CORNERSTONE EARTH GROUP

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| **Type of Services** | **Geotechnical Investigation** |
| **Project Name** | **SJBCB New Education Building** |
| **Location** | **693 North 5th Street**<br>**San Jose, California** |
| **Client** | **San Jose Buddhist Church Betsuin** |
| **Client Address** | **640 North 5th Street**<br>**San Jose, California** |
| **Project Number** | **1353-1-3** |
| **Date** | **May 17, 2022** |

DRAFT


**Prepared by** **Bryan Cervantes Guzman, E.I.T.**
Senior Staff Engineer

**Nicholas S. Devlin, P.E.**
Principal Engineer
Geotechnical Project Manager

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CORNERSTONE EARTH GROUP

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|---|---|
| **Type of Services** | **Geotechnical Investigation** |
| **Project Name** | **SJBCB New Education Building** |
| **Location** | **639 North 5th Street**<br>**San Jose, California** |

## SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of San Jose Buddhist Church Betsuin (SJBCB) for the SJBCB New Education Building project located in San Jose, California. The location of the site is shown on the Vicinity Map, Figure 1. For our use, we were provided with the following document:

- A conceptual site plan titled, "Proposed Site Plan - San Jose Buddhist Church Betsuin – Board Meeting Presentation" prepared by Aedis Architects, dated February 3, 2022.
- A topographic survey plan titled, "Existing Conditions and Demolition Plan, Lotus Preschool and CR Replacement, 640 N. 5th St, San Jose, CA" prepared by Civil Engineering Associates (CEA) dated April 17, 2022.

### 1.1 PROJECT DESCRIPTION

Based on our review of the conceptual site plan, the project will consist of redeveloping the site for construction a new education building on the approximately 1.25-acre site. The planned development will include of a new two-story, at-grade preschool building, playground, storage warehouse with adjoining woodshop to be located on the southern portion of the site. The new buildings will likely be of wood-frame construction. In addition, a new asphalt pavement parking lot will be constructed on the northern portion of the site. We understand the existing preschool building and three single family homes and associated residential structures will be demolished and removed from the site. Appurtenant utilities, retaining walls, landscaping, and other improvements necessary for site development are also planned.

Structural loads are not currently known for the proposed structures; however, structural loads are expected to be typical of similar type structures. Site grading with cuts and fills on the order of 1 to 3 feet are anticipated.

## 1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated March 3, 2022 and consisted of field and laboratory programs to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare recommendations for site work and grading, building foundations, flatwork, retaining walls, and pavements, and preparation of this report. Brief descriptions of our exploration and laboratory programs are presented below.

## 1.3 EXPLORATION PROGRAM

Field exploration consisted of four exploratory borings drilled on March 25, 2022 with truck-mounted, hollow-stem auger drilling equipment and four Cone Penetration Tests (CPTs) advanced on March 23 and 31, 2022. The borings were drilled to depths of 6½ to 40 feet; the CPTs were advanced to depths of approximately 40 to 83 feet below existing grades. Seismic shear wave velocity measurements were collected from CPT-2. Our Exploratory Borings, EB-1, EB-2, and EB-3, were advanced adjacent to CPT-1, CPT-2, and CPT-4, respectively, for direct evaluation of physical samples to correlated soil behavior.

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

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

## 1.4 LABORATORY TESTING PROGRAM

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

## 1.5 PRELIMINARY CORROSION SCREENING

Two samples from our borings at depths of 2 to 6 feet were tested for saturated resistivity, pH, and soluble sulfates and chlorides. JDH Corrosion Consultants prepared a brief corrosion evaluation based on the laboratory test results, which is attached to this report in Appendix C.

## 1.6 ENVIRONMENTAL SERVICES

Cornerstone Earth Group also provided environmental services for this project, including a Phase 1 site assessment; environmental findings and conclusions are provided under separate covers.

# SECTION 2: REGIONAL SETTING

## 2.1 GEOLOGICAL SETTING

The site is located within the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range. Alluvial soil thicknesses in the area of downtown San Jose are estimated to be greater than 500 feet (Rogers & Williams, 1974).

## 2.2 REGIONAL SEISMICITY

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

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

**Table 1: Approximate Fault Distances**

| Fault Name | Distance | |
|---|---|---|
| | (miles) | (kilometers) |
| Hayward (Southeast Extension) | 5.3 | 8.6 |
| Monte Vista-Shannon | 7.8 | 12.5 |
| Calaveras | 8.1 | 13.1 |
| Hayward (Total Length) | 8.3 | 13.4 |
| San Andreas | 12.2 | 19.7 |
| Sargent | 15.3 | 24.7 |

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

# SECTION 3: SITE CONDITIONS

## 3.1 SITE BACKGROUND

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

- 1948: The site appears to be comprised of multiple residential lots with single family homes and associated front yards, backyards, etc. The streets were observed in the present layout.
- 1956: Multiple residential homes along North 5th Street appear to have been removed and the two-story office building appears to have been built along with the adjacent parking lot. The parking lot appears to be comprised of asphalt concrete.
- 1993: Two residential homes along North 4th Street appear to have been removed and the lot left undeveloped. Two residential homes appear to remain along North 4th Street and appear to match the two current residential homes at the site.
- 1998: The asphalt parking lot along North 5th Street appears to have been replaced as a concrete pavement parking lot.
- 2018: No major surface changes are observed to the site.

## 3.2 SURFACE DESCRIPTION

The project site is located north of downtown San Jose in a residential neighborhood with adjacent commercial development. The site is approximately 1.25 acres and is comprised of six parcels along North 4th and 5th Streets. The two parcels along North 5th Street include the current two-story preschool building, concrete pavement parking lot, a residential home, concrete hardscapes, landscaping, sidewalks, and planters. The four parcels along North 4th Street include two vacant lots and two with one residential home each and associated sheds/storage units. The vacant parcels are currently gravel parking lots for the church. Associated flatwork, driveways, and landscape areas including large trees were observed on these lots as well. The topography of the site is generally flat with site grades ranging from approximately Elevation 61½ to 64 feet based on our review of the provided topographic survey (CEA, 2022).

The gravel parking lots generally consisted of 1 to 1¾ inches of crushed rock over soil subgrade. The concrete pavement encountered within Boring EB-3 consisted of 4½ inches of Portland cement concrete (PCC) over 2 inches of aggregate base. Based on our observations, the existing PCC pavement was in fair condition with minor cracking.

## 3.3 SUBSURFACE CONDITIONS

Below the surface grades and pavements, our explorations generally encountered undocumented fill underlain by alluvial soil to the terminal depths explored for this investigation. A more detailed description of the subsurface conditions is presented in the following sections.

### 3.3.1 Undocumented Fill

The undocumented fill depths range from approximately 1½ to 4½ feet below the existing grades. The fill consisted of loose to medium dense, clayey sand with gravel, and stiff to hard, sandy lean clay with gravel. In addition, debris consisting of pieces of brick and metal was encountered within the fill. Based on the depths of fill encountered in our borings, we have included preliminary fill depth contours on Figure 4 of this report.

### 3.3.2 Alluvial Soil

Below the undocumented fill, the alluvial soil predominately consisted of medium stiff to very stiff lean, clay and lean clay with sand to depths of about 25 to 40 feet below existing site grades, the terminal depths explored in our borings. Loose, clayey sand was encountered in Boring EB-1 from 3 to 5½ feet below the existing grade. Loose to medium dense, silty sand was encountered within Borings, EB-1, EB-2, and EB-3 from depths of 12 to 14½ feet below the existing grades.

Our CPTs generally indicated soil behavior types (SBT) consistent with the soil types encountered within our borings discussed above. Below a depth of 40 feet, our CPTs generally indicated soil behavior types including medium dense to dense, sand and gravel extended to a refusal depth of 83 feet at CPT-2. However, stiff, clay to silty clay was indicated in CPT-2 between 52 and 64 feet of depth.

### 3.3.3 Plasticity/Expansion Potential

We performed one Plasticity Index (PI) test on a sample of the undocumented fill (e.g. sandy lean clay) encountered in our borings. The test result was used to evaluate expansion potential of surficial soil. The surficial PI test resulted in a PI of 9, indicating low expansion potential to wetting and drying cycles; however, the underlying native lean clay was field classified as having a low to moderate expansion potential.

### 3.2.2 In-Situ Moisture Contents

Laboratory testing indicated that the in-situ moisture contents within the upper 10 feet range from 8 to 28 percent moisture. Based on our experience, this is about 1 to 14 percent above the estimated laboratory optimum moisture content.

## 3.3 GROUNDWATER

Groundwater was encountered in our exploratory borings, except for EB-4 which only extended to a depth of 6½ feet, at depths of 7½ to 13½ feet below the existing grades. Groundwater depths were inferred from pore pressure dissipation (PPD) measurements performed at our CPTs and ranged from approximately 3½ to 8¾ feet below the existing grades; however, pressurized groundwater was observed to be existing the hole at CPT-2 which extended to a refusal depth of 83 feet below the existing grade. This is likely the result of a deeper pressurized aquifer being encountered. These groundwater depths at the CPTs are considered

rough approximations based on the pore pressures not stabilizing. All measurements were taken at the time of drilling and may not represent the stabilized levels that can be higher than the initial levels encountered.

Maps published by the California Geological Survey (CGS, San Jose West Quadrangle,2002) indicate historical high groundwater depth between 7 to 10 feet below the ground surface.

We also reviewed groundwater data available online from the website GeoTracker, https://geotracker.waterboards.ca.gov/. Nearby monitoring well data indicates that groundwater has been measured at depths of approximately 9 to 12½ feet at wells located directly onsite or adjacent to 639 North 5th Street between 2007 to 2017.

Based on the above, we recommend a design groundwater depth of 7 feet. Fluctuations in groundwater levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

## SECTION 4: GEOLOGIC HAZARDS

### 4.1 FAULT SURFACE RUPTURE

As discussed above several significant faults are located within 25 kilometers of the site. The site is not located within a State-designated Alquist Priolo Earthquake Fault Zone, or a Santa Clara County Fault Hazard Zone. As shown in Figure 3, no known surface expression of fault traces is thought to cross the site; therefore, fault surface rupture hazard is not a significant geologic hazard at the site.

### 4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A site modified peak ground acceleration ($PGA_M$) was determined in accordance with the 2019 California Building Code (CBC) and Section 21.5 of ASCE 7-16. Therefore, we recommend a site-specific $MCE_G$ peak ground acceleration, $PGA_M$, of 0.63g for this project.

### 4.3 LIQUEFACTION POTENTIAL

The site is within a State-designated Liquefaction Hazard Zone (CGS, San Jose West Quadrangle, 2002) as well as a Santa Clara County Liquefaction Hazard Zone (Santa Clara County, 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 7 feet. Following the liquefaction analysis framework in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008), incorporating updates in *CPT and SPT Based Liquefaction Triggering Procedures* (Boulanger and Idriss, 2014), and in accordance with CDMG Special Publication 117A guidelines (CDMG, 2008) for quantitative analysis, these layers were analyzed for liquefaction triggering and potential post-liquefaction settlement. These methods compare the ratio of the estimated cyclic shaking (Cyclic Stress Ratio - CSR) to the soil's estimated resistance to cyclic shaking (Cyclic Resistance Ratio - CRR), providing a factor of safety against liquefaction triggering. Factors of safety less than or equal to 1.3 are considered to be potentially liquefiable and capable of post-liquefaction re-consolidation (i.e. settlement).

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

The soil's CRR is estimated from the in-situ measurements from CPTs and laboratory testing on samples retrieved from our borings. SPT "N" values obtained from hollow-stem auger borings were not used in our analyses, as the "N" values obtained are less reliable in sands below groundwater. The tip pressures are corrected for effective overburden stresses, taking into consideration both the groundwater level at the time of exploration and the design groundwater level, and stress reduction versus depth factors. The CPT method utilizes the soil behavior type index ($I_C$) to estimate the plasticity of the layers. Selected soil samples collected from advancing the boring equipment adjacent to CPT-1, 2, and 4 were tested to evaluate grain size, 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 to CPT-4) are presented on Figures 5A to 5D of this report. Calculations for these CPTs are attached as Appendix D.

### 4.3.3 Summary

Our analyses indicate that several layers could potentially experience liquefaction triggering that could result in post-liquefaction total settlement at the ground surface of up to ⅔ inch, based on the Yoshimine (2006) method. As discussed in SP 117A, differential movement for level ground sites over deep soil sites will be up to about two-thirds of the total settlement between independent foundation elements. In our opinion, differential settlement is estimated to be less than to ½ inch between independent foundation elements or over a horizontal distance of 30 feet.

### 4.3.4 Ground Deformation and Surficial Cracking Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground deformation or sand boils. For ground deformation to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) indicates that the 7-foot-thick layer of non-liquefiable cap is sufficient to prevent ground deformation and significant surficial cracking; therefore, the above total settlement estimates are reasonable.

## 4.4 LATERAL SPREADING

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

The banks of the Guadalupe River are typically considered susceptible to lateral spreading; however, the site is located about ½ mile from the river. Therefore, in our opinion, the potential for lateral spreading to impact the site is low.

### 4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

Loose unsaturated sandy soils can settle during strong seismic shaking. The soil encountered at the site above the design high groundwater depth of 7 feet consisted of stiff to very stiff, clay and medium dense, clayey sand, it is our opinion the potential for significant seismic (i.e. unsaturated sand) settlement to occur is low.

### 4.6 FLOODING

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

## SECTION 5: CONCLUSIONS

### 5.1 SUMMARY

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

- Potential for liquefaction-induced settlement
- Presence of undocumented fill and redevelopment considerations
- Presence of deeper expansive soil
- Shallow groundwater
- Soil corrosion potential

#### 5.1.1 Potential for Liquefaction-Induced Settlement

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 sand to vent to the ground surface through cracks in the surficial soil is low, our analysis indicates that liquefaction-induced settlement of up to ⅔ inch could occur, resulting in differential settlement of less than ½ inch between independent foundation elements or over a horizontal distance of 30 feet. Foundations should be designed to tolerate the anticipated total and differential settlement. Detailed foundation recommendations are presented in the "Foundations" section.

#### 5.1.2 Undocumented Fill and Redevelopment Considerations

As discussed, undocumented fill was encountered in our borings at depths of 1½ to 4½ feet below surface grades and existing pavement. Contours indicating approximate depths of existing fill across the site are presented on Figure 4. The fill depths are to be used for planning purposes only. Based on this and our understanding of the site's history, fill is anticipated to be present across the site and variable in density and consistency. We recommend all

undocumented fills at the site be completely removed from within the building areas and replaced as engineered fill. Additional recommendations are provided in the "Earthwork" section.

As discussed, the site is currently occupied by existing buildings and appurtenant flatwork, site fixtures, and landscaping. We understand that most of the existing improvements will be demolished for the construction of the building additions with the exception of the existing Kirasaki House. Potential issues that are often associated with redeveloping sites include demolition of existing improvements, abandonment of existing utilities, and undocumented fills. Please refer to the "Earthwork" section below for further recommendations.

### 5.1.3 Shallow Groundwater

Groundwater was encountered at depths ranging from 13 to 13½ feet below the existing ground surface. A groundwater depth of 3½ feet was indicated at CPT-2; however, this depth was inferred from PPD measurements and assumed to be approximate. As discussed above, we recommend a design groundwater depth of 7 feet. Our experience with similar sites in the vicinity indicates that shallow groundwater could significantly impact grading and underground construction. These impacts typically consist of potentially wet and unstable pavement subgrade, difficulty achieving compaction, and difficult underground utility installation. Dewatering and shoring of utility trenches may be required in some isolated areas of the site. Detailed recommendations addressing this concern are presented in the "Earthwork" section of this report.

### 5.1.4 Presence deeper Expansive Soil

As discussed, low expansion potential fill soil generally blankets the site; however, this soil is underlain by native clayey soil observed to have low to moderate expansion potential. Expansive soil 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 the low expansive soil or layer of non-expansive fill; if footings extend through the low expansive soil, they should extend below the zone of seasonal moisture fluctuation. In addition, it is important to limit moisture changes in expansive soil by using positive drainage away from buildings as well as limiting landscaping watering. Evaluation of potential import sources for the site should consider the acceptable range of plasticity. Detailed grading and foundation recommendations addressing expansive soil concerns are presented in the following sections.

### 5.1.5 Soil Corrosion Potential

A preliminary soil corrosion screening was performed by JDH Corrosion Consultants based on the results of analytical tests on a sample of the near-surface soil. In general, the JDH letter concludes that the use of sulfate resistant concrete is not warranted at the site. However, the corrosion potential for buried metallic structures, such as metal pipes, is considered corrosive. JDH recommends that special requirements for corrosion control be made to protect metal

pipes. A more detailed discussion of the site corrosion evaluation is presented in Appendix C. As the preliminary soil corrosion screening was based on the results of limited sampling, consideration may be given to collecting and testing additional samples from the upper 6 feet for sulfates and pH to confirm the potential for corrosion to mortar coated steel and concrete.

### 5.2 PLANS AND SPECIFICATIONS REVIEW

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

### 5.3 CONSTRUCTION OBSERVATION AND TESTING

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

## SECTION 6: EARTHWORK

### 6.1 SITE DEMOLITION

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

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

#### 6.1.1 Demolition of Existing Slabs, Foundations and Pavements

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

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

Existing foundations are typically mat-slabs, shallow footings, or piers/piles. If slab or shallow footings are encountered, they should be completely removed. Foundation elements to remain in place should be surveyed and superimposed on the proposed development plans to determine the potential for conflicts or detrimental impacts to the planned construction. Following review, additional mitigation or planned foundation elements may need to be modified.

### 6.1.2 Abandonment of Existing Utilities

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

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

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

## 6.2 SITE CLEARING AND PREPARATION

### 6.2.1 Site Stripping

The site should be stripped of all surface vegetation, and surface and subsurface improvements to be removed within the proposed development area. Demolition of existing improvements is discussed in the prior paragraphs. A detailed discussion of removal of existing fills is provided later in this report. Surface vegetation and topsoil should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight. Based on our site observations, surficial stripping should extend about 4 to 6 inches below existing grade in vegetated areas.

### 6.2.2 Tree and Shrub Removal

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

## 6.3 MITIGATION OF UNDOCUMENTED FILL

As discussed above, low expansion potential fill was encountered in our borings at depths ranging from 1½ to 4½ feet below the existing grades at the site. We have provided contours that indicate the approximate depths of undocumented fill across the site. These contours are based on our limited exploration locations and are to be used for planning purposed only. All undocumented fills should be completely removed from within building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater. The underlying moderately expansive (native) soil will likely be mixed with the existing fill soil during over-excavation. In addition, spoils from excavations within areas with planned surface improvements that extend through the existing fill and into the underlying native soil should be placed in separate stockpiles. Provided the removed fills meet the "Material for Fill" requirements below, the fills may be reused when backfilling the excavations. Based on review of the samples collected from our borings, it appears that the fill may be reused. If materials are encountered that do not meet the requirements, such as debris, wood, trash, those materials should be screened out of the remaining material and be removed from the site. Backfill of excavations should be placed in lifts and compacted in accordance with the "Compaction" section below.

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

## 6.4 TEMPORARY CUT AND FILL SLOPES

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

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

## 6.5 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 to 12 inches, moisture conditioned, and compacted in accordance with the “Compaction” section below.

## 6.6 WET SOIL STABILIZATION GUIDELINES

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

As discussed in the “Subsurface” section in this report, the in-situ moisture contents are about 1 to 14 percent over the estimated laboratory optimum in the upper 10 feet of the soil profile. The contractor should anticipate drying the soils prior to reusing them as fill. In addition, repetitive rubber-tire loading will likely de-stabilize the soils.

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

### 6.6.1 Scarification and Drying

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

### 6.6.2 Removal and Replacement

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

## 6.7 MATERIAL FOR FILL

### 6.7.1 Re-Use of On-site Soil

On-site soils with an organic content less than 3 percent by weight may be reused as general fill. General fill should not have lumps, clods or cobble pieces larger than 6 inches in diameter;

85 percent of the fill should be smaller than 2½ inches in diameter. Minor amounts of oversize material (smaller than 12 inches in diameter) may be allowed provided the oversized pieces are not allowed to nest together and the compaction method will allow for loosely placed lifts not exceeding 12 inches.

### 6.7.2 Re-Use of On-Site Site Improvements

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.

### 6.7.3 Potential Import Sources

Non-expansive material should be inorganic with a Plasticity Index (PI) of 15 or less, and not contain recycled asphalt concrete where it will be used within the habitable building areas. Imported soil for use as general fill material should be inorganic with a Plasticity Index (PI) of 20 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 COMPACTION REQUIREMENTS

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

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

**Table 3: 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 |
| | 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 |
| | Low Expansion Soils | 90 | >1 |
| Flatwork Aggregate Base | Class 2 Aggregate Base[3] | 90 | Optimum |
| Pavement Subgrade | On-Site Expansive Soils | 87 - 92 | >3 |
| | Low Expansion Soils | 95 | >1 |
| Pavement Aggregate Base | Class 2 Aggregate Base[3] | 95 | Optimum |
| Asphalt Concrete | Asphalt Concrete | 95 (Marshall) | NA |

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

### 6.8.1 Construction Moisture Conditioning

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

## 6.9 TRENCH BACKFILL

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

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

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

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

## 6.10 SITE DRAINAGE

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

## 6.11 LOW-IMPACT DEVELOPMENT (LID) IMPROVEMENTS

The Municipal Regional Permit (MRP) requires regulated projects to treat 100 percent of the amount of runoff identified in Provision C.3.d from a regulated project's drainage area with low impact development (LID) treatment measures onsite or at a joint stormwater treatment facility. LID treatment measures are defined as rainwater harvesting and use, infiltration,

evapotranspiration, or biotreatment. A biotreatment system may only be used if it is infeasible to implement harvesting and use, infiltration, or evapotranspiration at a project site.

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

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

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

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

### 6.11.1 Storm Water Treatment Design Considerations

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

#### 6.11.1.1 General Bioswale Design Guidelines

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

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

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

#### 6.11.1.2 Bioswale Infiltration Material

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

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

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

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

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

#### 6.11.1.3 Bioswale Construction Adjacent to Pavements

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

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

- Concrete curbs for pavements, or lateral restraint for exterior flatwork, located directly adjacent to a vertical bioswale cut should be designed to resist lateral earth pressures in accordance with the recommendations in the “Retaining Walls” section of this report, or concrete curbs or edge restraint should be adequately keyed into the native soil or engineered to reduce the potential for rotation or lateral movement of the curbs.

### 6.12 LANDSCAPE CONSIDERATIONS

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

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

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

## SECTION 7: 2019 CBC SEISMIC DESIGN CRITERIA

### 7.1 SEISMIC DESIGN CRITERIA

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

#### 7.1.1 Site Location and Provided Data For 2019 CBC Seismic Design

The project is located at latitude 37.349370° and longitude -121.895461°, which is based on Google Earth (WGS84) coordinates at the approximate center of site in San Jose, California. We have assumed that a Seismic Importance Factor ($I_e$) of 1.00 has been assigned to the structure in accordance with Table 1.5-2 of ASCE 7-16 for structures classified as Risk Category II. The building period has not been provided by the project structural engineer.

### 7.2 2019 CBC SEISMIC DESIGN CRITERIA

As discussed in the “Subsurface” of our report, our CPT and exploratory borings encountered medium dense to dense sands and stiff to very stiff clay deposits to a depth of 83 feet, the maximum depth explored. Shear wave velocity ($V_S$) measurements were performed while advancing CPT-2, resulting in a time-averaged shear wave velocity for the top 30 meters ($V_{S30}$) of 209 meters per second (686 feet per second), for the upper 100 feet.

### 7.2.1 2019 CBC Seismic Design

As our borings encountered deep alluvial soils with shear wave velocity for the upper 30 meters between 600 and 1200 feet per second, per section 20.3.2 of ASCE 7-16, we have classified the site as Soil Classification D, which is described as a “stiff soil” profile. Because we used site specific data from our explorations and laboratory testing, the site class should be considered as “determined” for the purposes of estimating the seismic design parameters from the code. Our site-specific ground motion hazard analysis considered a $V_{S30}$ of 209 m/s (686 ft/s).

In accordance with Section 11.4.8 of ASCE 7-16, we performed a ground motion hazard analysis following Chapter 21, Section 21.2 of ASCE 7-16. We evaluated both Probabilistic $MCE_R$ Ground Motions in accordance with Method 1 and Deterministic $MCE_R$ Ground Motions to generate our recommended design response spectrum for the project. The recommended design spectral accelerations and associated periods are provided in graphically on Figure 6.

## SECTION 8: FOUNDATIONS

### 8.1 SUMMARY OF RECOMMENDATIONS

In our opinion, the proposed structure may be supported on shallow foundations consisting of conventional spread footings provided the recommendations in the “Earthwork” section and the sections below are followed.

### 8.2 SHALLOW FOUNDATIONS

#### 8.2.1 Conventional Shallow Footings

Conventional shallow footings should bear on natural, undisturbed soil or engineered fill, be at least 15 inches wide, and extend at least 18 inches below the lowest adjacent grade. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscaping topsoil. The deeper footing embedment is due to the presence of moderately expansive soils and is intended to embed the footing below the zone of significant seasonal moisture fluctuation, reducing the potential for differential movement.

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

### 8.2.2 Footing Settlement

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

**Table 4: Assumed Structural Loading**

| Foundation Area | Range of Assumed Loads |
|---|---|
| Interior Isolated Column Footing | 100 to 200 kips |
| Exterior Isolated Column Footing | 50 to 100 kips |
| Perimeter Strip Footing | 3 to 5 kips per lineal foot |

Based on the above loading and the allowable bearing pressures presented above, we estimate the total static footing settlement will be on the order of ¾ inch, with less than ½ inch of post-construction differential settlement between adjacent foundation elements. In addition, we estimate that differential seismic movement will be less than ½ inch, resulting in an estimated total (static plus seismic) differential footing movement of less than 1 inch between foundation elements, assumed to be on the order of 30 feet. As our footing loads were assumed, we recommend we be retained to review the final footing layout and loading, and verify the settlement estimates above.

### 8.2.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of footing and the supporting subgrade, and also by passive pressures generated against footing sidewalls. An ultimate frictional resistance of 0.40 applied to the footing dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 400 pcf may be used in design. The structural engineer should apply an appropriate factor of safety (such as 1.5) to the ultimate values above. Where footings are adjacent to landscape areas without hardscape, the upper 12 inches of soil should be neglected when determining passive pressure capacity.

### 8.2.4 Conventional Shallow Footing Construction Considerations

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

Footing excavations should be filled as soon as possible or be kept moist until concrete placement by regular sprinkling to prevent desiccation. A Cornerstone representative should

observe all footing excavations prior to placing reinforcing steel and concrete. If there is a significant schedule delay between our initial observation and concrete placement, we may need to re-observe the excavations.

## SECTION 9: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

### 9.1 INTERIOR SLABS-ON-GRADE

Due to the moderate expansion potential of the surficial soils, the proposed slabs-on-grade should be at least 5 inches thick and be supported on at least 6 inches of non-expansive fill (NEF) to reduce the potential for slab damage due to soil heave. The NEF layer should be constructed over subgrade prepared in accordance with the recommendations in the "Earthwork" section of this report. If moisture-sensitive floor coverings are planned, the recommendations in the "Interior Slabs Moisture Protection Considerations" section below may be incorporated in the project design if desired. If significant time elapses between initial subgrade preparation and slab-on-grade NEF construction, the subgrade should be proof-rolled to confirm subgrade stability, and if the soil has been allowed to dry out, the subgrade should be re-moisture conditioned to at least 3 percent over the optimum moisture content.

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

### 9.2 INTERIOR SLABS MOISTURE PROTECTION CONSIDERATIONS

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

- Place a minimum 15-mil vapor retarder conforming to ASTM E 1745, Class C requirements or better directly below the concrete slab; the vapor retarder should extend to the slab edges and be sealed at all seams and penetrations in accordance with manufacturer's recommendations and ASTM E 1643 requirements. A 4-inch-thick capillary break, consisting of crushed rock should be placed below the vapor retarder and consolidated in place with vibratory equipment. The mineral aggregate shall be of such size that the percentage composition by dry weight as determined by laboratory sieves will conform to the following gradation:

| Sieve Size | Percentage Passing Sieve |
|---|---|
| 1” | 100 |
| ¾” | 90 – 100 |
| No. 4 | 0 – 10 |
| No. 200 | 0 – 5 |

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

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

### 9.3 EXTERIOR FLATWORK

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

## SECTION 10: VEHICULAR PAVEMENTS

### 10.1 ASPHALT CONCRETE

The following asphalt concrete pavement recommendations tabulated below are based on the Procedure 608 of the Caltrans Highway Design Manual, estimated traffic indices for various pavement-loading conditions, and on a design R-value of 5. The design R-value was chosen based on engineering judgement considering the variable and expansive soil conditions.

**Table 5: Asphalt Concrete Pavement Recommendations**

| Design Traffic Index (TI) | Asphalt Concrete (inches) | Class 2 Aggregate Base[1] (inches) | Total Pavement Section Thickness (inches) |
|---|---|---|---|
| 4.0 | 2.5 | 7.5 | 10.0 |
| 4.5 | 2.5 | 9.5 | 12.0 |
| 5.0 | 3.0 | 10.0 | 13.0 |
| 5.5 | 3.0 | 12.0 | 15.0 |
| 6.0 | 3.5 | 13.0 | 16.5 |
| 6.5 | 4.0 | 13.5 | 17.5 |

[1]Caltrans Class 2 aggregate base; minimum R-value of 78; subgrade R-value of 5

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

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

## 10.2 PORTLAND CEMENT CONCRETE

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

For design, we assumed a worst-case Average Daily Truck Traffic (ADTT) of 400 was used for the planned concrete street pavement. The following table presents minimum PCC pavements thicknesses for various traffic loading categories and the anticipated maximum Average Daily Truck Traffic (ADTT).

**Table 6: PCC Pavement Recommendations**

| Traffic Category | Minimum PCC Thickness[1] (inches) | Class 2 Aggregate Base Thickness (inches) |
|---|---|---|
| Maximum ADTT = 10 | 6.5 | 6 |
| Maximum ADTT = 20 | 7.0 | 6 |
| Maximum ADTT = 80 | 7.5 | 6 |

[1]Subgrade design R-Value = 5

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

### 10.3.1 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 should be increased to a minimum PCC thickness of 7 inches. The compressive strength, underlayment, and construction details should be consistent with the above recommendations for PCC pavements.

## 10.4 PAVEMENT CUTOFF

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

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

# SECTION 11: RETAINING WALLS

## 11.1 STATIC LATERAL EARTH PRESSURES

The structural design of any site retaining wall 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 7: Recommended Lateral Earth Pressures**

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

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

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

## 11.2 SEISMIC LATERAL EARTH PRESSURES

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

## 11.2 WALL DRAINAGE

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

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

the connection. At corners, a corner guard, corner connection insert, or a section of crushed rock covered with filter fabric must be used to maintain the drainage path.

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

### 11.3 BACKFILL

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

### 11.4 FOUNDATIONS

In general, conventional at-grade site retaining walls may be supported on a continuous conventional footing. Strip footings should bear on natural, undisturbed soil or entirely on engineered fill, and extend at least 12 inches below the lowest adjacent grade.

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 of mats of reinforcing steel should be included in continuous footings to help span irregularities and differential settlement.

## SECTION 12: LIMITATIONS

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

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

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

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

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

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

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

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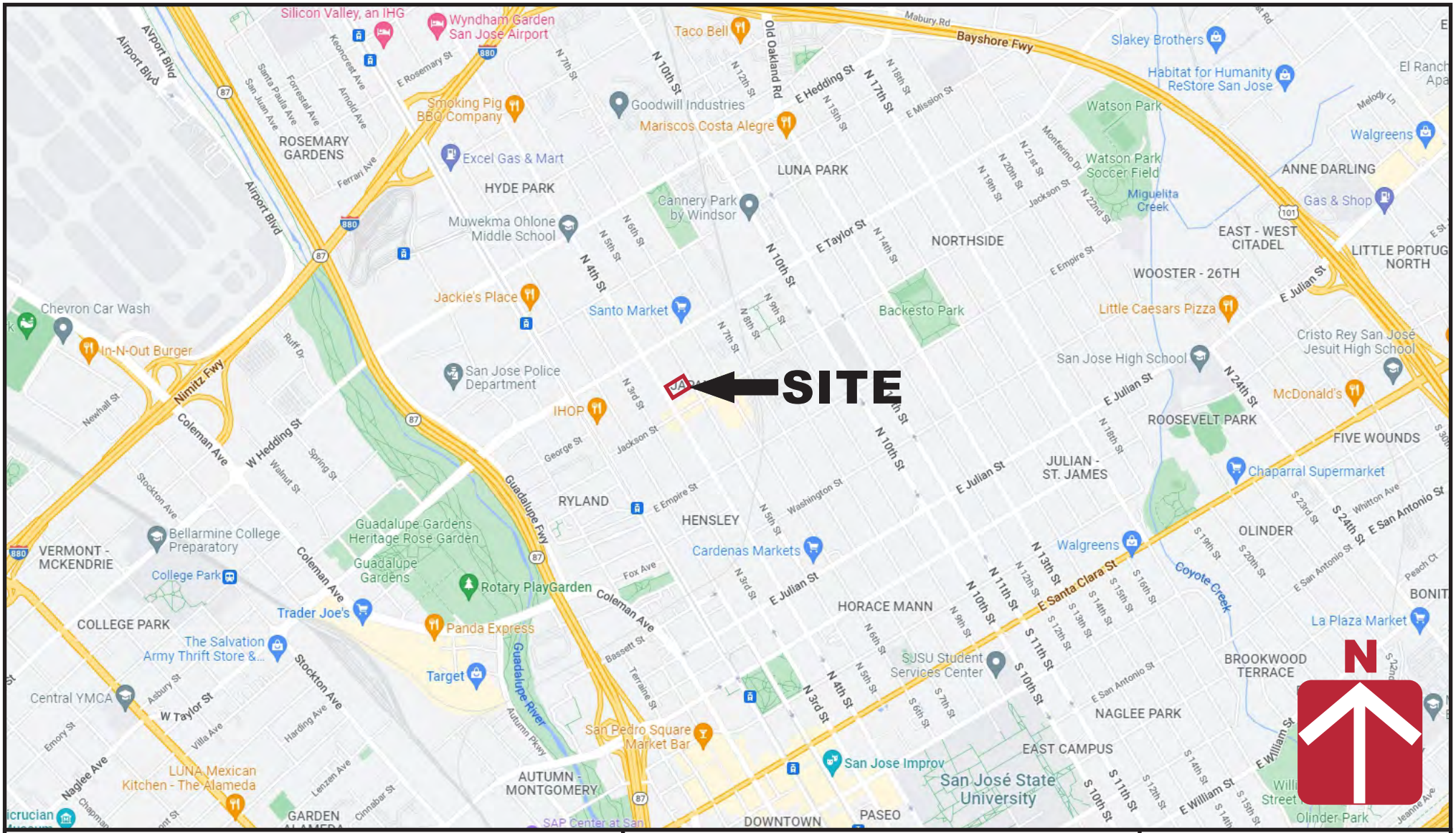


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**Vicinity Map**

**SJBCB New Education Building**
**639 North 5th Street**
**San Jose, CA**

| | |
|---|---|
| Project Number | 1353-1-3 |
| Figure Number | Figure 1 |
| Date | April 2022 |
| Drawn By | RRN |




**Legend**

Approximate location of exploratory boring (EB)

Approximate location of cone penetration test (CPT)

0 30 60

APPROXIMATE SCALE (FEET)

Base by Google Earth, dated 09/04/2020
Overlay by Aedis Architects, Proposed Site Plan, dated 02/03/2022

Site Plan

**SJBCB New Education Building**
**639 North 5th Street**
**San Jose, CA**

| Project Number | Figure Number | Date | Drawn By |
|---|---|---|---|
| 1353-1-3 | Figure 2 | April 2022 | RRN |

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

Project Number: 1353-1-3

Figure Number: Figure 3

Date: April 2022

Drawn By: RRN

**Regional Fault Map**

**SJBCB New Education Building**
**639 North 5th Street**
**San Jose, CA**

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**Legend**

| | |
|---|---|
| 3' | Depth of fill from Top of AC Pavement (TAC) |
| 3'——3' | Approximate depth of fill contour in feet (Note: Fill depths may vary from the contours shown) |
| ⊕ | Approximate location of exploratory boring (EB) |
| ▲ | Approximate location of cone penetration test (CPT) |

0 30 60
APPROXIMATE SCALE (FEET)

Base by Google Earth, dated 09/04/2020
Overlay by Aedis Architects, Proposed Site Plan, dated 02/03/2022

Project Number 1353-1-3
Figure Number Figure 4
Date April 2022
Drawn By RRN

**Fill Contour Map**

**SJBCB New Education Building**
**639 North 5th Street**
**San Jose, CA**

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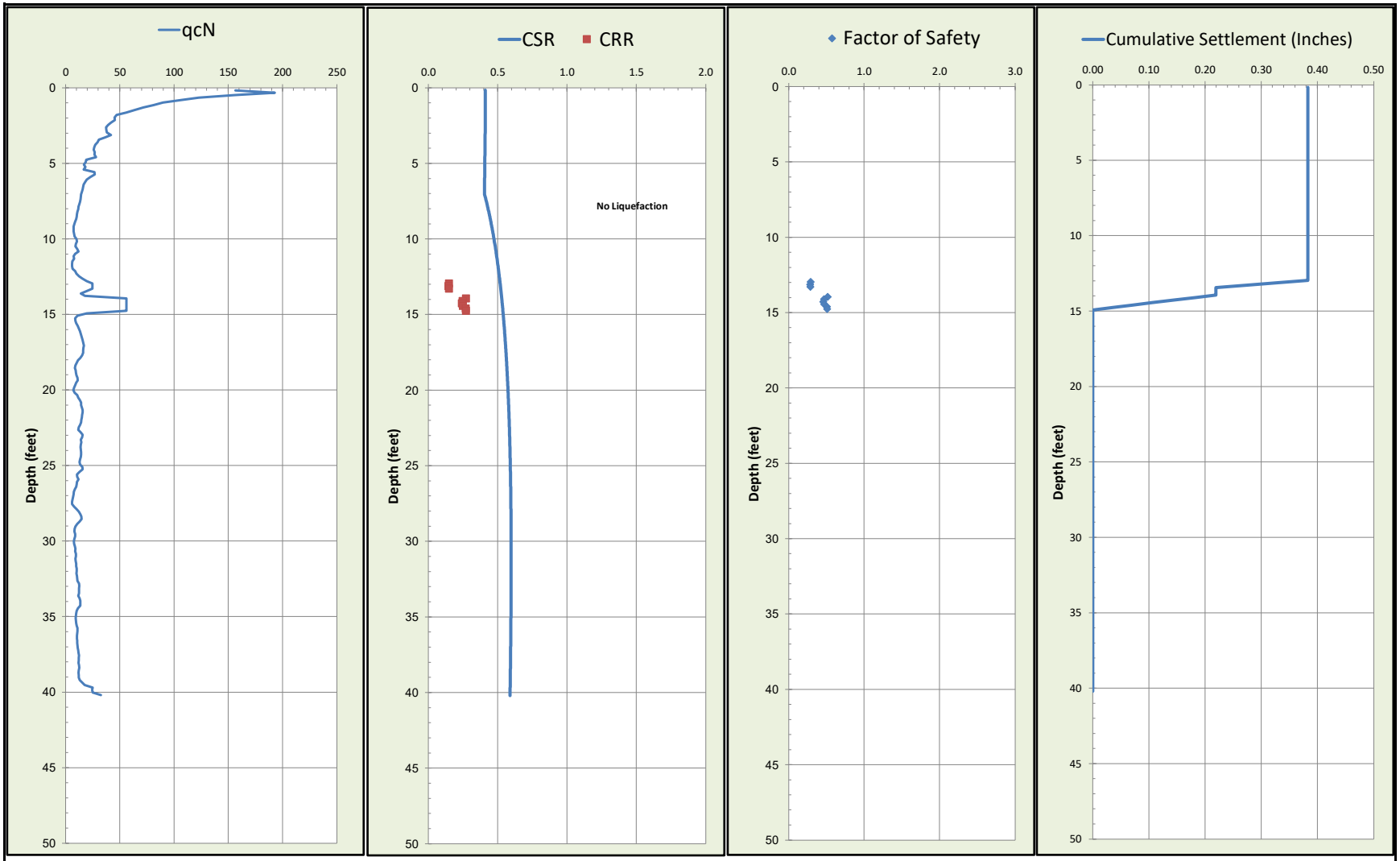
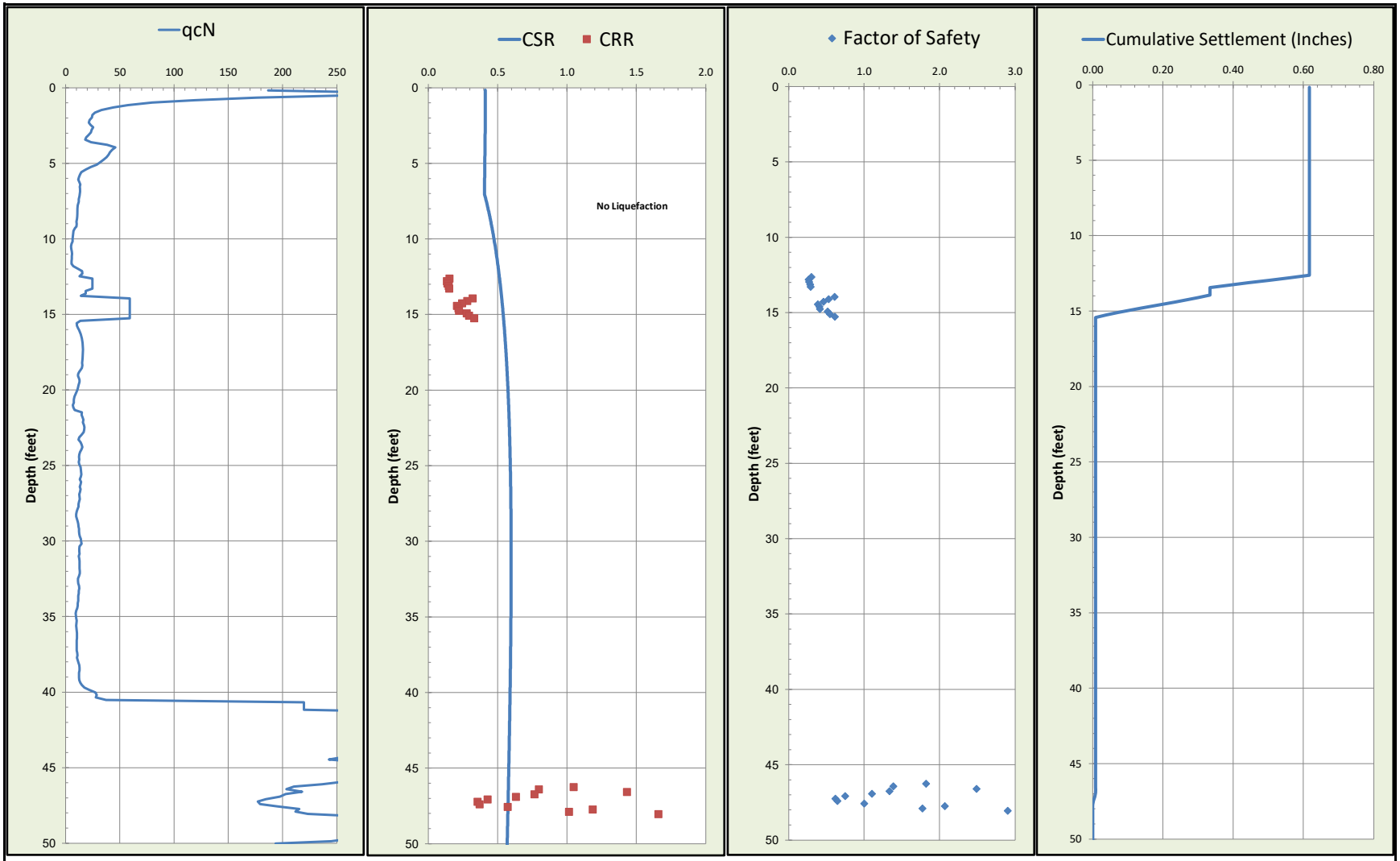



CORNERSTONE EARTH GROUP

**Liquefaction Analysis Summary**

**SJBCB New Education Bldg**
**San Jose, California**

| | |
|---|---|
| Project Number | 1353-1-3 |
| Figure Number | Figure 5A |
| 4/29/2022 | CPT No. 1 |

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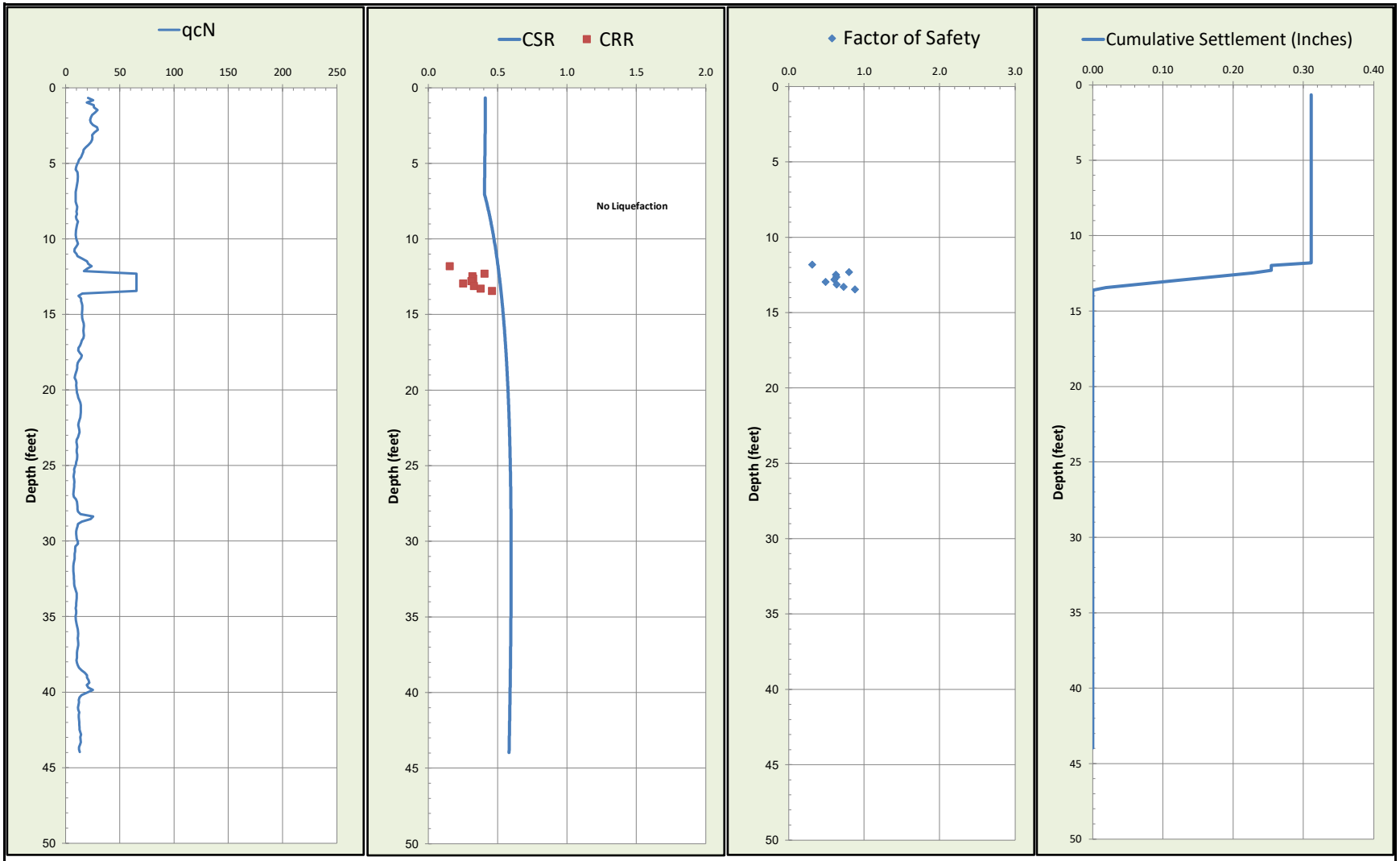
**Liquefaction Analysis Summary**

**SJBCB New Education Bldg**
**San Jose, California**

| | |
|---|---|
| Project Number | 1353-1-3 |
| Figure Number | Figure 5B |
| 4/29/2022 | CPT No. 2 |

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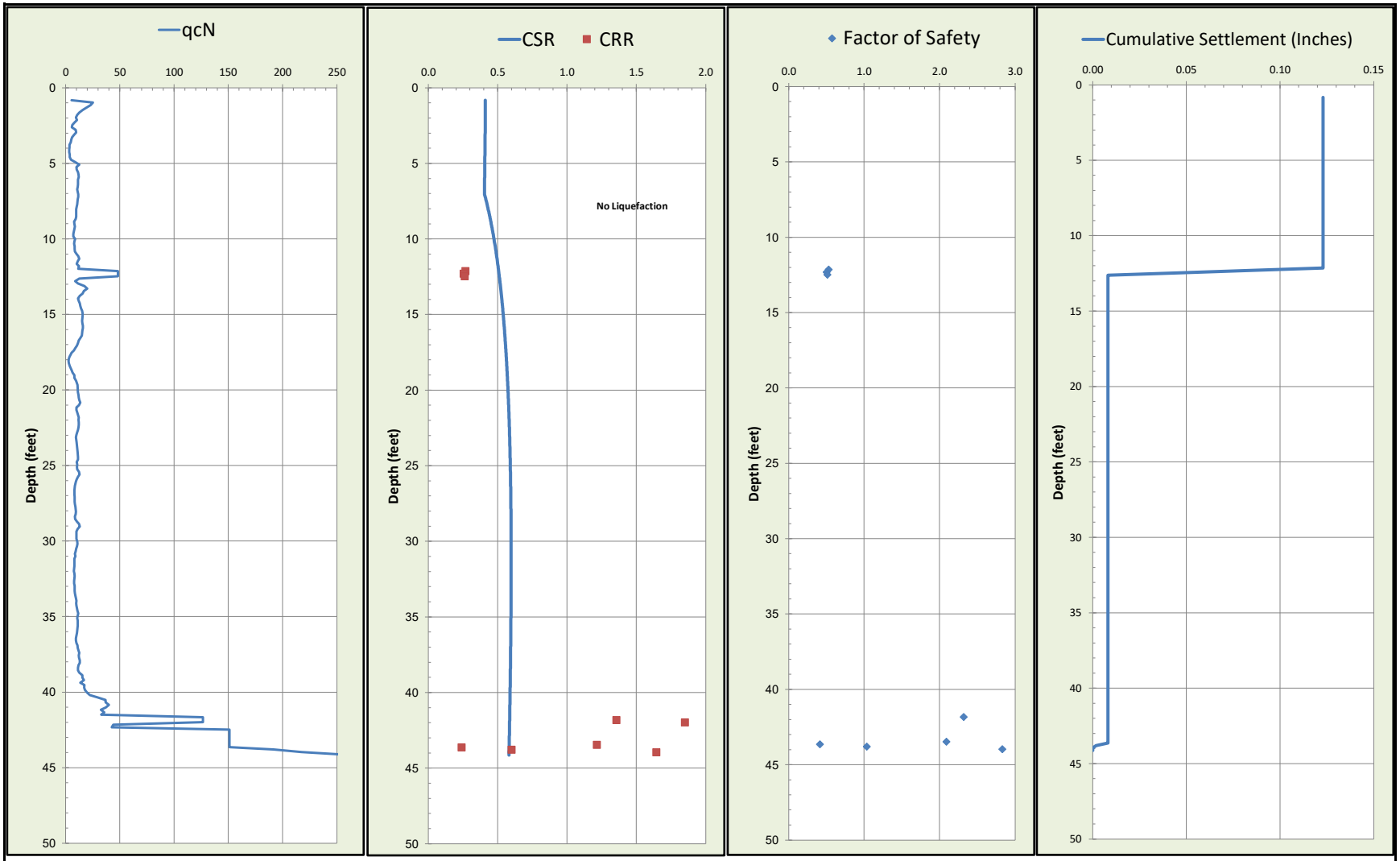
**Liquefaction Analysis Summary**

**SJBCB New Education Bldg**
**San Jose, California**

| | |
|---|---|
| Project Number | 1353-1-3 |
| Figure Number | Figure 5C |
| 4/29/2022 | CPT No. 3 |

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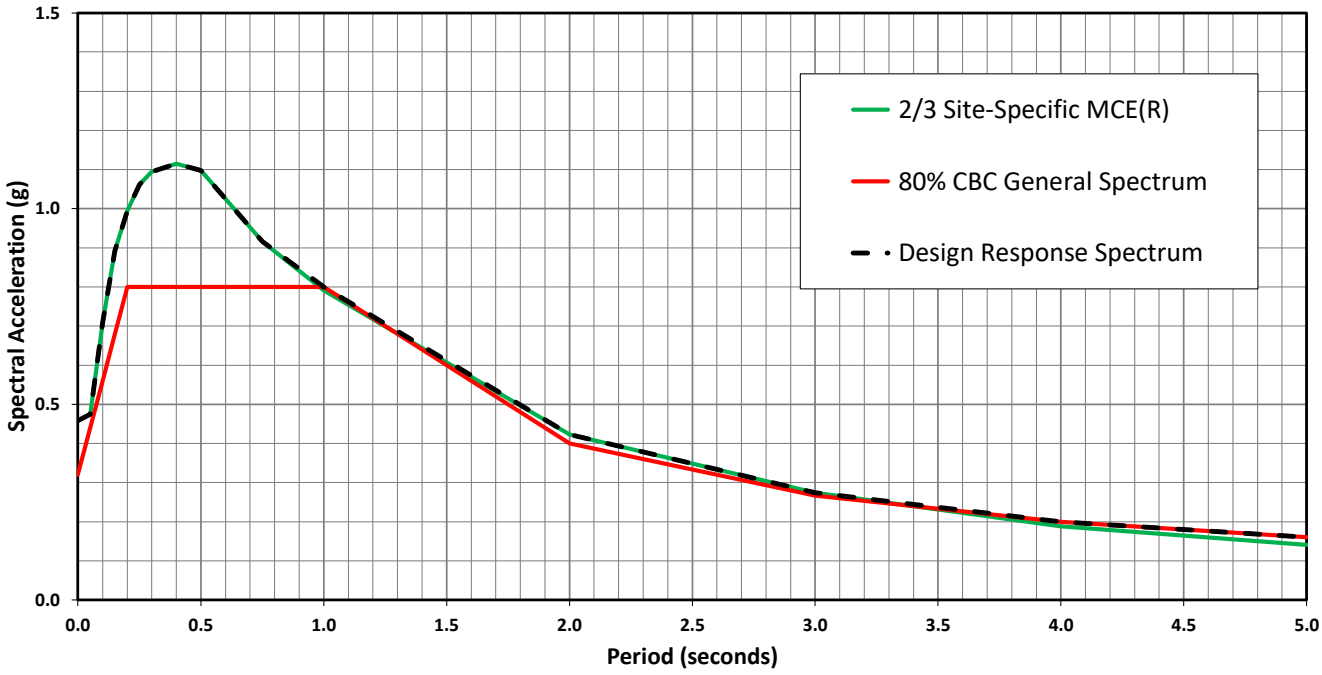
**Liquefaction Analysis Summary**

**SJBCB New Education Bldg**

**San Jose, California**

| | |
|---|---|
| Project Number | 1353-1-3 |
| Figure Number | Figure 5D |
| 4/29/2022 | CPT No. 4 |




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 | 0.458 |
| 0.05 | 0.475 |
| 0.10 | 0.710 |
| 0.15 | 0.893 |
| 0.20 | 0.994 |
| 0.25 | 1.062 |
| 0.30 | 1.094 |
| 0.40 | 1.114 |
| 0.50 | 1.098 |
| 0.75 | 0.916 |
| 1.00 | 0.800 |
| 2.00 | 0.423 |
| 3.00 | 0.274 |
| 4.00 | 0.200 |
| 5.00 | 0.160 |

| Site Design | Design Values |
|---|---|
| | |
| Site Class (Per Chapter 20 ASCE 7-16) | D |
| | |
| Shear Wave Velocity, $V_{S30}$ (m/sec) | 209 |
| | |
| Site Latitude (degrees) | 37.349370 |
| | |
| Site Longitude (degrees) | -121.895461 |
| | |
| Risk Category | II |
| | |
| Building Period (sec) | Unknown |
| | |
| Importance Factor, $I_e$ | 1 |
| | |
| [1]Site Specific $PGA_M$ (g) | 0.63 |
| | |

[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] | |
|---|---|
| | |
| $S_{DS}$ | 1.003 |
| | |
| $S_{D1}$ | 0.846 |
| | |
| $S_{MS}$ | 1.504 |
| | |
| $S_{M1}$ | 1.269 |

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 |
|---|---|
| SJBCB New Education Bldg<br>639 North 5th Street<br>San Jose, CA | PROJECT NO. 1353-1-3 |
| | April 19, 2022 \| NSD |

## APPENDIX A: FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using truck-mounted, hollow-stem auger drilling equipment and 20-ton truck-mounted Cone Penetration Test equipment. Four 8-inch-diameter exploratory borings were drilled on March 25, 2022 to depths of 6½ to 40 feet. Four CPT soundings were also performed in accordance with ASTM D 5778-95 (revised, 2002) on March 23 and 31, 2022, to depths ranging from 40 to 83 feet. The approximate locations of exploratory borings and CPTs are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). Boring logs, as well as a key to the classification of the soil, are included as part of this appendix.

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

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

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

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

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

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

# UNIFIED SOIL CLASSIFICATION (ASTM D-2487-10)

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

## OTHER MATERIAL SYMBOLS

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

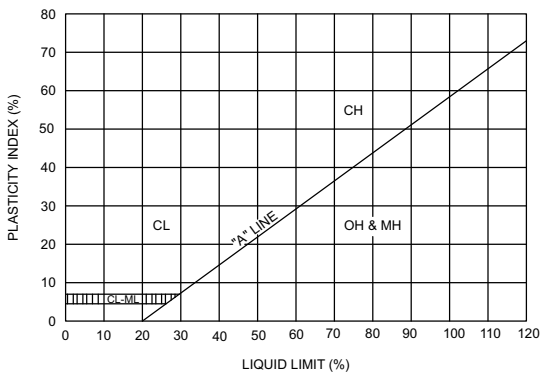
## SAMPLER TYPES

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

## ADDITIONAL TESTS

| | | | | | |
|---|---|---|---|---|---|
| CA | - | CHEMICAL ANALYSIS (CORROSIVITY) | 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** San Jose Buddhist Temple
**PROJECT NUMBER** 1353-1-3
**PROJECT LOCATION** San Jose, CA

**DATE STARTED** 3/25/22 **DATE COMPLETED** 3/25/22
**GROUND ELEVATION** _____ **BORING DEPTH** 40 ft.
**DRILLING CONTRACTOR** Exploration Geoservices Inc.
**LATITUDE** 37.349142° **LONGITUDE** -121.895693°
**DRILLING METHOD** Mobile B-53, 8 inch Hollow-Stem Auger
**GROUND WATER LEVELS:**
**LOGGED BY** EA
▽ **AT TIME OF DRILLING** 13.5 ft.
**NOTES** _____
▼ **AT END OF DRILLING** 7.5 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 | 1 inch of crushed rock | | | | | | |
| | | **Clayey Sand with Gravel (SC) [Fill]** medium dense, moist, brown, fine to medium sand, fine to coarse subangular gravel, some brick fragments | 19 | MC-1B | 101 | 8 | | |
| | | **Clayey Sand (SC)** loose, moist, brown, fine to medium sand, some fine subangular gravel, some asphalt fragments | 15 | MC-2B | 97 | 11 | | 49 |
| | 5 | **Lean Clay (CL)** very stiff, moist, moist, brown with gray mottles, some fine sand, moderate plasticity | 30 | MC-3B | 104 | 19 | | |
| | | becomes stiff | | ST-4 | 101 | 24 | | |
| | 10 | becomes medium stiff | 16 | MC-5B | 95 | 28 | | 90 |
| | | **Silty Sand (SM)** medium dense, moist, moist, brown, fine to medium sand | 19 | SPT-6B | | 32 | | |
| | 15 | **Lean Clay (CL)** very stiff, moist, moist, gray with brown mottles, some fine sand, moderate plasticity | | | | | | |
| | | | 32 | MC-7B | 96 | 27 | | |
| | 20 | | | | | | | |
| | | becomes medium stiff | 46 | MC-8B | 91 | 32 | | |
| | 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 - 4/22/22 08:05 - P:\DRAFTING\GINT FILES\1353-1-1 NORTH 5TH ST.GPJ

# BORING NUMBER EB-1



CORNERSTONE EARTH GROUP

**PROJECT NAME** San Jose Buddhist Temple

**PROJECT NUMBER** 1353-1-3

**PROJECT LOCATION** San Jose, CA

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| ELEVATION (ft) | DEPTH (ft) | SYMBOL | DESCRIPTION | N-Value (uncorrected) blows per foot | SAMPLES TYPE AND NUMBER | DRY UNIT WEIGHT PCF | NATURAL MOISTURE CONTENT | PLASTICITY INDEX, % | PERCENT PASSING No. 200 SIEVE |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Lean Clay (CL)**<br>very stiff, moist, moist, gray with brown mottles, some fine sand, moderate plasticity | | | | | | |
| | | | | 35 | MC-9B | 96 | 26 | | |
| | 30 | | | | | | | | |
| | | | becomes stiff | 24 | MC-10B | 88 | 32 | | |
| | 35 | | | | | | | | |
| | | | some organics | 23 | MC-11B | 65 | 41 | | |
| | 40 | | 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 - 4/22/22 08:05 - P:\DRAFTING\GINT FILES\1353-1-1 NORTH 5TH ST.GPJ

# BORING NUMBER EB-2



CORNERSTONE EARTH GROUP

**PROJECT NAME** San Jose Buddhist Temple
**PROJECT NUMBER** 1353-1-3
**PROJECT LOCATION** San Jose, CA

**DATE STARTED** 3/25/22 **DATE COMPLETED** 3/25/22
**GROUND ELEVATION** _____ **BORING DEPTH** 25 ft.
**DRILLING CONTRACTOR** Exploration Geoservices Inc.
**LATITUDE** 37.349360° **LONGITUDE** -121.895470°
**DRILLING METHOD** Mobile B-53, 8 inch Hollow-Stem Auger
**GROUND WATER LEVELS:**
**LOGGED BY** EA
▽ **AT TIME OF DRILLING** 13 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 | 1 inch of crushed rock | | | | | | |
| | | **Clayey Sand with Gravel (SC) [Fill]** loose, moist, brown, fine to medium sand, fine to coarse subangular gravel | 17 | MC-1C | 120 | 12 | 9 | |
| | | **Sandy Lean Clay (CL)** hard, moist, brown, fine to medium sand, low plasticity Liquid Limit = 24, Plastic Limit = 15 | 33 | MC-2B | 92 | 20 | | 88 |
| | 5 | **Lean Clay (CL)** very stiff, moist, brown with gray mottles, some fine sand, moderate plasticity | 24 | MC-3B | 90 | 28 | | |
| | | **Lean Clay with Sand (CL)** stiff, moist, brown with gray mottles, fine sand, moderate plasticity | 21 | MC-4B | 98 | 24 | | |
| | 10 | | | | | | | |
| | | **Silty Sand (SM)** loose, moist, brown, fine to medium sand | 14 | MC-5B | 101 | 25 | | 26 |
| | | | 12 | SPT-6B | | 28 | | |
| | 15 | **Lean Clay with Sand (CL)** stiff, moist, gray with brown mottles, fine sand, moderate plasticity | | | | | | |
| | | | | ST-7 | 90 | 28 | | |
| | 20 | | | | | | | |
| | | **Lean Clay (CL)** very stiff, moist, gray with brown mottles, some fine sand, moderate plasticity | 22 | MC | | | | |
| | | | 36 | MC-9B | 96 | 26 | | |
| | 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
>4.5

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 4/22/22 08:05 - P:\DRAFTING\GINT FILES\1353-1-1 NORTH 5TH ST.GPJ

# BORING NUMBER EB-3



CORNERSTONE EARTH GROUP

**PROJECT NAME** San Jose Buddhist Temple
**PROJECT NUMBER** 1353-1-3
**PROJECT LOCATION** San Jose, CA

**DATE STARTED** 3/25/22 **DATE COMPLETED** 3/25/22
**GROUND ELEVATION** _____ **BORING DEPTH** 35 ft.
**DRILLING CONTRACTOR** Exploration Geoservices Inc. **LATITUDE** 37.349451° **LONGITUDE** -121.895003°
**DRILLING METHOD** Mobile B-53, 8 inch Hollow-Stem Auger **GROUND WATER LEVELS:**
**LOGGED BY** EA ▽ **AT TIME OF DRILLING** 13 ft.
**NOTES** _____ ▼ **AT END OF DRILLING** 10 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 | | 4½ inches Portland cement concrete over 2 inches aggregate base | | | | | | |
| | | | **Sandy Lean Clay with Gravel (CL) [Fill]** moist, brown, fine to medium sand, fine to coarse subangular gravel, some metal debris, low plasticity | | GB-1 | | 14 | | |
| | | | | | GB | | | | |
| | | | **Lean Clay (CL)** stiff, moist, brown with gray mottles, some fine sand, moderate plasticity | 15 | MC-3B | 95 | 25 | | |
| | 5 | | | 22 | MC-4B | 95 | 23 | | |
| | | | | 16 | MC-5B | 102 | 22 | | |
| | 10 | | **Silty Sand (SM)** loose, wet, gray, fine to medium sand | 17 | MC-6B | 98 | 26 | | 48 |
| | | | | 32 | SPT-7B | | 28 | | |
| | 15 | | **Lean Clay (CL)** stiff, moist, gray with brown mottles, some fine sand, moderate plasticity | | | | | | |
| | | | | 19 | MC-8B | 90 | 31 | | |
| | 20 | | | | | | | | |
| | | | | 24 | MC-9B | 88 | 33 | | |
| | 25 | | | | | | | | |

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

*Continued Next Page*

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 4/22/22 08:05 - P:\DRAFTING\GINT FILES\1353-1-1 NORTH 5TH ST.GPJ

# BORING NUMBER EB-3



CORNERSTONE EARTH GROUP

**PROJECT NAME** San Jose Buddhist Temple

**PROJECT NUMBER** 1353-1-3

**PROJECT LOCATION** San Jose, CA

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| ELEVATION (ft) | DEPTH (ft) | SYMBOL | DESCRIPTION | N-Value (uncorrected) blows per foot | SAMPLES TYPE AND NUMBER | DRY UNIT WEIGHT PCF | NATURAL MOISTURE CONTENT | PLASTICITY INDEX, % | PERCENT PASSING No. 200 SIEVE | UNDRAINED SHEAR STRENGTH, ksf (○ HAND PENETROMETER, △ TORVANE, ● UNCONFINED COMPRESSION, ▲ UNCONSOLIDATED-UNDRAINED TRIAXIAL; 1.0 2.0 3.0 4.0) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Lean Clay (CL)**<br>stiff, moist, gray with brown mottles, some fine sand, moderate plasticity | | | | | | | |
| | 30 | | | 20 | MC-10B | 87 | 32 | | | ○ |
| | | | | 14 | MC | | | | | ○ |
| | 35 | | Bottom of Boring at 35.0 feet. | | | | | | | |
| | 40 | | | | | | | | | |
| | 45 | | | | | | | | | |
| | 50 | | | | | | | | | |
| | 55 | | | | | | | | | |

CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 4/22/22 08:05 - P:\DRAFTING\GINT FILES\1353-1-1 NORTH 5TH ST.GPJ

# BORING NUMBER EB-4



CORNERSTONE EARTH GROUP

**PROJECT NAME** San Jose Buddhist Temple
**PROJECT NUMBER** 1353-1-3
**PROJECT LOCATION** San Jose, CA

**DATE STARTED** 3/25/22 **DATE COMPLETED** 3/25/22
**GROUND ELEVATION** _____ **BORING DEPTH** 6.5 ft.
**DRILLING CONTRACTOR** Exploration Geoservices Inc.
**LATITUDE** 37.349426° **LONGITUDE** -121.895825°
**DRILLING METHOD** Mobile B-53, 8 inch Hollow-Stem Auger
**GROUND WATER LEVELS:**
**LOGGED BY** EA
**AT TIME OF DRILLING** Not Encountered
**NOTES** _____
**AT END OF DRILLING** Not Encountered

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| ELEVATION (ft) | DEPTH (ft) | SYMBOL | DESCRIPTION | N-Value (uncorrected) blows per foot | SAMPLES TYPE AND NUMBER | DRY UNIT WEIGHT PCF | NATURAL MOISTURE CONTENT | PLASTICITY INDEX, % | PERCENT PASSING No. 200 SIEVE | UNDRAINED SHEAR STRENGTH, ksf |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | 1¾ inch of crushed rock | | | | | | | |
| | | | **Sandy Lean Clay with Gravel (CL) [Fill]** hard, moist, brown, fine to medium sand, fine to coarse subangular gravel, some brick fragments, low plasticity | 48 | MC-1B | 106 | 10 | | | >4.5 |
| | | | | 32 | MC-2B | | 15 | | | >4.5 |
| | 5 | | **Lean Clay (CL)** stiff, moist, brown with gray mottles, some fine sand, moderate plasticity | 13 | SPT | | | | | |
| | | | Bottom of Boring at 6.5 feet. | | | | | | | |
| | 10 | | | | | | | | | |
| | 15 | | | | | | | | | |
| | 20 | | | | | | | | | |
| | 25 | | | | | | | | | |

