89		Clay	93.9			19.57	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	21.610	0.517	4661.3	2993.3	12.882	2.682	2.88		Clay	93.3			20.43	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	22.040	0.516	4681.8	3003.6	13.117	2.619	2.87		Clay	92.3			20.83	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	23.840	0.555	4702.3	3013.8	14.260	2.583	2.83		Clay	89.7			22.53	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.81

Total Settlement: 0.46 (Inches)

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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)
38.222	25.670	0.600	4722.8	3024.1	15.415	2.574	2.80		Clay	87.4			24.26	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	26.590	0.717	4743.3	3034.4	15.963	2.961	2.83		Clay	89.3			25.13	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	28.640	0.786	4763.8	3044.6	17.249	2.993	2.80		Clay	87.3			27.07	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	30.070	0.861	4784.3	3054.9	18.120	3.111	2.80		Clay	86.8			28.42	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	31.070	0.887	4804.8	3065.2	18.705	3.094	2.79		Clay	85.8			29.37	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	30.180	0.874	4825.3	3075.4	18.058	3.148	2.80		Clay	87.1			28.53	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	28.780	0.875	4845.8	3085.7	17.083	3.320	2.84		Clay	89.8			27.20	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	27.360	0.883	4866.3	3096.0	16.103	3.542	2.87		Clay	92.8			25.86	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	25.800	0.931	4886.8	3106.2	15.039	3.986	2.93		Clay	97.2			24.39	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	23.970	0.948	4907.3	3116.5	13.808	4.406	2.98		Clay	100.0			22.66	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	21.090	0.848	4927.8	3126.8	11.914	4.553	3.04		Clay	100.0			19.93	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	19.620	0.799	4948.3	3137.0	10.931	4.660	3.08		Clay	100.0			18.54	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	19.800	0.703	4968.8	3147.3	11.004	4.060	3.04		Clay	100.0			18.71	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	17.600	0.682	4989.3	3157.6	9.568	4.515	3.12		Clay	100.0			16.64	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	15.930	0.655	5009.8	3167.8	8.476	4.879	3.18		Clay	100.0			15.06	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	15.880	0.614	5030.3	3178.1	8.411	4.594	3.17		Clay	100.0			15.01	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	16.020	0.592	5050.8	3188.4	8.465	4.387	3.15		Clay	100.0			15.14	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	15.840	0.554	5071.4	3198.7	8.319	4.164	3.14		Clay	100.0			14.97	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.175	14.650	0.550	5091.9	3209.0	7.544	4.544	3.20		Clay	100.0			13.85	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.339	13.680	0.536	5112.4	3219.2	6.911	4.818	3.25		Clay	100.0			12.93	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.503	13.370	0.522	5132.9	3229.5	6.691	4.832	3.26		Clay	100.0			12.64	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.667	12.710	0.386	5153.4	3239.8	6.256	3.809	3.22		Clay	100.0			12.01	0.89	n.a.	n.a.	0.84	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.831	11.900	0.378	5173.9	3250.0	5.731	4.059	3.27		Clay	100.0			11.25	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.995	12.450	0.358	5194.4	3260.3	6.044	3.633	3.22		Clay	100.0			11.77	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.159	12.030	0.316	5214.9	3270.6	5.762	3.354	3.22		Clay	100.0			11.37	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.323	11.430	0.283	5235.4	3280.8	5.372	3.211	3.24		Clay	100.0			10.80	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.487	11.140	0.240	5255.9	3291.1	5.173	2.820	3.22		Clay	100.0			10.53	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.651	10.970	0.243	5276.4	3301.4	5.048	2.917	3.24		Clay	100.0			10.37	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.815	11.140	0.256	5296.9	3311.6	5.128	3.015	3.24		Clay	100.0			10.53	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.979	11.610	0.236	5317.4	3321.9	5.389	2.636	3.19		Clay	100.0			10.97	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.143	11.470	0.211	5337.9	3332.2	5.283	2.397	3.18		Clay	100.0			10.84	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.307	11.320	0.238	5358.4	3342.4	5.170	2.754	3.22		Clay	100.0			10.70	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	13.870	0.259	5378.9	3352.7	6.670	2.317	3.08		Clay	100.0			13.11	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	16.120	0.336	5399.4	3363.0	7.981	2.504	3.04		Clay	100.0			15.24	0.88	n.a.	n.a.	0.83	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	17.290	0.360	5419.9	3373.2	8.645	2.469	3.00		Clay	100.0			16.34	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	17.800	0.395	5440.4	3383.5	8.914	2.619	3.01		Clay	100.0			16.82	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	19.110	0.437	5460.9	3393.8	9.653	2.668	2.98		Clay	100.0			18.06	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	19.930	0.525	5481.4	3404.0	10.099	3.054	3.00		Clay	100.0			18.84	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	20.450	0.512	5501.9	3414.3	10.368	2.893	2.97		Clay	100.0			19.33	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	21.560	0.478	5522.4	3424.5	10.979	2.543	2.92		Clay	96.8			20.38	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	24.840	0.507	5542.9	3434.8	12.850	2.297	2.84		Clay	90.3			23.48	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	27.010	0.538	5563.5	3445.1	14.065	2.221	2.80		Clay	87.1			25.53	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	28.160	0.591	5584.0	3455.4	14.683	2.330	2.80		Clay	86.8			26.62	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	37.430	0.637	5604.5	3465.7	19.983	1.840	2.63		Clay	73.3			35.38	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	35.100	0.686	5625.0	3475.9	18.578	2.125	2.69		Clay	78.2			33.18	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	32.100	0.693	5645.5	3486.2	16.796	2.367	2.75		Clay	83.3			30.34	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	29.200	0.730	5666.0	3496.5	15.082	2.769	2.83		Clay	89.5			27.60	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	28.510	0.719	5686.5	3506.7	14.639	2.801	2.84		Clay	90.6			26.95	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	29.100	0.746	5707.0	3517.0	14.925	2.842	2.84		Clay	90.3			27.50	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	28.830	0.760	5727.5	3527.3	14.723	2.927	2.85		Clay	91.3			27.25	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	27.150	0.787	5748.0	3537.5	13.725	3.242	2.90		Clay	95.4			25.66	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	25.200	0.762	5768.5	3547.8	12.580	3.415	2.95		Clay	98.9			23.82	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	24.360	0.752	5789.0	3558.1	12.066	3.503	2.97		Clay	100.0			23.02	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	25.500	0.693	5809.5	3568.3	12.664	3.067	2.92		Clay	96.5			24.10	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	25.640	0.661	5830.0	3578.6	12.700	2.909	2.90		Clay	95.3			24.23	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	22.500	0.590	5850.5	3588.9	10.909	3.014	2.97		Clay	100.0			21.27	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	20.890	0.564	5871.0	3599.1	9.977	3.141	3.01		Clay	100.0			19.74	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	20.450	0.556	5891.5	3609.4	9.699	3.176	3.02		Clay	100.0			19.33	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	22.580	0.643	5912.0	3619.7	10.843	3.277	2.99		Clay	100.0			21.34	0.87	n.a.	n.a.	0.81	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	25.220	0.745	5932.5	3629.9	12.261	3.348	2.95		Clay	99.2			23.84	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	26.340	0.821	5953.0	3640.2	12.836	3.514	2.95		Clay	98.9			24.90	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	24.120	0.627	5973.5	3650.5	11.578	2.967	2.94		Clay	98.3			22.80	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	20.110	0.592	5994.0	3660.7	9.349	3.459	3.06		Clay	100.0			19.01	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	21.180	0.509	6014.5	3671.0	9.901	2.801	2.98		Clay	100.0			20.02	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	22.420	0.536	6035.0	3681.3	10.541	2.763	2.96		Clay	99.6			21.19	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	24.370	0.619	6055.6	3691.6	11.563	2.900	2.94		Clay	97.9			23.03	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	25.440	0.706	6076.1	3701.9	12.103	3.152	2.94		Clay	98.3			24.05	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 3

PGA (A_{max}) 0.81

Total Settlement: 0.46 (Inches)

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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)
49.213	25.660	0.741	6096.6	3712.1	12.183	3.277	2.95		Clay	98.9			24.25	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	24.800	0.718	6117.1	3722.4	11.681	3.302	2.97		Clay	100.0			23.44	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	29.400	0.735	6137.6	3732.7	14.109	2.791	2.86		Clay	91.5			27.79	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	31.010	0.897	6158.1	3742.9	14.925	3.211	2.87		Clay	92.8			29.31	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	36.450	1.350	6178.6	3753.2	17.777	4.047	2.88		Clay	93.0			34.45	0.86	n.a.	n.a.	0.80	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	52.120	1.168	6199.1	3763.5	26.051	2.383	2.60		Clay	71.2			49.26	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement:	0.66	(Inches)

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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)
5.085	28.100	0.674	610.2	610.2	48.922	2.425	2.40		Unsaturated	54.8			26.56	1.70	45.15	104.90	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.249	25.950	0.664	629.9	629.9	44.410	2.590	2.45		Unsaturated	58.8			24.53	1.70	41.70	101.76	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.413	23.630	0.671	649.6	649.6	39.757	2.879	2.51		Unsaturated	64.1			22.33	1.70	37.97	98.37	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.577	22.870	0.659	669.2	669.2	37.874	2.924	2.53		Unsaturated	65.7			21.62	1.70	36.75	97.17	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.741	24.470	0.682	688.9	688.9	39.964	2.827	2.51		Unsaturated	63.5			23.13	1.70	39.32	99.97	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.906	25.220	0.783	708.7	708.7	40.610	3.149	2.53		Unsaturated	65.7			23.84	1.70	40.52	102.02	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	24.570	0.822	728.4	728.4	38.995	3.396	2.57		Unsaturated	68.5			23.22	1.70	39.39	101.18	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.234	23.160	0.779	748.1	748.1	36.221	3.419	2.59		Unsaturated	70.5			21.89	1.69	36.89	98.35	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.398	22.040	0.733	767.8	767.8	41.620	3.385	2.55		Unsaturated	66.7			20.83	1.68	34.91	95.04	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.562	22.300	0.753	787.4	787.4	41.361	3.437	2.55		Unsaturated	67.3			21.08	1.65	34.87	95.09	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.726	26.160	0.629	807.1	807.1	39.417	2.442	2.47		Unsaturated	60.6			24.73	1.62	39.96	100.03	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	29.560	0.555	826.8	826.8	44.072	1.904	2.36		Unsaturated	52.0			27.94	1.59	44.35	102.90	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
7.054	25.220	0.566	846.5	846.5	37.056	2.283	2.47		Unsaturated	60.7			23.84	1.59	37.83	97.33	0.99	0.520	1.095	n.a.	n.a.	n.a.	0.00	0.00
7.218	20.630	0.674	866.2	866.2	35.673	3.337	2.59		Unsaturated	70.3			19.50	1.59	31.01	90.73	0.99	0.520	1.088	n.a.	n.a.	n.a.	0.00	0.00
7.382	20.290	0.720	885.8	885.8	34.508	3.628	2.63		Unsaturated	73.1			19.18	1.57	30.18	90.16	0.99	0.520	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.546	19.120	0.657	905.5	905.5	31.961	3.520	2.64		Unsaturated	74.4			18.07	1.56	28.25	87.87	0.99	0.520	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.710	18.230	0.589	925.2	925.2	29.966	3.315	2.65		Unsaturated	74.7			17.23	1.55	26.74	85.96	0.99	0.519	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.874	18.960	0.554	944.9	944.9	30.725	2.997	2.61		Unsaturated	71.8			17.92	1.53	27.47	86.41	0.99	0.519	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.038	21.060	0.534	964.6	964.6	28.807	2.595	2.59		Unsaturated	70.3			19.91	1.51	30.01	89.42	0.99	0.519	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.202	23.380	0.646	984.2	984.2	31.720	2.822	2.58		Unsaturated	69.6			22.10	1.48	32.76	92.84	0.98	0.519	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.366	20.460	0.771	1003.9	1003.9	39.760	3.863	2.60		Unsaturated	71.1			19.34	1.48	28.64	87.79	0.98	0.518	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.530	19.880	0.658	1023.6	1023.6	30.435	3.397	2.65		Unsaturated	74.9	26.14	1.66	43.39	1.38	59.74	128.74	0.98	0.518	1.097	n.a.	n.a.	n.a.	0.00	0.00
8.694	26.970	0.531	1043.3	1043.3	35.602	2.008	2.45		Unsaturated	58.9	26.14	1.66	43.39	1.37	59.56	124.65	0.98	0.518	1.091	n.a.	n.a.	n.a.	0.00	0.00
8.858	27.660	0.530	1063.0	1063.0	36.178	1.954	2.44		Unsaturated	57.9		1.66	43.40	1.36	59.14	123.79	0.98	0.517	1.088	n.a.	n.a.	n.a.	0.00	0.00
9.022	21.730	0.270	1082.6	1082.6	27.998	1.274	2.42		Unsaturated	56.5	26.14	1.66	43.39	1.35	58.72	122.77	0.98	0.517	1.085	n.a.	n.a.	n.a.	0.00	0.00
9.186	18.690	0.283	1102.3	1102.3	23.754	1.560	2.53		Unsaturated	65.1	26.14	1.66	43.39	1.34	58.12	124.53	0.98	0.517	1.084	n.a.	n.a.	n.a.	0.00	0.00
9.350	17.900	0.352	1122.0	1122.0	25.551	2.030	2.57		Unsaturated	68.3	26.14	1.66	43.39	1.33	57.65	124.69	0.98	0.517	1.082	n.a.	n.a.	n.a.	0.00	0.00
9.514	15.950	0.413	1141.7	1141.7	26.941	2.685	2.62		Unsaturated	72.8			15.08	1.40	21.17	78.45	0.98	0.516	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.678	15.940	0.433	1161.4	1161.4	26.451	2.819	2.64		Unsaturated	74.4			15.07	1.39	20.96	78.43	0.98	0.516	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.843	16.440	0.397	1181.2	1181.2	26.837	2.505	2.61		Unsaturated	71.4			15.54	1.38	21.41	78.52	0.98	0.516	1.052	n.a.	n.a.	n.a.	0.00	0.00
10.007	13.180	0.363	1200.8	1200.8	20.951	2.886	2.73		Clay	81.2			12.46	1.16	n.a.	n.a.	0.98	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.171	10.410	0.310	1220.5	1220.5	16.058	3.163	2.84		Clay	90.5			9.84	1.16	n.a.	n.a.	0.98	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.335	9.530	0.280	1240.2	1240.2	14.368	3.143	2.88		Clay	93.4			9.01	1.15	n.a.	n.a.	0.98	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.499	8.610	0.280	1259.9	1259.9	12.668	3.509	2.95		Clay	99.2			8.14	1.15	n.a.	n.a.	0.98	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.663	8.020	0.260	1279.6	1279.6	11.536	3.523	2.99		Clay	100.0			7.58	1.14	n.a.	n.a.	0.98	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.827	7.460	0.249	1299.2	1299.2	10.484	3.656	3.03		Clay	100.0			7.05	1.14	n.a.	n.a.	0.98	0.535	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.991	7.050	0.202	1318.9	1318.9	9.691	3.161	3.02		Clay	100.0			6.66	1.13	n.a.	n.a.	0.98	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.155	6.700	0.173	1338.6	1338.6	9.010	2.869	3.02		Clay	100.0			6.33	1.13	n.a.	n.a.	0.98	0.543	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.319	6.660	0.168	1358.3	1358.3	8.807	2.809	3.03		Clay	100.0			6.29	1.12	n.a.	n.a.	0.97	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.483	7.250	0.131	1378.0	1378.0	9.523	1.997	2.92		Clay	96.5			6.85	1.12	n.a.	n.a.	0.97	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.647	10.560	0.174	1397.6	1397.6	14.111	1.764	2.75		Clay	82.6			9.98	1.12	n.a.	n.a.	0.97	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.811	14.540	0.230	1417.3	1417.3	19.518	1.663	2.61		Clay	72.0			13.74	1.11	n.a.	n.a.	0.97	0.557	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.975	15.690	0.231	1437.4	1432.7	18.592	1.543	2.61	plastic	Clay	72.0			14.83	1.11	n.a.	n.a.	0.97	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.139	11.110	0.217	1457.9	1443.0	14.389	2.090	2.78		Clay	85.2			10.50	1.11	n.a.	n.a.	0.97	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.303	9.830	0.179	1478.4	1453.2	12.511	1.969	2.81		Clay	88.2			9.29	1.10	n.a.	n.a.	0.97	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.467	10.960	0.209	1498.9	1463.5	13.954	2.047	2.78		Clay	85.7			10.36	1.10	n.a.	n.a.	0.97	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.631	13.320	0.203	1519.4	1473.8	17.045	1.616	2.66		Clay	75.4			12.59	1.10	n.a.	n.a.	0.97	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.795	10.540	0.190	1539.9	1484.0	13.167	1.945	2.79		Clay	86.5			9.96	1.10	n.a.	n.a.	0.97	0.575	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.959	9.440	0.175	1560.4	1494.3	11.591	2.021	2.85		Clay	90.9			8.92	1.10	n.a.	n.a.	0.97	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.123	8.940	0.232	1580.9	1504.6	10.833	2.847	2.96		Clay	99.4			8.45	1.09	n.a.	n.a.	0.97	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.287	11.570	0.278	1601.4	1514.8	14.219	2.581	2.83		Clay	89.7			10.94	1.09	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.451	13.060	0.272	1621.9	1525.1	16.063	2.221	2.75		Clay	83.3			12.34	1.09	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.615	9.730	0.179	1642.4	1535.4	11.605	2.009	2.85		Clay	90.8			9.20	1.09	n.a.	n.a.	0.97	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	7.550	0.142	1663.0	1545.7	8.693	2.114	2.97		Clay	100.0			7.14	1.09	n.a.	n.a.	0.97	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.944	7.290	0.146	1683.5	1556.0	8.288	2.264	3.00		Clay	100.0			6.89	1.08	n.a.	n.a.	0.97	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.108	10.240	0.277	1704.0	1566.2	11.988	2.951	2.93		Clay	97.2			9.68	1.08	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.272	18.740	0.262	1724.5	1576.5	19.577	1.466	2.58	plastic	Clay	69.5		1.8	31.88	1.08	n.a.	n.a.	0.96	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.436	18.460	0.215	1745.0	1586.8	19.196	1.222	2.55	plastic	Clay	66.8	17.71	1.8	31.88	1.08	n.a.	n.a.	0.96	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	11.480	0.197	1765.5	1597.0	13.271	1.859	2.78		Clay	85.4			10.85	1.08	n.a.	n.a.	0.96	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.764	8.810	0.177	1786.0	1607.3	9.851	2.236	2.93		Clay	97.6			8.33	1.08	n.a.	n.a.	0.96	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.928	7.360	0.201	1806.5	1617.6	7.983	3.113	3.09		Clay	100.0			6.96	1.07	n.a.	n.a.	0.96	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.092	6.420	0.215	1827.0	1627.8	6.765	3.904	3.20		Clay	100.0			6.07	1.07	n.a.	n.a.	0.96	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.256	6.730	0.217	1847.5	1638.1	7.089	3.737	3.17		Clay	100.0			6.36	1.07	n.a.	n.a.	0.96	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	7.210	0.230	1868.0	1648.4	7.615	3.665	3.14		Clay	100.0			6.81	1.07	n.a.	n.a.	0.96	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.584	7.610	0.260	1888.5	1658.6	8.038	3.901	3.14		Clay	100.0			7.19	1.07	n.a.	n.a.	0.96	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.748	8.170	0.276	1909.0	1668.9	8.647	3.825	3.11		Clay	100.0			7.72	1.06	n.a.	n.a.	0.96	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.912	8.390	0.286	1929.5	1679.2	8.844	3.852	3.10		Clay	100.0			7.93	1.06	n.a.	n.a.	0.96	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.076	8.760	0.286	1950.0	1689.4	9.216	3.674	3.08		Clay	100.0			8.28	1.06	n.a.	n.a.	0.96	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement:	0.66	(Inches)

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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)
16.240	8.930	0.296	1970.5	1699.7	9.349	3.726	3.07		Clay	100.0			8.44	1.06	n.a.	n.a.	0.96	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.404	9.010	0.294	1991.0	1710.0	9.374	3.668	3.07		Clay	100.0			8.52	1.06	n.a.	n.a.	0.96	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.568	9.190	0.307	2011.5	1720.2	9.515	3.751	3.07		Clay	100.0			8.69	1.06	n.a.	n.a.	0.96	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.732	9.210	0.311	2032.0	1730.5	9.470	3.795	3.07		Clay	100.0			8.71	1.05	n.a.	n.a.	0.96	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.896	9.190	0.314	2052.5	1740.7	9.380	3.846	3.08		Clay	100.0			8.69	1.05	n.a.	n.a.	0.95	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	8.970	0.308	2073.0	1751.0	9.062	3.882	3.10		Clay	100.0			8.48	1.05	n.a.	n.a.	0.95	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.224	9.160	0.313	2093.5	1761.3	9.213	3.858	3.09		Clay	100.0			8.66	1.05	n.a.	n.a.	0.95	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.388	9.420	0.326	2114.0	1771.5	9.441	3.898	3.08		Clay	100.0			8.90	1.05	n.a.	n.a.	0.95	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.552	9.700	0.339	2134.5	1781.8	9.690	3.927	3.08		Clay	100.0			9.17	1.05	n.a.	n.a.	0.95	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.717	9.980	0.324	2155.1	1792.1	9.935	3.639	3.05		Clay	100.0			9.43	1.04	n.a.	n.a.	0.95	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.881	10.860	0.340	2175.6	1802.4	10.843	3.479	3.01		Clay	100.0			10.26	1.04	n.a.	n.a.	0.95	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.045	11.080	0.374	2196.1	1812.7	11.013	3.747	3.02		Clay	100.0			10.47	1.04	n.a.	n.a.	0.95	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.209	11.030	0.389	2216.6	1822.9	10.885	3.921	3.03		Clay	100.0			10.43	1.04	n.a.	n.a.	0.95	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.373	10.800	0.398	2237.1	1833.2	10.562	4.111	3.06		Clay	100.0			10.21	1.04	n.a.	n.a.	0.95	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.537	11.160	0.406	2257.6	1843.5	10.883	4.047	3.04		Clay	100.0			10.55	1.04	n.a.	n.a.	0.95	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.701	10.770	0.400	2278.1	1853.7	10.391	4.153	3.07		Clay	100.0			10.18	1.04	n.a.	n.a.	0.95	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.865	10.210	0.320	2298.6	1864.0	9.722	3.532	3.05		Clay	100.0			9.65	1.03	n.a.	n.a.	0.95	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.029	9.510	0.291	2319.1	1874.3	8.911	3.485	3.08		Clay	100.0			8.99	1.03	n.a.	n.a.	0.95	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.193	8.920	0.246	2339.6	1884.5	8.225	3.174	3.08		Clay	100.0			8.43	1.03	n.a.	n.a.	0.95	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.357	8.670	0.256	2360.1	1894.8	7.906	3.418	3.11		Clay	100.0			8.19	1.03	n.a.	n.a.	0.95	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.521	8.300	0.248	2380.6	1905.1	7.464	3.488	3.14		Clay	100.0			7.84	1.03	n.a.	n.a.	0.94	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.685	7.490	0.221	2401.1	1915.3	6.567	3.514	3.19		Clay	100.0			7.08	1.03	n.a.	n.a.	0.94	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.849	7.240	0.180	2421.6	1925.6	6.262	2.985	3.17		Clay	100.0			6.84	1.03	n.a.	n.a.	0.94	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.013	8.110	0.175	2442.1	1935.9	7.117	2.540	3.08		Clay	100.0			7.67	1.02	n.a.	n.a.	0.94	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.177	10.350	0.193	2462.6	1946.1	9.371	2.117	2.94		Clay	98.0			9.78	1.02	n.a.	n.a.	0.94	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.341	15.750	0.277	2483.1	1956.4	14.832	1.909	2.75		Clay	82.6			14.89	1.02	n.a.	n.a.	0.94	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.505	19.350	0.381	2503.6	1966.7	18.405	2.105	2.69		Clay	78.3			18.29	1.02	n.a.	n.a.	0.94	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.669	23.050	0.494	2524.1	1976.9	22.042	2.267	2.65		Clay	74.7			21.79	1.02	n.a.	n.a.	0.94	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.833	24.320	0.621	2544.6	1987.2	23.196	2.694	2.67		Clay	77.0			22.99	1.02	n.a.	n.a.	0.94	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.997	25.820	0.772	2565.1	1997.5	24.568	3.146	2.70		Clay	78.8			24.40	1.02	n.a.	n.a.	0.94	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.161	29.360	0.891	2585.6	2007.7	27.959	3.175	2.66		Clay	75.5			27.75	1.01	n.a.	n.a.	0.94	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.325	30.120	0.948	2606.1	2018.0	28.560	3.290	2.66		Clay	75.8			28.47	1.01	n.a.	n.a.	0.94	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	27.200	0.921	2626.8	2028.3	25.525	3.558	2.72		Clay	80.5			25.71	1.01	n.a.	n.a.	0.94	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.654	26.770	0.908	2647.3	2038.6	24.965	3.568	2.73		Clay	81.2			25.30	1.01	n.a.	n.a.	0.94	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.818	29.020	0.985	2667.8	2048.9	27.026	3.558	2.70		Clay	79.0			27.43	1.01	n.a.	n.a.	0.94	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.982	32.570	1.019	2688.3	2059.1	30.329	3.263	2.64		Clay	74.0			30.78	1.01	n.a.	n.a.	0.93	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.146	31.490	0.868	2708.8	2069.4	29.125	2.880	2.62		Clay	72.3			29.76	1.01	n.a.	n.a.	0.93	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.310	28.750	1.067	2729.3	2079.7	26.336	3.896	2.73		Clay	81.8			27.17	1.00	n.a.	n.a.	0.93	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.474	31.340	1.159	2749.8	2089.9	28.676	3.868	2.71		Clay	79.4			29.62	1.00	n.a.	n.a.	0.93	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.638	28.820	1.014	2770.3	2100.2	26.126	3.696	2.72		Clay	80.8			27.24	1.00	n.a.	n.a.	0.93	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.802	24.880	0.562	2790.8	2110.5	22.255	2.393	2.66		Clay	75.6			23.52	1.00	n.a.	n.a.	0.93	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.966	16.670	0.393	2811.3	2120.7	14.395	2.575	2.83		Clay	89.3			15.76	1.00	n.a.	n.a.	0.93	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	12.040	0.251	2831.8	2131.0	9.971	2.363	2.94		Clay	98.2			11.38	1.00	n.a.	n.a.	0.93	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.294	9.980	0.220	2852.3	2141.3	7.990	2.572	3.04		Clay	100.0			9.43	1.00	n.a.	n.a.	0.93	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.458	8.280	0.182	2872.8	2151.5	6.362	2.659	3.13		Clay	100.0			7.83	1.00	n.a.	n.a.	0.93	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.622	9.980	0.296	2893.3	2161.8	7.895	3.469	3.12		Clay	100.0			9.43	0.99	n.a.	n.a.	0.93	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.786	15.980	0.438	2913.8	2172.1	13.373	3.016	2.90		Clay	94.6			15.10	0.99	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	17.600	0.478	2934.3	2182.3	14.785	2.963	2.86		Clay	91.4			16.64	0.99	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.114	15.620	0.539	2954.8	2192.6	12.900	3.811	2.97		Clay	100.0			14.76	0.99	n.a.	n.a.	0.93	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.278	17.590	0.868	2975.3	2202.9	14.619	5.391	3.02		Clay	100.0			16.63	0.99	n.a.	n.a.	0.92	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.442	31.830	0.949	2995.8	2213.1	27.411	3.129	2.66		Clay	75.7			30.09	0.99	n.a.	n.a.	0.92	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.606	31.060	0.970	3016.3	2223.4	26.583	3.282	2.68		Clay	77.6			29.36	0.99	n.a.	n.a.	0.92	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	35.110	0.988	3036.8	2233.7	30.078	2.941	2.61		Clay	71.9			33.19	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.934	40.820	0.868	3057.3	2243.9	36.063	2.209	2.47		Sand	60.7			38.58	0.97	37.45	96.85	0.92	0.697	0.994	0.133	0.165	0.24	0.03	0.04
25.098	31.880	1.061	3077.8	2254.2	26.920	3.497	2.70		Clay	78.7			30.13	0.98	n.a.	n.a.	0.92	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.262	27.210	1.021	3098.3	2264.5	22.664	3.979	2.79		Clay	86.2			25.72	0.98	n.a.	n.a.	0.92	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.427	35.600	0.729	3118.9	2274.8	31.031	2.142	2.51		Sand	64.1			33.65	0.96	32.41	91.22	0.92	0.700	0.993	0.127	0.154	0.22	0.04	0.04
25.591	38.650	1.436	3139.4	2285.1	32.455	3.873	2.67		Clay	76.2			36.53	0.98	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.755	44.970	1.787	3159.9	2295.3	37.807	4.118	2.64		Clay	73.9			42.50	0.98	n.a.	n.a.	0.92	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.919	58.130	1.531	3180.4	2305.6	51.196	2.708	2.41		Sand	56.2	57.48	1.13	64.95	0.96	62.53	127.54	0.92	0.702	0.989	0.190	0.272	0.39	0.02	0.03
26.083	60.810	0.660	3200.9	2315.9	53.494	1.115	2.15		Sand	35.3		1.13	64.95	0.96	62.28	115.57	0.92	0.702	0.989	0.162	0.217	0.31	0.03	0.03
26.247	55.910	0.996	3221.4	2326.1	48.950	1.834	2.32		Sand	48.4		1.13	59.71	0.96	57.16	117.58	0.92	0.703	0.988	0.166	0.225	0.32	0.03	0.03
26.411	59.540	1.462	3241.9	2336.4	52.098	2.524	2.39		Sand	54.1		1.13	63.59	0.96	60.83	124.61	0.92	0.704	0.987	0.182	0.256	0.36	0.03	0.03
26.575	59.040	1.337	3262.4	2346.7	51.526	2.329	2.37		Sand	52.5		1.13	63.06	0.95	60.19	123.17	0.91	0.704	0.987	0.179	0.249	0.35	0.03	0.03
26.739	54.260	1.318	3282.9	2356.9	47.124	2.505	2.42		Sand	56.5		1.13	57.95	0.95	55.15	118.22	0.91	0.705	0.987	0.167	0.227	0.32	0.03	0.03
26.903	56.800	0.828	3303.4	2367.2	49.282	1.501	2.26		Sand	43.8		1.13	60.67	0.95	57.58	115.77	0.91	0.706	0.986	0.162	0.217	0.31	0.03	0.03
27.067	73.460	1.072	3323.9	2377.5	64.022	1.493	2.17		Sand	36.6		1.13	78.46	0.95	74.59	131.85	0.91	0.706	0.984	0.203	0.297	0.42	0.02	0.03

CORNERSTONE EARTH GROUP

CPT No. 5

PGA (A_{max}) 0.81

Total Settlement: 0.66 (Inches)

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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)
27.231	105.510	1.018	3344.4	2387.7	92.392	0.980	1.93		Sand	17.5		1.13	112.69	0.95	107.08	138.35	0.91	0.707	0.983	0.227	0.345	0.49	0.02	0.02
27.395	129.380	0.856	3364.9	2398.0	113.379	0.670	1.76		Sand	3.8		1.13	138.18	0.95	130.84	130.86	0.91	0.707	0.983	0.200	0.290	0.41	0.02	0.03
27.559	154.760	0.792	3385.4	2408.3	135.614	0.517	1.63		Sand	0.0		1.13	165.29	0.95	157.12	157.12	0.91	0.708	0.978	0.344	0.590	0.83	0.01	0.01
27.723	158.040	0.630	3405.9	2418.5	138.216	0.403	1.56		Sand	0.0		1.13	168.80	0.95	160.29	160.29	0.91	0.708	0.977	0.374	0.657	0.93	0.01	0.01
27.887	158.920	0.682	3426.4	2428.8	138.691	0.434	1.58		Sand	0.0		1.13	169.73	0.95	160.94	160.94	0.91	0.709	0.976	0.381	0.671	0.95	0.01	0.01
28.051	170.680	0.603	3446.9	2439.1	148.743	0.357	1.51		Sand	0.0		1.13	182.30	0.95	173.02	173.02	0.91	0.709	0.972	0.559	1.074	1.51	0.00	0.00
28.215	172.640	1.215	3467.4	2449.3	150.144	0.711	1.68		Sand	0.0		1.13	184.39	0.95	174.81	174.81	0.91	0.710	0.971	0.595	1.159	1.63	0.00	0.00
28.379	168.310	0.674	3487.9	2459.6	146.025	0.405	1.55		Sand	0.0	163.18	1.13	184.39	0.95	174.54	174.54	0.91	0.710	0.970	0.590	1.145	1.61	0.00	0.00
28.543	126.260	0.887	3508.4	2469.9	108.925	0.712	1.79		Sand	6.2	163.18	1.13	184.39	0.95	174.30	175.25	0.91	0.711	0.969	0.605	1.180	1.66	0.00	0.00
28.707	89.900	1.145	3528.9	2480.1	76.946	1.299	2.07		Sand	28.6	163.18	1.13	184.39	0.96	176.55	245.17	0.91	0.711	0.952	74.883	156.895	220.55	0.00	0.00
28.871	51.440	0.814	3549.4	2490.4	43.271	1.639	2.33		Sand	49.3	163.18	1.13	184.39	0.96	176.64	268.93	0.90	0.712	0.951	1655.799	3464.725	4867.40	0.00	0.00
29.035	30.280	0.720	3569.9	2500.7	22.790	2.527	2.66		Clay	76.1			28.62	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.199	27.710	0.392	3590.4	2510.9	22.486	1.513	2.54		Sand	66.1			26.19	0.91	23.86	80.67	0.90	0.713	0.984	0.116	0.135	0.19	0.04	0.04
29.364	27.660	0.328	3611.0	2521.2	22.387	1.269	2.50		Sand	62.9	26.19		26.19	0.91	23.80	79.89	0.90	0.713	0.984	0.116	0.134	0.19	0.04	0.04
29.528	24.830	0.320	3631.5	2531.5	19.887	1.390	2.56		Sand	68.1	26.19		26.19	0.91	23.76	80.94	0.90	0.714	0.984	0.117	0.135	0.19	0.04	0.04
29.692	23.540	0.380	3652.0	2541.8	17.086	1.750	2.67		Clay	76.9			22.25	0.95	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.856	22.810	0.436	3672.5	2552.0	16.437	2.079	2.73		Clay	81.3			21.56	0.95	n.a.	n.a.	0.90	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.020	20.930	0.470	3693.0	2562.3	14.896	2.463	2.81		Clay	87.5			19.78	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.184	20.570	0.490	3713.5	2572.6	14.548	2.618	2.83		Clay	89.4			19.44	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.348	21.040	0.538	3734.0	2582.8	14.846	2.806	2.84		Clay	90.2			19.89	0.95	n.a.	n.a.	0.90	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.512	20.280	0.564	3754.5	2593.1	14.194	3.065	2.88		Clay	93.3			19.17	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.676	18.360	0.567	3775.0	2603.4	12.655	3.442	2.95		Clay	98.9			17.35	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.840	16.300	0.556	3795.5	2613.6	11.021	3.861	3.03		Clay	100.0			15.41	0.95	n.a.	n.a.	0.90	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.004	15.170	0.504	3816.0	2623.9	10.109	3.800	3.05		Clay	100.0			14.34	0.94	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.168	14.240	0.463	3836.5	2634.2	9.355	3.758	3.08		Clay	100.0			13.46	0.94	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.332	12.930	0.424	3857.0	2644.4	8.320	3.854	3.12		Clay	100.0			12.22	0.94	n.a.	n.a.	0.89	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.496	11.470	0.371	3877.5	2654.7	7.181	3.892	3.18		Clay	100.0			10.84	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.660	10.330	0.321	3898.0	2665.0	6.290	3.830	3.22		Clay	100.0			9.76	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.824	10.030	0.268	3918.5	2675.2	6.034	3.321	3.20		Clay	100.0			9.48	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.988	9.450	0.165	3939.0	2685.5	5.571	2.206	3.14		Clay	100.0			8.93	0.94	n.a.	n.a.	0.89	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.152	8.920	0.122	3959.5	2695.8	5.149	1.758	3.12		Clay	100.0			8.43	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.316	9.950	0.108	3980.0	2706.0	5.883	1.357	3.02		Clay	100.0			9.40	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.480	11.360	0.117	4000.5	2716.3	6.892	1.250	2.94		Clay	98.4			10.74	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.644	12.440	0.173	4021.0	2726.6	7.650	1.659	2.96		Clay	99.8			11.76	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.808	13.340	0.184	4041.5	2736.8	8.272	1.626	2.93		Clay	97.1			12.61	0.93	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.972	14.780	0.241	4062.0	2747.1	9.282	1.890	2.92		Clay	96.3			13.97	0.93	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.136	15.730	0.257	4082.5	2757.4	9.929	1.877	2.89		Clay	94.1			14.87	0.93	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.301	16.530	0.288	4103.1	2767.7	10.462	1.989	2.88		Clay	93.6			15.62	0.93	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.465	17.290	0.336	4123.6	2778.0	10.964	2.206	2.89		Clay	94.2			16.34	0.93	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.629	18.410	0.398	4144.1	2788.2	11.719	2.436	2.89		Clay	94.1			17.40	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.793	19.590	0.479	4164.6	2798.5	12.512	2.736	2.89		Clay	94.5			18.52	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.957	21.170	0.558	4185.1	2808.8	13.584	2.925	2.88		Clay	93.5			20.01	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.121	23.240	0.602	4205.6	2819.0	14.996	2.848	2.84		Clay	90.2			21.97	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.285	25.510	0.622	4226.1	2829.3	16.539	2.658	2.79		Clay	86.1			24.11	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.449	25.680	0.642	4246.6	2839.6	16.592	2.725	2.79		Clay	86.5			24.27	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.613	23.950	0.664	4267.1	2849.8	15.311	3.044	2.85		Clay	91.0			22.64	0.92	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.777	20.910	0.682	4287.6	2860.1	13.123	3.634	2.95		Clay	99.0			19.76	0.92	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.941	17.010	0.671	4308.1	2870.4	10.351	4.517	3.09		Clay	100.0			16.08	0.92	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.105	14.470	0.535	4328.6	2880.6	8.544	4.348	3.15		Clay	100.0			13.68	0.92	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.269	13.880	0.348	4349.1	2890.9	8.098	2.973	3.07		Clay	100.0			13.12	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.433	17.170	0.262	4369.6	2901.2	10.330	1.748	2.86		Clay	91.7			16.23	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.597	18.900	0.289	4390.1	2911.4	11.475	1.730	2.82		Clay	88.4			17.86	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.761	15.600	0.298	4410.6	2921.7	9.169	2.225	2.96		Clay	99.6			14.74	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.925	14.130	0.305	4431.1	2932.0	8.127	2.560	3.03		Clay	100.0			13.36	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.089	12.510	0.272	4451.6	2942.2	6.991	2.645	3.10		Clay	100.0			11.82	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.253	10.540	0.228	4472.1	2952.5	5.625	2.746	3.19		Clay	100.0			9.96	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.417	9.740	0.203	4492.6	2962.8	5.059	2.709	3.22		Clay	100.0			9.21	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.581	9.040	0.165	4513.1	2973.0	4.563	2.432	3.24		Clay	100.0			8.54	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.745	8.890	0.136	4533.6	2983.3	4.440	2.053	3.21		Clay	100.0			8.40	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.909	8.450	0.123	4554.1	2993.6	4.124	1.993	3.23		Clay	100.0			7.99	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.073	8.380	0.135	4574.6	3003.8	4.057	2.216	3.26		Clay	100.0			7.92	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.238	8.790	0.138	4595.3	3014.2	4.308	2.126	3.23		Clay	100.0			8.31	0.91	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.402	8.990	0.132	4615.8	3024.4	4.419	1.975	3.21		Clay	100.0			8.50	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.566	8.860	0.116	4636.3	3034.7	4.311	1.773	3.19		Clay	100.0			8.37	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	8.930	0.111	4656.8	3045.0	4.336	1.681	3.18		Clay	100.0			8.44	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.894	9.600	0.131	4677.3	3055.2	4.753	1.804	3.16		Clay	100.0			9.07	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.058	10.440	0.139	4697.8	3065.5	5.279	1.718	3.11		Clay	100.0			9.87	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement:	0.66	(Inches)