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

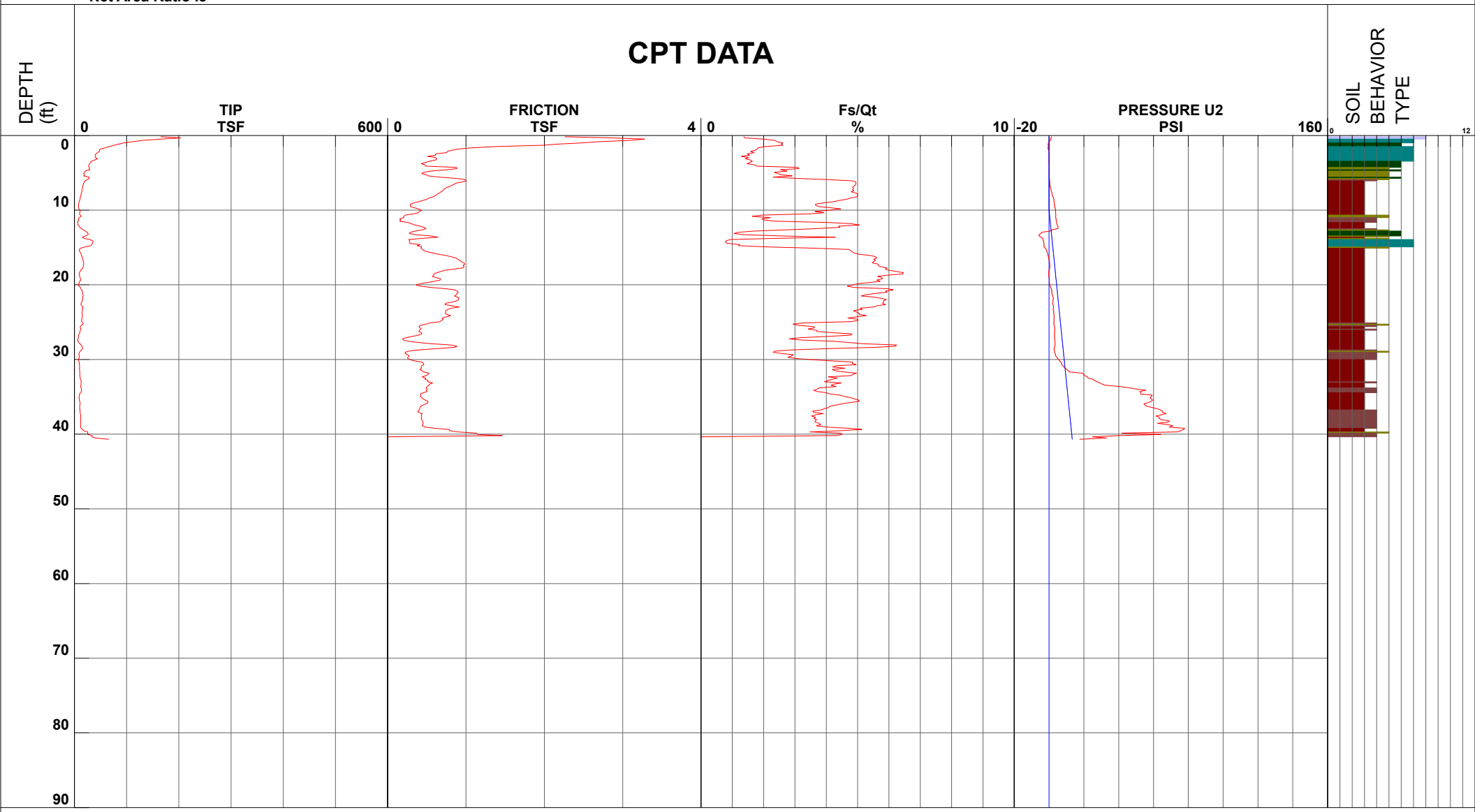
CORNERSTONE EARTH GROUP2 - CORNERSTONE 0812.GDT - 4/22/22 08:05 - P:\DRAFTING\GINT FILES\1353-1-1 NORTH 5TH ST.GPJ

# Cornerstone Earth Group

| | | | | | |
|---|---|---|---|---|---|
| Project | SJBCB New Education Bldg GI | Operator | BH-GM | Filename | SDF(883).cpt |
| Job Number | 1353-3-1 | Cone Number | DDG1589 | GPS | |
| Hole Number | CPT-01 | Date and Time | 3/23/2022 6:01:37 PM | Maximum Depth | 40.68 ft |
| EST GW Depth During Test | | 10.00 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 15cm squared

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

# SJBCB New Education Bldg GI

Project ID: Cornerstone Earth Group
Data File: SDF(883).cpt
CPT Date: 3/23/2022 6:01:37 PM
GW During Test: 10 ft


Sounding ID: CPT-01
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - * | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx * | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.33 | 203.9 | 327.1 | 332.2 | 204.0 | 2.9 | 0.9 | 1.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 65 | 41 | 57 | 95 | 48 | - | - | 6 | 0.350 | 1.67 | 16 |
| 0.49 | 165.0 | 264.6 | 301.9 | 165.0 | 3.3 | 1.2 | 2.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 33 | 49 | 95 | 48 | - | - | 9 | 0.350 | 1.84 | 16 |
| 0.66 | 130.0 | 208.4 | 262.4 | 130.0 | 3.1 | 0.6 | 2.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 42 | 26 | 40 | 91 | 48 | - | - | 12 | 0.350 | 1.97 | 16 |
| 0.82 | 111.4 | 178.7 | 235.6 | 111.4 | 2.7 | 0.0 | 2.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 60 | 37 | 35 | 86 | 48 | - | - | 13 | 0.200 | 2.01 | 16 |
| 0.98 | 95.1 | 152.5 | 217.2 | 95.1 | 2.5 | -0.3 | 2.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 51 | 32 | 31 | 81 | 48 | - | - | 15 | 0.200 | 2.08 | 16 |
| 1.15 | 85.7 | 137.4 | 200.9 | 85.7 | 2.2 | -0.5 | 2.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 46 | 29 | 28 | 77 | 48 | - | - | 16 | 0.200 | 2.10 | 16 |
| 1.31 | 75.8 | 121.6 | 187.5 | 75.8 | 2.0 | -0.5 | 2.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 41 | 25 | 25 | 73 | 48 | - | - | 17 | 0.200 | 2.14 | 16 |
| 1.48 | 67.4 | 108.1 | 158.2 | 67.4 | 1.4 | -0.4 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 36 | 22 | 22 | 70 | 48 | - | - | 16 | 0.200 | 2.10 | 16 |
| 1.64 | 59.2 | 94.9 | 138.4 | 59.2 | 1.1 | -0.6 | 1.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 32 | 20 | 19 | 65 | 48 | - | - | 16 | 0.200 | 2.10 | 16 |
| 1.80 | 49.9 | 80.1 | 124.7 | 49.9 | 0.9 | -0.6 | 1.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 27 | 17 | 17 | 60 | 48 | - | - | 17 | 0.200 | 2.15 | 16 |
| 1.97 | 47.7 | 76.5 | 119.8 | 47.7 | 0.8 | 0.0 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 26 | 16 | 16 | 58 | 47 | - | - | 18 | 0.200 | 2.16 | 16 |
| 2.13 | 48.0 | 77.0 | 116.2 | 48.0 | 0.8 | 0.0 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 26 | 16 | 16 | 58 | 47 | - | - | 17 | 0.200 | 2.13 | 16 |
| 2.30 | 44.4 | 71.2 | 114.3 | 44.4 | 0.8 | 0.1 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 24 | 15 | 15 | 56 | 46 | - | - | 18 | 0.200 | 2.17 | 16 |
| 2.46 | 41.4 | 66.4 | 104.3 | 41.4 | 0.6 | 0.0 | 1.5 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 22 | 14 | 14 | 53 | 46 | - | - | 18 | 0.200 | 2.16 | 16 |
| 2.62 | 39.6 | 63.5 | 103.6 | 39.6 | 0.6 | 0.0 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 21 | 13 | 13 | 52 | 45 | - | - | 19 | 0.200 | 2.19 | 16 |
| 2.79 | 39.8 | 63.8 | 96.9 | 39.8 | 0.5 | 0.0 | 1.3 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 21 | 13 | 13 | 52 | 45 | - | - | 17 | 0.200 | 2.13 | 16 |
| 2.95 | 40.3 | 64.6 | 103.7 | 40.3 | 0.6 | 0.0 | 1.5 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 22 | 13 | 14 | 53 | 45 | - | - | 18 | 0.200 | 2.17 | 16 |
| 3.12 | 44.4 | 71.2 | 106.6 | 44.4 | 0.6 | 0.1 | 1.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 24 | 15 | 15 | 56 | 45 | - | - | 16 | 0.200 | 2.12 | 16 |
| 3.28 | 38.7 | 62.0 | 103.3 | 38.7 | 0.6 | 0.0 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 21 | 13 | 13 | 51 | 44 | - | - | 19 | 0.200 | 2.20 | 16 |
| 3.45 | 32.4 | 51.9 | 96.5 | 32.4 | 0.5 | 0.0 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 17 | 11 | 11 | 45 | 43 | - | - | 21 | 0.200 | 2.27 | 16 |
| 3.61 | 31.3 | 50.1 | 92.9 | 31.3 | 0.5 | 0.0 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 17 | 10 | 11 | 44 | 42 | - | - | 21 | 0.200 | 2.27 | 16 |
| 3.77 | 29.0 | 46.6 | 87.7 | 29.0 | 0.4 | 0.0 | 1.5 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 10 | 10 | 42 | 42 | - | - | 22 | 0.200 | 2.28 | 16 |
| 3.94 | 28.0 | 44.9 | 92.3 | 28.0 | 0.5 | 0.1 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 15 | 9 | 10 | 41 | 41 | - | - | 24 | 0.200 | 2.33 | 16 |
| 4.10 | 27.3 | 43.8 | 93.0 | 27.3 | 0.5 | 0.1 | 1.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 15 | 9 | 10 | 40 | 41 | - | - | 24 | 0.200 | 2.35 | 16 |
| 4.27 | 28.4 | 45.6 | 125.4 | 28.4 | 0.9 | 0.1 | 3.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 23 | 14 | 11 | - | - | 2.0 | 9.9 | 31 | 0.070 | 2.50 | 15 |
| 4.43 | 28.3 | 45.4 | 126.0 | 28.3 | 0.9 | 0.2 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 23 | 14 | 11 | - | - | 2.0 | 9.9 | 31 | 0.070 | 2.50 | 15 |
| 4.59 | 29.8 | 47.7 | 115.1 | 29.8 | 0.8 | 0.1 | 2.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 10 | 11 | 43 | 41 | - | - | 27 | 0.200 | 2.42 | 16 |
| 4.76 | 20.3 | 32.5 | 103.2 | 20.3 | 0.6 | 0.1 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 10 | 8 | - | - | 1.4 | 9.9 | 34 | 0.070 | 2.57 | 15 |
| 4.92 | 19.7 | 31.6 | 94.3 | 19.7 | 0.5 | 0.1 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 10 | 8 | - | - | 1.4 | 9.9 | 33 | 0.070 | 2.54 | 15 |
| 5.09 | 17.8 | 28.6 | 92.9 | 17.8 | 0.4 | 0.2 | 2.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 9 | 7 | - | - | 1.2 | 9.9 | 35 | 0.070 | 2.59 | 15 |
| 5.25 | 19.3 | 30.9 | 98.0 | 19.3 | 0.5 | 0.1 | 2.6 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 15 | 10 | 8 | - | - | 1.3 | 9.9 | 34 | 0.070 | 2.57 | 15 |
| 5.41 | 17.8 | 28.5 | - | 17.8 | 0.5 | 0.1 | 3.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 9 | 7 | - | - | 1.2 | 9.9 | 37 | 0.070 | 2.64 | 15 |
| 5.58 | 28.3 | 45.4 | 107.6 | 28.3 | 0.7 | 0.1 | 2.3 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 15 | 9 | 11 | 41 | 40 | - | - | 27 | 0.200 | 2.41 | 16 |
| 5.74 | 28.5 | 45.8 | 125.8 | 28.5 | 0.9 | 0.2 | 3.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 23 | 14 | 11 | - | - | 2.0 | 9.9 | 31 | 0.070 | 2.50 | 15 |
| 5.91 | 24.2 | 38.9 | - | 24.2 | 1.0 | 0.2 | 4.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 19 | 12 | 10 | - | - | 1.7 | 9.9 | 37 | 0.070 | 2.63 | 15 |
| 6.07 | 20.8 | 33.3 | - | 20.8 | 1.0 | 0.4 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 22 | 14 | 9 | - | - | 1.4 | 9.9 | 42 | 0.005 | 2.74 | 15 |
| 6.23 | 19.2 | 30.7 | - | 19.2 | 0.9 | 0.3 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 20 | 13 | 9 | - | - | 1.3 | 9.9 | 44 | 0.005 | 2.77 | 15 |
| 6.40 | 17.6 | 28.2 | - | 17.6 | 0.9 | 0.4 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 19 | 12 | 8 | - | - | 1.2 | 9.9 | 46 | 0.005 | 2.80 | 15 |
| 6.56 | 17.1 | 27.4 | - | 17.1 | 0.8 | 0.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 18 | 11 | 8 | - | - | 1.2 | 9.9 | 46 | 0.005 | 2.81 | 15 |
| 6.73 | 16.6 | 26.6 | - | 16.6 | 0.8 | 0.6 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 18 | 11 | 8 | - | - | 1.1 | 9.9 | 47 | 0.005 | 2.81 | 15 |
| 6.89 | 15.9 | 25.5 | - | 15.9 | 0.8 | 0.8 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 17 | 11 | 7 | - | - | 1.1 | 9.9 | 47 | 0.005 | 2.82 | 15 |
| 7.05 | 15.1 | 24.3 | - | 15.1 | 0.7 | 1.0 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 10 | 7 | - | - | 1.0 | 9.9 | 49 | 0.005 | 2.84 | 15 |
| 7.22 | 14.8 | 23.7 | - | 14.8 | 0.7 | 1.1 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 10 | 7 | - | - | 1.0 | 9.9 | 49 | 0.005 | 2.85 | 15 |
| 7.38 | 14.5 | 23.3 | - | 14.6 | 0.7 | 1.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 10 | 7 | - | - | 1.0 | 9.9 | 49 | 0.005 | 2.86 | 15 |
| 7.55 | 14.2 | 22.7 | - | 14.2 | 0.7 | 1.4 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 9 | 7 | - | - | 1.0 | 9.9 | 50 | 0.005 | 2.86 | 15 |
| 7.71 | 13.3 | 21.4 | - | 13.4 | 0.7 | 1.6 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.3 | 52 | 0.005 | 2.89 | 15 |
| 7.87 | 12.6 | 20.3 | - | 12.7 | 0.6 | 1.7 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 8 | 6 | - | - | 0.9 | 8.6 | 53 | 0.005 | 2.91 | 15 |
| 8.04 | 12.3 | 19.6 | - | 12.3 | 0.6 | 1.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 8.2 | 54 | 0.005 | 2.93 | 15 |
| 8.20 | 11.6 | 18.7 | - | 11.7 | 0.6 | 2.2 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 7.6 | 55 | 0.005 | 2.94 | 15 |
| 8.37 | 11.2 | 17.9 | - | 11.2 | 0.5 | 2.5 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 6 | - | - | 0.8 | 7.1 | 55 | 0.005 | 2.95 | 15 |
| 8.53 | 10.7 | 17.2 | - | 10.8 | 0.5 | 2.7 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.7 | 55 | 0.005 | 2.95 | 15 |
| 8.69 | 10.2 | 16.4 | - | 10.3 | 0.5 | 2.9 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.3 | 56 | 0.005 | 2.96 | 15 |
| 8.86 | 9.4 | 15.0 | - | 9.4 | 0.4 | 2.9 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 5.6 | 57 | 0.005 | 2.98 | 15 |
| 9.02 | 8.5 | 13.7 | - | 8.6 | 0.3 | 3.0 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 5.0 | 58 | 0.005 | 2.99 | 15 |
| 9.19 | 7.9 | 12.7 | - | 8.0 | 0.3 | 3.1 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 4.5 | 59 | 0.005 | 3.01 | 15 |
| 9.35 | 7.9 | 12.7 | - | 8.0 | 0.3 | 3.2 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 4.4 | 59 | 0.005 | 3.01 | 15 |
| 9.51 | 7.7 | 12.4 | - | 7.8 | 0.3 | 3.3 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 4.2 | 60 | 0.005 | 3.03 | 15 |
| 9.68 | 8.2 | 13.2 | - | 8.3 | 0.3 | 3.5 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 5 | 4 | - | - | 0.5 | 4.4 | 60 | 0.005 | 3.02 | 15 |
| 9.84 | 8.8 | 14.1 | - | 8.9 | 0.4 | 3.6 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 5 | - | - | 0.6 | 4.7 | 60 | 0.005 | 3.02 | 15 |
| 10.01 | 10.6 | 17.1 | - | 10.7 | 0.4 | 3.7 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.7 | 54 | 0.005 | 2.93 | 15 |
| 10.17 | 11.2 | 17.9 | - | 11.2 | 0.4 | 3.7 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 5.9 | 51 | 0.005 | 2.88 | 15 |
| 10.34 | 10.0 | 16.0 | - | 10.1 | 0.4 | 3.8 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.2 | 55 | 0.005 | 2.94 | 15 |
| 10.50 | 9.6 | 15.4 | - | 9.7 | 0.3 | 3.8 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 5.0 | 53 | 0.005 | 2.92 | 15 |
| 10.66 | 11.3 | 18.1 | - | 11.4 | 0.2 | 3.9 | 2.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 6 | 5 | - | - | 0.8 | 5.9 | 41 | 0.070 | 2.72 | 15 |
| 10.83 | 12.6 | 20.3 | - | 12.7 | 0.2 | 3.9 | 1.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 6 | 5 | - | - | 0.9 | 6.6 | 37 | 0.070 | 2.63 | 15 |
| 10.99 | 9.2 | 14.8 | - | 9.3 | 0.2 | 3.9 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 7 | 5 | 4 | - | - | 0.6 | 4.6 | 47 | 0.070 | 2.83 | 15 |
| 11.16 | 7.9 | 12.6 | - | 8.0 | 0.2 | 4.0 | 2.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 6 | 4 | 4 | - | - | 0.5 | 3.9 | 50 | 0.070 | 2.86 | 15 |
| 11.32 | 8.2 | 13.2 | - | 8.3 | 0.2 | 4.1 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 7 | 4 | 4 | - | - | 0.5 | 4.0 | 49 | 0.070 | 2.85 | 15 |
| 11.48 | 6.5 | 10.5 | - | 6.6 | 0.2 | 4.1 | 2.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 4 | 3 | - | - | 0.4 | 3.1 | 58 | 0.005 | 2.99 | 15 |
| 11.65 | 6.4 | 10.2 | - | 6.5 | 0.3 | 4.3 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 4 | 4 | - | - | 0.4 | 3.0 | 68 | 0.005 | 3.13 | 15 |
| 11.81 | 6.3 | 10.0 | - | 6.4 | 0.3 | 4.4 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 4 | 4 | - | - | 0.4 | 2.9 | 72 | 0.005 | 3.19 | 15 |
| 11.98 | 6.9 | 10.9 | - | 7.0 | 0.3 | 4.6 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 5 | 4 | - | - | 0.4 | 3.2 | 70 | 0.005 | 3.17 | 15 |
| 12.14 | 9.4 | 14.7 | - | 9.5 | 0.4 | 5.1 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 4.5 | 59 | 0.005 | 3.01 | 15 |
| 12.30 | 10.4 | 16.2 | - | 10.5 | 0.5 | 5.1 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.0 | 57 | 0.005 | 2.98 | 15 |
| 12.47 | 13.2 | 20.3 | - | 13.3 | 0.5 | 5.1 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 6.3 | 48 | 0.005 | 2.84 | 15 |
| 12.63 | 16.4 | 25.1 | - | 16.4 | 0.4 | 1.7 | 2.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 8 | 7 | - | - | 1.1 | 7.9 | 39 | 0.070 | 2.68 | 15 |
| 12.80 | 20.7 | 24.8 | 76.1 | 20.7 | 0.4 | 0.6 | 1.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 10 | 6 | - | - | 1.4 | 9.9 | 33 | 0.070 | 2.56 | 15 |
| 12.96 | 24.3 | 29.0 | 68.1 | 24.2 | 0.3 | -4.2 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 10 | 8 | 7 | 26 | 35 | - | - | 27 | 0.200 | 2.41 | 16 |
| 13.12 | 26.3 | 31.3 | 66.4 | 26.2 | 0.3 | -4.8 | 1.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 10 | 9 | 7 | 29 | 35 | - | - | 24 | 0.200 | 2.35 | 16 |
| 13.29 | 26.2 | 31.1 | 74.4 | 26.1 | 0.4 | -5.7 | 1.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 10 | 9 | 7 | 28 | 35 | - | - | 27 | 0.200 | 2.42 | 16 |
| 13.45 | 21.1 | 27.3 | - | 21.0 | 0.6 | -5.7 | 2.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 11 | 7 | - | - | 1.4 | 9.9 | 37 | 0.070 | 2.63 | 15 |
| 13.62 | 15.0 | 22.1 | - | 14.9 | 0.6 | -4.5 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 10 | 6 | - | - | 1.0 | 6.9 | 49 | 0.005 | 2.85 | 15 |
| 13.78 | 18.9 | 24.2 | - | 18.8 | 0.4 | -3.6 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 9 | 6 | - | - | 1.3 | 8.7 | 38 | 0.070 | 2.64 | 15 |
| 13.94 | 29.2 | 34.2 | 65.4 | 29.1 | 0.3 | -3.5 | 1.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 11 | 10 | 8 | 32 | 36 | - | - | 22 | 0.200 | 2.29 | 16 |
| 14.11 | 35.3 | 41.2 | 67.1 | 35.2 | 0.3 | -3.3 | 0.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 12 | 9 | 38 | 37 | - | - | 18 | 0.200 | 2.18 | 16 |
| 14.27 | 35.8 | 41.6 | 66.6 | 35.7 | 0.3 | -3.1 | 0.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 12 | 9 | 38 | 37 | - | - | 18 | 0.200 | 2.17 | 16 |
| 14.44 | 34.1 | 39.6 | 66.7 | 34.1 | 0.3 | -3.0 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 11 | 8 | 36 | 36 | - | - | 19 | 0.200 | 2.21 | 16 |
| 14.60 | 33.6 | 38.9 | 76.6 | 33.6 | 0.4 | -2.9 | 1.3 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 11 | 9 | 36 | 36 | - | - | 23 | 0.200 | 2.31 | 16 |
| 14.76 | 31.2 | 36.0 | 73.8 | 31.2 | 0.4 | -2.9 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 12 | 10 | 8 | 33 | 36 | - | - | 24 | 0.200 | 2.33 | 16 |
| 14.93 | 20.7 | 25.7 | - | 20.6 | 0.4 | -2.9 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 10 | 7 | - | - | 1.4 | 9.1 | 35 | 0.070 | 2.60 | 15 |
| 15.09 | 11.6 | 16.1 | - | 11.6 | 0.4 | -2.1 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 8 | 5 | - | - | 0.8 | 4.9 | 54 | 0.005 | 2.93 | 15 |
| 15.26 | 9.4 | 13.0 | - | 9.4 | 0.4 | -1.6 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 3.9 | 64 | 0.005 | 3.09 | 15 |
| 15.42 | 9.7 | 13.2 | - | 9.6 | 0.5 | -1.4 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.0 | 64 | 0.005 | 3.08 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

**Middle Earth Geo Testing**

Project ID: Cornerstone Earth Group
Data File: SDF(883).cpt
CPT Date: 3/23/2022 6:01:37 PM
GW During Test: 10 ft


Sounding ID: CPT-01
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15.58 | 10.5 | 14.3 | - | 10.5 | 0.5 | -1.2 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 7 | 5 | - | - | 0.7 | 4.3 | 62 | 0.005 | 3.05 | 15 |
| 15.75 | 11.9 | 16.1 | - | 11.8 | 0.6 | -1.0 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 8 | 5 | - | - | 0.8 | 4.9 | 59 | 0.005 | 3.01 | 15 |
| 15.91 | 12.9 | 17.3 | - | 12.9 | 0.7 | -0.7 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 9 | 6 | - | - | 0.9 | 5.3 | 58 | 0.005 | 2.99 | 15 |
| 16.08 | 13.8 | 18.4 | - | 13.7 | 0.7 | -0.6 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 9 | 6 | - | - | 0.9 | 5.7 | 58 | 0.005 | 2.99 | 15 |
| 16.24 | 14.6 | 19.4 | - | 14.6 | 0.8 | -0.4 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 10 | 6 | - | - | 1.0 | 6.0 | 57 | 0.005 | 2.98 | 15 |
| 16.40 | 15.6 | 20.6 | - | 15.6 | 0.9 | -0.2 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 10 | 6 | - | - | 1.0 | 6.4 | 56 | 0.005 | 2.96 | 15 |
| 16.57 | 16.2 | 21.3 | - | 16.2 | 0.9 | -0.1 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 7 | - | - | 1.1 | 6.6 | 55 | 0.005 | 2.94 | 15 |
| 16.73 | 16.6 | 21.8 | - | 16.6 | 0.9 | 0.0 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.8 | 54 | 0.005 | 2.94 | 15 |
| 16.90 | 17.1 | 22.2 | - | 17.1 | 0.9 | 0.3 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.2 | 6.9 | 54 | 0.005 | 2.93 | 15 |
| 17.06 | 17.8 | 23.1 | - | 17.8 | 1.0 | 0.3 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.2 | 53 | 0.005 | 2.91 | 15 |
| 17.23 | 17.4 | 22.4 | - | 17.4 | 1.0 | 0.3 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.0 | 54 | 0.005 | 2.93 | 15 |
| 17.39 | 17.0 | 21.8 | - | 17.0 | 1.0 | 0.4 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.8 | 55 | 0.005 | 2.94 | 15 |
| 17.55 | 17.1 | 21.8 | - | 17.1 | 1.0 | 0.4 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.2 | 6.7 | 55 | 0.005 | 2.95 | 15 |
| 17.72 | 16.2 | 20.6 | - | 16.2 | 1.0 | 0.4 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.4 | 57 | 0.005 | 2.98 | 15 |
| 17.88 | 14.5 | 18.3 | - | 14.5 | 0.9 | 0.2 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 10 | 6 | - | - | 1.0 | 5.6 | 60 | 0.005 | 3.02 | 15 |
| 18.05 | 12.2 | 15.3 | - | 12.2 | 0.7 | 0.0 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.6 | 65 | 0.005 | 3.09 | 15 |
| 18.21 | 10.9 | 13.5 | - | 10.8 | 0.7 | -0.1 | 6.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 7 | 5 | - | - | 0.7 | 4.0 | 69 | 0.005 | 3.15 | 15 |
| 18.37 | 9.7 | 12.0 | - | 9.7 | 0.6 | -0.1 | 7.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 6 | 4 | - | - | 0.6 | 3.5 | 74 | 0.005 | 3.21 | 15 |
| 18.54 | 9.2 | 11.3 | - | 9.2 | 0.6 | -0.2 | 7.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 6 | 4 | - | - | 0.6 | 3.3 | 75 | 0.005 | 3.23 | 15 |
| 18.70 | 9.9 | 12.1 | - | 9.9 | 0.6 | -0.2 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.6 | 3.6 | 72 | 0.005 | 3.18 | 15 |
| 18.87 | 10.1 | 12.3 | - | 10.1 | 0.6 | -0.1 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.6 | 70 | 0.005 | 3.16 | 15 |
| 19.03 | 10.7 | 13.0 | - | 10.7 | 0.6 | 0.0 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 7 | 5 | - | - | 0.7 | 3.8 | 69 | 0.005 | 3.15 | 15 |
| 19.19 | 11.6 | 14.1 | - | 11.6 | 0.7 | 0.2 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.2 | 67 | 0.005 | 3.12 | 15 |
| 19.36 | 11.9 | 14.3 | - | 11.9 | 0.7 | 0.2 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 65 | 0.005 | 3.10 | 15 |
| 19.52 | 10.4 | 12.4 | - | 10.4 | 0.6 | 0.1 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.7 | 70 | 0.005 | 3.16 | 15 |
| 19.69 | 9.5 | 11.3 | - | 9.5 | 0.5 | 0.2 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 6 | 4 | - | - | 0.6 | 3.3 | 72 | 0.005 | 3.19 | 15 |
| 19.85 | 8.3 | 9.8 | - | 8.3 | 0.4 | 0.3 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.5 | 2.8 | 75 | 0.005 | 3.23 | 15 |
| 20.01 | 7.5 | 8.8 | - | 7.5 | 0.4 | 0.4 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 5 | 3 | - | - | 0.5 | 2.5 | 78 | 0.005 | 3.27 | 15 |
| 20.18 | 8.9 | 10.4 | - | 8.9 | 0.4 | 0.6 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.6 | 3.0 | 72 | 0.005 | 3.18 | 15 |
| 20.34 | 11.4 | 13.2 | - | 11.4 | 0.6 | 0.9 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 4 | - | - | 0.7 | 3.9 | 65 | 0.005 | 3.09 | 15 |
| 20.51 | 12.4 | 14.3 | - | 12.4 | 0.7 | 1.2 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 67 | 0.005 | 3.12 | 15 |
| 20.67 | 13.9 | 16.1 | - | 14.0 | 0.9 | 1.5 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 4.8 | 64 | 0.005 | 3.08 | 15 |
| 20.83 | 15.0 | 17.3 | - | 15.1 | 0.9 | 1.5 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 10 | 6 | - | - | 1.0 | 5.2 | 61 | 0.005 | 3.04 | 15 |
| 21.00 | 15.2 | 17.3 | - | 15.2 | 0.9 | 1.6 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 10 | 6 | - | - | 1.0 | 5.3 | 61 | 0.005 | 3.04 | 15 |
| 21.16 | 15.9 | 18.1 | - | 15.9 | 0.9 | 1.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.5 | 59 | 0.005 | 3.01 | 15 |
| 21.33 | 16.7 | 18.9 | - | 16.8 | 0.9 | 1.7 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 11 | 6 | - | - | 1.1 | 5.8 | 57 | 0.005 | 2.98 | 15 |
| 21.49 | 16.7 | 18.7 | - | 16.7 | 0.9 | 2.1 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.7 | 57 | 0.005 | 2.97 | 15 |
| 21.65 | 16.1 | 18.0 | - | 16.1 | 0.9 | 2.3 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.5 | 59 | 0.005 | 3.01 | 15 |
| 21.82 | 15.8 | 17.6 | - | 15.8 | 0.9 | 2.5 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.3 | 60 | 0.005 | 3.03 | 15 |
| 21.98 | 15.3 | 17.0 | - | 15.4 | 0.9 | 2.3 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 6 | - | - | 1.0 | 5.1 | 62 | 0.005 | 3.05 | 15 |
| 22.15 | 15.1 | 16.6 | - | 15.1 | 0.9 | 2.2 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 5.0 | 62 | 0.005 | 3.06 | 15 |
| 22.31 | 14.2 | 15.6 | - | 14.2 | 0.8 | 2.3 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.7 | 64 | 0.005 | 3.08 | 15 |
| 22.47 | 12.7 | 13.9 | - | 12.8 | 0.7 | 2.1 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.1 | 67 | 0.005 | 3.12 | 15 |
| 22.64 | 12.4 | 13.5 | - | 12.5 | 0.7 | 2.2 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.0 | 68 | 0.005 | 3.14 | 15 |
| 22.80 | 14.6 | 15.8 | - | 14.7 | 0.8 | 2.6 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.7 | 63 | 0.005 | 3.06 | 15 |
| 22.97 | 16.5 | 17.8 | - | 16.6 | 0.9 | 2.6 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.4 | 59 | 0.005 | 3.01 | 15 |
| 23.13 | 16.0 | 17.2 | - | 16.0 | 0.8 | 2.5 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 11 | 5 | - | - | 1.1 | 5.2 | 59 | 0.005 | 3.00 | 15 |
| 23.30 | 15.0 | 16.0 | - | 15.0 | 0.8 | 2.3 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.8 | 61 | 0.005 | 3.04 | 15 |
| 23.46 | 15.2 | 16.2 | - | 15.3 | 0.7 | 2.7 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.9 | 60 | 0.005 | 3.02 | 15 |
| 23.62 | 14.9 | 15.8 | - | 15.0 | 0.7 | 2.7 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.7 | 61 | 0.005 | 3.03 | 15 |
| 23.79 | 14.6 | 15.4 | - | 14.7 | 0.7 | 2.7 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.6 | 62 | 0.005 | 3.05 | 15 |
| 23.95 | 14.9 | 15.6 | - | 14.9 | 0.7 | 2.8 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.7 | 61 | 0.005 | 3.04 | 15 |
| 24.12 | 15.2 | 15.9 | - | 15.3 | 0.8 | 2.8 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.8 | 62 | 0.005 | 3.05 | 15 |
| 24.28 | 15.1 | 15.7 | - | 15.1 | 0.8 | 2.8 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.7 | 61 | 0.005 | 3.04 | 15 |
| 24.44 | 14.8 | 15.4 | - | 14.9 | 0.7 | 2.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.6 | 60 | 0.005 | 3.03 | 15 |
| 24.61 | 14.2 | 14.6 | - | 14.2 | 0.7 | 2.9 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.3 | 63 | 0.005 | 3.07 | 15 |
| 24.77 | 13.7 | 14.0 | - | 13.7 | 0.7 | 2.9 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.9 | 4.1 | 64 | 0.005 | 3.08 | 15 |
| 24.94 | 14.0 | 14.3 | - | 14.1 | 0.7 | 2.7 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.2 | 63 | 0.005 | 3.06 | 15 |
| 25.10 | 16.3 | 16.6 | - | 16.4 | 0.5 | 2.8 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 11 | 5 | - | - | 1.1 | 5.0 | 52 | 0.005 | 2.90 | 15 |
| 25.26 | 16.7 | 16.9 | - | 16.7 | 0.5 | 2.7 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 11 | 5 | - | - | 1.1 | 5.1 | 50 | 0.005 | 2.86 | 15 |
| 25.43 | 13.5 | 13.6 | - | 13.5 | 0.4 | 2.9 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 4.0 | 56 | 0.005 | 2.97 | 15 |
| 25.59 | 11.1 | 11.1 | - | 11.2 | 0.4 | 3.2 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.2 | 65 | 0.005 | 3.09 | 15 |
| 25.76 | 11.4 | 11.4 | - | 11.5 | 0.4 | 3.3 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.3 | 64 | 0.005 | 3.08 | 15 |
| 25.92 | 12.5 | 12.4 | - | 12.5 | 0.4 | 3.3 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.6 | 61 | 0.005 | 3.03 | 15 |
| 26.08 | 11.0 | 10.9 | - | 11.1 | 0.4 | 3.2 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.1 | 66 | 0.005 | 3.11 | 15 |
| 26.25 | 10.8 | 10.6 | - | 10.8 | 0.4 | 3.2 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.0 | 67 | 0.005 | 3.12 | 15 |
| 26.41 | 10.3 | 10.1 | - | 10.3 | 0.4 | 3.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.8 | 71 | 0.005 | 3.18 | 15 |
| 26.58 | 9.0 | 8.8 | - | 9.1 | 0.4 | 3.2 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 79 | 0.005 | 3.28 | 15 |
| 26.74 | 8.2 | 7.9 | - | 8.2 | 0.4 | 3.1 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.1 | 83 | 0.005 | 3.32 | 15 |
| 26.90 | 7.7 | 7.5 | - | 7.8 | 0.3 | 3.1 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.0 | 82 | 0.005 | 3.31 | 15 |
| 27.07 | 7.4 | 7.2 | - | 7.5 | 0.2 | 3.2 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.9 | 79 | 0.005 | 3.28 | 15 |
| 27.23 | 6.8 | 6.5 | - | 6.9 | 0.2 | 3.2 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.4 | 1.7 | 81 | 0.005 | 3.30 | 15 |
| 27.40 | 6.2 | 6.0 | - | 6.3 | 0.2 | 3.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 4 | 2 | - | - | 0.4 | 1.5 | 88 | 0.005 | 3.38 | 15 |
| 27.56 | 6.4 | 6.1 | - | 6.5 | 0.3 | 3.3 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 4 | 3 | - | - | 0.4 | 1.5 | 93 | 0.005 | 3.43 | 15 |
| 27.72 | 8.4 | 8.0 | - | 8.5 | 0.4 | 3.4 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.1 | 83 | 0.005 | 3.32 | 15 |
| 27.89 | 10.8 | 10.2 | - | 10.9 | 0.6 | 3.4 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.9 | 75 | 0.005 | 3.23 | 15 |
| 28.05 | 12.9 | 12.2 | - | 13.0 | 0.8 | 3.4 | 7.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.8 | 3.5 | 73 | 0.005 | 3.21 | 15 |
| 28.22 | 14.2 | 13.4 | - | 14.3 | 0.9 | 3.3 | 7.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.9 | 3.9 | 70 | 0.005 | 3.16 | 15 |
| 28.38 | 15.3 | 14.3 | - | 15.4 | 0.9 | 3.3 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.2 | 66 | 0.005 | 3.11 | 15 |
| 28.54 | 15.5 | 14.5 | - | 15.6 | 0.6 | 2.9 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.3 | 60 | 0.005 | 3.02 | 15 |
| 28.71 | 13.7 | 12.7 | - | 13.8 | 0.4 | 2.9 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.9 | 3.7 | 57 | 0.005 | 2.98 | 15 |
| 28.87 | 11.3 | 10.5 | - | 11.4 | 0.3 | 3.1 | 2.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 3 | - | - | 0.7 | 2.9 | 60 | 0.005 | 3.02 | 15 |
| 29.04 | 9.7 | 8.9 | - | 9.7 | 0.2 | 3.3 | 2.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 65 | 0.005 | 3.09 | 15 |
| 29.20 | 8.7 | 8.0 | - | 8.8 | 0.2 | 3.5 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.1 | 71 | 0.005 | 3.17 | 15 |
| 29.36 | 8.6 | 7.9 | - | 8.7 | 0.3 | 3.7 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.1 | 74 | 0.005 | 3.21 | 15 |
| 29.53 | 9.4 | 8.6 | - | 9.5 | 0.3 | 3.9 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.3 | 70 | 0.005 | 3.16 | 15 |
| 29.69 | 9.3 | 8.4 | - | 9.4 | 0.3 | 4.4 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.3 | 70 | 0.005 | 3.16 | 15 |
| 29.86 | 8.4 | 7.6 | - | 8.5 | 0.3 | 4.9 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 76 | 0.005 | 3.24 | 15 |
| 30.02 | 8.0 | 7.2 | - | 8.2 | 0.3 | 5.6 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.9 | 81 | 0.005 | 3.30 | 15 |
| 30.19 | 8.3 | 7.4 | - | 8.4 | 0.3 | 6.0 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 83 | 0.005 | 3.33 | 15 |
| 30.35 | 9.0 | 8.0 | - | 9.1 | 0.4 | 6.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.1 | 84 | 0.005 | 3.33 | 15 |
| 30.51 | 9.4 | 8.4 | - | 9.6 | 0.5 | 7.1 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.2 | 82 | 0.005 | 3.31 | 15 |
| 30.68 | 9.3 | 8.2 | - | 9.5 | 0.5 | 7.4 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.2 | 83 | 0.005 | 3.32 | 15 |
| 30.84 | 10.1 | 8.9 | - | 10.2 | 0.4 | 7.9 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.4 | 77 | 0.005 | 3.25 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(883).cpt
CPT Date: 3/23/2022 6:01:37 PM
GW During Test: 10 ft


Sounding ID: CPT-01
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | * qc1n PS - | q1ncs PS - | * qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | * Material Behavior Description | Unit Wght pcf | Qc to N | * SPT R-N1 60% | SPT R-N 60% | * SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | * Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.01 | 10.1 | 8.9 | - | 10.3 | 0.4 | 8.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.4 | 76 | 0.005 | 3.24 | 15 |
| 31.17 | 9.4 | 8.2 | - | 9.6 | 0.4 | 9.1 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.2 | 81 | 0.005 | 3.30 | 15 |
| 31.33 | 9.8 | 8.5 | - | 10.0 | 0.4 | 10.2 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.3 | 78 | 0.005 | 3.26 | 15 |
| 31.50 | 10.2 | 8.8 | - | 10.4 | 0.4 | 10.9 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.4 | 77 | 0.005 | 3.25 | 15 |
| 31.66 | 10.1 | 8.7 | - | 10.3 | 0.5 | 11.7 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.4 | 79 | 0.005 | 3.27 | 15 |
| 31.83 | 10.6 | 9.1 | - | 11.0 | 0.5 | 18.9 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 4 | - | - | 0.7 | 2.5 | 79 | 0.005 | 3.27 | 15 |
| 31.99 | 10.6 | 9.1 | - | 11.0 | 0.5 | 19.9 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.5 | 78 | 0.005 | 3.27 | 15 |
| 32.15 | 10.2 | 8.7 | - | 10.6 | 0.5 | 20.5 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.4 | 80 | 0.005 | 3.29 | 15 |
| 32.32 | 10.9 | 9.3 | - | 11.3 | 0.4 | 22.0 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.5 | 74 | 0.005 | 3.22 | 15 |
| 32.48 | 11.1 | 9.4 | - | 11.6 | 0.5 | 22.4 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 4 | - | - | 0.7 | 2.6 | 75 | 0.005 | 3.22 | 15 |
| 32.65 | 11.3 | 9.6 | - | 11.8 | 0.5 | 25.0 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 4 | - | - | 0.7 | 2.6 | 74 | 0.005 | 3.21 | 15 |
| 32.81 | 12.7 | 10.7 | - | 13.2 | 0.5 | 26.2 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.0 | 69 | 0.005 | 3.15 | 15 |
| 32.97 | 13.1 | 11.0 | - | 13.6 | 0.5 | 27.6 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.1 | 68 | 0.005 | 3.13 | 15 |
| 33.14 | 12.8 | 10.7 | - | 13.3 | 0.6 | 29.1 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.0 | 71 | 0.005 | 3.18 | 15 |
| 33.30 | 12.6 | 10.5 | - | 13.2 | 0.5 | 30.6 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.9 | 70 | 0.005 | 3.17 | 15 |
| 33.47 | 12.7 | 10.5 | - | 13.3 | 0.5 | 32.8 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.9 | 70 | 0.005 | 3.16 | 15 |
| 33.63 | 11.7 | 9.7 | - | 12.5 | 0.5 | 40.7 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 4 | - | - | 0.7 | 2.7 | 74 | 0.005 | 3.21 | 15 |
| 33.79 | 13.0 | 10.7 | - | 13.9 | 0.5 | 46.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.0 | 68 | 0.005 | 3.13 | 15 |
| 33.96 | 13.6 | 11.2 | - | 14.6 | 0.5 | 50.5 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.9 | 3.2 | 66 | 0.005 | 3.11 | 15 |
| 34.12 | 13.7 | 11.2 | - | 14.8 | 0.5 | 55.6 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.9 | 3.2 | 65 | 0.005 | 3.10 | 15 |
| 34.29 | 13.7 | 11.2 | - | 14.7 | 0.5 | 52.2 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.9 | 3.2 | 66 | 0.005 | 3.11 | 15 |
| 34.45 | 11.4 | 9.3 | - | 12.5 | 0.5 | 52.6 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.5 | 74 | 0.005 | 3.21 | 15 |
| 34.61 | 10.2 | 8.2 | - | 11.2 | 0.4 | 52.6 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.2 | 79 | 0.005 | 3.28 | 15 |
| 34.78 | 9.6 | 7.7 | - | 10.7 | 0.4 | 59.1 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 84 | 0.005 | 3.33 | 15 |
| 34.94 | 9.2 | 7.4 | - | 10.3 | 0.4 | 58.9 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 86 | 0.005 | 3.36 | 15 |
| 35.11 | 9.1 | 7.3 | - | 10.3 | 0.4 | 58.0 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 88 | 0.005 | 3.38 | 15 |
| 35.27 | 9.2 | 7.4 | - | 10.4 | 0.5 | 58.6 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 88 | 0.005 | 3.38 | 15 |
| 35.43 | 9.5 | 7.6 | - | 10.7 | 0.5 | 59.5 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 87 | 0.005 | 3.37 | 15 |
| 35.60 | 10.1 | 8.1 | - | 11.3 | 0.5 | 58.7 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 85 | 0.005 | 3.34 | 15 |
| 35.76 | 10.8 | 8.6 | - | 11.9 | 0.5 | 57.0 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 81 | 0.005 | 3.30 | 15 |
| 35.93 | 10.8 | 8.5 | - | 11.9 | 0.5 | 54.6 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 80 | 0.005 | 3.29 | 15 |
| 36.09 | 10.5 | 8.3 | - | 11.6 | 0.5 | 55.1 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.2 | 80 | 0.005 | 3.29 | 15 |
| 36.26 | 10.3 | 8.0 | - | 11.4 | 0.4 | 56.0 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 80 | 0.005 | 3.29 | 15 |
| 36.42 | 10.2 | 7.9 | - | 11.3 | 0.4 | 59.1 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 36.58 | 10.4 | 8.1 | - | 11.6 | 0.4 | 61.9 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 79 | 0.005 | 3.28 | 15 |
| 36.75 | 10.5 | 8.2 | - | 11.8 | 0.4 | 64.0 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.2 | 78 | 0.005 | 3.27 | 15 |
| 36.91 | 10.8 | 8.3 | - | 12.1 | 0.4 | 65.0 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.2 | 76 | 0.005 | 3.24 | 15 |
| 37.08 | 10.9 | 8.4 | - | 12.2 | 0.4 | 65.1 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.2 | 76 | 0.005 | 3.24 | 15 |
| 37.24 | 11.3 | 8.7 | - | 12.6 | 0.4 | 67.3 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.3 | 76 | 0.005 | 3.24 | 15 |
| 37.40 | 11.8 | 9.0 | - | 13.1 | 0.4 | 64.5 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 73 | 0.005 | 3.20 | 15 |
| 37.57 | 12.3 | 9.4 | - | 13.5 | 0.4 | 61.5 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 71 | 0.005 | 3.18 | 15 |
| 37.73 | 11.8 | 9.0 | - | 13.1 | 0.4 | 63.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 74 | 0.005 | 3.21 | 15 |
| 37.90 | 11.9 | 9.0 | - | 13.1 | 0.4 | 63.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 73 | 0.005 | 3.20 | 15 |
| 38.06 | 11.8 | 8.9 | - | 13.1 | 0.4 | 64.7 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 74 | 0.005 | 3.21 | 15 |
| 38.22 | 12.2 | 9.2 | - | 13.5 | 0.4 | 69.1 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 38.39 | 12.3 | 9.2 | - | 13.6 | 0.4 | 68.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 38.55 | 12.1 | 9.0 | - | 13.3 | 0.5 | 62.4 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.4 | 74 | 0.005 | 3.21 | 15 |
| 38.72 | 11.7 | 8.7 | - | 13.0 | 0.4 | 67.9 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.3 | 76 | 0.005 | 3.24 | 15 |
| 38.88 | 11.9 | 8.9 | - | 13.3 | 0.4 | 71.1 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 74 | 0.005 | 3.22 | 15 |
| 39.04 | 11.9 | 8.8 | - | 13.2 | 0.5 | 69.1 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.3 | 77 | 0.005 | 3.25 | 15 |
| 39.21 | 12.9 | 9.5 | - | 14.4 | 0.6 | 77.8 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 4 | - | - | 0.8 | 2.6 | 77 | 0.005 | 3.25 | 15 |
| 39.37 | 15.3 | 11.3 | - | 16.8 | 0.8 | 77.4 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 10 | 4 | - | - | 1.0 | 3.2 | 72 | 0.005 | 3.19 | 15 |
| 39.54 | 17.6 | 12.9 | - | 19.0 | 0.8 | 75.7 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 12 | 4 | - | - | 1.1 | 3.7 | 65 | 0.005 | 3.10 | 15 |
| 39.70 | 25.5 | 18.6 | - | 26.9 | 0.9 | 73.7 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 17 | 6 | - | - | 1.7 | 5.6 | 50 | 0.005 | 2.88 | 15 |
| 39.86 | 25.5 | 18.6 | - | 26.3 | 1.1 | 41.9 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 17 | 6 | - | - | 1.7 | 5.6 | 55 | 0.005 | 2.95 | 15 |
| 40.03 | 25.5 | 18.6 | - | 26.8 | 1.2 | 64.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 17 | 6 | - | - | 1.7 | 5.6 | 55 | 0.005 | 2.95 | 15 |
| 40.19 | 33.8 | 24.5 | - | 34.6 | 1.5 | 40.5 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 23 | 7 | - | - | 2.3 | 7.5 | 48 | 0.005 | 2.83 | 15 |

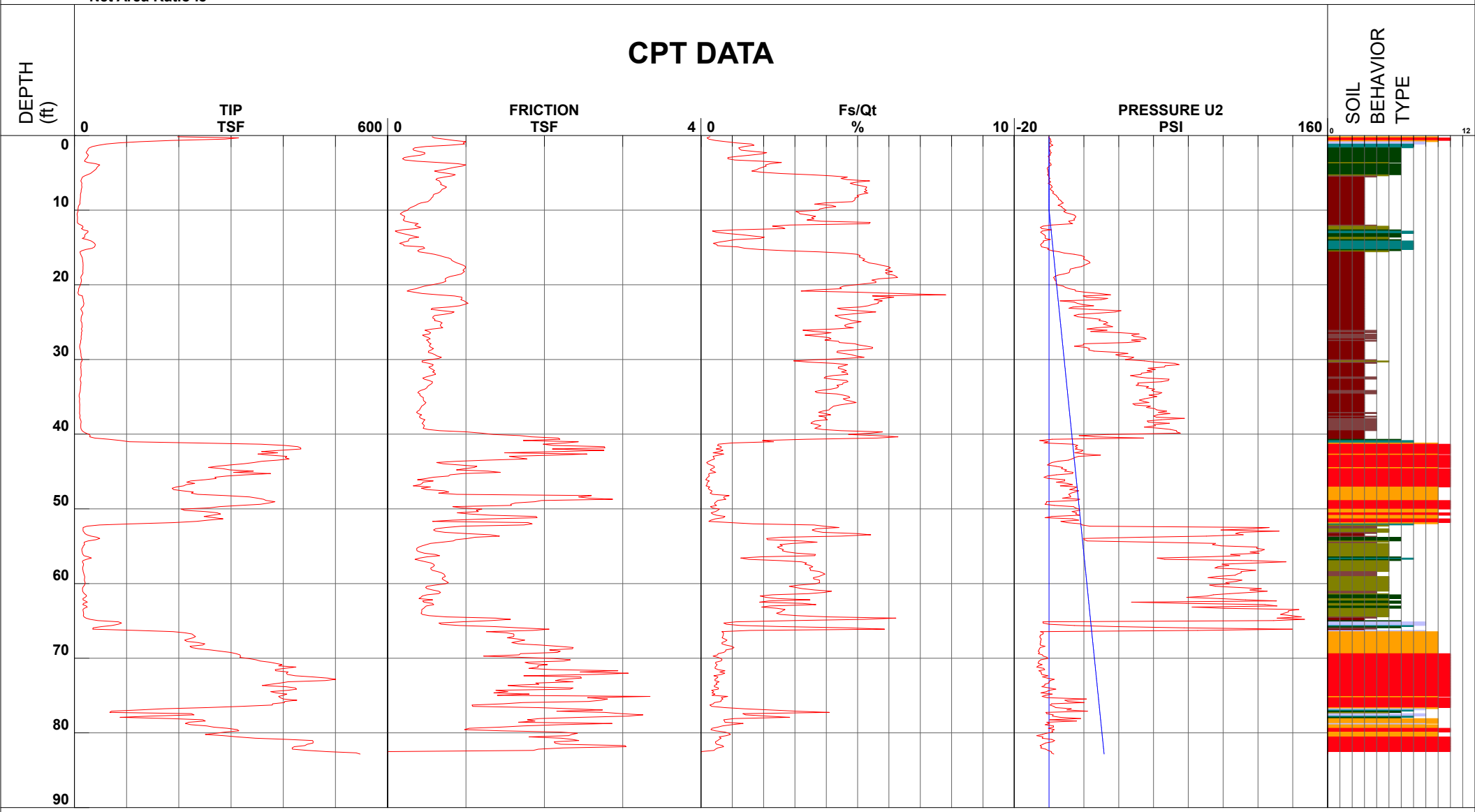
* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

# Cornerstone Earth Group

| | | | | | |
|---|---|---|---|---|---|
| Project | SJBCB New Education Bldg GI | Operator | BH-GM | Filename | SDF(882).cpt |
| Job Number | 1353-3-1 | Cone Number | DDG1589 | GPS | |
| Hole Number | CPT-02 | Date and Time | 3/23/2022 2:29:06 PM | Maximum Depth | 82.84 ft |
| EST GW Depth During Test | | 10.00 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 15cm squared

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

# SJBCB New Education Bldg GI

Project ID: Cornerstone Earth Group
Data File: SDF(882).cpt
CPT Date: 3/23/2022 2:29:06 PM
GW During Test: 10 ft


Sounding ID: CPT-02
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.33 | 314.7 | 504.7 | 504.7 | 314.7 | 0.6 | 0.1 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 84 | 52 | 70 | 95 | 48 | - | - | 5 | 1.000 | 0.91 | 16 |
| 0.49 | 288.7 | 462.9 | 462.9 | 288.7 | 0.7 | 0.9 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 77 | 48 | 66 | 95 | 48 | - | - | 5 | 1.000 | 1.01 | 16 |
| 0.66 | 186.1 | 298.5 | 298.5 | 186.1 | 0.8 | 0.8 | 0.5 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 50 | 31 | 47 | 95 | 48 | - | - | 5 | 1.000 | 1.33 | 16 |
| 0.82 | 126.0 | 202.0 | 202.0 | 126.0 | 1.0 | 1.2 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 40 | 25 | 35 | 90 | 48 | - | - | 5 | 0.350 | 1.61 | 16 |
| 0.98 | 84.5 | 135.5 | 155.2 | 84.5 | 1.0 | 0.3 | 1.1 | 6 | clean SAND to silty SAND | 125 | 5.0 | 27 | 17 | 25 | 77 | 48 | - | - | 9 | 0.350 | 1.85 | 16 |
| 1.15 | 60.9 | 97.7 | 135.0 | 61.0 | 1.0 | 1.1 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 33 | 20 | 20 | 66 | 48 | - | - | 15 | 0.200 | 2.06 | 16 |
| 1.31 | 46.5 | 74.6 | 117.0 | 46.6 | 0.8 | 2.2 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 25 | 16 | 16 | 57 | 48 | - | - | 18 | 0.200 | 2.16 | 16 |
| 1.48 | 35.0 | 56.1 | 93.2 | 35.0 | 0.5 | 0.4 | 1.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 19 | 12 | 12 | 48 | 47 | - | - | 19 | 0.200 | 2.20 | 16 |
| 1.64 | 28.7 | 46.0 | 80.1 | 28.7 | 0.3 | 0.2 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 15 | 10 | 10 | 41 | 46 | - | - | 20 | 0.200 | 2.23 | 16 |
| 1.80 | 26.1 | 41.9 | 77.5 | 26.1 | 0.3 | 0.1 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 9 | 9 | 38 | 45 | - | - | 21 | 0.200 | 2.27 | 16 |
| 1.97 | 25.7 | 41.3 | 78.5 | 25.7 | 0.3 | 0.7 | 1.3 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 9 | 9 | 38 | 44 | - | - | 22 | 0.200 | 2.28 | 16 |
| 2.13 | 23.5 | 37.7 | 85.0 | 23.5 | 0.4 | 0.5 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 8 | 9 | 35 | 43 | - | - | 26 | 0.200 | 2.39 | 16 |
| 2.30 | 22.6 | 36.2 | 93.1 | 22.6 | 0.5 | 1.3 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 12 | 8 | 9 | 33 | 43 | - | - | 29 | 0.200 | 2.46 | 16 |
| 2.46 | 24.4 | 39.1 | 92.5 | 24.4 | 0.5 | 0.7 | 2.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 8 | 9 | 36 | 43 | - | - | 27 | 0.200 | 2.41 | 16 |
| 2.62 | 26.9 | 43.2 | 86.9 | 27.0 | 0.4 | 0.7 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 9 | 10 | 39 | 43 | - | - | 23 | 0.200 | 2.32 | 16 |
| 2.79 | 25.5 | 40.9 | 75.7 | 25.5 | 0.3 | -0.5 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 9 | 9 | 37 | 43 | - | - | 21 | 0.200 | 2.27 | 16 |
| 2.95 | 24.7 | 39.5 | 66.3 | 24.7 | 0.2 | 0.1 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 8 | 8 | 36 | 42 | - | - | 19 | 0.200 | 2.20 | 16 |
| 3.12 | 22.4 | 35.9 | 63.6 | 22.4 | 0.2 | 0.1 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 12 | 7 | 8 | 33 | 41 | - | - | 20 | 0.200 | 2.24 | 16 |
| 3.28 | 20.3 | 32.5 | 66.6 | 20.3 | 0.2 | 0.4 | 1.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 11 | 7 | 7 | 30 | 41 | - | - | 24 | 0.200 | 2.33 | 16 |
| 3.45 | 19.3 | 30.9 | 85.0 | 19.3 | 0.4 | 0.1 | 2.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 10 | 6 | 7 | 28 | 40 | - | - | 31 | 0.200 | 2.50 | 16 |
| 3.61 | 25.0 | 40.0 | 107.7 | 25.0 | 0.6 | 0.2 | 2.6 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 20 | 12 | 10 | - | - | 1.7 | 9.9 | 30 | 0.070 | 2.48 | 15 |
| 3.77 | 40.5 | 64.9 | 123.0 | 40.5 | 0.9 | 1.0 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 22 | 13 | 14 | 53 | 43 | - | - | 22 | 0.200 | 2.28 | 16 |
| 3.94 | 48.5 | 77.9 | 130.5 | 48.6 | 1.0 | 1.2 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 26 | 16 | 17 | 59 | 44 | - | - | 19 | 0.200 | 2.20 | 16 |
| 4.10 | 45.6 | 73.1 | 126.9 | 45.6 | 0.9 | 0.2 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 24 | 15 | 16 | 57 | 44 | - | - | 20 | 0.200 | 2.23 | 16 |
| 4.27 | 43.4 | 69.6 | 120.3 | 43.4 | 0.8 | -0.7 | 2.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 23 | 14 | 15 | 55 | 43 | - | - | 20 | 0.200 | 2.22 | 16 |
| 4.43 | 42.1 | 67.6 | 115.5 | 42.1 | 0.8 | -1.1 | 1.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 23 | 14 | 14 | 54 | 43 | - | - | 20 | 0.200 | 2.22 | 16 |
| 4.59 | 40.0 | 64.1 | 110.6 | 40.0 | 0.7 | -0.7 | 1.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 21 | 13 | 14 | 52 | 42 | - | - | 20 | 0.200 | 2.22 | 16 |
| 4.76 | 36.9 | 59.2 | 102.4 | 36.9 | 0.6 | -0.7 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 20 | 12 | 13 | 50 | 42 | - | - | 20 | 0.200 | 2.22 | 16 |
| 4.92 | 33.9 | 54.4 | 107.0 | 33.9 | 0.7 | -0.5 | 2.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 18 | 11 | 12 | 47 | 41 | - | - | 23 | 0.200 | 2.31 | 16 |
| 5.09 | 30.6 | 49.1 | 117.1 | 30.6 | 0.8 | -0.4 | 2.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 10 | 11 | 44 | 40 | - | - | 27 | 0.200 | 2.42 | 16 |
| 5.25 | 24.7 | 39.7 | 127.0 | 24.7 | 0.9 | -0.9 | 3.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 20 | 12 | 10 | - | - | 1.7 | 9.9 | 34 | 0.070 | 2.58 | 15 |
| 5.41 | 19.7 | 31.6 | - | 19.7 | 0.8 | -0.3 | 4.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 10 | 9 | - | - | 1.4 | 9.9 | 41 | 0.070 | 2.71 | 15 |
| 5.58 | 15.4 | 24.8 | - | 15.4 | 0.7 | -0.1 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 17 | 10 | 7 | - | - | 1.1 | 9.9 | 47 | 0.005 | 2.82 | 15 |
| 5.74 | 14.1 | 22.6 | - | 14.1 | 0.6 | 0.5 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 9 | 7 | - | - | 1.0 | 9.9 | 48 | 0.005 | 2.84 | 15 |
| 5.91 | 13.2 | 21.1 | - | 13.2 | 0.6 | -0.3 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.9 | 50 | 0.005 | 2.88 | 15 |
| 6.07 | 12.2 | 19.6 | - | 12.3 | 0.7 | 0.2 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 55 | 0.005 | 2.94 | 15 |
| 6.23 | 13.4 | 21.5 | - | 13.4 | 0.7 | 0.9 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.9 | 51 | 0.005 | 2.89 | 15 |
| 6.40 | 14.3 | 23.0 | - | 14.3 | 0.7 | -0.5 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 10 | 7 | - | - | 1.0 | 9.9 | 49 | 0.005 | 2.85 | 15 |
| 6.56 | 13.8 | 22.2 | - | 13.9 | 0.7 | 0.7 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 9 | 7 | - | - | 1.0 | 9.9 | 50 | 0.005 | 2.87 | 15 |
| 6.73 | 14.0 | 22.4 | - | 14.0 | 0.7 | 1.4 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 9 | 7 | - | - | 1.0 | 9.9 | 51 | 0.005 | 2.88 | 15 |
| 6.89 | 14.2 | 22.8 | - | 14.2 | 0.8 | 1.8 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 9 | 7 | - | - | 1.0 | 9.9 | 51 | 0.005 | 2.89 | 15 |
| 7.05 | 13.9 | 22.4 | - | 14.0 | 0.7 | 0.9 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 9 | 7 | - | - | 1.0 | 9.9 | 52 | 0.005 | 2.89 | 15 |
| 7.22 | 13.3 | 21.3 | - | 13.3 | 0.7 | 0.7 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.8 | 53 | 0.005 | 2.91 | 15 |
| 7.38 | 12.9 | 20.7 | - | 12.9 | 0.7 | 1.6 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.3 | 53 | 0.005 | 2.92 | 15 |
| 7.55 | 12.9 | 20.6 | - | 12.9 | 0.7 | 2.6 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.1 | 53 | 0.005 | 2.92 | 15 |
| 7.71 | 12.0 | 19.3 | - | 12.1 | 0.6 | 2.0 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 8.3 | 55 | 0.005 | 2.95 | 15 |
| 7.87 | 11.5 | 18.5 | - | 11.6 | 0.6 | 3.1 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 7.8 | 55 | 0.005 | 2.95 | 15 |
| 8.04 | 11.7 | 18.7 | - | 11.7 | 0.6 | 4.2 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 7.7 | 55 | 0.005 | 2.94 | 15 |
| 8.20 | 11.5 | 18.5 | - | 11.6 | 0.6 | 4.6 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 7.5 | 55 | 0.005 | 2.95 | 15 |
| 8.37 | 11.4 | 18.2 | - | 11.5 | 0.6 | 5.4 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 7.2 | 55 | 0.005 | 2.95 | 15 |
| 8.53 | 11.2 | 17.9 | - | 11.3 | 0.6 | 5.5 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 6 | - | - | 0.8 | 6.9 | 56 | 0.005 | 2.96 | 15 |
| 8.69 | 10.9 | 17.5 | - | 11.0 | 0.5 | 6.8 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 6.6 | 56 | 0.005 | 2.96 | 15 |
| 8.86 | 10.6 | 17.0 | - | 10.7 | 0.5 | 7.1 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.3 | 57 | 0.005 | 2.97 | 15 |
| 9.02 | 10.7 | 17.2 | - | 10.9 | 0.4 | 8.2 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.3 | 53 | 0.005 | 2.91 | 15 |
| 9.19 | 10.6 | 17.0 | - | 10.7 | 0.4 | 6.6 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.1 | 52 | 0.005 | 2.89 | 15 |
| 9.35 | 8.6 | 13.9 | - | 8.7 | 0.4 | 5.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.8 | 59 | 0.005 | 3.01 | 15 |
| 9.51 | 7.5 | 12.1 | - | 7.7 | 0.3 | 7.3 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 4.1 | 63 | 0.005 | 3.07 | 15 |
| 9.68 | 7.3 | 11.7 | - | 7.5 | 0.3 | 7.6 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 3.9 | 63 | 0.005 | 3.06 | 15 |
| 9.84 | 7.0 | 11.2 | - | 7.2 | 0.3 | 8.7 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 5 | 4 | - | - | 0.5 | 3.6 | 63 | 0.005 | 3.07 | 15 |
| 10.01 | 6.8 | 10.9 | - | 7.0 | 0.3 | 9.8 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 5 | 4 | - | - | 0.4 | 3.5 | 64 | 0.005 | 3.08 | 15 |
| 10.17 | 6.8 | 10.9 | - | 7.0 | 0.2 | 8.5 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 5 | 4 | - | - | 0.4 | 3.5 | 60 | 0.005 | 3.02 | 15 |
| 10.34 | 5.8 | 9.3 | - | 6.0 | 0.2 | 9.7 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 2.9 | 65 | 0.005 | 3.10 | 15 |
| 10.50 | 5.1 | 8.2 | - | 5.3 | 0.2 | 12.2 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 3 | 3 | - | - | 0.3 | 2.5 | 70 | 0.005 | 3.16 | 15 |
| 10.66 | 5.4 | 8.6 | - | 5.7 | 0.2 | 14.5 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.3 | 2.6 | 70 | 0.005 | 3.16 | 15 |
| 10.83 | 5.9 | 9.5 | - | 6.2 | 0.2 | 15.3 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 2.9 | 68 | 0.005 | 3.13 | 15 |
| 10.99 | 6.1 | 9.7 | - | 6.4 | 0.2 | 15.1 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 2.9 | 67 | 0.005 | 3.12 | 15 |
| 11.16 | 5.8 | 9.3 | - | 6.1 | 0.2 | 14.3 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 2.8 | 69 | 0.005 | 3.14 | 15 |
| 11.32 | 5.9 | 9.4 | - | 6.2 | 0.2 | 14.6 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 2.8 | 67 | 0.005 | 3.12 | 15 |
| 11.48 | 5.8 | 9.3 | - | 6.0 | 0.2 | 11.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 2.7 | 70 | 0.005 | 3.16 | 15 |
| 11.65 | 5.5 | 8.8 | - | 5.8 | 0.3 | 12.0 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.3 | 2.5 | 79 | 0.005 | 3.27 | 15 |
| 11.81 | 7.3 | 11.5 | - | 7.6 | 0.4 | 13.5 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 3.4 | 70 | 0.005 | 3.16 | 15 |
| 11.98 | 12.2 | 19.1 | - | 12.3 | 0.3 | 1.7 | 3.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 6 | 5 | - | - | 0.8 | 6.0 | 45 | 0.070 | 2.79 | 15 |
| 12.14 | 16.1 | 25.1 | - | 16.1 | 0.4 | -3.5 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 8 | 7 | - | - | 1.1 | 7.9 | 37 | 0.070 | 2.63 | 15 |
| 12.30 | 16.3 | 25.2 | - | 16.2 | 0.4 | -5.0 | 2.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 8 | 7 | - | - | 1.1 | 8.0 | 39 | 0.070 | 2.66 | 15 |
| 12.47 | 13.6 | 20.9 | - | 13.5 | 0.4 | -4.2 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 7 | 6 | - | - | 0.9 | 6.5 | 43 | 0.070 | 2.74 | 15 |
| 12.63 | 17.1 | 20.6 | 59.4 | 17.2 | 0.2 | 1.5 | 1.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 7 | 6 | 5 | 15 | 32 | - | - | 32 | 0.200 | 2.52 | 16 |
| 12.80 | 26.2 | 31.3 | 48.0 | 26.1 | 0.1 | -4.0 | 0.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 10 | 9 | 6 | 29 | 35 | - | - | 17 | 0.200 | 2.14 | 16 |
| 12.96 | 25.9 | 30.8 | 51.5 | 25.8 | 0.1 | -4.9 | 0.5 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 10 | 9 | 7 | 28 | 35 | - | - | 19 | 0.200 | 2.20 | 16 |
| 13.12 | 22.5 | 26.7 | 58.1 | 22.4 | 0.2 | -3.9 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 9 | 8 | 6 | 23 | 34 | - | - | 25 | 0.200 | 2.36 | 16 |
| 13.29 | 20.1 | 23.8 | 66.6 | 20.0 | 0.3 | -2.8 | 1.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 8 | 7 | 6 | 20 | 33 | - | - | 31 | 0.200 | 2.51 | 16 |
| 13.45 | 19.7 | 23.2 | 73.5 | 19.6 | 0.3 | -2.1 | 1.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 10 | 6 | - | - | 1.3 | 9.2 | 34 | 0.070 | 2.57 | 15 |
| 13.62 | 19.6 | 25.1 | 83.1 | 19.5 | 0.4 | -2.3 | 2.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 10 | 6 | - | - | 1.3 | 9.1 | 35 | 0.070 | 2.60 | 15 |
| 13.78 | 14.9 | 21.7 | - | 14.9 | 0.3 | -2.1 | 2.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 11 | 7 | 6 | - | - | 1.0 | 6.8 | 37 | 0.070 | 2.64 | 15 |
| 13.94 | 24.1 | 28.2 | 65.7 | 24.1 | 0.3 | 0.7 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 9 | 8 | 7 | 25 | 34 | - | - | 27 | 0.200 | 2.40 | 16 |
| 14.11 | 31.8 | 37.0 | 65.0 | 31.7 | 0.3 | -3.3 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 12 | 11 | 8 | 34 | 36 | - | - | 20 | 0.200 | 2.24 | 16 |
| 14.27 | 35.5 | 41.2 | 61.0 | 35.4 | 0.2 | -3.2 | 0.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 12 | 8 | 38 | 37 | - | - | 16 | 0.200 | 2.11 | 16 |
| 14.44 | 38.5 | 44.5 | 58.3 | 38.4 | 0.2 | -4.1 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 9 | 8 | 9 | 40 | 37 | - | - | 13 | 0.350 | 2.01 | 16 |
| 14.60 | 40.1 | 46.2 | 62.7 | 40.0 | 0.2 | -4.9 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 9 | 8 | 9 | 42 | 37 | - | - | 14 | 0.350 | 2.04 | 16 |
| 14.76 | 39.6 | 45.4 | 62.6 | 39.5 | 0.2 | -4.6 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 9 | 8 | 9 | 41 | 37 | - | - | 14 | 0.350 | 2.05 | 16 |
| 14.93 | 38.6 | 44.1 | 79.3 | 38.5 | 0.5 | -4.2 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 15 | 13 | 10 | 40 | 37 | - | - | 21 | 0.200 | 2.25 | 16 |
| 15.09 | 34.1 | 38.8 | 80.7 | 34.1 | 0.5 | -0.4 | 1.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 11 | 9 | 36 | 36 | - | - | 24 | 0.200 | 2.34 | 16 |
| 15.26 | 22.0 | 24.9 | 80.0 | 21.9 | 0.4 | -0.7 | 2.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 11 | 6 | - | - | 1.5 | 9.5 | 34 | 0.070 | 2.58 | 15 |
| 15.42 | 14.3 | 19.4 | - | 14.3 | 0.4 | 1.8 | 2.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 7 | 5 | - | - | 1.0 | 6.0 | 45 | 0.070 | 2.77 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(882).cpt
CPT Date: 3/23/2022 2:29:06 PM
GW During Test: 10 ft