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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)
38.222	11.020	0.140	4718.3	3075.8	5.632	1.616	3.07		Clay	100.0			10.42	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.386	11.660	0.130	4738.8	3086.0	6.021	1.399	3.02		Clay	100.0			11.02	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	10.810	0.094	4759.3	3096.3	5.445	1.115	3.01		Clay	100.0			10.22	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.714	10.690	0.094	4779.8	3106.6	5.344	1.133	3.02		Clay	100.0			10.10	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.878	12.550	0.098	4800.3	3116.8	6.513	0.966	2.92		Clay	96.3			11.86	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.042	11.470	0.097	4820.8	3127.1	5.794	1.071	2.98		Clay	100.0			10.84	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.206	11.130	0.102	4841.3	3137.4	5.552	1.171	3.01		Clay	100.0			10.52	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	11.720	0.108	4861.8	3147.6	5.902	1.163	2.99		Clay	100.0			11.08	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.534	11.720	0.124	4882.3	3157.9	5.877	1.336	3.02		Clay	100.0			11.08	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.698	12.330	0.157	4902.8	3168.2	6.236	1.589	3.03		Clay	100.0			11.65	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.862	12.990	0.179	4923.3	3178.4	6.625	1.700	3.02		Clay	100.0			12.28	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.026	12.800	0.175	4943.8	3188.7	6.478	1.694	3.03		Clay	100.0			12.10	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	11.870	0.169	4964.3	3199.0	5.869	1.800	3.08		Clay	100.0			11.22	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.354	11.790	0.161	4984.8	3209.2	5.794	1.732	3.07		Clay	100.0			11.14	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.518	12.040	0.254	5005.3	3219.5	5.925	2.663	3.16		Clay	100.0			11.38	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.682	15.770	0.425	5025.8	3229.8	8.209	3.206	3.08		Clay	100.0			14.91	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.846	29.330	0.653	5046.3	3240.0	16.547	2.436	2.77		Clay	84.3			27.72	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.011	45.590	0.757	5066.9	3250.3	32.836	1.758	2.44		Sand	58.4	50.59	1.28	64.76	0.82	53.05	116.15	0.85	0.721	0.948	0.163	0.210	0.29	0.03	0.02
41.175	53.520	0.882	5087.4	3260.6	38.814	1.730	2.38		Sand	53.4		1.28	64.75	0.82	52.89	114.25	0.85	0.721	0.949	0.160	0.204	0.28	0.03	0.02
41.339	53.420	1.226	5107.9	3270.9	38.669	2.410	2.47		Sand	60.8		1.28	64.63	0.82	52.82	116.56	0.85	0.721	0.947	0.164	0.211	0.29	0.03	0.02
41.503	64.210	1.301	5128.4	3281.1	46.791	2.110	2.37		Sand	52.7		1.28	77.68	0.82	64.01	128.12	0.85	0.721	0.942	0.192	0.262	0.36	0.02	0.01
41.667	82.470	1.082	5148.9	3291.4	60.549	1.354	2.16		Sand	36.0		1.28	99.77	0.83	82.97	141.58	0.84	0.721	0.934	0.242	0.356	0.49	0.02	0.01
41.831	97.310	0.594	5169.4	3301.7	71.675	0.627	1.91		Sand	15.7		1.28	117.73	0.82	96.15	120.90	0.84	0.720	0.944	0.173	0.228	0.32	0.03	0.02
41.995	107.120	0.927	5189.9	3311.9	78.968	0.887	1.96		Sand	19.7		1.28	129.60	0.83	107.78	145.07	0.84	0.720	0.931	0.259	0.389	0.54	0.02	0.01
42.159	117.660	1.114	5210.4	3322.2	86.789	0.968	1.95		Sand	18.9		1.28	142.35	0.84	119.19	155.94	0.84	0.720	0.924	0.333	0.536	0.74	0.02	0.01
42.323	137.040	1.141	5230.9	3332.5	101.243	0.849	1.86		Sand	11.9		1.28	165.80	0.83	138.42	153.63	0.84	0.720	0.925	0.314	0.498	0.69	0.02	0.01
42.487	139.470	1.002	5251.4	3342.7	102.908	0.732	1.82		Sand	8.3		1.28	168.73	0.83	139.68	143.97	0.84	0.720	0.931	0.253	0.378	0.52	0.02	0.01
42.651	135.260	0.928	5271.9	3353.0	99.581	0.700	1.82		Sand	8.3		1.28	163.64	0.82	134.75	138.95	0.84	0.720	0.933	0.230	0.332	0.46	0.02	0.01
42.815	136.410	1.225	5292.4	3363.3	100.283	0.916	1.89		Sand	13.8		1.28	165.03	0.84	137.92	159.94	0.84	0.719	0.919	0.371	0.610	0.85	0.01	0.01
42.979	116.320	2.066	5312.9	3373.5	85.084	1.818	2.14		Sand	33.9	128.93	1.28	165.03	0.86	142.57	212.22	0.84	0.719	0.860	4.045	7.654	10.64	0.00	0.00
43.143	72.050	2.303	5333.4	3383.8	51.859	3.319	2.47		Sand	60.8	128.93	1.28	165.03	0.87	144.21	233.68	0.84	0.719	0.859	23.020	43.512	60.51	0.00	0.00
43.307	38.230	1.782	5353.9	3394.1	20.950	5.012	2.88		Clay	93.5			36.13	0.88	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.471	25.340	1.028	5374.4	3404.3	13.308	4.538	3.00		Clay	100.0			23.95	0.88	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.635	18.540	0.520	5394.9	3414.6	9.279	3.282	3.05		Clay	100.0			17.52	0.88	n.a.	n.a.	0.83	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.799	14.820	0.392	5415.4	3424.9	7.073	3.236	3.14		Clay	100.0			14.01	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.963	11.650	0.334	5435.9	3435.1	5.200	3.739	3.29		Clay	100.0			11.01	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.127	10.870	0.288	5456.4	3445.4	4.726	3.537	3.31		Clay	100.0			10.27	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.291	10.490	0.268	5476.9	3455.7	4.486	3.457	3.32		Clay	100.0			9.91	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.455	10.490	0.268	5497.4	3465.9	4.467	3.462	3.32		Clay	100.0			9.91	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.619	10.860	0.248	5517.9	3476.2	4.661	3.061	3.28		Clay	100.0			10.26	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.783	11.480	0.304	5538.4	3486.5	4.997	3.490	3.28		Clay	100.0			10.85	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.948	13.450	0.318	5559.0	3496.8	6.103	2.980	3.17		Clay	100.0			12.71	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.112	14.490	0.311	5579.5	3507.1	6.672	2.658	3.12		Clay	100.0			13.70	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.276	18.730	0.429	5600.0	3517.3	9.058	2.693	3.01		Clay	100.0			17.70	0.87	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	24.960	0.463	5620.5	3527.6	12.558	2.090	2.83		Clay	89.2			23.59	0.87	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.604	25.530	0.519	5641.0	3537.9	12.838	2.285	2.84		Clay	90.3			24.13	0.87	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.768	25.600	0.534	5661.5	3548.1	12.834	2.345	2.85		Clay	90.8			24.20	0.87	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.932	26.780	0.586	5682.0	3558.4	13.455	2.448	2.84		Clay	90.2			25.31	0.87	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.096	27.210	0.630	5702.5	3568.7	13.651	2.586	2.85		Clay	90.9			25.72	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	30.610	0.706	5723.0	3578.9	15.507	2.544	2.80		Clay	87.0			28.93	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.424	34.910	0.888	5743.5	3589.2	17.853	2.772	2.77		Clay	84.8			33.00	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.588	38.160	1.252	5764.0	3599.5	19.602	3.549	2.81		Clay	87.5			36.07	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.752	36.840	1.355	5784.5	3609.7	18.809	3.991	2.85		Clay	91.2			34.82	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.916	33.040	1.325	5805.0	3620.0	16.651	4.397	2.92		Clay	96.6			31.23	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	31.020	1.087	5825.5	3630.3	15.485	3.867	2.91		Clay	95.8			29.32	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.244	28.190	0.923	5846.0	3640.5	13.881	3.653	2.93		Clay	97.5			26.64	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.408	27.530	0.898	5866.5	3650.8	13.475	3.651	2.94		Clay	98.4			26.02	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.572	28.540	0.924	5887.0	3661.1	13.983	3.610	2.93		Clay	97.1			26.98	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.736	26.320	0.930	5907.5	3671.3	12.729	3.980	2.98		Clay	100.0			24.88	0.86	n.a.	n.a.	0.81	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	22.560	0.845	5928.0	3681.6	10.645	4.312	3.07		Clay	100.0			21.32	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.064	19.590	0.653	5948.5	3691.9	9.001	3.930	3.10		Clay	100.0			18.52	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.228	17.010	0.517	5969.0	3702.1	7.577	3.686	3.15		Clay	100.0			16.08	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.392	15.700	0.336	5989.5	3712.4	6.845	2.645	3.10		Clay	100.0			14.84	0.86	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.556	15.090	0.316	6010.0	3722.7	6.493	2.615	3.12		Clay	100.0			14.26	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	16.340	0.308	6030.5	3732.9	7.139	2.311	3.06		Clay	100.0			15.44	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.885	16.230	0.284	6051.1	3743.3	7.055	2.151	3.05		Clay	100.0			15.34	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.049	15.370	0.282	6071.6	3753.5	6.572	2.286	3.09		Clay	100.0			14.53	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	5

PGA (A_{max})	0.81

Total Settlement: 0.66 (Inches)

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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)
49.213	15.900	0.288	6092.1	3763.8	6.830	2.241	3.07		Clay	100.0			15.03	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.377	16.610	0.390	6112.6	3774.1	7.183	2.877	3.11		Clay	100.0			15.70	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.541	21.240	0.594	6133.1	3784.3	9.605	3.269	3.03		Clay	100.0			20.08	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.705	27.850	0.542	6153.6	3794.6	13.057	2.188	2.82		Clay	88.9			26.32	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.869	27.340	0.376	6174.1	3804.9	12.748	1.550	2.75		Clay	83.3			25.84	0.86	n.a.	n.a.	0.80	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.033	19.580	0.281	6194.6	3815.1	8.641	1.705	2.92		Clay	96.6			18.51	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
0.160			19.2	19.2					Unsaturated					1.70										
0.330			39.6	39.6					Unsaturated					1.70										
0.490			58.8	58.8					Unsaturated					1.70										
0.660			79.2	79.2					Unsaturated					1.70										
0.820	27.760	1.621	98.4	98.4	121.457	5.848	2.42		Unsaturated	56.8			26.24	1.70	44.60	104.87	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
0.980	36.550	2.043	117.6	117.6	146.304	5.598	2.36		Unsaturated	51.9			34.55	1.70	58.73	121.09	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.150	34.170	1.924	138.0	138.0	126.212	5.641	2.40		Unsaturated	55.0			32.30	1.70	54.90	117.40	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.310	31.570	1.768	157.2	157.2	109.204	5.616	2.43		Unsaturated	57.8			29.84	1.70	50.73	113.00	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.480	29.030	1.776	177.6	177.6	94.421	6.135	2.50		Unsaturated	63.3			27.44	1.70	46.65	109.31	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.640	32.510	1.540	196.8	196.8	100.452	4.750	2.40		Unsaturated	54.9			30.73	1.70	52.24	113.96	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.800	27.970	1.219	216.0	216.0	82.425	4.374	2.42		Unsaturated	56.9			26.44	1.70	44.94	105.35	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
1.970	25.840	1.135	236.4	236.4	72.736	4.413	2.46		Unsaturated	60.0			24.42	1.70	41.52	101.87	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.130	30.460	1.609	255.6	255.6	82.489	5.304	2.49		Unsaturated	62.1			28.79	1.70	48.94	111.97	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.300	34.330	2.154	276.0	276.0	89.483	6.300	2.53		Unsaturated	65.1			32.45	1.70	55.16	120.73	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.460	55.160	2.365	295.2	295.2	139.211	4.298	2.28		Unsaturated	45.3			52.14	1.70	88.63	155.56	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.620	36.650	2.171	314.4	314.4	89.482	5.949	2.51		Unsaturated	63.5			34.64	1.70	58.89	125.11	1.00	0.527	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.790	28.610	1.597	334.8	334.8	67.585	5.614	2.56		Unsaturated	68.0			27.04	1.70	45.97	109.56	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
2.950	25.690	1.422	354.0	354.0	58.957	5.573	2.60		Unsaturated	70.9			24.28	1.70	41.28	104.10	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.120	26.500	1.331	374.4	374.4	59.125	5.058	2.57		Unsaturated	68.3			25.05	1.70	42.58	105.25	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	24.230	1.315	393.6	393.6	73.731	5.470	2.53		Unsaturated	65.4			22.90	1.70	38.93	99.91	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.440	20.060	1.229	412.8	412.8	58.911	6.190	2.63		Unsaturated	73.7			18.96	1.70	32.23	92.91	1.00	0.526	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.610	17.190	1.122	433.2	433.2	48.693	6.610	2.71		Unsaturated	79.7			16.25	1.70	27.62	87.87	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.770	15.790	1.063	452.4	452.4	68.805	6.829	2.62		Unsaturated	72.9			14.92	1.70	25.37	83.90	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.940	15.070	1.067	472.8	472.8	62.748	7.196	2.67		Unsaturated	76.3			14.24	1.70	24.21	82.95	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.100	14.100	1.153	492.0	492.0	56.317	8.325	2.75		Unsaturated	82.6			13.33	1.70	22.66	81.81	1.00	0.525	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.270	15.080	1.332	512.4	512.4	57.860	8.984	2.76		Unsaturated	84.1			14.25	1.70	24.23	84.04	1.00	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.430	21.150	1.440	531.6	531.6	51.914	6.897	2.70		Unsaturated	79.4			19.99	1.70	33.98	96.09	1.00	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.590	24.160	1.578	550.8	550.8	57.916	6.608	2.66		Unsaturated	75.8			22.84	1.70	38.82	101.80	1.00	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.760	24.250	1.458	571.2	571.2	56.649	6.086	2.64		Unsaturated	74.1			22.92	1.70	38.97	101.70	0.99	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	24.640	1.697	590.4	590.4	56.231	6.969	2.69		Unsaturated	77.9			23.29	1.70	39.59	103.14	0.99	0.524	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.090	26.460	1.858	610.8	610.8	58.992	7.102	2.68		Unsaturated	77.3			25.01	1.70	42.52	106.85	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.250	26.260	1.993	630.0	630.0	82.365	7.682	2.62		Unsaturated	72.4			24.82	1.70	42.19	105.56	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.410	28.440	2.046	649.2	649.2	60.765	7.276	2.68		Unsaturated	77.3			26.88	1.70	45.70	110.97	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.580	29.230	2.173	669.6	669.6	61.113	7.522	2.69		Unsaturated	78.1			27.63	1.70	46.97	112.75	0.99	0.523	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.740	30.320	2.298	688.8	688.8	87.037	7.666	2.60		Unsaturated	71.2			28.66	1.69	48.54	113.54	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.910	30.690	2.325	709.2	709.2	85.548	7.666	2.61		Unsaturated	71.5			29.01	1.67	48.47	113.51	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.070	35.680	2.236	728.4	728.4	70.418	6.331	2.59		Unsaturated	70.4			33.72	1.62	54.73	121.37	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.230	39.260	1.953	747.6	747.6	61.835	5.023	2.55		Unsaturated	67.1			37.11	1.59	58.96	126.10	0.99	0.522	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.400	38.360	1.433	768.0	768.0	59.580	3.773	2.47		Unsaturated	60.6			36.26	1.58	57.34	122.31	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.560	34.050	0.895	787.2	787.2	52.155	2.659	2.40		Unsaturated	55.3			32.18	1.59	51.27	112.87	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.730	33.230	0.364	807.6	807.6	50.222	1.108	2.17		Unsaturated	37.0			31.41	1.61	50.49	102.45	0.99	0.521	1.100	n.a.	n.a.	n.a.	0.00	0.00
6.890	30.090	0.286	826.8	826.8	44.873	0.963	2.18		Unsaturated	37.4			28.44	1.61	45.72	96.91	0.99	0.521	1.098	n.a.	n.a.	n.a.	0.00	0.00
7.050	26.350	0.235	846.0	846.0	38.756	0.906	2.22		Unsaturated	40.6			24.91	1.61	39.99	91.92	0.99	0.520	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.220	18.500	0.235	866.4	866.4	26.687	1.301	2.44		Unsaturated	58.3			17.49	1.61	28.20	84.35	0.99	0.520	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.380	14.900	0.361	885.6	885.6	25.142	2.494	2.63		Unsaturated	73.1			14.08	1.61	22.64	80.40	0.99	0.520	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.550	13.260	0.605	906.0	906.0	28.272	4.722	2.77		Unsaturated	84.5			12.53	1.59	19.98	78.55	0.99	0.520	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.710	14.730	0.705	925.2	925.2	30.842	4.939	2.75		Unsaturated	83.3			13.92	1.57	21.84	80.83	0.99	0.519	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.870	19.790	0.772	944.4	944.4	40.910	3.996	2.60		Unsaturated	71.2			18.71	1.53	28.61	87.77	0.99	0.519	1.078	n.a.	n.a.	n.a.	0.00	0.00
8.040	22.670	0.807	964.8	964.8	36.340	3.638	2.61		Unsaturated	71.9			21.43	1.50	32.12	92.44	0.99	0.519	1.079	n.a.	n.a.	n.a.	0.00	0.00
8.200	17.850	0.862	984.0	984.0	35.280	4.965	2.71		Unsaturated	80.1			16.87	1.50	25.38	85.02	0.98	0.519	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.370	14.240	0.898	1004.4	1004.4	27.355	6.538	2.88		Unsaturated	93.1			13.46	1.50	20.23	79.82	0.98	0.518	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.530	12.200	0.692	1023.6	1023.6	22.837	5.922	2.90		Unsaturated	95.2			11.53	1.50	17.27	76.15	0.98	0.518	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.690	11.510	0.500	1042.8	1042.8	21.075	4.554	2.85		Unsaturated	91.2			10.88	1.49	16.19	74.34	0.98	0.518	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.860	10.480	0.556	1063.2	1063.2	18.714	5.593	2.95		Unsaturated	99.0			9.91	1.48	14.61	73.00	0.98	0.517	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.020	10.540	0.624	1082.4	1082.4	18.475	6.241	2.99		Unsaturated	100.0			9.96	1.46	14.55	73.00	0.98	0.517	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.190	10.250	0.526	1102.8	1102.8	17.589	5.426	2.96		Unsaturated	99.9			9.69	1.45	14.02	72.30	0.98	0.517	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.350	14.270	0.540	1122.0	1122.0	24.437	3.939	2.76		Unsaturated	84.0			13.49	1.42	19.16	77.42	0.98	0.517	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.510	20.450	0.570	1141.2	1141.2	28.948	2.868	2.62		Unsaturated	72.3			19.33	1.39	26.84	85.70	0.98	0.516	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.680	18.140	0.641	1161.6	1161.6	30.233	3.648	2.67		Unsaturated	76.7			17.15	1.38	23.70	82.34	0.98	0.516	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.840	12.910	0.715	1180.8	1180.8	20.867	5.803	2.93		Unsaturated	97.1			12.20	1.38	16.89	75.82	0.98	0.516	1.051	n.a.	n.a.	n.a.	0.00	0.00
10.010	9.920	0.685	1201.2	1201.2	15.517	7.346	3.09		Clay	100.0			9.38	1.16	n.a.	n.a.	0.98	0.516	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.170	10.670	0.554	1220.4	1220.4	16.486	5.505	2.99		Clay	100.0			10.09	1.16	n.a.	n.a.	0.98	0.520	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.330	9.330	0.545	1239.6	1239.6	14.053	6.258	3.08		Clay	100.0			8.82	1.15	n.a.	n.a.	0.98	0.524	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.500	11.640	0.505	1260.0	1260.0	17.476	4.589	2.92		Clay	96.3			11.00	1.15	n.a.	n.a.	0.98	0.528	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.660	9.200	0.453	1279.2	1279.2	13.384	5.286	3.04		Clay	100.0			8.70	1.14	n.a.	n.a.	0.98	0.532	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.830	8.080	0.347	1299.6	1299.6	11.435	4.670	3.06		Clay	100.0			7.64	1.14	n.a.	n.a.	0.98	0.535	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.990	7.560	0.317	1318.8	1318.8	10.465	4.598	3.09		Clay	100.0			7.15	1.13	n.a.	n.a.	0.98	0.539	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.150	7.510	0.290	1338.8	1329.4	10.291	4.235	3.07		Clay	100.0			7.10	1.13	n.a.	n.a.	0.98	0.543	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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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)
11.320	6.790	0.253	1360.0	1340.0	9.119	4.137	3.11		Clay	100.0			6.42	1.13	n.a.	n.a.	0.97	0.546	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	6.020	0.220	1380.0	1350.0	7.896	4.135	3.16		Clay	100.0			5.69	1.13	n.a.	n.a.	0.97	0.550	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.650	5.610	0.192	1401.3	1360.7	7.216	3.907	3.18		Clay	100.0			5.30	1.12	n.a.	n.a.	0.97	0.553	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.810	5.470	0.186	1421.3	1370.7	6.944	3.898	3.19		Clay	100.0			5.17	1.12	n.a.	n.a.	0.97	0.556	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.980	5.450	0.168	1442.5	1381.3	6.847	3.559	3.17		Clay	100.0			5.15	1.12	n.a.	n.a.	0.97	0.560	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.140	5.500	0.128	1462.5	1391.4	6.855	2.682	3.11		Clay	100.0			5.20	1.12	n.a.	n.a.	0.97	0.563	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.300	5.610	0.116	1482.5	1401.4	6.949	2.383	3.08		Clay	100.0			5.30	1.11	n.a.	n.a.	0.97	0.566	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.470	5.680	0.148	1503.8	1412.0	6.980	2.999	3.13		Clay	100.0			5.37	1.11	n.a.	n.a.	0.97	0.569	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.630	6.060	0.188	1523.8	1422.0	7.451	3.539	3.14		Clay	100.0			5.73	1.11	n.a.	n.a.	0.97	0.572	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.800	7.080	0.273	1545.0	1432.7	8.805	4.335	3.13		Clay	100.0			6.69	1.11	n.a.	n.a.	0.97	0.576	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.960	7.460	0.361	1565.0	1442.7	9.257	5.412	3.18		Clay	100.0			7.05	1.11	n.a.	n.a.	0.97	0.578	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	6.440	0.310	1585.0	1452.7	7.775	5.496	3.24		Clay	100.0			6.09	1.10	n.a.	n.a.	0.97	0.581	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.290	5.340	0.222	1606.3	1463.4	6.201	4.882	3.29		Clay	100.0			5.05	1.10	n.a.	n.a.	0.97	0.584	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.450	4.430	0.160	1626.3	1473.4	4.910	4.410	3.35		Clay	100.0			4.19	1.10	n.a.	n.a.	0.97	0.587	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.620	4.220	0.148	1647.5	1484.0	4.577	4.358	3.37		Clay	100.0			3.99	1.10	n.a.	n.a.	0.97	0.590	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.780	4.410	0.139	1667.5	1494.0	4.787	3.890	3.33		Clay	100.0			4.17	1.10	n.a.	n.a.	0.97	0.592	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.940	4.320	0.136	1687.5	1504.0	4.623	3.912	3.34		Clay	100.0			4.08	1.09	n.a.	n.a.	0.97	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.110	4.310	0.141	1708.8	1514.7	4.563	4.092	3.36		Clay	100.0			4.07	1.09	n.a.	n.a.	0.97	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.270	4.750	0.176	1728.8	1524.7	5.097	4.524	3.34		Clay	100.0			4.49	1.09	n.a.	n.a.	0.96	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.440	5.170	0.203	1750.0	1535.3	5.595	4.724	3.32		Clay	100.0			4.89	1.09	n.a.	n.a.	0.96	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.600	5.460	0.217	1770.0	1545.4	5.921	4.748	3.30		Clay	100.0			5.16	1.09	n.a.	n.a.	0.96	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	5.150	0.207	1790.0	1555.4	5.471	4.860	3.33		Clay	100.0			4.87	1.08	n.a.	n.a.	0.96	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.930	5.910	0.261	1811.3	1566.0	6.391	5.209	3.29		Clay	100.0			5.59	1.08	n.a.	n.a.	0.96	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.090	6.540	0.283	1831.3	1576.0	7.137	5.032	3.25		Clay	100.0			6.18	1.08	n.a.	n.a.	0.96	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.260	6.820	0.242	1852.5	1586.7	7.429	4.109	3.18		Clay	100.0			6.45	1.08	n.a.	n.a.	0.96	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.420	8.900	0.262	1872.5	1596.7	9.975	3.292	3.02		Clay	100.0			8.41	1.08	n.a.	n.a.	0.96	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.580	8.280	0.331	1892.5	1606.7	9.129	4.513	3.13		Clay	100.0			7.83	1.08	n.a.	n.a.	0.96	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.750	8.200	0.410	1913.8	1617.4	8.957	5.654	3.20		Clay	100.0			7.75	1.07	n.a.	n.a.	0.96	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.910	10.270	0.490	1933.8	1627.4	11.433	5.266	3.10		Clay	100.0			9.71	1.07	n.a.	n.a.	0.96	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.080	12.240	0.547	1955.0	1638.0	13.751	4.857	3.01		Clay	100.0			11.57	1.07	n.a.	n.a.	0.96	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.240	13.910	0.633	1975.0	1648.0	15.682	4.899	2.97		Clay	100.0			13.15	1.07	n.a.	n.a.	0.96	0.627	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	15.150	0.704	1995.0	1658.0	17.071	4.972	2.95		Clay	98.7			14.32	1.07	n.a.	n.a.	0.96	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.570	16.360	0.808	2016.3	1668.7	18.400	5.261	2.94		Clay	98.0			15.46	1.06	n.a.	n.a.	0.96	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.730	17.310	0.883	2036.3	1678.7	19.410	5.417	2.93		Clay	97.3			16.36	1.06	n.a.	n.a.	0.96	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.900	17.600	0.902	2057.5	1689.3	19.619	5.444	2.93		Clay	97.1			16.64	1.06	n.a.	n.a.	0.95	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.060	17.990	0.921	2077.5	1699.4	19.950	5.431	2.92		Clay	96.7			17.00	1.06	n.a.	n.a.	0.95	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.220	18.430	0.908	2097.5	1709.4	20.336	5.225	2.90		Clay	95.3			17.42	1.06	n.a.	n.a.	0.95	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.390	18.970	0.859	2118.8	1720.0	20.826	4.793	2.87		Clay	92.7			17.93	1.06	n.a.	n.a.	0.95	0.641	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.550	19.190	0.813	2138.8	1730.0	20.948	4.484	2.85		Clay	91.0			18.14	1.05	n.a.	n.a.	0.95	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.720	18.880	0.785	2160.0	1740.7	20.452	4.412	2.85		Clay	91.2			17.84	1.05	n.a.	n.a.	0.95	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.880	19.290	0.811	2180.0	1750.7	20.792	4.454	2.85		Clay	91.0			18.23	1.05	n.a.	n.a.	0.95	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	20.040	0.822	2200.0	1760.7	21.514	4.338	2.83		Clay	89.5			18.94	1.05	n.a.	n.a.	0.95	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.210	19.810	0.782	2221.3	1771.3	21.113	4.184	2.83		Clay	89.2			18.72	1.05	n.a.	n.a.	0.95	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.370	19.100	0.745	2241.3	1781.4	20.186	4.145	2.84		Clay	90.2			18.05	1.05	n.a.	n.a.	0.95	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.540	18.260	0.724	2262.5	1792.0	19.117	4.227	2.86		Clay	92.1			17.26	1.04	n.a.	n.a.	0.95	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.700	17.700	0.703	2282.5	1802.0	18.378	4.244	2.88		Clay	93.2			16.73	1.04	n.a.	n.a.	0.95	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.860	17.620	0.633	2302.5	1812.0	18.177	3.842	2.85		Clay	91.3			16.65	1.04	n.a.	n.a.	0.95	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.030	16.530	0.554	2323.8	1822.7	16.863	3.602	2.86		Clay	91.9			15.62	1.04	n.a.	n.a.	0.95	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.190	15.480	0.473	2343.8	1832.7	15.614	3.306	2.86		Clay	92.2			14.63	1.04	n.a.	n.a.	0.95	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.360	14.660	0.497	2365.0	1843.3	14.623	3.685	2.92		Clay	96.3			13.86	1.04	n.a.	n.a.	0.95	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.520	15.300	0.641	2385.0	1853.4	15.224	4.541	2.96		Clay	99.7			14.46	1.04	n.a.	n.a.	0.94	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.690	17.890	0.968	2406.3	1864.0	17.904	5.799	2.97		Clay	100.0			16.91	1.03	n.a.	n.a.	0.94	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