| Depth ft | qc PS tsf | qc1n PS - * | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx - * | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15.58 | 10.7 | 14.4 | - | 10.8 | 0.4 | 5.9 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 7 | 5 | - | - | 0.7 | 4.4 | 57 | 0.005 | 2.98 | 15 |
| 15.75 | 11.1 | 14.9 | - | 11.3 | 0.5 | 8.7 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 7 | 5 | - | - | 0.7 | 4.5 | 60 | 0.005 | 3.02 | 15 |
| 15.91 | 11.9 | 16.0 | - | 12.2 | 0.6 | 14.4 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 8 | 5 | - | - | 0.8 | 4.9 | 60 | 0.005 | 3.02 | 15 |
| 16.08 | 13.0 | 17.3 | - | 13.4 | 0.7 | 18.4 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 9 | 5 | - | - | 0.9 | 5.3 | 58 | 0.005 | 2.99 | 15 |
| 16.24 | 14.2 | 18.8 | - | 14.6 | 0.7 | 20.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 9 | 6 | - | - | 1.0 | 5.8 | 56 | 0.005 | 2.96 | 15 |
| 16.40 | 15.1 | 19.9 | - | 15.5 | 0.8 | 20.0 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 10 | 6 | - | - | 1.0 | 6.1 | 55 | 0.005 | 2.95 | 15 |
| 16.57 | 15.5 | 20.2 | - | 15.9 | 0.8 | 19.9 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 10 | 6 | - | - | 1.0 | 6.3 | 55 | 0.005 | 2.94 | 15 |
| 16.73 | 15.8 | 20.6 | - | 16.3 | 0.8 | 21.7 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.4 | 54 | 0.005 | 2.94 | 15 |
| 16.90 | 16.1 | 20.7 | - | 16.5 | 0.8 | 23.1 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.4 | 54 | 0.005 | 2.94 | 15 |
| 17.06 | 16.5 | 21.2 | - | 16.9 | 0.9 | 23.6 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.6 | 54 | 0.005 | 2.94 | 15 |
| 17.23 | 16.5 | 21.1 | - | 17.0 | 0.9 | 21.6 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 7 | - | - | 1.1 | 6.5 | 55 | 0.005 | 2.95 | 15 |
| 17.39 | 16.8 | 21.3 | - | 17.2 | 1.0 | 20.2 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 7 | - | - | 1.1 | 6.6 | 56 | 0.005 | 2.96 | 15 |
| 17.55 | 16.6 | 21.0 | - | 17.0 | 1.0 | 18.5 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 7 | - | - | 1.1 | 6.5 | 57 | 0.005 | 2.97 | 15 |
| 17.72 | 16.4 | 20.6 | - | 16.7 | 1.0 | 15.2 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 7 | - | - | 1.1 | 6.4 | 57 | 0.005 | 2.98 | 15 |
| 17.88 | 16.4 | 20.5 | - | 16.7 | 1.0 | 12.2 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.3 | 57 | 0.005 | 2.98 | 15 |
| 18.05 | 16.3 | 20.3 | - | 16.5 | 1.0 | 12.0 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.3 | 57 | 0.005 | 2.98 | 15 |
| 18.21 | 16.1 | 19.8 | - | 16.3 | 1.0 | 11.8 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 11 | 6 | - | - | 1.1 | 6.1 | 58 | 0.005 | 3.00 | 15 |
| 18.37 | 16.3 | 20.1 | - | 16.6 | 1.0 | 11.5 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 11 | 6 | - | - | 1.1 | 6.2 | 57 | 0.005 | 2.98 | 15 |
| 18.54 | 15.8 | 19.4 | - | 16.0 | 0.9 | 8.6 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 11 | 6 | - | - | 1.1 | 6.0 | 58 | 0.005 | 3.00 | 15 |
| 18.70 | 14.3 | 17.4 | - | 14.4 | 0.9 | 5.0 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 10 | 6 | - | - | 0.9 | 5.3 | 62 | 0.005 | 3.05 | 15 |
| 18.87 | 12.9 | 15.6 | - | 13.0 | 0.8 | 3.5 | 6.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.7 | 65 | 0.005 | 3.10 | 15 |
| 19.03 | 12.1 | 14.6 | - | 12.2 | 0.8 | 2.5 | 6.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.4 | 67 | 0.005 | 3.12 | 15 |
| 19.19 | 12.9 | 15.4 | - | 13.0 | 0.7 | 3.1 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.7 | 64 | 0.005 | 3.07 | 15 |
| 19.36 | 13.5 | 16.1 | - | 13.6 | 0.7 | 3.4 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 4.9 | 62 | 0.005 | 3.05 | 15 |
| 19.52 | 13.3 | 15.8 | - | 13.4 | 0.7 | 4.1 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 4.8 | 63 | 0.005 | 3.06 | 15 |
| 19.69 | 12.6 | 14.8 | - | 12.7 | 0.7 | 4.1 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.4 | 64 | 0.005 | 3.08 | 15 |
| 19.85 | 12.2 | 14.3 | - | 12.2 | 0.6 | 4.0 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 64 | 0.005 | 3.08 | 15 |
| 20.01 | 11.4 | 13.3 | - | 11.5 | 0.6 | 4.8 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.7 | 3.9 | 65 | 0.005 | 3.09 | 15 |
| 20.18 | 10.3 | 12.0 | - | 10.5 | 0.5 | 8.1 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.5 | 67 | 0.005 | 3.11 | 15 |
| 20.34 | 9.3 | 10.7 | - | 9.4 | 0.4 | 9.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.6 | 3.1 | 70 | 0.005 | 3.16 | 15 |
| 20.51 | 8.1 | 9.4 | - | 8.4 | 0.4 | 11.6 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 5 | 3 | - | - | 0.5 | 2.6 | 74 | 0.005 | 3.22 | 15 |
| 20.67 | 7.8 | 9.0 | - | 8.1 | 0.3 | 14.9 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 5 | 3 | - | - | 0.5 | 2.5 | 72 | 0.005 | 3.19 | 15 |
| 20.83 | 7.8 | 8.9 | - | 8.1 | 0.2 | 15.2 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 5 | 3 | - | - | 0.5 | 2.5 | 70 | 0.005 | 3.16 | 15 |
| 21.00 | 6.8 | 7.7 | - | 7.2 | 0.3 | 21.0 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.4 | 2.1 | 85 | 0.005 | 3.34 | 15 |
| 21.16 | 7.1 | 8.0 | - | 7.6 | 0.4 | 29.2 | 7.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.4 | 2.2 | 88 | 0.005 | 3.38 | 15 |
| 21.33 | 8.4 | 9.4 | - | 9.0 | 0.7 | 35.3 | 9.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 4 | - | - | 0.5 | 2.6 | 87 | 0.005 | 3.37 | 15 |
| 21.49 | 15.6 | 17.4 | - | 15.9 | 0.9 | 19.6 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 10 | 6 | - | - | 1.0 | 5.3 | 60 | 0.005 | 3.02 | 15 |
| 21.65 | 15.4 | 17.1 | - | 15.8 | 0.9 | 21.8 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 6 | - | - | 1.0 | 5.2 | 63 | 0.005 | 3.06 | 15 |
| 21.82 | 16.3 | 18.0 | - | 16.9 | 0.9 | 33.6 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.5 | 60 | 0.005 | 3.02 | 15 |
| 21.98 | 16.9 | 18.6 | - | 17.5 | 0.9 | 29.8 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.7 | 58 | 0.005 | 3.00 | 15 |
| 22.15 | 16.9 | 18.5 | - | 17.0 | 1.0 | 6.3 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.1 | 5.6 | 59 | 0.005 | 3.01 | 15 |
| 22.31 | 17.7 | 19.3 | - | 18.0 | 1.0 | 14.5 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 12 | 6 | - | - | 1.2 | 5.9 | 58 | 0.005 | 2.99 | 15 |
| 22.47 | 18.1 | 19.7 | - | 18.5 | 1.0 | 16.2 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 12 | 6 | - | - | 1.2 | 6.0 | 57 | 0.005 | 2.98 | 15 |
| 22.64 | 17.8 | 19.3 | - | 18.2 | 1.0 | 19.3 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 12 | 6 | - | - | 1.2 | 5.9 | 57 | 0.005 | 2.98 | 15 |
| 22.80 | 17.2 | 18.6 | - | 17.7 | 0.9 | 25.6 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 11 | 6 | - | - | 1.2 | 5.6 | 58 | 0.005 | 2.99 | 15 |
| 22.97 | 15.5 | 16.6 | - | 15.8 | 0.8 | 13.7 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 5.0 | 60 | 0.005 | 3.02 | 15 |
| 23.13 | 13.1 | 14.0 | - | 13.3 | 0.6 | 11.4 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.9 | 4.1 | 61 | 0.005 | 3.04 | 15 |
| 23.30 | 12.4 | 13.1 | - | 12.8 | 0.6 | 23.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 4 | - | - | 0.8 | 3.9 | 64 | 0.005 | 3.08 | 15 |
| 23.46 | 13.9 | 14.7 | - | 14.8 | 0.7 | 41.3 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.4 | 63 | 0.005 | 3.06 | 15 |
| 23.62 | 15.2 | 16.0 | - | 16.0 | 0.8 | 38.0 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.8 | 63 | 0.005 | 3.06 | 15 |
| 23.79 | 16.0 | 16.7 | - | 16.5 | 0.8 | 28.5 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 11 | 5 | - | - | 1.1 | 5.0 | 60 | 0.005 | 3.02 | 15 |
| 23.95 | 15.3 | 15.9 | - | 15.6 | 0.7 | 16.9 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.8 | 59 | 0.005 | 3.01 | 15 |
| 24.12 | 14.0 | 14.6 | - | 14.3 | 0.6 | 14.4 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.3 | 60 | 0.005 | 3.02 | 15 |
| 24.28 | 13.2 | 13.7 | - | 13.6 | 0.6 | 16.4 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.9 | 4.0 | 62 | 0.005 | 3.05 | 15 |
| 24.44 | 12.9 | 13.2 | - | 13.3 | 0.6 | 23.5 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.8 | 3.9 | 64 | 0.005 | 3.07 | 15 |
| 24.61 | 12.9 | 13.2 | - | 13.5 | 0.6 | 29.4 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.8 | 3.9 | 65 | 0.005 | 3.09 | 15 |
| 24.77 | 12.4 | 12.7 | - | 13.0 | 0.6 | 28.7 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.7 | 66 | 0.005 | 3.11 | 15 |
| 24.94 | 13.0 | 13.2 | - | 13.7 | 0.7 | 32.5 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.9 | 3.9 | 66 | 0.005 | 3.11 | 15 |
| 25.10 | 14.2 | 14.4 | - | 14.9 | 0.7 | 33.7 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.3 | 63 | 0.005 | 3.06 | 15 |
| 25.26 | 14.5 | 14.6 | - | 15.1 | 0.7 | 31.3 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.3 | 62 | 0.005 | 3.05 | 15 |
| 25.43 | 14.6 | 14.7 | - | 15.3 | 0.7 | 33.7 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.3 | 61 | 0.005 | 3.04 | 15 |
| 25.59 | 14.8 | 14.7 | - | 15.5 | 0.7 | 36.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.4 | 61 | 0.005 | 3.04 | 15 |
| 25.76 | 14.5 | 14.4 | - | 15.0 | 0.7 | 27.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 1.0 | 4.3 | 63 | 0.005 | 3.06 | 15 |
| 25.92 | 13.5 | 13.3 | - | 13.9 | 0.6 | 21.8 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 3.9 | 63 | 0.005 | 3.06 | 15 |
| 26.08 | 14.6 | 14.4 | - | 15.3 | 0.5 | 33.3 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 4 | - | - | 1.0 | 4.3 | 56 | 0.005 | 2.96 | 15 |
| 26.25 | 14.4 | 14.1 | - | 14.8 | 0.5 | 23.9 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 10 | 4 | - | - | 0.9 | 4.2 | 58 | 0.005 | 2.99 | 15 |
| 26.41 | 13.2 | 12.9 | - | 14.0 | 0.5 | 41.0 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 3.8 | 63 | 0.005 | 3.07 | 15 |
| 26.58 | 13.9 | 13.5 | - | 14.9 | 0.5 | 51.7 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 3.9 | 60 | 0.005 | 3.03 | 15 |
| 26.74 | 13.4 | 12.9 | - | 14.3 | 0.4 | 47.5 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 3.8 | 59 | 0.005 | 3.01 | 15 |
| 26.90 | 12.8 | 12.3 | - | 13.7 | 0.5 | 48.8 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.8 | 3.6 | 63 | 0.005 | 3.06 | 15 |
| 27.07 | 12.8 | 12.2 | - | 13.8 | 0.5 | 54.7 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.8 | 3.5 | 64 | 0.005 | 3.09 | 15 |
| 27.23 | 13.1 | 12.5 | - | 14.2 | 0.5 | 55.9 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.9 | 3.6 | 64 | 0.005 | 3.08 | 15 |
| 27.40 | 12.5 | 11.9 | - | 13.5 | 0.5 | 47.4 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.4 | 65 | 0.005 | 3.09 | 15 |
| 27.56 | 11.8 | 11.2 | - | 12.8 | 0.5 | 52.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.2 | 69 | 0.005 | 3.14 | 15 |
| 27.72 | 11.9 | 11.2 | - | 12.8 | 0.5 | 45.1 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.2 | 69 | 0.005 | 3.14 | 15 |
| 27.89 | 11.3 | 10.6 | - | 11.7 | 0.6 | 19.9 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 3.0 | 73 | 0.005 | 3.20 | 15 |
| 28.05 | 10.6 | 9.9 | - | 11.0 | 0.5 | 19.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.8 | 76 | 0.005 | 3.23 | 15 |
| 28.22 | 10.1 | 9.4 | - | 10.3 | 0.5 | 14.6 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 4 | - | - | 0.6 | 2.6 | 79 | 0.005 | 3.27 | 15 |
| 28.38 | 10.1 | 9.4 | - | 10.5 | 0.6 | 21.2 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 4 | - | - | 0.6 | 2.6 | 80 | 0.005 | 3.28 | 15 |
| 28.54 | 10.7 | 9.9 | - | 11.1 | 0.6 | 23.2 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.8 | 78 | 0.005 | 3.26 | 15 |
| 28.71 | 11.4 | 10.5 | - | 11.9 | 0.6 | 22.8 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 3.0 | 73 | 0.005 | 3.20 | 15 |
| 28.87 | 12.0 | 11.0 | - | 12.5 | 0.5 | 25.9 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 69 | 0.005 | 3.15 | 15 |
| 29.04 | 12.0 | 10.9 | - | 12.7 | 0.5 | 38.9 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 69 | 0.005 | 3.15 | 15 |
| 29.20 | 12.5 | 11.4 | - | 13.4 | 0.6 | 45.3 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.2 | 69 | 0.005 | 3.15 | 15 |
| 29.36 | 12.6 | 11.4 | - | 13.3 | 0.6 | 38.4 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.3 | 70 | 0.005 | 3.16 | 15 |
| 29.53 | 12.7 | 11.5 | - | 13.5 | 0.6 | 40.5 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.3 | 70 | 0.005 | 3.17 | 15 |
| 29.69 | 13.2 | 11.9 | - | 14.1 | 0.7 | 48.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.9 | 3.4 | 70 | 0.005 | 3.17 | 15 |
| 29.86 | 14.2 | 12.7 | - | 15.1 | 0.6 | 47.0 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.9 | 3.7 | 66 | 0.005 | 3.10 | 15 |
| 30.02 | 14.4 | 12.9 | - | 15.3 | 0.5 | 43.8 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 10 | 4 | - | - | 0.9 | 3.7 | 61 | 0.005 | 3.04 | 15 |
| 30.19 | 14.8 | 13.2 | - | 15.9 | 0.4 | 54.7 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 10 | 4 | - | - | 1.0 | 3.8 | 57 | 0.005 | 2.97 | 15 |
| 30.35 | 12.9 | 11.4 | - | 14.1 | 0.4 | 61.1 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.8 | 3.2 | 64 | 0.005 | 3.07 | 15 |
| 30.51 | 12.4 | 11.0 | - | 13.8 | 0.5 | 72.3 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 69 | 0.005 | 3.15 | 15 |
| 30.68 | 12.4 | 10.9 | - | 13.9 | 0.6 | 74.7 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 71 | 0.005 | 3.17 | 15 |
| 30.84 | 12.6 | 11.0 | - | 13.9 | 0.6 | 66.7 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 70 | 0.005 | 3.16 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(882).cpt
CPT Date: 3/23/2022 2:29:06 PM
GW During Test: 10 ft



| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.01 | 12.0 | 10.4 | - | 13.3 | 0.5 | 66.3 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.9 | 71 | 0.005 | 3.18 | 15 |
| 31.17 | 12.5 | 10.8 | - | 13.6 | 0.5 | 56.9 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 70 | 0.005 | 3.16 | 15 |
| 31.33 | 12.7 | 11.0 | - | 13.9 | 0.6 | 61.0 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 70 | 0.005 | 3.16 | 15 |
| 31.50 | 12.9 | 11.1 | - | 14.0 | 0.6 | 56.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.2 | 70 | 0.005 | 3.16 | 15 |
| 31.66 | 12.8 | 11.0 | - | 14.0 | 0.6 | 59.2 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.1 | 70 | 0.005 | 3.16 | 15 |
| 31.83 | 12.9 | 11.1 | - | 14.0 | 0.6 | 53.1 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.1 | 71 | 0.005 | 3.17 | 15 |
| 31.99 | 13.0 | 11.1 | - | 14.1 | 0.6 | 52.9 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.1 | 71 | 0.005 | 3.17 | 15 |
| 32.15 | 13.1 | 11.1 | - | 14.0 | 0.6 | 46.7 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 3.2 | 68 | 0.005 | 3.14 | 15 |
| 32.32 | 12.5 | 10.6 | - | 13.5 | 0.5 | 50.4 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.0 | 69 | 0.005 | 3.15 | 15 |
| 32.48 | 11.4 | 9.6 | - | 12.5 | 0.4 | 56.8 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.6 | 72 | 0.005 | 3.19 | 15 |
| 32.65 | 11.2 | 9.4 | - | 12.6 | 0.5 | 68.9 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.6 | 74 | 0.005 | 3.21 | 15 |
| 32.81 | 11.4 | 9.5 | - | 12.7 | 0.5 | 68.5 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 4 | - | - | 0.7 | 2.6 | 76 | 0.005 | 3.24 | 15 |
| 32.97 | 12.2 | 10.2 | - | 13.4 | 0.6 | 64.5 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.8 | 74 | 0.005 | 3.21 | 15 |
| 33.14 | 12.6 | 10.5 | - | 13.6 | 0.6 | 50.9 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.9 | 72 | 0.005 | 3.19 | 15 |
| 33.30 | 12.2 | 10.1 | - | 13.2 | 0.6 | 51.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.8 | 73 | 0.005 | 3.20 | 15 |
| 33.47 | 12.2 | 10.0 | - | 13.1 | 0.5 | 50.1 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.8 | 73 | 0.005 | 3.20 | 15 |
| 33.63 | 11.6 | 9.5 | - | 12.7 | 0.5 | 57.1 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 4 | - | - | 0.7 | 2.6 | 75 | 0.005 | 3.22 | 15 |
| 33.79 | 11.5 | 9.4 | - | 12.6 | 0.5 | 55.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 4 | - | - | 0.7 | 2.6 | 75 | 0.005 | 3.22 | 15 |
| 33.96 | 11.4 | 9.3 | - | 12.6 | 0.5 | 60.7 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.5 | 74 | 0.005 | 3.22 | 15 |
| 34.12 | 11.1 | 9.1 | - | 12.3 | 0.4 | 59.0 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.5 | 74 | 0.005 | 3.21 | 15 |
| 34.29 | 10.9 | 8.9 | - | 12.1 | 0.4 | 60.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.4 | 74 | 0.005 | 3.21 | 15 |
| 34.45 | 10.4 | 8.4 | - | 11.7 | 0.4 | 64.8 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.2 | 76 | 0.005 | 3.24 | 15 |
| 34.61 | 9.5 | 7.7 | - | 10.7 | 0.4 | 63.0 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 83 | 0.005 | 3.33 | 15 |
| 34.78 | 9.0 | 7.2 | - | 10.1 | 0.4 | 57.5 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 87 | 0.005 | 3.37 | 15 |
| 34.94 | 9.1 | 7.3 | - | 10.3 | 0.4 | 61.9 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 88 | 0.005 | 3.38 | 15 |
| 35.11 | 9.6 | 7.7 | - | 10.8 | 0.5 | 58.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 85 | 0.005 | 3.35 | 15 |
| 35.27 | 10.0 | 8.0 | - | 11.1 | 0.5 | 54.7 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 83 | 0.005 | 3.32 | 15 |
| 35.43 | 9.9 | 7.8 | - | 10.9 | 0.5 | 51.8 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 84 | 0.005 | 3.33 | 15 |
| 35.60 | 9.7 | 7.7 | - | 10.8 | 0.5 | 54.2 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 86 | 0.005 | 3.36 | 15 |
| 35.76 | 9.8 | 7.7 | - | 11.0 | 0.5 | 57.4 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 86 | 0.005 | 3.36 | 15 |
| 35.93 | 10.2 | 8.0 | - | 11.1 | 0.5 | 48.1 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 84 | 0.005 | 3.33 | 15 |
| 36.09 | 10.3 | 8.1 | - | 11.3 | 0.5 | 49.3 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 82 | 0.005 | 3.31 | 15 |
| 36.26 | 10.2 | 8.0 | - | 11.4 | 0.4 | 58.2 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 36.42 | 10.2 | 7.9 | - | 11.3 | 0.4 | 55.9 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 36.58 | 10.0 | 7.8 | - | 11.2 | 0.4 | 60.7 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 82 | 0.005 | 3.31 | 15 |
| 36.75 | 10.0 | 7.7 | - | 11.2 | 0.4 | 61.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 82 | 0.005 | 3.31 | 15 |
| 36.91 | 9.9 | 7.6 | - | 11.2 | 0.4 | 67.5 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 82 | 0.005 | 3.31 | 15 |
| 37.08 | 9.9 | 7.5 | - | 11.1 | 0.4 | 62.7 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 1.9 | 81 | 0.005 | 3.30 | 15 |
| 37.24 | 9.8 | 7.5 | - | 11.2 | 0.4 | 69.4 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 1.9 | 83 | 0.005 | 3.32 | 15 |
| 37.40 | 10.4 | 7.9 | - | 11.7 | 0.4 | 62.3 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 37.57 | 10.9 | 8.2 | - | 12.0 | 0.4 | 60.1 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.2 | 78 | 0.005 | 3.26 | 15 |
| 37.73 | 10.2 | 7.7 | - | 11.4 | 0.4 | 61.6 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 81 | 0.005 | 3.31 | 15 |
| 37.90 | 10.7 | 8.1 | - | 12.3 | 0.4 | 77.8 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.1 | 79 | 0.005 | 3.28 | 15 |
| 38.06 | 11.8 | 8.9 | - | 13.0 | 0.5 | 64.4 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 76 | 0.005 | 3.24 | 15 |
| 38.22 | 12.7 | 9.5 | - | 13.8 | 0.5 | 56.4 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.6 | 72 | 0.005 | 3.18 | 15 |
| 38.39 | 12.8 | 9.6 | - | 14.0 | 0.5 | 57.0 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.8 | 2.6 | 71 | 0.005 | 3.17 | 15 |
| 38.55 | 12.5 | 9.3 | - | 13.9 | 0.4 | 69.2 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 71 | 0.005 | 3.18 | 15 |
| 38.72 | 12.3 | 9.1 | - | 13.5 | 0.5 | 60.5 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 38.88 | 12.2 | 9.0 | - | 13.4 | 0.5 | 61.1 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.4 | 74 | 0.005 | 3.22 | 15 |
| 39.04 | 12.4 | 9.1 | - | 13.4 | 0.5 | 54.8 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 74 | 0.005 | 3.21 | 15 |
| 39.21 | 12.5 | 9.2 | - | 13.7 | 0.5 | 63.9 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 39.37 | 13.3 | 9.7 | - | 14.7 | 0.5 | 69.8 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 4 | - | - | 0.8 | 2.7 | 72 | 0.005 | 3.18 | 15 |
| 39.54 | 14.9 | 10.8 | - | 16.3 | 0.7 | 73.2 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 10 | 4 | - | - | 1.0 | 3.0 | 71 | 0.005 | 3.17 | 15 |
| 39.70 | 17.4 | 12.7 | - | 18.8 | 1.0 | 73.4 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 12 | 5 | - | - | 1.1 | 3.6 | 71 | 0.005 | 3.17 | 15 |
| 39.86 | 22.1 | 16.1 | - | 23.6 | 1.2 | 75.4 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 15 | 5 | - | - | 1.5 | 4.7 | 63 | 0.005 | 3.06 | 15 |
| 40.03 | 28.7 | 20.7 | - | 29.3 | 1.3 | 33.8 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 19 | 6 | - | - | 1.9 | 6.3 | 53 | 0.005 | 2.92 | 15 |
| 40.19 | 30.2 | 21.8 | - | 30.6 | 1.7 | 17.2 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 20 | 7 | - | - | 2.0 | 6.6 | 55 | 0.005 | 2.95 | 15 |
| 40.36 | 29.2 | 21.0 | - | 29.7 | 1.8 | 26.2 | 6.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 19 | 7 | - | - | 2.0 | 6.4 | 58 | 0.005 | 3.00 | 15 |
| 40.52 | 38.7 | 27.8 | - | 39.8 | 2.2 | 54.3 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 19 | 26 | 8 | - | - | 2.6 | 8.6 | 50 | 0.005 | 2.87 | 15 |
| 40.68 | 65.6 | 53.9 | 145.4 | 65.6 | 2.2 | 1.8 | 3.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 27 | 33 | 13 | - | - | 4.5 | 9.9 | 30 | 0.070 | 2.49 | 15 |
| 40.85 | 88.1 | 72.2 | 125.4 | 88.0 | 1.7 | -5.4 | 2.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 24 | 29 | 16 | 56 | 38 | - | - | 20 | 0.200 | 2.23 | 16 |
| 41.01 | 105.0 | 85.9 | 147.8 | 105.0 | 2.4 | -0.5 | 2.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 29 | 35 | 18 | 62 | 39 | - | - | 20 | 0.200 | 2.22 | 16 |
| 41.18 | 232.6 | 190.0 | 197.6 | 232.5 | 2.3 | -3.0 | 1.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 38 | 47 | 33 | 88 | 43 | - | - | 6 | 0.350 | 1.70 | 16 |
| 41.34 | 357.3 | 291.4 | 291.4 | 357.6 | 2.0 | 13.8 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 58 | 71 | 46 | 95 | 45 | - | - | 5 | 0.350 | 1.40 | 16 |
| 41.50 | 402.5 | 327.6 | 327.6 | 402.8 | 2.1 | 16.4 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 66 | 80 | 51 | 95 | 46 | - | - | 5 | 0.350 | 1.34 | 16 |
| 41.67 | 427.7 | 347.5 | 347.5 | 428.0 | 2.8 | 15.0 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 69 | 86 | 55 | 95 | 46 | - | - | 5 | 0.350 | 1.39 | 16 |
| 41.83 | 433.4 | 351.5 | 351.5 | 433.7 | 2.8 | 16.2 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 70 | 87 | 56 | 95 | 46 | - | - | 5 | 0.350 | 1.38 | 16 |
| 42.00 | 433.7 | 351.1 | 351.1 | 434.0 | 2.1 | 15.1 | 0.5 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 59 | 72 | 54 | 95 | 46 | - | - | 5 | 1.000 | 1.30 | 16 |
| 42.16 | 393.9 | 318.3 | 318.3 | 394.3 | 2.8 | 19.4 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 64 | 79 | 51 | 95 | 45 | - | - | 5 | 0.350 | 1.44 | 16 |
| 42.32 | 358.6 | 289.2 | 289.2 | 358.9 | 2.2 | 18.4 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 58 | 72 | 47 | 95 | 45 | - | - | 5 | 0.350 | 1.43 | 16 |
| 42.49 | 389.3 | 313.4 | 313.4 | 389.5 | 1.5 | 14.8 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 52 | 65 | 48 | 95 | 45 | - | - | 5 | 1.000 | 1.27 | 16 |
| 42.65 | 351.3 | 282.3 | 282.3 | 351.7 | 2.5 | 20.8 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 56 | 70 | 46 | 95 | 45 | - | - | 5 | 0.350 | 1.49 | 16 |
| 42.82 | 374.2 | 300.2 | 300.2 | 374.8 | 2.1 | 29.6 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 60 | 75 | 48 | 95 | 45 | - | - | 5 | 0.350 | 1.39 | 16 |
| 42.98 | 406.8 | 325.7 | 325.7 | 407.1 | 1.6 | 16.9 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 54 | 68 | 50 | 95 | 46 | - | - | 5 | 1.000 | 1.25 | 16 |
| 43.15 | 403.8 | 322.8 | 322.8 | 404.1 | 1.7 | 14.5 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 54 | 67 | 50 | 95 | 45 | - | - | 5 | 1.000 | 1.28 | 16 |
| 43.31 | 411.5 | 328.3 | 328.3 | 411.7 | 1.8 | 13.1 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 55 | 69 | 51 | 95 | 46 | - | - | 5 | 1.000 | 1.29 | 16 |
| 43.47 | 388.7 | 309.5 | 309.5 | 388.9 | 1.3 | 11.1 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 52 | 65 | 47 | 95 | 45 | - | - | 5 | 1.000 | 1.23 | 16 |
| 43.64 | 359.0 | 285.3 | 285.3 | 359.1 | 0.9 | 5.3 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 48 | 60 | 43 | 95 | 45 | - | - | 5 | 1.000 | 1.19 | 16 |
| 43.80 | 343.8 | 272.8 | 272.8 | 343.9 | 0.6 | 1.7 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 45 | 57 | 40 | 95 | 45 | - | - | 5 | 1.000 | 1.14 | 16 |
| 43.97 | 324.6 | 257.0 | 257.0 | 324.6 | 0.7 | 0.2 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 43 | 54 | 39 | 95 | 44 | - | - | 5 | 1.000 | 1.20 | 16 |
| 44.13 | 298.1 | 235.6 | 235.6 | 298.1 | 0.9 | -0.9 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 39 | 50 | 37 | 95 | 44 | - | - | 5 | 1.000 | 1.31 | 16 |
| 44.29 | 271.9 | 214.5 | 214.5 | 272.0 | 1.1 | 4.0 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 43 | 54 | 34 | 92 | 44 | - | - | 5 | 0.350 | 1.42 | 16 |
| 44.46 | 256.9 | 202.3 | 202.3 | 257.0 | 1.1 | 7.7 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 40 | 51 | 33 | 90 | 43 | - | - | 5 | 0.350 | 1.45 | 16 |
| 44.62 | 284.4 | 223.6 | 223.6 | 284.5 | 1.0 | 7.2 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 45 | 57 | 35 | 94 | 44 | - | - | 5 | 0.350 | 1.36 | 16 |
| 44.79 | 297.5 | 233.6 | 233.6 | 297.7 | 0.9 | 10.0 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 39 | 50 | 36 | 95 | 44 | - | - | 5 | 1.000 | 1.31 | 16 |
| 44.95 | 342.9 | 268.7 | 268.7 | 343.1 | 1.3 | 9.0 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 45 | 57 | 42 | 95 | 45 | - | - | 5 | 1.000 | 1.31 | 16 |
| 45.11 | 304.9 | 238.5 | 238.5 | 305.2 | 1.4 | 13.8 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 48 | 61 | 38 | 95 | 44 | - | - | 5 | 0.350 | 1.42 | 16 |
| 45.28 | 375.8 | 293.4 | 293.4 | 376.0 | 1.0 | 13.4 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 49 | 63 | 44 | 95 | 45 | - | - | 5 | 1.000 | 1.19 | 16 |
| 45.44 | 328.3 | 255.9 | 255.9 | 328.4 | 0.8 | 4.3 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 43 | 55 | 39 | 95 | 44 | - | - | 5 | 1.000 | 1.23 | 16 |
| 45.61 | 291.7 | 227.0 | 227.0 | 291.7 | 0.8 | -1.0 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 38 | 49 | 35 | 94 | 44 | - | - | 5 | 1.000 | 1.29 | 16 |
| 45.77 | 269.1 | 209.0 | 209.0 | 269.0 | 0.6 | -2.9 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 35 | 45 | 32 | 91 | 43 | - | - | 5 | 1.000 | 1.28 | 16 |
| 45.93 | 271.5 | 210.5 | 210.5 | 271.5 | 0.5 | -0.4 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 35 | 45 | 32 | 92 | 43 | - | - | 5 | 1.000 | 1.25 | 16 |
| 46.10 | 250.2 | 193.7 | 193.7 | 250.4 | 0.4 | 9.1 | 0.2 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 32 | 42 | 30 | 89 | 43 | - | - | 5 | 1.000 | 1.26 | 16 |
| 46.26 | 222.5 | 171.9 | 171.9 | 222.7 | 0.6 | 8.9 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 34 | 45 | 27 | 85 | 42 | - | - | 5 | 0.350 | 1.40 | 16 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Ratio % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46.43 | 215.3 | 166.1 | 166.1 | 215.4 | 0.4 | 4.2 | 0.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 33 | 43 | 26 | 84 | 42 | - | - | 5 | 0.350 | 1.37 | 16 |
| 46.59 | 230.6 | 177.6 | 177.6 | 230.8 | 0.4 | 10.6 | 0.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 36 | 46 | 28 | 86 | 42 | - | - | 5 | 0.350 | 1.33 | 16 |
| 46.75 | 214.5 | 165.0 | 165.0 | 214.8 | 0.4 | 13.4 | 0.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 33 | 43 | 26 | 84 | 42 | - | - | 5 | 0.350 | 1.36 | 16 |
| 46.92 | 209.0 | 160.4 | 160.4 | 209.1 | 0.3 | 6.5 | 0.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 32 | 42 | 25 | 83 | 42 | - | - | 5 | 0.350 | 1.34 | 16 |
| 47.08 | 195.1 | 149.6 | 149.6 | 195.5 | 0.5 | 16.1 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 30 | 39 | 24 | 80 | 42 | - | - | 5 | 0.350 | 1.46 | 16 |
| 47.25 | 187.4 | 143.4 | 143.4 | 187.6 | 0.4 | 14.5 | 0.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 29 | 37 | 23 | 79 | 41 | - | - | 5 | 0.350 | 1.44 | 16 |
| 47.41 | 189.5 | 144.8 | 144.8 | 189.7 | 0.5 | 11.8 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 29 | 38 | 24 | 79 | 41 | - | - | 5 | 0.350 | 1.47 | 16 |
| 47.57 | 206.5 | 157.5 | 157.5 | 206.9 | 0.7 | 17.0 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 32 | 41 | 26 | 82 | 42 | - | - | 5 | 0.350 | 1.49 | 16 |
| 47.74 | 227.7 | 173.4 | 173.4 | 228.0 | 0.8 | 14.8 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 35 | 46 | 28 | 85 | 42 | - | - | 5 | 0.350 | 1.45 | 16 |
| 47.90 | 224.0 | 170.3 | 170.3 | 224.3 | 0.7 | 12.6 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 34 | 45 | 27 | 85 | 42 | - | - | 5 | 0.350 | 1.42 | 16 |
| 48.07 | 236.1 | 179.2 | 179.2 | 236.3 | 0.9 | 11.3 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 36 | 47 | 29 | 86 | 42 | - | - | 5 | 0.350 | 1.46 | 16 |
| 48.23 | 289.2 | 219.2 | 219.2 | 289.5 | 2.6 | 12.0 | 0.9 | 6 | clean SAND to silty SAND | 125 | 5.0 | 44 | 58 | 38 | 93 | 43 | - | - | 5 | 0.350 | 1.63 | 16 |
| 48.39 | 335.2 | 253.7 | 253.7 | 335.5 | 2.4 | 12.4 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 51 | 67 | 42 | 95 | 44 | - | - | 5 | 0.350 | 1.52 | 16 |
| 48.56 | 350.2 | 264.6 | 264.6 | 350.3 | 2.6 | 7.7 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 70 | 44 | 95 | 44 | - | - | 5 | 0.350 | 1.51 | 16 |
| 48.72 | 362.2 | 273.3 | 273.3 | 362.5 | 2.9 | 17.5 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 55 | 72 | 45 | 95 | 44 | - | - | 5 | 0.350 | 1.53 | 16 |
| 48.89 | 367.3 | 276.7 | 276.7 | 367.6 | 2.0 | 15.5 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 55 | 73 | 44 | 95 | 45 | - | - | 5 | 0.350 | 1.40 | 16 |
| 49.05 | 384.3 | 289.0 | 289.0 | 384.2 | 1.9 | -1.5 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 58 | 77 | 46 | 95 | 45 | - | - | 5 | 0.350 | 1.36 | 16 |
| 49.22 | 372.8 | 279.9 | 279.9 | 372.7 | 1.6 | -1.5 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 56 | 75 | 44 | 95 | 45 | - | - | 5 | 0.350 | 1.34 | 16 |
| 49.38 | 356.1 | 267.0 | 267.0 | 356.1 | 1.6 | -2.3 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 71 | 42 | 95 | 44 | - | - | 5 | 0.350 | 1.36 | 16 |
| 49.54 | 318.0 | 238.1 | 238.1 | 318.1 | 1.6 | 2.8 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 48 | 64 | 38 | 95 | 44 | - | - | 5 | 0.350 | 1.43 | 16 |
| 49.71 | 278.0 | 207.8 | 207.8 | 278.3 | 0.8 | 14.1 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 42 | 56 | 33 | 91 | 43 | - | - | 5 | 0.350 | 1.35 | 16 |
| 49.87 | 258.8 | 193.2 | 193.2 | 259.1 | 0.9 | 15.0 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 39 | 52 | 31 | 89 | 43 | - | - | 5 | 0.350 | 1.42 | 16 |
| 50.04 | 204.7 | 152.5 | 152.5 | 205.0 | 1.2 | 17.2 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 41 | 26 | 81 | 41 | - | - | 5 | 0.350 | 1.63 | 16 |
| 50.20 | 211.0 | 157.1 | 157.1 | 211.4 | 1.1 | 17.7 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 42 | 27 | 82 | 42 | - | - | 5 | 0.350 | 1.60 | 16 |
| 50.36 | 250.1 | 185.8 | 185.8 | 250.3 | 1.2 | 13.2 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 37 | 50 | 31 | 87 | 42 | - | - | 5 | 0.350 | 1.50 | 16 |
| 50.53 | 273.2 | 202.7 | 202.7 | 273.5 | 0.9 | 15.8 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 41 | 55 | 32 | 90 | 43 | - | - | 5 | 0.350 | 1.38 | 16 |
| 50.69 | 280.1 | 207.5 | 207.5 | 280.4 | 1.0 | 15.3 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 41 | 56 | 33 | 91 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 50.86 | 263.6 | 195.0 | 195.0 | 263.9 | 1.3 | 17.4 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 39 | 53 | 32 | 89 | 43 | - | - | 5 | 0.350 | 1.50 | 16 |
| 51.02 | 248.2 | 183.3 | 182.9 | 248.2 | 1.9 | 1.5 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 37 | 50 | 32 | 87 | 42 | - | - | 5 | 0.350 | 1.64 | 16 |
| 51.18 | 267.8 | 197.5 | 197.5 | 267.8 | 1.9 | -2.3 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 40 | 54 | 34 | 89 | 43 | - | - | 5 | 0.350 | 1.60 | 16 |
| 51.35 | 284.6 | 209.6 | 209.6 | 284.8 | 1.3 | 13.6 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 42 | 57 | 34 | 91 | 43 | - | - | 5 | 0.350 | 1.46 | 16 |
| 51.51 | 256.2 | 188.4 | 188.4 | 256.5 | 0.8 | 17.0 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 38 | 51 | 30 | 88 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 51.68 | 233.5 | 171.4 | 171.4 | 233.6 | 0.6 | 6.8 | 0.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 34 | 47 | 27 | 85 | 42 | - | - | 5 | 0.350 | 1.39 | 16 |
| 51.84 | 190.3 | 139.5 | 153.7 | 190.5 | 1.8 | 10.2 | 1.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 28 | 38 | 25 | 78 | 41 | - | - | 8 | 0.350 | 1.79 | 16 |
| 52.00 | 110.7 | 81.0 | 124.6 | 111.0 | 1.8 | 18.0 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 27 | 37 | 17 | 60 | 38 | - | - | 17 | 0.200 | 2.14 | 16 |
| 52.17 | 48.2 | 27.3 | - | 48.6 | 1.7 | 19.1 | 3.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 24 | 8 | - | - | 3.3 | 8.4 | 43 | 0.070 | 2.74 | 15 |
| 52.33 | 24.1 | 13.6 | - | 24.5 | 0.9 | 23.5 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 16 | 4 | - | - | 1.6 | 3.9 | 61 | 0.005 | 3.04 | 15 |
| 52.50 | 16.8 | 9.5 | - | 19.3 | 0.7 | 126.4 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 4 | - | - | 1.1 | 2.6 | 76 | 0.005 | 3.24 | 15 |
| 52.66 | 16.6 | 9.4 | - | 19.0 | 0.6 | 117.8 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 52.82 | 16.5 | 9.3 | - | 18.5 | 0.6 | 98.7 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.5 | 72 | 0.005 | 3.19 | 15 |
| 52.99 | 16.8 | 9.4 | - | 19.4 | 0.6 | 132.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.5 | 72 | 0.005 | 3.19 | 15 |
| 53.15 | 18.8 | 10.5 | - | 20.9 | 0.7 | 109.5 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.2 | 2.9 | 70 | 0.005 | 3.16 | 15 |
| 53.32 | 20.2 | 11.2 | - | 22.3 | 1.0 | 107.2 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.3 | 3.1 | 72 | 0.005 | 3.19 | 15 |
| 53.48 | 24.1 | 13.4 | - | 26.3 | 1.3 | 111.5 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 16 | 5 | - | - | 1.6 | 3.8 | 68 | 0.005 | 3.14 | 15 |
| 53.64 | 32.0 | 17.7 | - | 33.8 | 1.4 | 90.3 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 21 | 6 | - | - | 2.1 | 5.3 | 56 | 0.005 | 2.97 | 15 |
| 53.81 | 42.9 | 23.8 | - | 44.0 | 1.1 | 52.4 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 21 | 6 | - | - | 2.9 | 7.3 | 41 | 0.070 | 2.70 | 15 |
| 53.97 | 48.8 | 35.2 | 98.5 | 49.2 | 1.0 | 19.9 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 18 | 24 | 9 | - | - | 3.3 | 8.3 | 31 | 0.070 | 2.51 | 15 |
| 54.14 | 40.9 | 22.5 | - | 41.3 | 0.9 | 20.2 | 2.3 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 11 | 20 | 6 | - | - | 2.8 | 6.9 | 39 | 0.070 | 2.67 | 15 |
| 54.30 | 26.2 | 14.4 | - | 26.7 | 0.8 | 21.9 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 17 | 4 | - | - | 1.7 | 4.2 | 56 | 0.005 | 2.96 | 15 |
| 54.46 | 18.8 | 10.3 | - | 20.0 | 0.7 | 59.0 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.2 | 2.8 | 69 | 0.005 | 3.15 | 15 |
| 54.63 | 18.7 | 10.2 | - | 20.6 | 0.5 | 95.6 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 12 | 3 | - | - | 1.2 | 2.8 | 65 | 0.005 | 3.10 | 15 |
| 54.79 | 19.6 | 10.7 | - | 21.5 | 0.5 | 93.9 | 3.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 3 | - | - | 1.3 | 2.9 | 61 | 0.005 | 3.04 | 15 |
| 54.96 | 16.9 | 9.2 | - | 18.9 | 0.4 | 98.9 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.5 | 67 | 0.005 | 3.12 | 15 |
| 55.12 | 16.3 | 8.9 | - | 18.7 | 0.4 | 119.5 | 3.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.3 | 67 | 0.005 | 3.12 | 15 |
| 55.28 | 14.8 | 8.0 | - | 17.1 | 0.4 | 119.2 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 0.9 | 2.1 | 72 | 0.005 | 3.18 | 15 |
| 55.45 | 14.1 | 7.6 | - | 16.5 | 0.4 | 123.7 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 9 | 3 | - | - | 0.9 | 1.9 | 75 | 0.005 | 3.22 | 15 |
| 55.61 | 14.4 | 7.8 | - | 16.8 | 0.4 | 122.0 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 0.9 | 2.0 | 74 | 0.005 | 3.21 | 15 |
| 55.78 | 14.9 | 8.0 | - | 17.2 | 0.4 | 115.6 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 0.9 | 2.1 | 74 | 0.005 | 3.21 | 15 |
| 55.94 | 15.3 | 8.2 | - | 17.6 | 0.5 | 120.7 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 0.9 | 2.1 | 75 | 0.005 | 3.22 | 15 |
| 56.11 | 16.5 | 8.9 | - | 18.6 | 0.6 | 104.3 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.3 | 75 | 0.005 | 3.22 | 15 |
| 56.27 | 18.3 | 9.7 | - | 20.4 | 0.7 | 109.7 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.2 | 2.6 | 71 | 0.005 | 3.18 | 15 |
| 56.43 | 26.2 | 14.0 | - | 28.0 | 0.5 | 91.3 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 7 | 13 | 4 | - | - | 1.7 | 4.0 | 49 | 0.070 | 2.85 | 15 |
| 56.60 | 32.5 | 17.3 | - | 33.7 | 0.4 | 62.1 | 1.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 16 | 5 | - | - | 2.2 | 5.1 | 38 | 0.070 | 2.66 | 15 |
| 56.76 | 22.9 | 12.1 | - | 24.2 | 0.3 | 66.5 | 1.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 6 | 11 | 4 | - | - | 1.5 | 3.4 | 50 | 0.070 | 2.86 | 15 |
| 56.93 | 16.4 | 8.7 | - | 18.7 | 0.4 | 116.0 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.3 | 69 | 0.005 | 3.14 | 15 |
| 57.09 | 15.2 | 8.0 | - | 17.9 | 0.5 | 136.2 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 0.9 | 2.1 | 76 | 0.005 | 3.24 | 15 |
| 57.25 | 16.3 | 8.6 | - | 18.7 | 0.6 | 119.2 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.3 | 74 | 0.005 | 3.22 | 15 |
| 57.42 | 17.7 | 9.3 | - | 19.6 | 0.6 | 99.4 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.5 | 71 | 0.005 | 3.18 | 15 |
| 57.58 | 17.2 | 9.0 | - | 19.2 | 0.6 | 103.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.4 | 73 | 0.005 | 3.20 | 15 |
| 57.75 | 16.3 | 8.5 | - | 18.2 | 0.6 | 96.9 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.2 | 76 | 0.005 | 3.24 | 15 |
| 57.91 | 15.9 | 8.3 | - | 17.8 | 0.6 | 95.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.2 | 76 | 0.005 | 3.24 | 15 |
| 58.07 | 15.8 | 8.2 | - | 17.9 | 0.6 | 108.7 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.1 | 77 | 0.005 | 3.25 | 15 |
| 58.24 | 16.4 | 8.5 | - | 18.7 | 0.6 | 118.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.0 | 2.2 | 76 | 0.005 | 3.23 | 15 |
| 58.40 | 16.9 | 8.7 | - | 19.0 | 0.6 | 110.3 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.3 | 76 | 0.005 | 3.24 | 15 |
| 58.57 | 17.7 | 9.2 | - | 19.9 | 0.7 | 110.4 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.4 | 75 | 0.005 | 3.22 | 15 |
| 58.73 | 18.2 | 9.4 | - | 20.3 | 0.7 | 108.0 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.5 | 74 | 0.005 | 3.22 | 15 |
| 58.89 | 18.8 | 9.7 | - | 20.9 | 0.7 | 106.8 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 13 | 4 | - | - | 1.2 | 2.6 | 73 | 0.005 | 3.19 | 15 |
| 59.06 | 19.5 | 10.0 | - | 21.4 | 0.7 | 96.3 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.2 | 2.7 | 71 | 0.005 | 3.17 | 15 |
| 59.22 | 19.5 | 10.0 | - | 21.3 | 0.7 | 91.3 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.2 | 2.7 | 70 | 0.005 | 3.16 | 15 |
| 59.39 | 19.3 | 9.9 | - | 21.3 | 0.7 | 101.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.2 | 2.7 | 70 | 0.005 | 3.17 | 15 |
| 59.55 | 19.0 | 9.7 | - | 21.2 | 0.7 | 110.8 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 13 | 4 | - | - | 1.2 | 2.6 | 72 | 0.005 | 3.19 | 15 |
| 59.71 | 19.8 | 10.1 | - | 21.9 | 0.7 | 107.5 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.3 | 2.7 | 71 | 0.005 | 3.17 | 15 |
| 59.88 | 20.5 | 10.4 | - | 22.5 | 0.8 | 101.5 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 14 | 4 | - | - | 1.3 | 2.8 | 70 | 0.005 | 3.16 | 15 |
| 60.04 | 20.2 | 10.2 | - | 22.2 | 0.7 | 103.5 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 4 | - | - | 1.3 | 2.8 | 70 | 0.005 | 3.16 | 15 |
| 60.21 | 19.4 | 9.8 | - | 21.2 | 0.6 | 92.2 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 13 | 3 | - | - | 1.2 | 2.6 | 68 | 0.005 | 3.14 | 15 |
| 60.37 | 17.7 | 9.0 | - | 19.6 | 0.5 | 95.6 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.4 | 70 | 0.005 | 3.16 | 15 |
| 60.53 | 16.0 | 8.1 | - | 18.2 | 0.5 | 109.2 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.1 | 75 | 0.005 | 3.23 | 15 |
| 60.70 | 15.6 | 7.8 | - | 18.0 | 0.5 | 122.0 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 1.0 | 2.0 | 78 | 0.005 | 3.26 | 15 |
| 60.86 | 15.8 | 7.9 | - | 18.0 | 0.6 | 115.4 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.0 | 80 | 0.005 | 3.28 | 15 |
| 61.03 | 15.6 | 7.8 | - | 18.1 | 0.7 | 125.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 10 | 3 | - | - | 1.0 | 2.0 | 83 | 0.005 | 3.32 | 15 |
| 61.19 | 17.2 | 8.6 | - | 19.4 | 0.7 | 115.3 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.2 | 78 | 0.005 | 3.26 | 15 |
| 61.35 | 19.0 | 9.5 | - | 21.0 | 0.6 | 103.8 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 13 | 3 | - | - | 1.2 | 2.5 | 71 | 0.005 | 3.18 | 15 |
| 61.52 | 22.0 | 11.0 | - | 23.9 | 0.5 | 94.4 | 2.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 15 | 4 | - | - | 1.4 | 3.0 | 59 | 0.005 | 3.01 | 15 |
| 61.68 | 23.4 | 11.6 | - | 25.2 | 0.4 | 91.1 | 2.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 16 | 4 | - | - | 1.5 | 3.2 | 54 | 0.005 | 2.93 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(882).cpt
CPT Date: 3/23/2022 2:29:06 PM
GW During Test: 10 ft


Sounding ID: CPT-02
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 61.85 | 20.4 | 10.1 | - | 22.0 | 0.4 | 79.1 | 2.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 14 | 3 | - | - | 1.3 | 2.7 | 60 | 0.005 | 3.02 | 15 |
| 62.01 | 16.3 | 8.1 | - | 18.2 | 0.4 | 97.8 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.1 | 71 | 0.005 | 3.18 | 15 |
| 62.17 | 16.5 | 8.1 | - | 18.7 | 0.6 | 112.8 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.1 | 78 | 0.005 | 3.26 | 15 |
| 62.34 | 20.7 | 10.2 | - | 23.3 | 0.4 | 130.7 | 2.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 14 | 3 | - | - | 1.3 | 2.8 | 60 | 0.005 | 3.03 | 15 |
| 62.50 | 24.7 | 12.1 | - | 25.7 | 0.5 | 47.3 | 2.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 16 | 4 | - | - | 1.6 | 3.4 | 53 | 0.005 | 2.91 | 15 |
| 62.67 | 17.6 | 8.6 | - | 19.1 | 0.6 | 78.9 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.2 | 74 | 0.005 | 3.21 | 15 |
| 62.83 | 16.0 | 7.8 | - | 18.5 | 0.6 | 124.0 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.0 | 80 | 0.005 | 3.29 | 15 |
| 63.00 | 22.4 | 10.9 | - | 25.0 | 0.5 | 130.9 | 2.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 15 | 3 | - | - | 1.4 | 3.0 | 58 | 0.005 | 3.00 | 15 |
| 63.16 | 24.6 | 12.0 | - | 26.2 | 0.5 | 82.1 | 2.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 16 | 4 | - | - | 1.6 | 3.4 | 54 | 0.005 | 2.93 | 15 |
| 63.32 | 18.9 | 9.2 | - | 20.9 | 0.5 | 100.9 | 3.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 13 | 3 | - | - | 1.2 | 2.4 | 66 | 0.005 | 3.11 | 15 |
| 63.49 | 16.3 | 7.9 | - | 19.1 | 0.4 | 143.5 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.0 | 74 | 0.005 | 3.21 | 15 |
| 63.65 | 16.7 | 8.1 | - | 19.4 | 0.4 | 137.5 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.0 | 2.1 | 72 | 0.005 | 3.19 | 15 |
| 63.82 | 17.1 | 8.3 | - | 19.8 | 0.4 | 137.5 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 11 | 3 | - | - | 1.1 | 2.1 | 71 | 0.005 | 3.18 | 15 |
| 63.98 | 17.7 | 8.5 | - | 20.4 | 0.4 | 135.0 | 3.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.2 | 69 | 0.005 | 3.15 | 15 |
| 64.14 | 17.5 | 8.4 | - | 20.1 | 0.4 | 133.0 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.1 | 2.2 | 70 | 0.005 | 3.16 | 15 |
| 64.31 | 17.2 | 8.2 | - | 19.9 | 0.5 | 139.4 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 11 | 3 | - | - | 1.1 | 2.1 | 75 | 0.005 | 3.22 | 15 |
| 64.47 | 18.5 | 8.8 | - | 21.3 | 0.8 | 144.9 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 12 | 3 | - | - | 1.2 | 2.3 | 77 | 0.005 | 3.26 | 15 |
| 64.64 | 22.2 | 10.6 | - | 24.8 | 1.4 | 131.0 | 7.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 15 | 4 | - | - | 1.4 | 2.9 | 80 | 0.005 | 3.28 | 15 |
| 64.80 | 30.1 | 14.3 | - | 33.0 | 1.6 | 146.8 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 20 | 5 | - | - | 2.0 | 4.1 | 65 | 0.005 | 3.10 | 15 |
| 64.96 | 44.9 | 21.4 | - | 47.5 | 1.3 | 129.1 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 11 | 22 | 6 | - | - | 3.0 | 6.5 | 45 | 0.070 | 2.78 | 15 |
| 65.13 | 84.3 | 56.4 | 89.6 | 84.2 | 0.9 | -3.6 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 19 | 28 | 12 | 48 | 35 | - | - | 18 | 0.200 | 2.17 | 16 |
| 65.29 | 90.2 | 60.3 | 81.0 | 90.2 | 0.7 | -3.4 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 12 | 18 | 12 | 50 | 36 | - | - | 14 | 0.350 | 2.03 | 16 |
| 65.46 | 83.9 | 56.0 | 80.3 | 83.9 | 0.7 | 0.1 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 19 | 28 | 11 | 48 | 35 | - | - | 15 | 0.200 | 2.09 | 16 |
| 65.62 | 72.0 | 48.0 | 87.5 | 72.3 | 0.9 | 14.5 | 1.3 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 24 | 10 | 43 | 34 | - | - | 21 | 0.200 | 2.26 | 16 |
| 65.78 | 52.2 | 24.5 | - | 52.9 | 1.4 | 38.7 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 26 | 7 | - | - | 3.5 | 7.5 | 40 | 0.070 | 2.69 | 15 |
| 65.95 | 35.7 | 16.8 | - | 37.3 | 1.7 | 77.6 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 24 | 5 | - | - | 2.4 | 4.9 | 59 | 0.005 | 3.01 | 15 |
| 66.11 | 35.2 | 16.5 | - | 37.9 | 2.1 | 139.8 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 23 | 6 | - | - | 2.3 | 4.8 | 64 | 0.005 | 3.08 | 15 |
| 66.28 | 119.0 | 79.0 | 120.1 | 120.7 | 1.9 | 85.4 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 26 | 40 | 16 | 59 | 37 | - | - | 17 | 0.200 | 2.13 | 16 |
| 66.44 | 189.0 | 125.4 | 133.2 | 188.9 | 1.3 | -5.0 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 25 | 38 | 22 | 74 | 40 | - | - | 7 | 0.350 | 1.74 | 16 |
| 66.60 | 211.1 | 139.9 | 146.9 | 211.1 | 1.5 | -3.2 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 28 | 42 | 25 | 78 | 40 | - | - | 6 | 0.350 | 1.72 | 16 |
| 66.77 | 225.2 | 149.1 | 154.2 | 225.1 | 1.6 | -3.5 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 30 | 45 | 26 | 80 | 41 | - | - | 6 | 0.350 | 1.69 | 16 |
| 66.93 | 228.2 | 150.9 | 155.3 | 228.1 | 1.6 | -5.0 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 30 | 46 | 26 | 81 | 41 | - | - | 6 | 0.350 | 1.69 | 16 |
| 67.10 | 232.0 | 153.2 | 156.6 | 231.9 | 1.6 | -5.3 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 46 | 27 | 81 | 41 | - | - | 6 | 0.350 | 1.68 | 16 |
| 67.26 | 227.4 | 150.0 | 153.1 | 227.3 | 1.5 | -5.2 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 30 | 45 | 26 | 80 | 41 | - | - | 6 | 0.350 | 1.68 | 16 |
| 67.42 | 219.3 | 144.5 | 151.8 | 219.2 | 1.7 | -4.5 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 29 | 44 | 26 | 79 | 41 | - | - | 6 | 0.350 | 1.72 | 16 |
| 67.59 | 211.3 | 139.0 | 149.9 | 211.2 | 1.8 | -4.7 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 28 | 42 | 25 | 78 | 40 | - | - | 7 | 0.350 | 1.76 | 16 |
| 67.75 | 215.3 | 141.5 | 150.1 | 215.2 | 1.7 | -4.9 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 28 | 43 | 25 | 78 | 40 | - | - | 7 | 0.350 | 1.73 | 16 |
| 67.92 | 237.0 | 155.6 | 157.4 | 236.9 | 1.6 | -4.8 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 47 | 27 | 82 | 41 | - | - | 5 | 0.350 | 1.66 | 16 |
| 68.08 | 249.7 | 163.7 | 163.5 | 249.6 | 1.7 | -5.1 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 33 | 50 | 28 | 83 | 41 | - | - | 5 | 0.350 | 1.64 | 16 |
| 68.24 | 245.6 | 160.8 | 166.8 | 245.5 | 2.0 | -5.0 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 32 | 49 | 28 | 83 | 41 | - | - | 6 | 0.350 | 1.70 | 16 |
| 68.41 | 221.4 | 144.8 | 159.8 | 221.4 | 2.2 | -2.4 | 1.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 29 | 44 | 26 | 79 | 41 | - | - | 8 | 0.350 | 1.80 | 16 |
| 68.57 | 224.5 | 146.7 | 163.7 | 224.4 | 2.4 | -5.0 | 1.1 | 6 | clean SAND to silty SAND | 125 | 5.0 | 29 | 45 | 27 | 80 | 41 | - | - | 8 | 0.350 | 1.81 | 16 |
| 68.74 | 237.6 | 155.0 | 168.9 | 237.4 | 2.4 | -5.6 | 1.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 48 | 28 | 81 | 41 | - | - | 8 | 0.350 | 1.78 | 16 |
| 68.90 | 261.0 | 170.2 | 174.2 | 260.9 | 2.1 | -5.8 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 34 | 52 | 30 | 85 | 41 | - | - | 6 | 0.350 | 1.68 | 16 |
| 69.07 | 279.7 | 182.2 | 183.4 | 279.6 | 2.2 | -6.2 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 36 | 56 | 32 | 87 | 42 | - | - | 5 | 0.350 | 1.66 | 16 |
| 69.23 | 298.6 | 194.2 | 194.2 | 298.5 | 2.2 | -5.5 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 39 | 60 | 33 | 89 | 42 | - | - | 5 | 0.350 | 1.61 | 16 |
| 69.39 | 309.7 | 201.2 | 201.2 | 309.6 | 1.7 | -6.1 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 40 | 62 | 33 | 90 | 42 | - | - | 5 | 0.350 | 1.52 | 16 |
| 69.56 | 316.9 | 205.6 | 205.6 | 316.8 | 1.7 | -3.8 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 41 | 63 | 34 | 91 | 42 | - | - | 5 | 0.350 | 1.50 | 16 |
| 69.72 | 318.2 | 206.2 | 206.2 | 318.1 | 1.2 | -3.3 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 41 | 64 | 33 | 91 | 42 | - | - | 5 | 0.350 | 1.42 | 16 |
| 69.89 | 317.0 | 205.2 | 205.2 | 317.0 | 1.7 | -1.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 41 | 63 | 34 | 91 | 42 | - | - | 5 | 0.350 | 1.51 | 16 |
| 70.05 | 333.0 | 215.4 | 215.4 | 333.0 | 2.1 | -0.8 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 43 | 67 | 36 | 92 | 43 | - | - | 5 | 0.350 | 1.54 | 16 |
| 70.21 | 347.9 | 224.7 | 224.7 | 347.8 | 2.3 | -4.7 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 45 | 70 | 37 | 94 | 43 | - | - | 5 | 0.350 | 1.54 | 16 |
| 70.38 | 355.9 | 229.7 | 229.7 | 355.8 | 2.3 | -5.7 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 46 | 71 | 38 | 94 | 43 | - | - | 5 | 0.350 | 1.51 | 16 |
| 70.54 | 374.7 | 241.5 | 241.5 | 374.6 | 1.8 | -6.2 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 48 | 75 | 39 | 95 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 70.71 | 386.8 | 249.0 | 249.0 | 386.7 | 1.8 | -6.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 77 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.40 | 16 |
| 70.87 | 397.8 | 255.8 | 255.8 | 397.7 | 2.0 | -4.0 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 51 | 80 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.42 | 16 |
| 71.03 | 391.1 | 251.2 | 251.2 | 391.0 | 1.9 | -6.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 78 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 71.20 | 424.5 | 272.4 | 272.4 | 424.4 | 1.9 | -7.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 54 | 85 | 43 | 95 | 44 | - | - | 5 | 0.350 | 1.36 | 16 |
| 71.36 | 402.1 | 257.7 | 257.7 | 402.0 | 1.8 | -3.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 52 | 80 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.38 | 16 |
| 71.53 | 384.5 | 246.1 | 246.1 | 384.4 | 2.1 | -2.5 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 49 | 77 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.45 | 16 |
| 71.69 | 385.5 | 246.5 | 246.5 | 385.3 | 2.9 | -5.9 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 49 | 77 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.55 | 16 |
| 71.85 | 409.4 | 261.5 | 261.5 | 409.3 | 2.5 | -4.5 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 52 | 82 | 42 | 95 | 43 | - | - | 5 | 0.350 | 1.46 | 16 |
| 72.02 | 405.9 | 259.0 | 259.0 | 405.8 | 3.1 | -4.5 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 52 | 81 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.53 | 16 |
| 72.18 | 407.8 | 259.9 | 259.9 | 407.8 | 2.7 | -4.2 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 52 | 82 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.48 | 16 |
| 72.35 | 423.0 | 269.3 | 269.3 | 423.0 | 1.7 | -0.6 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 54 | 85 | 42 | 95 | 44 | - | - | 5 | 0.350 | 1.34 | 16 |
| 72.51 | 455.6 | 289.7 | 289.7 | 455.5 | 2.5 | -3.7 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 58 | 91 | 46 | 95 | 44 | - | - | 5 | 0.350 | 1.39 | 16 |
| 72.67 | 485.1 | 308.2 | 308.2 | 485.1 | 2.5 | -1.0 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 62 | 97 | 48 | 95 | 44 | - | - | 5 | 0.350 | 1.36 | 16 |
| 72.84 | 500.7 | 317.7 | 317.7 | 500.8 | 2.2 | 3.0 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 53 | 83 | 49 | 95 | 44 | - | - | 5 | 1.000 | 1.30 | 16 |
| 73.00 | 480.3 | 304.4 | 304.4 | 480.3 | 2.1 | 0.6 | 0.4 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 51 | 80 | 47 | 95 | 44 | - | - | 5 | 1.000 | 1.32 | 16 |
| 73.17 | 409.0 | 258.9 | 258.9 | 409.0 | 2.4 | 0.1 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 52 | 82 | 42 | 95 | 43 | - | - | 5 | 0.350 | 1.45 | 16 |
| 73.33 | 394.7 | 249.6 | 249.6 | 394.7 | 1.9 | -0.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 79 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 73.49 | 376.7 | 238.0 | 238.0 | 376.7 | 1.9 | -2.4 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 48 | 75 | 38 | 95 | 43 | - | - | 5 | 0.350 | 1.44 | 16 |
| 73.66 | 359.7 | 226.9 | 226.9 | 359.6 | 1.5 | -2.5 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 45 | 72 | 36 | 94 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 73.82 | 405.2 | 255.4 | 255.4 | 405.2 | 1.7 | -4.1 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 51 | 81 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.37 | 16 |
| 73.99 | 423.1 | 266.4 | 266.4 | 423.1 | 2.4 | 0.2 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 85 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.43 | 16 |
| 74.15 | 425.6 | 267.7 | 267.7 | 425.7 | 2.3 | 3.9 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 54 | 85 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.42 | 16 |
| 74.31 | 409.2 | 257.1 | 257.1 | 409.2 | 1.4 | 0.1 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 43 | 68 | 40 | 95 | 43 | - | - | 5 | 1.000 | 1.30 | 16 |
| 74.48 | 375.9 | 235.9 | 235.9 | 375.9 | 1.5 | -1.4 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 47 | 75 | 37 | 95 | 43 | - | - | 5 | 0.350 | 1.38 | 16 |
| 74.64 | 386.1 | 242.0 | 242.0 | 386.0 | 1.4 | -4.7 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 48 | 77 | 38 | 95 | 43 | - | - | 5 | 0.350 | 1.34 | 16 |
| 74.81 | 406.8 | 254.7 | 254.7 | 406.8 | 1.8 | 1.8 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 51 | 81 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.38 | 16 |
| 74.97 | 400.0 | 250.2 | 250.2 | 399.9 | 1.4 | -2.0 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 80 | 39 | 95 | 43 | - | - | 5 | 0.350 | 1.32 | 16 |
| 75.13 | 391.2 | 244.4 | 244.4 | 391.1 | 3.3 | -4.0 | 0.9 | 6 | clean SAND to silty SAND | 125 | 5.0 | 49 | 78 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.59 | 16 |
| 75.30 | 394.3 | 246.1 | 246.1 | 394.3 | 2.6 | -1.0 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 49 | 79 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.50 | 16 |
| 75.46 | 400.2 | 249.5 | 249.5 | 400.6 | 2.8 | 21.5 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 80 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.52 | 16 |
| 75.63 | 426.0 | 265.4 | 265.4 | 426.2 | 2.7 | 9.1 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 85 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.47 | 16 |
| 75.79 | 402.5 | 250.4 | 250.4 | 402.7 | 2.6 | 10.8 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 80 | 41 | 95 | 43 | - | - | 5 | 0.350 | 1.49 | 16 |
| 75.96 | 402.3 | 250.1 | 250.1 | 402.7 | 1.7 | 20.1 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 80 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.38 | 16 |
| 76.12 | 379.5 | 235.6 | 235.6 | 379.5 | 1.5 | 1.5 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 47 | 76 | 37 | 95 | 43 | - | - | 5 | 0.350 | 1.37 | 16 |
| 76.28 | 379.0 | 235.1 | 235.1 | 379.0 | 1.1 | 0.6 | 0.3 | 7 | grvly SAND to dense SAND | 130 | 6.0 | 39 | 63 | 36 | 95 | 43 | - | - | 5 | 1.000 | 1.30 | 16 |
| 76.45 | 318.8 | 197.5 | 197.5 | 318.8 | 1.1 | 2.7 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 40 | 64 | 32 | 89 | 42 | - | - | 5 | 0.350 | 1.40 | 16 |
| 76.61 | 253.4 | 156.8 | 162.1 | 253.5 | 1.9 | 3.8 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 51 | 28 | 82 | 41 | - | - | 6 | 0.350 | 1.69 | 16 |
| 76.78 | 172.2 | 106.5 | 137.4 | 172.4 | 2.3 | 12.8 | 1.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 21 | 34 | 21 | 69 | 39 | - | - | 13 | 0.350 | 1.99 | 16 |
| 76.94 | 124.3 | 76.8 | 137.9 | 124.5 | 2.7 | 10.2 | 2.3 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 26 | 41 | 17 | 58 | 37 | - | - | 21 | 0.200 | 2.25 | 16 |
| 77.10 | 70.9 | 28.6 | - | 71.3 | 2.2 | 22.1 | 3.3 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 35 | 8 | - | - | 4.8 | 8.8 | 39 | 0.070 | 2.68 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(882).cpt
CPT Date: 3/23/2022 2:29:06 PM
GW During Test: 10 ft