19.850	20.540	1.101	2426.3	1874.0	20.626	5.694	2.92		Clay	96.9			19.41	1.03	n.a.	n.a.	0.94	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.010	20.990	1.051	2446.3	1884.0	20.984	5.314	2.90		Clay	94.9			19.84	1.03	n.a.	n.a.	0.94	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.180	19.390	0.971	2467.5	1894.7	19.166	5.350	2.93		Clay	97.3			18.33	1.03	n.a.	n.a.	0.94	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.340	17.100	0.812	2487.5	1904.7	16.650	5.123	2.96		Clay	100.0			16.16	1.03	n.a.	n.a.	0.94	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.510	14.550	0.675	2508.8	1915.3	13.883	5.073	3.02		Clay	100.0			13.75	1.03	n.a.	n.a.	0.94	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.670	12.710	0.580	2528.8	1925.3	11.889	5.064	3.07		Clay	100.0			12.01	1.03	n.a.	n.a.	0.94	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
20.830	11.420	0.497	2548.8	1935.4	10.484	4.899	3.11		Clay	100.0			10.79	1.02	n.a.	n.a.	0.94	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.000	10.870	0.482	2570.0	1946.0	9.851	5.032	3.13		Clay	100.0			10.27	1.02	n.a.	n.a.	0.94	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.160	10.660	0.478	2590.0	1956.0	9.576	5.106	3.15		Clay	100.0			10.08	1.02	n.a.	n.a.	0.94	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.330	10.770	0.518	2611.3	1966.7	9.625	5.470	3.16		Clay	100.0			10.18	1.02	n.a.	n.a.	0.94	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.490	14.330	0.536	2631.3	1976.7	13.168	4.118	2.98		Clay	100.0			13.54	1.02	n.a.	n.a.	0.94	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.650	13.320	0.499	2651.3	1986.7	12.075	4.159	3.01		Clay	100.0			12.59	1.02	n.a.	n.a.	0.94	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.820	11.910	0.522	2672.5	1997.3	10.588	4.935	3.10		Clay	100.0			11.26	1.02	n.a.	n.a.	0.94	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
21.980	10.860	0.596	2692.5	2007.3	9.479	6.264	3.21		Clay	100.0			10.26	1.01	n.a.	n.a.	0.93	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.150	14.740	0.612	2713.8	2018.0	13.264	4.574	3.01		Clay	100.0			13.93	1.01	n.a.	n.a.	0.93	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
22.310	22.090	0.601	2733.8	2028.0	20.437	2.901	2.74		Clay	82.0			20.88	1.01	n.a.	n.a.	0.93	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.470	15.010	0.488	2753.8	2038.0	13.379	3.582	2.94		Clay	98.2			14.19	1.01	n.a.	n.a.	0.93	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.640	12.900	0.362	2775.0	2048.7	11.239	3.140	2.97		Clay	100.0			12.19	1.01	n.a.	n.a.	0.93	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.800	10.090	0.231	2795.0	2058.7	8.445	2.661	3.03		Clay	100.0			9.54	1.01	n.a.	n.a.	0.93	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.970	9.010	0.193	2816.3	2069.3	7.347	2.544	3.07		Clay	100.0			8.52	1.01	n.a.	n.a.	0.93	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.130	9.540	0.189	2836.3	2079.3	7.812	2.330	3.03		Clay	100.0			9.02	1.00	n.a.	n.a.	0.93	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.290	11.070	0.244	2856.3	2089.4	9.230	2.533	2.98		Clay	100.0			10.46	1.00	n.a.	n.a.	0.93	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.460	11.580	0.281	2877.5	2100.0	9.658	2.772	2.99		Clay	100.0			10.95	1.00	n.a.	n.a.	0.93	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.620	11.710	0.319	2897.5	2110.0	9.726	3.113	3.02		Clay	100.0			11.07	1.00	n.a.	n.a.	0.93	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.790	12.340	0.319	2918.8	2120.7	10.262	2.928	2.98		Clay	100.0			11.66	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.950	12.330	0.345	2938.8	2130.7	10.195	3.180	3.00		Clay	100.0			11.65	1.00	n.a.	n.a.	0.93	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.110	11.600	0.373	2958.8	2140.7	9.455	3.689	3.07		Clay	100.0			10.96	1.00	n.a.	n.a.	0.93	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.280	10.980	0.381	2980.0	2151.3	8.822	4.017	3.11		Clay	100.0			10.38	1.00	n.a.	n.a.	0.92	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.440	10.190	0.380	3000.0	2161.3	8.041	4.372	3.17		Clay	100.0			9.63	0.99	n.a.	n.a.	0.92	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.610	10.050	0.307	3021.3	2172.0	7.863	3.597	3.13		Clay	100.0			9.50	0.99	n.a.	n.a.	0.92	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.770	10.420	0.360	3041.3	2182.0	8.157	4.045	3.14		Clay	100.0			9.85	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.930	10.770	0.404	3061.3	2192.0	8.430	4.376	3.15		Clay	100.0			10.18	0.99	n.a.	n.a.	0.92	0.697	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.100	12.420	0.421	3082.5	2202.7	9.878	3.873	3.07		Clay	100.0			11.74	0.99	n.a.	n.a.	0.92	0.698	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.260	12.300	0.364	3102.5	2212.7	9.716	3.386	3.04		Clay	100.0			11.63	0.99	n.a.	n.a.	0.92	0.699	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.430	11.330	0.296	3123.8	2223.3	8.787	3.030	3.05		Clay	100.0			10.71	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.590	10.110	0.212	3143.8	2233.3	7.646	2.488	3.05		Clay	100.0			9.56	0.99	n.a.	n.a.	0.92	0.700	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.750	9.720	0.191	3163.8	2243.4	7.255	2.341	3.06		Clay	100.0			9.19	0.98	n.a.	n.a.	0.92	0.701	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.920	9.800	0.175	3185.0	2254.0	7.283	2.130	3.03		Clay	100.0			9.26	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.080	11.230	0.165	3205.0	2264.0	8.505	1.718	2.93		Clay	97.2			10.61	0.98	n.a.	n.a.	0.92	0.702	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.250	12.220	0.191	3226.3	2274.7	9.326	1.799	2.90		Clay	95.2			11.55	0.98	n.a.	n.a.	0.92	0.703	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.410	10.990	0.321	3246.3	2284.7	8.200	3.423	3.10		Clay	100.0			10.39	0.98	n.a.	n.a.	0.92	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.570	13.010	0.493	3266.3	2294.7	9.916	4.335	3.09		Clay	100.0			12.30	0.98	n.a.	n.a.	0.91	0.704	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.740	18.050	0.621	3287.5	2305.3	14.233	3.788	2.93		Clay	97.6			17.06	0.98	n.a.	n.a.	0.91	0.705	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.900	27.860	0.901	3307.5	2315.3	22.637	3.438	2.75		Clay	82.9			26.33	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.070	28.090	1.499	3328.8	2326.0	22.722	5.672	2.89		Clay	94.3			26.55	0.98	n.a.	n.a.	0.91	0.706	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.230	28.630	1.488	3348.8	2336.0	23.078	5.519	2.88		Clay	93.3			27.06	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.400	38.020	1.401	3370.0	2346.6	30.968	3.855	2.68		Clay	77.3			35.94	0.97	n.a.	n.a.	0.91	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.560	46.310	1.634	3390.0	2356.7	37.863	3.662	2.60		Clay	71.0			43.77	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.720	35.210	1.537	3410.0	2366.7	28.314	4.587	2.76		Clay	83.7			33.28	0.97	n.a.	n.a.	0.91	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.890	36.490	1.655	3431.3	2377.3	29.255	4.760	2.76		Clay	83.8			34.49	0.97	n.a.	n.a.	0.91	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.050	53.260	1.611	3451.3	2387.3	45.858	3.125	2.49		Sand	62.4	62.16		62.16	0.95	58.89	124.81	0.91	0.709	0.984	0.183	0.256	0.36	0.03	0.03
28.220	65.760	1.557	3472.5	2398.0	56.845	2.432	2.35		Sand	51.0			62.16	0.94	58.71	120.69	0.91	0.710	0.984	0.173	0.237	0.33	0.03	0.03
28.380	65.190	1.745	3492.5	2408.0	56.213	2.751	2.39		Sand	54.2	62.16		62.16	0.94	58.62	121.85	0.91	0.710	0.984	0.175	0.242	0.34	0.03	0.03
28.540	57.010	1.881	3512.5	2418.0	48.855	3.404	2.50		Sand	62.9	62.16		62.16	0.94	58.55	124.50	0.91	0.711	0.983	0.182	0.254	0.36	0.03	0.03
28.710	45.250	1.848	3533.8	2428.6	35.809	4.251	2.66		Clay	76.0			42.77	0.96	n.a.	n.a.	0.91	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.870	43.240	1.776	3553.8	2438.7	34.005	4.283	2.68		Clay	77.5			40.87	0.96	n.a.	n.a.	0.90	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.040	49.880	1.766	3575.0	2449.3	42.250	3.672	2.57		Sand	68.3	50.71		50.71	0.93	47.31	111.36	0.90	0.712	0.983	0.154	0.201	0.28	0.03	0.03
29.200	50.030	1.787	3595.0	2459.3	42.287	3.705	2.57		Sand	68.5	50.71		50.71	0.93	47.22	111.28	0.90	0.713	0.983	0.154	0.201	0.28	0.03	0.03
29.360	50.840	1.678	3615.0	2469.3	42.901	3.421	2.54		Sand	66.2	50.71		50.71	0.93	47.12	110.64	0.90	0.713	0.982	0.153	0.199	0.28	0.03	0.03
29.530	47.640	1.536	3636.3	2480.0	40.006	3.353	2.56		Sand	67.5	50.71		50.71	0.93	47.03	110.81	0.90	0.714	0.982	0.153	0.199	0.28	0.03	0.03
29.690	50.260	1.461	3656.3	2490.0	42.199	3.016	2.51		Sand	63.7	50.71		50.71	0.93	46.92	109.77	0.90	0.714	0.981	0.152	0.196	0.27	0.03	0.03
29.860	53.650	1.314	3677.5	2500.6	45.048	2.535	2.44		Sand	57.9			50.71	0.92	46.80	108.02	0.90	0.714	0.981	0.149	0.191	0.27	0.03	0.03
30.020	55.300	0.940	3697.5	2510.7	46.381	1.759	2.32		Sand	48.9			52.27	0.92	48.11	106.40	0.90	0.715	0.981	0.146	0.186	0.26	0.03	0.03
30.180	58.840	0.842	3717.5	2520.7	49.345	1.478	2.26		Sand	43.4			55.61	0.92	51.12	107.47	0.90	0.715	0.980	0.148	0.189	0.26	0.03	0.03
30.350	58.070	0.924	3738.8	2531.3	48.567	1.644	2.29		Sand	46.2			54.89	0.92	50.35	107.96	0.90	0.715	0.980	0.149	0.190	0.27	0.03	0.03
30.510	56.220	0.887	3758.8	2541.3	46.867	1.632	2.30		Sand	47.0			53.14	0.92	48.62	106.17	0.90	0.716	0.980	0.146	0.185	0.26	0.03	0.03
30.680	55.040	0.892	3780.0	2552.0	45.744	1.678	2.32		Sand	48.2			52.02	0.91	47.49	105.32	0.90	0.716	0.979	0.145	0.183	0.26	0.03	0.03
30.840	55.600	1.033	3800.0	2562.0	46.127	1.924	2.35		Sand	51.0			52.55	0.91	47.92	107.04	0.90	0.716	0.979	0.147	0.187	0.26	0.03	0.03
31.000	58.410	1.005	3820.0	2572.0	48.438	1.778	2.31		Sand	48.0			55.21	0.91	50.28	108.71	0.89	0.717	0.978	0.150	0.192	0.27	0.03	0.03
31.170	56.390	1.413	3841.3	2582.6	46.601	2.594	2.43		Sand	57.6			53.30	0.91	48.47	110.05	0.89	0.717	0.977	0.152	0.196	0.27	0.03	0.03
31.330	57.910	1.632	3861.3	2592.7	47.800	2.916	2.46		Sand	59.7			54.74	0.91	49.73	112.30	0.89	0.717	0.976	0.156	0.203	0.28	0.03	0.03
31.500	63.310	1.493	3882.5	2603.3	52.295	2.433	2.38		Sand	53.1			59.84	0.91	54.35	116.00	0.89	0.718	0.975	0.163	0.216	0.30	0.03	0.02
31.660	78.460	1.174	3902.5	2613.3	65.071	1.534	2.17		Sand	36.8			74.16	0.91	67.43	123.19	0.89	0.718	0.973	0.179	0.245	0.34	0.03	0.02
31.820	136.510	1.057	3922.5	2623.3	114.216	0.785	1.80		Sand	7.0			129.03	0.91	116.89	118.47	0.89	0.718	0.974	0.168	0.225	0.31	0.03	0.03
31.990	191.050	0.955	3943.8	2634.0	160.180	0.505	1.57		Sand	0.0			180.58	0.92	166.25	166.25	0.89	0.718	0.959	0.446	0.804	1.12	0.01	0.01
32.150	194.010	1.332	3963.8	2644.0	162.370	0.693	1.65		Sand	0.0			183.37	0.92	168.72	168.72	0.89	0.719	0.958	0.483	0.885	1.23	0.00	0.00
32.320	124.350	2.229	3985.0	2654.6	103.253	1.821	2.08		Sand	29.1	183.37		183.37	0.94	172.13	240.77	0.89	0.719	0.932	46.579	95.503	132.84	0.00	0.00
32.480	68.730	2.038	4005.0	2664.6	56.203	3.055	2.42		Sand	56.8	183.37		183.37	0.94	172.55	268.11	0.89	0.719	0.931	1464.516	2999.095	4170.41	0.00	0.00
32.640	36.170	1.672	4025.0	2674.7	25.542	4.895	2.81		Clay	87.9			34.19	0.94	n.a.	n.a.	0.89	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.810	17.640	0.649	4046.3	2685.3	11.631	4.154	3.03		Clay	100.0			16.67	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.970	15.090	0.360	4066.3	2695.3	9.689	2.759	2.99		Clay	100.0			14.26	0.94	n.a.	n.a.	0.89	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.140	15.330	0.396	4087.5	2706.0	9.820	2.978	3.00		Clay	100.0			14.49	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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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)
33.300	15.480	0.345	4107.5	2716.0	9.887	2.569	2.96		Clay	100.0			14.63	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.460	14.650	0.343	4127.5	2726.0	9.234	2.722	3.00		Clay	100.0			13.85	0.94	n.a.	n.a.	0.88	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.630	13.870	0.355	4148.8	2736.6	8.621	3.013	3.05		Clay	100.0			13.11	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.790	15.300	0.365	4168.8	2746.7	9.623	2.762	2.99		Clay	100.0			14.46	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.960	15.470	0.386	4190.0	2757.3	9.702	2.885	3.00		Clay	100.0			14.62	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.120	15.210	0.401	4210.0	2767.3	9.471	3.058	3.02		Clay	100.0			14.38	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.280	15.580	0.408	4230.0	2777.3	9.696	3.031	3.01		Clay	100.0			14.73	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.450	16.860	0.458	4251.3	2788.0	10.570	3.106	2.99		Clay	100.0			15.94	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.610	18.300	0.451	4271.3	2798.0	11.554	2.788	2.93		Clay	97.2			17.30	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.780	18.890	0.451	4292.5	2808.6	11.923	2.691	2.91		Clay	95.6			17.85	0.93	n.a.	n.a.	0.88	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.940	18.760	0.445	4312.5	2818.6	11.781	2.680	2.91		Clay	95.8			17.73	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.100	16.990	0.396	4332.5	2828.7	10.481	2.674	2.95		Clay	99.2			16.06	0.93	n.a.	n.a.	0.88	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.270	14.580	0.320	4353.8	2839.3	8.737	2.582	3.01		Clay	100.0			13.78	0.93	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.430	12.590	0.267	4373.8	2849.3	7.302	2.564	3.07		Clay	100.0			11.90	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.600	11.780	0.223	4395.0	2860.0	6.701	2.325	3.08		Clay	100.0			11.13	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.760	11.590	0.238	4415.0	2870.0	6.538	2.536	3.11		Clay	100.0			10.95	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.930	12.570	0.232	4436.3	2880.6	7.187	2.239	3.05		Clay	100.0			11.88	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.090	12.740	0.261	4456.3	2890.6	7.273	2.486	3.07		Clay	100.0			12.04	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.250	12.430	0.260	4476.3	2900.7	7.027	2.551	3.09		Clay	100.0			11.75	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.420	12.550	0.234	4497.5	2911.3	7.077	2.269	3.06		Clay	100.0			11.86	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.580	11.390	0.245	4517.5	2921.3	6.251	2.686	3.14		Clay	100.0			10.77	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.750	11.360	0.261	4538.8	2932.0	6.201	2.871	3.16		Clay	100.0			10.74	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.910	13.820	0.284	4558.8	2942.0	7.846	2.460	3.04		Clay	100.0			13.06	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.070	15.950	0.388	4578.8	2952.0	9.255	2.839	3.01		Clay	100.0			15.08	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.240	19.270	0.587	4600.0	2962.6	11.456	3.458	2.98		Clay	100.0			18.21	0.92	n.a.	n.a.	0.87	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.400	22.650	0.771	4620.0	2972.6	13.685	3.792	2.95		Clay	98.7			21.41	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.570	26.680	0.877	4641.3	2983.3	16.331	3.599	2.87		Clay	92.8			25.22	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.730	28.950	0.940	4661.3	2993.3	17.786	3.532	2.84		Clay	90.0			27.36	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.890	