Sounding ID: CPT-02
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | *qc1n PS - | *q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | *SPT R-N1 60% | SPT R-N 60% | *SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | *Ic SBT Indx | *Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77.27 | 67.7 | 27.3 | - | 67.6 | 2.8 | -1.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 18 | 45 | 8 | - | - | 4.6 | 8.4 | 45 | 0.005 | 2.78 | 15 |
| 77.43 | 223.8 | 137.9 | 164.5 | 223.8 | 3.0 | -1.3 | 1.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 28 | 45 | 26 | 78 | 40 | - | - | 11 | 0.350 | 1.90 | 16 |
| 77.60 | 229.1 | 141.0 | 170.0 | 229.2 | 3.3 | 2.3 | 1.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 28 | 46 | 27 | 78 | 40 | - | - | 11 | 0.350 | 1.92 | 16 |
| 77.76 | 145.7 | 89.6 | 146.0 | 145.8 | 3.1 | 2.0 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 30 | 49 | 19 | 63 | 37 | - | - | 18 | 0.200 | 2.18 | 16 |
| 77.92 | 87.3 | 53.6 | 134.9 | 87.5 | 2.5 | 6.4 | 3.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 27 | 44 | 13 | - | - | 6.0 | 9.9 | 28 | 0.070 | 2.45 | 15 |
| 78.09 | 182.5 | 112.0 | 133.8 | 182.9 | 1.9 | 18.2 | 1.1 | 6 | clean SAND to silty SAND | 125 | 5.0 | 22 | 37 | 21 | 71 | 39 | - | - | 11 | 0.350 | 1.91 | 16 |
| 78.25 | 245.8 | 150.7 | 156.0 | 245.8 | 1.8 | 0.3 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 30 | 49 | 26 | 81 | 40 | - | - | 6 | 0.350 | 1.70 | 16 |
| 78.42 | 250.7 | 153.5 | 159.3 | 251.0 | 1.9 | 15.9 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 50 | 27 | 81 | 40 | - | - | 6 | 0.350 | 1.70 | 16 |
| 78.58 | 219.0 | 134.0 | 143.6 | 218.9 | 1.7 | -1.3 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 27 | 44 | 24 | 77 | 40 | - | - | 7 | 0.350 | 1.75 | 16 |
| 78.74 | 212.6 | 129.9 | 157.9 | 212.6 | 2.9 | 0.3 | 1.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 26 | 43 | 25 | 76 | 40 | - | - | 11 | 0.350 | 1.93 | 16 |
| 78.91 | 222.9 | 136.1 | 152.4 | 222.9 | 2.2 | -2.2 | 1.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 27 | 45 | 25 | 77 | 40 | - | - | 8 | 0.350 | 1.82 | 16 |
| 79.07 | 253.4 | 154.6 | 157.3 | 253.5 | 1.7 | 2.6 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 31 | 51 | 27 | 81 | 41 | - | - | 6 | 0.350 | 1.67 | 16 |
| 79.24 | 266.8 | 162.6 | 162.6 | 266.9 | 1.4 | 2.5 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 33 | 53 | 28 | 83 | 41 | - | - | 5 | 0.350 | 1.59 | 16 |
| 79.40 | 292.4 | 177.9 | 177.9 | 292.3 | 1.0 | -0.4 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 36 | 58 | 29 | 86 | 41 | - | - | 5 | 0.350 | 1.45 | 16 |
| 79.56 | 311.7 | 189.5 | 189.5 | 311.8 | 1.0 | 3.0 | 0.3 | 6 | clean SAND to silty SAND | 125 | 5.0 | 38 | 62 | 30 | 88 | 42 | - | - | 5 | 0.350 | 1.40 | 16 |
| 79.73 | 315.1 | 191.4 | 191.4 | 315.1 | 1.5 | 1.5 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 38 | 63 | 31 | 88 | 42 | - | - | 5 | 0.350 | 1.49 | 16 |
| 79.89 | 288.5 | 175.1 | 177.0 | 288.6 | 2.2 | 2.2 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 35 | 58 | 30 | 85 | 41 | - | - | 5 | 0.350 | 1.66 | 16 |
| 80.06 | 270.8 | 164.2 | 173.4 | 270.8 | 2.4 | -1.6 | 0.9 | 6 | clean SAND to silty SAND | 125 | 5.0 | 33 | 54 | 29 | 83 | 41 | - | - | 7 | 0.350 | 1.73 | 16 |
| 80.22 | 250.7 | 151.8 | 164.5 | 250.6 | 2.4 | -3.9 | 1.0 | 6 | clean SAND to silty SAND | 125 | 5.0 | 30 | 50 | 27 | 81 | 40 | - | - | 7 | 0.350 | 1.77 | 16 |
| 80.38 | 285.1 | 172.5 | 176.9 | 285.0 | 2.3 | -7.1 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 34 | 57 | 30 | 85 | 41 | - | - | 6 | 0.350 | 1.68 | 16 |
| 80.55 | 311.8 | 188.4 | 188.4 | 311.7 | 1.8 | -3.5 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 38 | 62 | 32 | 88 | 42 | - | - | 5 | 0.350 | 1.56 | 16 |
| 80.71 | 346.6 | 209.2 | 209.2 | 346.5 | 2.2 | -3.9 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 42 | 69 | 35 | 91 | 42 | - | - | 5 | 0.350 | 1.55 | 16 |
| 80.88 | 409.7 | 247.1 | 247.1 | 409.7 | 2.4 | 1.5 | 0.6 | 6 | clean SAND to silty SAND | 125 | 5.0 | 49 | 82 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.46 | 16 |
| 81.04 | 456.4 | 275.0 | 275.0 | 456.4 | 2.4 | 3.2 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 55 | 91 | 44 | 95 | 43 | - | - | 5 | 0.350 | 1.41 | 16 |
| 81.20 | 457.2 | 275.3 | 275.3 | 457.3 | 2.1 | 2.0 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 55 | 91 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.37 | 16 |
| 81.37 | 456.9 | 274.8 | 274.8 | 456.9 | 2.1 | -2.0 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 55 | 91 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.37 | 16 |
| 81.53 | 446.3 | 268.1 | 268.1 | 446.2 | 2.2 | -3.5 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 54 | 89 | 43 | 95 | 43 | - | - | 5 | 0.350 | 1.39 | 16 |
| 81.70 | 441.5 | 265.0 | 265.0 | 441.4 | 3.0 | -5.1 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 88 | 44 | 95 | 43 | - | - | 5 | 0.350 | 1.49 | 16 |
| 81.86 | 421.1 | 252.5 | 252.5 | 421.0 | 3.0 | -4.4 | 0.7 | 6 | clean SAND to silty SAND | 125 | 5.0 | 51 | 84 | 42 | 95 | 43 | - | - | 5 | 0.350 | 1.53 | 16 |
| 82.02 | 417.1 | 249.8 | 249.8 | 417.0 | 2.2 | -4.8 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 83 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.44 | 16 |
| 82.19 | 417.6 | 249.9 | 249.9 | 417.6 | 1.9 | -1.9 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 50 | 84 | 40 | 95 | 43 | - | - | 5 | 0.350 | 1.40 | 16 |
| 82.35 | 445.6 | 266.4 | 266.4 | 445.6 | 1.9 | -0.6 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 53 | 89 | 42 | 95 | 43 | - | - | 5 | 0.350 | 1.35 | 16 |

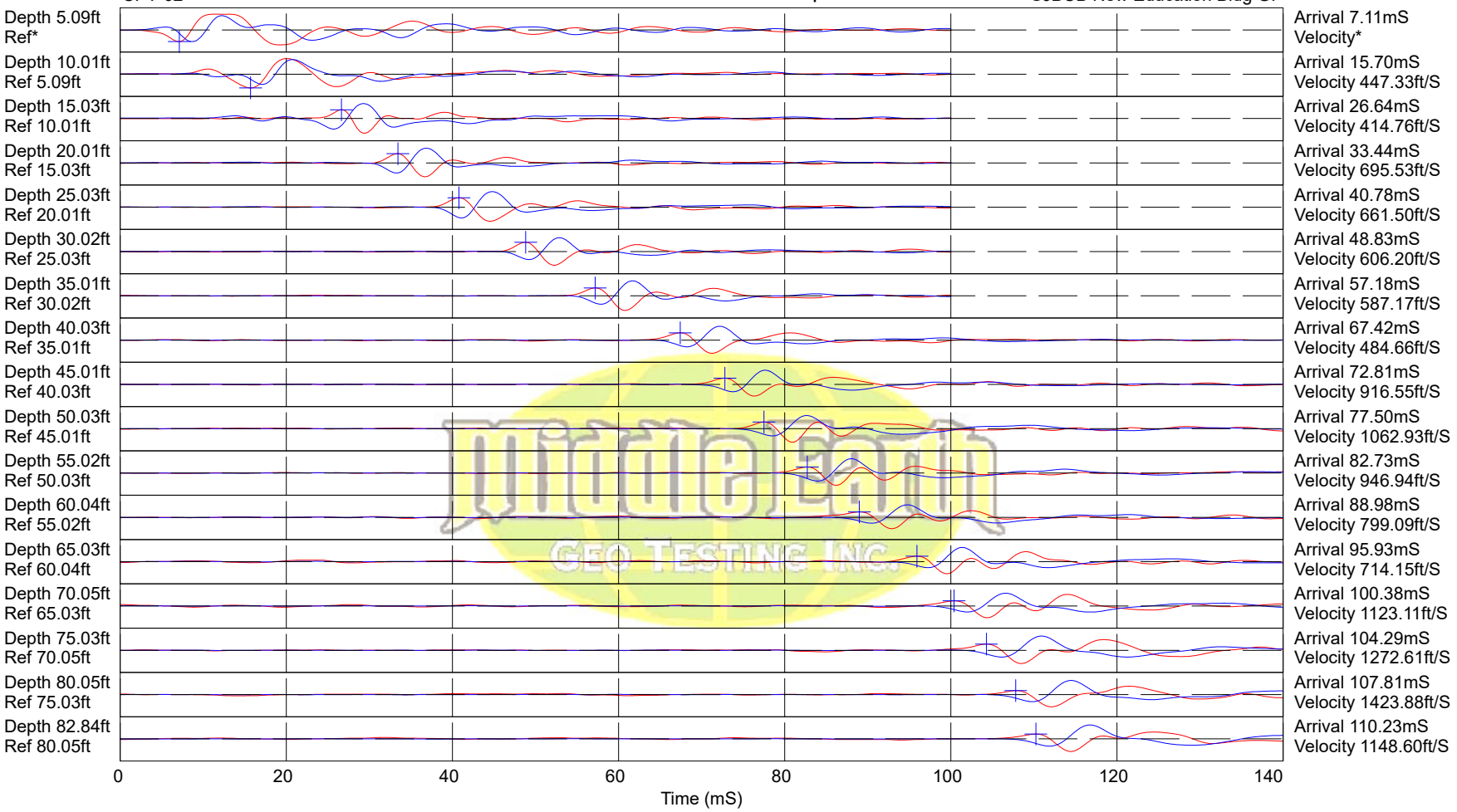
* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

**Middle Earth Geo Testing**

CPT-02

Cornerstone Earth Group

SJBCB New Education Bldg GI




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

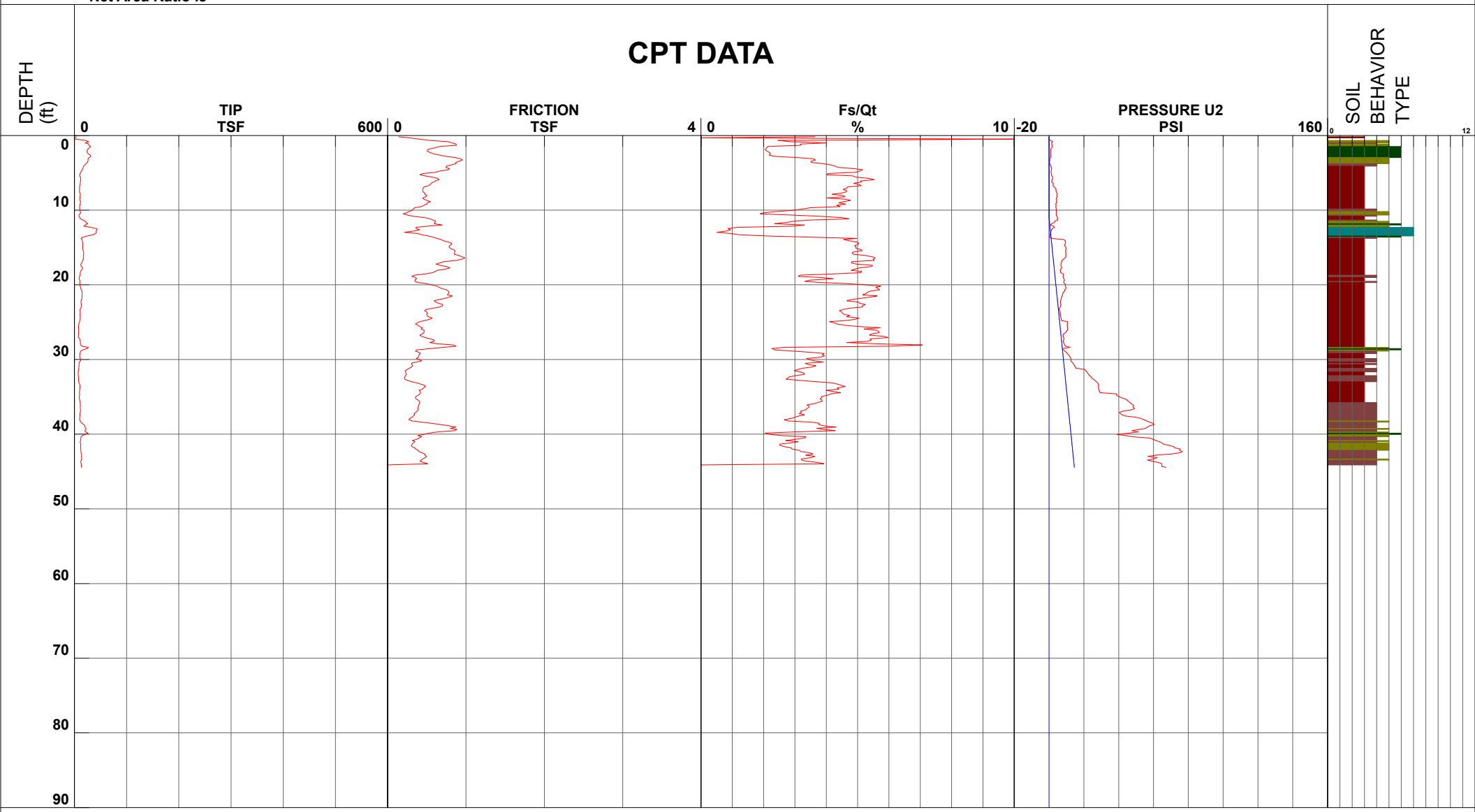
COMMENT:

# Cornerstone Earth Group

| | | | | | |
|---|---|---|---|---|---|
| Project | SJBCB New Education Bldg GI | Operator | BH-GM | Filename | SDF(885).cpt |
| Job Number | 1353-3-1 | Cone Number | DDG1589 | GPS | |
| Hole Number | CPT-03 | Date and Time | 3/23/2022 7:27:28 PM | Maximum Depth | 44.45 ft |
| EST GW Depth During Test | | 11.00 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 15cm squared

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

# SJBCB New Education Bldg GI

Project ID: Cornerstone Earth Group
Data File: SDF(885).cpt
CPT Date: 3/23/2022 7:27:28 PM
GW During Test: 11 ft


Sounding ID: CPT-03
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.33 | 1.1 | 0.0 | - | 1.1 | 0.3 | -0.2 | 0.1 | 1 | sensitive fine SOIL | 115 | 2.0 | 1 | 1 | 1 | - | - | 0.1 | 9.9 | 95 | 0.005 | 3.48 | 15 |
| 0.49 | 1.4 | 2.2 | - | 1.4 | 0.4 | -0.2 | 9.9 | 2 | Organic SOILS - Peats | 100 | 1.0 | 2 | 1 | 1 | - | - | 0.1 | 9.9 | 95 | 0.100 | 3.83 | 10 |
| 0.66 | 22.0 | 35.3 | 99.5 | 22.0 | 0.5 | 0.8 | 2.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 18 | 11 | 9 | - | - | 1.6 | 9.9 | 31 | 0.070 | 2.51 | 15 |
| 0.82 | 27.0 | 43.3 | 116.8 | 27.1 | 0.8 | 2.1 | 2.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 22 | 14 | 10 | - | - | 1.9 | 9.9 | 30 | 0.070 | 2.49 | 15 |
| 0.98 | 20.7 | 33.2 | - | 20.7 | 0.8 | 1.5 | 4.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 17 | 10 | 9 | - | - | 1.5 | 9.9 | 39 | 0.070 | 2.67 | 15 |
| 1.15 | 27.4 | 44.0 | 124.4 | 27.4 | 0.9 | 1.5 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 22 | 14 | 11 | - | - | 1.9 | 9.9 | 31 | 0.070 | 2.51 | 15 |
| 1.31 | 27.6 | 44.3 | 125.0 | 27.6 | 0.9 | 1.7 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 22 | 14 | 11 | - | - | 1.9 | 9.9 | 31 | 0.070 | 2.51 | 15 |
| 1.48 | 31.1 | 49.9 | 106.5 | 31.1 | 0.7 | 1.8 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 17 | 10 | 11 | 44 | 47 | - | - | 25 | 0.200 | 2.35 | 16 |
| 1.64 | 28.8 | 46.2 | 102.4 | 28.8 | 0.6 | 1.5 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 15 | 10 | 11 | 41 | 46 | - | - | 25 | 0.200 | 2.38 | 16 |
| 1.80 | 25.8 | 41.4 | 96.8 | 25.9 | 0.5 | 1.0 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 9 | 10 | 38 | 45 | - | - | 27 | 0.200 | 2.41 | 16 |
| 1.97 | 24.6 | 39.4 | 95.2 | 24.6 | 0.5 | 1.0 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 8 | 9 | 36 | 44 | - | - | 27 | 0.200 | 2.42 | 16 |
| 2.13 | 23.9 | 38.3 | 95.7 | 23.9 | 0.5 | 1.0 | 2.1 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 8 | 9 | 35 | 44 | - | - | 28 | 0.200 | 2.44 | 16 |
| 2.30 | 24.7 | 39.6 | 98.6 | 24.7 | 0.5 | 1.0 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 13 | 8 | 9 | 36 | 44 | - | - | 28 | 0.200 | 2.44 | 16 |
| 2.46 | 26.7 | 42.8 | 102.0 | 26.7 | 0.6 | 1.0 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 9 | 10 | 39 | 44 | - | - | 27 | 0.200 | 2.42 | 16 |
| 2.62 | 30.6 | 49.1 | 107.4 | 30.6 | 0.7 | 1.0 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 10 | 11 | 44 | 44 | - | - | 25 | 0.200 | 2.37 | 16 |
| 2.79 | 31.6 | 50.6 | 113.0 | 31.6 | 0.7 | 1.0 | 2.4 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 17 | 11 | 12 | 45 | 44 | - | - | 26 | 0.200 | 2.38 | 16 |
| 2.95 | 28.1 | 45.1 | 123.7 | 28.1 | 0.9 | 1.0 | 3.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 23 | 14 | 11 | - | - | 2.0 | 9.9 | 30 | 0.070 | 2.49 | 15 |
| 3.12 | 26.0 | 41.7 | 130.6 | 26.0 | 0.9 | 0.2 | 3.6 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 21 | 13 | 10 | - | - | 1.8 | 9.9 | 34 | 0.070 | 2.57 | 15 |
| 3.28 | 26.2 | 41.9 | 132.4 | 26.2 | 1.0 | 0.5 | 3.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 21 | 13 | 11 | - | - | 1.8 | 9.9 | 34 | 0.070 | 2.57 | 15 |
| 3.45 | 25.9 | 41.5 | 129.2 | 25.9 | 0.9 | 0.3 | 3.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 21 | 13 | 10 | - | - | 1.8 | 9.9 | 34 | 0.070 | 2.56 | 15 |
| 3.61 | 24.7 | 39.6 | 126.8 | 24.7 | 0.9 | 0.2 | 3.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 20 | 12 | 10 | - | - | 1.7 | 9.9 | 34 | 0.070 | 2.58 | 15 |
| 3.77 | 22.4 | 35.9 | - | 22.4 | 0.9 | 0.5 | 3.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 18 | 11 | 9 | - | - | 1.6 | 9.9 | 37 | 0.070 | 2.64 | 15 |
| 3.94 | 19.6 | 31.4 | - | 19.6 | 0.8 | 0.8 | 4.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 10 | 8 | - | - | 1.4 | 9.9 | 41 | 0.070 | 2.70 | 15 |
| 4.10 | 17.6 | 28.2 | - | 17.6 | 0.8 | 1.0 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 19 | 12 | 8 | - | - | 1.2 | 9.9 | 43 | 0.005 | 2.75 | 15 |
| 4.27 | 17.0 | 27.3 | - | 17.0 | 0.7 | 1.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 18 | 11 | 8 | - | - | 1.2 | 9.9 | 44 | 0.005 | 2.77 | 15 |
| 4.43 | 16.1 | 25.9 | - | 16.2 | 0.8 | 1.4 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 17 | 11 | 7 | - | - | 1.1 | 9.9 | 47 | 0.005 | 2.82 | 15 |
| 4.59 | 15.0 | 24.1 | - | 15.1 | 0.8 | 1.3 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 10 | 7 | - | - | 1.0 | 9.9 | 49 | 0.005 | 2.86 | 15 |
| 4.76 | 13.1 | 21.0 | - | 13.1 | 0.7 | 1.2 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.9 | 52 | 0.005 | 2.90 | 15 |
| 4.92 | 12.4 | 19.9 | - | 12.5 | 0.6 | 1.1 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.9 | 9.9 | 52 | 0.005 | 2.91 | 15 |
| 5.09 | 11.1 | 17.8 | - | 11.1 | 0.4 | 1.4 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.8 | 9.9 | 51 | 0.005 | 2.89 | 15 |
| 5.25 | 10.2 | 16.4 | - | 10.2 | 0.4 | 1.4 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 9.9 | 53 | 0.005 | 2.92 | 15 |
| 5.41 | 9.8 | 15.8 | - | 9.9 | 0.5 | 1.6 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 9.9 | 57 | 0.005 | 2.98 | 15 |
| 5.58 | 11.5 | 18.5 | - | 11.5 | 0.6 | 2.1 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 9.9 | 54 | 0.005 | 2.94 | 15 |
| 5.74 | 11.9 | 19.1 | - | 11.9 | 0.6 | 2.1 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 55 | 0.005 | 2.95 | 15 |
| 5.91 | 11.9 | 19.0 | - | 11.9 | 0.7 | 1.7 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 56 | 0.005 | 2.96 | 15 |
| 6.07 | 12.0 | 19.2 | - | 12.0 | 0.6 | 1.6 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 54 | 0.005 | 2.93 | 15 |
| 6.23 | 11.5 | 18.4 | - | 11.5 | 0.6 | 1.6 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 9.9 | 55 | 0.005 | 2.95 | 15 |
| 6.40 | 11.4 | 18.2 | - | 11.4 | 0.6 | 2.4 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 9.8 | 54 | 0.005 | 2.94 | 15 |
| 6.56 | 10.8 | 17.3 | - | 10.9 | 0.5 | 2.4 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 9.1 | 56 | 0.005 | 2.97 | 15 |
| 6.73 | 10.2 | 16.3 | - | 10.2 | 0.5 | 2.2 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 8.3 | 58 | 0.005 | 2.99 | 15 |
| 6.89 | 9.9 | 15.8 | - | 9.9 | 0.5 | 3.1 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 7.8 | 57 | 0.005 | 2.98 | 15 |
| 7.05 | 9.8 | 15.7 | - | 9.8 | 0.5 | 3.5 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 7 | 5 | - | - | 0.7 | 7.6 | 57 | 0.005 | 2.98 | 15 |
| 7.22 | 9.8 | 15.8 | - | 9.9 | 0.4 | 4.1 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 7.4 | 57 | 0.005 | 2.97 | 15 |
| 7.38 | 9.7 | 15.5 | - | 9.8 | 0.5 | 3.9 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.7 | 7.2 | 58 | 0.005 | 2.99 | 15 |
| 7.55 | 9.7 | 15.6 | - | 9.8 | 0.5 | 4.1 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.7 | 7.0 | 58 | 0.005 | 2.99 | 15 |
| 7.71 | 10.6 | 17.0 | - | 10.7 | 0.5 | 4.5 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 7.5 | 55 | 0.005 | 2.95 | 15 |
| 7.87 | 11.4 | 18.3 | - | 11.5 | 0.5 | 4.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 5 | - | - | 0.8 | 7.9 | 52 | 0.005 | 2.90 | 15 |
| 8.04 | 11.1 | 17.7 | - | 11.2 | 0.5 | 4.4 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 7.5 | 54 | 0.005 | 2.93 | 15 |
| 8.20 | 10.6 | 17.0 | - | 10.7 | 0.5 | 4.7 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 7.0 | 55 | 0.005 | 2.95 | 15 |
| 8.37 | 11.1 | 17.8 | - | 11.2 | 0.4 | 4.2 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 7.2 | 52 | 0.005 | 2.90 | 15 |
| 8.53 | 10.0 | 16.1 | - | 10.1 | 0.5 | 4.2 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.4 | 57 | 0.005 | 2.98 | 15 |
| 8.69 | 10.5 | 16.8 | - | 10.6 | 0.5 | 4.5 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.6 | 56 | 0.005 | 2.97 | 15 |
| 8.86 | 12.0 | 19.2 | - | 12.1 | 0.5 | 4.2 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 7.4 | 53 | 0.005 | 2.91 | 15 |
| 9.02 | 11.4 | 18.3 | - | 11.5 | 0.5 | 4.4 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 6.9 | 53 | 0.005 | 2.92 | 15 |
| 9.19 | 10.9 | 17.4 | - | 10.9 | 0.5 | 3.7 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 6.4 | 55 | 0.005 | 2.95 | 15 |
| 9.35 | 10.6 | 17.0 | - | 10.7 | 0.5 | 4.1 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.1 | 55 | 0.005 | 2.94 | 15 |
| 9.51 | 9.7 | 15.6 | - | 9.8 | 0.4 | 3.9 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 5.5 | 57 | 0.005 | 2.98 | 15 |
| 9.68 | 9.9 | 15.8 | - | 9.9 | 0.3 | 4.0 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.5 | 53 | 0.005 | 2.91 | 15 |
| 9.84 | 10.1 | 16.2 | - | 10.2 | 0.3 | 4.1 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.5 | 51 | 0.005 | 2.88 | 15 |
| 10.01 | 10.7 | 17.1 | - | 10.8 | 0.3 | 4.1 | 3.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.8 | 48 | 0.005 | 2.84 | 15 |
| 10.17 | 11.2 | 18.0 | - | 11.3 | 0.3 | 4.1 | 2.6 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 6 | 5 | - | - | 0.8 | 6.0 | 44 | 0.070 | 2.77 | 15 |
| 10.34 | 12.2 | 19.5 | - | 12.3 | 0.2 | 4.1 | 2.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 6 | 5 | - | - | 0.8 | 6.4 | 40 | 0.070 | 2.69 | 15 |
| 10.50 | 10.6 | 17.0 | - | 10.7 | 0.2 | 4.0 | 2.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 5 | 5 | - | - | 0.7 | 5.4 | 42 | 0.070 | 2.73 | 15 |
| 10.66 | 8.7 | 13.9 | - | 8.8 | 0.3 | 4.2 | 3.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.3 | 53 | 0.005 | 2.92 | 15 |
| 10.83 | 8.6 | 13.8 | - | 8.7 | 0.3 | 4.5 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.2 | 58 | 0.005 | 2.99 | 15 |
| 10.99 | 10.5 | 16.6 | - | 10.6 | 0.5 | 4.8 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.2 | 56 | 0.005 | 2.97 | 15 |
| 11.16 | 11.5 | 18.0 | - | 11.6 | 0.5 | 4.8 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 5.6 | 55 | 0.005 | 2.95 | 15 |
| 11.32 | 16.4 | 25.5 | - | 16.5 | 0.6 | 4.9 | 3.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 8 | 7 | - | - | 1.1 | 8.1 | 43 | 0.070 | 2.74 | 15 |
| 11.48 | 20.8 | 32.1 | - | 20.8 | 0.6 | 3.3 | 3.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 10 | 8 | - | - | 1.4 | 9.9 | 36 | 0.070 | 2.61 | 15 |
| 11.65 | 22.1 | 29.2 | - | 22.1 | 0.6 | 3.1 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 15 | 11 | 8 | - | - | 1.5 | 9.9 | 36 | 0.070 | 2.62 | 15 |
| 11.81 | 25.4 | 30.4 | 94.3 | 25.4 | 0.6 | 1.6 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 15 | 13 | 8 | - | - | 1.7 | 9.9 | 33 | 0.070 | 2.56 | 15 |
| 11.98 | 21.0 | 31.8 | - | 21.0 | 0.7 | 0.8 | 3.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 11 | 8 | - | - | 1.4 | 9.9 | 38 | 0.070 | 2.65 | 15 |
| 12.14 | 17.8 | 26.7 | - | 17.8 | 0.5 | 2.4 | 3.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 9 | 7 | - | - | 1.2 | 8.5 | 39 | 0.070 | 2.67 | 15 |
| 12.30 | 31.2 | 37.0 | 73.3 | 31.3 | 0.4 | 3.1 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 12 | 10 | 8 | 34 | 36 | - | - | 23 | 0.200 | 2.31 | 16 |
| 12.47 | 42.1 | 49.8 | 75.0 | 42.1 | 0.4 | 1.9 | 0.9 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 17 | 14 | 10 | 44 | 38 | - | - | 17 | 0.200 | 2.13 | 16 |
| 12.63 | 43.2 | 50.9 | 78.0 | 43.2 | 0.4 | 1.4 | 1.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 17 | 14 | 11 | 45 | 38 | - | - | 17 | 0.200 | 2.14 | 16 |
| 12.80 | 41.3 | 48.6 | 72.3 | 41.4 | 0.3 | 1.2 | 0.8 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 14 | 10 | 43 | 38 | - | - | 16 | 0.200 | 2.12 | 16 |
| 12.96 | 42.1 | 49.3 | 65.1 | 42.1 | 0.2 | 0.9 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 10 | 8 | 10 | 44 | 38 | - | - | 13 | 0.350 | 2.02 | 16 |
| 13.12 | 40.7 | 47.5 | 75.3 | 40.7 | 0.4 | 0.7 | 1.0 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 16 | 14 | 10 | 42 | 38 | - | - | 18 | 0.200 | 2.16 | 16 |
| 13.29 | 35.5 | 41.3 | 78.1 | 35.5 | 0.4 | 0.5 | 1.2 | 5 | silty SAND to sandy SILT | 120 | 3.0 | 14 | 12 | 9 | 38 | 37 | - | - | 22 | 0.200 | 2.28 | 16 |
| 13.45 | 24.8 | 28.8 | 87.7 | 24.9 | 0.5 | 0.3 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 12 | 7 | - | - | 1.7 | 9.9 | 33 | 0.070 | 2.55 | 15 |
| 13.62 | 16.4 | 23.2 | - | 16.4 | 0.6 | 0.4 | 3.7 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 8 | 6 | - | - | 1.1 | 7.3 | 45 | 0.070 | 2.78 | 15 |
| 13.78 | 12.6 | 17.7 | - | 12.6 | 0.6 | 1.2 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 5.5 | 57 | 0.005 | 2.97 | 15 |
| 13.94 | 15.0 | 20.9 | - | 15.1 | 0.7 | 8.5 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 10 | 6 | - | - | 1.0 | 6.5 | 51 | 0.005 | 2.89 | 15 |
| 14.11 | 15.0 | 20.9 | - | 15.2 | 0.7 | 9.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 10 | 6 | - | - | 1.0 | 6.5 | 52 | 0.005 | 2.90 | 15 |
| 14.27 | 15.6 | 21.6 | - | 15.8 | 0.8 | 9.5 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 10 | 6 | - | - | 1.1 | 6.7 | 52 | 0.005 | 2.90 | 15 |
| 14.44 | 16.2 | 22.3 | - | 16.4 | 0.8 | 9.3 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 7.0 | 52 | 0.005 | 2.90 | 15 |
| 14.60 | 16.2 | 22.2 | - | 16.4 | 0.8 | 9.1 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.9 | 52 | 0.005 | 2.90 | 15 |
| 14.76 | 16.1 | 21.9 | - | 16.3 | 0.8 | 8.9 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.8 | 52 | 0.005 | 2.90 | 15 |
| 14.93 | 15.8 | 21.3 | - | 16.0 | 0.8 | 9.5 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.7 | 52 | 0.005 | 2.91 | 15 |
| 15.09 | 16.1 | 21.6 | - | 16.3 | 0.8 | 9.7 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 6 | - | - | 1.1 | 6.7 | 52 | 0.005 | 2.90 | 15 |
| 15.26 | 16.4 | 21.8 | - | 16.6 | 0.8 | 9.6 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.8 | 52 | 0.005 | 2.91 | 15 |
| 15.42 | 16.7 | 22.2 | - | 16.9 | 0.9 | 9.5 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.9 | 52 | 0.005 | 2.90 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

**Middle Earth Geo Testing**

Project ID: Cornerstone Earth Group
Data File: SDF(885).cpt
CPT Date: 3/23/2022 7:27:28 PM
GW During Test: 11 ft



| Depth ft | qc PS tsf | qc1n PS - * | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15.58 | 17.5 | 23.1 | - | 17.7 | 0.9 | 9.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.2 | 50 | 0.005 | 2.87 | 15 |
| 15.75 | 17.8 | 23.3 | - | 18.0 | 0.9 | 9.6 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 12 | 7 | - | - | 1.2 | 7.3 | 50 | 0.005 | 2.87 | 15 |
| 15.91 | 17.5 | 22.8 | - | 17.7 | 0.9 | 9.6 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.1 | 51 | 0.005 | 2.88 | 15 |
| 16.08 | 17.3 | 22.4 | - | 17.5 | 0.9 | 9.6 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.0 | 52 | 0.005 | 2.91 | 15 |
| 16.24 | 17.4 | 22.5 | - | 17.6 | 1.0 | 9.6 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.0 | 53 | 0.005 | 2.92 | 15 |
| 16.40 | 17.7 | 22.7 | - | 17.9 | 1.0 | 9.1 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 12 | 7 | - | - | 1.2 | 7.1 | 53 | 0.005 | 2.92 | 15 |
| 16.57 | 17.2 | 21.9 | - | 17.4 | 0.9 | 8.3 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.2 | 6.8 | 54 | 0.005 | 2.93 | 15 |
| 16.73 | 15.8 | 20.0 | - | 15.9 | 0.9 | 7.5 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 11 | 6 | - | - | 1.1 | 6.2 | 56 | 0.005 | 2.96 | 15 |
| 16.90 | 14.9 | 18.8 | - | 15.1 | 0.7 | 7.3 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 10 | 6 | - | - | 1.0 | 5.8 | 55 | 0.005 | 2.95 | 15 |
| 17.06 | 14.0 | 17.5 | - | 14.1 | 0.7 | 6.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 9 | 5 | - | - | 0.9 | 5.4 | 57 | 0.005 | 2.97 | 15 |
| 17.23 | 12.5 | 15.6 | - | 12.6 | 0.6 | 7.0 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.7 | 60 | 0.005 | 3.03 | 15 |
| 17.39 | 12.2 | 15.2 | - | 12.4 | 0.7 | 6.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.6 | 63 | 0.005 | 3.06 | 15 |
| 17.55 | 13.7 | 16.9 | - | 13.9 | 0.7 | 7.0 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 5.2 | 60 | 0.005 | 3.02 | 15 |
| 17.72 | 15.7 | 19.2 | - | 15.8 | 0.8 | 7.4 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 10 | 6 | - | - | 1.0 | 5.9 | 55 | 0.005 | 2.95 | 15 |
| 17.88 | 15.1 | 18.5 | - | 15.3 | 0.7 | 6.7 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 10 | 6 | - | - | 1.0 | 5.7 | 56 | 0.005 | 2.96 | 15 |
| 18.05 | 13.2 | 16.1 | - | 13.4 | 0.6 | 6.4 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 4.9 | 59 | 0.005 | 3.01 | 15 |
| 18.21 | 11.9 | 14.3 | - | 12.0 | 0.6 | 6.6 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 63 | 0.005 | 3.07 | 15 |
| 18.37 | 11.3 | 13.5 | - | 11.4 | 0.6 | 6.7 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.7 | 4.0 | 65 | 0.005 | 3.09 | 15 |
| 18.54 | 11.3 | 13.5 | - | 11.5 | 0.5 | 8.2 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 4 | - | - | 0.7 | 4.0 | 61 | 0.005 | 3.04 | 15 |
| 18.70 | 10.8 | 12.8 | - | 10.9 | 0.3 | 8.2 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 7 | 4 | - | - | 0.7 | 3.8 | 58 | 0.005 | 2.99 | 15 |
| 18.87 | 10.0 | 11.8 | - | 10.1 | 0.3 | 8.0 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.6 | 3.5 | 60 | 0.005 | 3.02 | 15 |
| 19.03 | 9.2 | 10.9 | - | 9.4 | 0.4 | 8.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.6 | 3.2 | 66 | 0.005 | 3.11 | 15 |
| 19.19 | 8.8 | 10.3 | - | 9.0 | 0.4 | 8.5 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.6 | 3.0 | 69 | 0.005 | 3.15 | 15 |
| 19.36 | 10.0 | 11.6 | - | 10.1 | 0.3 | 8.8 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.6 | 3.4 | 62 | 0.005 | 3.05 | 15 |
| 19.52 | 10.5 | 12.1 | - | 10.6 | 0.3 | 8.6 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.6 | 60 | 0.005 | 3.02 | 15 |
| 19.69 | 10.1 | 11.7 | - | 10.3 | 0.4 | 8.4 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.4 | 64 | 0.005 | 3.08 | 15 |
| 19.85 | 10.6 | 12.1 | - | 10.7 | 0.5 | 9.0 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.6 | 67 | 0.005 | 3.12 | 15 |
| 20.01 | 10.6 | 12.1 | - | 10.8 | 0.6 | 9.4 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.6 | 69 | 0.005 | 3.15 | 15 |
| 20.18 | 11.0 | 12.5 | - | 11.2 | 0.6 | 9.4 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.7 | 70 | 0.005 | 3.16 | 15 |
| 20.34 | 11.8 | 13.3 | - | 12.0 | 0.7 | 9.7 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.0 | 67 | 0.005 | 3.12 | 15 |
| 20.51 | 12.3 | 13.9 | - | 12.5 | 0.7 | 9.6 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.1 | 66 | 0.005 | 3.11 | 15 |
| 20.67 | 13.2 | 14.8 | - | 13.4 | 0.8 | 9.1 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.4 | 65 | 0.005 | 3.09 | 15 |
| 20.83 | 14.2 | 15.9 | - | 14.4 | 0.8 | 8.9 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 4.8 | 62 | 0.005 | 3.05 | 15 |
| 21.00 | 14.8 | 16.4 | - | 14.9 | 0.8 | 8.1 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 5.0 | 61 | 0.005 | 3.03 | 15 |
| 21.16 | 14.7 | 16.3 | - | 14.9 | 0.8 | 7.9 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.9 | 61 | 0.005 | 3.03 | 15 |
| 21.33 | 14.8 | 16.3 | - | 15.0 | 0.8 | 7.8 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.9 | 60 | 0.005 | 3.03 | 15 |
| 21.49 | 14.7 | 16.0 | - | 14.8 | 0.8 | 7.5 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.8 | 62 | 0.005 | 3.06 | 15 |
| 21.65 | 14.6 | 15.9 | - | 14.7 | 0.8 | 7.2 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 5 | - | - | 1.0 | 4.8 | 62 | 0.005 | 3.05 | 15 |
| 21.82 | 14.4 | 15.6 | - | 14.5 | 0.7 | 6.9 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 10 | 5 | - | - | 0.9 | 4.7 | 61 | 0.005 | 3.04 | 15 |
| 21.98 | 13.6 | 14.7 | - | 13.8 | 0.7 | 6.9 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.4 | 62 | 0.005 | 3.04 | 15 |
| 22.15 | 12.8 | 13.7 | - | 12.9 | 0.6 | 6.6 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.8 | 4.1 | 63 | 0.005 | 3.07 | 15 |
| 22.31 | 12.2 | 13.0 | - | 12.3 | 0.6 | 6.5 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 4 | - | - | 0.8 | 3.8 | 66 | 0.005 | 3.11 | 15 |
| 22.47 | 12.8 | 13.7 | - | 13.0 | 0.7 | 6.7 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.8 | 4.1 | 65 | 0.005 | 3.09 | 15 |
| 22.64 | 13.4 | 14.2 | - | 13.5 | 0.7 | 6.8 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.9 | 4.2 | 64 | 0.005 | 3.09 | 15 |
| 22.80 | 13.6 | 14.4 | - | 13.7 | 0.7 | 6.6 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.3 | 64 | 0.005 | 3.08 | 15 |
| 22.97 | 12.9 | 13.5 | - | 13.0 | 0.7 | 6.4 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 5 | - | - | 0.8 | 4.0 | 66 | 0.005 | 3.10 | 15 |
| 23.13 | 12.1 | 12.7 | - | 12.2 | 0.6 | 5.9 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.7 | 66 | 0.005 | 3.11 | 15 |
| 23.30 | 10.9 | 11.3 | - | 11.0 | 0.5 | 5.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 68 | 0.005 | 3.14 | 15 |
| 23.46 | 10.7 | 11.0 | - | 10.8 | 0.5 | 6.0 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.2 | 69 | 0.005 | 3.14 | 15 |
| 23.62 | 11.1 | 11.5 | - | 11.2 | 0.5 | 6.3 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 68 | 0.005 | 3.13 | 15 |
| 23.79 | 11.3 | 11.6 | - | 11.4 | 0.5 | 6.4 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.4 | 68 | 0.005 | 3.13 | 15 |
| 23.95 | 10.9 | 11.1 | - | 11.0 | 0.5 | 6.4 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.2 | 69 | 0.005 | 3.15 | 15 |
| 24.12 | 10.7 | 10.9 | - | 10.8 | 0.5 | 6.6 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.1 | 71 | 0.005 | 3.17 | 15 |
| 24.28 | 11.2 | 11.3 | - | 11.3 | 0.5 | 6.8 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 69 | 0.005 | 3.15 | 15 |
| 24.44 | 11.3 | 11.4 | - | 11.4 | 0.6 | 6.9 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.3 | 70 | 0.005 | 3.17 | 15 |
| 24.61 | 10.9 | 11.0 | - | 11.1 | 0.5 | 7.0 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.2 | 71 | 0.005 | 3.18 | 15 |
| 24.77 | 10.2 | 10.2 | - | 10.3 | 0.5 | 7.2 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.6 | 2.9 | 73 | 0.005 | 3.19 | 15 |
| 24.94 | 10.1 | 10.0 | - | 10.3 | 0.4 | 10.5 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.6 | 2.8 | 71 | 0.005 | 3.17 | 15 |
| 25.10 | 8.9 | 8.8 | - | 9.1 | 0.4 | 10.5 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 76 | 0.005 | 3.24 | 15 |
| 25.26 | 8.2 | 8.1 | - | 8.4 | 0.4 | 10.4 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.2 | 80 | 0.005 | 3.29 | 15 |
| 25.43 | 8.4 | 8.2 | - | 8.6 | 0.4 | 10.4 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.2 | 80 | 0.005 | 3.29 | 15 |
| 25.59 | 8.1 | 7.9 | - | 8.3 | 0.4 | 10.5 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.1 | 84 | 0.005 | 3.34 | 15 |
| 25.76 | 7.8 | 7.6 | - | 8.0 | 0.4 | 10.6 | 7.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.0 | 89 | 0.005 | 3.39 | 15 |
| 25.92 | 8.2 | 8.0 | - | 8.4 | 0.4 | 10.7 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.2 | 84 | 0.005 | 3.34 | 15 |
| 26.08 | 8.3 | 8.1 | - | 8.6 | 0.5 | 10.5 | 6.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.2 | 86 | 0.005 | 3.35 | 15 |
| 26.25 | 8.2 | 7.9 | - | 8.4 | 0.5 | 9.9 | 7.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.1 | 87 | 0.005 | 3.37 | 15 |
| 26.41 | 8.2 | 7.8 | - | 8.4 | 0.5 | 9.4 | 7.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.1 | 87 | 0.005 | 3.37 | 15 |
| 26.58 | 8.0 | 7.7 | - | 8.2 | 0.4 | 8.3 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.0 | 87 | 0.005 | 3.37 | 15 |
| 26.74 | 7.6 | 7.3 | - | 7.8 | 0.4 | 8.0 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.9 | 89 | 0.005 | 3.39 | 15 |
| 26.90 | 7.4 | 7.0 | - | 7.6 | 0.4 | 8.0 | 7.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.8 | 93 | 0.005 | 3.43 | 15 |
| 27.07 | 8.1 | 7.6 | - | 8.2 | 0.5 | 8.3 | 7.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 2.0 | 90 | 0.005 | 3.40 | 15 |
| 27.23 | 10.0 | 9.4 | - | 10.2 | 0.5 | 8.6 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 4 | - | - | 0.6 | 2.6 | 79 | 0.005 | 3.27 | 15 |
| 27.40 | 10.9 | 10.2 | - | 11.1 | 0.6 | 8.3 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.9 | 76 | 0.005 | 3.24 | 15 |
| 27.56 | 11.1 | 10.4 | - | 11.3 | 0.6 | 8.2 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.9 | 75 | 0.005 | 3.23 | 15 |
| 27.72 | 11.5 | 10.7 | - | 11.7 | 0.5 | 8.4 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 3.0 | 71 | 0.005 | 3.18 | 15 |
| 27.89 | 11.4 | 10.5 | - | 11.6 | 0.6 | 8.7 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 3.0 | 76 | 0.005 | 3.23 | 15 |
| 28.05 | 11.9 | 10.9 | - | 12.0 | 0.8 | 9.0 | 8.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 80 | 0.005 | 3.28 | 15 |
| 28.22 | 14.5 | 13.3 | - | 14.7 | 0.9 | 9.5 | 6.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 10 | 5 | - | - | 0.9 | 3.9 | 69 | 0.005 | 3.15 | 15 |
| 28.38 | 26.7 | 24.4 | - | 27.0 | 0.7 | 12.0 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 13 | 7 | - | - | 1.8 | 7.6 | 40 | 0.070 | 2.69 | 15 |
| 28.54 | 24.2 | 22.0 | - | 24.4 | 0.5 | 7.7 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 11 | 12 | 6 | - | - | 1.6 | 6.8 | 40 | 0.070 | 2.69 | 15 |
| 28.71 | 15.9 | 14.4 | - | 16.1 | 0.4 | 8.0 | 2.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 11 | 4 | - | - | 1.0 | 4.3 | 50 | 0.005 | 2.87 | 15 |
| 28.87 | 12.0 | 10.8 | - | 12.2 | 0.4 | 9.1 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 62 | 0.005 | 3.06 | 15 |
| 29.04 | 11.4 | 10.3 | - | 11.6 | 0.4 | 9.9 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 2.9 | 67 | 0.005 | 3.12 | 15 |
| 29.20 | 10.7 | 9.6 | - | 10.9 | 0.4 | 10.5 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.7 | 72 | 0.005 | 3.18 | 15 |
| 29.36 | 10.3 | 9.2 | - | 10.5 | 0.4 | 11.1 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 29.53 | 10.1 | 9.0 | - | 10.4 | 0.4 | 11.7 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.5 | 74 | 0.005 | 3.21 | 15 |
| 29.69 | 10.4 | 9.2 | - | 10.6 | 0.4 | 12.1 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 29.86 | 10.8 | 9.5 | - | 11.1 | 0.4 | 12.5 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.6 | 69 | 0.005 | 3.15 | 15 |
| 30.02 | 11.7 | 10.3 | - | 11.9 | 0.4 | 12.6 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 2.9 | 67 | 0.005 | 3.12 | 15 |
| 30.19 | 11.9 | 10.5 | - | 12.2 | 0.4 | 12.6 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.9 | 67 | 0.005 | 3.12 | 15 |
| 30.35 | 9.3 | 8.1 | - | 9.6 | 0.4 | 13.1 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.2 | 78 | 0.005 | 3.26 | 15 |
| 30.51 | 9.1 | 7.9 | - | 9.3 | 0.3 | 13.8 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.1 | 76 | 0.005 | 3.24 | 15 |
| 30.68 | 9.0 | 7.8 | - | 9.3 | 0.3 | 14.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.1 | 77 | 0.005 | 3.25 | 15 |
| 30.84 | 8.7 | 7.5 | - | 8.9 | 0.3 | 14.7 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 80 | 0.005 | 3.29 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(885).cpt
CPT Date: 3/23/2022 7:27:28 PM
GW During Test: 11 ft


Sounding ID: CPT-03
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.01 | 8.6 | 7.3 | - | 8.9 | 0.3 | 15.1 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 80 | 0.005 | 3.29 | 15 |
| 31.17 | 8.6 | 7.3 | - | 8.9 | 0.3 | 15.5 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 79 | 0.005 | 3.27 | 15 |
| 31.33 | 8.1 | 6.9 | - | 8.5 | 0.2 | 20.5 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.8 | 80 | 0.005 | 3.29 | 15 |
| 31.50 | 7.6 | 6.5 | - | 8.0 | 0.2 | 21.1 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.5 | 1.6 | 83 | 0.005 | 3.32 | 15 |
| 31.66 | 7.2 | 6.1 | - | 7.7 | 0.2 | 21.6 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.4 | 1.5 | 86 | 0.005 | 3.36 | 15 |
| 31.83 | 7.1 | 5.9 | - | 7.5 | 0.2 | 22.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.4 | 1.5 | 89 | 0.005 | 3.39 | 15 |
| 31.99 | 7.3 | 6.1 | - | 7.7 | 0.2 | 22.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.4 | 1.5 | 88 | 0.005 | 3.38 | 15 |
| 32.15 | 7.6 | 6.3 | - | 8.0 | 0.2 | 23.3 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.4 | 1.6 | 84 | 0.005 | 3.33 | 15 |
| 32.32 | 7.8 | 6.5 | - | 8.3 | 0.2 | 24.0 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.5 | 1.6 | 81 | 0.005 | 3.30 | 15 |
| 32.48 | 7.7 | 6.4 | - | 8.2 | 0.2 | 24.6 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.5 | 1.6 | 81 | 0.005 | 3.30 | 15 |
| 32.65 | 8.0 | 6.6 | - | 8.5 | 0.2 | 25.4 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.5 | 1.7 | 80 | 0.005 | 3.28 | 15 |
| 32.81 | 7.9 | 6.6 | - | 8.5 | 0.3 | 26.4 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 5 | 3 | - | - | 0.5 | 1.6 | 84 | 0.005 | 3.33 | 15 |
| 32.97 | 8.3 | 6.8 | - | 8.8 | 0.3 | 27.1 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.7 | 85 | 0.005 | 3.34 | 15 |
| 33.14 | 8.9 | 7.3 | - | 9.5 | 0.4 | 27.9 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 84 | 0.005 | 3.34 | 15 |
| 33.30 | 9.7 | 8.0 | - | 10.3 | 0.4 | 28.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 33.47 | 10.4 | 8.5 | - | 11.0 | 0.5 | 28.4 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 79 | 0.005 | 3.28 | 15 |
| 33.63 | 10.5 | 8.5 | - | 11.0 | 0.5 | 28.3 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 80 | 0.005 | 3.29 | 15 |
| 33.79 | 10.5 | 8.5 | - | 11.1 | 0.5 | 28.4 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 79 | 0.005 | 3.27 | 15 |
| 33.96 | 10.2 | 8.2 | - | 10.8 | 0.4 | 28.5 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.2 | 80 | 0.005 | 3.29 | 15 |
| 34.12 | 10.0 | 8.0 | - | 10.5 | 0.4 | 28.9 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 80 | 0.005 | 3.28 | 15 |
| 34.29 | 9.9 | 7.9 | - | 10.4 | 0.4 | 28.9 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 34.45 | 9.5 | 7.5 | - | 10.0 | 0.4 | 29.4 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 84 | 0.005 | 3.34 | 15 |
| 34.61 | 9.9 | 7.9 | - | 10.7 | 0.4 | 38.8 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 81 | 0.005 | 3.30 | 15 |
| 34.78 | 9.7 | 7.7 | - | 10.5 | 0.4 | 38.8 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 81 | 0.005 | 3.30 | 15 |
| 34.94 | 9.3 | 7.3 | - | 10.1 | 0.4 | 40.1 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 82 | 0.005 | 3.32 | 15 |
| 35.11 | 9.2 | 7.2 | - | 10.0 | 0.4 | 41.4 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 83 | 0.005 | 3.33 | 15 |
| 35.27 | 9.6 | 7.5 | - | 10.4 | 0.4 | 43.5 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 1.9 | 81 | 0.005 | 3.30 | 15 |
| 35.43 | 10.0 | 7.8 | - | 10.9 | 0.4 | 44.8 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 80 | 0.005 | 3.28 | 15 |
| 35.60 | 10.5 | 8.2 | - | 11.4 | 0.4 | 45.6 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.2 | 78 | 0.005 | 3.26 | 15 |
| 35.76 | 11.0 | 8.5 | - | 11.9 | 0.4 | 46.4 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 76 | 0.005 | 3.23 | 15 |
| 35.93 | 11.3 | 8.7 | - | 12.2 | 0.4 | 47.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 74 | 0.005 | 3.21 | 15 |
| 36.09 | 11.6 | 9.0 | - | 12.6 | 0.4 | 48.4 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 72 | 0.005 | 3.19 | 15 |
| 36.26 | 11.5 | 8.8 | - | 12.4 | 0.4 | 48.4 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 73 | 0.005 | 3.20 | 15 |
| 36.42 | 11.2 | 8.6 | - | 12.2 | 0.4 | 48.3 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 74 | 0.005 | 3.21 | 15 |
| 36.58 | 11.5 | 8.8 | - | 12.5 | 0.4 | 49.1 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 73 | 0.005 | 3.20 | 15 |
| 36.75 | 11.7 | 8.9 | - | 12.6 | 0.4 | 47.1 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 72 | 0.005 | 3.19 | 15 |
| 36.91 | 11.8 | 8.9 | - | 12.6 | 0.4 | 42.5 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 71 | 0.005 | 3.17 | 15 |
| 37.08 | 11.3 | 8.5 | - | 12.1 | 0.4 | 40.5 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.3 | 73 | 0.005 | 3.20 | 15 |
| 37.24 | 10.7 | 8.1 | - | 11.5 | 0.3 | 40.9 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.1 | 75 | 0.005 | 3.22 | 15 |
| 37.40 | 10.5 | 7.9 | - | 11.3 | 0.3 | 42.0 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 77 | 0.005 | 3.25 | 15 |
| 37.57 | 10.4 | 7.8 | - | 11.3 | 0.3 | 43.9 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 76 | 0.005 | 3.23 | 15 |
| 37.73 | 10.4 | 7.8 | - | 11.4 | 0.3 | 49.6 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 75 | 0.005 | 3.23 | 15 |
| 37.90 | 9.9 | 7.3 | - | 10.9 | 0.3 | 52.6 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 1.9 | 77 | 0.005 | 3.25 | 15 |
| 38.06 | 10.2 | 7.6 | - | 11.3 | 0.3 | 54.6 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.0 | 74 | 0.005 | 3.21 | 15 |
| 38.22 | 11.1 | 8.2 | - | 12.2 | 0.3 | 56.0 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.2 | 72 | 0.005 | 3.19 | 15 |
| 38.39 | 12.4 | 9.1 | - | 13.6 | 0.4 | 57.8 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 72 | 0.005 | 3.19 | 15 |
| 38.55 | 14.8 | 10.8 | - | 15.9 | 0.6 | 59.6 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 10 | 4 | - | - | 0.9 | 3.0 | 67 | 0.005 | 3.13 | 15 |
| 38.72 | 17.8 | 13.0 | - | 19.0 | 0.7 | 60.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 12 | 4 | - | - | 1.2 | 3.8 | 61 | 0.005 | 3.04 | 15 |
| 38.88 | 20.1 | 14.7 | - | 21.2 | 0.8 | 57.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 13 | 5 | - | - | 1.3 | 4.3 | 59 | 0.005 | 3.00 | 15 |
| 39.04 | 20.2 | 14.7 | - | 21.3 | 0.9 | 56.4 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 13 | 5 | - | - | 1.3 | 4.3 | 60 | 0.005 | 3.03 | 15 |
| 39.21 | 21.6 | 15.7 | - | 22.7 | 0.8 | 55.5 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 14 | 5 | - | - | 1.4 | 4.6 | 56 | 0.005 | 2.96 | 15 |
| 39.37 | 22.4 | 16.2 | - | 23.4 | 0.9 | 51.7 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 15 | 5 | - | - | 1.5 | 4.8 | 56 | 0.005 | 2.97 | 15 |
| 39.54 | 20.0 | 14.4 | - | 20.9 | 0.9 | 47.7 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 13 | 5 | - | - | 1.3 | 4.2 | 61 | 0.005 | 3.04 | 15 |
| 39.70 | 21.5 | 15.4 | - | 22.5 | 0.6 | 51.3 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 14 | 5 | - | - | 1.4 | 4.5 | 53 | 0.005 | 2.91 | 15 |
| 39.86 | 25.9 | 18.6 | - | 26.8 | 0.5 | 45.8 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 13 | 5 | - | - | 1.7 | 5.6 | 42 | 0.070 | 2.74 | 15 |
| 40.03 | 20.6 | 14.7 | - | 21.3 | 0.5 | 39.0 | 2.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 7 | 10 | 4 | - | - | 1.4 | 4.3 | 49 | 0.070 | 2.86 | 15 |
| 40.19 | 15.0 | 10.7 | - | 15.9 | 0.4 | 44.0 | 3.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 10 | 3 | - | - | 1.0 | 3.0 | 61 | 0.005 | 3.04 | 15 |
| 40.36 | 12.9 | 9.1 | - | 13.8 | 0.4 | 48.4 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.8 | 2.5 | 71 | 0.005 | 3.18 | 15 |
| 40.52 | 12.1 | 8.5 | - | 13.2 | 0.4 | 57.6 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.3 | 74 | 0.005 | 3.21 | 15 |
| 40.68 | 12.4 | 8.7 | - | 13.5 | 0.4 | 59.8 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.3 | 71 | 0.005 | 3.17 | 15 |
| 40.85 | 11.7 | 8.2 | - | 12.9 | 0.3 | 61.3 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 8 | 3 | - | - | 0.7 | 2.2 | 71 | 0.005 | 3.18 | 15 |
| 41.01 | 11.2 | 7.8 | - | 12.4 | 0.3 | 63.4 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.7 | 2.0 | 76 | 0.005 | 3.24 | 15 |
| 41.18 | 11.5 | 8.0 | - | 12.7 | 0.3 | 64.9 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 8 | 3 | - | - | 0.7 | 2.1 | 73 | 0.005 | 3.20 | 15 |
| 41.34 | 12.5 | 8.7 | - | 13.8 | 0.3 | 65.8 | 3.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.3 | 68 | 0.005 | 3.13 | 15 |
| 41.50 | 12.0 | 8.3 | - | 13.3 | 0.3 | 69.0 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.2 | 70 | 0.005 | 3.16 | 15 |
| 41.67 | 11.8 | 8.1 | - | 13.2 | 0.3 | 71.6 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 8 | 3 | - | - | 0.7 | 2.1 | 71 | 0.005 | 3.18 | 15 |
| 41.83 | 12.1 | 8.3 | - | 13.5 | 0.3 | 72.2 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.2 | 72 | 0.005 | 3.19 | 15 |
| 42.00 | 12.3 | 8.5 | - | 13.8 | 0.4 | 75.4 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.2 | 71 | 0.005 | 3.18 | 15 |
| 42.16 | 12.4 | 8.5 | - | 13.9 | 0.4 | 75.0 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.3 | 73 | 0.005 | 3.20 | 15 |
| 42.32 | 12.4 | 8.5 | - | 13.9 | 0.4 | 76.5 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.3 | 73 | 0.005 | 3.20 | 15 |
| 42.49 | 12.6 | 8.6 | - | 14.1 | 0.4 | 75.1 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.3 | 74 | 0.005 | 3.22 | 15 |
| 42.65 | 13.3 | 9.1 | - | 14.7 | 0.5 | 69.9 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.8 | 2.4 | 73 | 0.005 | 3.20 | 15 |
| 42.82 | 14.1 | 9.6 | - | 15.3 | 0.5 | 61.5 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.9 | 2.6 | 70 | 0.005 | 3.16 | 15 |
| 42.98 | 13.6 | 9.2 | - | 14.7 | 0.5 | 56.8 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.9 | 2.5 | 73 | 0.005 | 3.20 | 15 |
| 43.15 | 13.7 | 9.2 | - | 14.9 | 0.5 | 62.1 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.9 | 2.5 | 72 | 0.005 | 3.19 | 15 |
| 43.31 | 13.9 | 9.4 | - | 15.1 | 0.4 | 60.0 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.9 | 2.5 | 70 | 0.005 | 3.16 | 15 |
| 43.47 | 13.3 | 8.9 | - | 14.4 | 0.4 | 56.6 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.8 | 2.4 | 72 | 0.005 | 3.18 | 15 |
| 43.64 | 12.2 | 8.2 | - | 13.4 | 0.4 | 59.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 8 | 3 | - | - | 0.8 | 2.1 | 76 | 0.005 | 3.24 | 15 |
| 43.80 | 12.3 | 8.2 | - | 13.6 | 0.5 | 62.8 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 8 | 3 | - | - | 0.8 | 2.2 | 78 | 0.005 | 3.26 | 15 |
| 43.97 | 13.0 | 8.6 | - | 14.3 | 0.5 | 64.8 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 9 | 3 | - | - | 0.8 | 2.3 | 77 | 0.005 | 3.25 | 15 |

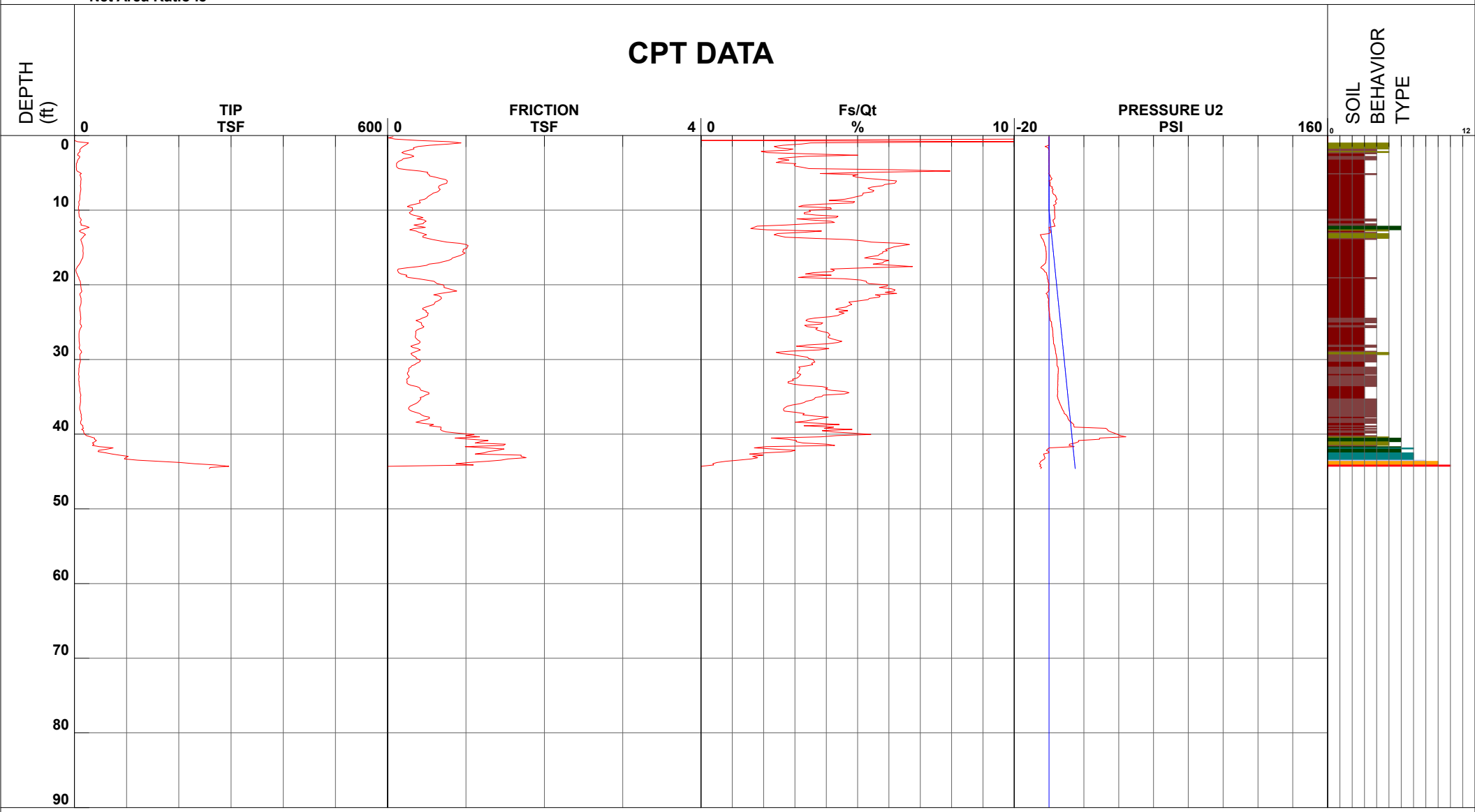
* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

# Cornerstone Earth Group

| | | | | | |
|---|---|---|---|---|---|
| Project | SJBCB New Education Bldg GI | Operator | JM-IY | Filename | SDF(932).cpt |
| Job Number | 1353-3-1 | Cone Number | DDG1589 | GPS | |
| Hole Number | CPT-04 | Date and Time | 3/31/2022 2:59:29 PM | Maximum Depth | 44.62 ft |
| EST GW Depth During Test | | 10.00 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 15cm squared

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

# SJBCB New Education Bldg GI

Project ID: Cornerstone Earth Group
Data File: SDF(932).cpt
CPT Date: 3/31/2022 2:59:29 PM
GW During Test: 10 ft


Sounding ID: CPT-04
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.33 | 1.1 | 0.0 | - | 1.1 | 0.0 | 0.0 | 9.9 | 2 | Organic SOILS - Peats | 100 | 1.0 | 0 | 1 | 1 | - | - | 0.1 | 9.9 | 95 | 0.100 | 5.96 | 10 |
| 0.49 | 1.1 | 0.0 | - | 1.1 | 0.1 | 0.0 | 9.9 | 2 | Organic SOILS - Peats | 100 | 1.0 | 0 | 1 | 1 | - | - | 0.1 | 9.9 | 95 | 0.100 | 6.27 | 10 |
| 0.66 | 1.1 | 0.0 | - | 1.1 | 0.4 | 0.0 | 0.1 | 1 | sensitive fine SOIL | 115 | 2.0 | 1 | 1 | 1 | - | - | 0.1 | 9.9 | 95 | 0.005 | 3.48 | 15 |
| 0.82 | 5.9 | 9.5 | - | 5.9 | 0.8 | 0.0 | 9.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 4 | - | - | 0.4 | 9.9 | 84 | 0.005 | 3.34 | 15 |
| 0.98 | 26.8 | 42.9 | 129.8 | 26.8 | 0.9 | 0.1 | 3.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 21 | 13 | 11 | - | - | 1.9 | 9.9 | 33 | 0.070 | 2.55 | 15 |
| 1.15 | 24.4 | 39.1 | 119.2 | 24.4 | 0.8 | 0.1 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 20 | 12 | 10 | - | - | 1.7 | 9.9 | 33 | 0.070 | 2.55 | 15 |
| 1.31 | 20.7 | 33.3 | 100.5 | 20.7 | 0.5 | -0.1 | 2.6 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 17 | 10 | 8 | - | - | 1.5 | 9.9 | 33 | 0.070 | 2.55 | 15 |
| 1.48 | 16.7 | 26.8 | 87.6 | 16.7 | 0.4 | -2.2 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 8 | 7 | - | - | 1.2 | 9.9 | 35 | 0.070 | 2.59 | 15 |
| 1.64 | 13.3 | 21.4 | - | 13.3 | 0.3 | -0.6 | 2.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 11 | 7 | 6 | - | - | 0.9 | 9.9 | 40 | 0.070 | 2.68 | 15 |
| 1.80 | 11.5 | 18.4 | - | 11.5 | 0.3 | -0.2 | 3.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 6 | 5 | - | - | 0.8 | 9.9 | 45 | 0.070 | 2.78 | 15 |
| 1.97 | 10.0 | 16.1 | - | 10.0 | 0.3 | -0.1 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 8 | 5 | 5 | - | - | 0.7 | 9.9 | 47 | 0.070 | 2.81 | 15 |
| 2.13 | 11.1 | 17.9 | - | 11.1 | 0.2 | 0.1 | 1.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 9 | 6 | 5 | - | - | 0.8 | 9.9 | 40 | 0.070 | 2.69 | 15 |
| 2.30 | 8.5 | 13.7 | - | 8.5 | 0.2 | 0.0 | 2.1 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 7 | 4 | 4 | - | - | 0.6 | 9.9 | 46 | 0.070 | 2.81 | 15 |
| 2.46 | 6.5 | 10.5 | - | 6.5 | 0.2 | 0.0 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 4 | 3 | - | - | 0.5 | 9.9 | 60 | 0.005 | 3.02 | 15 |
| 2.62 | 6.2 | 9.9 | - | 6.2 | 0.3 | 0.1 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 4 | 3 | - | - | 0.4 | 9.9 | 69 | 0.005 | 3.15 | 15 |
| 2.79 | 10.0 | 16.0 | - | 10.0 | 0.3 | -0.1 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 9.9 | 50 | 0.005 | 2.87 | 15 |
| 2.95 | 10.2 | 16.4 | - | 10.2 | 0.3 | 0.0 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 8 | 5 | 5 | - | - | 0.7 | 9.9 | 47 | 0.070 | 2.81 | 15 |
| 3.12 | 8.0 | 12.9 | - | 8.0 | 0.2 | 0.0 | 2.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 5 | 4 | - | - | 0.6 | 9.9 | 50 | 0.005 | 2.87 | 15 |
| 3.28 | 6.5 | 10.4 | - | 6.5 | 0.2 | 0.0 | 2.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 4 | 3 | - | - | 0.4 | 9.9 | 57 | 0.005 | 2.98 | 15 |
| 3.45 | 5.6 | 9.0 | - | 5.6 | 0.1 | 0.0 | 2.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 4 | 3 | - | - | 0.4 | 9.2 | 60 | 0.005 | 3.02 | 15 |
| 3.61 | 5.1 | 8.3 | - | 5.1 | 0.1 | -0.1 | 2.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 3 | 3 | - | - | 0.3 | 8.0 | 61 | 0.005 | 3.04 | 15 |
| 3.77 | 3.7 | 6.0 | - | 3.7 | 0.1 | 0.1 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 2 | 2 | - | - | 0.2 | 5.5 | 74 | 0.005 | 3.22 | 15 |
| 3.94 | 3.8 | 6.2 | - | 3.8 | 0.1 | 0.1 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 3 | 2 | - | - | 0.3 | 5.4 | 73 | 0.005 | 3.21 | 15 |
| 4.10 | 3.7 | 5.9 | - | 3.7 | 0.1 | 0.0 | 3.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 2 | 2 | - | - | 0.2 | 4.9 | 75 | 0.005 | 3.23 | 15 |
| 4.27 | 3.6 | 5.9 | - | 3.6 | 0.1 | 0.0 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 2 | 2 | - | - | 0.2 | 4.7 | 77 | 0.005 | 3.25 | 15 |
| 4.43 | 4.1 | 6.6 | - | 4.1 | 0.1 | 0.1 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 3 | 2 | - | - | 0.3 | 5.1 | 74 | 0.005 | 3.22 | 15 |
| 4.59 | 4.0 | 6.4 | - | 4.0 | 0.2 | 0.0 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 3 | 3 | - | - | 0.3 | 4.7 | 88 | 0.005 | 3.38 | 15 |
| 4.76 | 5.2 | 8.4 | - | 5.2 | 0.4 | 0.0 | 8.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 3 | 3 | - | - | 0.4 | 6.1 | 85 | 0.005 | 3.35 | 15 |
| 4.92 | 9.4 | 15.1 | - | 9.4 | 0.5 | 0.2 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 9.9 | 61 | 0.005 | 3.03 | 15 |
| 5.09 | 13.3 | 21.3 | - | 13.3 | 0.5 | -0.3 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.9 | 47 | 0.005 | 2.81 | 15 |
| 5.25 | 10.6 | 17.0 | - | 10.6 | 0.5 | 0.4 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 9.9 | 56 | 0.005 | 2.97 | 15 |
| 5.41 | 11.0 | 17.6 | - | 11.0 | 0.5 | 0.7 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.8 | 9.9 | 55 | 0.005 | 2.95 | 15 |
| 5.58 | 12.2 | 19.5 | - | 12.2 | 0.6 | 1.0 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 53 | 0.005 | 2.92 | 15 |
| 5.74 | 12.6 | 20.3 | - | 12.7 | 0.7 | 1.7 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 8 | 6 | - | - | 0.9 | 9.9 | 54 | 0.005 | 2.93 | 15 |
| 5.91 | 12.8 | 20.5 | - | 12.8 | 0.7 | 1.4 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 9.9 | 55 | 0.005 | 2.95 | 15 |
| 6.07 | 12.2 | 19.6 | - | 12.2 | 0.8 | -0.1 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 57 | 0.005 | 2.98 | 15 |
| 6.23 | 12.2 | 19.5 | - | 12.2 | 0.8 | 0.7 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 58 | 0.005 | 2.99 | 15 |
| 6.40 | 12.2 | 19.6 | - | 12.2 | 0.8 | 0.7 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 57 | 0.005 | 2.98 | 15 |
| 6.56 | 11.9 | 19.1 | - | 11.9 | 0.7 | 0.6 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.9 | 57 | 0.005 | 2.98 | 15 |
| 6.73 | 11.4 | 18.2 | - | 11.4 | 0.7 | 0.5 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 9.5 | 58 | 0.005 | 2.99 | 15 |
| 6.89 | 11.9 | 19.1 | - | 11.9 | 0.6 | 1.9 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.7 | 56 | 0.005 | 2.96 | 15 |
| 7.05 | 12.2 | 19.6 | - | 12.3 | 0.7 | 1.6 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.7 | 55 | 0.005 | 2.94 | 15 |
| 7.22 | 12.5 | 20.0 | - | 12.5 | 0.7 | 2.4 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.9 | 9.7 | 54 | 0.005 | 2.94 | 15 |
| 7.38 | 11.9 | 19.1 | - | 11.9 | 0.7 | 1.9 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 9.0 | 56 | 0.005 | 2.96 | 15 |
| 7.55 | 11.6 | 18.6 | - | 11.7 | 0.6 | 2.1 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 8.6 | 56 | 0.005 | 2.97 | 15 |
| 7.71 | 11.3 | 18.1 | - | 11.3 | 0.6 | 2.1 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 8.1 | 56 | 0.005 | 2.96 | 15 |
| 7.87 | 10.9 | 17.4 | - | 10.9 | 0.6 | 2.7 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 7.7 | 57 | 0.005 | 2.98 | 15 |
| 8.04 | 10.4 | 16.7 | - | 10.5 | 0.5 | 3.7 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 7.2 | 58 | 0.005 | 2.99 | 15 |
| 8.20 | 10.3 | 16.5 | - | 10.4 | 0.5 | 4.0 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.9 | 57 | 0.005 | 2.98 | 15 |
| 8.37 | 10.4 | 16.7 | - | 10.5 | 0.5 | 4.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.9 | 57 | 0.005 | 2.97 | 15 |
| 8.53 | 10.3 | 16.5 | - | 10.4 | 0.5 | 4.6 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.6 | 56 | 0.005 | 2.97 | 15 |
| 8.69 | 9.9 | 15.8 | - | 10.0 | 0.4 | 3.8 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 6.2 | 55 | 0.005 | 2.95 | 15 |
| 8.86 | 8.3 | 13.4 | - | 8.4 | 0.4 | 3.6 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 5.1 | 63 | 0.005 | 3.06 | 15 |
| 9.02 | 8.6 | 13.8 | - | 8.7 | 0.4 | 4.1 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 5 | - | - | 0.6 | 5.2 | 62 | 0.005 | 3.05 | 15 |
| 9.19 | 9.2 | 14.7 | - | 9.2 | 0.4 | 3.8 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 5.4 | 56 | 0.005 | 2.96 | 15 |
| 9.35 | 8.7 | 13.9 | - | 8.7 | 0.3 | 2.6 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 5.0 | 55 | 0.005 | 2.94 | 15 |
| 9.51 | 8.1 | 13.0 | - | 8.1 | 0.3 | 3.1 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 5 | 4 | - | - | 0.5 | 4.6 | 56 | 0.005 | 2.96 | 15 |
| 9.68 | 7.6 | 12.2 | - | 7.7 | 0.3 | 3.1 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 4.2 | 62 | 0.005 | 3.05 | 15 |
| 9.84 | 7.6 | 12.2 | - | 7.7 | 0.3 | 3.2 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 5 | 4 | - | - | 0.5 | 4.1 | 62 | 0.005 | 3.06 | 15 |
| 10.01 | 9.3 | 14.9 | - | 9.4 | 0.3 | 3.2 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 5.1 | 54 | 0.005 | 2.93 | 15 |
| 10.17 | 8.5 | 13.6 | - | 8.6 | 0.3 | 3.1 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.6 | 56 | 0.005 | 2.97 | 15 |
| 10.34 | 8.4 | 13.5 | - | 8.5 | 0.3 | 3.2 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.5 | 56 | 0.005 | 2.96 | 15 |
| 10.50 | 8.8 | 14.1 | - | 8.8 | 0.3 | 3.3 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.6 | 55 | 0.005 | 2.94 | 15 |
| 10.66 | 8.8 | 14.2 | - | 8.9 | 0.3 | 3.3 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 6 | 4 | - | - | 0.6 | 4.7 | 56 | 0.005 | 2.97 | 15 |
| 10.83 | 9.0 | 14.4 | - | 9.1 | 0.4 | 3.4 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 4.7 | 59 | 0.005 | 3.01 | 15 |
| 10.99 | 10.5 | 16.8 | - | 10.5 | 0.5 | 3.4 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 7 | 5 | - | - | 0.7 | 5.5 | 55 | 0.005 | 2.95 | 15 |
| 11.16 | 12.2 | 19.6 | - | 12.3 | 0.4 | 3.2 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 6 | 6 | - | - | 0.8 | 6.4 | 46 | 0.070 | 2.80 | 15 |
| 11.32 | 13.3 | 21.3 | - | 13.3 | 0.5 | 2.3 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 6.9 | 46 | 0.005 | 2.81 | 15 |
| 11.48 | 11.8 | 19.0 | - | 11.9 | 0.5 | 2.4 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 8 | 6 | - | - | 0.8 | 6.1 | 52 | 0.005 | 2.90 | 15 |
| 11.65 | 10.9 | 17.4 | - | 10.9 | 0.5 | 2.6 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 7 | 5 | - | - | 0.7 | 5.5 | 54 | 0.005 | 2.93 | 15 |
| 11.81 | 13.0 | 20.8 | - | 13.0 | 0.5 | 2.9 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 6.6 | 47 | 0.005 | 2.81 | 15 |
| 11.98 | 12.4 | 19.9 | - | 12.5 | 0.3 | 3.0 | 2.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 10 | 6 | 6 | - | - | 0.8 | 6.3 | 44 | 0.070 | 2.76 | 15 |
| 12.14 | 21.8 | 26.8 | 79.5 | 21.9 | 0.4 | 3.4 | 1.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 11 | 7 | - | - | 1.5 | 9.9 | 32 | 0.070 | 2.54 | 15 |
| 12.30 | 28.4 | 34.8 | 84.5 | 28.4 | 0.5 | 0.0 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 9 | 7 | 8 | 32 | 36 | - | - | 28 | 0.200 | 2.43 | 16 |
| 12.47 | 21.0 | 25.7 | 74.2 | 21.0 | 0.3 | 0.1 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 6 | 5 | 6 | 22 | 34 | - | - | 32 | 0.200 | 2.52 | 16 |
| 12.63 | 13.4 | 21.1 | - | 13.4 | 0.3 | 0.4 | 2.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 11 | 7 | 6 | - | - | 0.9 | 6.6 | 39 | 0.070 | 2.68 | 15 |
| 12.80 | 9.5 | 14.8 | - | 9.5 | 0.4 | 0.7 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 6 | 5 | - | - | 0.6 | 4.5 | 57 | 0.005 | 2.97 | 15 |
| 12.96 | 12.0 | 18.7 | - | 12.1 | 0.4 | 0.9 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 5 | - | - | 0.8 | 5.8 | 48 | 0.005 | 2.84 | 15 |
| 13.12 | 18.5 | 28.5 | - | 18.5 | 0.5 | 0.1 | 2.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 9 | 7 | - | - | 1.3 | 9.0 | 36 | 0.070 | 2.60 | 15 |
| 13.29 | 21.2 | 28.1 | 92.3 | 21.1 | 0.5 | -5.0 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 11 | 7 | - | - | 1.5 | 9.9 | 35 | 0.070 | 2.59 | 15 |
| 13.45 | 18.0 | 27.4 | - | 17.9 | 0.5 | -4.7 | 2.6 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 9 | 7 | - | - | 1.2 | 8.6 | 37 | 0.070 | 2.63 | 15 |
| 13.62 | 16.6 | 25.1 | - | 16.5 | 0.4 | -4.5 | 2.8 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 13 | 8 | 7 | - | - | 1.1 | 7.9 | 39 | 0.070 | 2.68 | 15 |
| 13.78 | 14.0 | 21.0 | - | 13.9 | 0.5 | -4.0 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 6.5 | 48 | 0.005 | 2.83 | 15 |
| 13.94 | 12.2 | 18.2 | - | 12.1 | 0.6 | -3.5 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 8 | 6 | - | - | 0.8 | 5.6 | 55 | 0.005 | 2.95 | 15 |
| 14.11 | 12.9 | 19.1 | - | 12.8 | 0.7 | -3.2 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 9 | 6 | - | - | 0.9 | 5.9 | 56 | 0.005 | 2.96 | 15 |
| 14.27 | 13.8 | 20.4 | - | 13.8 | 0.8 | -2.9 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 9 | 6 | - | - | 0.9 | 6.3 | 55 | 0.005 | 2.95 | 15 |
| 14.44 | 14.4 | 21.1 | - | 14.4 | 0.9 | -2.7 | 6.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 10 | 7 | - | - | 1.0 | 6.6 | 58 | 0.005 | 2.99 | 15 |
| 14.60 | 15.1 | 21.9 | - | 15.0 | 1.0 | -2.5 | 7.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 10 | 7 | - | - | 1.0 | 6.8 | 58 | 0.005 | 2.99 | 15 |
| 14.76 | 16.1 | 23.2 | - | 16.0 | 1.0 | -2.4 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 7.3 | 55 | 0.005 | 2.95 | 15 |
| 14.93 | 16.6 | 23.8 | - | 16.5 | 1.0 | -2.0 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 11 | 7 | - | - | 1.1 | 7.4 | 54 | 0.005 | 2.93 | 15 |
| 15.09 | 16.8 | 23.9 | - | 16.7 | 1.0 | -1.9 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 11 | 7 | - | - | 1.1 | 7.5 | 54 | 0.005 | 2.93 | 15 |
| 15.26 | 16.4 | 23.2 | - | 16.3 | 1.0 | -1.8 | 6.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 7.2 | 54 | 0.005 | 2.93 | 15 |
| 15.42 | 16.2 | 22.9 | - | 16.2 | 1.0 | -1.8 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 7.1 | 54 | 0.005 | 2.94 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(932).cpt
CPT Date: 3/31/2022 2:59:29 PM
GW During Test: 10 ft


Sounding ID: CPT-04
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15.58 | 16.5 | 23.1 | - | 16.4 | 1.0 | -1.7 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 7.2 | 54 | 0.005 | 2.93 | 15 |
| 15.75 | 17.0 | 23.7 | - | 17.0 | 1.0 | -1.7 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 11 | 7 | - | - | 1.2 | 7.4 | 53 | 0.005 | 2.92 | 15 |
| 15.91 | 16.8 | 23.3 | - | 16.8 | 1.0 | -1.7 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 16 | 11 | 7 | - | - | 1.1 | 7.3 | 53 | 0.005 | 2.92 | 15 |
| 16.08 | 16.3 | 22.5 | - | 16.3 | 0.9 | -1.6 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 7.0 | 54 | 0.005 | 2.93 | 15 |
| 16.24 | 16.3 | 22.2 | - | 16.2 | 0.9 | -1.6 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 11 | 7 | - | - | 1.1 | 6.9 | 53 | 0.005 | 2.92 | 15 |
| 16.40 | 15.8 | 21.5 | - | 15.8 | 0.8 | -1.6 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 14 | 11 | 7 | - | - | 1.1 | 6.7 | 53 | 0.005 | 2.92 | 15 |
| 16.57 | 14.4 | 19.4 | - | 14.3 | 0.8 | -1.7 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 13 | 10 | 6 | - | - | 1.0 | 6.0 | 57 | 0.005 | 2.98 | 15 |
| 16.73 | 13.0 | 17.4 | - | 13.0 | 0.8 | -1.8 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 12 | 9 | 6 | - | - | 0.9 | 5.3 | 61 | 0.005 | 3.04 | 15 |
| 16.90 | 12.2 | 16.2 | - | 12.1 | 0.7 | -1.8 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 8 | 5 | - | - | 0.8 | 4.9 | 63 | 0.005 | 3.06 | 15 |
| 17.06 | 11.2 | 14.9 | - | 11.2 | 0.7 | -1.9 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 7 | 5 | - | - | 0.7 | 4.5 | 65 | 0.005 | 3.09 | 15 |
| 17.23 | 9.6 | 12.7 | - | 9.6 | 0.5 | -2.6 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 6 | 4 | - | - | 0.6 | 3.8 | 68 | 0.005 | 3.14 | 15 |
| 17.39 | 8.0 | 10.6 | - | 8.0 | 0.5 | -3.4 | 7.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 5 | 4 | - | - | 0.5 | 3.1 | 77 | 0.005 | 3.25 | 15 |
| 17.55 | 5.8 | 7.6 | - | 5.7 | 0.4 | -4.3 | 8.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 4 | 3 | - | - | 0.4 | 2.1 | 91 | 0.005 | 3.42 | 15 |
| 17.72 | 4.7 | 6.1 | - | 4.6 | 0.2 | -4.7 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 3 | 3 | - | - | 0.3 | 1.6 | 95 | 0.005 | 3.46 | 15 |
| 17.88 | 3.3 | 4.2 | - | 3.2 | 0.1 | -3.6 | 6.0 | 2 | Organic SOILS - Peats | 100 | 1.0 | 4 | 3 | 2 | - | - | 0.3 | 1.0 | 95 | 0.100 | 3.61 | 10 |
| 18.05 | 2.9 | 3.8 | - | 2.9 | 0.1 | -2.9 | 6.6 | 2 | Organic SOILS - Peats | 100 | 1.0 | 4 | 3 | 2 | - | - | 0.2 | 0.8 | 95 | 0.100 | 3.70 | 10 |
| 18.21 | 3.2 | 4.0 | - | 3.1 | 0.1 | -2.6 | 6.3 | 2 | Organic SOILS - Peats | 100 | 1.0 | 4 | 3 | 2 | - | - | 0.3 | 0.9 | 95 | 0.100 | 3.65 | 10 |
| 18.37 | 3.9 | 5.0 | - | 3.9 | 0.1 | -1.5 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 3 | 3 | 2 | - | - | 0.2 | 1.2 | 95 | 0.005 | 3.48 | 15 |
| 18.54 | 5.2 | 6.6 | - | 5.1 | 0.2 | -1.5 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 4 | 3 | 3 | - | - | 0.3 | 1.7 | 82 | 0.005 | 3.31 | 15 |
| 18.70 | 5.9 | 7.4 | - | 5.9 | 0.2 | -1.2 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 4 | 3 | - | - | 0.4 | 2.0 | 81 | 0.005 | 3.30 | 15 |
| 18.87 | 6.9 | 8.7 | - | 6.9 | 0.2 | -1.0 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 5 | 3 | - | - | 0.4 | 2.4 | 71 | 0.005 | 3.18 | 15 |
| 19.03 | 8.6 | 10.7 | - | 8.5 | 0.3 | -1.0 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.5 | 3.1 | 63 | 0.005 | 3.06 | 15 |
| 19.19 | 8.5 | 10.6 | - | 8.5 | 0.4 | -1.0 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 6 | 4 | - | - | 0.5 | 3.0 | 71 | 0.005 | 3.17 | 15 |
| 19.36 | 9.8 | 12.1 | - | 9.8 | 0.5 | -0.6 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.6 | 3.5 | 69 | 0.005 | 3.14 | 15 |
| 19.52 | 11.2 | 13.8 | - | 11.2 | 0.6 | -0.6 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 7 | 5 | - | - | 0.7 | 4.1 | 65 | 0.005 | 3.10 | 15 |
| 19.69 | 11.6 | 14.1 | - | 11.6 | 0.6 | -0.4 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.2 | 65 | 0.005 | 3.09 | 15 |
| 19.85 | 11.8 | 14.3 | - | 11.8 | 0.6 | -0.1 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 65 | 0.005 | 3.09 | 15 |
| 20.01 | 11.9 | 14.4 | - | 11.9 | 0.7 | -0.2 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 67 | 0.005 | 3.12 | 15 |
| 20.18 | 12.1 | 14.6 | - | 12.1 | 0.7 | -0.2 | 6.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.4 | 66 | 0.005 | 3.11 | 15 |
| 20.34 | 12.6 | 15.1 | - | 12.6 | 0.7 | -0.3 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.5 | 64 | 0.005 | 3.08 | 15 |
| 20.51 | 12.8 | 15.2 | - | 12.8 | 0.8 | -0.3 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.8 | 4.6 | 65 | 0.005 | 3.10 | 15 |
| 20.67 | 13.3 | 15.8 | - | 13.3 | 0.8 | -0.1 | 6.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 9 | 5 | - | - | 0.9 | 4.8 | 65 | 0.005 | 3.09 | 15 |
| 20.83 | 14.3 | 16.9 | - | 14.3 | 0.9 | -0.4 | 6.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 10 | 6 | - | - | 1.0 | 5.1 | 63 | 0.005 | 3.06 | 15 |
| 21.00 | 13.2 | 15.5 | - | 13.2 | 0.8 | -0.7 | 6.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.9 | 4.6 | 64 | 0.005 | 3.09 | 15 |
| 21.16 | 10.7 | 12.5 | - | 10.7 | 0.7 | -1.7 | 7.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 5 | - | - | 0.7 | 3.7 | 72 | 0.005 | 3.19 | 15 |
| 21.33 | 10.5 | 12.2 | - | 10.5 | 0.6 | -1.0 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.6 | 70 | 0.005 | 3.16 | 15 |
| 21.49 | 11.5 | 13.3 | - | 11.5 | 0.7 | -0.8 | 6.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 3.9 | 68 | 0.005 | 3.14 | 15 |
| 21.65 | 12.0 | 13.8 | - | 12.0 | 0.7 | -0.8 | 6.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.1 | 67 | 0.005 | 3.12 | 15 |
| 21.82 | 12.8 | 14.6 | - | 12.8 | 0.7 | -0.4 | 6.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.8 | 4.4 | 64 | 0.005 | 3.08 | 15 |
| 21.98 | 12.6 | 14.3 | - | 12.6 | 0.7 | -0.2 | 5.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 8 | 5 | - | - | 0.8 | 4.3 | 65 | 0.005 | 3.09 | 15 |
| 22.15 | 12.8 | 14.5 | - | 12.8 | 0.6 | -0.3 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.8 | 4.3 | 63 | 0.005 | 3.07 | 15 |
| 22.31 | 12.8 | 14.5 | - | 12.8 | 0.6 | -0.4 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 9 | 5 | - | - | 0.8 | 4.3 | 62 | 0.005 | 3.05 | 15 |
| 22.47 | 12.6 | 14.1 | - | 12.6 | 0.6 | -0.3 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.2 | 63 | 0.005 | 3.06 | 15 |
| 22.64 | 12.2 | 13.6 | - | 12.2 | 0.6 | -0.3 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 5 | - | - | 0.8 | 4.0 | 64 | 0.005 | 3.08 | 15 |
| 22.80 | 11.4 | 12.7 | - | 11.4 | 0.5 | -0.3 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.7 | 66 | 0.005 | 3.10 | 15 |
| 22.97 | 10.6 | 11.7 | - | 10.6 | 0.5 | -0.3 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.4 | 68 | 0.005 | 3.14 | 15 |
| 23.13 | 10.2 | 11.2 | - | 10.2 | 0.4 | -0.1 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.2 | 68 | 0.005 | 3.14 | 15 |
| 23.30 | 10.4 | 11.4 | - | 10.4 | 0.4 | -0.1 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 67 | 0.005 | 3.13 | 15 |
| 23.46 | 10.5 | 11.5 | - | 10.5 | 0.5 | 0.0 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 69 | 0.005 | 3.15 | 15 |
| 23.62 | 11.1 | 12.0 | - | 11.1 | 0.5 | 0.1 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.5 | 66 | 0.005 | 3.11 | 15 |
| 23.79 | 11.4 | 12.3 | - | 11.4 | 0.5 | 0.2 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.6 | 66 | 0.005 | 3.11 | 15 |
| 23.95 | 11.5 | 12.4 | - | 11.5 | 0.5 | 0.3 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.6 | 66 | 0.005 | 3.10 | 15 |
| 24.12 | 11.7 | 12.5 | - | 11.7 | 0.5 | 0.3 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.6 | 65 | 0.005 | 3.09 | 15 |
| 24.28 | 11.9 | 12.7 | - | 11.9 | 0.5 | 0.4 | 4.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.7 | 63 | 0.005 | 3.07 | 15 |
| 24.44 | 12.2 | 12.9 | - | 12.2 | 0.4 | 0.5 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 4 | - | - | 0.8 | 3.8 | 60 | 0.005 | 3.03 | 15 |
| 24.61 | 12.1 | 12.8 | - | 12.2 | 0.4 | 0.6 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 8 | 4 | - | - | 0.8 | 3.7 | 60 | 0.005 | 3.02 | 15 |
| 24.77 | 10.8 | 11.4 | - | 10.8 | 0.4 | 0.6 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 63 | 0.005 | 3.06 | 15 |
| 24.94 | 11.4 | 11.9 | - | 11.4 | 0.4 | 1.3 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.4 | 62 | 0.005 | 3.05 | 15 |
| 25.10 | 11.1 | 11.5 | - | 11.1 | 0.4 | 1.4 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 7 | 4 | - | - | 0.7 | 3.3 | 65 | 0.005 | 3.10 | 15 |
| 25.26 | 11.3 | 11.7 | - | 11.3 | 0.4 | 1.4 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.7 | 3.4 | 65 | 0.005 | 3.09 | 15 |
| 25.43 | 13.2 | 13.6 | - | 13.3 | 0.4 | 1.5 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 4.0 | 57 | 0.005 | 2.98 | 15 |
| 25.59 | 13.7 | 14.0 | - | 13.7 | 0.5 | 1.6 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 4.1 | 57 | 0.005 | 2.98 | 15 |
| 25.76 | 12.0 | 12.2 | - | 12.0 | 0.4 | 1.9 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 8 | 4 | - | - | 0.8 | 3.5 | 63 | 0.005 | 3.06 | 15 |
| 25.92 | 10.9 | 11.1 | - | 11.0 | 0.4 | 2.0 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 3.2 | 65 | 0.005 | 3.10 | 15 |
| 26.08 | 10.0 | 10.1 | - | 10.0 | 0.4 | 2.0 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.6 | 2.8 | 69 | 0.005 | 3.15 | 15 |
| 26.25 | 9.2 | 9.3 | - | 9.3 | 0.4 | 2.1 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.6 | 73 | 0.005 | 3.19 | 15 |
| 26.41 | 8.9 | 9.0 | - | 9.0 | 0.4 | 2.2 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.5 | 75 | 0.005 | 3.22 | 15 |
| 26.58 | 8.7 | 8.8 | - | 8.8 | 0.4 | 2.2 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.5 | 2.4 | 76 | 0.005 | 3.24 | 15 |
| 26.74 | 8.7 | 8.7 | - | 8.7 | 0.4 | 2.2 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.5 | 2.4 | 77 | 0.005 | 3.24 | 15 |
| 26.90 | 8.7 | 8.6 | - | 8.7 | 0.4 | 2.3 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.5 | 2.3 | 77 | 0.005 | 3.25 | 15 |
| 27.07 | 8.7 | 8.6 | - | 8.8 | 0.4 | 2.4 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.5 | 2.3 | 76 | 0.005 | 3.24 | 15 |
| 27.23 | 8.8 | 8.7 | - | 8.9 | 0.4 | 2.4 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 77 | 0.005 | 3.25 | 15 |
| 27.40 | 8.9 | 8.7 | - | 9.0 | 0.4 | 2.5 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 77 | 0.005 | 3.25 | 15 |
| 27.56 | 9.2 | 8.9 | - | 9.2 | 0.4 | 2.5 | 5.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 77 | 0.005 | 3.25 | 15 |
| 27.72 | 9.5 | 9.2 | - | 9.5 | 0.4 | 2.6 | 5.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.5 | 76 | 0.005 | 3.23 | 15 |
| 27.89 | 9.7 | 9.4 | - | 9.8 | 0.4 | 2.6 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.6 | 73 | 0.005 | 3.20 | 15 |
| 28.05 | 10.0 | 9.6 | - | 10.0 | 0.3 | 3.1 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.7 | 69 | 0.005 | 3.15 | 15 |
| 28.22 | 9.7 | 9.3 | - | 9.8 | 0.3 | 3.2 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.6 | 68 | 0.005 | 3.13 | 15 |
| 28.38 | 9.0 | 8.6 | - | 9.1 | 0.3 | 3.3 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.3 | 74 | 0.005 | 3.21 | 15 |
| 28.54 | 9.4 | 9.0 | - | 9.5 | 0.4 | 3.5 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 75 | 0.005 | 3.23 | 15 |
| 28.71 | 11.0 | 10.4 | - | 11.1 | 0.4 | 3.6 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.9 | 68 | 0.005 | 3.14 | 15 |
| 28.87 | 13.1 | 12.4 | - | 13.2 | 0.4 | 3.8 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 9 | 4 | - | - | 0.9 | 3.6 | 58 | 0.005 | 2.99 | 15 |
| 29.04 | 13.8 | 13.0 | - | 13.9 | 0.3 | 3.8 | 2.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 9 | 4 | - | - | 0.9 | 3.8 | 54 | 0.005 | 2.93 | 15 |
| 29.20 | 11.8 | 11.0 | - | 11.8 | 0.3 | 3.9 | 3.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 3.1 | 59 | 0.005 | 3.01 | 15 |
| 29.36 | 10.5 | 9.8 | - | 10.6 | 0.3 | 4.1 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 3 | - | - | 0.7 | 2.7 | 66 | 0.005 | 3.10 | 15 |
| 29.53 | 10.5 | 9.7 | - | 10.6 | 0.3 | 4.2 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.7 | 67 | 0.005 | 3.12 | 15 |
| 29.69 | 10.7 | 9.9 | - | 10.8 | 0.4 | 4.3 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 3 | - | - | 0.7 | 2.7 | 68 | 0.005 | 3.14 | 15 |
| 29.86 | 10.6 | 9.8 | - | 10.7 | 0.4 | 4.5 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 3 | - | - | 0.7 | 2.7 | 69 | 0.005 | 3.14 | 15 |
| 30.02 | 11.2 | 10.3 | - | 11.3 | 0.4 | 4.6 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.9 | 68 | 0.005 | 3.13 | 15 |
| 30.19 | 11.7 | 10.7 | - | 11.7 | 0.4 | 4.6 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.7 | 3.0 | 67 | 0.005 | 3.12 | 15 |
| 30.35 | 11.2 | 10.1 | - | 11.2 | 0.4 | 4.5 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 7 | 4 | - | - | 0.7 | 2.8 | 69 | 0.005 | 3.14 | 15 |
| 30.51 | 10.4 | 9.4 | - | 10.5 | 0.4 | 4.5 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.6 | 71 | 0.005 | 3.17 | 15 |
| 30.68 | 9.7 | 8.8 | - | 9.8 | 0.3 | 4.6 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.4 | 74 | 0.005 | 3.21 | 15 |
| 30.84 | 9.1 | 8.2 | - | 9.2 | 0.3 | 4.6 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.2 | 75 | 0.005 | 3.23 | 15 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

Project ID: Cornerstone Earth Group
Data File: SDF(932).cpt
CPT Date: 3/31/2022 2:59:29 PM
GW During Test: 10 ft


Sounding ID: CPT-04
Project No: 1353-3-1
Cone/Rig: DDG1589

| Depth ft | qc PS tsf | qc1n PS - * | q1ncs PS - | qt PS tsf | Slv Stss tsf | pore prss (psi) | Frct Rato % | Mat Typ Zon | Material Behavior Description | Unit Wght pcf | Qc to N | SPT R-N1 60% | SPT R-N 60% | SPT IcN1 60% | Rel Den % | Ftn Ang deg | Und Shr tsf | OCR - | Fin Ic % | D50 - mm | Ic SBT Indx | Nk - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31.01 | 9.5 | 8.5 | - | 9.6 | 0.3 | 5.1 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 6 | 3 | - | - | 0.6 | 2.3 | 72 | 0.005 | 3.19 | 15 |
| 31.17 | 8.6 | 7.7 | - | 8.7 | 0.3 | 5.3 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 77 | 0.005 | 3.25 | 15 |
| 31.33 | 8.6 | 7.6 | - | 8.7 | 0.3 | 5.3 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 77 | 0.005 | 3.25 | 15 |
| 31.50 | 8.6 | 7.7 | - | 8.7 | 0.3 | 5.3 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 77 | 0.005 | 3.24 | 15 |
| 31.66 | 8.5 | 7.5 | - | 8.6 | 0.3 | 5.2 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 77 | 0.005 | 3.25 | 15 |
| 31.83 | 8.2 | 7.2 | - | 8.3 | 0.3 | 5.2 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.8 | 79 | 0.005 | 3.27 | 15 |
| 31.99 | 8.0 | 7.0 | - | 8.1 | 0.3 | 5.1 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 5 | 3 | - | - | 0.5 | 1.8 | 81 | 0.005 | 3.29 | 15 |
| 32.15 | 8.5 | 7.4 | - | 8.6 | 0.3 | 5.1 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 78 | 0.005 | 3.26 | 15 |
| 32.32 | 8.8 | 7.7 | - | 8.9 | 0.3 | 5.1 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 76 | 0.005 | 3.24 | 15 |
| 32.48 | 8.6 | 7.5 | - | 8.7 | 0.3 | 5.1 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 77 | 0.005 | 3.26 | 15 |
| 32.65 | 8.4 | 7.2 | - | 8.5 | 0.2 | 5.1 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.8 | 78 | 0.005 | 3.26 | 15 |
| 32.81 | 8.4 | 7.2 | - | 8.5 | 0.2 | 5.0 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.8 | 78 | 0.005 | 3.27 | 15 |
| 32.97 | 8.9 | 7.6 | - | 9.0 | 0.2 | 5.0 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 75 | 0.005 | 3.22 | 15 |
| 33.14 | 8.8 | 7.5 | - | 8.9 | 0.2 | 5.0 | 3.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 1.9 | 75 | 0.005 | 3.23 | 15 |
| 33.30 | 8.9 | 7.6 | - | 9.0 | 0.3 | 5.0 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.5 | 2.0 | 76 | 0.005 | 3.24 | 15 |
| 33.47 | 9.1 | 7.7 | - | 9.2 | 0.3 | 5.0 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.0 | 77 | 0.005 | 3.25 | 15 |
| 33.63 | 9.6 | 8.1 | - | 9.7 | 0.4 | 5.0 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 6 | 3 | - | - | 0.6 | 2.1 | 79 | 0.005 | 3.27 | 15 |
| 33.79 | 10.1 | 8.5 | - | 10.2 | 0.4 | 4.9 | 5.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.3 | 78 | 0.005 | 3.26 | 15 |
| 33.96 | 10.5 | 8.8 | - | 10.5 | 0.4 | 4.9 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.4 | 76 | 0.005 | 3.24 | 15 |
| 34.12 | 10.2 | 8.5 | - | 10.3 | 0.4 | 4.9 | 5.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.3 | 78 | 0.005 | 3.26 | 15 |
| 34.29 | 10.5 | 8.7 | - | 10.6 | 0.5 | 5.0 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 79 | 0.005 | 3.28 | 15 |
| 34.45 | 11.1 | 9.2 | - | 11.2 | 0.5 | 4.9 | 5.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 4 | - | - | 0.7 | 2.5 | 78 | 0.005 | 3.26 | 15 |
| 34.61 | 11.5 | 9.5 | - | 11.6 | 0.5 | 4.9 | 5.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 4 | - | - | 0.7 | 2.6 | 76 | 0.005 | 3.24 | 15 |
| 34.78 | 12.4 | 10.2 | - | 12.5 | 0.5 | 4.8 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 8 | 4 | - | - | 0.8 | 2.8 | 70 | 0.005 | 3.16 | 15 |
| 34.94 | 11.8 | 9.7 | - | 11.9 | 0.5 | 4.8 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.7 | 72 | 0.005 | 3.18 | 15 |
| 35.11 | 11.4 | 9.3 | - | 11.5 | 0.4 | 5.1 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.5 | 72 | 0.005 | 3.19 | 15 |
| 35.27 | 11.7 | 9.5 | - | 11.8 | 0.4 | 5.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.6 | 71 | 0.005 | 3.18 | 15 |
| 35.43 | 11.7 | 9.5 | - | 11.8 | 0.4 | 5.5 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.6 | 71 | 0.005 | 3.17 | 15 |
| 35.60 | 11.8 | 9.6 | - | 11.9 | 0.4 | 5.8 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.6 | 70 | 0.005 | 3.16 | 15 |
| 35.76 | 11.6 | 9.4 | - | 11.7 | 0.4 | 6.0 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.5 | 70 | 0.005 | 3.16 | 15 |
| 35.93 | 11.2 | 9.0 | - | 11.4 | 0.4 | 6.3 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.4 | 71 | 0.005 | 3.17 | 15 |
| 36.09 | 10.9 | 8.8 | - | 11.1 | 0.3 | 6.5 | 3.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.3 | 70 | 0.005 | 3.16 | 15 |
| 36.26 | 10.4 | 8.3 | - | 10.5 | 0.3 | 6.9 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.6 | 2.2 | 71 | 0.005 | 3.18 | 15 |
| 36.42 | 10.1 | 8.0 | - | 10.2 | 0.3 | 7.2 | 3.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 72 | 0.005 | 3.19 | 15 |
| 36.58 | 10.1 | 8.0 | - | 10.2 | 0.3 | 7.5 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 5 | 7 | 3 | - | - | 0.6 | 2.1 | 72 | 0.005 | 3.19 | 15 |
| 36.75 | 10.6 | 8.4 | - | 10.7 | 0.3 | 7.8 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 7 | 3 | - | - | 0.7 | 2.2 | 70 | 0.005 | 3.16 | 15 |
| 36.91 | 11.5 | 9.1 | - | 11.7 | 0.3 | 8.3 | 3.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 67 | 0.005 | 3.13 | 15 |
| 37.08 | 11.8 | 9.3 | - | 12.0 | 0.4 | 8.6 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.5 | 69 | 0.005 | 3.15 | 15 |
| 37.24 | 12.4 | 9.7 | - | 12.6 | 0.4 | 8.8 | 4.0 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.7 | 69 | 0.005 | 3.14 | 15 |
| 37.40 | 13.2 | 10.3 | - | 13.4 | 0.4 | 9.8 | 3.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 2.8 | 66 | 0.005 | 3.11 | 15 |
| 37.57 | 12.8 | 9.9 | - | 13.0 | 0.5 | 10.2 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 2.7 | 70 | 0.005 | 3.16 | 15 |
| 37.73 | 13.1 | 10.1 | - | 13.3 | 0.5 | 10.7 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 2.8 | 71 | 0.005 | 3.18 | 15 |
| 37.90 | 13.8 | 10.6 | - | 14.0 | 0.5 | 10.8 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.9 | 3.0 | 69 | 0.005 | 3.14 | 15 |
| 38.06 | 13.7 | 10.5 | - | 13.9 | 0.5 | 11.2 | 4.2 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.9 | 2.9 | 68 | 0.005 | 3.13 | 15 |
| 38.22 | 12.5 | 9.6 | - | 12.7 | 0.4 | 11.7 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.6 | 70 | 0.005 | 3.16 | 15 |
| 38.39 | 12.0 | 9.2 | - | 12.3 | 0.4 | 12.7 | 3.7 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.8 | 2.5 | 69 | 0.005 | 3.15 | 15 |
| 38.55 | 11.8 | 9.0 | - | 12.1 | 0.4 | 13.4 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 6 | 8 | 3 | - | - | 0.7 | 2.4 | 74 | 0.005 | 3.22 | 15 |
| 38.72 | 13.2 | 10.0 | - | 13.5 | 0.6 | 14.3 | 5.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.8 | 2.8 | 73 | 0.005 | 3.20 | 15 |
| 38.88 | 16.2 | 12.3 | - | 16.5 | 0.5 | 14.2 | 3.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 11 | 4 | - | - | 1.1 | 3.5 | 61 | 0.005 | 3.04 | 15 |
| 39.04 | 16.1 | 12.1 | - | 16.4 | 0.7 | 14.5 | 4.9 | 3 | silty CLAY to CLAY | 115 | 1.5 | 8 | 11 | 4 | - | - | 1.0 | 3.4 | 66 | 0.005 | 3.11 | 15 |
| 39.21 | 17.3 | 13.0 | - | 17.9 | 0.7 | 32.6 | 4.5 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 12 | 4 | - | - | 1.1 | 3.7 | 63 | 0.005 | 3.06 | 15 |
| 39.37 | 13.9 | 10.4 | - | 14.6 | 0.7 | 33.5 | 5.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 7 | 9 | 4 | - | - | 0.9 | 2.9 | 74 | 0.005 | 3.21 | 15 |
| 39.54 | 17.9 | 13.4 | - | 18.6 | 0.7 | 33.9 | 4.4 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 12 | 4 | - | - | 1.2 | 3.9 | 61 | 0.005 | 3.04 | 15 |
| 39.70 | 17.7 | 13.2 | - | 18.4 | 0.7 | 35.5 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 12 | 4 | - | - | 1.2 | 3.8 | 63 | 0.005 | 3.07 | 15 |
| 39.86 | 18.4 | 13.7 | - | 19.2 | 0.9 | 37.6 | 5.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 9 | 12 | 5 | - | - | 1.2 | 3.9 | 65 | 0.005 | 3.10 | 15 |
| 40.03 | 20.3 | 15.0 | - | 21.1 | 1.1 | 39.5 | 6.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 10 | 14 | 5 | - | - | 1.3 | 4.4 | 64 | 0.005 | 3.09 | 15 |
| 40.19 | 23.0 | 17.0 | - | 23.8 | 1.0 | 40.8 | 4.8 | 3 | silty CLAY to CLAY | 115 | 1.5 | 11 | 15 | 5 | - | - | 1.5 | 5.0 | 57 | 0.005 | 2.97 | 15 |
| 40.36 | 30.6 | 22.5 | - | 31.5 | 1.2 | 44.1 | 4.1 | 3 | silty CLAY to CLAY | 115 | 1.5 | 15 | 20 | 6 | - | - | 2.1 | 6.9 | 48 | 0.005 | 2.83 | 15 |
| 40.52 | 38.5 | 32.0 | 97.7 | 39.0 | 0.9 | 29.1 | 2.4 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 19 | 8 | - | - | 2.6 | 8.7 | 33 | 0.070 | 2.55 | 15 |
| 40.68 | 38.5 | 28.1 | - | 39.1 | 1.1 | 28.9 | 2.9 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 19 | 7 | - | - | 2.6 | 8.7 | 38 | 0.070 | 2.65 | 15 |
| 40.85 | 42.1 | 30.6 | - | 42.4 | 1.3 | 17.0 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 15 | 21 | 8 | - | - | 2.9 | 9.5 | 38 | 0.070 | 2.65 | 15 |
| 41.01 | 39.0 | 28.3 | - | 39.3 | 1.2 | 16.9 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 14 | 19 | 8 | - | - | 2.7 | 8.8 | 39 | 0.070 | 2.68 | 15 |
| 41.18 | 34.3 | 24.8 | - | 34.6 | 1.1 | 15.1 | 3.5 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 12 | 17 | 7 | - | - | 2.3 | 7.6 | 43 | 0.070 | 2.75 | 15 |
| 41.34 | 37.5 | 27.0 | - | 37.7 | 1.5 | 11.8 | 4.3 | 3 | silty CLAY to CLAY | 115 | 1.5 | 18 | 25 | 8 | - | - | 2.5 | 8.3 | 45 | 0.005 | 2.78 | 15 |
| 41.50 | 34.6 | 24.9 | - | 34.8 | 1.5 | 11.5 | 4.6 | 3 | silty CLAY to CLAY | 115 | 1.5 | 17 | 23 | 7 | - | - | 2.3 | 7.6 | 47 | 0.005 | 2.82 | 15 |
| 41.67 | 47.5 | 39.0 | 100.5 | 47.8 | 1.0 | 14.3 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 10 | 12 | 9 | 36 | 34 | - | - | 29 | 0.200 | 2.46 | 16 |
| 41.83 | 74.4 | 61.1 | 108.6 | 74.4 | 1.3 | 0.1 | 1.8 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 15 | 19 | 13 | 51 | 37 | - | - | 20 | 0.200 | 2.24 | 16 |
| 42.00 | 64.3 | 52.7 | 118.1 | 64.3 | 1.5 | -0.7 | 2.4 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 13 | 16 | 12 | 46 | 36 | - | - | 26 | 0.200 | 2.38 | 16 |
| 42.16 | 46.6 | 33.1 | - | 46.6 | 1.4 | -1.5 | 3.2 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 17 | 23 | 9 | - | - | 3.2 | 9.9 | 36 | 0.070 | 2.62 | 15 |
| 42.32 | 45.2 | 31.9 | - | 45.2 | 1.3 | -0.2 | 3.0 | 4 | clayy SILT to silty CLAY | 115 | 2.0 | 16 | 23 | 8 | - | - | 3.1 | 9.9 | 36 | 0.070 | 2.62 | 15 |
| 42.49 | 59.7 | 48.7 | 108.3 | 59.7 | 1.2 | -0.1 | 2.2 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 12 | 15 | 11 | 43 | 36 | - | - | 26 | 0.200 | 2.38 | 16 |
| 42.65 | 72.1 | 58.7 | 102.5 | 72.0 | 1.1 | -3.2 | 1.6 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 15 | 18 | 13 | 49 | 37 | - | - | 20 | 0.200 | 2.23 | 16 |
| 42.82 | 86.3 | 70.1 | 124.0 | 86.2 | 1.7 | -2.9 | 2.0 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 18 | 22 | 15 | 55 | 38 | - | - | 20 | 0.200 | 2.24 | 16 |
| 42.98 | 103.2 | 83.8 | 126.0 | 103.2 | 1.7 | -2.7 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 21 | 26 | 17 | 61 | 39 | - | - | 17 | 0.200 | 2.13 | 16 |
| 43.15 | 97.6 | 79.0 | 126.8 | 97.5 | 1.8 | -2.4 | 1.9 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 20 | 24 | 17 | 59 | 38 | - | - | 18 | 0.200 | 2.17 | 16 |
| 43.31 | 95.6 | 77.3 | 119.4 | 95.6 | 1.5 | -2.6 | 1.7 | 5 | silty SAND to sandy SILT | 120 | 4.0 | 19 | 24 | 16 | 59 | 38 | - | - | 17 | 0.200 | 2.15 | 16 |
| 43.47 | 120.7 | 97.4 | 124.5 | 120.6 | 1.4 | -3.8 | 1.2 | 6 | clean SAND to silty SAND | 125 | 5.0 | 19 | 24 | 19 | 66 | 40 | - | - | 12 | 0.350 | 1.98 | 16 |
| 43.64 | 160.1 | 129.0 | 140.1 | 160.0 | 1.3 | -4.8 | 0.8 | 6 | clean SAND to silty SAND | 125 | 5.0 | 26 | 32 | 23 | 75 | 41 | - | - | 8 | 0.350 | 1.77 | 16 |
| 43.80 | 202.9 | 163.2 | 163.2 | 202.8 | 1.0 | -5.1 | 0.5 | 6 | clean SAND to silty SAND | 125 | 5.0 | 33 | 41 | 27 | 83 | 42 | - | - | 5 | 0.350 | 1.57 | 16 |
| 43.97 | 230.0 | 184.7 | 184.7 | 229.9 | 0.9 | -5.6 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 37 | 46 | 30 | 87 | 43 | - | - | 5 | 0.350 | 1.45 | 16 |
| 44.13 | 271.3 | 217.5 | 217.5 | 271.2 | 1.1 | -4.7 | 0.4 | 6 | clean SAND to silty SAND | 125 | 5.0 | 43 | 54 | 35 | 93 | 44 | - | - | 5 | 0.350 | 1.41 | 16 |

* Indicates the parameter was calculated using the normalized point stress.
The parameters listed above were determined using empirical correlations.
A Professional Engineer must determine their suitability for analysis and design.

## 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 30 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 25 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.

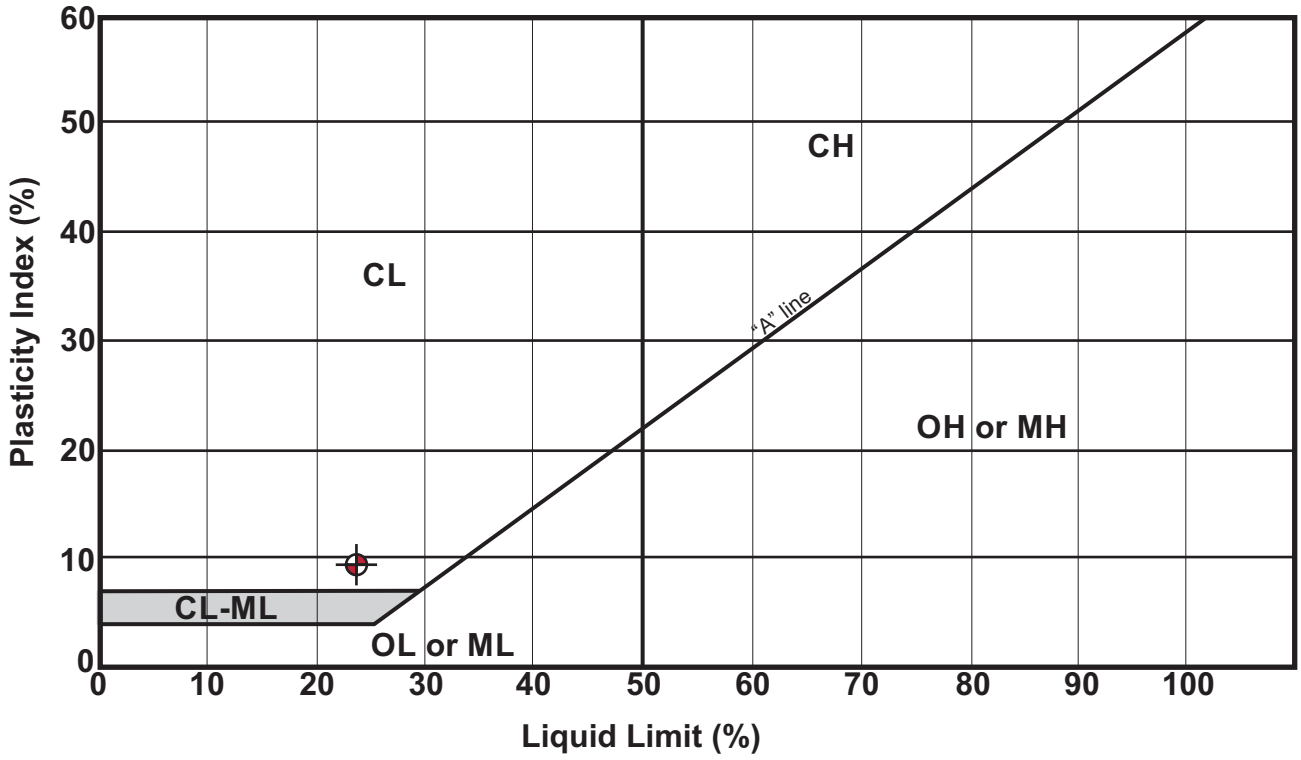
**Washed Sieve Analyses:** The percent soil fraction passing the No. 200 sieve (ASTM D1140) was determined on five samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

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

**Consolidation:** One consolidation test (ASTM D2435) was performed on a relatively undisturbed sample of the subsurface clayey soils to assist in evaluating the compressibility property of this soil. Results of the consolidation test are presented graphically in this appendix.

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

## Plasticity Index (ASTM D4318) Testing Summary




| Symbol | Boring No. | Depth (ft) | Natural Water Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index | Passing No. 200 (%) | Group Name (USCS - ASTM D2487) |
|---|---|---|---|---|---|---|---|---|
| ⊕ | EB-2 | 2.0 | 12 | 24 | 15 | 9 | — | Sandy Lean Clay (CL) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

CORNERSTONE EARTH GROUP

**Plasticity Index Testing Summary**

**SJBCB New Education Building**
**639 North 5th Street**
**San Jose, CA**

Project Number: 1353-1-3

Figure Number: Figure B1

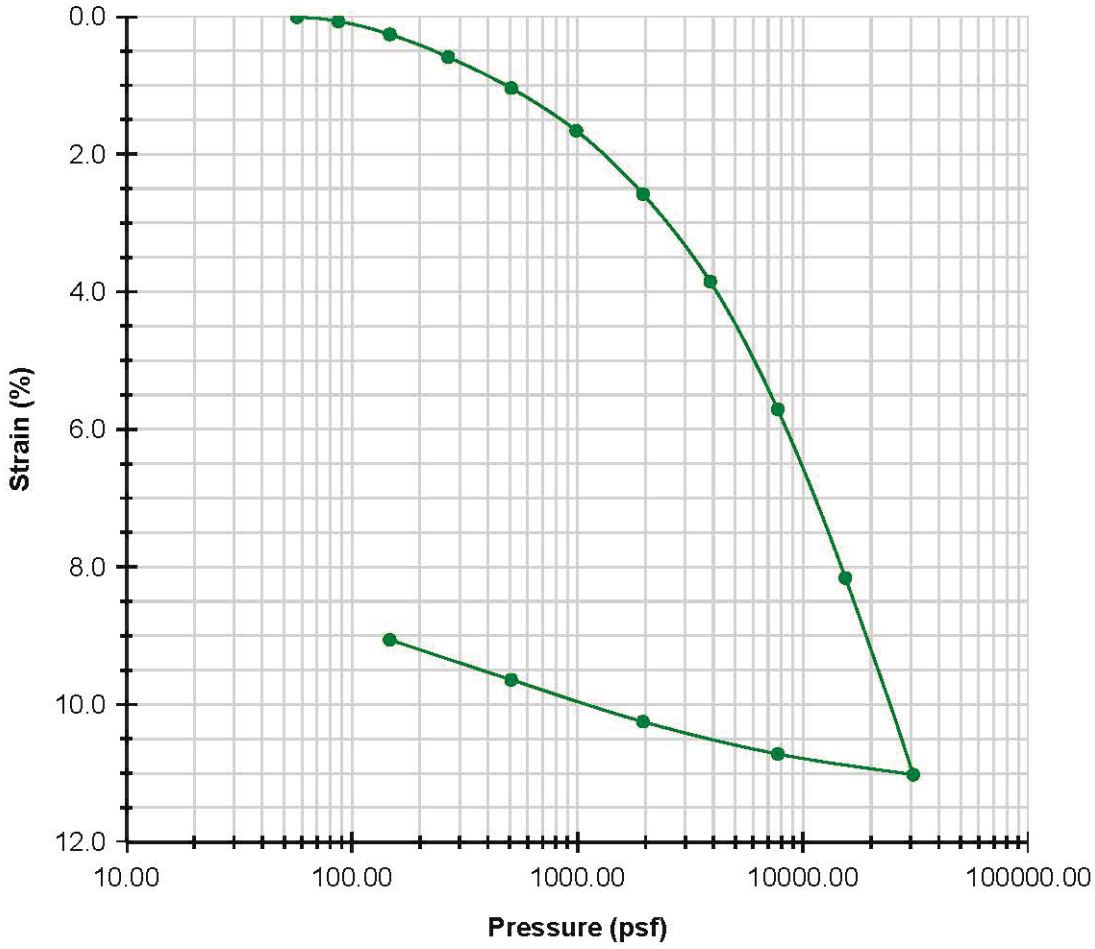
Date: April 2022

Drawn By: FLL

# Consolidation Test ASTM D2435

Boring: EB-1 Sample: 4 Depth: 10.2'

Desription: Lean Clay (CL)




| | BEFORE | AFTER |
|---|---|---|
| Moisture (%) | 23.9 | 20.0 |
| Dry Density (pcf) | 100.8 | 109.9 |
| Saturation (%) | 94.7 | 100.0 |
| Void Ratio | 0.69 | 0.54 |

(A) Stress Strain Curve

CORNERSTONE EARTH GROUP

Strain-Log Curve - EB-1 @ 10.2'

SJBCB New Education Building
639 North 5th Street
San Jose, CA

Project Number: 1353-1-3

Figure Number: Figure B2

Date: April 2022

Drawn By: FLL

# Corrosivity Tests Summary

CORNERSTONE EARTH GROUP

| | | | |
|---|---|---|---|
| Job Number | 1353-1-3 | Date Tested | 4/4/2022 |
| Job Name | San Jose Buddhist Church | Tested By | BBA, FL |
| Location | San Jose, CA | | |

| Sample I.D. | | | Soil Visual Description | Moisture Content | pH | Temp. at Testing | Resistivity (Ohm-cm) Corrected to 15.5 C° | | Chloride Dry Wt. | Sulfate Dry Wt. |
|---|---|---|---|---|---|---|---|---|---|---|
| Boring | Sample No. | Depth, ft. | | % | | C° | As Received | Saturated | mg/kg | mg/kg |
| | | | | ASTM D2216 | ASTM G51 | | G57 | ASTM G57 | ASTM D4327 | ASTM D4327 |
| EB-1 | 1B | 2.0 | Brown Clayey Sand (SC) [Fill] | 8.0 | 7.3 | 24.0 | - | 1,576 | 30 | 207 |
| EB-3 | 4A | 5.5 | Brown Lean Clay (CL) | 23.2 | 7.2 | 24.2 | 1,158 | 1,158 | 74 | 97 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

# APPENDIX C: SITE CORROSIVITY EVALUATION

## JDH CORROSION CONSULTANTS REPORT DATED APRIL 19, 2022

April 19, 2022

Cornerstone Earth Group, Inc.
1259 Oakmead Parkway
Sunnyvale, CA 94085

Attention: **Bryan Cervantes Guzman, EIT**
**Senior Staff Engineer**

Subject: **Site Corrosivity Evaluation**
**San Jose BCB New Education Bldg GI**
**639 N. 5th Street**
**San Jose, CA**
**Project: 1353-1-3**

Dear Bryan,

In accordance with your request, we have reviewed the laboratory soils data for the above referenced project site. Our evaluation of these results and our corresponding recommendations for corrosion control for the above referenced project foundations and buried site utilities are presented herein for your consideration.

## Soil Testing & Analysis

### Soil Chemical Analysis

Two (2) soil samples from the project site were chemically analyzed for corrosivity by **Cornerstone Earth Group**. Each sample was analyzed for chloride and sulfate concentration, pH and resistivity at 100% saturation. The test results are presented in Cornerstone Earth Group Tests Summary dated 4/4/2022. The results of the chemical analysis were as follows:

**Soil Laboratory Analysis**

| Chemical Analysis | Range of Results | Corrosion Classification* |
|---|---|---|
| Chlorides | 30 – 74 mg/kg | Non-corrosive* |
| Sulfates | 97 – 207 mg/kg | Non-corrosive to Mildly Corrosive** |
| pH | 7.2 – 7.3 | Non-corrosive* |
| Resistivity at 100% Saturation | 1,158 – 1,576 ohm-cm | **Corrosive*** |

* With respect to bare steel or ductile iron.
** With respect to mortar coated steel

## Discussion

### Reinforced Concrete Foundations

Due to the low levels of water-soluble sulfates found in these soils, there is no special requirement for sulfate resistant concrete to be used at this site. The type of cement used should be in accordance with California Building Code (CBC) for soils which have less than 0.10 percent by weight of water soluble sulfate ($SO_4$) in soil and the minimum depth of cover for the reinforcing steel should be as specified in CBC as well.

### Underground Metallic Pipelines

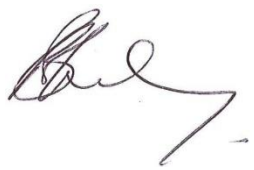
The soils at the project site are generally considered to be "corrosive" to ductile/cast iron, steel and dielectric coated steel based on the saturated resistivity measurements. Therefore, special requirements for corrosion control are required for buried metallic utilities at this site depending upon the critical nature of the piping. Pressure piping systems such as domestic and fire water should be provided with appropriate coating systems and cathodic protection, where warranted. In addition, all underground pipelines should be electrically isolated from above grade structures, reinforced concrete structures and copper lines in order to avoid potential galvanic corrosion problems.

### LIMITATIONS

*The conclusions and recommendations contained in this report are based on the information and assumptions referenced herein. All services provided herein were performed by persons who are experienced and skilled in providing these types of services and in accordance with the standards of workmanship in this profession. No other warrantees or guarantees, expressed or implied, is provided.*

We thank you for the opportunity to be of service to **Cornerstone Earth Group** on this project and trust that you find the enclosed information satisfactory. If you have any questions, or if we can be of any additional assistance, please feel free to contact us at (925) 927-6630.