28.600	0.959	4681.3	3003.3	17.487	3.652	2.85		Clay	91.2			27.03	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.060	28.010	0.879	4702.5	3014.0	17.027	3.427	2.84		Clay	90.6			26.47	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.220	27.370	1.043	4722.5	3024.0	16.540	4.172	2.91		Clay	95.6			25.87	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.390	26.070	1.024	4743.8	3034.6	15.619	4.319	2.94		Clay	97.9			24.64	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.550	21.270	0.950	4763.8	3044.6	12.408	5.030	3.06		Clay	100.0			20.10	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.710	23.300	0.821	4783.8	3054.6	13.689	3.928	2.96		Clay	99.5			22.02	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.880	21.040	0.712	4805.0	3065.3	12.160	3.818	2.99		Clay	100.0			19.89	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.040	19.320	0.582	4825.0	3075.3	10.996	3.439	3.00		Clay	100.0			18.26	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.210	18.220	0.525	4846.3	3085.9	10.238	3.326	3.01		Clay	100.0			17.22	0.91	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.370	16.660	0.483	4866.3	3096.0	9.191	3.395	3.06		Clay	100.0			15.75	0.90	n.a.	n.a.	0.86	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.530	15.880	0.460	4886.3	3106.0	8.652	3.420	3.08		Clay	100.0			15.01	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.700	15.570	0.425	4907.5	3116.6	8.417	3.243	3.08		Clay	100.0			14.72	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.860	14.750	0.401	4927.5	3126.6	7.859	3.261	3.10		Clay	100.0			13.94	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.030	13.090	0.388	4948.8	3137.3	6.767	3.657	3.19		Clay	100.0			12.37	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.190	12.040	0.311	4968.8	3147.3	6.072	3.251	3.20		Clay	100.0			11.38	0.90	n.a.	n.a.	0.85	0.722	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.350	11.030	0.275	4988.8	3157.3	5.407	3.222	3.24		Clay	100.0			10.43	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.520	11.180	0.272	5010.0	3168.0	5.477	3.130	3.23		Clay	100.0			10.57	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.680	11.930	0.424	5030.0	3178.0	5.925	4.508	3.28		Clay	100.0			11.28	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.850	12.210	0.435	5051.3	3188.6	6.074	4.496	3.27		Clay	100.0			11.54	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.010	13.320	0.285	5071.3	3198.6	6.743	2.644	3.11		Clay	100.0			12.59	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.170	16.260	0.351	5091.3	3208.6	8.548	2.562	3.02		Clay	100.0			15.37	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.340	13.870	0.350	5112.5	3219.3	7.029	3.094	3.13		Clay	100.0			13.11	0.90	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.500	13.490	0.398	5132.5	3229.3	6.765	3.644	3.18		Clay	100.0			12.75	0.89	n.a.	n.a.	0.85	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.670	13.840	0.421	5153.8	3239.9	6.953	3.738	3.18		Clay	100.0			13.08	0.89	n.a.	n.a.	0.84	0.721	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.830	15.330	0.435	5173.8	3250.0	7.842	3.414	3.12		Clay	100.0			14.49	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.990	15.290	0.442	5193.8	3260.0	7.787	3.480	3.12		Clay	100.0			14.45	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.160	15.080	0.424	5215.0	3270.6	7.627	3.397	3.12		Clay	100.0			14.25	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.320	14.590	0.372	5235.0	3280.6	7.299	3.107	3.12		Clay	100.0			13.79	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.490	13.460	0.379	5256.3	3291.3	6.582	3.496	3.18		Clay	100.0			12.72	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.650	12.770	0.304	5276.3	3301.3	6.138	2.998	3.17		Clay	100.0			12.07	0.89	n.a.	n.a.	0.84	0.720	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.810	11.620	0.291	5296.3	3311.3	5.419	3.245	3.24		Clay	100.0			10.98	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.980	11.110	0.294	5317.5	3321.9	5.088	3.473	3.28		Clay	100.0			10.50	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.140	12.770	0.286	5337.5	3332.0	6.063	2.827	3.16		Clay	100.0			12.07	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.310	13.760	0.302	5358.8	3342.6	6.630	2.723	3.12		Clay	100.0			13.01	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.470	13.450	0.287	5378.8	3352.6	6.419	2.668	3.13		Clay	100.0			12.71	0.89	n.a.	n.a.	0.84	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.640	13.660	0.297	5400.0	3363.3	6.517	2.705	3.13		Clay	100.0			12.91	0.88	n.a.	n.a.	0.83	0.719	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.800	13.050	0.275	5420.0	3373.3	6.131	2.662	3.15		Clay	100.0			12.33	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.960	11.890	0.253	5440.0	3383.3	5.421	2.755	3.20		Clay	100.0			11.24	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.130	10.770	0.250	5461.3	3393.9	4.737	3.115	3.28		Clay	100.0			10.18	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
44.290	10.930	0.227	5481.3	3404.0	4.812	2.777	3.25		Clay	100.0			10.33	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.460	11.090	0.246	5502.5	3414.6	4.884	2.949	3.25		Clay	100.0			10.48	0.88	n.a.	n.a.	0.83	0.718	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.620	10.620	0.222	5522.5	3424.6	4.590	2.822	3.27		Clay	100.0			10.04	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.780	10.550	0.256	5542.5	3434.6	4.530	3.295	3.31		Clay	100.0			9.97	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.950	10.420	0.311	5563.8	3445.3	4.434	4.077	3.36		Clay	100.0			9.85	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.110	14.890	0.401	5583.8	3455.3	7.003	3.317	3.15		Clay	100.0			14.07	0.88	n.a.	n.a.	0.83	0.717	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.280	15.550	0.487	5605.0	3465.9	7.356	3.821	3.17		Clay	100.0			14.70	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.440	13.360	0.514	5625.0	3475.9	6.069	4.869	3.30		Clay	100.0			12.63	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.600	12.470	0.408	5645.0	3486.0	5.535	4.226	3.29		Clay	100.0			11.79	0.88	n.a.	n.a.	0.83	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.770	11.600	0.324	5666.3	3496.6	5.015	3.690	3.30		Clay	100.0			10.96	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.930	11.320	0.277	5686.3	3506.6	4.835	3.264	3.28		Clay	100.0			10.70	0.88	n.a.	n.a.	0.82	0.716	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.100	10.770	0.238	5707.5	3517.3	4.501	3.000	3.29		Clay	100.0			10.18	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.260	9.840	0.213	5727.5	3527.3	3.956	3.049	3.34		Clay	100.0			9.30	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.420	9.340	0.197	5747.5	3537.3	3.656	3.042	3.37		Clay	100.0			8.83	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.590	9.460	0.201	5768.8	3547.9	3.707	3.058	3.37		Clay	100.0			8.94	0.87	n.a.	n.a.	0.82	0.715	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.750	9.440	0.199	5788.8	3558.0	3.679	3.037	3.37		Clay	100.0			8.92	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
46.920	9.390	0.216	5810.0	3568.6	3.634	3.335	3.39		Clay	100.0			8.88	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.080	9.420	0.221	5830.0	3578.6	3.635	3.404	3.40		Clay	100.0			8.90	0.87	n.a.	n.a.	0.82	0.714	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.240	9.680	0.254	5850.0	3588.6	3.765	3.766	3.41		Clay	100.0			9.15	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.410	10.050	0.337	5871.3	3599.3	3.953	4.733	3.44		Clay	100.0			9.50	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.570	11.250	0.429	5891.3	3609.3	4.602	5.166	3.41		Clay	100.0			10.63	0.87	n.a.	n.a.	0.82	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.740	12.460	0.485	5912.5	3619.9	5.251	5.099	3.36		Clay	100.0			11.78	0.87	n.a.	n.a.	0.81	0.713	n.a.	n.a.	n.a.	n.a.	0.00	0.00
47.900	13.600	0.510	5932.5	3629.9	5.859	4.794	3.30		Clay	100.0			12.85	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.060	15.350	0.513	5952.5	3640.0	6.799	4.147	3.21		Clay	100.0			14.51	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.230	15.610	0.519	5973.8	3650.6	6.916	4.109	3.21		Clay	100.0			14.75	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.390	16.900	0.533	5993.8	3660.6	7.596	3.837	3.16		Clay	100.0			15.97	0.87	n.a.	n.a.	0.81	0.712	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.560	17.300	0.545	6015.0	3671.3	7.786	3.816	3.15		Clay	100.0			16.35	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.720	16.390	0.496	6035.0	3681.3	7.265	3.711	3.16		Clay	100.0			15.49	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
48.880	15.250	0.441	6055.0	3691.3	6.622	3.611	3.19		Clay	100.0			14.41	0.86	n.a.	n.a.	0.81	0.711	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.050	14.960	0.372	6076.3	3701.9	6.441	3.119	3.17		Clay	100.0			14.14	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.210	15.120	0.353	6096.3	3711.9	6.504	2.927	3.15		Clay	100.0			14.29	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.380	15.480	0.396	6117.5	3722.6	6.673	3.186	3.16		Clay	100.0			14.63	0.86	n.a.	n.a.	0.81	0.710	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.540	17.030	0.456	6137.5	3732.6	7.481	3.263	3.12		Clay	100.0			16.10	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.700	18.890	0.626	6157.5	3742.6	8.449	3.957	3.13		Clay	100.0			17.85	0.86	n.a.	n.a.	0.81	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
49.870	20.940	0.747	6178.8	3753.3	9.512	4.186	3.10		Clay	100.0			19.79	0.86	n.a.	n.a.	0.80	0.709	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.030	20.960	0.785	6198.8	3763.3	9.492	4.397	3.11		Clay	100.0			19.81	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.200	23.260	0.599	6220.0	3773.9	10.679	2.970	2.97		Clay	100.0			21.98	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.360	25.440	0.468	6240.0	3783.9	11.797	2.095	2.85		Clay	91.1			24.05	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.520	20.770	0.768	6260.0	3794.0	9.299	4.353	3.12		Clay	100.0			19.63	0.86	n.a.	n.a.	0.80	0.708	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.690	18.140	1.216	6281.3	3804.6	7.885	8.106	3.34		Clay	100.0			17.15	0.86	n.a.	n.a.	0.80	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
50.850	43.230	1.483	6301.3	3814.6	21.014	3.700	2.79		Clay	86.6			40.86	0.86	n.a.	n.a.	0.80	0.707	n.a.	n.a.	n.a.	n.a.	0.00	0.00
51.020	83.290	1.907	6322.5	3825.3	56.329	2.380	2.35		Sand	50.7			78.72	0.77	60.24	122.51	0.80	0.707	0.925	0.177	0.230	0.33	0.03	0.00
51.180	97.850	2.625	6342.5	3835.3	66.470	2.773	2.34		Sand	50.3			92.49	0.78	71.81	136.96	0.80	0.706	0.915	0.222	0.310	0.44	0.02	0.00
51.350	111.760	2.795	6363.8	3845.9	76.123	2.574	2.28		Sand	45.1			105.63	0.78	82.87	148.21	0.80	0.706	0.906	0.277	0.414	0.59	0.02	0.00
51.510	131.420	2.883	6383.8	3855.9	89.782	2.248	2.18		Sand	37.8			124.22	0.79	98.70	162.53	0.80	0.706	0.893	0.399	0.650	0.92	0.01	0.00
51.670	158.130	2.352	6403.8	3865.9	108.336	1.518	2.01		Sand	23.5			149.46	0.80	119.12	166.97	0.80	0.705	0.888	0.456	0.765	1.08	0.01	0.00
51.840	181.150	1.761	6425.0	3876.6	124.255	0.990	1.84		Sand	9.9			171.22	0.78	132.92	141.12	0.80	0.705	0.910	0.239	0.343	0.49	0.02	0.00
52.000	196.440	1.182	6445.0	3886.6	134.752	0.612	1.68		Sand	0.0			185.67	0.78	144.49	144.49	0.79	0.705	0.907	0.256	0.373	0.53	0.02	0.00
52.170	207.050	1.057	6466.3	3897.2	141.949	0.518	1.62		Sand	0.0			195.70	0.78	153.51	153.51	0.79	0.704	0.899	0.314	0.482	0.68	0.02	0.00
52.330	206.090	1.061	6486.3	3907.3	141.093	0.523	1.62		Sand	0.0			194.79	0.78	152.49	152.49	0.79	0.704	0.900	0.306	0.467	0.66	0.02	0.00
52.490	193.720	1.145	6506.3	3917.3	132.312	0.601	1.68		Sand	0.0			183.10	0.77	141.60	141.60	0.79	0.703	0.908	0.242	0.346	0.49	0.02	0.00
52.660	183.000	1.250	6527.5	3927.9	124.689	0.695	1.74		Sand	2.0			172.97	0.76	132.26	132.26	0.79	0.703	0.915	0.205	0.278	0.40	0.02	0.00
52.820	181.120	1.353	6547.5	3937.9	123.220	0.761	1.77		Sand	4.2			171.19	0.76	130.50	130.54	0.79	0.703	0.916	0.199	0.268	0.38	0.02	0.00
52.990	190.010	1.262	6568.8	3948.6	129.198	0.676	1.72		Sand	0.4			179.59	0.77	137.87	137.87	0.79	0.702	0.910	0.225	0.316	0.45	0.02	0.00
53.150	217.130	1.284	6588.8	3958.6	147.769	0.601	1.64		Sand	0.0			205.23	0.79	161.22	161.22	0.79	0.702	0.889	0.384	0.618	0.88	0.01	0.00
53.310	232.060	1.182	6608.8	3968.6	157.879	0.517	1.58		Sand	0.0			219.34	0.79	174.30	174.30	0.79	0.702	0.874	0.585	1.021	1.46	0.00	0.00
53.480	232.750	0.916	6630.0	3979.2	158.136	0.399	1.51		Sand	0.0			219.99	0.79	174.71	174.71	0.79	0.701	0.873	0.593	1.039	1.48	0.00	0.00
53.640	237.740	0.990	6650.0	3989.3	161.366	0.422	1.52		Sand	0.0			224.71	0.80	179.00	179.00	0.79	0.701	0.867	0.698	1.255	1.79	0.00	0.00
53.810	224.470	1.036	6671.3	3999.9	152.021	0.469	1.57		Sand	0.0			212.16	0.79	166.94	166.94	0.79	0.701	0.881	0.456	0.758	1.08	0.01	0.00
53.970	184.560	1.043	6691.3	4009.9	124.422	0.575	1.69		Sand	0.0			174.44	0.76	132.18	132.18	0.79	0.700	0.912	0.204	0.277	0.40	0.02	0.00
54.130	175.990	1.282	6711.3	4019.9	118.383	0.743	1.77		Sand	4.8			166.34	0.75	124.84	124.95	0.78	0.700	0.917	0.183	0.239	0.34	0.03	0.00
54.300	177.690	1.421	6732.5	4030.6	119.384	0.815	1.79		Sand	6.6			167.95	0.75	126.27	127.45	0.78	0.699	0.915	0.190	0.251	0.36	0.02	0.00
54.460	181.110	1.654	6752.5	4040.6	121.568	0.930	1.83		Sand	9.0			171.18	0.76	129.79	135.58	0.78	0.699	0.909	0.216	0.298	0.43	0.02	0.00
54.630	181.500	1.493	6773.8	4051.2	121.667	0.838	1.80		Sand	6.7			171.55	0.75	129.15	130.44	0.78	0.699	0.912	0.199	0.267	0.38	0.02	0.00
54.790	169.120	1.183	6793.8	4061.3	113.064	0.714	1.78		Sand	5.2			159.85	0.74	118.49	118.72	0.78	0.698	0.920	0.168	0.213	0.31	0.03	0.00
54.950	157.850	0.944	6813.8	4071.3	105.239	0.611	1.76		Sand	4.1			149.20	0.73	109.08	109.10	0.78	0.698	0.925	0.151	0.183	0.26	0.03	0.00
55.120	141.530	1.488	6835.0	4081.9	93.988	1.077	1.95		Sand	19.1			133.77	0.76	101.04	136.00	0.78	0.698	0.907	0.218	0.301	0.43	0.02	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
55.280	117.910	2.007	6855.0	4091.9	77.812	1.753	2.15		Sand	35.2			111.45	0.76	84.77	143.08	0.78	0.697	0.901	0.249	0.357	0.51	0.02	0.00
55.450	70.110	1.758	6876.3	4102.6	45.257	2.637	2.45		Sand	58.7			66.27	0.73	48.34	110.24	0.78	0.697	0.924	0.152	0.186	0.27	0.03	0.00
55.610	44.650	1.287	6896.3	4112.6	20.037	3.123	2.76		Clay	84.1			42.20	0.84	n.a.	n.a.	0.78	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.770	28.520	0.776	6916.3	4122.6	12.158	3.096	2.94		Clay	97.8			26.96	0.84	n.a.	n.a.	0.78	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
55.940	21.790	0.421	6937.5	4133.2	8.865	2.295	2.98		Clay	100.0			20.60	0.84	n.a.	n.a.	0.78	0.696	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.100	20.810	0.387	6957.5	4143.3	8.366	2.231	2.99		Clay	100.0			19.67	0.84	n.a.	n.a.	0.77	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.270	20.440	0.394	6978.8	4153.9	8.161	2.327	3.01		Clay	100.0			19.32	0.84	n.a.	n.a.	0.77	0.695	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.430	18.620	0.395	6998.8	4163.9	7.263	2.611	3.08		Clay	100.0			17.60	0.84	n.a.	n.a.	0.77	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.590	18.660	0.428	7018.8	4173.9	7.260	2.824	3.10		Clay	100.0			17.64	0.84	n.a.	n.a.	0.77	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.760	18.440	0.440	7040.0	4184.6	7.131	2.946	3.11		Clay	100.0			17.43	0.84	n.a.	n.a.	0.77	0.694	n.a.	n.a.	n.a.	n.a.	0.00	0.00
56.920	18.580	0.446	7060.0	4194.6	7.176	2.961	3.11		Clay	100.0			17.56	0.83	n.a.	n.a.	0.77	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.090	19.430	0.457	7081.3	4205.2	7.557	2.876	3.09		Clay	100.0			18.36	0.83	n.a.	n.a.	0.77	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.250	19.550	0.527	7101.3	4215.3	7.591	3.291	3.12		Clay	100.0			18.48	0.83	n.a.	n.a.	0.77	0.693	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.410	19.620	0.517	7121.3	4225.3	7.602	3.220	3.11		Clay	100.0			18.54	0.83	n.a.	n.a.	0.77	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.580	19.260	0.564	7142.5	4235.9	7.408	3.592	3.15		Clay	100.0			18.20	0.83	n.a.	n.a.	0.77	0.692	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.740	20.610	0.490	7162.5	4245.9	8.021	2.880	3.07		Clay	100.0			19.48	0.83	n.a.	n.a.	0.77	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