Respectfully submitted,



Brendon Hurley
**JDH CORROSION CONSULTANTS, INC.**
Field Technician




Mohammed Ali., P.E.
JDH Corrosion Consultants, Inc.
Senior Corrosion Engineer

CC: File 2022144

# APPENDIX D: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

| CPT No. | 1 |
|---|---|

| PGA ($A_{max}$) | 0.63 |
|---|---|

| Total Settlement: | 0.38 | (Inches) |
|---|---|---|

© 2014 Cornerstone Earth Group, Inc.

| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.160 | 165.640 | 2.266 | 19.2 | 19.2 | 1643.469 | 1.368 | 1.38 | | Unsaturated | 0.0 | | | 156.56 | 1.70 | 266.15 | 266.15 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.330 | 203.950 | 2.858 | 39.6 | 39.6 | 1408.984 | 1.401 | 1.40 | | Unsaturated | 0.0 | | | 192.77 | 1.70 | 327.71 | 327.71 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.490 | 165.030 | 3.281 | 58.8 | 58.8 | 935.554 | 1.989 | 1.60 | | Unsaturated | 0.0 | | | 155.98 | 1.70 | 265.17 | 265.17 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.660 | 129.970 | 3.080 | 79.2 | 79.2 | 634.776 | 2.371 | 1.73 | | Unsaturated | 1.3 | | | 122.84 | 1.70 | 208.84 | 208.84 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.820 | 111.440 | 2.695 | 98.4 | 98.4 | 488.229 | 2.419 | 1.78 | | Unsaturated | 5.7 | | | 105.33 | 1.70 | 179.06 | 179.62 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.980 | 95.070 | 2.485 | 117.6 | 117.6 | 380.928 | 2.615 | 1.86 | | Unsaturated | 12.1 | | | 89.86 | 1.70 | 152.76 | 169.24 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.150 | 85.660 | 2.191 | 138.0 | 138.0 | 316.782 | 2.560 | 1.89 | | Unsaturated | 14.6 | | | 80.96 | 1.70 | 137.64 | 162.43 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.310 | 75.830 | 1.980 | 157.2 | 157.2 | 262.686 | 2.614 | 1.95 | | Unsaturated | 18.6 | | | 71.67 | 1.70 | 121.84 | 158.03 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.480 | 67.390 | 1.401 | 177.6 | 177.6 | 219.570 | 2.081 | 1.91 | | Unsaturated | 15.6 | | | 63.70 | 1.70 | 108.28 | 134.01 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.640 | 59.180 | 1.073 | 196.8 | 196.8 | 183.110 | 1.817 | 1.91 | | Unsaturated | 15.8 | | | 55.94 | 1.70 | 95.09 | 119.99 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.800 | 49.920 | 0.896 | 216.0 | 216.0 | 147.360 | 1.798 | 1.97 | | Unsaturated | 20.4 | | | 47.18 | 1.70 | 80.21 | 115.37 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.970 | 47.720 | 0.826 | 236.4 | 236.4 | 134.608 | 1.735 | 1.98 | | Unsaturated | 21.5 | | | 45.10 | 1.70 | 76.68 | 113.86 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.130 | 48.020 | 0.762 | 255.6 | 255.6 | 130.244 | 1.590 | 1.96 | | Unsaturated | 20.1 | | | 45.39 | 1.70 | 77.16 | 111.35 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.300 | 44.410 | 0.754 | 276.0 | 276.0 | 115.864 | 1.702 | 2.02 | | Unsaturated | 24.6 | | | 41.98 | 1.70 | 71.36 | 113.42 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.460 | 41.400 | 0.613 | 295.2 | 295.2 | 104.391 | 1.487 | 2.01 | | Unsaturated | 23.9 | | | 39.13 | 1.70 | 66.52 | 106.51 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.620 | 39.600 | 0.612 | 314.4 | 314.4 | 96.716 | 1.552 | 2.05 | | Unsaturated | 26.8 | | | 37.43 | 1.70 | 63.63 | 107.71 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.790 | 39.760 | 0.513 | 334.8 | 334.8 | 94.079 | 1.294 | 2.00 | | Unsaturated | 23.3 | | | 37.58 | 1.70 | 63.89 | 102.37 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.950 | 40.300 | 0.609 | 354.0 | 354.0 | 92.718 | 1.518 | 2.05 | | Unsaturated | 27.4 | | | 38.09 | 1.70 | 64.75 | 109.80 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.120 | 44.400 | 0.628 | 374.4 | 374.4 | 99.346 | 1.419 | 2.01 | | Unsaturated | 24.0 | | | 41.97 | 1.70 | 71.34 | 112.38 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.280 | 38.680 | 0.609 | 393.6 | 393.6 | 84.337 | 1.583 | 2.10 | | Unsaturated | 30.8 | | | 36.56 | 1.70 | 62.15 | 110.93 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.440 | 32.360 | 0.531 | 412.8 | 412.8 | 68.807 | 1.652 | 2.18 | | Unsaturated | 37.0 | | | 30.59 | 1.70 | 52.00 | 104.35 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.610 | 31.270 | 0.487 | 433.2 | 433.2 | 64.869 | 1.569 | 2.18 | | Unsaturated | 37.4 | | | 29.56 | 1.70 | 50.24 | 102.47 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.770 | 29.040 | 0.428 | 452.4 | 452.4 | 58.899 | 1.484 | 2.20 | | Unsaturated | 38.7 | | | 27.45 | 1.70 | 46.66 | 99.01 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.940 | 28.000 | 0.478 | 472.8 | 472.8 | 55.515 | 1.723 | 2.26 | | Unsaturated | 43.6 | | | 26.47 | 1.70 | 44.99 | 99.91 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.100 | 27.340 | 0.485 | 492.0 | 492.0 | 53.108 | 1.790 | 2.28 | | Unsaturated | 45.7 | | | 25.84 | 1.70 | 43.93 | 99.63 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.270 | 28.420 | 0.878 | 512.4 | 512.4 | 54.095 | 3.118 | 2.44 | | Unsaturated | 58.2 | | | 26.86 | 1.70 | 45.67 | 106.66 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.430 | 28.280 | 0.885 | 531.6 | 531.6 | 52.827 | 3.158 | 2.45 | | Unsaturated | 59.1 | | | 26.73 | 1.70 | 45.44 | 106.64 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.590 | 29.760 | 0.755 | 550.8 | 550.8 | 54.622 | 2.561 | 2.38 | | Unsaturated | 53.2 | | | 28.13 | 1.70 | 47.82 | 107.75 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.760 | 20.280 | 0.556 | 571.2 | 571.2 | 36.374 | 2.781 | 2.53 | | Unsaturated | 65.6 | | | 19.17 | 1.70 | 32.59 | 91.79 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.920 | 19.690 | 0.462 | 590.4 | 590.4 | 34.704 | 2.381 | 2.50 | | Unsaturated | 63.4 | | | 18.61 | 1.70 | 31.64 | 90.06 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.090 | 17.830 | 0.436 | 610.8 | 610.8 | 30.830 | 2.485 | 2.56 | | Unsaturated | 67.5 | | | 16.85 | 1.70 | 28.65 | 87.12 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.250 | 19.300 | 0.494 | 630.0 | 630.0 | 32.886 | 2.604 | 2.55 | | Unsaturated | 66.8 | | | 18.24 | 1.70 | 31.01 | 90.02 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.410 | 17.770 | 0.516 | 649.2 | 649.2 | 37.704 | 2.957 | 2.54 | | Unsaturated | 66.1 | | | 16.80 | 1.70 | 28.55 | 86.71 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.580 | 28.290 | 0.653 | 669.6 | 669.6 | 46.971 | 2.336 | 2.40 | | Unsaturated | 54.9 | | | 26.74 | 1.70 | 45.46 | 105.35 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.740 | 28.540 | 0.879 | 688.8 | 688.8 | 46.710 | 3.117 | 2.49 | | Unsaturated | 61.9 | | | 26.98 | 1.70 | 45.86 | 107.94 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.910 | 24.250 | 0.991 | 709.2 | 709.2 | 48.546 | 4.148 | 2.56 | | Unsaturated | 67.9 | | | 22.92 | 1.70 | 38.97 | 100.50 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.070 | 20.760 | 1.005 | 728.4 | 728.4 | 40.668 | 4.927 | 2.67 | | Unsaturated | 76.5 | | | 19.62 | 1.70 | 33.36 | 94.83 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.230 | 19.170 | 0.948 | 747.6 | 747.6 | 50.284 | 5.042 | 2.61 | | Unsaturated | 72.0 | | | 18.12 | 1.70 | 30.80 | 90.76 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.400 | 17.600 | 0.870 | 768.0 | 768.0 | 44.833 | 5.054 | 2.65 | | Unsaturated | 74.8 | | | 16.64 | 1.70 | 28.28 | 87.97 | 0.99 | 0.405 | 1.098 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.560 | 17.090 | 0.844 | 787.2 | 787.2 | 42.420 | 5.054 | 2.66 | | Unsaturated | 76.1 | | | 16.15 | 1.69 | 27.25 | 86.85 | 0.99 | 0.404 | 1.095 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.730 | 16.570 | 0.812 | 807.6 | 807.6 | 40.035 | 5.025 | 2.68 | | Unsaturated | 77.3 | | | 15.66 | 1.67 | 26.14 | 85.60 | 0.99 | 0.404 | 1.091 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.890 | 15.910 | 0.770 | 826.8 | 826.8 | 37.486 | 4.969 | 2.70 | | Unsaturated | 78.7 | | | 15.04 | 1.65 | 24.87 | 84.15 | 0.99 | 0.404 | 1.088 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.050 | 15.140 | 0.736 | 846.0 | 846.0 | 34.792 | 5.004 | 2.72 | | Clay | 80.7 | | | 14.31 | 1.27 | n.a. | n.a. | 0.99 | 0.405 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.220 | 14.810 | 0.716 | 866.4 | 866.4 | 33.187 | 4.980 | 2.73 | | Clay | 81.7 | | | 14.00 | 1.27 | n.a. | n.a. | 0.99 | 0.410 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.380 | 14.540 | 0.709 | 885.6 | 885.6 | 31.836 | 5.027 | 2.75 | | Clay | 83.0 | | | 13.74 | 1.26 | n.a. | n.a. | 0.98 | 0.414 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.550 | 14.200 | 0.680 | 906.0 | 906.0 | 30.347 | 4.947 | 2.76 | | Clay | 83.8 | | | 13.42 | 1.25 | n.a. | n.a. | 0.98 | 0.419 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.710 | 13.360 | 0.660 | 925.2 | 925.2 | 27.880 | 5.115 | 2.80 | | Clay | 86.7 | | | 12.63 | 1.24 | n.a. | n.a. | 0.98 | 0.423 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.870 | 12.670 | 0.633 | 944.4 | 944.4 | 25.832 | 5.189 | 2.82 | | Clay | 89.0 | | | 11.98 | 1.24 | n.a. | n.a. | 0.98 | 0.427 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.040 | 12.280 | 0.613 | 964.8 | 964.8 | 24.456 | 5.193 | 2.84 | | Clay | 90.4 | | | 11.61 | 1.23 | n.a. | n.a. | 0.98 | 0.431 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.200 | 11.670 | 0.580 | 984.0 | 984.0 | 22.720 | 5.191 | 2.87 | | Clay | 92.3 | | | 11.03 | 1.22 | n.a. | n.a. | 0.98 | 0.435 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.370 | 11.190 | 0.533 | 1004.4 | 1004.4 | 21.282 | 4.990 | 2.88 | | Clay | 93.0 | | | 10.58 | 1.22 | n.a. | n.a. | 0.98 | 0.439 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.530 | 10.750 | 0.498 | 1023.6 | 1023.6 | 20.004 | 4.868 | 2.89 | | Clay | 94.1 | | | 10.16 | 1.21 | n.a. | n.a. | 0.98 | 0.443 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.690 | 10.290 | 0.453 | 1042.8 | 1042.8 | 18.735 | 4.638 | 2.90 | | Clay | 94.7 | | | 9.73 | 1.21 | n.a. | n.a. | 0.98 | 0.446 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.860 | 9.400 | 0.397 | 1063.2 | 1063.2 | 16.682 | 4.477 | 2.92 | | Clay | 97.0 | | | 8.88 | 1.20 | n.a. | n.a. | 0.98 | 0.450 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.020 | 8.590 | 0.335 | 1082.4 | 1082.4 | 14.872 | 4.162 | 2.94 | | Clay | 98.5 | | | 8.12 | 1.19 | n.a. | n.a. | 0.98 | 0.453 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.190 | 7.960 | 0.290 | 1102.8 | 1102.8 | 13.436 | 3.909 | 2.96 | | Clay | 99.9 | | | 7.52 | 1.19 | n.a. | n.a. | 0.98 | 0.457 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.350 | 7.970 | 0.290 | 1122.0 | 1122.0 | 13.207 | 3.913 | 2.97 | | Clay | 100.0 | | | 7.53 | 1.18 | n.a. | n.a. | 0.98 | 0.460 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.510 | 7.770 | 0.291 | 1141.2 | 1141.2 | 12.617 | 4.045 | 2.99 | | Clay | 100.0 | | | 7.34 | 1.18 | n.a. | n.a. | 0.98 | 0.463 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.680 | 8.290 | 0.339 | 1161.6 | 1161.6 | 13.273 | 4.397 | 3.00 | | Clay | 100.0 | | | 7.84 | 1.17 | n.a. | n.a. | 0.98 | 0.467 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.840 | 8.840 | 0.392 | 1180.8 | 1180.8 | 13.973 | 4.749 | 3.00 | | Clay | 100.0 | | | 8.36 | 1.17 | n.a. | n.a. | 0.98 | 0.470 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.010 | 10.690 | 0.434 | 1201.2 | 1201.2 | 16.799 | 4.298 | 2.91 | | Clay | 95.9 | | | 10.10 | 1.16 | n.a. | n.a. | 0.97 | 0.473 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.170 | 11.210 | 0.406 | 1220.4 | 1220.4 | 17.371 | 3.832 | 2.87 | | Clay | 92.4 | | | 10.60 | 1.16 | n.a. | n.a. | 0.97 | 0.476 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.330 | 10.060 | 0.393 | 1239.6 | 1239.6 | 15.231 | 4.161 | 2.94 | | Clay | 97.8 | | | 9.51 | 1.15 | n.a. | n.a. | 0.97 | 0.479 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.500 | 9.630 | 0.332 | 1260.0 | 1260.0 | 14.286 | 3.687 | 2.92 | | Clay | 96.9 | | | 9.10 | 1.15 | n.a. | n.a. | 0.97 | 0.481 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.660 | 11.370 | 0.224 | 1279.2 | 1279.2 | 16.777 | 2.088 | 2.72 | | Clay | 80.8 | | | 10.75 | 1.14 | n.a. | n.a. | 0.97 | 0.484 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.830 | 12.700 | 0.207 | 1299.6 | 1299.6 | 18.544 | 1.720 | 2.64 | plastic | Clay | 74.2 | | | 12.00 | 1.14 | n.a. | n.a. | 0.97 | 0.487 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.990 | 9.270 | 0.204 | 1318.8 | 1318.8 | 13.058 | 2.365 | 2.84 | | Clay | 90.4 | | | 8.76 | 1.13 | n.a. | n.a. | 0.97 | 0.490 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 1

PGA ($A_{max}$) 0.63

Total Settlement: 0.38 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.150 | 7.940 | 0.153 | 1338.0 | 1338.0 | 10.868 | 2.107 | 2.88 | | Clay | 93.6 | | | 7.50 | 1.13 | n.a. | n.a. | 0.97 | 0.492 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.320 | 8.300 | 0.166 | 1358.4 | 1358.4 | 11.220 | 2.178 | 2.88 | | Clay | 93.3 | | | 7.84 | 1.12 | n.a. | n.a. | 0.97 | 0.495 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.480 | 6.580 | 0.156 | 1377.6 | 1377.6 | 8.553 | 2.650 | 3.02 | | Clay | 100.0 | | | 6.22 | 1.12 | n.a. | n.a. | 0.97 | 0.497 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.650 | 6.460 | 0.256 | 1398.0 | 1398.0 | 8.242 | 4.451 | 3.16 | | Clay | 100.0 | | | 6.11 | 1.12 | n.a. | n.a. | 0.97 | 0.500 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.810 | 6.360 | 0.302 | 1417.2 | 1417.2 | 7.975 | 5.347 | 3.22 | | Clay | 100.0 | | | 6.01 | 1.11 | n.a. | n.a. | 0.97 | 0.502 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.980 | 6.970 | 0.349 | 1437.6 | 1437.6 | 8.697 | 5.580 | 3.20 | | Clay | 100.0 | | | 6.59 | 1.11 | n.a. | n.a. | 0.97 | 0.504 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.140 | 9.450 | 0.412 | 1456.8 | 1456.8 | 11.974 | 4.723 | 3.05 | | Clay | 100.0 | | | 8.93 | 1.10 | n.a. | n.a. | 0.97 | 0.507 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.300 | 10.500 | 0.462 | 1476.0 | 1476.0 | 13.228 | 4.733 | 3.02 | | Clay | 100.0 | | | 9.92 | 1.10 | n.a. | n.a. | 0.97 | 0.509 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.470 | 13.240 | 0.488 | 1496.4 | 1496.4 | 16.696 | 3.907 | 2.89 | | Clay | 93.9 | | | 12.51 | 1.10 | n.a. | n.a. | 0.97 | 0.511 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.630 | 16.420 | 0.446 | 1515.6 | 1515.6 | 20.668 | 2.848 | 2.73 | | Clay | 81.3 | | | 15.52 | 1.09 | n.a. | n.a. | 0.96 | 0.513 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.800 | 20.690 | 0.354 | 1536.0 | 1536.0 | 22.101 | 1.777 | 2.58 | plastic | Clay | 69.7 | | | 19.56 | 1.09 | n.a. | n.a. | 0.96 | 0.515 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.960 | 24.230 | 0.289 | 1555.2 | 1555.2 | 25.856 | 1.234 | 2.44 | | Sand | 58.2 | 24.81 | | 24.81 | 1.18 | 29.22 | 85.64 | 0.96 | 0.517 | 1.029 | 0.121 | 0.149 | 0.29 | 0.04 | 0.05 |
| 13.120 | 26.250 | 0.277 | 1574.6 | 1567.2 | 27.965 | 1.086 | 2.38 | | Sand | 53.5 | | | 24.81 | 1.17 | 29.14 | 84.11 | 0.96 | 0.519 | 1.028 | 0.120 | 0.147 | 0.28 | 0.04 | 0.06 |
| 13.290 | 26.130 | 0.364 | 1595.4 | 1577.3 | 27.733 | 1.435 | 2.45 | | Sand | 59.0 | 24.81 | | 24.81 | 1.17 | 29.01 | 85.60 | 0.96 | 0.521 | 1.028 | 0.121 | 0.149 | 0.29 | 0.04 | 0.05 |
| 13.450 | 21.010 | 0.550 | 1614.9 | 1586.8 | 25.463 | 2.724 | 2.65 | plastic | Clay | 74.7 | | | 19.86 | 1.08 | n.a. | n.a. | 0.96 | 0.523 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.620 | 14.950 | 0.644 | 1635.6 | 1597.0 | 17.699 | 4.554 | 2.91 | | Clay | 95.8 | | | 14.13 | 1.08 | n.a. | n.a. | 0.96 | 0.525 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.780 | 18.840 | 0.435 | 1655.2 | 1606.5 | 22.425 | 2.416 | 2.66 | plastic | Clay | 75.6 | | | 17.81 | 1.08 | n.a. | n.a. | 0.96 | 0.527 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.940 | 29.150 | 0.271 | 1674.7 | 1616.0 | 30.622 | 0.958 | 2.32 | | Sand | 48.6 | 33.76 | 1.66 | 56.04 | 1.13 | 63.21 | 125.30 | 0.96 | 0.529 | 1.035 | 0.184 | 0.272 | 0.51 | 0.03 | 0.04 |
| 14.110 | 35.260 | 0.284 | 1695.4 | 1626.2 | 37.103 | 0.824 | 2.21 | | Sand | 40.1 | 33.76 | 1.66 | 56.04 | 1.13 | 63.19 | 120.45 | 0.96 | 0.530 | 1.033 | 0.172 | 0.247 | 0.47 | 0.03 | 0.04 |
| 14.270 | 35.720 | 0.277 | 1714.9 | 1635.7 | 37.478 | 0.796 | 2.20 | | Sand | 39.2 | | 1.66 | 56.04 | 1.12 | 63.05 | 119.63 | 0.96 | 0.532 | 1.032 | 0.170 | 0.243 | 0.46 | 0.03 | 0.04 |
| 14.440 | 34.080 | 0.284 | 1735.7 | 1645.8 | 35.594 | 0.854 | 2.24 | | Sand | 42.0 | 33.76 | 1.66 | 56.04 | 1.12 | 62.82 | 121.23 | 0.96 | 0.534 | 1.032 | 0.174 | 0.251 | 0.47 | 0.03 | 0.04 |
| 14.600 | 33.590 | 0.413 | 1755.2 | 1655.4 | 34.957 | 1.262 | 2.34 | | Sand | 49.9 | 33.76 | 1.66 | 56.04 | 1.12 | 62.54 | 125.06 | 0.96 | 0.535 | 1.032 | 0.183 | 0.270 | 0.50 | 0.03 | 0.03 |
| 14.760 | 31.180 | 0.375 | 1774.7 | 1664.9 | 32.279 | 1.239 | 2.36 | | Sand | 51.8 | 33.76 | 1.66 | 56.04 | 1.11 | 62.37 | 125.66 | 0.96 | 0.537 | 1.031 | 0.185 | 0.273 | 0.51 | 0.03 | 0.04 |
| 14.930 | 20.640 | 0.435 | 1795.5 | 1675.0 | 23.572 | 2.202 | 2.62 | plastic | Clay | 72.3 | | | 19.51 | 1.06 | n.a. | n.a. | 0.96 | 0.539 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.090 | 11.570 | 0.427 | 1815.0 | 1684.6 | 12.659 | 4.001 | 2.99 | | Clay | 100.0 | | | 10.94 | 1.06 | n.a. | n.a. | 0.95 | 0.540 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.260 | 9.370 | 0.444 | 1835.7 | 1694.7 | 9.975 | 5.258 | 3.14 | | Clay | 100.0 | | | 8.86 | 1.06 | n.a. | n.a. | 0.95 | 0.542 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.420 | 9.640 | 0.461 | 1855.2 | 1704.2 | 10.224 | 5.292 | 3.14 | | Clay | 100.0 | | | 9.11 | 1.06 | n.a. | n.a. | 0.95 | 0.543 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.580 | 10.490 | 0.507 | 1874.8 | 1713.8 | 11.148 | 5.310 | 3.11 | | Clay | 100.0 | | | 9.91 | 1.06 | n.a. | n.a. | 0.95 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.750 | 11.840 | 0.580 | 1895.5 | 1723.9 | 12.637 | 5.325 | 3.07 | | Clay | 100.0 | | | 11.19 | 1.06 | n.a. | n.a. | 0.95 | 0.546 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.910 | 12.860 | 0.650 | 1915.0 | 1733.4 | 13.733 | 5.464 | 3.04 | | Clay | 100.0 | | | 12.16 | 1.05 | n.a. | n.a. | 0.95 | 0.547 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.080 | 13.750 | 0.745 | 1935.8 | 1743.6 | 14.662 | 5.831 | 3.04 | | Clay | 100.0 | | | 13.00 | 1.05 | n.a. | n.a. | 0.95 | 0.549 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.240 | 14.560 | 0.813 | 1955.3 | 1753.1 | 15.495 | 5.986 | 3.03 | | Clay | 100.0 | | | 13.76 | 1.05 | n.a. | n.a. | 0.95 | 0.550 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.400 | 15.580 | 0.874 | 1974.8 | 1762.6 | 16.558 | 5.989 | 3.01 | | Clay | 100.0 | | | 14.73 | 1.05 | n.a. | n.a. | 0.95 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.570 | 16.200 | 0.892 | 1995.5 | 1772.8 | 17.151 | 5.870 | 2.99 | | Clay | 100.0 | | | 15.31 | 1.05 | n.a. | n.a. | 0.95 | 0.553 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.730 | 16.620 | 0.926 | 2015.1 | 1782.3 | 17.519 | 5.932 | 2.99 | | Clay | 100.0 | | | 15.71 | 1.05 | n.a. | n.a. | 0.95 | 0.554 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.900 | 17.060 | 0.940 | 2035.8 | 1792.4 | 17.900 | 5.857 | 2.98 | | Clay | 100.0 | | | 16.12 | 1.04 | n.a. | n.a. | 0.95 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.060 | 17.810 | 0.973 | 2055.3 | 1802.0 | 18.627 | 5.800 | 2.96 | | Clay | 100.0 | | | 16.83 | 1.04 | n.a. | n.a. | 0.95 | 0.556 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.220 | 17.420 | 0.985 | 2074.8 | 1811.5 | 18.087 | 6.011 | 2.98 | | Clay | 100.0 | | | 16.47 | 1.04 | n.a. | n.a. | 0.95 | 0.557 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.390 | 17.030 | 0.964 | 2095.6 | 1821.6 | 17.547 | 6.032 | 2.99 | | Clay | 100.0 | | | 16.10 | 1.04 | n.a. | n.a. | 0.94 | 0.559 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.550 | 17.080 | 0.975 | 2115.1 | 1831.2 | 17.500 | 6.085 | 3.00 | | Clay | 100.0 | | | 16.14 | 1.04 | n.a. | n.a. | 0.94 | 0.560 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.720 | 16.230 | 0.964 | 2135.8 | 1841.3 | 16.469 | 6.355 | 3.03 | | Clay | 100.0 | | | 15.34 | 1.04 | n.a. | n.a. | 0.94 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.880 | 14.490 | 0.853 | 2155.4 | 1850.8 | 14.493 | 6.358 | 3.07 | | Clay | 100.0 | | | 13.70 | 1.04 | n.a. | n.a. | 0.94 | 0.562 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.040 | 12.240 | 0.734 | 2174.9 | 1860.4 | 11.990 | 6.580 | 3.14 | | Clay | 100.0 | | | 11.57 | 1.03 | n.a. | n.a. | 0.94 | 0.563 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.210 | 10.850 | 0.678 | 2195.6 | 1870.5 | 10.427 | 6.952 | 3.20 | | Clay | 100.0 | | | 10.26 | 1.03 | n.a. | n.a. | 0.94 | 0.564 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.370 | 9.700 | 0.627 | 2215.1 | 1880.1 | 9.141 | 7.299 | 3.26 | | Clay | 100.0 | | | 9.17 | 1.03 | n.a. | n.a. | 0.94 | 0.565 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.540 | 9.180 | 0.590 | 2235.9 | 1890.2 | 8.530 | 7.317 | 3.28 | | Clay | 100.0 | | | 8.68 | 1.03 | n.a. | n.a. | 0.94 | 0.566 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.700 | 9.880 | 0.589 | 2255.4 | 1899.7 | 9.214 | 6.724 | 3.24 | | Clay | 100.0 | | | 9.34 | 1.03 | n.a. | n.a. | 0.94 | 0.567 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.860 | 10.110 | 0.571 | 2274.9 | 1909.3 | 9.399 | 6.364 | 3.21 | | Clay | 100.0 | | | 9.56 | 1.03 | n.a. | n.a. | 0.94 | 0.568 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.030 | 10.710 | 0.617 | 2295.7 | 1919.4 | 9.964 | 6.456 | 3.20 | | Clay | 100.0 | | | 10.12 | 1.03 | n.a. | n.a. | 0.94 | 0.569 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.190 | 11.640 | 0.674 | 2315.2 | 1928.9 | 10.869 | 6.429 | 3.17 | | Clay | 100.0 | | | 11.00 | 1.02 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.360 | 11.900 | 0.668 | 2335.9 | 1939.1 | 11.069 | 6.223 | 3.15 | | Clay | 100.0 | | | 11.25 | 1.02 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.520 | 10.420 | 0.596 | 2355.4 | 1948.6 | 9.486 | 6.445 | 3.21 | | Clay | 100.0 | | | 9.85 | 1.02 | n.a. | n.a. | 0.93 | 0.571 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.690 | 9.470 | 0.509 | 2376.2 | 1958.7 | 8.456 | 6.147 | 3.24 | | Clay | 100.0 | | | 8.95 | 1.02 | n.a. | n.a. | 0.93 | 0.572 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.850 | 8.300 | 0.417 | 2395.7 | 1968.3 | 7.217 | 5.867 | 3.28 | | Clay | 100.0 | | | 7.84 | 1.02 | n.a. | n.a. | 0.93 | 0.573 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.010 | 7.520 | 0.365 | 2415.2 | 1977.8 | 6.383 | 5.776 | 3.32 | | Clay | 100.0 | | | 7.11 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.180 | 8.890 | 0.415 | 2436.0 | 1987.9 | 7.719 | 5.403 | 3.24 | | Clay | 100.0 | | | 8.40 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.340 | 11.390 | 0.555 | 2455.5 | 1997.5 | 10.175 | 5.463 | 3.15 | | Clay | 100.0 | | | 10.77 | 1.02 | n.a. | n.a. | 0.93 | 0.575 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.510 | 12.400 | 0.737 | 2476.2 | 2007.6 | 11.120 | 6.604 | 3.17 | | Clay | 100.0 | | | 11.72 | 1.01 | n.a. | n.a. | 0.93 | 0.576 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.670 | 13.950 | 0.855 | 2495.7 | 2017.1 | 12.594 | 6.728 | 3.13 | | Clay | 100.0 | | | 13.19 | 1.01 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.830 | 15.060 | 0.886 | 2515.3 | 2026.7 | 13.621 | 6.420 | 3.09 | | Clay | 100.0 | | | 14.23 | 1.01 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.000 | 15.200 | 0.901 | 2536.0 | 2036.8 | 13.680 | 6.466 | 3.09 | | Clay | 100.0 | | | 14.37 | 1.01 | n.a. | n.a. | 0.93 | 0.578 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.160 | 15.930 | 0.884 | 2555.5 | 2046.3 | 14.320 | 6.030 | 3.06 | | Clay | 100.0 | | | 15.06 | 1.01 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.330 | 16.750 | 0.878 | 2576.3 | 2056.5 | 15.037 | 5.677 | 3.03 | | Clay | 100.0 | | | 15.83 | 1.01 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.490 | 16.690 | 0.853 | 2595.8 | 2066.0 | 14.900 | 5.540 | 3.02 | | Clay | 100.0 | | | 15.78 | 1.01 | n.a. | n.a. | 0.93 | 0.580 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.650 | 16.130 | 0.893 | 2615.3 | 2075.5 | 14.283 | 6.022 | 3.06 | | Clay | 100.0 | | | 15.25 | 1.01 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.820 | 15.830 | 0.909 | 2636.0 | 2085.7 | 13.916 | 6.267 | 3.08 | | Clay | 100.0 | | | 14.96 | 1.00 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.980 | 15.340 | 0.906 | 2655.6 | 2095.2 | 13.375 | 6.462 | 3.10 | | Clay | 100.0 | | | 14.50 | 1.00 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

| CPT No. | 1 |
|---|---|

| PGA ($A_{max}$) | 0.63 |
|---|---|

| Total Settlement: | 0.38 | (Inches) |
|---|---|---|

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22.150 | 15.090 | 0.877 | 2676.3 | 2105.3 | 13.064 | 6.377 | 3.10 | | Clay | 100.0 | | | 14.26 | 1.00 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.310 | 14.190 | 0.825 | 2695.8 | 2114.9 | 12.145 | 6.423 | 3.13 | | Clay | 100.0 | | | 13.41 | 1.00 | n.a. | n.a. | 0.92 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.470 | 12.760 | 0.738 | 2715.3 | 2124.4 | 10.735 | 6.470 | 3.17 | | Clay | 100.0 | | | 12.06 | 1.00 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.640 | 12.450 | 0.730 | 2736.1 | 2134.5 | 10.383 | 6.591 | 3.19 | | Clay | 100.0 | | | 11.77 | 1.00 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.800 | 14.640 | 0.819 | 2755.6 | 2144.1 | 12.371 | 6.178 | 3.11 | | Clay | 100.0 | | | 13.84 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.970 | 16.550 | 0.911 | 2776.3 | 2154.2 | 14.076 | 6.010 | 3.06 | | Clay | 100.0 | | | 15.64 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.130 | 16.030 | 0.812 | 2795.9 | 2163.7 | 13.525 | 5.549 | 3.05 | | Clay | 100.0 | | | 15.15 | 0.99 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.290 | 15.010 | 0.770 | 2815.4 | 2173.3 | 12.518 | 5.660 | 3.09 | | Clay | 100.0 | | | 14.19 | 0.99 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.460 | 15.280 | 0.742 | 2836.1 | 2183.4 | 12.697 | 5.355 | 3.07 | | Clay | 100.0 | | | 14.44 | 0.99 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.620 | 14.960 | 0.740 | 2855.6 | 2193.0 | 12.342 | 5.465 | 3.08 | | Clay | 100.0 | | | 14.14 | 0.99 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.790 | 14.660 | 0.738 | 2876.4 | 2203.1 | 12.003 | 5.579 | 3.10 | | Clay | 100.0 | | | 13.86 | 0.99 | n.a. | n.a. | 0.91 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.950 | 14.890 | 0.750 | 2895.9 | 2212.6 | 12.150 | 5.578 | 3.09 | | Clay | 100.0 | | | 14.07 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.110 | 15.260 | 0.803 | 2915.4 | 2222.2 | 12.422 | 5.816 | 3.10 | | Clay | 100.0 | | | 14.42 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.280 | 15.100 | 0.753 | 2936.2 | 2232.3 | 12.213 | 5.525 | 3.09 | | Clay | 100.0 | | | 14.27 | 0.99 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.440 | 14.880 | 0.695 | 2955.7 | 2241.8 | 11.956 | 5.189 | 3.08 | | Clay | 100.0 | | | 14.06 | 0.98 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.610 | 14.220 | 0.709 | 2976.4 | 2252.0 | 11.307 | 5.572 | 3.12 | | Clay | 100.0 | | | 13.44 | 0.98 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.770 | 13.710 | 0.686 | 2995.9 | 2261.5 | 10.800 | 5.614 | 3.13 | | Clay | 100.0 | | | 12.96 | 0.98 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.930 | 14.080 | 0.670 | 3015.5 | 2271.0 | 11.072 | 5.332 | 3.11 | | Clay | 100.0 | | | 13.31 | 0.98 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.100 | 16.390 | 0.540 | 3036.2 | 2281.2 | 13.039 | 3.628 | 2.95 | | Clay | 99.1 | | | 15.49 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.260 | 16.720 | 0.490 | 3055.7 | 2290.7 | 13.264 | 3.223 | 2.91 | | Clay | 96.2 | | | 15.80 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.430 | 13.520 | 0.419 | 3076.5 | 2300.8 | 10.415 | 3.499 | 3.02 | | Clay | 100.0 | | | 12.78 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.590 | 11.150 | 0.401 | 3096.0 | 2310.4 | 8.312 | 4.177 | 3.15 | | Clay | 100.0 | | | 10.54 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.750 | 11.460 | 0.413 | 3115.5 | 2319.9 | 8.537 | 4.174 | 3.14 | | Clay | 100.0 | | | 10.83 | 0.98 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.920 | 12.520 | 0.427 | 3136.2 | 2330.0 | 9.401 | 3.901 | 3.08 | | Clay | 100.0 | | | 11.83 | 0.97 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.080 | 11.060 | 0.407 | 3155.8 | 2339.6 | 8.106 | 4.287 | 3.16 | | Clay | 100.0 | | | 10.45 | 0.97 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.250 | 10.800 | 0.398 | 3176.5 | 2349.7 | 7.841 | 4.322 | 3.17 | | Clay | 100.0 | | | 10.21 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.410 | 10.320 | 0.434 | 3196.0 | 2359.2 | 7.394 | 4.970 | 3.23 | | Clay | 100.0 | | | 9.75 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.570 | 9.030 | 0.434 | 3215.5 | 2368.8 | 6.267 | 5.843 | 3.33 | | Clay | 100.0 | | | 8.53 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.740 | 8.200 | 0.389 | 3236.3 | 2378.9 | 5.534 | 5.915 | 3.38 | | Clay | 100.0 | | | 7.75 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.900 | 7.790 | 0.315 | 3255.8 | 2388.4 | 5.160 | 5.109 | 3.36 | | Clay | 100.0 | | | 7.36 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.070 | 7.460 | 0.238 | 3276.5 | 2398.6 | 4.854 | 4.085 | 3.33 | | Clay | 100.0 | | | 7.05 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.230 | 6.840 | 0.191 | 3296.1 | 2408.1 | 4.312 | 3.681 | 3.35 | | Clay | 100.0 | | | 6.47 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.400 | 6.280 | 0.201 | 3316.8 | 2418.2 | 3.822 | 4.340 | 3.43 | | Clay | 100.0 | | | 5.94 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.560 | 6.450 | 0.272 | 3336.3 | 2427.8 | 3.939 | 5.680 | 3.49 | | Clay | 100.0 | | | 6.10 | 0.96 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.720 | 8.450 | 0.397 | 3355.8 | 2437.3 | 5.557 | 5.865 | 3.37 | | Clay | 100.0 | | | 7.99 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.890 | 10.870 | 0.562 | 3376.6 | 2447.4 | 7.503 | 6.125 | 3.28 | | Clay | 100.0 | | | 10.27 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.050 | 12.950 | 0.805 | 3396.1 | 2457.0 | 9.159 | 7.158 | 3.26 | | Clay | 100.0 | | | 12.24 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.220 | 14.290 | 0.883 | 3416.8 | 2467.1 | 10.199 | 7.017 | 3.21 | | Clay | 100.0 | | | 13.51 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.380 | 15.360 | 0.853 | 3436.4 | 2476.6 | 11.016 | 6.253 | 3.16 | | Clay | 100.0 | | | 14.52 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.540 | 15.580 | 0.642 | 3455.9 | 2486.2 | 11.143 | 4.634 | 3.07 | | Clay | 100.0 | | | 14.73 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.710 | 13.740 | 0.400 | 3476.6 | 2496.3 | 9.616 | 3.329 | 3.04 | | Clay | 100.0 | | | 12.99 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.870 | 11.380 | 0.268 | 3496.1 | 2505.9 | 7.688 | 2.777 | 3.07 | | Clay | 100.0 | | | 10.76 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.040 | 9.730 | 0.224 | 3516.9 | 2516.0 | 6.337 | 2.809 | 3.15 | | Clay | 100.0 | | | 9.20 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.200 | 8.760 | 0.224 | 3536.4 | 2525.5 | 5.537 | 3.208 | 3.23 | | Clay | 100.0 | | | 8.28 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.360 | 8.700 | 0.255 | 3555.9 | 2535.1 | 5.461 | 3.680 | 3.26 | | Clay | 100.0 | | | 8.22 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.530 | 9.480 | 0.272 | 3576.7 | 2545.2 | 6.044 | 3.540 | 3.22 | | Clay | 100.0 | | | 8.96 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.690 | 9.340 | 0.258 | 3596.2 | 2554.7 | 5.904 | 3.414 | 3.22 | | Clay | 100.0 | | | 8.83 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.860 | 8.520 | 0.256 | 3616.9 | 2564.9 | 5.233 | 3.813 | 3.29 | | Clay | 100.0 | | | 8.05 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.020 | 8.130 | 0.285 | 3636.4 | 2574.4 | 4.904 | 4.509 | 3.35 | | Clay | 100.0 | | | 7.68 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.180 | 8.400 | 0.345 | 3656.0 | 2583.9 | 5.087 | 5.246 | 3.38 | | Clay | 100.0 | | | 7.94 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.350 | 9.060 | 0.434 | 3676.7 | 2594.1 | 5.568 | 6.014 | 3.38 | | Clay | 100.0 | | | 8.56 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.510 | 9.520 | 0.455 | 3696.2 | 2603.6 | 5.893 | 5.931 | 3.36 | | Clay | 100.0 | | | 9.00 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.680 | 9.420 | 0.461 | 3717.0 | 2613.7 | 5.786 | 6.099 | 3.37 | | Clay | 100.0 | | | 8.90 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.840 | 10.180 | 0.435 | 3736.5 | 2623.3 | 6.337 | 5.230 | 3.30 | | Clay | 100.0 | | | 9.62 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.000 | 10.230 | 0.425 | 3756.0 | 2632.8 | 6.345 | 5.089 | 3.29 | | Clay | 100.0 | | | 9.67 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.170 | 9.510 | 0.432 | 3776.7 | 2642.9 | 5.768 | 5.663 | 3.35 | | Clay | 100.0 | | | 8.99 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.330 | 9.950 | 0.411 | 3796.3 | 2652.5 | 6.071 | 5.104 | 3.31 | | Clay | 100.0 | | | 9.40 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.500 | 10.340 | 0.436 | 3817.0 | 2662.6 | 6.333 | 5.172 | 3.30 | | Clay | 100.0 | | | 9.77 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.660 | 10.260 | 0.459 | 3836.5 | 2672.1 | 6.243 | 5.500 | 3.32 | | Clay | 100.0 | | | 9.70 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.820 | 10.860 | 0.526 | 3856.0 | 2681.7 | 6.662 | 5.883 | 3.31 | | Clay | 100.0 | | | 10.26 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.990 | 10.920 | 0.515 | 3876.8 | 2691.8 | 6.673 | 5.737 | 3.30 | | Clay | 100.0 | | | 10.32 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.150 | 10.500 | 0.489 | 3896.3 | 2701.3 | 6.332 | 5.717 | 3.32 | | Clay | 100.0 | | | 9.92 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.320 | 11.180 | 0.442 | 3917.0 | 2711.5 | 6.802 | 4.792 | 3.25 | | Clay | 100.0 | | | 10.57 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.480 | 11.450 | 0.484 | 3936.6 | 2721.0 | 6.969 | 5.109 | 3.26 | | Clay | 100.0 | | | 10.82 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.640 | 11.690 | 0.476 | 3956.1 | 2730.5 | 7.114 | 4.897 | 3.24 | | Clay | 100.0 | | | 11.05 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.810 | 13.090 | 0.516 | 3976.8 | 2740.7 | 8.101 | 4.646 | 3.18 | | Clay | 100.0 | | | 12.37 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.970 | 13.450 | 0.515 | 3996.3 | 2750.2 | 8.328 | 4.498 | 3.16 | | Clay | 100.0 | | | 12.71 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 1

PGA ($A_{max}$) 0.63

Total Settlement: 0.38 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33.140 | 13.190 | 0.573 | 4017.1 | 2760.3 | 8.101 | 5.124 | 3.21 | | Clay | 100.0 | | | 12.47 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.300 | 13.070 | 0.534 | 4036.6 | 2769.9 | 7.980 | 4.830 | 3.20 | | Clay | 100.0 | | | 12.35 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.460 | 13.140 | 0.526 | 4056.1 | 2779.4 | 7.996 | 4.735 | 3.19 | | Clay | 100.0 | | | 12.42 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.630 | 12.320 | 0.506 | 4076.9 | 2789.5 | 7.371 | 4.921 | 3.23 | | Clay | 100.0 | | | 11.64 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.790 | 13.650 | 0.490 | 4096.4 | 2799.1 | 8.290 | 4.223 | 3.15 | | Clay | 100.0 | | | 12.90 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.960 | 14.350 | 0.506 | 4117.1 | 2809.2 | 8.751 | 4.115 | 3.12 | | Clay | 100.0 | | | 13.56 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.120 | 14.500 | 0.494 | 4136.6 | 2818.8 | 8.821 | 3.975 | 3.11 | | Clay | 100.0 | | | 13.71 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.280 | 14.440 | 0.506 | 4156.2 | 2828.3 | 8.742 | 4.095 | 3.12 | | Clay | 100.0 | | | 13.65 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.450 | 12.200 | 0.458 | 4176.9 | 2838.4 | 7.125 | 4.527 | 3.22 | | Clay | 100.0 | | | 11.53 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.610 | 10.930 | 0.419 | 4196.4 | 2848.0 | 6.202 | 4.746 | 3.28 | | Clay | 100.0 | | | 10.33 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.780 | 10.420 | 0.424 | 4217.2 | 2858.1 | 5.816 | 5.106 | 3.32 | | Clay | 100.0 | | | 9.85 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.940 | 10.030 | 0.421 | 4236.7 | 2867.6 | 5.518 | 5.324 | 3.35 | | Clay | 100.0 | | | 9.48 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.100 | 9.950 | 0.434 | 4256.2 | 2877.2 | 5.437 | 5.551 | 3.37 | | Clay | 100.0 | | | 9.40 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.270 | 10.070 | 0.451 | 4276.9 | 2887.3 | 5.494 | 5.682 | 3.37 | | Clay | 100.0 | | | 9.52 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.430 | 10.390 | 0.479 | 4296.5 | 2896.8 | 5.690 | 5.817 | 3.36 | | Clay | 100.0 | | | 9.82 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.600 | 10.990 | 0.513 | 4317.2 | 2907.0 | 6.076 | 5.808 | 3.34 | | Clay | 100.0 | | | 10.39 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.760 | 11.650 | 0.516 | 4336.7 | 2916.5 | 6.502 | 5.439 | 3.30 | | Clay | 100.0 | | | 11.01 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.930 | 11.620 | 0.490 | 4357.5 | 2926.6 | 6.452 | 5.188 | 3.29 | | Clay | 100.0 | | | 10.98 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.090 | 11.320 | 0.455 | 4377.0 | 2936.2 | 6.220 | 4.983 | 3.29 | | Clay | 100.0 | | | 10.70 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.250 | 11.070 | 0.422 | 4396.5 | 2945.7 | 6.024 | 4.758 | 3.29 | | Clay | 100.0 | | | 10.46 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.420 | 11.020 | 0.415 | 4417.2 | 2955.8 | 5.962 | 4.713 | 3.29 | | Clay | 100.0 | | | 10.42 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.580 | 11.260 | 0.408 | 4436.8 | 2965.4 | 6.098 | 4.514 | 3.27 | | Clay | 100.0 | | | 10.64 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.750 | 11.460 | 0.405 | 4457.5 | 2975.5 | 6.205 | 4.383 | 3.26 | | Clay | 100.0 | | | 10.83 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.910 | 11.740 | 0.385 | 4477.0 | 2985.0 | 6.366 | 4.056 | 3.23 | | Clay | 100.0 | | | 11.10 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.070 | 11.850 | 0.393 | 4496.5 | 2994.6 | 6.413 | 4.090 | 3.23 | | Clay | 100.0 | | | 11.20 | 0.91 | n.a. | n.a. | 0.84 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.240 | 12.280 | 0.442 | 4517.3 | 3004.7 | 6.670 | 4.406 | 3.24 | | Clay | 100.0 | | | 11.61 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.400 | 12.740 | 0.431 | 4536.8 | 3014.2 | 6.948 | 4.120 | 3.21 | | Clay | 100.0 | | | 12.04 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.570 | 13.150 | 0.434 | 4557.5 | 3024.4 | 7.189 | 3.989 | 3.19 | | Clay | 100.0 | | | 12.43 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.730 | 12.760 | 0.433 | 4577.1 | 3033.9 | 6.903 | 4.137 | 3.21 | | Clay | 100.0 | | | 12.06 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.890 | 12.770 | 0.427 | 4596.6 | 3043.4 | 6.881 | 4.081 | 3.21 | | Clay | 100.0 | | | 12.07 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.060 | 12.750 | 0.436 | 4617.3 | 3053.6 | 6.839 | 4.179 | 3.21 | | Clay | 100.0 | | | 12.05 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.220 | 13.190 | 0.444 | 4636.8 | 3063.1 | 7.098 | 4.081 | 3.20 | | Clay | 100.0 | | | 12.47 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.390 | 13.260 | 0.449 | 4657.6 | 3073.2 | 7.114 | 4.104 | 3.20 | | Clay | 100.0 | | | 12.53 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.550 | 12.960 | 0.455 | 4677.1 | 3082.8 | 6.891 | 4.280 | 3.22 | | Clay | 100.0 | | | 12.25 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.710 | 12.650 | 0.446 | 4696.6 | 3092.3 | 6.663 | 4.330 | 3.23 | | Clay | 100.0 | | | 11.96 | 0.90 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.880 | 12.940 | 0.439 | 4717.4 | 3102.4 | 6.821 | 4.150 | 3.21 | | Clay | 100.0 | | | 12.23 | 0.90 | n.a. | n.a. | 0.84 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.040 | 12.850 | 0.479 | 4736.9 | 3112.0 | 6.736 | 4.569 | 3.24 | | Clay | 100.0 | | | 12.15 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.210 | 13.980 | 0.608 | 4757.6 | 3122.1 | 7.432 | 5.238 | 3.24 | | Clay | 100.0 | | | 13.21 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.370 | 16.400 | 0.785 | 4777.1 | 3131.7 | 8.948 | 5.600 | 3.20 | | Clay | 100.0 | | | 15.50 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.530 | 18.650 | 0.789 | 4796.7 | 3141.2 | 10.347 | 4.857 | 3.11 | | Clay | 100.0 | | | 17.63 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.700 | 26.560 | 0.888 | 4817.4 | 3151.3 | 15.328 | 3.675 | 2.90 | | Clay | 94.9 | | | 25.10 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.860 | 26.060 | 1.134 | 4836.9 | 3160.9 | 14.959 | 4.795 | 2.98 | | Clay | 100.0 | | | 24.63 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.030 | 26.470 | 1.151 | 4857.7 | 3171.0 | 15.163 | 4.788 | 2.98 | | Clay | 100.0 | | | 25.02 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.190 | 34.400 | 1.463 | 4877.2 | 3180.5 | 20.098 | 4.576 | 2.87 | | Clay | 92.5 | | | 32.51 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.160 | 197.610 | 0.567 | 19.2 | 19.2 | 1960.692 | 0.287 | 0.70 | | Unsaturated | 0.0 | | | 186.78 | 1.70 | 317.52 | 317.52 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.330 | 314.700 | 0.596 | 39.6 | 39.6 | 2174.172 | 0.189 | 0.51 | | Unsaturated | 0.0 | | | 297.45 | 1.70 | 505.66 | 505.66 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.490 | 288.680 | 0.719 | 58.8 | 58.8 | 1636.651 | 0.249 | 0.67 | | Unsaturated | 0.0 | | | 272.85 | 1.70 | 463.85 | 463.85 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.660 | 186.140 | 0.847 | 79.2 | 79.2 | 909.195 | 0.455 | 1.02 | | Unsaturated | 0.0 | | | 175.94 | 1.70 | 299.09 | 299.09 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.820 | 125.990 | 0.997 | 98.4 | 98.4 | 552.003 | 0.791 | 1.33 | | Unsaturated | 0.0 | | | 119.08 | 1.70 | 202.44 | 202.44 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.980 | 84.520 | 0.964 | 117.6 | 117.6 | 338.630 | 1.141 | 1.59 | | Unsaturated | 0.0 | | | 79.89 | 1.70 | 135.81 | 135.81 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.150 | 60.950 | 0.981 | 138.0 | 138.0 | 225.328 | 1.611 | 1.81 | | Unsaturated | 8.0 | | | 57.61 | 1.70 | 97.93 | 100.96 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.310 | 46.570 | 0.787 | 157.2 | 157.2 | 161.220 | 1.692 | 1.92 | | Unsaturated | 16.7 | | | 44.02 | 1.70 | 74.83 | 100.44 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.480 | 34.990 | 0.488 | 177.6 | 177.6 | 113.865 | 1.397 | 1.97 | | Unsaturated | 20.2 | | | 33.07 | 1.70 | 56.22 | 87.76 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.640 | 28.670 | 0.345 | 196.8 | 196.8 | 88.551 | 1.209 | 2.00 | | Unsaturated | 23.3 | | | 27.10 | 1.70 | 46.07 | 81.70 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.800 | 26.120 | 0.322 | 216.0 | 216.0 | 76.952 | 1.238 | 2.06 | | Unsaturated | 27.6 | | | 24.69 | 1.70 | 41.97 | 82.94 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.970 | 25.740 | 0.331 | 236.4 | 236.4 | 72.453 | 1.293 | 2.09 | | Unsaturated | 30.1 | | | 24.33 | 1.70 | 41.36 | 85.17 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.130 | 23.510 | 0.395 | 255.6 | 255.6 | 63.588 | 1.688 | 2.21 | | Unsaturated | 39.6 | | | 22.22 | 1.70 | 37.78 | 88.56 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.300 | 22.570 | 0.473 | 276.0 | 276.0 | 58.706 | 2.110 | 2.30 | | Unsaturated | 46.8 | | | 21.33 | 1.70 | 36.27 | 90.53 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.460 | 24.370 | 0.474 | 295.2 | 295.2 | 61.296 | 1.957 | 2.26 | | Unsaturated | 43.9 | | | 23.03 | 1.70 | 39.16 | 92.78 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.620 | 26.960 | 0.420 | 314.4 | 314.4 | 65.722 | 1.567 | 2.18 | | Unsaturated | 37.0 | | | 25.48 | 1.70 | 43.32 | 93.66 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.790 | 25.490 | 0.302 | 334.8 | 334.8 | 60.171 | 1.192 | 2.13 | | Unsaturated | 33.4 | | | 24.09 | 1.70 | 40.96 | 87.86 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.950 | 24.660 | 0.212 | 354.0 | 354.0 | 56.576 | 0.865 | 2.07 | | Unsaturated | 28.7 | | | 23.31 | 1.70 | 39.62 | 81.46 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.120 | 22.360 | 0.192 | 374.4 | 374.4 | 49.822 | 0.865 | 2.12 | | Unsaturated | 32.3 | | | 21.13 | 1.70 | 35.93 | 80.77 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.280 | 20.280 | 0.218 | 393.6 | 393.6 | 44.013 | 1.087 | 2.22 | | Unsaturated | 40.3 | | | 19.17 | 1.70 | 32.59 | 82.58 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.440 | 19.260 | 0.375 | 412.8 | 412.8 | 40.774 | 1.969 | 2.40 | | Unsaturated | 54.9 | | | 18.20 | 1.70 | 30.95 | 86.85 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.610 | 24.960 | 0.642 | 433.2 | 433.2 | 51.688 | 2.594 | 2.40 | | Unsaturated | 54.9 | | | 23.59 | 1.70 | 40.11 | 98.53 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.770 | 40.490 | 0.894 | 452.4 | 452.4 | 82.305 | 2.221 | 2.21 | | Unsaturated | 39.6 | | | 38.27 | 1.70 | 65.06 | 122.37 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.940 | 48.560 | 0.999 | 472.8 | 472.8 | 96.626 | 2.066 | 2.14 | | Unsaturated | 33.9 | | | 45.90 | 1.70 | 78.03 | 133.47 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.100 | 45.580 | 0.949 | 492.0 | 492.0 | 88.862 | 2.093 | 2.17 | | Unsaturated | 36.2 | | | 43.08 | 1.70 | 73.24 | 129.82 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.270 | 43.390 | 0.848 | 512.4 | 512.4 | 82.849 | 1.966 | 2.17 | | Unsaturated | 36.4 | | | 41.01 | 1.70 | 69.72 | 125.66 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.430 | 42.120 | 0.776 | 531.6 | 531.6 | 78.926 | 1.854 | 2.17 | | Unsaturated | 36.2 | | | 39.81 | 1.70 | 67.68 | 122.98 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.590 | 39.960 | 0.709 | 550.8 | 550.8 | 73.519 | 1.787 | 2.18 | | Unsaturated | 37.1 | | | 37.77 | 1.70 | 64.21 | 119.48 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.760 | 36.910 | 0.599 | 571.2 | 571.2 | 66.627 | 1.636 | 2.18 | | Unsaturated | 37.7 | | | 34.89 | 1.70 | 59.31 | 113.84 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.920 | 33.930 | 0.662 | 590.4 | 590.4 | 60.185 | 1.969 | 2.27 | | Unsaturated | 44.6 | | | 32.07 | 1.70 | 54.52 | 112.34 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.090 | 30.590 | 0.783 | 610.8 | 610.8 | 53.278 | 2.586 | 2.39 | | Unsaturated | 54.1 | | | 28.91 | 1.70 | 49.15 | 109.75 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.250 | 24.710 | 0.864 | 630.0 | 630.0 | 42.257 | 3.541 | 2.56 | | Unsaturated | 67.4 | | | 23.36 | 1.70 | 39.70 | 101.36 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.410 | 19.710 | 0.821 | 649.2 | 649.2 | 41.897 | 4.236 | 2.61 | | Unsaturated | 72.0 | | | 18.63 | 1.70 | 31.67 | 91.89 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.580 | 15.440 | 0.721 | 669.6 | 669.6 | 45.117 | 4.773 | 2.63 | | Unsaturated | 73.2 | | | 14.59 | 1.70 | 24.81 | 83.21 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.740 | 14.110 | 0.630 | 688.8 | 688.8 | 39.970 | 4.576 | 2.65 | | Unsaturated | 75.1 | | | 13.34 | 1.70 | 22.67 | 80.75 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.910 | 13.180 | 0.615 | 709.2 | 709.2 | 36.169 | 4.797 | 2.70 | | Unsaturated | 78.7 | | | 12.46 | 1.70 | 21.18 | 79.35 | 0.99 | 0.405 | 1.099 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.070 | 12.250 | 0.660 | 728.4 | 728.4 | 32.635 | 5.551 | 2.77 | | Unsaturated | 84.8 | | | 11.58 | 1.70 | 19.68 | 78.20 | 0.99 | 0.405 | 1.096 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.230 | 13.410 | 0.668 | 747.6 | 747.6 | 34.875 | 5.125 | 2.73 | | Unsaturated | 81.2 | | | 12.67 | 1.70 | 21.55 | 80.18 | 0.99 | 0.405 | 1.095 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.400 | 14.320 | 0.682 | 768.0 | 768.0 | 36.292 | 4.896 | 2.70 | | Unsaturated | 79.1 | | | 13.53 | 1.70 | 23.01 | 81.79 | 0.99 | 0.405 | 1.093 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.560 | 13.860 | 0.675 | 787.2 | 787.2 | 34.213 | 5.015 | 2.73 | | Unsaturated | 81.1 | | | 13.10 | 1.70 | 22.27 | 81.11 | 0.99 | 0.404 | 1.091 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.730 | 14.020 | 0.714 | 807.6 | 807.6 | 33.720 | 5.244 | 2.74 | | Unsaturated | 82.6 | | | 13.25 | 1.69 | 22.35 | 81.40 | 0.99 | 0.404 | 1.089 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.890 | 14.230 | 0.752 | 826.8 | 826.8 | 33.422 | 5.441 | 2.76 | | Unsaturated | 83.7 | | | 13.45 | 1.66 | 22.38 | 81.59 | 0.99 | 0.404 | 1.086 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.050 | 13.950 | 0.735 | 846.0 | 846.0 | 31.979 | 5.431 | 2.77 | | Clay | 84.8 | | | 13.19 | 1.27 | n.a. | n.a. | 0.99 | 0.405 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.220 | 13.280 | 0.695 | 866.4 | 866.4 | 29.656 | 5.408 | 2.79 | | Clay | 86.5 | | | 12.55 | 1.27 | n.a. | n.a. | 0.99 | 0.410 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.380 | 12.930 | 0.684 | 885.6 | 885.6 | 28.201 | 5.476 | 2.81 | | Clay | 88.1 | | | 12.22 | 1.26 | n.a. | n.a. | 0.98 | 0.414 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.550 | 12.890 | 0.670 | 906.0 | 906.0 | 27.455 | 5.386 | 2.82 | | Clay | 88.3 | | | 12.18 | 1.25 | n.a. | n.a. | 0.98 | 0.419 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.710 | 12.070 | 0.642 | 925.2 | 925.2 | 25.092 | 5.532 | 2.85 | | Clay | 91.2 | | | 11.41 | 1.24 | n.a. | n.a. | 0.98 | 0.423 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.870 | 11.590 | 0.591 | 944.4 | 944.4 | 23.545 | 5.316 | 2.86 | | Clay | 91.9 | | | 10.95 | 1.24 | n.a. | n.a. | 0.98 | 0.427 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.040 | 11.720 | 0.581 | 964.8 | 964.8 | 23.295 | 5.167 | 2.86 | | Clay | 91.5 | | | 11.08 | 1.23 | n.a. | n.a. | 0.98 | 0.431 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.200 | 11.580 | 0.579 | 984.0 | 984.0 | 22.537 | 5.225 | 2.87 | | Clay | 92.6 | | | 10.95 | 1.22 | n.a. | n.a. | 0.98 | 0.435 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.370 | 11.460 | 0.559 | 1004.4 | 1004.4 | 21.820 | 5.098 | 2.87 | | Clay | 92.9 | | | 10.83 | 1.22 | n.a. | n.a. | 0.98 | 0.439 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.530 | 11.260 | 0.550 | 1023.6 | 1023.6 | 21.001 | 5.120 | 2.89 | | Clay | 94.0 | | | 10.64 | 1.21 | n.a. | n.a. | 0.98 | 0.443 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.690 | 11.010 | 0.534 | 1042.8 | 1042.8 | 20.116 | 5.091 | 2.90 | | Clay | 94.9 | | | 10.41 | 1.21 | n.a. | n.a. | 0.98 | 0.446 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.860 | 10.700 | 0.512 | 1063.2 | 1063.2 | 19.128 | 5.030 | 2.91 | | Clay | 96.0 | | | 10.11 | 1.20 | n.a. | n.a. | 0.98 | 0.450 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.020 | 10.840 | 0.426 | 1082.4 | 1082.4 | 19.030 | 4.132 | 2.86 | | Clay | 91.7 | | | 10.25 | 1.19 | n.a. | n.a. | 0.98 | 0.453 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.190 | 10.690 | 0.385 | 1102.8 | 1102.8 | 18.387 | 3.794 | 2.85 | | Clay | 90.7 | | | 10.10 | 1.19 | n.a. | n.a. | 0.98 | 0.457 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.350 | 8.710 | 0.360 | 1122.0 | 1122.0 | 14.526 | 4.418 | 2.97 | | Clay | 100.0 | | | 8.23 | 1.18 | n.a. | n.a. | 0.98 | 0.460 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.510 | 7.650 | 0.325 | 1141.2 | 1141.2 | 12.407 | 4.589 | 3.03 | | Clay | 100.0 | | | 7.23 | 1.18 | n.a. | n.a. | 0.98 | 0.463 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.680 | 7.410 | 0.291 | 1161.6 | 1161.6 | 11.758 | 4.264 | 3.03 | | Clay | 100.0 | | | 7.00 | 1.17 | n.a. | n.a. | 0.98 | 0.467 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.840 | 7.130 | 0.266 | 1180.8 | 1180.8 | 11.077 | 4.064 | 3.04 | | Clay | 100.0 | | | 6.74 | 1.17 | n.a. | n.a. | 0.98 | 0.470 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.010 | 6.960 | 0.255 | 1201.2 | 1201.2 | 10.588 | 4.016 | 3.05 | | Clay | 100.0 | | | 6.58 | 1.16 | n.a. | n.a. | 0.97 | 0.473 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.170 | 6.930 | 0.207 | 1220.4 | 1220.4 | 10.357 | 3.269 | 3.01 | | Clay | 100.0 | | | 6.55 | 1.16 | n.a. | n.a. | 0.97 | 0.476 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.330 | 5.940 | 0.181 | 1239.6 | 1239.6 | 8.584 | 3.404 | 3.08 | | Clay | 100.0 | | | 5.61 | 1.15 | n.a. | n.a. | 0.97 | 0.479 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.500 | 5.270 | 0.161 | 1260.0 | 1260.0 | 7.365 | 3.463 | 3.14 | | Clay | 100.0 | | | 4.98 | 1.15 | n.a. | n.a. | 0.97 | 0.481 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.660 | 5.590 | 0.186 | 1279.2 | 1279.2 | 7.740 | 3.753 | 3.14 | | Clay | 100.0 | | | 5.28 | 1.14 | n.a. | n.a. | 0.97 | 0.484 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.830 | 6.160 | 0.217 | 1299.6 | 1299.6 | 8.480 | 3.945 | 3.12 | | Clay | 100.0 | | | 5.82 | 1.14 | n.a. | n.a. | 0.97 | 0.487 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.990 | 6.290 | 0.214 | 1318.8 | 1318.8 | 8.539 | 3.808 | 3.11 | | Clay | 100.0 | | | 5.95 | 1.13 | n.a. | n.a. | 0.97 | 0.490 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.150 | 6.010 | 0.210 | 1338.0 | 1338.0 | 7.984 | 3.922 | 3.14 | | Clay | 100.0 | | | 5.68 | 1.13 | n.a. | n.a. | 0.97 | 0.492 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.320 | 6.090 | 0.199 | 1358.4 | 1358.4 | 7.966 | 3.674 | 3.13 | | Clay | 100.0 | | | 5.76 | 1.12 | n.a. | n.a. | 0.97 | 0.495 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.480 | 5.950 | 0.222 | 1377.6 | 1377.6 | 7.638 | 4.216 | 3.18 | | Clay | 100.0 | | | 5.62 | 1.12 | n.a. | n.a. | 0.97 | 0.497 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.650 | 5.720 | 0.300 | 1398.0 | 1398.0 | 7.183 | 5.973 | 3.29 | | Clay | 100.0 | | | 5.41 | 1.12 | n.a. | n.a. | 0.97 | 0.500 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.810 | 7.490 | 0.392 | 1417.2 | 1417.2 | 9.570 | 5.775 | 3.18 | | Clay | 100.0 | | | 7.08 | 1.11 | n.a. | n.a. | 0.97 | 0.502 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.980 | 12.240 | 0.347 | 1437.6 | 1437.6 | 16.028 | 3.013 | 2.83 | | Clay | 89.5 | | | 11.57 | 1.11 | n.a. | n.a. | 0.97 | 0.504 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.140 | 16.080 | 0.368 | 1456.8 | 1456.8 | 21.076 | 2.396 | 2.68 | plastic | Clay | 77.1 | | | 15.20 | 1.10 | n.a. | n.a. | 0.97 | 0.507 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.300 | 16.270 | 0.424 | 1476.0 | 1476.0 | 21.046 | 2.727 | 2.71 | | Clay | 79.9 | | | 15.38 | 1.10 | n.a. | n.a. | 0.97 | 0.509 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.470 | 13.550 | 0.365 | 1496.4 | 1496.4 | 17.110 | 2.850 | 2.79 | | Clay | 86.5 | | | 12.81 | 1.10 | n.a. | n.a. | 0.97 | 0.511 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.630 | 17.160 | 0.187 | 1515.6 | 1515.6 | 18.318 | 1.142 | 2.55 | | Sand | 67.0 | 24.69 | | 24.69 | 1.19 | 29.43 | 88.03 | 0.96 | 0.513 | 1.032 | 0.124 | 0.154 | 0.30 | 0.04 | 0.06 |
| 12.800 | 26.120 | 0.096 | 1536.0 | 1536.0 | 28.125 | 0.378 | 2.17 | | Sand | 36.8 | | | 24.69 | 1.19 | 29.50 | 76.48 | 0.96 | 0.515 | 1.028 | 0.113 | 0.135 | 0.26 | 0.04 | 0.06 |
| 12.960 | 25.830 | 0.130 | 1555.2 | 1555.2 | 27.620 | 0.519 | 2.23 | | Sand | 41.7 | 24.69 | | 24.69 | 1.18 | 29.23 | 79.18 | 0.96 | 0.517 | 1.028 | 0.115 | 0.139 | 0.27 | 0.04 | 0.06 |
| 13.120 | 22.460 | 0.191 | 1574.6 | 1567.2 | 23.803 | 0.883 | 2.40 | | Sand | 54.7 | 24.69 | | 24.69 | 1.17 | 28.99 | 84.31 | 0.96 | 0.519 | 1.028 | 0.120 | 0.147 | 0.28 | 0.04 | 0.06 |
| 13.290 | 20.060 | 0.262 | 1595.4 | 1577.3 | 21.088 | 1.359 | 2.54 | | Sand | 66.0 | 24.69 | | 24.69 | 1.17 | 28.84 | 87.04 | 0.96 | 0.521 | 1.028 | 0.123 | 0.152 | 0.29 | 0.04 | 0.05 |
| 13.450 | 19.630 | 0.325 | 1614.9 | 1586.8 | 21.761 | 1.724 | 2.58 | plastic | Clay | 69.6 | | | 18.55 | 1.08 | n.a. | n.a. | 0.96 | 0.523 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.620 | 19.550 | 0.396 | 1635.6 | 1597.0 | 23.460 | 2.114 | 2.61 | | Clay | 71.6 | | | 18.48 | 1.08 | n.a. | n.a. | 0.96 | 0.525 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.780 | 14.920 | 0.282 | 1655.2 | 1606.5 | 17.544 | 2.001 | 2.70 | | Clay | 78.7 | | | 14.10 | 1.08 | n.a. | n.a. | 0.96 | 0.527 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.940 | 24.130 | 0.268 | 1674.7 | 1616.0 | 25.192 | 1.151 | 2.43 | | Sand | 57.7 | 37.87 | 1.56 | 59.08 | 1.12 | 66.38 | 132.95 | 0.96 | 0.529 | 1.037 | 0.207 | 0.321 | 0.61 | 0.02 | 0.03 |
| 14.110 | 31.740 | 0.267 | 1695.4 | 1626.2 | 33.307 | 0.864 | 2.27 | | Sand | 44.2 | 37.87 | 1.56 | 59.08 | 1.12 | 66.39 | 127.02 | 0.96 | 0.530 | 1.035 | 0.189 | 0.281 | 0.53 | 0.02 | 0.03 |
| 14.270 | 35.450 | 0.206 | 1714.9 | 1635.7 | 37.188 | 0.596 | 2.14 | | Sand | 34.5 | 37.87 | 1.56 | 59.08 | 1.12 | 66.45 | 119.99 | 0.96 | 0.532 | 1.032 | 0.171 | 0.245 | 0.46 | 0.03 | 0.04 |
| 14.440 | 38.430 | 0.150 | 1735.7 | 1645.8 | 40.256 | 0.400 | 2.04 | | Sand | 26.1 | 37.87 | 1.56 | 59.08 | 1.13 | 66.59 | 110.10 | 0.96 | 0.534 | 1.029 | 0.152 | 0.206 | 0.39 | 0.03 | 0.04 |
| 14.600 | 40.070 | 0.203 | 1755.2 | 1655.4 | 41.882 | 0.519 | 2.07 | | Sand | 28.7 | | 1.56 | 59.08 | 1.12 | 66.31 | 113.38 | 0.96 | 0.535 | 1.029 | 0.158 | 0.218 | 0.41 | 0.03 | 0.04 |
| 14.760 | 39.530 | 0.207 | 1774.7 | 1664.9 | 41.176 | 0.537 | 2.08 | | Sand | 29.7 | 37.87 | 1.56 | 59.08 | 1.12 | 66.09 | 114.45 | 0.96 | 0.537 | 1.029 | 0.160 | 0.222 | 0.41 | 0.03 | 0.04 |
| 14.930 | 38.500 | 0.455 | 1795.5 | 1675.0 | 39.946 | 1.210 | 2.28 | | Sand | 45.2 | 37.87 | 1.56 | 59.08 | 1.11 | 65.54 | 126.54 | 0.96 | 0.539 | 1.031 | 0.187 | 0.278 | 0.52 | 0.03 | 0.03 |
| 15.090 | 34.060 | 0.473 | 1815.0 | 1684.6 | 35.119 | 1.426 | 2.36 | | Sand | 52.2 | 37.87 | 1.56 | 59.08 | 1.11 | 65.29 | 129.53 | 0.95 | 0.540 | 1.031 | 0.196 | 0.295 | 0.55 | 0.02 | 0.03 |
| 15.260 | 21.950 | 0.411 | 1835.7 | 1694.7 | 23.222 | 1.956 | 2.59 | | Mixed | 70.3 | 37.87 | 1.56 | 59.08 | 1.10 | 64.99 | 134.60 | 0.95 | 0.542 | 1.031 | 0.213 | 0.331 | 0.61 | 0.02 | 0.03 |
| 15.420 | 14.320 | 0.384 | 1855.2 | 1704.2 | 15.717 | 2.867 | 2.83 | | Clay | 89.0 | | | 13.53 | 1.06 | n.a. | n.a. | 0.95 | 0.543 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.580 | 10.760 | 0.401 | 1874.8 | 1713.8 | 11.463 | 4.081 | 3.03 | | Clay | 100.0 | | | 10.17 | 1.06 | n.a. | n.a. | 0.95 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.750 | 11.210 | 0.504 | 1895.5 | 1723.9 | 11.906 | 4.908 | 3.06 | | Clay | 100.0 | | | 10.60 | 1.06 | n.a. | n.a. | 0.95 | 0.546 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.910 | 12.150 | 0.595 | 1915.0 | 1733.4 | 12.914 | 5.316 | 3.06 | | Clay | 100.0 | | | 11.48 | 1.05 | n.a. | n.a. | 0.95 | 0.547 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.080 | 13.270 | 0.661 | 1935.8 | 1743.6 | 14.111 | 5.371 | 3.03 | | Clay | 100.0 | | | 12.54 | 1.05 | n.a. | n.a. | 0.95 | 0.549 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.240 | 14.500 | 0.717 | 1955.3 | 1753.1 | 15.427 | 5.304 | 3.00 | | Clay | 100.0 | | | 13.71 | 1.05 | n.a. | n.a. | 0.95 | 0.550 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.400 | 15.410 | 0.777 | 1974.8 | 1762.6 | 16.365 | 5.387 | 2.98 | | Clay | 100.0 | | | 14.57 | 1.05 | n.a. | n.a. | 0.95 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.570 | 15.790 | 0.811 | 1995.5 | 1772.8 | 16.688 | 5.479 | 2.98 | | Clay | 100.0 | | | 14.92 | 1.05 | n.a. | n.a. | 0.95 | 0.553 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.730 | 16.160 | 0.818 | 2015.1 | 1782.3 | 17.003 | 5.400 | 2.97 | | Clay | 100.0 | | | 15.27 | 1.05 | n.a. | n.a. | 0.95 | 0.554 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.900 | 16.400 | 0.848 | 2035.8 | 1792.4 | 17.163 | 5.514 | 2.97 | | Clay | 100.0 | | | 15.50 | 1.04 | n.a. | n.a. | 0.95 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.060 | 16.810 | 0.884 | 2055.3 | 1802.0 | 17.517 | 5.599 | 2.97 | | Clay | 100.0 | | | 15.89 | 1.04 | n.a. | n.a. | 0.95 | 0.556 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.220 | 16.850 | 0.928 | 2074.8 | 1811.5 | 17.458 | 5.870 | 2.99 | | Clay | 100.0 | | | 15.93 | 1.04 | n.a. | n.a. | 0.95 | 0.557 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.390 | 17.050 | 0.968 | 2095.6 | 1821.6 | 17.569 | 6.047 | 2.99 | | Clay | 100.0 | | | 16.12 | 1.04 | n.a. | n.a. | 0.94 | 0.559 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.550 | 16.880 | 0.992 | 2115.1 | 1831.2 | 17.281 | 6.270 | 3.01 | | Clay | 100.0 | | | 15.95 | 1.04 | n.a. | n.a. | 0.94 | 0.560 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.720 | 16.640 | 0.993 | 2135.8 | 1841.3 | 16.914 | 6.379 | 3.02 | | Clay | 100.0 | | | 15.73 | 1.04 | n.a. | n.a. | 0.94 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.880 | 16.590 | 0.977 | 2155.4 | 1850.8 | 16.762 | 6.300 | 3.02 | | Clay | 100.0 | | | 15.68 | 1.04 | n.a. | n.a. | 0.94 | 0.562 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.040 | 16.470 | 0.960 | 2174.9 | 1860.4 | 16.537 | 6.241 | 3.02 | | Clay | 100.0 | | | 15.57 | 1.03 | n.a. | n.a. | 0.94 | 0.563 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.210 | 16.220 | 0.981 | 2195.6 | 1870.5 | 16.169 | 6.486 | 3.04 | | Clay | 100.0 | | | 15.33 | 1.03 | n.a. | n.a. | 0.94 | 0.564 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.370 | 16.490 | 0.961 | 2215.1 | 1880.1 | 16.364 | 6.249 | 3.03 | | Clay | 100.0 | | | 15.59 | 1.03 | n.a. | n.a. | 0.94 | 0.565 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.540 | 15.960 | 0.941 | 2235.9 | 1890.2 | 15.704 | 6.343 | 3.04 | | Clay | 100.0 | | | 15.09 | 1.03 | n.a. | n.a. | 0.94 | 0.566 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.700 | 14.330 | 0.877 | 2255.4 | 1899.7 | 13.899 | 6.645 | 3.10 | | Clay | 100.0 | | | 13.54 | 1.03 | n.a. | n.a. | 0.94 | 0.567 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.860 | 12.940 | 0.803 | 2274.9 | 1909.3 | 12.363 | 6.803 | 3.14 | | Clay | 100.0 | | | 12.23 | 1.03 | n.a. | n.a. | 0.94 | 0.568 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.030 | 12.180 | 0.762 | 2295.7 | 1919.4 | 11.496 | 6.910 | 3.17 | | Clay | 100.0 | | | 11.51 | 1.03 | n.a. | n.a. | 0.94 | 0.569 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.190 | 12.940 | 0.734 | 2315.2 | 1928.9 | 12.217 | 6.233 | 3.12 | | Clay | 100.0 | | | 12.23 | 1.02 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.360 | 13.560 | 0.738 | 2335.9 | 1939.1 | 12.782 | 5.952 | 3.09 | | Clay | 100.0 | | | 12.82 | 1.02 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.520 | 13.370 | 0.743 | 2355.4 | 1948.6 | 12.514 | 6.091 | 3.11 | | Clay | 100.0 | | | 12.64 | 1.02 | n.a. | n.a. | 0.93 | 0.571 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.690 | 12.640 | 0.703 | 2376.2 | 1958.7 | 11.693 | 6.139 | 3.13 | | Clay | 100.0 | | | 11.95 | 1.02 | n.a. | n.a. | 0.93 | 0.572 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.850 | 12.210 | 0.640 | 2395.7 | 1968.3 | 11.190 | 5.811 | 3.13 | | Clay | 100.0 | | | 11.54 | 1.02 | n.a. | n.a. | 0.93 | 0.573 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.010 | 11.460 | 0.559 | 2415.2 | 1977.8 | 10.367 | 5.452 | 3.14 | | Clay | 100.0 | | | 10.83 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.180 | 10.450 | 0.471 | 2436.0 | 1987.9 | 9.288 | 5.097 | 3.16 | | Clay | 100.0 | | | 9.88 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.340 | 9.390 | 0.410 | 2455.5 | 1997.5 | 8.173 | 5.024 | 3.20 | | Clay | 100.0 | | | 8.88 | 1.02 | n.a. | n.a. | 0.93 | 0.575 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.510 | 8.310 | 0.365 | 2476.2 | 2007.6 | 7.045 | 5.164 | 3.26 | | Clay | 100.0 | | | 7.85 | 1.01 | n.a. | n.a. | 0.93 | 0.576 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.670 | 8.050 | 0.287 | 2495.7 | 2017.1 | 6.744 | 4.224 | 3.22 | | Clay | 100.0 | | | 7.61 | 1.01 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.830 | 7.990 | 0.248 | 2515.3 | 2026.7 | 6.644 | 3.688 | 3.19 | | Clay | 100.0 | | | 7.55 | 1.01 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.000 | 7.090 | 0.344 | 2536.0 | 2036.8 | 5.717 | 5.907 | 3.37 | | Clay | 100.0 | | | 6.70 | 1.01 | n.a. | n.a. | 0.93 | 0.578 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.160 | 7.490 | 0.442 | 2555.5 | 2046.3 | 6.072 | 7.107 | 3.39 | | Clay | 100.0 | | | 7.08 | 1.01 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.330 | 8.870 | 0.653 | 2576.3 | 2056.5 | 7.374 | 8.614 | 3.38 | | Clay | 100.0 | | | 8.38 | 1.01 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.490 | 15.840 | 0.852 | 2595.8 | 2066.0 | 14.078 | 5.858 | 3.06 | | Clay | 100.0 | | | 14.97 | 1.01 | n.a. | n.a. | 0.93 | 0.580 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.650 | 15.680 | 0.946 | 2615.3 | 2075.5 | 13.849 | 6.583 | 3.09 | | Clay | 100.0 | | | 14.82 | 1.01 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.820 | 16.750 | 0.949 | 2636.0 | 2085.7 | 14.798 | 6.146 | 3.05 | | Clay | 100.0 | | | 15.83 | 1.00 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.980 | 17.330 | 0.934 | 2655.6 | 2095.2 | 15.275 | 5.836 | 3.03 | | Clay | 100.0 | | | 16.38 | 1.00 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22.150 | 16.980 | 0.978 | 2676.3 | 2105.3 | 14.859 | 6.249 | 3.06 | | Clay | 100.0 | | | 16.05 | 1.00 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.310 | 17.910 | 1.000 | 2695.8 | 2114.9 | 15.662 | 6.035 | 3.03 | | Clay | 100.0 | | | 16.93 | 1.00 | n.a. | n.a. | 0.92 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.470 | 18.380 | 1.027 | 2715.3 | 2124.4 | 16.025 | 6.031 | 3.02 | | Clay | 100.0 | | | 17.37 | 1.00 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.640 | 18.110 | 0.975 | 2736.1 | 2134.5 | 15.687 | 5.824 | 3.02 | | Clay | 100.0 | | | 17.12 | 1.00 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.800 | 17.620 | 0.921 | 2755.6 | 2144.1 | 15.151 | 5.668 | 3.02 | | Clay | 100.0 | | | 16.65 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.970 | 15.680 | 0.785 | 2776.3 | 2154.2 | 13.269 | 5.495 | 3.06 | | Clay | 100.0 | | | 14.82 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.130 | 13.270 | 0.571 | 2795.9 | 2163.7 | 10.974 | 4.805 | 3.09 | | Clay | 100.0 | | | 12.54 | 0.99 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.290 | 12.710 | 0.554 | 2815.4 | 2173.3 | 10.401 | 4.898 | 3.11 | | Clay | 100.0 | | | 12.01 | 0.99 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.460 | 14.540 | 0.698 | 2836.1 | 2183.4 | 12.020 | 5.316 | 3.08 | | Clay | 100.0 | | | 13.74 | 0.99 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.620 | 15.760 | 0.849 | 2855.6 | 2193.0 | 13.071 | 5.923 | 3.08 | | Clay | 100.0 | | | 14.90 | 0.99 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.790 | 16.390 | 0.813 | 2876.4 | 2203.1 | 13.574 | 5.440 | 3.05 | | Clay | 100.0 | | | 15.49 | 0.99 | n.a. | n.a. | 0.91 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.950 | 15.500 | 0.716 | 2895.9 | 2212.6 | 12.702 | 5.094 | 3.05 | | Clay | 100.0 | | | 14.65 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.110 | 14.250 | 0.601 | 2915.4 | 2222.2 | 11.513 | 4.700 | 3.06 | | Clay | 100.0 | | | 13.47 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.280 | 13.480 | 0.579 | 2936.2 | 2232.3 | 10.762 | 4.818 | 3.09 | | Clay | 100.0 | | | 12.74 | 0.99 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.440 | 13.200 | 0.576 | 2955.7 | 2241.8 | 10.458 | 4.912 | 3.11 | | Clay | 100.0 | | | 12.48 | 0.98 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.610 | 13.300 | 0.606 | 2976.4 | 2252.0 | 10.490 | 5.126 | 3.12 | | Clay | 100.0 | | | 12.57 | 0.98 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.770 | 12.860 | 0.598 | 2995.9 | 2261.5 | 10.048 | 5.265 | 3.14 | | Clay | 100.0 | | | 12.16 | 0.98 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.930 | 13.490 | 0.666 | 3015.5 | 2271.0 | 10.552 | 5.556 | 3.14 | | Clay | 100.0 | | | 12.75 | 0.98 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.100 | 14.730 | 0.695 | 3036.2 | 2281.2 | 11.583 | 5.262 | 3.09 | | Clay | 100.0 | | | 13.92 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.260 | 14.940 | 0.679 | 3055.7 | 2290.7 | 11.710 | 5.060 | 3.08 | | Clay | 100.0 | | | 14.12 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.430 | 15.120 | 0.672 | 3076.5 | 2300.8 | 11.806 | 4.944 | 3.07 | | Clay | 100.0 | | | 14.29 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.590 | 15.320 | 0.684 | 3096.0 | 2310.4 | 11.922 | 4.963 | 3.07 | | Clay | 100.0 | | | 14.48 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.750 | 14.870 | 0.705 | 3115.5 | 2319.9 | 11.477 | 5.294 | 3.10 | | Clay | 100.0 | | | 14.05 | 0.98 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.920 | 13.780 | 0.571 | 3136.2 | 2330.0 | 10.482 | 4.677 | 3.09 | | Clay | 100.0 | | | 13.02 | 0.97 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.080 | 15.110 | 0.476 | 3155.8 | 2339.6 | 11.568 | 3.516 | 2.99 | | Clay | 100.0 | | | 14.28 | 0.97 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.250 | 14.710 | 0.521 | 3176.5 | 2349.7 | 11.169 | 3.970 | 3.03 | | Clay | 100.0 | | | 13.90 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.410 | 13.800 | 0.549 | 3196.0 | 2359.2 | 10.344 | 4.497 | 3.09 | | Clay | 100.0 | | | 13.04 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.570 | 14.610 | 0.533 | 3215.5 | 2368.8 | 10.978 | 4.099 | 3.04 | | Clay | 100.0 | | | 13.81 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.740 | 14.060 | 0.444 | 3236.3 | 2378.9 | 10.460 | 3.569 | 3.02 | | Clay | 100.0 | | | 13.29 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.900 | 13.480 | 0.477 | 3255.8 | 2388.4 | 9.925 | 4.026 | 3.07 | | Clay | 100.0 | | | 12.74 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.070 | 13.540 | 0.522 | 3276.5 | 2398.6 | 9.924 | 4.383 | 3.10 | | Clay | 100.0 | | | 12.80 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.230 | 13.890 | 0.543 | 3296.1 | 2408.1 | 10.167 | 4.436 | 3.09 | | Clay | 100.0 | | | 13.13 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.400 | 13.210 | 0.495 | 3316.8 | 2418.2 | 9.554 | 4.287 | 3.10 | | Clay | 100.0 | | | 12.49 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.560 | 12.570 | 0.519 | 3336.3 | 2427.8 | 8.981 | 4.759 | 3.15 | | Clay | 100.0 | | | 11.88 | 0.96 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.720 | 12.530 | 0.525 | 3355.8 | 2437.3 | 8.905 | 4.834 | 3.16 | | Clay | 100.0 | | | 11.84 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.890 | 11.550 | 0.554 | 3376.6 | 2447.4 | 8.059 | 5.613 | 3.23 | | Clay | 100.0 | | | 10.92 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.050 | 10.890 | 0.535 | 3396.1 | 2457.0 | 7.482 | 5.819 | 3.27 | | Clay | 100.0 | | | 10.29 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.220 | 10.260 | 0.532 | 3416.8 | 2467.1 | 6.932 | 6.226 | 3.31 | | Clay | 100.0 | | | 9.70 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.380 | 10.390 | 0.553 | 3436.4 | 2476.6 | 7.003 | 6.376 | 3.31 | | Clay | 100.0 | | | 9.82 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.540 | 11.020 | 0.584 | 3455.9 | 2486.2 | 7.475 | 6.288 | 3.29 | | Clay | 100.0 | | | 10.42 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.710 | 11.770 | 0.558 | 3476.6 | 2496.3 | 8.037 | 5.560 | 3.23 | | Clay | 100.0 | | | 11.12 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.870 | 12.340 | 0.521 | 3496.1 | 2505.9 | 8.454 | 4.922 | 3.18 | | Clay | 100.0 | | | 11.66 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.040 | 12.530 | 0.519 | 3516.9 | 2516.0 | 8.563 | 4.821 | 3.17 | | Clay | 100.0 | | | 11.84 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.200 | 13.150 | 0.568 | 3536.4 | 2525.5 | 9.013 | 4.992 | 3.16 | | Clay | 100.0 | | | 12.43 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.360 | 13.130 | 0.605 | 3555.9 | 2535.1 | 8.956 | 5.327 | 3.18 | | Clay | 100.0 | | | 12.41 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.530 | 13.310 | 0.629 | 3576.7 | 2545.2 | 9.054 | 5.463 | 3.19 | | Clay | 100.0 | | | 12.58 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.690 | 13.900 | 0.687 | 3596.2 | 2554.7 | 9.474 | 5.680 | 3.18 | | Clay | 100.0 | | | 13.14 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.860 | 14.860 | 0.649 | 3616.9 | 2564.9 | 10.177 | 4.970 | 3.12 | | Clay | 100.0 | | | 14.05 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.020 | 15.060 | 0.543 | 3636.4 | 2574.4 | 10.287 | 4.099 | 3.07 | | Clay | 100.0 | | | 14.23 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.180 | 15.620 | 0.439 | 3656.0 | 2583.9 | 10.675 | 3.180 | 2.99 | | Clay | 100.0 | | | 14.76 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.350 | 13.740 | 0.441 | 3676.7 | 2594.1 | 9.176 | 3.701 | 3.08 | | Clay | 100.0 | | | 12.99 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.510 | 13.460 | 0.526 | 3696.2 | 2603.6 | 8.920 | 4.531 | 3.14 | | Clay | 100.0 | | | 12.72 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.680 | 13.490 | 0.581 | 3717.0 | 2613.7 | 8.900 | 4.996 | 3.17 | | Clay | 100.0 | | | 12.75 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.840 | 13.550 | 0.573 | 3736.5 | 2623.3 | 8.906 | 4.901 | 3.16 | | Clay | 100.0 | | | 12.81 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.000 | 12.920 | 0.525 | 3756.0 | 2632.8 | 8.388 | 4.756 | 3.18 | | Clay | 100.0 | | | 12.21 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.170 | 13.270 | 0.545 | 3776.7 | 2642.9 | 8.613 | 4.792 | 3.17 | | Clay | 100.0 | | | 12.54 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.330 | 13.560 | 0.577 | 3796.3 | 2652.5 | 8.793 | 4.948 | 3.17 | | Clay | 100.0 | | | 12.82 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.500 | 13.710 | 0.599 | 3817.0 | 2662.6 | 8.865 | 5.076 | 3.17 | | Clay | 100.0 | | | 12.96 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.660 | 13.650 | 0.574 | 3836.5 | 2672.1 | 8.781 | 4.893 | 3.17 | | Clay | 100.0 | | | 12.90 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.820 | 13.690 | 0.603 | 3856.0 | 2681.7 | 8.772 | 5.123 | 3.18 | | Clay | 100.0 | | | 12.94 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.990 | 13.800 | 0.611 | 3876.8 | 2691.8 | 8.813 | 5.154 | 3.18 | | Clay | 100.0 | | | 13.04 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.150 | 13.780 | 0.552 | 3896.3 | 2701.3 | 8.760 | 4.663 | 3.16 | | Clay | 100.0 | | | 13.02 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.320 | 13.200 | 0.496 | 3917.0 | 2711.5 | 8.292 | 4.410 | 3.16 | | Clay | 100.0 | | | 12.48 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.480 | 12.210 | 0.448 | 3936.6 | 2721.0 | 7.528 | 4.369 | 3.19 | | Clay | 100.0 | | | 11.54 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.640 | 12.200 | 0.469 | 3956.1 | 2730.5 | 7.487 | 4.590 | 3.21 | | Clay | 100.0 | | | 11.53 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.810 | 12.360 | 0.530 | 3976.8 | 2740.7 | 7.569 | 5.106 | 3.23 | | Clay | 100.0 | | | 11.68 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.970 | 13.110 | 0.571 | 3996.3 | 2750.2 | 8.081 | 5.138 | 3.21 | | Clay | 100.0 | | | 12.39 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33.140 | 13.310 | 0.570 | 4017.1 | 2760.3 | 8.188 | 5.045 | 3.20 | | Clay | 100.0 | | | 12.58 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.300 | 12.930 | 0.551 | 4036.6 | 2769.9 | 7.879 | 5.050 | 3.21 | | Clay | 100.0 | | | 12.22 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.460 | 12.870 | 0.527 | 4056.1 | 2779.4 | 7.802 | 4.864 | 3.21 | | Clay | 100.0 | | | 12.16 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.630 | 12.390 | 0.509 | 4076.9 | 2789.5 | 7.422 | 4.914 | 3.23 | | Clay | 100.0 | | | 11.71 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.790 | 12.310 | 0.500 | 4096.4 | 2799.1 | 7.332 | 4.868 | 3.23 | | Clay | 100.0 | | | 11.64 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.960 | 12.280 | 0.474 | 4117.1 | 2809.2 | 7.277 | 4.638 | 3.22 | | Clay | 100.0 | | | 11.61 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.120 | 11.990 | 0.427 | 4136.6 | 2818.8 | 7.040 | 4.304 | 3.21 | | Clay | 100.0 | | | 11.33 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.280 | 11.800 | 0.399 | 4156.2 | 2828.3 | 6.875 | 4.099 | 3.21 | | Clay | 100.0 | | | 11.15 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.450 | 11.340 | 0.385 | 4176.9 | 2838.4 | 6.519 | 4.163 | 3.23 | | Clay | 100.0 | | | 10.72 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.610 | 10.410 | 0.411 | 4196.4 | 2848.0 | 5.837 | 4.950 | 3.31 | | Clay | 100.0 | | | 9.84 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.780 | 9.840 | 0.410 | 4217.2 | 2858.1 | 5.410 | 5.306 | 3.36 | | Clay | 100.0 | | | 9.30 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.940 | 9.990 | 0.430 | 4236.7 | 2867.6 | 5.490 | 5.463 | 3.36 | | Clay | 100.0 | | | 9.44 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.100 | 10.450 | 0.456 | 4256.2 | 2877.2 | 5.785 | 5.483 | 3.34 | | Clay | 100.0 | | | 9.88 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.270 | 10.790 | 0.454 | 4276.9 | 2887.3 | 5.993 | 5.251 | 3.32 | | Clay | 100.0 | | | 10.20 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.430 | 10.630 | 0.457 | 4296.5 | 2896.8 | 5.856 | 5.388 | 3.33 | | Clay | 100.0 | | | 10.05 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.600 | 10.470 | 0.466 | 4317.2 | 2907.0 | 5.718 | 5.601 | 3.35 | | Clay | 100.0 | | | 9.90 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.760 | 10.670 | 0.488 | 4336.7 | 2916.5 | 5.830 | 5.741 | 3.35 | | Clay | 100.0 | | | 10.09 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.930 | 10.850 | 0.476 | 4357.5 | 2926.6 | 5.926 | 5.485 | 3.33 | | Clay | 100.0 | | | 10.26 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.090 | 11.060 | 0.458 | 4377.0 | 2936.2 | 6.043 | 5.159 | 3.31 | | Clay | 100.0 | | | 10.45 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.250 | 11.080 | 0.433 | 4396.5 | 2945.7 | 6.030 | 4.877 | 3.30 | | Clay | 100.0 | | | 10.47 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.420 | 11.010 | 0.426 | 4417.2 | 2955.8 | 5.955 | 4.840 | 3.30 | | Clay | 100.0 | | | 10.41 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.580 | 10.920 | 0.413 | 4436.8 | 2965.4 | 5.869 | 4.751 | 3.30 | | Clay | 100.0 | | | 10.32 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.750 | 10.890 | 0.409 | 4457.5 | 2975.5 | 5.822 | 4.721 | 3.30 | | Clay | 100.0 | | | 10.29 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.910 | 10.880 | 0.384 | 4477.0 | 2985.0 | 5.790 | 4.445 | 3.29 | | Clay | 100.0 | | | 10.28 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.070 | 10.750 | 0.370 | 4496.5 | 2994.6 | 5.678 | 4.347 | 3.29 | | Clay | 100.0 | | | 10.16 | 0.91 | n.a. | n.a. | 0.84 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.240 | 10.800 | 0.389 | 4517.3 | 3004.7 | 5.685 | 4.557 | 3.30 | | Clay | 100.0 | | | 10.21 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.400 | 11.340 | 0.432 | 4536.8 | 3014.2 | 6.019 | 4.765 | 3.29 | | Clay | 100.0 | | | 10.72 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.570 | 11.730 | 0.409 | 4557.5 | 3024.4 | 6.250 | 4.329 | 3.26 | | Clay | 100.0 | | | 11.09 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.730 | 11.110 | 0.407 | 4577.1 | 3033.9 | 5.815 | 4.611 | 3.30 | | Clay | 100.0 | | | 10.50 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.890 | 11.860 | 0.425 | 4596.6 | 3043.4 | 6.283 | 4.448 | 3.26 | | Clay | 100.0 | | | 11.21 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.060 | 12.710 | 0.475 | 4617.3 | 3053.6 | 6.813 | 4.570 | 3.24 | | Clay | 100.0 | | | 12.01 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.220 | 13.470 | 0.460 | 4636.8 | 3063.1 | 7.281 | 4.126 | 3.19 | | Clay | 100.0 | | | 12.73 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.390 | 13.660 | 0.456 | 4657.6 | 3073.2 | 7.374 | 4.022 | 3.18 | | Clay | 100.0 | | | 12.91 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.550 | 13.510 | 0.439 | 4677.1 | 3082.8 | 7.248 | 3.930 | 3.18 | | Clay | 100.0 | | | 12.77 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.710 | 13.200 | 0.456 | 4696.6 | 3092.3 | 7.018 | 4.202 | 3.21 | | Clay | 100.0 | | | 12.48 | 0.90 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.880 | 13.120 | 0.468 | 4717.4 | 3102.4 | 6.937 | 4.351 | 3.22 | | Clay | 100.0 | | | 12.40 | 0.90 | n.a. | n.a. | 0.84 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.040 | 13.150 | 0.461 | 4736.9 | 3112.0 | 6.929 | 4.271 | 3.22 | | Clay | 100.0 | | | 12.43 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.210 | 13.400 | 0.453 | 4757.6 | 3122.1 | 7.060 | 4.114 | 3.20 | | Clay | 100.0 | | | 12.67 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.370 | 14.300 | 0.515 | 4777.1 | 3131.7 | 7.607 | 4.320 | 3.19 | | Clay | 100.0 | | | 13.52 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.530 | 15.910 | 0.664 | 4796.7 | 3141.2 | 8.603 | 4.916 | 3.18 | | Clay | 100.0 | | | 15.04 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.700 | 18.460 | 1.008 | 4817.4 | 3151.3 | 10.187 | 6.277 | 3.18 | | Clay | 100.0 | | | 17.45 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.860 | 23.220 | 1.200 | 4836.9 | 3160.9 | 13.162 | 5.770 | 3.07 | | Clay | 100.0 | | | 21.95 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.030 | 29.140 | 1.349 | 4857.7 | 3171.0 | 16.847 | 5.050 | 2.96 | | Clay | 99.4 | | | 27.54 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.190 | 30.470 | 1.686 | 4877.2 | 3180.5 | 17.627 | 6.015 | 2.99 | | Clay | 100.0 | | | 28.80 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.350 | 29.560 | 1.836 | 4896.7 | 3190.1 | 16.998 | 6.771 | 3.04 | | Clay | 100.0 | | | 27.94 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.520 | 39.510 | 2.179 | 4917.4 | 3200.2 | 23.156 | 5.881 | 2.90 | | Clay | 94.7 | | | 37.34 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.680 | 65.630 | 2.199 | 4937.0 | 3209.7 | 48.472 | 3.481 | 2.51 | | Sand | 63.6 | 219.77 | | 219.77 | 0.90 | 196.89 | 302.43 | 0.83 | 0.587 | 0.875 | ######### | ######## | 2735301.62 | 0.00 | 0.00 |
| 40.850 | 88.060 | 1.732 | 4957.7 | 3219.9 | 65.574 | 2.024 | 2.25 | | Sand | 43.0 | 219.77 | | 219.77 | 0.90 | 196.73 | 289.16 | 0.82 | 0.587 | 0.874 | 53002.034 | ######## | 173574.99 | 0.00 | 0.00 |
| 41.010 | 105.030 | 2.434 | 4977.2 | 3229.4 | 78.453 | 2.374 | 2.24 | | Sand | 42.4 | 219.77 | | 219.77 | 0.89 | 196.58 | 288.37 | 0.82 | 0.587 | 0.873 | 45500.659 | 87405.554 | 148927.08 | 0.00 | 0.00 |
| 41.170 | 232.520 | 2.266 | 4996.7 | 3238.9 | 175.728 | 0.985 | 1.72 | | Sand | 0.9 | | | 219.77 | 0.86 | 189.90 | 189.90 | 0.82 | 0.587 | 0.900 | 1.119 | 2.216 | 3.78 | 0.00 | 0.00 |
| 41.340 | 357.520 | 1.985 | 5017.5 | 3249.1 | 270.792 | 0.559 | 1.42 | | Sand | 0.0 | | | 337.92 | 0.89 | 301.77 | 301.77 | 0.82 | 0.586 | 0.871 | ######### | ######## | 2356602.50 | 0.00 | 0.00 |
| 41.500 | 402.690 | 2.115 | 5037.0 | 3258.6 | 304.791 | 0.528 | 1.36 | | Sand | 0.0 | | | 380.61 | 0.89 | 339.64 | 339.64 | 0.82 | 0.586 | 0.870 | ######### | ######## | ########## | 0.00 | 0.00 |
| 41.670 | 427.900 | 2.765 | 5057.7 | 3268.7 | 323.482 | 0.650 | 1.41 | | Sand | 0.0 | | | 404.44 | 0.89 | 360.60 | 360.60 | 0.82 | 0.586 | 0.870 | ######### | ######## | ########## | 0.00 | 0.00 |
| 41.830 | 433.660 | 2.774 | 5077.3 | 3278.3 | 327.378 | 0.643 | 1.40 | | Sand | 0.0 | | | 409.89 | 0.89 | 365.18 | 365.18 | 0.82 | 0.585 | 0.869 | ######### | ######## | ########## | 0.00 | 0.00 |
| 41.990 | 433.920 | 2.102 | 5096.8 | 3287.8 | 327.093 | 0.487 | 1.32 | | Sand | 0.0 | | | 410.13 | 0.89 | 365.12 | 365.12 | 0.82 | 0.585 | 0.868 | ######### | ######## | ########## | 0.00 | 0.00 |
| 42.160 | 394.200 | 2.763 | 5117.5 | 3297.9 | 296.510 | 0.706 | 1.46 | | Sand | 0.0 | | | 372.59 | 0.89 | 331.42 | 331.42 | 0.82 | 0.585 | 0.867 | ######### | ######## | ########## | 0.00 | 0.00 |
| 42.320 | 358.830 | 2.172 | 5137.0 | 3307.5 | 269.335 | 0.610 | 1.45 | | Sand | 0.0 | | | 339.16 | 0.89 | 301.46 | 301.46 | 0.82 | 0.585 | 0.866 | ######### | ######## | 2191079.75 | 0.00 | 0.00 |
| 42.490 | 389.470 | 1.492 | 5157.8 | 3317.6 | 292.044 | 0.386 | 1.29 | | Sand | 0.0 | | | 368.12 | 0.89 | 326.93 | 326.93 | 0.82 | 0.584 | 0.865 | ######### | ######## | ########## | 0.00 | 0.00 |
| 42.650 | 351.610 | 2.544 | 5177.3 | 3327.1 | 263.080 | 0.729 | 1.51 | | Sand | 0.0 | | | 332.33 | 0.89 | 294.93 | 294.93 | 0.81 | 0.584 | 0.864 | ######### | ######## | 543830.68 | 0.00 | 0.00 |
| 42.810 | 374.640 | 2.118 | 5196.8 | 3336.7 | 280.031 | 0.569 | 1.41 | | Sand | 0.0 | | | 354.10 | 0.89 | 314.01 | 314.01 | 0.81 | 0.584 | 0.863 | ######### | ######## | ########## | 0.00 | 0.00 |
| 42.980 | 407.020 | 1.554 | 5217.6 | 3346.8 | 303.934 | 0.384 | 1.27 | | Sand | 0.0 | | | 384.71 | 0.89 | 340.88 | 340.88 | 0.81 | 0.583 | 0.862 | ######### | ######## | ########## | 0.00 | 0.00 |
| 43.140 | 404.050 | 1.669 | 5237.1 | 3356.3 | 301.266 | 0.416 | 1.30 | | Sand | 0.0 | | | 381.90 | 0.89 | 338.14 | 338.14 | 0.81 | 0.583 | 0.862 | ######### | ######## | ########## | 0.00 | 0.00 |
| 43.310 | 411.660 | 1.779 | 5257.8 | 3366.5 | 306.507 | 0.435 | 1.31 | | Sand | 0.0 | | | 389.09 | 0.88 | 344.23 | 344.23 | 0.81 | 0.583 | 0.861 | ######### | ######## | ########## | 0.00 | 0.00 |
| 43.470 | 388.860 | 1.260 | 5277.3 | 3376.0 | 289.006 | 0.326 | 1.25 | | Sand | 0.0 | | | 367.54 | 0.88 | 324.92 | 324.92 | 0.81 | 0.582 | 0.860 | ######### | ######## | ########## | 0.00 | 0.00 |
| 43.640 | 359.050 | 0.882 | 5298.1 | 3386.1 | 266.292 | 0.247 | 1.21 | | Sand | 0.0 | | | 339.37 | 0.88 | 299.78 | 299.78 | 0.81 | 0.582 | 0.859 | ######### | ######## | 1510484.69 | 0.00 | 0.00 |
| 43.800 | 343.860 | 0.624 | 5317.6 | 3395.7 | 254.577 | 0.183 | 1.17 | | Sand | 0.0 | | | 325.01 | 0.88 | 286.88 | 286.88 | 0.81 | 0.582 | 0.858 | 34354.055 | 64854.804 | 111496.04 | 0.00 | 0.00 |
| 43.960 | 324.590 | 0.707 | 5337.1 | 3405.2 | 239.856 | 0.220 | 1.23 | | Sand | 0.0 | | | 306.80 | 0.88 | 270.60 | 270.60 | 0.81 | 0.581 | 0.857 | 2139.121 | 4034.349 | 6939.56 | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (psf) | Q | F (%) | $I_c$ | Layer "Plastic" PI > 7 | Flag Soil Type | Fines (%) | $q_{cN}$ near interfaces (soft layer) | Thin Layer Factor ($K_H$) | Interpreted $q_{cN}$ | $C_N$ | $q_{c1N}$ | $q_{c1N\text{-}CS}$ | Stress Reduction Coeff, $r_d$ | CSR | $K_\sigma$ for Sand | $CRR_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44.130 | 298.060 | 0.919 | 5357.9 | 3415.3 | 219.754 | 0.311 | 1.33 | | Sand | 0.0 | | | 281.72 | 0.88 | 247.41 | 247.41 | 0.81 | 0.581 | 0.856 | 96.347 | 181.519 | 312.42 | 0.00 | 0.00 |
| 44.290 | 271.980 | 1.138 | 5377.4 | 3424.9 | 200.065 | 0.423 | 1.44 | | Sand | 0.0 | | | 257.07 | 0.87 | 222.40 | 222.40 | 0.81 | 0.581 | 0.856 | 8.615 | 16.215 | 27.92 | 0.00 | 0.00 |
| 44.460 | 256.960 | 1.105 | 5398.1 | 3435.0 | 188.620 | 0.435 | 1.47 | | Sand | 0.0 | | | 242.87 | 0.86 | 208.11 | 208.11 | 0.80 | 0.580 | 0.860 | 3.079 | 5.823 | 10.03 | 0.00 | 0.00 |
| 44.620 | 284.500 | 0.986 | 5417.6 | 3444.6 | 208.753 | 0.350 | 1.38 | | Sand | 0.0 | | | 268.90 | 0.87 | 233.80 | 233.80 | 0.80 | 0.580 | 0.854 | 23.298 | 43.764 | 75.45 | 0.00 | 0.00 |
| 44.780 | 297.690 | 0.878 | 5437.2 | 3454.1 | 218.215 | 0.298 | 1.33 | | Sand | 0.0 | | | 281.37 | 0.87 | 246.18 | 246.18 | 0.80 | 0.580 | 0.853 | 83.786 | 157.230 | 271.25 | 0.00 | 0.00 |
| 44.950 | 343.020 | 1.283 | 5457.9 | 3464.2 | 251.374 | 0.377 | 1.33 | | Sand | 0.0 | | | 324.22 | 0.88 | 284.68 | 284.68 | 0.80 | 0.579 | 0.852 | 22836.223 | 42809.843 | 73898.96 | 0.00 | 0.00 |
| 45.110 | 305.110 | 1.439 | 5477.4 | 3473.8 | 223.056 | 0.476 | 1.44 | | Sand | 0.0 | | | 288.38 | 0.88 | 252.87 | 252.87 | 0.80 | 0.579 | 0.851 | 184.222 | 345.016 | 595.92 | 0.00 | 0.00 |
| 45.280 | 375.960 | 0.961 | 5498.2 | 3483.9 | 274.912 | 0.258 | 1.21 | | Sand | 0.0 | | | 355.35 | 0.88 | 311.55 | 311.55 | 0.80 | 0.579 | 0.850 | ######### | ######## | ########## | 0.00 | 0.00 |
| 45.440 | 328.380 | 0.798 | 5517.7 | 3493.4 | 239.530 | 0.245 | 1.25 | | Sand | 0.0 | | | 310.38 | 0.88 | 271.92 | 271.92 | 0.80 | 0.578 | 0.850 | 2626.333 | 4908.894 | 8489.14 | 0.00 | 0.00 |
| 45.600 | 291.700 | 0.775 | 5537.2 | 3503.0 | 212.251 | 0.268 | 1.31 | | Sand | 0.0 | | | 275.71 | 0.87 | 239.35 | 239.35 | 0.80 | 0.578 | 0.849 | 40.243 | 75.146 | 130.03 | 0.00 | 0.00 |
| 45.770 | 269.050 | 0.581 | 5557.9 | 3513.1 | 195.322 | 0.218 | 1.30 | | Sand | 0.0 | | | 254.30 | 0.86 | 217.68 | 217.68 | 0.80 | 0.578 | 0.848 | 5.980 | 11.156 | 19.32 | 0.00 | 0.00 |
| 45.930 | 271.490 | 0.490 | 5577.5 | 3522.6 | 196.838 | 0.182 | 1.27 | | Sand | 0.0 | | | 256.61 | 0.86 | 219.76 | 219.76 | 0.80 | 0.577 | 0.847 | 7.003 | 13.050 | 22.61 | 0.00 | 0.00 |
| 46.100 | 250.340 | 0.381 | 5598.2 | 3532.8 | 181.076 | 0.154 | 1.28 | | Sand | 0.0 | | | 236.62 | 0.84 | 199.82 | 199.82 | 0.80 | 0.577 | 0.866 | 1.871 | 3.562 | 6.18 | 0.00 | 0.00 |
| 46.260 | 222.660 | 0.581 | 5617.7 | 3542.3 | 160.605 | 0.264 | 1.42 | | Sand | 0.0 | | | 210.45 | 0.83 | 174.34 | 174.34 | 0.80 | 0.576 | 0.897 | 0.585 | 1.049 | 1.82 | 0.00 | 0.00 |
| 46.420 | 215.400 | 0.449 | 5637.2 | 3551.8 | 155.085 | 0.211 | 1.39 | | Sand | 0.0 | | | 203.59 | 0.82 | 167.61 | 167.61 | 0.79 | 0.576 | 0.903 | 0.466 | 0.798 | 1.38 | 0.00 | 0.00 |
| 46.590 | 230.760 | 0.442 | 5658.0 | 3562.0 | 166.047 | 0.194 | 1.35 | | Sand | 0.0 | | | 218.11 | 0.83 | 181.26 | 181.26 | 0.79 | 0.576 | 0.888 | 0.764 | 1.433 | 2.49 | 0.00 | 0.00 |
| 46.750 | 214.740 | 0.411 | 5677.5 | 3571.5 | 154.163 | 0.194 | 1.38 | | Sand | 0.0 | | | 202.97 | 0.82 | 166.62 | 166.62 | 0.79 | 0.575 | 0.903 | 0.451 | 0.767 | 1.33 | 0.00 | 0.00 |
| 46.920 | 209.080 | 0.327 | 5698.2 | 3581.6 | 149.825 | 0.158 | 1.36 | | Sand | 0.0 | | | 197.62 | 0.82 | 161.37 | 161.37 | 0.79 | 0.575 | 0.907 | 0.386 | 0.633 | 1.10 | 0.01 | 0.00 |
| 47.080 | 195.370 | 0.545 | 5717.8 | 3591.2 | 139.672 | 0.283 | 1.49 | | Sand | 0.0 | | | 184.66 | 0.81 | 149.07 | 149.07 | 0.79 | 0.575 | 0.916 | 0.282 | 0.429 | 0.75 | 0.02 | 0.00 |
| 47.240 | 187.570 | 0.430 | 5737.3 | 3600.7 | 133.828 | 0.233 | 1.47 | | Sand | 0.0 | | | 177.29 | 0.80 | 142.07 | 142.07 | 0.79 | 0.574 | 0.921 | 0.244 | 0.355 | 0.62 | 0.02 | 0.00 |
| 47.410 | 189.680 | 0.498 | 5758.0 | 3610.8 | 135.160 | 0.266 | 1.49 | | Sand | 0.0 | | | 179.28 | 0.80 | 143.72 | 143.72 | 0.79 | 0.574 | 0.919 | 0.252 | 0.370 | 0.65 | 0.02 | 0.00 |
| 47.570 | 206.770 | 0.721 | 5777.5 | 3620.4 | 147.324 | 0.354 | 1.51 | | Sand | 0.0 | | | 195.43 | 0.81 | 158.55 | 158.55 | 0.79 | 0.573 | 0.907 | 0.357 | 0.574 | 1.00 | 0.01 | 0.00 |
| 47.740 | 227.920 | 0.780 | 5798.3 | 3630.5 | 162.372 | 0.346 | 1.47 | | Sand | 0.0 | | | 215.43 | 0.82 | 177.27 | 177.27 | 0.79 | 0.573 | 0.889 | 0.653 | 1.186 | 2.07 | 0.00 | 0.00 |
| 47.900 | 224.190 | 0.651 | 5817.8 | 3640.0 | 159.464 | 0.294 | 1.44 | | Sand | 0.0 | | | 211.90 | 0.82 | 173.71 | 173.71 | 0.79 | 0.573 | 0.892 | 0.572 | 1.015 | 1.77 | 0.00 | 0.00 |
| 48.060 | 236.230 | 0.883 | 5837.3 | 3649.6 | 167.914 | 0.379 | 1.48 | | Sand | 0.0 | | | 223.28 | 0.83 | 184.41 | 184.41 | 0.79 | 0.572 | 0.879 | 0.872 | 1.661 | 2.90 | 0.00 | 0.00 |
| 48.230 | 289.410 | 2.602 | 5858.1 | 3659.7 | 205.894 | 0.908 | 1.65 | | Sand | 0.0 | | | 273.54 | 0.85 | 233.72 | 233.72 | 0.78 | 0.572 | 0.836 | 23.127 | 42.518 | 74.34 | 0.00 | 0.00 |
| 48.390 | 335.430 | 2.439 | 5877.6 | 3669.2 | 238.651 | 0.734 | 1.54 | | Sand | 0.0 | | | 317.04 | 0.86 | 274.19 | 274.19 | 0.78 | 0.572 | 0.835 | 3764.069 | 6913.456 | 12095.54 | 0.00 | 0.00 |
| 48.560 | 350.280 | 2.570 | 5898.3 | 3679.4 | 248.959 | 0.740 | 1.53 | | Sand | 0.0 | | | 331.08 | 0.86 | 286.12 | 286.12 | 0.78 | 0.571 | 0.834 | 29780.584 | 54643.728 | 95670.18 | 0.00 | 0.00 |
| 48.720 | 362.440 | 2.872 | 5917.8 | 3688.9 | 257.335 | 0.799 | 1.54 | | Sand | 0.0 | | | 342.57 | 0.86 | 295.85 | 295.85 | 0.78 | 0.571 | 0.833 | ########## | ######## | 648387.96 | 0.00 | 0.00 |
| 48.880 | 367.490 | 1.962 | 5937.4 | 3698.4 | 260.607 | 0.538 | 1.42 | | Sand | 0.0 | | | 347.34 | 0.86 | 299.77 | 299.77 | 0.78 | 0.570 | 0.832 | ########## | ######## | 1489770.19 | 0.00 | 0.00 |
| 49.050 | 384.230 | 1.879 | 5958.1 | 3708.6 | 272.194 | 0.493 | 1.38 | | Sand | 0.0 | | | 363.17 | 0.86 | 313.19 | 313.19 | 0.78 | 0.570 | 0.832 | ########## | ######## | ########## | 0.00 | 0.00 |
| 49.210 | 372.750 | 1.632 | 5977.6 | 3718.1 | 263.653 | 0.441 | 1.36 | | Sand | 0.0 | | | 352.32 | 0.86 | 303.63 | 303.63 | 0.78 | 0.570 | 0.831 | ########## | ######## | 3508986.53 | 0.00 | 0.00 |
| 49.380 | 356.110 | 1.571 | 5998.4 | 3728.2 | 251.438 | 0.445 | 1.38 | | Sand | 0.0 | | | 336.59 | 0.86 | 289.87 | 289.87 | 0.78 | 0.569 | 0.830 | 60734.302 | ######## | 194854.29 | 0.00 | 0.00 |
| 49.540 | 318.040 | 1.580 | 6017.9 | 3737.8 | 224.036 | 0.502 | 1.45 | | Sand | 0.0 | | | 300.60 | 0.86 | 258.71 | 258.71 | 0.78 | 0.569 | 0.829 | 388.387 | 708.605 | 1245.76 | 0.00 | 0.00 |
| 49.700 | 278.180 | 0.832 | 6037.4 | 3747.3 | 195.434 | 0.302 | 1.37 | | Sand | 0.0 | | | 262.93 | 0.84 | 221.21 | 221.21 | 0.78 | 0.568 | 0.829 | 7.838 | 14.287 | 25.13 | 0.00 | 0.00 |
| 49.870 | 259.030 | 0.937 | 6058.1 | 3757.5 | 181.580 | 0.366 | 1.44 | | Sand | 0.0 | | | 244.83 | 0.83 | 203.10 | 203.10 | 0.78 | 0.568 | 0.843 | 2.261 | 4.195 | 7.39 | 0.00 | 0.00 |
| 50.030 | 204.900 | 1.204 | 6077.7 | 3767.0 | 142.997 | 0.596 | 1.65 | | Sand | 0.0 | | | 193.67 | 0.80 | 154.07 | 154.07 | 0.77 | 0.568 | 0.904 | 0.318 | 0.494 | 0.87 | 0.01 | 0.00 |
| 50.200 | 211.300 | 1.133 | 6098.4 | 3777.1 | 147.326 | 0.544 | 1.61 | | Sand | 0.0 | | | 199.72 | 0.80 | 159.51 | 159.51 | 0.77 | 0.567 | 0.899 | 0.366 | 0.588 | 1.04 | 0.01 | 0.00 |
| 50.360 | 250.270 | 1.159 | 6117.9 | 3786.7 | 174.667 | 0.469 | 1.52 | | Sand | 0.0 | | | 236.55 | 0.82 | 194.42 | 194.42 | 0.77 | 0.567 | 0.856 | 1.400 | 2.637 | 4.65 | 0.00 | 0.00 |
| 50.520 | 273.390 | 0.888 | 6137.4 | 3796.2 | 190.756 | 0.328 | 1.40 | | Sand | 0.0 | | | 258.40 | 0.83 | 215.68 | 215.68 | 0.77 | 0.566 | 0.825 | 5.163 | 9.367 | 16.54 | 0.00 | 0.00 |
| 50.690 | 280.280 | 1.046 | 6158.2 | 3806.3 | 195.350 | 0.377 | 1.42 | | Sand | 0.0 | | | 264.91 | 0.84 | 221.95 | 221.95 | 0.77 | 0.566 | 0.824 | 8.310 | 15.061 | 26.61 | 0.00 | 0.00 |
| 50.850 | 263.800 | 1.312 | 6177.7 | 3815.9 | 183.500 | 0.503 | 1.52 | | Sand | 0.0 | | | 249.34 | 0.83 | 206.32 | 206.32 | 0.77 | 0.566 | 0.833 | 2.750 | 5.038 | 8.91 | 0.00 | 0.00 |
| 51.020 | 248.220 | 1.895 | 6198.4 | 3826.0 | 172.298 | 0.773 | 1.66 | | Sand | 0.0 | | | 234.61 | 0.82 | 191.74 | 191.74 | 0.77 | 0.565 | 0.858 | 1.223 | 2.310 | 4.09 | 0.00 | 0.00 |
| 51.180 | 267.810 | 1.908 | 6218.0 | 3835.5 | 185.830 | 0.721 | 1.61 | | Sand | 0.0 | | | 253.13 | 0.83 | 209.65 | 209.65 | 0.77 | 0.565 | 0.824 | 3.403 | 6.172 | 10.93 | 0.00 | 0.00 |
| 51.350 | 284.770 | 1.322 | 6238.7 | 3845.7 | 197.468 | 0.469 | 1.47 | | Sand | 0.0 | | | 269.16 | 0.84 | 225.37 | 225.37 | 0.77 | 0.564 | 0.821 | 10.988 | 19.842 | 35.16 | 0.00 | 0.00 |
| 51.510 | 256.440 | 0.825 | 6258.2 | 3855.2 | 177.379 | 0.326 | 1.42 | | Sand | 0.0 | | | 242.38 | 0.82 | 198.70 | 198.70 | 0.77 | 0.564 | 0.845 | 1.758 | 3.266 | 5.79 | 0.00 | 0.00 |
| 51.670 | 233.580 | 0.573 | 6277.7 | 3864.7 | 161.166 | 0.249 | 1.40 | | Sand | 0.0 | | | 220.78 | 0.80 | 177.68 | 177.68 | 0.77 | 0.564 | 0.875 | 0.663 | 1.191 | 2.11 | 0.00 | 0.00 |
| 51.840 | 190.400 | 1.791 | 6298.5 | 3874.9 | 130.788 | 0.956 | 1.81 | | Sand | 7.7 | 220.78 | | 220.78 | 0.81 | 178.10 | 181.49 | 0.77 | 0.563 | 0.870 | 0.771 | 1.419 | 2.52 | 0.00 | 0.00 |
| 52.000 | 110.920 | 1.846 | 6318.0 | 3884.4 | 75.175 | 1.713 | 2.16 | | Sand | 35.6 | 220.78 | | 220.78 | 0.85 | 188.09 | 270.16 | 0.76 | 0.563 | 0.818 | 1998.922 | 3596.239 | 6391.26 | 0.00 | 0.00 |
| 52.170 | 48.490 | 1.740 | 6338.7 | 3894.5 | 23.274 | 3.838 | 2.77 | | Clay | 84.7 | | | 45.83 | 0.85 | n.a. | n.a. | 0.76 | 0.562 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 52.330 | 24.420 | 0.946 | 6358.3 | 3904.1 | 10.881 | 4.452 | 3.07 | | Clay | 100.0 | | | 23.08 | 0.85 | n.a. | n.a. | 0.76 | 0.562 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 52.490 | 18.640 | 0.741 | 6377.8 | 3913.6 | 7.896 | 4.798 | 3.20 | | Clay | 100.0 | | | 17.62 | 0.85 | n.a. | n.a. | 0.76 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 52.660 | 18.340 | 0.613 | 6398.5 | 3923.7 | 7.718 | 4.049 | 3.16 | | Clay | 100.0 | | | 17.33 | 0.85 | n.a. | n.a. | 0.76 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 52.820 | 17.940 | 0.586 | 6418.0 | 3933.3 | 7.490 | 3.978 | 3.17 | | Clay | 100.0 | | | 16.96 | 0.85 | n.a. | n.a. | 0.76 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 52.990 | 18.700 | 0.613 | 6438.8 | 3943.4 | 7.851 | 3.961 | 3.15 | | Clay | 100.0 | | | 17.67 | 0.85 | n.a. | n.a. | 0.76 | 0.560 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 53.150 | 20.370 | 0.730 | 6458.3 | 3952.9 | 8.672 | 4.259 | 3.14 | | Clay | 100.0 | | | 19.25 | 0.85 | n.a. | n.a. | 0.76 | 0.560 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 53.310 | 21.720 | 1.001 | 6477.8 | 3962.5 | 9.328 | 5.416 | 3.17 | | Clay | 100.0 | | | 20.53 | 0.85 | n.a. | n.a. | 0.76 | 0.559 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 53.480 | 25.730 | 1.308 | 6498.6 | 3972.6 | 11.318 | 5.818 | 3.13 | | Clay | 100.0 | | | 24.32 | 0.85 | n.a. | n.a. | 0.76 | 0.559 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 53.640 | 33.300 | 1.428 | 6518.1 | 3982.1 | 15.088 | 4.753 | 2.97 | | Clay | 100.0 | | | 31.47 | 0.85 | n.a. | n.a. | 0.76 | 0.558 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 53.810 | 43.700 | 1.118 | 6538.8 | 3992.3 | 20.254 | 2.766 | 2.73 | | Clay | 81.2 | | | 41.30 | 0.85 | n.a. | n.a. | 0.76 | 0.558 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 53.970 | 49.050 | 1.022 | 6558.3 | 4001.8 | 22.875 | 2.233 | 2.63 | | Clay | 73.4 | | | 46.36 | 0.85 | n.a. | n.a. | 0.75 | 0.558 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 54.130 | 41.230 | 0.871 | 6577.9 | 4011.3 | 18.917 | 2.295 | 2.70 | | Clay | 79.3 | | | 38.97 | 0.84 | n.a. | n.a. | 0.75 | 0.557 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 54.300 | 26.560 | 0.837 | 6598.6 | 4021.5 | 11.568 | 3.600 | 2.99 | | Clay | 100.0 | | | 25.10 | 0.84 | n.a. | n.a. | 0.75 | 0.557 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 54.460 | 19.690 | 0.699 | 6618.1 | 4031.0 | 8.127 | 4.267 | 3.16 | | Clay | 100.0 | | | 18.61 | 0.84 | n.a. | n.a. | 0.75 | 0.556 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 54.630 | 20.090 | 0.548 | 6638.9 | 4041.1 | 8.300 | 3.269 | 3.08 | | Clay | 100.0 | | | 18.99 | 0.84 | n.a. | n.a. | 0.75 | 0.556 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 54.790 | 20.980 | 0.495 | 6658.4 | 4050.7 | 8.715 | 2.804 | 3.03 | | Clay | 100.0 | | | 19.83 | 0.84 | n.a. | n.a. | 0.75 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 54.950 | 18.360 | 0.440 | 6677.9 | 4060.2 | 7.399 | 2.929 | 3.10 | | Clay | 100.0 | | | 17.35 | 0.84 | n.a. | n.a. | 0.75 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55.120 | 18.050 | 0.398 | 6698.6 | 4070.4 | 7.223 | 2.706 | 3.09 | | Clay | 100.0 | | | 17.06 | 0.84 | n.a. | n.a. | 0.75 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 55.280 | 16.520 | 0.372 | 6718.2 | 4079.9 | 6.452 | 2.825 | 3.14 | | Clay | 100.0 | | | 15.61 | 0.84 | n.a. | n.a. | 0.75 | 0.554 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 55.450 | 15.900 | 0.371 | 6738.9 | 4090.0 | 6.127 | 2.962 | 3.17 | | Clay | 100.0 | | | 15.03 | 0.84 | n.a. | n.a. | 0.75 | 0.554 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 55.610 | 16.180 | 0.374 | 6758.4 | 4099.6 | 6.245 | 2.924 | 3.16 | | Clay | 100.0 | | | 15.29 | 0.84 | n.a. | n.a. | 0.75 | 0.553 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 55.770 | 16.570 | 0.411 | 6777.9 | 4109.1 | 6.416 | 3.120 | 3.17 | | Clay | 100.0 | | | 15.66 | 0.84 | n.a. | n.a. | 0.74 | 0.553 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 55.940 | 17.010 | 0.468 | 6798.7 | 4119.2 | 6.608 | 3.440 | 3.18 | | Clay | 100.0 | | | 16.08 | 0.84 | n.a. | n.a. | 0.74 | 0.552 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 56.100 | 18.040 | 0.605 | 6818.2 | 4128.8 | 7.087 | 4.134 | 3.20 | | Clay | 100.0 | | | 17.05 | 0.84 | n.a. | n.a. | 0.74 | 0.552 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 56.270 | 19.840 | 0.663 | 6838.9 | 4138.9 | 7.935 | 4.039 | 3.15 | | Clay | 100.0 | | | 18.75 | 0.84 | n.a. | n.a. | 0.74 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 56.430 | 27.500 | 0.505 | 6858.5 | 4148.4 | 11.605 | 2.097 | 2.86 | | Clay | 91.6 | | | 25.99 | 0.84 | n.a. | n.a. | 0.74 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 56.590 | 33.400 | 0.413 | 6878.0 | 4158.0 | 14.411 | 1.378 | 2.68 | | Clay | 77.5 | | | 31.57 | 0.84 | n.a. | n.a. | 0.74 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 56.760 | 23.860 | 0.349 | 6898.7 | 4168.1 | 9.794 | 1.712 | 2.87 | | Clay | 92.9 | | | 22.55 | 0.84 | n.a. | n.a. | 0.74 | 0.550 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 56.920 | 18.100 | 0.416 | 6918.2 | 4177.6 | 7.009 | 2.843 | 3.11 | | Clay | 100.0 | | | 17.11 | 0.84 | n.a. | n.a. | 0.74 | 0.550 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 57.090 | 17.150 | 0.487 | 6939.0 | 4187.8 | 6.534 | 3.558 | 3.19 | | Clay | 100.0 | | | 16.21 | 0.84 | n.a. | n.a. | 0.74 | 0.549 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 57.250 | 18.060 | 0.551 | 6958.5 | 4197.3 | 6.948 | 3.780 | 3.18 | | Clay | 100.0 | | | 17.07 | 0.83 | n.a. | n.a. | 0.74 | 0.549 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 57.410 | 19.090 | 0.586 | 6978.0 | 4206.8 | 7.417 | 3.755 | 3.16 | | Clay | 100.0 | | | 18.04 | 0.83 | n.a. | n.a. | 0.74 | 0.548 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 57.580 | 18.670 | 0.598 | 6998.8 | 4217.0 | 7.195 | 3.941 | 3.18 | | Clay | 100.0 | | | 17.65 | 0.83 | n.a. | n.a. | 0.74 | 0.548 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 57.740 | 17.660 | 0.581 | 7018.3 | 4226.5 | 6.696 | 4.104 | 3.22 | | Clay | 100.0 | | | 16.69 | 0.83 | n.a. | n.a. | 0.73 | 0.548 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 57.910 | 17.290 | 0.550 | 7039.0 | 4236.6 | 6.501 | 3.997 | 3.22 | | Clay | 100.0 | | | 16.34 | 0.83 | n.a. | n.a. | 0.73 | 0.547 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 58.070 | 17.360 | 0.552 | 7058.5 | 4246.2 | 6.514 | 3.991 | 3.22 | | Clay | 100.0 | | | 16.41 | 0.83 | n.a. | n.a. | 0.73 | 0.547 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 58.230 | 18.080 | 0.571 | 7078.1 | 4255.7 | 6.834 | 3.927 | 3.20 | | Clay | 100.0 | | | 17.09 | 0.83 | n.a. | n.a. | 0.73 | 0.546 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 58.400 | 18.440 | 0.636 | 7098.8 | 4265.8 | 6.981 | 4.274 | 3.21 | | Clay | 100.0 | | | 17.43 | 0.83 | n.a. | n.a. | 0.73 | 0.546 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 58.560 | 19.280 | 0.686 | 7118.3 | 4275.4 | 7.354 | 4.364 | 3.20 | | Clay | 100.0 | | | 18.22 | 0.83 | n.a. | n.a. | 0.73 | 0.545 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 58.730 | 19.730 | 0.720 | 7139.1 | 4285.5 | 7.542 | 4.453 | 3.20 | | Clay | 100.0 | | | 18.65 | 0.83 | n.a. | n.a. | 0.73 | 0.545 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 58.890 | 20.390 | 0.728 | 7158.6 | 4295.0 | 7.828 | 4.329 | 3.18 | | Clay | 100.0 | | | 19.27 | 0.83 | n.a. | n.a. | 0.73 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 59.060 | 20.930 | 0.737 | 7179.3 | 4305.2 | 8.056 | 4.250 | 3.16 | | Clay | 100.0 | | | 19.78 | 0.83 | n.a. | n.a. | 0.73 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 59.220 | 20.860 | 0.701 | 7198.8 | 4314.7 | 8.001 | 4.062 | 3.15 | | Clay | 100.0 | | | 19.72 | 0.83 | n.a. | n.a. | 0.73 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 59.380 | 20.790 | 0.695 | 7218.4 | 4324.2 | 7.946 | 4.045 | 3.15 | | Clay | 100.0 | | | 19.65 | 0.83 | n.a. | n.a. | 0.73 | 0.543 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 59.550 | 20.640 | 0.720 | 7239.1 | 4334.4 | 7.854 | 4.233 | 3.17 | | Clay | 100.0 | | | 19.51 | 0.83 | n.a. | n.a. | 0.73 | 0.543 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 59.710 | 21.370 | 0.749 | 7258.6 | 4343.9 | 8.168 | 4.221 | 3.15 | | Clay | 100.0 | | | 20.20 | 0.83 | n.a. | n.a. | 0.73 | 0.542 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 59.880 | 21.940 | 0.776 | 7279.4 | 4354.0 | 8.406 | 4.240 | 3.15 | | Clay | 100.0 | | | 20.74 | 0.83 | n.a. | n.a. | 0.72 | 0.542 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 60.040 | 21.650 | 0.736 | 7298.9 | 4363.6 | 8.250 | 4.088 | 3.14 | | Clay | 100.0 | | | 20.46 | 0.83 | n.a. | n.a. | 0.72 | 0.541 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 60.200 | 20.730 | 0.609 | 7318.4 | 4373.1 | 7.807 | 3.567 | 3.13 | | Clay | 100.0 | | | 19.59 | 0.83 | n.a. | n.a. | 0.72 | 0.541 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 60.370 | 19.110 | 0.500 | 7339.1 | 4383.3 | 7.045 | 3.238 | 3.14 | | Clay | 100.0 | | | 18.06 | 0.83 | n.a. | n.a. | 0.72 | 0.540 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 60.530 | 17.590 | 0.485 | 7358.7 | 4392.8 | 6.333 | 3.489 | 3.20 | | Clay | 100.0 | | | 16.63 | 0.82 | n.a. | n.a. | 0.72 | 0.540 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 60.700 | 17.340 | 0.503 | 7379.4 | 4402.9 | 6.201 | 3.687 | 3.22 | | Clay | 100.0 | | | 16.39 | 0.82 | n.a. | n.a. | 0.72 | 0.540 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 60.860 | 17.440 | 0.573 | 7398.9 | 4412.5 | 6.228 | 4.169 | 3.25 | | Clay | 100.0 | | | 16.48 | 0.82 | n.a. | n.a. | 0.72 | 0.539 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 61.020 | 17.440 | 0.652 | 7418.4 | 4422.0 | 6.210 | 4.745 | 3.28 | | Clay | 100.0 | | | 16.48 | 0.82 | n.a. | n.a. | 0.72 | 0.539 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 61.190 | 18.820 | 0.676 | 7439.2 | 4432.1 | 6.814 | 4.474 | 3.23 | | Clay | 100.0 | | | 17.79 | 0.82 | n.a. | n.a. | 0.72 | 0.538 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 61.350 | 20.460 | 0.650 | 7458.7 | 4441.7 | 7.534 | 3.883 | 3.16 | | Clay | 100.0 | | | 19.34 | 0.82 | n.a. | n.a. | 0.72 | 0.538 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 61.520 | 23.390 | 0.503 | 7479.4 | 4451.8 | 8.828 | 2.562 | 3.00 | | Clay | 100.0 | | | 22.11 | 0.82 | n.a. | n.a. | 0.72 | 0.537 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 61.680 | 24.720 | 0.442 | 7499.0 | 4461.3 | 9.401 | 2.108 | 2.94 | | Clay | 97.8 | | | 23.36 | 0.82 | n.a. | n.a. | 0.72 | 0.537 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 61.840 | 21.590 | 0.425 | 7518.5 | 4470.9 | 7.976 | 2.381 | 3.02 | | Clay | 100.0 | | | 20.41 | 0.82 | n.a. | n.a. | 0.71 | 0.536 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.010 | 17.710 | 0.400 | 7539.2 | 4481.0 | 6.222 | 2.866 | 3.16 | | Clay | 100.0 | | | 16.74 | 0.82 | n.a. | n.a. | 0.71 | 0.536 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.170 | 18.110 | 0.574 | 7558.7 | 4490.5 | 6.383 | 4.006 | 3.23 | | Clay | 100.0 | | | 17.12 | 0.82 | n.a. | n.a. | 0.71 | 0.535 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.340 | 22.580 | 0.448 | 7579.5 | 4500.7 | 8.350 | 2.385 | 3.01 | | Clay | 100.0 | | | 21.34 | 0.82 | n.a. | n.a. | 0.71 | 0.535 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.500 | 25.420 | 0.462 | 7599.0 | 4510.2 | 9.587 | 2.138 | 2.93 | | Clay | 97.5 | | | 24.03 | 0.82 | n.a. | n.a. | 0.71 | 0.535 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.660 | 18.730 | 0.571 | 7618.5 | 4519.7 | 6.602 | 3.824 | 3.21 | | Clay | 100.0 | | | 17.70 | 0.82 | n.a. | n.a. | 0.71 | 0.534 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.830 | 17.820 | 0.588 | 7639.3 | 4529.9 | 6.181 | 4.202 | 3.25 | | Clay | 100.0 | | | 16.84 | 0.82 | n.a. | n.a. | 0.71 | 0.534 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 62.990 | 24.310 | 0.494 | 7658.8 | 4539.4 | 9.023 | 2.411 | 2.98 | | Clay | 100.0 | | | 22.98 | 0.82 | n.a. | n.a. | 0.71 | 0.533 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 63.160 | 25.780 | 0.477 | 7679.5 | 4549.5 | 9.645 | 2.173 | 2.93 | | Clay | 97.6 | | | 24.37 | 0.82 | n.a. | n.a. | 0.71 | 0.533 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 63.320 | 20.370 | 0.460 | 7699.0 | 4559.1 | 7.247 | 2.785 | 3.10 | | Clay | 100.0 | | | 19.25 | 0.82 | n.a. | n.a. | 0.71 | 0.532 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 63.480 | 18.320 | 0.436 | 7718.6 | 4568.6 | 6.330 | 3.016 | 3.16 | | Clay | 100.0 | | | 17.32 | 0.82 | n.a. | n.a. | 0.71 | 0.532 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 63.650 | 18.680 | 0.436 | 7739.3 | 4578.7 | 6.469 | 2.941 | 3.15 | | Clay | 100.0 | | | 17.66 | 0.82 | n.a. | n.a. | 0.71 | 0.531 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 63.810 | 19.090 | 0.437 | 7758.8 | 4588.3 | 6.630 | 2.871 | 3.14 | | Clay | 100.0 | | | 18.04 | 0.82 | n.a. | n.a. | 0.71 | 0.531 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 63.980 | 19.660 | 0.427 | 7779.6 | 4598.4 | 6.859 | 2.708 | 3.11 | | Clay | 100.0 | | | 18.58 | 0.81 | n.a. | n.a. | 0.70 | 0.531 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 64.140 | 19.410 | 0.444 | 7799.1 | 4607.9 | 6.732 | 2.860 | 3.13 | | Clay | 100.0 | | | 18.35 | 0.81 | n.a. | n.a. | 0.70 | 0.530 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 64.300 | 19.160 | 0.529 | 7818.6 | 4617.5 | 6.606 | 3.467 | 3.18 | | Clay | 100.0 | | | 18.11 | 0.81 | n.a. | n.a. | 0.70 | 0.530 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 64.470 | 20.540 | 0.750 | 7839.3 | 4627.6 | 7.183 | 4.514 | 3.22 | | Clay | 100.0 | | | 19.41 | 0.81 | n.a. | n.a. | 0.70 | 0.529 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 64.630 | 24.120 | 1.383 | 7858.9 | 4637.1 | 8.708 | 6.852 | 3.26 | | Clay | 100.0 | | | 22.80 | 0.81 | n.a. | n.a. | 0.70 | 0.529 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 64.800 | 32.200 | 1.569 | 7879.6 | 4647.3 | 12.162 | 5.550 | 3.09 | | Clay | 100.0 | | | 30.43 | 0.81 | n.a. | n.a. | 0.70 | 0.528 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 64.960 | 46.800 | 1.320 | 7899.1 | 4656.8 | 18.403 | 3.080 | 2.79 | | Clay | 86.2 | | | 44.23 | 0.81 | n.a. | n.a. | 0.70 | 0.528 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 65.120 | 84.210 | 0.949 | 7918.6 | 4666.4 | 51.078 | 1.182 | 2.19 | | Sand | 37.8 | | | 79.59 | 0.68 | 54.41 | 107.91 | 0.70 | 0.527 | 0.911 | 0.149 | 0.177 | 0.33 | 0.03 | 0.00 |
| 65.290 | 90.170 | 0.654 | 7939.4 | 4676.5 | 54.805 | 0.758 | 2.05 | | Sand | 27.1 | | | 85.23 | 0.67 | 57.49 | 100.75 | 0.70 | 0.527 | 0.915 | 0.138 | 0.160 | 0.30 | 0.03 | 0.00 |
| 65.450 | 83.920 | 0.683 | 7958.9 | 4686.0 | 50.774 | 0.854 | 2.11 | | Sand | 31.6 | | | 79.32 | 0.67 | 53.50 | 101.30 | 0.70 | 0.527 | 0.915 | 0.139 | 0.161 | 0.31 | 0.03 | 0.00 |
| 65.620 | 72.230 | 0.914 | 7979.6 | 4696.2 | 43.295 | 1.340 | 2.28 | | Sand | 45.0 | | | 68.27 | 0.67 | 46.05 | 101.97 | 0.70 | 0.526 | 0.914 | 0.140 | 0.163 | 0.31 | 0.03 | 0.00 |
| 65.780 | 52.720 | 1.365 | 7999.2 | 4705.7 | 20.707 | 2.801 | 2.72 | | Clay | 80.9 | | | 49.83 | 0.81 | n.a. | n.a. | 0.70 | 0.526 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 65.940 | 36.850 | 1.675 | 8018.7 | 4715.2 | 13.930 | 5.099 | 3.02 | | Clay | 100.0 | | | 34.83 | 0.81 | n.a. | n.a. | 0.70 | 0.525 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 66.110 | 37.190 | 2.061 | 8039.4 | 4725.4 | 14.039 | 6.215 | 3.07 | | Clay | 100.0 | | | 35.15 | 0.81 | n.a. | n.a. | 0.69 | 0.525 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 66.270 | 120.210 | 1.855 | 8058.9 | 4734.9 | 73.409 | 1.597 | 2.14 | | Sand | 34.6 | | | 113.62 | 0.71 | 80.71 | 137.45 | 0.69 | 0.524 | 0.884 | 0.224 | 0.304 | 0.58 | 0.02 | 0.00 |
| 66.440 | 188.930 | 1.259 | 8079.7 | 4745.0 | 116.699 | 0.681 | 1.75 | | Sand | 3.3 | | | 178.57 | 0.70 | 124.32 | 124.32 | 0.69 | 0.524 | 0.896 | 0.181 | 0.231 | 0.44 | 0.03 | 0.00 |
| 66.600 | 211.080 | 1.516 | 8099.2 | 4754.6 | 130.542 | 0.732 | 1.74 | | Sand | 1.8 | | | 199.51 | 0.71 | 142.48 | 142.48 | 0.69 | 0.523 | 0.879 | 0.246 | 0.343 | 0.65 | 0.02 | 0.00 |
| 66.770 | 225.150 | 1.610 | 8119.9 | 4764.7 | 139.259 | 0.728 | 1.71 | | Sand | 0.0 | | | 212.81 | 0.72 | 154.27 | 154.27 | 0.69 | 0.523 | 0.865 | 0.319 | 0.475 | 0.91 | 0.01 | 0.00 |
| 66.930 | 228.090 | 1.614 | 8139.5 | 4774.2 | 140.964 | 0.720 | 1.70 | | Sand | 0.0 | | | 215.59 | 0.73 | 156.64 | 156.64 | 0.69 | 0.523 | 0.862 | 0.339 | 0.512 | 0.98 | 0.01 | 0.00 |
| 67.090 | 231.910 | 1.608 | 8159.0 | 4783.8 | 143.219 | 0.706 | 1.69 | | Sand | 0.0 | | | 219.20 | 0.73 | 159.79 | 159.79 | 0.69 | 0.522 | 0.858 | 0.369 | 0.567 | 1.09 | 0.01 | 0.00 |
| 67.260 | 227.300 | 1.527 | 8179.7 | 4793.9 | 140.166 | 0.684 | 1.69 | | Sand | 0.0 | | | 214.84 | 0.72 | 155.65 | 155.65 | 0.69 | 0.522 | 0.863 | 0.331 | 0.495 | 0.95 | 0.01 | 0.00 |
| 67.420 | 219.190 | 1.650 | 8199.2 | 4803.4 | 134.933 | 0.767 | 1.74 | | Sand | 1.9 | | | 207.17 | 0.72 | 148.56 | 148.56 | 0.69 | 0.521 | 0.871 | 0.279 | 0.402 | 0.77 | 0.02 | 0.00 |
| 67.590 | 211.230 | 1.750 | 8220.0 | 4813.6 | 129.796 | 0.845 | 1.78 | | Sand | 5.1 | | | 199.65 | 0.71 | 141.75 | 141.96 | 0.69 | 0.521 | 0.877 | 0.243 | 0.337 | 0.65 | 0.02 | 0.00 |
| 67.750 | 215.180 | 1.664 | 8239.5 | 4823.1 | 132.134 | 0.788 | 1.75 | | Sand | 3.1 | | | 203.38 | 0.71 | 144.86 | 144.87 | 0.69 | 0.520 | 0.874 | 0.258 | 0.363 | 0.70 | 0.02 | 0.00 |
| 67.910 | 236.920 | 1.585 | 8259.0 | 4832.6 | 145.595 | 0.681 | 1.68 | | Sand | 0.0 | | | 223.93 | 0.73 | 163.34 | 163.34 | 0.69 | 0.520 | 0.851 | 0.409 | 0.639 | 1.23 | 0.01 | 0.00 |
| 68.080 | 249.600 | 1.669 | 8279.8 | 4842.8 | 153.358 | 0.680 | 1.66 | | Sand | 0.0 | | | 235.92 | 0.74 | 174.32 | 174.32 | 0.69 | 0.519 | 0.834 | 0.585 | 0.975 | 1.88 | 0.00 | 0.00 |
| 68.240 | 245.500 | 1.952 | 8299.3 | 4852.3 | 150.642 | 0.809 | 1.72 | | Sand | 0.2 | | | 232.04 | 0.73 | 170.54 | 170.54 | 0.68 | 0.519 | 0.840 | 0.513 | 0.836 | 1.61 | 0.00 | 0.00 |
| 68.410 | 221.370 | 2.173 | 8320.0 | 4862.4 | 135.433 | 1.000 | 1.81 | | Sand | 7.9 | | | 209.23 | 0.72 | 150.36 | 153.76 | 0.68 | 0.519 | 0.863 | 0.315 | 0.466 | 0.90 | 0.01 | 0.00 |
| 68.570 | 224.380 | 2.370 | 8339.5 | 4872.0 | 137.169 | 1.076 | 1.83 | | Sand | 9.3 | | | 212.08 | 0.72 | 153.69 | 160.66 | 0.68 | 0.518 | 0.853 | 0.378 | 0.581 | 1.12 | 0.01 | 0.00 |
| 68.730 | 237.470 | 2.357 | 8359.1 | 4881.5 | 145.175 | 1.010 | 1.79 | | Sand | 6.3 | | | 224.45 | 0.73 | 163.31 | 164.38 | 0.68 | 0.518 | 0.848 | 0.421 | 0.661 | 1.28 | 0.00 | 0.00 |
| 68.900 | 260.970 | 2.066 | 8379.8 | 4891.6 | 159.627 | 0.805 | 1.69 | | Sand | 0.0 | | | 246.66 | 0.74 | 183.66 | 183.66 | 0.68 | 0.517 | 0.816 | 0.845 | 1.483 | 2.87 | 0.00 | 0.00 |
| 69.060 | 279.650 | 2.204 | 8399.3 | 4901.2 | 171.067 | 0.800 | 1.67 | | Sand | 0.0 | | | 264.32 | 0.76 | 200.53 | 200.53 | 0.68 | 0.517 | 0.778 | 1.948 | 3.333 | 6.45 | 0.00 | 0.00 |
| 69.230 | 298.540 | 2.169 | 8420.1 | 4911.3 | 182.603 | 0.737 | 1.63 | | Sand | 0.0 | | | 282.17 | 0.77 | 218.03 | 218.03 | 0.68 | 0.516 | 0.747 | 6.140 | 10.096 | 19.55 | 0.00 | 0.00 |
| 69.390 | 309.610 | 1.696 | 8439.6 | 4920.8 | 189.281 | 0.555 | 1.53 | | Sand | 0.0 | | | 292.64 | 0.78 | 228.43 | 228.43 | 0.68 | 0.516 | 0.747 | 14.284 | 23.468 | 45.48 | 0.00 | 0.00 |
| 69.550 | 316.830 | 1.677 | 8459.1 | 4930.4 | 193.563 | 0.537 | 1.52 | | Sand | 0.0 | | | 299.46 | 0.79 | 235.24 | 235.24 | 0.68 | 0.516 | 0.746 | 26.728 | 43.879 | 85.10 | 0.00 | 0.00 |
| 69.720 | 318.100 | 1.224 | 8479.8 | 4940.5 | 194.143 | 0.390 | 1.43 | | Sand | 0.0 | | | 300.66 | 0.79 | 236.29 | 236.29 | 0.68 | 0.515 | 0.746 | 29.614 | 48.578 | 94.30 | 0.00 | 0.00 |
| 69.880 | 316.960 | 1.702 | 8499.4 | 4950.0 | 193.246 | 0.544 | 1.52 | | Sand | 0.0 | | | 299.58 | 0.78 | 235.01 | 235.01 | 0.68 | 0.515 | 0.745 | 26.158 | 42.875 | 83.29 | 0.00 | 0.00 |
| 70.050 | 333.010 | 2.115 | 8520.1 | 4960.2 | 202.950 | 0.643 | 1.55 | | Sand | 0.0 | | | 314.75 | 0.80 | 250.58 | 250.58 | 0.68 | 0.514 | 0.744 | 139.465 | 228.407 | 444.13 | 0.00 | 0.00 |
| 70.210 | 347.800 | 2.332 | 8539.6 | 4969.7 | 211.871 | 0.679 | 1.55 | | Sand | 0.0 | | | 328.73 | 0.80 | 262.43 | 262.43 | 0.68 | 0.514 | 0.744 | 644.634 | 1054.924 | 2052.92 | 0.00 | 0.00 |
| 70.370 | 355.840 | 2.251 | 8559.1 | 4979.3 | 216.616 | 0.640 | 1.53 | | Sand | 0.0 | | | 336.33 | 0.80 | 268.36 | 268.36 | 0.68 | 0.513 | 0.743 | 1520.185 | 2485.812 | 4841.43 | 0.00 | 0.00 |
| 70.540 | 374.640 | 1.755 | 8579.9 | 4989.4 | 227.961 | 0.474 | 1.43 | | Sand | 0.0 | | | 354.10 | 0.80 | 282.39 | 282.39 | 0.67 | 0.513 | 0.743 | 15113.183 | 24692.854 | 48134.11 | 0.00 | 0.00 |
| 70.700 | 386.740 | 1.805 | 8599.4 | 4998.9 | 235.179 | 0.472 | 1.42 | | Sand | 0.0 | | | 365.54 | 0.80 | 291.36 | 291.36 | 0.67 | 0.513 | 0.742 | 81356.955 | ######## | 259125.72 | 0.00 | 0.00 |
| 70.870 | 397.760 | 2.040 | 8620.1 | 5009.1 | 241.704 | 0.519 | 1.43 | | Sand | 0.0 | | | 375.95 | 0.80 | 299.50 | 299.50 | 0.67 | 0.512 | 0.741 | ######### | ######## | 1396335.30 | 0.00 | 0.00 |
| 71.030 | 391.050 | 1.917 | 8639.7 | 5018.6 | 237.350 | 0.496 | 1.43 | | Sand | 0.0 | | | 369.61 | 0.80 | 294.30 | 294.30 | 0.67 | 0.512 | 0.741 | ######### | ######## | 467877.02 | 0.00 | 0.00 |
| 71.190 | 424.390 | 1.921 | 8659.2 | 5028.1 | 257.561 | 0.457 | 1.38 | | Sand | 0.0 | | | 401.12 | 0.80 | 319.24 | 319.24 | 0.67 | 0.511 | 0.740 | ######### | ######## | ########## | 0.00 | 0.00 |
| 71.360 | 402.030 | 1.802 | 8679.9 | 5038.3 | 243.600 | 0.453 | 1.39 | | Sand | 0.0 | | | 379.99 | 0.80 | 302.25 | 302.25 | 0.67 | 0.511 | 0.740 | ######### | ######## | 2556455.21 | 0.00 | 0.00 |
| 71.520 | 384.420 | 2.100 | 8699.4 | 5047.8 | 232.587 | 0.553 | 1.46 | | Sand | 0.0 | | | 363.35 | 0.80 | 288.87 | 288.87 | 0.67 | 0.510 | 0.739 | 50101.332 | 81473.812 | 159611.22 | 0.00 | 0.00 |
| 71.690 | 385.370 | 2.939 | 8720.2 | 5057.9 | 232.928 | 0.771 | 1.56 | | Sand | 0.0 | | | 364.24 | 0.79 | 289.43 | 289.43 | 0.67 | 0.510 | 0.739 | 55812.666 | 90687.608 | 177814.67 | 0.00 | 0.00 |
| 71.850 | 409.340 | 2.457 | 8739.7 | 5067.5 | 247.343 | 0.607 | 1.47 | | Sand | 0.0 | | | 386.90 | 0.79 | 307.28 | 307.28 | 0.67 | 0.510 | 0.738 | ######### | ######## | 8098911.70 | 0.00 | 0.00 |
| 72.010 | 405.860 | 3.073 | 8759.2 | 5077.0 | 244.981 | 0.765 | 1.54 | | Sand | 0.0 | | | 383.61 | 0.79 | 304.52 | 304.52 | 0.67 | 0.509 | 0.737 | ######### | ######## | 4263718.83 | 0.00 | 0.00 |
| 72.180 | 407.790 | 2.656 | 8780.0 | 5087.1 | 245.907 | 0.658 | 1.50 | | Sand | 0.0 | | | 385.43 | 0.79 | 305.81 | 305.81 | 0.67 | 0.509 | 0.737 | ######### | ######## | 5735447.86 | 0.00 | 0.00 |
| 72.340 | 423.030 | 1.736 | 8799.5 | 5096.7 | 254.953 | 0.415 | 1.35 | | Sand | 0.0 | | | 399.84 | 0.79 | 317.08 | 317.08 | 0.67 | 0.508 | 0.736 | ######### | ######## | ########## | 0.00 | 0.00 |
| 72.510 | 455.540 | 2.465 | 8820.2 | 5106.8 | 274.473 | 0.546 | 1.41 | | Sand | 0.0 | | | 430.57 | 0.79 | 341.27 | 341.27 | 0.67 | 0.508 | 0.736 | ######### | ######## | ########## | 0.00 | 0.00 |
| 72.670 | 485.130 | 2.473 | 8839.7 | 5116.3 | 292.197 | 0.514 | 1.37 | | Sand | 0.0 | | | 458.53 | 0.79 | 363.25 | 363.25 | 0.67 | 0.507 | 0.735 | ######### | ######## | ########## | 0.00 | 0.00 |
| 72.830 | 500.750 | 2.216 | 8859.3 | 5125.9 | 301.405 | 0.446 | 1.32 | | Sand | 0.0 | | | 473.30 | 0.79 | 374.77 | 374.77 | 0.66 | 0.507 | 0.735 | ######### | ######## | ########## | 0.00 | 0.00 |
| 73.000 | 480.270 | 2.142 | 8880.0 | 5136.0 | 288.677 | 0.450 | 1.33 | | Sand | 0.0 | | | 453.94 | 0.79 | 359.25 | 359.25 | 0.66 | 0.507 | 0.734 | ######### | ######## | ########## | 0.00 | 0.00 |
| 73.160 | 409.030 | 2.368 | 8899.5 | 5145.5 | 245.223 | 0.585 | 1.46 | | Sand | 0.0 | | | 386.61 | 0.79 | 305.81 | 305.81 | 0.66 | 0.506 | 0.733 | ######### | ######## | 5746950.74 | 0.00 | 0.00 |
| 73.330 | 394.710 | 1.890 | 8920.3 | 5155.7 | 236.305 | 0.484 | 1.42 | | Sand | 0.0 | | | 373.07 | 0.79 | 294.95 | 294.95 | 0.66 | 0.506 | 0.733 | ######### | ######## | 534896.89 | 0.00 | 0.00 |
| 73.490 | 376.710 | 1.929 | 8939.8 | 5165.2 | 225.191 | 0.518 | 1.46 | | Sand | 0.0 | | | 356.06 | 0.79 | 281.37 | 281.37 | 0.66 | 0.505 | 0.732 | 12613.598 | 20320.566 | 40206.42 | 0.00 | 0.00 |
| 73.650 | 359.630 | 1.536 | 8959.3 | 5174.7 | 214.655 | 0.432 | 1.42 | | Sand | 0.0 | | | 339.91 | 0.79 | 268.48 | 268.48 | 0.66 | 0.505 | 0.732 | 1547.071 | 2490.456 | 4931.58 | 0.00 | 0.00 |
| 73.820 | 405.180 | 1.717 | 8980.0 | 5184.9 | 241.942 | 0.428 | 1.38 | | Sand | 0.0 | | | 382.97 | 0.79 | 302.33 | 302.33 | 0.66 | 0.505 | 0.731 | ######### | ######## | 2599448.10 | 0.00 | 0.00 |
| 73.980 | 423.140 | 2.368 | 8999.6 | 5194.4 | 252.549 | 0.566 | 1.44 | | Sand | 0.0 | | | 399.94 | 0.79 | 315.57 | 315.57 | 0.66 | 0.504 | 0.731 | ######### | ######## | ########## | 0.00 | 0.00 |
| 74.150 | 425.680 | 2.329 | 9020.3 | 5204.5 | 253.827 | 0.553 | 1.44 | | Sand | 0.0 | | | 402.34 | 0.79 | 317.31 | 317.31 | 0.66 | 0.504 | 0.730 | ######### | ######## | ########## | 0.00 | 0.00 |
| 74.310 | 409.190 | 1.380 | 9039.8 | 5214.1 | 243.660 | 0.341 | 1.32 | | Sand | 0.0 | | | 386.76 | 0.79 | 304.87 | 304.87 | 0.66 | 0.503 | 0.729 | ######### | ######## | 4620769.37 | 0.00 | 0.00 |
| 74.480 | 375.900 | 1.535 | 9060.6 | 5224.2 | 223.392 | 0.413 | 1.40 | | Sand | 0.0 | | | 355.29 | 0.79 | 279.92 | 279.92 | 0.66 | 0.503 | 0.729 | 9805.278 | 15722.842 | 31263.45 | 0.00 | 0.00 |
| 74.640 | 386.000 | 1.355 | 9080.1 | 5233.7 | 229.253 | 0.355 | 1.35 | | Sand | 0.0 | | | 364.84 | 0.79 | 287.30 | 287.30 | 0.66 | 0.503 | 0.728 | 37183.687 | 59579.586 | 118562.85 | 0.00 | 0.00 |
| 74.800 | 406.790 | 1.807 | 9099.6 | 5243.3 | 241.522 | 0.449 | 1.39 | | Sand | 0.0 | | | 384.49 | 0.79 | 302.63 | 302.63 | 0.66 | 0.502 | 0.728 | ######### | ######## | 2784093.77 | 0.00 | 0.00 |
| 74.970 | 399.940 | 1.400 | 9120.3 | 5253.4 | 237.173 | 0.354 | 1.34 | | Sand | 0.0 | | | 378.02 | 0.79 | 297.38 | 297.38 | 0.66 | 0.502 | 0.727 | ######### | ######## | 888446.14 | 0.00 | 0.00 |
| 75.130 | 391.120 | 3.350 | 9139.9 | 5262.9 | 231.667 | 0.867 | 1.60 | | Sand | 0.0 | | | 369.68 | 0.79 | 290.69 | 290.69 | 0.66 | 0.501 | 0.727 | 71250.275 | ######## | 227217.02 | 0.00 | 0.00 |
| 75.300 | 394.300 | 2.551 | 9160.6 | 5273.1 | 233.342 | 0.654 | 1.51 | | Sand | 0.0 | | | 372.68 | 0.79 | 292.90 | 292.90 | 0.65 | 0.501 | 0.726 | ######### | ######## | 352651.02 | 0.00 | 0.00 |
| 75.460 | 400.490 | 2.807 | 9180.1 | 5282.6 | 236.828 | 0.709 | 1.53 | | Sand | 0.0 | | | 378.53 | 0.79 | 297.36 | 297.36 | 0.65 | 0.500 | 0.726 | ######### | ######## | 883646.36 | 0.00 | 0.00 |
| 75.620 | 426.150 | 2.722 | 9199.6 | 5292.2 | 251.945 | 0.646 | 1.48 | | Sand | 0.0 | | | 402.79 | 0.79 | 316.26 | 316.26 | 0.65 | 0.500 | 0.725 | ######### | ######## | ########## | 0.00 | 0.00 |
| 75.790 | 402.650 | 2.563 | 9220.4 | 5302.3 | 237.666 | 0.644 | 1.50 | | Sand | 0.0 | | | 380.58 | 0.78 | 298.67 | 298.67 | 0.65 | 0.500 | 0.724 | ######### | ######## | 1168159.15 | 0.00 | 0.00 |
| 75.950 | 402.620 | 1.723 | 9239.9 | 5311.8 | 237.429 | 0.433 | 1.39 | | Sand | 0.0 | | | 380.55 | 0.78 | 298.51 | 298.51 | 0.65 | 0.499 | 0.724 | ######### | ######## | 1127924.52 | 0.00 | 0.00 |
| 76.120 | 379.500 | 1.474 | 9260.6 | 5322.0 | 223.417 | 0.393 | 1.39 | | Sand | 0.0 | | | 358.70 | 0.78 | 281.22 | 281.22 | 0.65 | 0.499 | 0.723 | 12300.826 | 19573.980 | 39237.55 | 0.00 | 0.00 |
| 76.280 | 379.040 | 1.077 | 9280.2 | 5331.5 | 222.938 | 0.288 | 1.31 | | Sand | 0.0 | | | 358.26 | 0.78 | 280.75 | 280.75 | 0.65 | 0.498 | 0.723 | 11322.656 | 18004.066 | 36118.82 | 0.00 | 0.00 |
| 76.440 | 318.810 | 1.085 | 9299.7 | 5341.0 | 186.901 | 0.345 | 1.42 | | Sand | 0.0 | | | 301.33 | 0.76 | 230.04 | 230.04 | 0.65 | 0.498 | 0.722 | 16.477 | 26.181 | 52.56 | 0.00 | 0.00 |
| 76.610 | 253.440 | 1.917 | 9320.4 | 5351.2 | 147.864 | 0.771 | 1.71 | | Sand | 0.0 | | | 239.55 | 0.71 | 169.54 | 169.54 | 0.65 | 0.498 | 0.823 | 0.496 | 0.786 | 1.58 | 0.00 | 0.00 |
| 76.770 | 172.360 | 2.325 | 9339.9 | 5360.7 | 99.579 | 1.387 | 2.01 | | Sand | 23.4 | | | 162.91 | 0.70 | 113.77 | 160.64 | 0.65 | 0.497 | 0.837 | 0.378 | 0.569 | 1.15 | 0.01 | 0.00 |
| 76.940 | 124.420 | 2.743 | 9360.7 | 5370.8 | 71.038 | 2.290 | 2.26 | | Sand | 43.9 | | | 117.60 | 0.68 | 80.01 | 143.92 | 0.65 | 0.497 | 0.859 | 0.253 | 0.348 | 0.70 | 0.02 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 2