57.910	21.670	0.478	7183.8	4256.6	8.494	2.644	3.03		Clay	100.0			20.48	0.83	n.a.	n.a.	0.77	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.070	20.580	0.469	7203.8	4266.6	7.959	2.764	3.06		Clay	100.0			19.45	0.83	n.a.	n.a.	0.77	0.691	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.230	18.630	0.444	7223.8	4276.6	7.023	2.959	3.12		Clay	100.0			17.61	0.83	n.a.	n.a.	0.77	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.400	17.910	0.393	7245.0	4287.2	6.665	2.753	3.12		Clay	100.0			16.93	0.83	n.a.	n.a.	0.76	0.690	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.560	19.110	0.356	7265.0	4297.3	7.203	2.300	3.05		Clay	100.0			18.06	0.83	n.a.	n.a.	0.76	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.730	21.800	0.354	7286.3	4307.9	8.430	1.949	2.96		Clay	99.7			20.60	0.83	n.a.	n.a.	0.76	0.689	n.a.	n.a.	n.a.	n.a.	0.00	0.00
58.890	25.790	0.372	7306.3	4317.9	10.254	1.681	2.85		Clay	91.2			24.38	0.83	n.a.	n.a.	0.76	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.060	25.960	0.485	7327.5	4328.6	10.302	2.173	2.91		Clay	95.7			24.54	0.83	n.a.	n.a.	0.76	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.220	23.980	0.547	7347.5	4338.6	9.361	2.696	2.99		Clay	100.0			22.67	0.83	n.a.	n.a.	0.76	0.688	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.380	20.850	0.507	7367.5	4348.6	7.895	2.951	3.08		Clay	100.0			19.71	0.83	n.a.	n.a.	0.76	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.550	18.940	0.455	7388.8	4359.2	6.995	2.982	3.12		Clay	100.0			17.90	0.83	n.a.	n.a.	0.76	0.687	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.710	18.220	0.386	7408.8	4369.2	6.644	2.656	3.12		Clay	100.0			17.22	0.83	n.a.	n.a.	0.76	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
59.880	17.490	0.392	7430.0	4379.9	6.290	2.848	3.15		Clay	100.0			16.53	0.83	n.a.	n.a.	0.76	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.040	17.640	0.432	7450.0	4389.9	6.340	3.107	3.17		Clay	100.0			16.67	0.82	n.a.	n.a.	0.76	0.686	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.200	18.000	0.459	7470.0	4399.9	6.484	3.219	3.17		Clay	100.0			17.01	0.82	n.a.	n.a.	0.76	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.370	19.020	0.523	7491.3	4410.6	6.926	3.421	3.16		Clay	100.0			17.98	0.82	n.a.	n.a.	0.76	0.685	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.530	19.820	0.695	7511.3	4420.6	7.268	4.323	3.20		Clay	100.0			18.73	0.82	n.a.	n.a.	0.75	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.700	19.470	0.440	7532.5	4431.2	7.088	2.801	3.11		Clay	100.0			18.40	0.82	n.a.	n.a.	0.75	0.684	n.a.	n.a.	n.a.	n.a.	0.00	0.00
60.860	23.490	0.413	7552.5	4441.2	8.878	2.097	2.96		Clay	99.4			22.20	0.82	n.a.	n.a.	0.75	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.020	19.620	0.376	7572.5	4451.3	7.114	2.372	3.07		Clay	100.0			18.54	0.82	n.a.	n.a.	0.75	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.190	16.690	0.386	7593.8	4461.9	5.779	2.993	3.20		Clay	100.0			15.78	0.82	n.a.	n.a.	0.75	0.683	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.350	18.160	0.427	7613.8	4471.9	6.419	2.974	3.16		Clay	100.0			17.16	0.82	n.a.	n.a.	0.75	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.520	20.160	0.491	7635.0	4482.6	7.292	3.003	3.11		Clay	100.0			19.05	0.82	n.a.	n.a.	0.75	0.682	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.680	20.660	0.518	7655.0	4492.6	7.493	3.079	3.11		Clay	100.0			19.53	0.82	n.a.	n.a.	0.75	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
61.840	21.550	0.519	7675.0	4502.6	7.868	2.928	3.08		Clay	100.0			20.37	0.82	n.a.	n.a.	0.75	0.681	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.010	19.680	0.509	7696.3	4513.2	7.016	3.217	3.14		Clay	100.0			18.60	0.82	n.a.	n.a.	0.75	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.170	19.260	0.495	7716.3	4523.2	6.810	3.213	3.15		Clay	100.0			18.20	0.82	n.a.	n.a.	0.75	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.340	18.760	0.488	7737.5	4533.9	6.569	3.278	3.17		Clay	100.0			17.73	0.82	n.a.	n.a.	0.75	0.680	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.500	18.260	0.478	7757.5	4543.9	6.330	3.323	3.19		Clay	100.0			17.26	0.82	n.a.	n.a.	0.75	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.660	18.120	0.468	7777.5	4553.9	6.250	3.291	3.19		Clay	100.0			17.13	0.82	n.a.	n.a.	0.74	0.679	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.830	17.940	0.447	7798.8	4564.6	6.152	3.181	3.19		Clay	100.0			16.96	0.82	n.a.	n.a.	0.74	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
62.990	17.470	0.436	7818.8	4574.6	5.929	3.212	3.20		Clay	100.0			16.51	0.82	n.a.	n.a.	0.74	0.678	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.160	17.630	0.423	7840.0	4585.2	5.980	3.085	3.19		Clay	100.0			16.66	0.82	n.a.	n.a.	0.74	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.320	18.450	0.508	7860.0	4595.2	6.320	3.500	3.20		Clay	100.0			17.44	0.81	n.a.	n.a.	0.74	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.480	19.070	0.616	7880.0	4605.2	6.571	4.073	3.22		Clay	100.0			18.02	0.81	n.a.	n.a.	0.74	0.677	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.650	19.560	0.584	7901.3	4615.9	6.763	3.740	3.19		Clay	100.0			18.49	0.81	n.a.	n.a.	0.74	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.810	19.260	0.558	7921.3	4625.9	6.615	3.647	3.19		Clay	100.0			18.20	0.81	n.a.	n.a.	0.74	0.676	n.a.	n.a.	n.a.	n.a.	0.00	0.00
63.980	17.440	0.509	7942.5	4636.5	5.810	3.775	3.25		Clay	100.0			16.48	0.81	n.a.	n.a.	0.74	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.140	17.420	0.449	7962.5	4646.6	5.784	3.340	3.22		Clay	100.0			16.47	0.81	n.a.	n.a.	0.74	0.675	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.300	17.160	0.398	7982.5	4656.6	5.656	3.020	3.21		Clay	100.0			16.22	0.81	n.a.	n.a.	0.74	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.470	16.960	0.373	8003.8	4667.2	5.553	2.878	3.20		Clay	100.0			16.03	0.81	n.a.	n.a.	0.74	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.630	17.030	0.380	8023.8	4677.2	5.567	2.922	3.20		Clay	100.0			16.10	0.81	n.a.	n.a.	0.74	0.674	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.800	17.510	0.426	8045.0	4687.9	5.754	3.156	3.21		Clay	100.0			16.55	0.81	n.a.	n.a.	0.74	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
64.960	18.290	0.474	8065.0	4697.9	6.070	3.323	3.20		Clay	100.0			17.29	0.81	n.a.	n.a.	0.73	0.673	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.120	19.680	0.520	8085.0	4707.9	6.643	3.326	3.17		Clay	100.0			18.60	0.81	n.a.	n.a.	0.73	0.672	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.290	21.410	0.543	8106.3	4718.6	7.357	3.128	3.12		Clay	100.0			20.24	0.81	n.a.	n.a.	0.73	0.672	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.450	23.270	0.619	8126.3	4728.6	8.124	3.222	3.09		Clay	100.0			21.99	0.81	n.a.	n.a.	0.73	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.620	23.410	0.745	8147.5	4739.2	8.160	3.853	3.13		Clay	100.0			22.13	0.81	n.a.	n.a.	0.73	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.780	24.990	0.681	8167.5	4749.2	8.804	3.256	3.06		Clay	100.0			23.62	0.81	n.a.	n.a.	0.73	0.671	n.a.	n.a.	n.a.	n.a.	0.00	0.00
65.940	27.940	0.708	8187.5	4759.2	10.021	2.967	2.99		Clay	100.0			26.41	0.81	n.a.	n.a.	0.73	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.110	28.910	0.600	8208.8	4769.9	10.401	2.417	2.93		Clay	97.4			27.33	0.81	n.a.	n.a.	0.73	0.670	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
66.270	29.360	0.615	8228.8	4779.9	10.563	2.435	2.93		Clay	97.1			27.75	0.81	n.a.	n.a.	0.73	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.440	26.490	0.688	8250.0	4790.5	9.337	3.078	3.03		Clay	100.0			25.04	0.81	n.a.	n.a.	0.73	0.669	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.600	24.640	0.715	8270.0	4800.6	8.543	3.488	3.09		Clay	100.0			23.29	0.81	n.a.	n.a.	0.73	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.770	26.840	1.346	8291.3	4811.2	9.434	5.932	3.19		Clay	100.0			25.37	0.81	n.a.	n.a.	0.73	0.668	n.a.	n.a.	n.a.	n.a.	0.00	0.00
66.930	29.260	1.416	8311.3	4821.2	10.414	5.639	3.15		Clay	100.0			27.66	0.80	n.a.	n.a.	0.73	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.090	37.910	1.191	8331.3	4831.2	13.969	3.528	2.92		Clay	96.6			35.83	0.80	n.a.	n.a.	0.73	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.260	39.980	1.350	8352.5	4841.9	14.789	3.771	2.92		Clay	96.5			37.79	0.80	n.a.	n.a.	0.72	0.667	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.420	33.320	1.347	8372.5	4851.9	12.009	4.623	3.04		Clay	100.0			31.49	0.80	n.a.	n.a.	0.72	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.590	29.900	1.245	8393.8	4862.5	10.572	4.842	3.10		Clay	100.0			28.26	0.80	n.a.	n.a.	0.72	0.666	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.750	35.560	1.147	8413.8	4872.6	12.869	3.659	2.96		Clay	99.7			33.61	0.80	n.a.	n.a.	0.72	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
67.910	40.190	0.918	8433.8	4882.6	14.735	2.551	2.82		Clay	88.5			37.99	0.80	n.a.	n.a.	0.72	0.665	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.080	37.210	0.895	8455.0	4893.2	13.481	2.712	2.87		Clay	92.2			35.17	0.80	n.a.	n.a.	0.72	0.664	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.240	25.240	0.748	8475.0	4903.2	8.567	3.559	3.09		Clay	100.0			23.86	0.80	n.a.	n.a.	0.72	0.664	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.410	21.880	0.562	8496.3	4913.9	7.176	3.186	3.13		Clay	100.0			20.68	0.80	n.a.	n.a.	0.72	0.664	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.570	20.150	0.520	8516.3	4923.9	6.455	3.269	3.18		Clay	100.0			19.05	0.80	n.a.	n.a.	0.72	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.730	18.970	0.503	8536.3	4933.9	5.960	3.421	3.22		Clay	100.0			17.93	0.80	n.a.	n.a.	0.72	0.663	n.a.	n.a.	n.a.	n.a.	0.00	0.00
68.900	18.740	0.504	8557.5	4944.5	5.849	3.485	3.23		Clay	100.0			17.71	0.80	n.a.	n.a.	0.72	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.060	19.090	0.537	8577.5	4954.6	5.975	3.630	3.23		Clay	100.0			18.04	0.80	n.a.	n.a.	0.72	0.662	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.230	19.440	0.583	8598.8	4965.2	6.099	3.851	3.24		Clay	100.0			18.37	0.80	n.a.	n.a.	0.72	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.390	19.380	0.587	8618.8	4975.2	6.058	3.896	3.24		Clay	100.0			18.32	0.80	n.a.	n.a.	0.72	0.661	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.550	19.420	0.582	8638.8	4985.2	6.058	3.856	3.24		Clay	100.0			18.36	0.80	n.a.	n.a.	0.72	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.720	19.180	0.532	8660.0	4995.9	5.945	3.580	3.23		Clay	100.0			18.13	0.80	n.a.	n.a.	0.71	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
69.880	18.790	0.559	8680.0	5005.9	5.773	3.865	3.26		Clay	100.0			17.76	0.80	n.a.	n.a.	0.71	0.660	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.050	18.710	0.591	8701.3	5016.5	5.725	4.112	3.27		Clay	100.0			17.68	0.80	n.a.	n.a.	0.71	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.210	19.830	0.621	8721.3	5026.5	6.155	4.012	3.24		Clay	100.0			18.74	0.80	n.a.	n.a.	0.71	0.659	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.370	20.720	0.647	8741.3	5036.6	6.492	3.959	3.22		Clay	100.0			19.58	0.80	n.a.	n.a.	0.71	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.540	21.610	0.652	8762.5	5047.2	6.827	3.787	3.19		Clay	100.0			20.43	0.80	n.a.	n.a.	0.71	0.658	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.700	22.330	0.664	8782.5	5057.2	7.094	3.704	3.17		Clay	100.0			21.11	0.79	n.a.	n.a.	0.71	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
70.870	22.360	0.611	8803.8	5067.9	7.087	3.405	3.15		Clay	100.0			21.13	0.79	n.a.	n.a.	0.71	0.657	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.030	23.020	0.589	8823.8	5077.9	7.329	3.163	3.12		Clay	100.0			21.76	0.79	n.a.	n.a.	0.71	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.190	24.550	0.581	8843.8	5087.9	7.912	2.888	3.07		Clay	100.0			23.20	0.79	n.a.	n.a.	0.71	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.360	27.400	0.779	8865.0	5098.5	9.009	3.393	3.06		Clay	100.0			25.90	0.79	n.a.	n.a.	0.71	0.656	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.520	32.130	1.053	8885.0	5108.6	10.840	3.802	3.03		Clay	100.0			30.37	0.79	n.a.	n.a.	0.71	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.690	35.160	1.147	8906.3	5119.2	11.997	3.737	2.99		Clay	100.0			33.23	0.79	n.a.	n.a.	0.71	0.655	n.a.	n.a.	n.a.	n.a.	0.00	0.00
71.850	31.670	1.048	8926.3	5129.2	10.609	3.851	3.04		Clay	100.0			29.93	0.79	n.a.	n.a.	0.71	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.010	30.380	0.884	8946.3	5139.2	10.082	3.414	3.03		Clay	100.0			28.71	0.79	n.a.	n.a.	0.71	0.654	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.180	32.030	0.929	8967.5	5149.9	10.698	3.371	3.00		Clay	100.0			30.27	0.79	n.a.	n.a.	0.70	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.340	31.450	1.026	8987.5	5159.9	10.448	3.806	3.04		Clay	100.0			29.73	0.79	n.a.	n.a.	0.70	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.510	31.900	1.047	9008.8	5170.5	10.597	3.822	3.04		Clay	100.0			30.15	0.79	n.a.	n.a.	0.70	0.653	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.670	32.860	1.011	9028.8	5180.5	10.943	3.565	3.01		Clay	100.0			31.06	0.79	n.a.	n.a.	0.70	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
72.830	33.920	0.967	9048.8	5190.6	11.327	3.290	2.98		Clay	100.0			32.06	0.79	n.a.	n.a.	0.70	0.652	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.000	35.020	0.974	9070.0	5201.2	11.722	3.193	2.96		Clay	99.5			33.10	0.79	n.a.	n.a.	0.70	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.160	34.620	0.925	9090.0	5211.2	11.542	3.076	2.95		Clay	99.2			32.72	0.79	n.a.	n.a.	0.70	0.651	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.330	33.740	1.037	9111.3	5221.9	11.178	3.553	3.00		Clay	100.0			31.89	0.79	n.a.	n.a.	0.70	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.490	36.030	1.250	9131.3	5231.9	12.028	3.972	3.00		Clay	100.0			34.05	0.79	n.a.	n.a.	0.70	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.650	36.570	1.348	9151.3	5241.9	12.207	4.214	3.01		Clay	100.0			34.57	0.79	n.a.	n.a.	0.70	0.650	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.820	34.260	1.360	9172.5	5252.5	11.299	4.581	3.06		Clay	100.0			32.38	0.79	n.a.	n.a.	0.70	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
73.980	35.130	1.239	9192.5	5262.5	11.604	4.057	3.02		Clay	100.0			33.20	0.79	n.a.	n.a.	0.70	0.649	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.150	40.460	1.273	9213.8	5273.2	13.598	3.551	2.93		Clay	97.5			38.24	0.79	n.a.	n.a.	0.70	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.310	37.250	1.338	9233.8	5283.2	12.354	4.101	3.00		Clay	100.0			35.21	0.79	n.a.	n.a.	0.70	0.648	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.480	34.270	1.180	9255.0	5293.8	11.199	3.981	3.03		Clay	100.0			32.39	0.79	n.a.	n.a.	0.70	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.640	31.510	1.021	9275.0	5303.9	10.133	3.801	3.05		Clay	100.0			29.78	0.78	n.a.	n.a.	0.69	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.800	29.860	0.864	9295.0	5313.9	9.489	3.427	3.05		Clay	100.0			28.22	0.78	n.a.	n.a.	0.69	0.647	n.a.	n.a.	n.a.	n.a.	0.00	0.00
74.970	27.200	0.757	9316.3	5324.5	8.467	3.360	3.08		Clay	100.0			25.71	0.78	n.a.	n.a.	0.69	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.130	24.200	0.640	9336.3	5334.5	7.323	3.275	3.13		Clay	100.0			22.87	0.78	n.a.	n.a.	0.69	0.646	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.300	26.250	1.183	9357.5	5345.2	8.071	5.483	3.23		Clay	100.0			24.81	0.78	n.a.	n.a.	0.69	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.460	28.120	3.465	9377.5	5355.2	8.751	14.788	3.48		Clay	100.0			26.58	0.78	n.a.	n.a.	0.69	0.645	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.620	77.560	5.272	9397.5	5365.2	27.161	7.236	2.91		Clay	95.8			73.31	0.78	n.a.	n.a.	0.69	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.790	114.330	6.115	9418.8	5375.9	40.783	5.578	2.71		Clay	79.5			108.06	0.78	n.a.	n.a.	0.69	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
75.950	85.850	5.287	9438.8	5385.9	30.127	6.517	2.85		Clay	90.7			81.14	0.78	n.a.	n.a.	0.69	0.644	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.120	81.080	4.845	9460.0	5396.5	28.296	6.345	2.86		Clay	91.6			76.64	0.78	n.a.	n.a.	0.69	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.280	96.710	5.217	9480.0	5406.5	34.022	5.673	2.77		Clay	84.3			91.41	0.78	n.a.	n.a.	0.69	0.643	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.440	121.370	5.457	9500.0	5416.5	43.061	4.679	2.64		Clay	73.8			114.72	0.78	n.a.	n.a.	0.69	0.642	n.a.	n.a.	n.a.	n.a.	0.00	0.00
76.610	160.330	5.035	9521.3	5427.2	91.814	3.236	2.29		Sand	46.6			151.54	0.72	108.42	181.18	0.69	0.642	0.798	0.762	1.282	2.00	0.00	0.00
76.770	214.600	3.741	9541.3	5437.2	123.723	1.783	2.02		Sand	24.2			202.84	0.74	149.35	203.88	0.69	0.641	0.740	2.368	3.858	6.01	0.00	0.00
76.940	247.320	3.717	9562.5	5447.8	142.870	1.533	1.92		Sand	17.0			233.76	0.74	173.31	210.02	0.69	0.641	0.719	3.488	5.520	8.61	0.00	0.00
77.100	244.310	2.510	9582.5	5457.9	140.961	1.048	1.81		Sand	8.0			230.92	0.70	161.13	164.81	0.69	0.641	0.827	0.427	0.656	1.02	0.01	0.00

CORNERSTONE EARTH GROUP

CPT No.	14

PGA (A_{max})	0.81

Total Settlement:	0.61	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
77.260	194.400	1.705	9602.5	5467.9	111.480	0.899	1.84		Sand	10.6			183.74	0.66	121.57	131.57	0.68	0.640	0.870	0.202	0.261	0.41	0.02	0.00
77.430	130.780	1.367	9623.8	5478.5	73.995	1.085	2.03		Sand	25.8			123.61	0.66	81.01	126.61	0.68	0.640	0.875	0.188	0.236	0.37	0.03	0.00
77.590	65.750	1.031	9643.8	5488.5	35.757	1.693	2.40		Sand	55.2			62.15	0.62	38.36	96.40	0.68	0.639	0.901	0.133	0.149	0.23	0.03	0.00
77.760	33.880	0.642	9665.0	5499.2	10.564	2.209	2.90		Clay	95.3			32.02	0.78	n.a.	n.a.	0.68	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
77.920	27.390	0.683	9685.0	5509.2	8.185	3.029	3.07		Clay	100.0			25.89	0.78	n.a.	n.a.	0.68	0.639	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.080	26.030	0.891	9705.0	5519.2	7.674	4.205	3.18		Clay	100.0			24.60	0.78	n.a.	n.a.	0.68	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.250	29.150	1.067	9726.3	5529.9	8.784	4.394	3.14		Clay	100.0			27.55	0.78	n.a.	n.a.	0.68	0.638	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.410	35.040	1.072	9746.3	5539.9	10.891	3.555	3.01		Clay	100.0			33.12	0.78	n.a.	n.a.	0.68	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.580	33.540	0.905	9767.5	5550.5	10.326	3.159	3.00		Clay	100.0			31.70	0.78	n.a.	n.a.	0.68	0.637	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.740	35.570	0.931	9787.5	5560.5	11.034	3.033	2.96		Clay	100.0			33.62	0.77	n.a.	n.a.	0.68	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
78.900	28.230	0.992	9807.5	5570.5	8.375	4.251	3.15		Clay	100.0			26.68	0.77	n.a.	n.a.	0.68	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.070	29.300	1.073	9828.8	5581.2	8.739	4.402	3.14		Clay	100.0			27.69	0.77	n.a.	n.a.	0.68	0.636	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.230	31.450	0.804	9848.8	5591.2	9.488	3.032	3.02		Clay	100.0			29.73	0.77	n.a.	n.a.	0.68	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.400	38.860	0.888	9870.0	5601.8	12.112	2.618	2.89		Clay	94.6			36.73	0.77	n.a.	n.a.	0.68	0.635	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.560	36.590	0.999	9890.0	5611.9	11.278	3.157	2.97		Clay	100.0			34.58	0.77	n.a.	n.a.	0.68	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.720	31.880	1.919	9910.0	5621.9	9.579	7.127	3.24		Clay	100.0			30.13	0.77	n.a.	n.a.	0.68	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
79.890	36.300	2.006	9931.3	5632.5	11.126	6.403	3.16		Clay	100.0			34.31	0.77	n.a.	n.a.	0.68	0.634	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.050	38.970	1.741	9951.3	5642.5	12.049	5.121	3.07		Clay	100.0			36.83	0.77	n.a.	n.a.	0.67	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.220	49.120	1.451	9972.5	5653.2	15.614	3.288	2.86		Clay	92.1			46.43	0.77	n.a.	n.a.	0.67	0.633	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.380	45.150	1.536	9992.5	5663.2	14.181	3.824	2.94		Clay	97.9			42.67	0.77	n.a.	n.a.	0.67	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.540	41.870	1.580	10012.5	5673.2	12.996	4.285	3.00		Clay	100.0			39.57	0.77	n.a.	n.a.	0.67	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.710	40.580	1.329	10033.8	5683.8	12.514	3.737	2.97		Clay	100.0			38.36	0.77	n.a.	n.a.	0.67	0.632	n.a.	n.a.	n.a.	n.a.	0.00	0.00
80.870	33.370	0.939	10053.8	5693.9	9.956	3.313	3.02		Clay	100.0			31.54	0.77	n.a.	n.a.	0.67	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.040	28.280	0.724	10075.0	5704.5	8.149	3.114	3.08		Clay	100.0			26.73	0.77	n.a.	n.a.	0.67	0.631	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.200	26.450	0.760	10095.0	5714.5	7.491	3.551	3.14		Clay	100.0			25.00	0.77	n.a.	n.a.	0.67	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.360	27.080	1.319	10115.0	5724.5	7.694	5.990	3.27		Clay	100.0			25.60	0.77	n.a.	n.a.	0.67	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.530	33.740	2.330	10136.3	5735.2	9.999	8.127	3.26		Clay	100.0			31.89	0.77	n.a.	n.a.	0.67	0.630	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.690	52.450	3.700	10156.3	5745.2	16.491	7.810	3.09		Clay	100.0			49.57	0.77	n.a.	n.a.	0.67	0.629	n.a.	n.a.	n.a.	n.a.	0.00	0.00
81.860	126.030	4.356	10177.5	5755.8	69.309	3.601	2.41		Sand	55.8			119.12	0.67	79.43	148.95	0.67	0.629	0.841	0.282	0.393	0.62	0.02	0.00
82.020	177.530	3.963	10197.5	5765.9	98.732	2.298	2.16		Sand	36.0			167.80	0.70	118.10	184.76	0.67	0.628	0.777	0.886	1.495	2.38	0.00	0.00
82.190	200.390	3.253	10218.8	5776.5	111.712	1.666	2.02		Sand	25.0			189.40	0.71	133.67	187.16	0.67	0.628	0.771	0.985	1.671	2.66	0.00	0.00
82.350	211.650	2.839	10238.8	5786.5	118.045	1.375	1.95		Sand	18.9			200.05	0.70	139.38	178.61	0.67	0.628	0.790	0.687	1.122	1.79	0.00	0.00
82.510	208.830	1.905	10258.8	5796.5	116.327	0.935	1.84		Sand	10.3			197.38	0.65	128.86	138.28	0.67	0.627	0.854	0.227	0.299	0.48	0.02	0.00
82.680	177.650	3.360	10280.0	5807.2	98.425	1.948	2.11		Sand	31.9			167.91	0.70	116.81	178.45	0.67	0.627	0.790	0.683	1.113	1.78	0.00	0.00
82.840	118.710	3.481	10300.0	5817.2	64.735	3.065	2.38		Sand	53.4			112.20	0.65	73.40	140.32	0.66	0.626	0.851	0.236	0.314	0.50	0.02	0.00
83.010	64.740	2.432	10321.3	5827.8	20.447	4.082	2.83		Clay	89.5			61.19	0.77	n.a.	n.a.	0.66	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.170	37.030	1.293	10341.3	5837.8	10.915	4.057	3.04		Clay	100.0			35.00	0.77	n.a.	n.a.	0.66	0.626	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.330	33.360	1.236	10361.3	5847.9	9.638	4.385	3.11		Clay	100.0			31.53	0.76	n.a.	n.a.	0.66	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.500	35.190	1.507	10382.5	5858.5	10.241	5.025	3.12		Clay	100.0			33.26	0.76	n.a.	n.a.	0.66	0.625	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.660	37.430	1.857	10402.5	5868.5	10.984	5.763	3.13		Clay	100.0			35.38	0.76	n.a.	n.a.	0.66	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.830	39.030	2.082	10423.8	5879.2	11.504	6.156	3.14		Clay	100.0			36.89	0.76	n.a.	n.a.	0.66	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
83.990	41.330	2.020	10443.8	5889.2	12.263	5.593	3.09		Clay	100.0			39.06	0.76	n.a.	n.a.	0.66	0.624	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.150	43.450	1.755	10463.8	5899.2	12.957	4.593	3.02		Clay	100.0			41.07	0.76	n.a.	n.a.	0.66	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.320	37.030	1.552	10485.0	5909.8	10.757	4.883	3.10		Clay	100.0			35.00	0.76	n.a.	n.a.	0.66	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.480	32.090	1.050	10505.0	5919.8	9.067	3.912	3.10		Clay	100.0			30.33	0.76	n.a.	n.a.	0.66	0.623	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.650	28.110	0.880	10526.3	5930.5	7.705	3.852	3.15		Clay	100.0			26.57	0.76	n.a.	n.a.	0.66	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.810	25.880	0.840	10546.3	5940.5	6.938	4.074	3.20		Clay	100.0			24.46	0.76	n.a.	n.a.	0.66	0.622	n.a.	n.a.	n.a.	n.a.	0.00	0.00
84.970	24.150	0.834	10566.3	5950.5	6.341	4.418	3.26		Clay	100.0			22.83	0.76	n.a.	n.a.	0.66	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.140	23.120	0.858	10587.5	5961.2	5.981	4.811	3.30		Clay	100.0			21.85	0.76	n.a.	n.a.	0.66	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.300	24.860	0.962	10607.5	5971.2	6.550	4.921	3.27		Clay	100.0			23.50	0.76	n.a.	n.a.	0.66	0.621	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.470	26.140	0.967	10628.8	5981.8	6.963	4.642	3.23		Clay	100.0			24.71	0.76	n.a.	n.a.	0.66	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.630	27.850	1.166	10648.8	5991.8	7.519	5.177	3.24		Clay	100.0			26.32	0.76	n.a.	n.a.	0.66	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.790	29.950	1.009	10668.8	6001.9	8.203	4.099	3.15		Clay	100.0			28.31	0.76	n.a.	n.a.	0.66	0.620	n.a.	n.a.	n.a.	n.a.	0.00	0.00
85.960	29.350	0.965	10690.0	6012.5	7.985	4.022	3.15		Clay	100.0			27.74	0.76	n.a.	n.a.	0.65	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.120	28.030	1.081	10710.0	6022.5	7.530	4.766	3.21		Clay	100.0			26.49	0.76	n.a.	n.a.	0.65	0.619	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.290	28.280	1.064	10731.3	6033.2	7.596	4.644	3.20		Clay	100.0			26.73	0.76	n.a.	n.a.	0.65	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.450	30.450	1.126	10751.3	6043.2	8.298	4.490	3.16		Clay	100.0			28.78	0.76	n.a.	n.a.	0.65	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.610	28.630	1.445	10771.3	6053.2	7.680	6.214	3.28		Clay	100.0			27.06	0.76	n.a.	n.a.	0.65	0.618	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.780	31.730	1.121	10792.5	6063.8	8.686	4.255	3.13		Clay	100.0			29.99	0.76	n.a.	n.a.	0.65	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
86.940	32.990	1.106	10812.5	6073.8	9.083	4.009	3.10		Clay	100.0			31.18	0.76	n.a.	n.a.	0.65	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.110	30.920	1.011	10833.8	6084.5	8.383	3.963	3.13		Clay	100.0			29.22	0.76	n.a.	n.a.	0.65	0.617	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.270	29.650	0.978	10853.8	6094.5	7.949	4.039	3.15		Clay	100.0			28.02	0.76	n.a.	n.a.	0.65	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.430	28.380	0.919	10873.8	6104.5	7.517	4.007	3.17		Clay	100.0			26.82	0.76	n.a.	n.a.	0.65	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.600	30.410	0.884	10895.0	6115.2	8.164	3.541	3.11		Clay	100.0			28.74	0.76	n.a.	n.a.	0.65	0.616	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.760	32.450	1.111	10915.0	6125.2	8.814	4.117	3.12		Clay	100.0			30.67	0.76	n.a.	n.a.	0.65	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
87.930	34.740	1.549	10936.3	6135.8	9.541	5.293	3.16		Clay	100.0			32.84	0.76	n.a.	n.a.	0.65	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.090	38.070	1.686	10956.3	6145.8	10.606	5.174	3.12		Clay	100.0			35.98	0.75	n.a.	n.a.	0.65	0.615	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
88.250	48.670	1.629	10976.3	6155.9	14.030	3.771	2.94		Clay	97.9			46.00	0.75	n.a.	n.a.	0.65	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.420	45.820	1.360	10997.5	6166.5	13.078	3.372	2.93		Clay	97.5			43.31	0.75	n.a.	n.a.	0.65	0.614	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.580	34.340	1.011	11017.5	6176.5	9.336	3.507	3.06		Clay	100.0			32.46	0.75	n.a.	n.a.	0.65	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.750	29.650	0.775	11038.8	6187.2	7.800	3.210	3.10		Clay	100.0			28.02	0.75	n.a.	n.a.	0.65	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
88.910	27.880	0.817	11058.8	6197.2	7.213	3.656	3.16		Clay	100.0			26.35	0.75	n.a.	n.a.	0.65	0.613	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.070	26.570	0.775	11078.8	6207.2	6.776	3.686	3.19		Clay	100.0			25.11	0.75	n.a.	n.a.	0.65	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.240	27.200	0.768	11100.0	6217.8	6.964	3.547	3.17		Clay	100.0			25.71	0.75	n.a.	n.a.	0.64	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.400	26.940	0.981	11120.0	6227.8	6.866	4.590	3.24		Clay	100.0			25.46	0.75	n.a.	n.a.	0.64	0.612	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.570	28.530	1.302	11141.3	6238.5	7.361	5.672	3.27		Clay	100.0			26.97	0.75	n.a.	n.a.	0.64	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.730	36.590	1.598	11161.3	6248.5	9.925	5.152	3.14		Clay	100.0			34.58	0.75	n.a.	n.a.	0.64	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
89.900	45.430	1.882	11182.5	6259.1	12.730	4.723	3.03		Clay	100.0			42.94	0.75	n.a.	n.a.	0.64	0.611	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.060	41.170	1.629	11202.5	6269.2	11.347	4.580	3.06		Clay	100.0			38.91	0.75	n.a.	n.a.	0.64	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.220	43.190	1.382	11222.5	6279.2	11.969	3.678	2.98		Clay	100.0			40.82	0.75	n.a.	n.a.	0.64	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.390	34.830	1.266	11243.8	6289.8	9.287	4.335	3.12		Clay	100.0			32.92	0.75	n.a.	n.a.	0.64	0.610	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.550	32.870	1.135	11263.8	6299.8	8.647	4.168	3.13		Clay	100.0			31.07	0.75	n.a.	n.a.	0.64	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.720	33.130	0.996	11285.0	6310.5	8.712	3.624	3.09		Clay	100.0			31.31	0.75	n.a.	n.a.	0.64	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
90.880	34.650	0.881	11305.0	6320.5	9.176	3.039	3.03		Clay	100.0			32.75	0.75	n.a.	n.a.	0.64	0.609	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.040	31.770	0.729	11325.0	6330.5	8.248	2.792	3.05		Clay	100.0			30.03	0.75	n.a.	n.a.	0.64	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.210	28.320	0.709	11346.3	6341.1	7.143	3.130	3.13		Clay	100.0			26.77	0.75	n.a.	n.a.	0.64	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.370	26.680	0.736	11366.3	6351.2	6.612	3.507	3.18		Clay	100.0			25.22	0.75	n.a.	n.a.	0.64	0.608	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.540	26.450	0.831	11387.5	6361.8	6.525	4.003	3.22		Clay	100.0			25.00	0.75	n.a.	n.a.	0.64	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.700	27.320	0.788	11407.5	6371.8	6.785	3.644	3.18		Clay	100.0			25.82	0.75	n.a.	n.a.	0.64	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
91.860	29.460	0.795	11427.5	6381.8	7.442	3.350	3.13		Clay	100.0			27.84	0.75	n.a.	n.a.	0.64	0.607	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.030	30.690	0.880	11448.8	6392.5	7.811	3.523	3.12		Clay	100.0	86.74	1.69	146.59	0.75	n.a.	n.a.	0.64	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.190	28.330	0.884	11468.8	6402.5	7.058	3.912	3.19		Clay	100.0	86.74	1.69	146.59	0.75	n.a.	n.a.	0.64	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.360	27.150	0.820	11490.0	6413.1	6.675	3.832	3.20		Clay	100.0	86.74	1.69	146.59	0.75	n.a.	n.a.	0.64	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.520	27.100	0.731	11510.0	6423.2	6.646	3.424	3.18		Clay	100.0	86.74	1.69	146.59	0.75	n.a.	n.a.	0.64	0.606	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.680	26.940	0.705	11530.0	6433.2	6.583	3.328	3.17		Clay	100.0		1.69	43.03	0.75	n.a.	n.a.	0.64	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
92.850	25.520	0.674	11551.3	6443.8	6.128	3.416	3.20		Clay	100.0	86.74	1.69	146.59	0.75	n.a.	n.a.	0.63	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.010	25.110	0.706	11571.3	6453.8	5.989	3.651	3.23		Clay	100.0	86.74	1.69	146.59	0.75	n.a.	n.a.	0.63	0.605	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.180	26.140	0.767	11592.5	6464.5	6.294	3.770	3.22		Clay	100.0	86.74	1.69	146.59	0.74	n.a.	n.a.	0.63	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.340	26.510	0.765	11612.5	6474.5	6.395	3.693	3.21		Clay	100.0	86.74	1.69	146.59	0.74	n.a.	n.a.	0.63	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.500	25.440	0.665	11632.5	6484.5	6.053	3.391	3.21		Clay	100.0	86.74	1.69	146.59	0.74	n.a.	n.a.	0.63	0.604	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.670	24.370	0.622	11653.8	6495.1	5.710	3.353	3.23		Clay	100.0	86.74	1.69	146.59	0.74	n.a.	n.a.	0.63	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
93.830	23.720	0.658	11673.8	6505.2	5.498	3.679	3.26		Clay	100.0			22.42	0.74	n.a.	n.a.	0.63	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.000	24.140	0.720	11695.0	6515.8	5.615	3.935	3.27		Clay	100.0			22.82	0.74	n.a.	n.a.	0.63	0.603	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.160	26.540	0.852	11715.0	6525.8	6.339	4.118	3.24		Clay	100.0			25.09	0.74	n.a.	n.a.	0.63	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.320	27.220	0.814	11735.0	6535.8	6.534	3.813	3.21		Clay	100.0			25.73	0.74	n.a.	n.a.	0.63	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.490	27.650	0.771	11756.3	6546.5	6.651	3.540	3.18		Clay	100.0			26.13	0.74	n.a.	n.a.	0.63	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.650	26.570	0.722	11776.3	6556.5	6.309	3.490	3.20		Clay	100.0			25.11	0.74	n.a.	n.a.	0.63	0.602	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.820	26.420	1.246	11797.5	6567.1	6.250	6.071	3.34		Clay	100.0			24.97	0.74	n.a.	n.a.	0.63	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
94.980	27.430	1.299	11817.5	6577.1	6.544	6.037	3.32		Clay	100.0			25.93	0.74	n.a.	n.a.	0.63	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.140	35.540	1.107	11837.5	6587.2	8.994	3.736	3.09		Clay	100.0			33.59	0.74	n.a.	n.a.	0.63	0.601	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.310	30.860	0.787	11858.8	6597.8	7.557	3.155	3.11		Clay	100.0			29.17	0.74	n.a.	n.a.	0.63	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.470	27.800	0.608	11878.8	6607.8	6.617	2.779	3.13		Clay	100.0			26.28	0.74	n.a.	n.a.	0.63	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.640	27.070	0.566	11900.0	6618.5	6.382	2.679	3.13		Clay	100.0			25.59	0.74	n.a.	n.a.	0.63	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.800	25.910	0.615	11920.0	6628.5	6.019	3.084	3.19		Clay	100.0			24.49	0.74	n.a.	n.a.	0.63	0.600	n.a.	n.a.	n.a.	n.a.	0.00	0.00
95.960	24.710	0.555	11940.0	6638.5	5.646	2.962	3.20		Clay	100.0			23.36	0.74	n.a.	n.a.	0.63	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.130	25.490	0.497	11961.3	6649.1	5.868	2.545	3.15		Clay	100.0			24.09	0.74	n.a.	n.a.	0.63	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.290	24.640	0.463	11981.3	6659.2	5.601	2.481	3.16		Clay	100.0			23.29	0.74	n.a.	n.a.	0.63	0.599	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.460	22.860	0.434	12002.5	6669.8	5.055	2.575	3.21		Clay	100.0			21.61	0.74	n.a.	n.a.	0.63	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.620	22.370	0.398	12022.5	6679.8	4.898	2.432	3.21		Clay	100.0			21.14	0.74	n.a.	n.a.	0.63	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.780	22.480	0.399	12042.5	6689.8	4.921	2.424	3.21		Clay	100.0			21.25	0.74	n.a.	n.a.	0.63	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
96.950	22.700	0.323	12063.8	6700.5	4.975	1.937	3.16		Clay	100.0			21.46	0.74	n.a.	n.a.	0.62	0.598	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.110	22.530	0.345	12083.8	6710.5	4.914	2.091	3.18		Clay	100.0			21.29	0.74	n.a.	n.a.	0.62	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.280	21.990	0.378	12105.0	6721.1	4.743	2.371	3.22		Clay	100.0			20.78	0.74	n.a.	n.a.	0.62	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.440	23.690	0.572	12125.0	6731.1	5.238	3.245	3.25		Clay	100.0			22.39	0.74	n.a.	n.a.	0.62	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.600	25.620	0.811	12145.0	6741.2	5.799	4.150	3.27		Clay	100.0			24.22	0.74	n.a.	n.a.	0.62	0.597	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.770	29.360	0.852	12166.3	6751.8	6.895	3.659	3.18		Clay	100.0			27.75	0.74	n.a.	n.a.	0.62	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
97.930	29.400	0.810	12186.3	6761.8	6.894	3.474	3.17		Clay	100.0			27.79	0.74	n.a.	n.a.	0.62	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.100	28.170	0.713	12207.5	6772.5	6.516	3.230	3.17		Clay	100.0			26.63	0.74	n.a.	n.a.	0.62	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.260	27.510	0.706	12227.5	6782.5	6.309	3.297	3.19		Clay	100.0			26.00	0.74	n.a.	n.a.	0.62	0.596	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.430	27.110	0.829	12248.8	6793.1	6.178	3.950	3.24		Clay	100.0			25.62	0.74	n.a.	n.a.	0.62	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.590	27.320	0.762	12268.8	6803.1	6.228	3.595	3.21		Clay	100.0			25.82	0.73	n.a.	n.a.	0.62	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.750	27.970	0.736	12288.8	6813.2	6.407	3.371	3.19		Clay	100.0			26.44	0.73	n.a.	n.a.	0.62	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
98.920	27.000	0.679	12310.0	6823.8	6.110	3.255	3.19		Clay	100.0			25.52	0.73	n.a.	n.a.	0.62	0.595	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.080	27.490	0.708	12330.0	6833.8	6.241	3.321	3.19		Clay	100.0			25.98	0.73	n.a.	n.a.	0.62	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No. 14

PGA (A_{max}) 0.81

Total Settlement: 0.61 (Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
99.250	27.970	0.902	12351.3	6844.5	6.368	4.139	3.24		Clay	100.0			26.44	0.73	n.a.	n.a.	0.62	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.410	30.950	0.876	12371.3	6854.5	7.226	3.538	3.15		Clay	100.0			29.25	0.73	n.a.	n.a.	0.62	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.570	32.250	0.827	12391.3	6864.5	7.591	3.175	3.11		Clay	100.0			30.48	0.73	n.a.	n.a.	0.62	0.594	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.740	35.920	2.782	12412.5	6875.1	8.644	9.361	3.35		Clay	100.0			33.95	0.73	n.a.	n.a.	0.62	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
99.900	35.130	3.044	12432.5	6885.1	8.399	10.529	3.39		Clay	100.0			33.20	0.73	n.a.	n.a.	0.62	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.070	49.320	3.664	12453.8	6895.8	12.498	8.502	3.20		Clay	100.0			46.62	0.73	n.a.	n.a.	0.62	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00
100.230	61.260	3.735	12473.8	6905.8	15.935	6.788	3.06		Clay	100.0			57.90	0.73	n.a.	n.a.	0.62	0.593	n.a.	n.a.	n.a.	n.a.	0.00	0.00