PGA ($A_{max}$) 0.63

Total Settlement: 0.62 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 77.100 | 71.180 | 2.157 | 9380.2 | 5380.4 | 24.716 | 3.245 | 2.70 | | Clay | 79.3 | | | 67.28 | 0.78 | n.a. | n.a. | 0.65 | 0.496 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 77.260 | 67.620 | 2.771 | 9399.7 | 5389.9 | 23.347 | 4.404 | 2.81 | | Clay | 87.7 | | | 63.91 | 0.78 | n.a. | n.a. | 0.65 | 0.496 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 77.430 | 223.770 | 2.984 | 9420.5 | 5400.0 | 129.609 | 1.362 | 1.92 | | Sand | 16.4 | | | 211.50 | 0.72 | 152.32 | 184.78 | 0.65 | 0.496 | 0.792 | 0.886 | 1.524 | 3.07 | 0.00 | 0.00 |
| 77.590 | 229.140 | 3.259 | 9440.0 | 5409.6 | 132.664 | 1.452 | 1.93 | | Sand | 17.4 | | | 216.58 | 0.73 | 157.83 | 194.36 | 0.65 | 0.495 | 0.769 | 1.395 | 2.360 | 4.76 | 0.00 | 0.00 |
| 77.760 | 145.750 | 3.071 | 9460.7 | 5419.7 | 83.285 | 2.178 | 2.20 | | Sand | 38.8 | | | 137.76 | 0.69 | 95.67 | 159.69 | 0.65 | 0.495 | 0.836 | 0.368 | 0.550 | 1.11 | 0.01 | 0.00 |
| 77.920 | 87.440 | 2.474 | 9480.2 | 5429.2 | 30.465 | 2.991 | 2.61 | | Clay | 71.9 | | | 82.65 | 0.78 | n.a. | n.a. | 0.64 | 0.495 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 78.080 | 182.790 | 1.940 | 9499.8 | 5438.8 | 104.964 | 1.089 | 1.92 | | Sand | 16.5 | | | 172.77 | 0.68 | 117.46 | 146.68 | 0.64 | 0.494 | 0.853 | 0.268 | 0.373 | 0.76 | 0.02 | 0.00 |
| 78.250 | 245.770 | 1.784 | 9520.5 | 5448.9 | 141.956 | 0.740 | 1.71 | | Sand | 0.0 | | | 232.30 | 0.69 | 161.39 | 161.39 | 0.64 | 0.494 | 0.833 | 0.386 | 0.582 | 1.18 | 0.01 | 0.00 |
| 78.410 | 250.960 | 1.882 | 9540.0 | 5458.4 | 144.880 | 0.764 | 1.71 | | Sand | 0.0 | | | 237.20 | 0.70 | 165.74 | 165.74 | 0.64 | 0.493 | 0.825 | 0.439 | 0.678 | 1.37 | 0.00 | 0.00 |
| 78.580 | 218.950 | 1.670 | 9560.8 | 5468.6 | 125.920 | 0.780 | 1.76 | | Sand | 4.1 | | | 206.95 | 0.67 | 138.55 | 138.58 | 0.64 | 0.493 | 0.862 | 0.228 | 0.304 | 0.62 | 0.02 | 0.00 |
| 78.740 | 212.610 | 2.866 | 9580.3 | 5478.1 | 122.080 | 1.379 | 1.94 | | Sand | 18.2 | | | 200.95 | 0.71 | 143.17 | 180.53 | 0.64 | 0.493 | 0.798 | 0.742 | 1.241 | 2.52 | 0.00 | 0.00 |
| 78.900 | 222.890 | 2.192 | 9599.8 | 5487.6 | 128.002 | 1.005 | 1.83 | | Sand | 9.4 | | | 210.67 | 0.68 | 143.65 | 150.88 | 0.64 | 0.492 | 0.846 | 0.294 | 0.418 | 0.85 | 0.01 | 0.00 |
| 79.070 | 253.460 | 1.730 | 9620.5 | 5497.8 | 145.803 | 0.696 | 1.68 | | Sand | 0.0 | | | 239.57 | 0.70 | 167.32 | 167.32 | 0.64 | 0.492 | 0.821 | 0.461 | 0.717 | 1.46 | 0.00 | 0.00 |
| 79.230 | 266.880 | 1.432 | 9640.1 | 5507.3 | 153.534 | 0.546 | 1.60 | | Sand | 0.0 | | | 252.25 | 0.71 | 179.00 | 179.00 | 0.64 | 0.491 | 0.800 | 0.698 | 1.157 | 2.35 | 0.00 | 0.00 |
| 79.400 | 292.350 | 1.042 | 9660.8 | 5517.4 | 168.295 | 0.362 | 1.47 | | Sand | 0.0 | | | 276.32 | 0.73 | 202.01 | 202.01 | 0.64 | 0.491 | 0.742 | 2.121 | 3.462 | 7.05 | 0.00 | 0.00 |
| 79.560 | 311.780 | 0.983 | 9680.3 | 5527.0 | 179.507 | 0.320 | 1.42 | | Sand | 0.0 | | | 294.69 | 0.75 | 220.18 | 220.18 | 0.64 | 0.491 | 0.712 | 7.231 | 11.326 | 23.08 | 0.00 | 0.00 |
| 79.720 | 315.130 | 1.457 | 9699.8 | 5536.5 | 181.304 | 0.470 | 1.50 | | Sand | 0.0 | | | 297.85 | 0.75 | 223.24 | 223.24 | 0.64 | 0.490 | 0.711 | 9.215 | 14.424 | 29.42 | 0.00 | 0.00 |
| 79.890 | 288.540 | 2.211 | 9720.6 | 5546.6 | 165.610 | 0.779 | 1.67 | | Sand | 0.0 | | | 272.72 | 0.73 | 198.02 | 198.02 | 0.64 | 0.490 | 0.752 | 1.693 | 2.803 | 5.72 | 0.00 | 0.00 |
| 80.050 | 270.790 | 2.422 | 9740.1 | 5556.2 | 155.108 | 0.911 | 1.74 | | Sand | 2.2 | | | 255.95 | 0.71 | 181.74 | 181.74 | 0.64 | 0.490 | 0.792 | 0.779 | 1.308 | 2.67 | 0.00 | 0.00 |
| 80.220 | 250.590 | 2.352 | 9760.8 | 5566.3 | 143.189 | 0.957 | 1.78 | | Sand | 5.4 | | | 236.85 | 0.69 | 163.92 | 164.28 | 0.64 | 0.489 | 0.824 | 0.420 | 0.641 | 1.31 | 0.00 | 0.00 |
| 80.380 | 285.000 | 2.311 | 9780.4 | 5575.8 | 163.097 | 0.825 | 1.69 | | Sand | 0.0 | | | 269.38 | 0.72 | 194.30 | 194.30 | 0.64 | 0.489 | 0.761 | 1.391 | 2.330 | 4.77 | 0.00 | 0.00 |
| 80.540 | 311.710 | 1.806 | 9799.9 | 5585.4 | 178.491 | 0.589 | 1.57 | | Sand | 0.0 | | | 294.62 | 0.74 | 219.16 | 219.16 | 0.63 | 0.488 | 0.709 | 6.685 | 10.425 | 21.34 | 0.00 | 0.00 |
| 80.710 | 346.500 | 2.217 | 9820.6 | 5595.5 | 198.544 | 0.649 | 1.56 | | Sand | 0.0 | | | 327.50 | 0.77 | 253.17 | 253.17 | 0.63 | 0.488 | 0.708 | 190.982 | 297.586 | 609.76 | 0.00 | 0.00 |
| 80.870 | 409.720 | 2.359 | 9840.1 | 5605.1 | 235.084 | 0.583 | 1.48 | | Sand | 0.0 | | | 387.26 | 0.77 | 299.49 | 299.49 | 0.63 | 0.488 | 0.708 | ######### | ######## | 1396561.86 | 0.00 | 0.00 |
| 81.040 | 456.410 | 2.441 | 9860.9 | 5615.2 | 261.956 | 0.541 | 1.42 | | Sand | 0.0 | | | 431.39 | 0.77 | 333.46 | 333.46 | 0.63 | 0.487 | 0.707 | ######### | ######## | ######### | 0.00 | 0.00 |
| 81.200 | 457.280 | 2.126 | 9880.4 | 5624.7 | 262.232 | 0.470 | 1.38 | | Sand | 0.0 | | | 432.21 | 0.77 | 333.95 | 333.95 | 0.63 | 0.487 | 0.707 | ######### | ######## | ######### | 0.00 | 0.00 |
| 81.360 | 456.900 | 2.136 | 9899.9 | 5634.3 | 261.785 | 0.473 | 1.38 | | Sand | 0.0 | | | 431.85 | 0.77 | 333.52 | 333.52 | 0.63 | 0.487 | 0.706 | ######### | ######## | ######### | 0.00 | 0.00 |
| 81.530 | 446.230 | 2.211 | 9920.7 | 5644.4 | 255.369 | 0.501 | 1.41 | | Sand | 0.0 | | | 421.77 | 0.77 | 325.58 | 325.58 | 0.63 | 0.486 | 0.706 | ######### | ######## | ######### | 0.00 | 0.00 |
| 81.690 | 441.450 | 3.032 | 9940.2 | 5653.9 | 252.384 | 0.695 | 1.51 | | Sand | 0.0 | | | 417.25 | 0.77 | 321.95 | 321.95 | 0.63 | 0.486 | 0.705 | ######### | ######## | ######### | 0.00 | 0.00 |
| 81.860 | 421.040 | 3.043 | 9960.9 | 5664.1 | 240.361 | 0.731 | 1.54 | | Sand | 0.0 | | | 397.96 | 0.77 | 306.92 | 306.92 | 0.63 | 0.485 | 0.705 | ######### | ######## | 7452566.08 | 0.00 | 0.00 |
| 82.020 | 417.000 | 2.238 | 9980.4 | 5673.6 | 237.821 | 0.543 | 1.45 | | Sand | 0.0 | | | 394.14 | 0.77 | 303.84 | 303.84 | 0.63 | 0.485 | 0.704 | ######### | ######## | 3660147.66 | 0.00 | 0.00 |
| 82.190 | 417.590 | 1.923 | 10001.2 | 5683.7 | 237.943 | 0.466 | 1.41 | | Sand | 0.0 | | | 394.70 | 0.77 | 304.13 | 304.13 | 0.63 | 0.485 | 0.704 | ######### | ######## | 3906746.56 | 0.00 | 0.00 |
| 82.350 | 445.560 | 1.860 | 10020.7 | 5693.3 | 253.855 | 0.422 | 1.36 | | Sand | 0.0 | | | 421.13 | 0.77 | 324.35 | 324.35 | 0.63 | 0.484 | 0.703 | ######### | ######## | ######### | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 3

PGA ($A_{max}$) 0.63

Total Settlement: 0.31 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.660 | 22.030 | 0.543 | 79.2 | 79.2 | 107.434 | 2.469 | 2.16 | | Unsaturated | 35.9 | | | 20.82 | 1.70 | 35.40 | 83.07 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.820 | 27.040 | 0.773 | 98.4 | 98.4 | 118.302 | 2.864 | 2.18 | | Unsaturated | 37.6 | | | 25.56 | 1.70 | 43.45 | 94.24 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.980 | 20.720 | 0.824 | 117.6 | 117.6 | 82.837 | 3.988 | 2.39 | | Unsaturated | 54.4 | | | 19.58 | 1.70 | 33.29 | 89.68 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.150 | 27.440 | 0.871 | 138.0 | 138.0 | 101.303 | 3.181 | 2.26 | | Unsaturated | 43.9 | | | 25.94 | 1.70 | 44.09 | 98.91 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.310 | 27.620 | 0.879 | 157.2 | 157.2 | 95.506 | 3.190 | 2.28 | | Unsaturated | 45.3 | | | 26.11 | 1.70 | 44.38 | 100.00 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.480 | 31.120 | 0.661 | 177.6 | 177.6 | 101.239 | 2.129 | 2.13 | | Unsaturated | 33.5 | | | 29.41 | 1.70 | 50.00 | 98.94 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.640 | 28.800 | 0.604 | 196.8 | 196.8 | 88.954 | 2.104 | 2.17 | | Unsaturated | 36.3 | | | 27.22 | 1.70 | 46.28 | 96.77 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.800 | 25.850 | 0.529 | 216.0 | 216.0 | 76.153 | 2.055 | 2.21 | | Unsaturated | 39.6 | | | 24.43 | 1.70 | 41.54 | 93.22 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.970 | 24.600 | 0.506 | 236.4 | 236.4 | 69.230 | 2.066 | 2.24 | | Unsaturated | 42.1 | | | 23.25 | 1.70 | 39.53 | 92.25 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.130 | 23.890 | 0.507 | 255.6 | 255.6 | 64.622 | 2.135 | 2.27 | | Unsaturated | 44.6 | | | 22.58 | 1.70 | 38.39 | 92.16 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.300 | 24.720 | 0.543 | 276.0 | 276.0 | 64.333 | 2.209 | 2.28 | | Unsaturated | 45.6 | | | 23.36 | 1.70 | 39.72 | 94.29 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.460 | 26.680 | 0.589 | 295.2 | 295.2 | 67.141 | 2.220 | 2.27 | | Unsaturated | 44.6 | | | 25.22 | 1.70 | 42.87 | 97.77 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.620 | 30.620 | 0.667 | 314.4 | 314.4 | 74.697 | 2.190 | 2.23 | | Unsaturated | 41.6 | | | 28.94 | 1.70 | 49.20 | 104.01 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.790 | 31.580 | 0.742 | 334.8 | 334.8 | 74.642 | 2.361 | 2.26 | | Unsaturated | 43.5 | | | 29.85 | 1.70 | 50.74 | 107.01 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.950 | 28.140 | 0.861 | 354.0 | 354.0 | 64.618 | 3.077 | 2.38 | | Unsaturated | 53.5 | | | 26.60 | 1.70 | 45.22 | 104.55 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.120 | 26.020 | 0.931 | 374.4 | 374.4 | 58.046 | 3.604 | 2.46 | | Unsaturated | 60.1 | | | 24.59 | 1.70 | 41.81 | 102.26 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.280 | 26.160 | 0.955 | 393.6 | 393.6 | 56.899 | 3.678 | 2.48 | | Unsaturated | 61.1 | | | 24.73 | 1.70 | 42.03 | 102.82 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.440 | 25.910 | 0.911 | 412.8 | 412.8 | 55.004 | 3.543 | 2.47 | | Unsaturated | 60.9 | | | 24.49 | 1.70 | 41.63 | 102.28 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.610 | 24.710 | 0.869 | 433.2 | 433.2 | 51.165 | 3.547 | 2.50 | | Unsaturated | 62.7 | | | 23.36 | 1.70 | 39.70 | 100.27 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.770 | 22.360 | 0.874 | 452.4 | 452.4 | 45.245 | 3.949 | 2.57 | | Unsaturated | 68.4 | | | 21.13 | 1.70 | 35.93 | 96.69 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.940 | 19.580 | 0.810 | 472.8 | 472.8 | 52.196 | 4.186 | 2.54 | | Unsaturated | 66.4 | | | 18.51 | 1.70 | 31.46 | 90.51 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.100 | 17.580 | 0.751 | 492.0 | 492.0 | 45.488 | 4.334 | 2.59 | | Unsaturated | 70.6 | | | 16.62 | 1.70 | 28.25 | 87.20 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.270 | 17.030 | 0.744 | 512.4 | 512.4 | 42.784 | 4.434 | 2.62 | | Unsaturated | 72.6 | | | 16.10 | 1.70 | 27.36 | 86.42 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.430 | 16.150 | 0.787 | 531.6 | 531.6 | 39.485 | 4.952 | 2.68 | | Unsaturated | 77.3 | | | 15.26 | 1.70 | 25.95 | 85.35 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.590 | 15.060 | 0.775 | 550.8 | 550.8 | 53.684 | 5.241 | 2.61 | | Unsaturated | 71.5 | | | 14.23 | 1.70 | 24.20 | 82.13 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.760 | 13.100 | 0.663 | 571.2 | 571.2 | 44.868 | 5.177 | 2.65 | | Unsaturated | 75.4 | | | 12.38 | 1.70 | 21.05 | 78.69 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.920 | 12.450 | 0.613 | 590.4 | 590.4 | 41.175 | 5.042 | 2.67 | | Unsaturated | 76.7 | | | 11.77 | 1.70 | 20.00 | 77.55 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.090 | 11.120 | 0.450 | 610.8 | 610.8 | 35.411 | 4.158 | 2.66 | | Unsaturated | 75.7 | | | 10.51 | 1.70 | 17.87 | 74.63 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.250 | 10.240 | 0.411 | 630.0 | 630.0 | 31.508 | 4.138 | 2.69 | | Unsaturated | 78.6 | | | 9.68 | 1.70 | 16.45 | 73.20 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.410 | 9.870 | 0.477 | 649.2 | 649.2 | 29.407 | 4.996 | 2.77 | | Unsaturated | 84.8 | | | 9.33 | 1.70 | 15.86 | 73.22 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.580 | 11.540 | 0.568 | 669.6 | 669.6 | 33.468 | 5.073 | 2.74 | | Unsaturated | 82.0 | | | 10.91 | 1.70 | 18.54 | 76.37 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.740 | 11.940 | 0.640 | 688.8 | 688.8 | 33.669 | 5.516 | 2.76 | | Unsaturated | 83.9 | | | 11.29 | 1.70 | 19.19 | 77.44 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.910 | 11.880 | 0.656 | 709.2 | 709.2 | 32.503 | 5.688 | 2.78 | | Unsaturated | 85.5 | | | 11.23 | 1.70 | 19.09 | 77.51 | 0.99 | 0.405 | 1.097 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.070 | 11.980 | 0.609 | 728.4 | 728.4 | 31.894 | 5.246 | 2.76 | | Unsaturated | 84.0 | | | 11.32 | 1.70 | 19.25 | 77.54 | 0.99 | 0.405 | 1.095 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.230 | 11.500 | 0.587 | 747.6 | 747.6 | 29.765 | 5.279 | 2.79 | | Unsaturated | 85.8 | | | 10.87 | 1.70 | 18.48 | 76.76 | 0.99 | 0.405 | 1.092 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.400 | 11.400 | 0.554 | 768.0 | 768.0 | 28.688 | 5.028 | 2.78 | | Unsaturated | 85.6 | | | 10.78 | 1.70 | 18.32 | 76.52 | 0.99 | 0.405 | 1.090 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.560 | 10.840 | 0.546 | 787.2 | 787.2 | 26.541 | 5.225 | 2.82 | | Unsaturated | 88.5 | | | 10.25 | 1.70 | 17.42 | 75.67 | 0.99 | 0.404 | 1.087 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.730 | 10.220 | 0.520 | 807.6 | 807.6 | 24.310 | 5.295 | 2.85 | | Unsaturated | 91.0 | | | 9.66 | 1.70 | 16.42 | 74.63 | 0.99 | 0.404 | 1.084 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.890 | 9.910 | 0.461 | 826.8 | 826.8 | 22.972 | 4.858 | 2.84 | | Unsaturated | 90.4 | | | 9.37 | 1.70 | 15.89 | 73.88 | 0.99 | 0.404 | 1.081 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.050 | 9.820 | 0.455 | 846.0 | 846.0 | 22.215 | 4.837 | 2.85 | | Clay | 91.2 | | | 9.28 | 1.27 | n.a. | n.a. | 0.99 | 0.405 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.220 | 9.880 | 0.446 | 866.4 | 866.4 | 21.807 | 4.718 | 2.85 | | Clay | 91.1 | | | 9.34 | 1.27 | n.a. | n.a. | 0.99 | 0.410 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.380 | 9.740 | 0.450 | 885.6 | 885.6 | 20.996 | 4.841 | 2.87 | | Clay | 92.7 | | | 9.21 | 1.26 | n.a. | n.a. | 0.98 | 0.414 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.550 | 9.760 | 0.451 | 906.0 | 906.0 | 20.545 | 4.842 | 2.88 | | Clay | 93.2 | | | 9.22 | 1.25 | n.a. | n.a. | 0.98 | 0.419 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.710 | 10.640 | 0.474 | 925.2 | 925.2 | 22.000 | 4.656 | 2.84 | | Clay | 90.6 | | | 10.06 | 1.24 | n.a. | n.a. | 0.98 | 0.423 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.870 | 11.470 | 0.477 | 944.4 | 944.4 | 23.291 | 4.334 | 2.81 | | Clay | 87.4 | | | 10.84 | 1.24 | n.a. | n.a. | 0.98 | 0.427 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.040 | 11.130 | 0.500 | 964.8 | 964.8 | 22.072 | 4.695 | 2.85 | | Clay | 90.7 | | | 10.52 | 1.23 | n.a. | n.a. | 0.98 | 0.431 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.200 | 10.640 | 0.486 | 984.0 | 984.0 | 20.626 | 4.793 | 2.87 | | Clay | 92.9 | | | 10.06 | 1.22 | n.a. | n.a. | 0.98 | 0.435 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.370 | 11.140 | 0.445 | 1004.4 | 1004.4 | 21.182 | 4.186 | 2.83 | | Clay | 89.1 | | | 10.53 | 1.22 | n.a. | n.a. | 0.98 | 0.439 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.530 | 10.090 | 0.463 | 1023.6 | 1023.6 | 18.715 | 4.836 | 2.91 | | Clay | 95.7 | | | 9.54 | 1.21 | n.a. | n.a. | 0.98 | 0.443 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.690 | 10.570 | 0.501 | 1042.8 | 1042.8 | 19.272 | 4.985 | 2.91 | | Clay | 95.6 | | | 9.99 | 1.21 | n.a. | n.a. | 0.98 | 0.446 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.860 | 12.050 | 0.546 | 1063.2 | 1063.2 | 21.667 | 4.739 | 2.85 | | Clay | 91.4 | | | 11.39 | 1.20 | n.a. | n.a. | 0.98 | 0.450 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.020 | 11.460 | 0.501 | 1082.4 | 1082.4 | 20.175 | 4.588 | 2.87 | | Clay | 92.5 | | | 10.83 | 1.19 | n.a. | n.a. | 0.98 | 0.453 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.190 | 10.930 | 0.502 | 1102.8 | 1102.8 | 18.822 | 4.839 | 2.91 | | Clay | 95.5 | | | 10.33 | 1.19 | n.a. | n.a. | 0.98 | 0.457 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.350 | 10.660 | 0.459 | 1122.0 | 1122.0 | 18.002 | 4.548 | 2.90 | | Clay | 95.3 | | | 10.08 | 1.18 | n.a. | n.a. | 0.98 | 0.460 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.510 | 9.790 | 0.432 | 1141.2 | 1141.2 | 16.157 | 4.689 | 2.95 | | Clay | 98.8 | | | 9.25 | 1.18 | n.a. | n.a. | 0.98 | 0.463 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.680 | 9.930 | 0.346 | 1161.6 | 1161.6 | 16.097 | 3.696 | 2.88 | | Clay | 93.7 | | | 9.39 | 1.17 | n.a. | n.a. | 0.98 | 0.467 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.840 | 10.180 | 0.329 | 1180.8 | 1180.8 | 16.243 | 3.434 | 2.86 | | Clay | 91.9 | | | 9.62 | 1.17 | n.a. | n.a. | 0.98 | 0.470 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.010 | 10.740 | 0.315 | 1201.2 | 1201.2 | 16.882 | 3.110 | 2.82 | | Clay | 88.7 | | | 10.15 | 1.16 | n.a. | n.a. | 0.97 | 0.473 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.170 | 11.270 | 0.274 | 1220.4 | 1220.4 | 17.469 | 2.569 | 2.76 | | Clay | 83.8 | | | 10.65 | 1.16 | n.a. | n.a. | 0.97 | 0.476 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.330 | 12.240 | 0.244 | 1239.6 | 1239.6 | 18.748 | 2.098 | 2.68 | | Clay | 77.7 | | | 11.57 | 1.15 | n.a. | n.a. | 0.97 | 0.479 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.500 | 10.660 | 0.200 | 1260.0 | 1260.0 | 15.921 | 1.994 | 2.73 | | Clay | 81.4 | | | 10.08 | 1.15 | n.a. | n.a. | 0.97 | 0.481 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.660 | 8.740 | 0.252 | 1279.2 | 1279.2 | 12.665 | 3.111 | 2.92 | | Clay | 96.8 | | | 8.26 | 1.14 | n.a. | n.a. | 0.97 | 0.484 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.830 | 8.690 | 0.329 | 1299.6 | 1299.6 | 12.373 | 4.093 | 3.00 | | Clay | 100.0 | | | 8.21 | 1.14 | n.a. | n.a. | 0.97 | 0.487 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.990 | 10.610 | 0.475 | 1318.8 | 1318.8 | 15.090 | 4.769 | 2.98 | | Clay | 100.0 | | | 10.03 | 1.13 | n.a. | n.a. | 0.97 | 0.490 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.150 | 11.590 | 0.545 | 1338.0 | 1338.0 | 16.324 | 4.989 | 2.96 | | Clay | 100.0 | | | 10.95 | 1.13 | n.a. | n.a. | 0.97 | 0.492 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.320 | 16.470 | 0.576 | 1358.4 | 1358.4 | 23.249 | 3.645 | 2.76 | | Clay | 83.5 | | | 15.57 | 1.12 | n.a. | n.a. | 0.97 | 0.495 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.480 | 20.800 | 0.614 | 1377.6 | 1377.6 | 29.197 | 3.055 | 2.63 | plastic | Clay | 73.5 | | | 19.66 | 1.12 | n.a. | n.a. | 0.97 | 0.497 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 3

PGA ($A_{max}$) 0.63

Total Settlement: 0.31 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.650 | 22.100 | 0.602 | 1398.0 | 1398.0 | 27.037 | 2.815 | 2.63 | plastic | Clay | 73.8 | | | 20.89 | 1.12 | n.a. | n.a. | 0.97 | 0.500 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.810 | 25.410 | 0.595 | 1417.2 | 1417.2 | 28.528 | 2.410 | 2.57 | | Sand | 68.9 | | | 24.02 | 1.23 | 29.64 | 88.68 | 0.97 | 0.502 | 1.039 | 0.124 | 0.156 | 0.31 | 0.04 | 0.06 |
| 11.980 | 21.020 | 0.694 | 1437.6 | 1437.6 | 28.243 | 3.420 | 2.67 | plastic | Clay | 77.0 | | | 19.87 | 1.11 | n.a. | n.a. | 0.97 | 0.504 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.140 | 17.810 | 0.521 | 1457.1 | 1448.3 | 23.588 | 3.051 | 2.70 | | Clay | 79.2 | | | 16.83 | 1.11 | n.a. | n.a. | 0.97 | 0.507 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.300 | 31.240 | 0.363 | 1476.6 | 1457.9 | 34.732 | 1.189 | 2.32 | | Sand | 48.9 | 40.84 | 1.6 | 65.34 | 1.17 | 76.32 | 142.01 | 0.97 | 0.509 | 1.056 | 0.244 | 0.406 | 0.80 | 0.02 | 0.03 |
| 12.470 | 42.100 | 0.363 | 1497.3 | 1468.0 | 46.924 | 0.878 | 2.14 | | Sand | 34.4 | 40.84 | 1.6 | 65.34 | 1.17 | 76.58 | 132.21 | 0.97 | 0.511 | 1.050 | 0.204 | 0.319 | 0.62 | 0.02 | 0.03 |
| 12.630 | 43.210 | 0.406 | 1516.9 | 1477.5 | 48.017 | 0.957 | 2.15 | | Sand | 35.4 | | 1.6 | 65.35 | 1.17 | 76.33 | 132.84 | 0.96 | 0.513 | 1.050 | 0.207 | 0.324 | 0.63 | 0.02 | 0.04 |
| 12.800 | 41.360 | 0.330 | 1537.6 | 1487.7 | 45.756 | 0.813 | 2.13 | | Sand | 33.7 | 40.84 | 1.6 | 65.34 | 1.17 | 76.19 | 131.05 | 0.96 | 0.515 | 1.048 | 0.201 | 0.310 | 0.60 | 0.02 | 0.03 |
| 12.960 | 42.100 | 0.216 | 1557.1 | 1497.2 | 46.431 | 0.522 | 2.03 | | Sand | 25.6 | 40.84 | 1.6 | 65.34 | 1.17 | 76.48 | 120.98 | 0.96 | 0.517 | 1.043 | 0.173 | 0.252 | 0.49 | 0.03 | 0.04 |
| 13.120 | 40.740 | 0.382 | 1576.6 | 1506.8 | 44.749 | 0.956 | 2.18 | | Sand | 37.4 | 40.84 | 1.6 | 65.34 | 1.16 | 75.65 | 133.77 | 0.96 | 0.519 | 1.047 | 0.210 | 0.330 | 0.63 | 0.02 | 0.04 |
| 13.290 | 35.550 | 0.434 | 1597.4 | 1516.9 | 38.794 | 1.249 | 2.30 | | Sand | 46.7 | 40.84 | 1.6 | 65.34 | 1.15 | 75.18 | 139.44 | 0.96 | 0.521 | 1.049 | 0.232 | 0.378 | 0.73 | 0.02 | 0.03 |
| 13.450 | 24.850 | 0.519 | 1616.9 | 1526.4 | 26.755 | 2.160 | 2.57 | | Sand | 68.3 | 40.84 | 1.6 | 65.34 | 1.14 | 74.68 | 146.66 | 0.96 | 0.523 | 1.051 | 0.268 | 0.459 | 0.88 | 0.01 | 0.02 |
| 13.620 | 16.370 | 0.581 | 1637.6 | 1536.6 | 20.242 | 3.734 | 2.81 | | Clay | 87.8 | | | 15.47 | 1.09 | n.a. | n.a. | 0.96 | 0.525 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.780 | 12.630 | 0.626 | 1657.2 | 1546.1 | 15.266 | 5.304 | 3.00 | | Clay | 100.0 | | | 11.94 | 1.09 | n.a. | n.a. | 0.96 | 0.527 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.940 | 15.080 | 0.681 | 1676.7 | 1555.6 | 18.310 | 4.783 | 2.91 | | Clay | 96.0 | | | 14.25 | 1.08 | n.a. | n.a. | 0.96 | 0.529 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.110 | 15.180 | 0.715 | 1697.4 | 1565.8 | 18.306 | 4.986 | 2.92 | | Clay | 96.9 | | | 14.35 | 1.08 | n.a. | n.a. | 0.96 | 0.530 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.270 | 15.770 | 0.777 | 1716.9 | 1575.3 | 18.932 | 5.211 | 2.93 | | Clay | 97.1 | | | 14.91 | 1.08 | n.a. | n.a. | 0.96 | 0.532 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.440 | 16.380 | 0.819 | 1737.7 | 1585.4 | 19.567 | 5.278 | 2.92 | | Clay | 96.5 | | | 15.48 | 1.08 | n.a. | n.a. | 0.96 | 0.534 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.600 | 16.370 | 0.812 | 1757.2 | 1595.0 | 19.425 | 5.242 | 2.92 | | Clay | 96.5 | | | 15.47 | 1.08 | n.a. | n.a. | 0.96 | 0.535 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.760 | 16.240 | 0.790 | 1776.7 | 1604.5 | 19.136 | 5.144 | 2.92 | | Clay | 96.5 | | | 15.35 | 1.08 | n.a. | n.a. | 0.96 | 0.537 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.930 | 15.940 | 0.782 | 1797.5 | 1614.6 | 18.631 | 5.198 | 2.93 | | Clay | 97.4 | | | 15.07 | 1.07 | n.a. | n.a. | 0.96 | 0.539 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.090 | 16.250 | 0.797 | 1817.0 | 1624.2 | 18.892 | 5.193 | 2.93 | | Clay | 97.0 | | | 15.36 | 1.07 | n.a. | n.a. | 0.95 | 0.540 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.260 | 16.520 | 0.835 | 1837.7 | 1634.3 | 19.092 | 5.353 | 2.93 | | Clay | 97.5 | | | 15.61 | 1.07 | n.a. | n.a. | 0.95 | 0.542 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.420 | 16.870 | 0.860 | 1857.2 | 1643.8 | 19.395 | 5.397 | 2.93 | | Clay | 97.2 | | | 15.95 | 1.07 | n.a. | n.a. | 0.95 | 0.543 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.580 | 17.640 | 0.854 | 1876.8 | 1653.4 | 20.203 | 5.114 | 2.90 | | Clay | 94.9 | | | 16.67 | 1.07 | n.a. | n.a. | 0.95 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.750 | 17.900 | 0.857 | 1897.5 | 1663.5 | 20.380 | 5.054 | 2.89 | | Clay | 94.4 | | | 16.92 | 1.07 | n.a. | n.a. | 0.95 | 0.546 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.910 | 17.610 | 0.852 | 1917.0 | 1673.0 | 19.906 | 5.114 | 2.90 | | Clay | 95.3 | | | 16.64 | 1.06 | n.a. | n.a. | 0.95 | 0.547 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.080 | 17.440 | 0.908 | 1937.8 | 1683.2 | 19.572 | 5.511 | 2.93 | | Clay | 97.5 | | | 16.48 | 1.06 | n.a. | n.a. | 0.95 | 0.549 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.240 | 17.580 | 0.954 | 1957.3 | 1692.7 | 19.615 | 5.748 | 2.94 | | Clay | 98.4 | | | 16.62 | 1.06 | n.a. | n.a. | 0.95 | 0.550 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.400 | 17.860 | 0.986 | 1976.8 | 1702.2 | 19.823 | 5.842 | 2.94 | | Clay | 98.5 | | | 16.88 | 1.06 | n.a. | n.a. | 0.95 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.570 | 17.320 | 0.946 | 1997.5 | 1712.4 | 19.063 | 5.793 | 2.95 | | Clay | 99.3 | | | 16.37 | 1.06 | n.a. | n.a. | 0.95 | 0.553 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.730 | 15.870 | 0.872 | 2017.1 | 1721.9 | 17.262 | 5.868 | 2.99 | | Clay | 100.0 | | | 15.00 | 1.06 | n.a. | n.a. | 0.95 | 0.554 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.900 | 15.030 | 0.719 | 2037.8 | 1732.0 | 16.179 | 5.131 | 2.97 | | Clay | 100.0 | | | 14.21 | 1.05 | n.a. | n.a. | 0.95 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.060 | 14.060 | 0.670 | 2057.3 | 1741.6 | 14.965 | 5.140 | 3.00 | | Clay | 100.0 | | | 13.29 | 1.05 | n.a. | n.a. | 0.95 | 0.556 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.220 | 12.570 | 0.618 | 2076.8 | 1751.1 | 13.171 | 5.357 | 3.05 | | Clay | 100.0 | | | 11.88 | 1.05 | n.a. | n.a. | 0.95 | 0.557 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.390 | 12.340 | 0.671 | 2097.6 | 1761.2 | 12.822 | 5.940 | 3.09 | | Clay | 100.0 | | | 11.66 | 1.05 | n.a. | n.a. | 0.94 | 0.559 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.550 | 13.820 | 0.746 | 2117.1 | 1770.8 | 14.413 | 5.845 | 3.05 | | Clay | 100.0 | | | 13.06 | 1.05 | n.a. | n.a. | 0.94 | 0.560 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.720 | 15.780 | 0.794 | 2137.8 | 1780.9 | 16.521 | 5.400 | 2.98 | | Clay | 100.0 | | | 14.91 | 1.05 | n.a. | n.a. | 0.94 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.880 | 15.220 | 0.744 | 2157.4 | 1790.4 | 15.796 | 5.261 | 2.99 | | Clay | 100.0 | | | 14.39 | 1.05 | n.a. | n.a. | 0.94 | 0.562 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.040 | 13.330 | 0.635 | 2176.9 | 1800.0 | 13.602 | 5.191 | 3.03 | | Clay | 100.0 | | | 12.60 | 1.04 | n.a. | n.a. | 0.94 | 0.563 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.210 | 11.950 | 0.608 | 2197.6 | 1810.1 | 11.989 | 5.603 | 3.10 | | Clay | 100.0 | | | 11.29 | 1.04 | n.a. | n.a. | 0.94 | 0.564 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.370 | 11.360 | 0.573 | 2217.1 | 1819.7 | 11.267 | 5.592 | 3.12 | | Clay | 100.0 | | | 10.74 | 1.04 | n.a. | n.a. | 0.94 | 0.565 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.540 | 11.440 | 0.475 | 2237.9 | 1829.8 | 11.281 | 4.602 | 3.06 | | Clay | 100.0 | | | 10.81 | 1.04 | n.a. | n.a. | 0.94 | 0.566 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.700 | 10.880 | 0.340 | 2257.4 | 1839.3 | 10.603 | 3.488 | 3.01 | | Clay | 100.0 | | | 10.28 | 1.04 | n.a. | n.a. | 0.94 | 0.567 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.860 | 10.080 | 0.310 | 2276.9 | 1848.9 | 9.673 | 3.461 | 3.04 | | Clay | 100.0 | | | 9.53 | 1.04 | n.a. | n.a. | 0.94 | 0.568 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.030 | 9.350 | 0.355 | 2297.7 | 1859.0 | 8.823 | 4.325 | 3.13 | | Clay | 100.0 | | | 8.84 | 1.03 | n.a. | n.a. | 0.94 | 0.569 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.190 | 8.910 | 0.370 | 2317.2 | 1868.5 | 8.297 | 4.767 | 3.18 | | Clay | 100.0 | | | 8.42 | 1.03 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.360 | 10.100 | 0.348 | 2337.9 | 1878.7 | 9.508 | 3.894 | 3.08 | | Clay | 100.0 | | | 9.55 | 1.03 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.520 | 10.590 | 0.348 | 2357.4 | 1888.2 | 9.969 | 3.695 | 3.05 | | Clay | 100.0 | | | 10.01 | 1.03 | n.a. | n.a. | 0.93 | 0.571 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.690 | 10.250 | 0.388 | 2378.2 | 1898.3 | 9.546 | 4.285 | 3.10 | | Clay | 100.0 | | | 9.69 | 1.03 | n.a. | n.a. | 0.93 | 0.572 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.850 | 10.700 | 0.497 | 2397.7 | 1907.9 | 9.960 | 5.228 | 3.14 | | Clay | 100.0 | | | 10.11 | 1.03 | n.a. | n.a. | 0.93 | 0.573 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.010 | 10.750 | 0.561 | 2417.2 | 1917.4 | 9.952 | 5.880 | 3.17 | | Clay | 100.0 | | | 10.16 | 1.03 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.180 | 11.120 | 0.630 | 2438.0 | 1927.5 | 10.273 | 6.362 | 3.18 | | Clay | 100.0 | | | 10.51 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.340 | 11.930 | 0.659 | 2457.5 | 1937.1 | 11.049 | 6.157 | 3.15 | | Clay | 100.0 | | | 11.28 | 1.02 | n.a. | n.a. | 0.93 | 0.575 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.510 | 12.470 | 0.698 | 2478.2 | 1947.2 | 11.535 | 6.216 | 3.14 | | Clay | 100.0 | | | 11.79 | 1.02 | n.a. | n.a. | 0.93 | 0.576 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.670 | 13.310 | 0.751 | 2497.7 | 1956.7 | 12.328 | 6.225 | 3.12 | | Clay | 100.0 | | | 12.58 | 1.02 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.830 | 14.360 | 0.772 | 2517.3 | 1966.3 | 13.326 | 5.889 | 3.08 | | Clay | 100.0 | | | 13.57 | 1.02 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.000 | 14.880 | 0.784 | 2538.0 | 1976.4 | 13.774 | 5.761 | 3.06 | | Clay | 100.0 | | | 14.06 | 1.02 | n.a. | n.a. | 0.93 | 0.578 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.160 | 14.840 | 0.777 | 2557.5 | 1985.9 | 13.657 | 5.727 | 3.06 | | Clay | 100.0 | | | 14.03 | 1.02 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.330 | 14.910 | 0.764 | 2578.3 | 1996.1 | 13.648 | 5.607 | 3.05 | | Clay | 100.0 | | | 14.09 | 1.02 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.490 | 14.770 | 0.824 | 2597.8 | 2005.6 | 13.433 | 6.119 | 3.08 | | Clay | 100.0 | | | 13.96 | 1.01 | n.a. | n.a. | 0.93 | 0.580 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.650 | 14.690 | 0.784 | 2617.3 | 2015.1 | 13.281 | 5.862 | 3.08 | | Clay | 100.0 | | | 13.88 | 1.01 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.820 | 14.450 | 0.729 | 2638.0 | 2025.3 | 12.967 | 5.552 | 3.07 | | Clay | 100.0 | | | 13.66 | 1.01 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.980 | 13.740 | 0.652 | 2657.6 | 2034.8 | 12.199 | 5.250 | 3.07 | | Clay | 100.0 | | | 12.99 | 1.01 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.150 | 12.870 | 0.595 | 2678.3 | 2044.9 | 11.277 | 5.158 | 3.10 | | Clay | 100.0 | | | 12.16 | 1.01 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.310 | 12.250 | 0.612 | 2697.8 | 2054.5 | 10.612 | 5.613 | 3.14 | | Clay | 100.0 | | | 11.58 | 1.01 | n.a. | n.a. | 0.92 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.470 | 12.940 | 0.652 | 2717.3 | 2064.0 | 11.222 | 5.626 | 3.12 | | Clay | 100.0 | | | 12.23 | 1.01 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

| CPT No. | 3 |
|---|---|

| PGA ($A_{max}$) | 0.63 |
|---|---|

| Total Settlement: | 0.31 | (Inches) |
|---|---|---|

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22.640 | 13.500 | 0.703 | 2738.1 | 2074.1 | 11.697 | 5.794 | 3.11 | | Clay | 100.0 | | | 12.76 | 1.01 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.800 | 13.710 | 0.701 | 2757.6 | 2083.7 | 11.836 | 5.686 | 3.11 | | Clay | 100.0 | | | 12.96 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.970 | 12.960 | 0.664 | 2778.3 | 2093.8 | 11.052 | 5.736 | 3.13 | | Clay | 100.0 | | | 12.25 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.130 | 12.190 | 0.575 | 2797.9 | 2103.3 | 10.261 | 5.327 | 3.14 | | Clay | 100.0 | | | 11.52 | 1.00 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.290 | 10.970 | 0.496 | 2817.4 | 2112.9 | 9.050 | 5.187 | 3.17 | | Clay | 100.0 | | | 10.37 | 1.00 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.460 | 10.740 | 0.471 | 2838.1 | 2123.0 | 8.781 | 5.053 | 3.18 | | Clay | 100.0 | | | 10.15 | 1.00 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.620 | 11.210 | 0.499 | 2857.6 | 2132.6 | 9.173 | 5.098 | 3.16 | | Clay | 100.0 | | | 10.60 | 1.00 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.790 | 11.380 | 0.510 | 2878.4 | 2142.7 | 9.279 | 5.131 | 3.16 | | Clay | 100.0 | | | 10.76 | 1.00 | n.a. | n.a. | 0.91 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.950 | 10.960 | 0.496 | 2897.9 | 2152.2 | 8.838 | 5.213 | 3.18 | | Clay | 100.0 | | | 10.36 | 1.00 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.110 | 10.780 | 0.507 | 2917.4 | 2161.8 | 8.624 | 5.437 | 3.20 | | Clay | 100.0 | | | 10.19 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.280 | 11.250 | 0.518 | 2938.2 | 2171.9 | 9.007 | 5.296 | 3.18 | | Clay | 100.0 | | | 10.63 | 0.99 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.440 | 11.390 | 0.570 | 2957.7 | 2181.4 | 9.087 | 5.747 | 3.20 | | Clay | 100.0 | | | 10.77 | 0.99 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.610 | 11.030 | 0.538 | 2978.4 | 2191.6 | 8.707 | 5.642 | 3.21 | | Clay | 100.0 | | | 10.43 | 0.99 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.770 | 10.300 | 0.474 | 2997.9 | 2201.1 | 7.997 | 5.381 | 3.22 | | Clay | 100.0 | | | 9.74 | 0.99 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.930 | 10.220 | 0.413 | 3017.5 | 2210.6 | 7.881 | 4.738 | 3.20 | | Clay | 100.0 | | | 9.66 | 0.99 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.100 | 9.040 | 0.378 | 3038.2 | 2220.8 | 6.773 | 5.023 | 3.26 | | Clay | 100.0 | | | 8.54 | 0.99 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.260 | 8.330 | 0.356 | 3057.7 | 2230.3 | 6.099 | 5.233 | 3.31 | | Clay | 100.0 | | | 7.87 | 0.99 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.430 | 8.540 | 0.387 | 3078.5 | 2240.4 | 6.249 | 5.525 | 3.32 | | Clay | 100.0 | | | 8.07 | 0.99 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.590 | 8.210 | 0.411 | 3098.0 | 2250.0 | 5.921 | 6.163 | 3.36 | | Clay | 100.0 | | | 7.76 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.750 | 7.930 | 0.445 | 3117.5 | 2259.5 | 5.640 | 6.981 | 3.41 | | Clay | 100.0 | | | 7.50 | 0.98 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.920 | 8.380 | 0.428 | 3138.2 | 2269.6 | 6.002 | 6.283 | 3.36 | | Clay | 100.0 | | | 7.92 | 0.98 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.080 | 8.500 | 0.467 | 3157.8 | 2279.2 | 6.073 | 6.745 | 3.38 | | Clay | 100.0 | | | 8.03 | 0.98 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.250 | 8.310 | 0.463 | 3178.5 | 2289.3 | 5.871 | 6.892 | 3.40 | | Clay | 100.0 | | | 7.85 | 0.98 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.410 | 8.310 | 0.465 | 3198.0 | 2298.8 | 5.839 | 6.927 | 3.40 | | Clay | 100.0 | | | 7.85 | 0.98 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.570 | 8.160 | 0.437 | 3217.5 | 2308.4 | 5.676 | 6.674 | 3.40 | | Clay | 100.0 | | | 7.71 | 0.98 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.740 | 7.760 | 0.411 | 3238.3 | 2318.5 | 5.297 | 6.695 | 3.42 | | Clay | 100.0 | | | 7.33 | 0.98 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.900 | 7.550 | 0.435 | 3257.8 | 2328.0 | 5.087 | 7.342 | 3.46 | | Clay | 100.0 | | | 7.14 | 0.98 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.070 | 8.190 | 0.482 | 3278.5 | 2338.2 | 5.603 | 7.359 | 3.43 | | Clay | 100.0 | | | 7.74 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.230 | 10.170 | 0.543 | 3298.1 | 2347.7 | 7.259 | 6.367 | 3.30 | | Clay | 100.0 | | | 9.61 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.400 | 11.070 | 0.595 | 3318.8 | 2357.8 | 7.982 | 6.323 | 3.27 | | Clay | 100.0 | | | 10.46 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.560 | 11.250 | 0.592 | 3338.3 | 2367.4 | 8.094 | 6.182 | 3.26 | | Clay | 100.0 | | | 10.63 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.720 | 11.660 | 0.537 | 3357.8 | 2376.9 | 8.398 | 5.376 | 3.21 | | Clay | 100.0 | | | 11.02 | 0.97 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.890 | 11.520 | 0.635 | 3378.6 | 2387.0 | 8.237 | 6.454 | 3.26 | | Clay | 100.0 | | | 10.89 | 0.97 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.050 | 12.000 | 0.838 | 3398.1 | 2396.6 | 8.596 | 8.136 | 3.31 | | Clay | 100.0 | | | 11.34 | 0.97 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.220 | 14.650 | 0.871 | 3418.8 | 2406.7 | 10.754 | 6.729 | 3.18 | | Clay | 100.0 | | | 13.85 | 0.97 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.380 | 26.920 | 0.713 | 3438.4 | 2416.2 | 20.859 | 2.827 | 2.72 | | Clay | 80.9 | | | 25.44 | 0.97 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.540 | 24.320 | 0.549 | 3457.9 | 2425.8 | 18.626 | 2.429 | 2.72 | | Clay | 80.9 | | | 22.99 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.710 | 16.010 | 0.374 | 3478.6 | 2435.9 | 11.717 | 2.618 | 2.91 | | Clay | 95.5 | | | 15.13 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.870 | 12.120 | 0.356 | 3498.1 | 2445.5 | 8.482 | 3.431 | 3.09 | | Clay | 100.0 | | | 11.46 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.040 | 11.540 | 0.401 | 3518.9 | 2455.6 | 7.966 | 4.099 | 3.16 | | Clay | 100.0 | | | 10.91 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.200 | 10.830 | 0.420 | 3538.4 | 2465.1 | 7.351 | 4.634 | 3.21 | | Clay | 100.0 | | | 10.24 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.360 | 10.490 | 0.400 | 3557.9 | 2474.7 | 7.040 | 4.591 | 3.23 | | Clay | 100.0 | | | 9.91 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.530 | 10.310 | 0.400 | 3578.7 | 2484.8 | 6.858 | 4.692 | 3.24 | | Clay | 100.0 | | | 9.74 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.690 | 10.550 | 0.395 | 3598.2 | 2494.3 | 7.017 | 4.509 | 3.22 | | Clay | 100.0 | | | 9.97 | 0.96 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.860 | 10.990 | 0.364 | 3618.9 | 2504.5 | 7.331 | 3.964 | 3.18 | | Clay | 100.0 | | | 10.39 | 0.96 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.020 | 11.870 | 0.405 | 3638.4 | 2514.0 | 7.996 | 4.026 | 3.15 | | Clay | 100.0 | | | 11.22 | 0.96 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.180 | 12.130 | 0.432 | 3658.0 | 2523.5 | 8.164 | 4.198 | 3.15 | | Clay | 100.0 | | | 11.47 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.350 | 9.510 | 0.364 | 3678.7 | 2533.7 | 6.055 | 4.745 | 3.29 | | Clay | 100.0 | | | 8.99 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.510 | 9.270 | 0.302 | 3698.2 | 2543.2 | 5.836 | 4.071 | 3.26 | | Clay | 100.0 | | | 8.76 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.680 | 9.250 | 0.311 | 3719.0 | 2553.3 | 5.789 | 4.212 | 3.28 | | Clay | 100.0 | | | 8.74 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.840 | 8.860 | 0.317 | 3738.5 | 2562.9 | 5.455 | 4.536 | 3.32 | | Clay | 100.0 | | | 8.37 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.000 | 8.770 | 0.304 | 3758.0 | 2572.4 | 5.358 | 4.409 | 3.31 | | Clay | 100.0 | | | 8.29 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.170 | 8.800 | 0.279 | 3778.7 | 2582.5 | 5.352 | 4.031 | 3.29 | | Clay | 100.0 | | | 8.32 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.330 | 8.380 | 0.250 | 3798.3 | 2592.1 | 5.001 | 3.854 | 3.31 | | Clay | 100.0 | | | 7.92 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.500 | 7.910 | 0.227 | 3819.0 | 2602.2 | 4.612 | 3.778 | 3.33 | | Clay | 100.0 | | | 7.48 | 0.95 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.660 | 7.550 | 0.229 | 3838.5 | 2611.7 | 4.312 | 4.071 | 3.37 | | Clay | 100.0 | | | 7.14 | 0.95 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.820 | 7.370 | 0.232 | 3858.0 | 2621.3 | 4.151 | 4.268 | 3.40 | | Clay | 100.0 | | | 6.97 | 0.95 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.990 | 7.580 | 0.240 | 3878.8 | 2631.4 | 4.287 | 4.250 | 3.39 | | Clay | 100.0 | | | 7.16 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.150 | 7.890 | 0.229 | 3898.3 | 2640.9 | 4.499 | 3.848 | 3.35 | | Clay | 100.0 | | | 7.46 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.320 | 8.160 | 0.221 | 3919.0 | 2651.1 | 4.678 | 3.558 | 3.31 | | Clay | 100.0 | | | 7.71 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.480 | 8.100 | 0.214 | 3938.6 | 2660.6 | 4.609 | 3.496 | 3.31 | | Clay | 100.0 | | | 7.66 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.640 | 8.350 | 0.217 | 3958.1 | 2670.1 | 4.772 | 3.409 | 3.30 | | Clay | 100.0 | | | 7.89 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.810 | 8.330 | 0.255 | 3978.8 | 2680.3 | 4.731 | 4.028 | 3.34 | | Clay | 100.0 | | | 7.87 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.970 | 8.700 | 0.306 | 3998.3 | 2689.8 | 4.982 | 4.571 | 3.35 | | Clay | 100.0 | | | 8.22 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.140 | 9.320 | 0.376 | 4019.1 | 2699.9 | 5.415 | 5.142 | 3.35 | | Clay | 100.0 | | | 8.81 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.300 | 10.150 | 0.425 | 4038.6 | 2709.5 | 6.002 | 5.225 | 3.32 | | Clay | 100.0 | | | 9.59 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.460 | 10.860 | 0.468 | 4058.1 | 2719.0 | 6.496 | 5.297 | 3.29 | | Clay | 100.0 | | | 10.26 | 0.94 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 3

PGA ($A_{max}$) 0.63

Total Settlement: 0.31 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33.630 | 10.890 | 0.483 | 4078.9 | 2729.1 | 6.486 | 5.452 | 3.30 | | Clay | 100.0 | | | 10.29 | 0.94 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.790 | 10.900 | 0.456 | 4098.4 | 2738.7 | 6.464 | 5.155 | 3.29 | | Clay | 100.0 | | | 10.30 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.960 | 10.610 | 0.449 | 4119.1 | 2748.8 | 6.221 | 5.248 | 3.31 | | Clay | 100.0 | | | 10.03 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.120 | 10.380 | 0.399 | 4138.6 | 2758.4 | 6.026 | 4.800 | 3.29 | | Clay | 100.0 | | | 9.81 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.280 | 10.280 | 0.414 | 4158.2 | 2767.9 | 5.926 | 5.053 | 3.31 | | Clay | 100.0 | | | 9.72 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.450 | 9.890 | 0.422 | 4178.9 | 2778.0 | 5.616 | 5.407 | 3.35 | | Clay | 100.0 | | | 9.35 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.610 | 10.460 | 0.409 | 4198.4 | 2787.6 | 5.999 | 4.889 | 3.30 | | Clay | 100.0 | | | 9.89 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.780 | 10.290 | 0.395 | 4219.2 | 2797.7 | 5.848 | 4.824 | 3.31 | | Clay | 100.0 | | | 9.73 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.940 | 9.890 | 0.359 | 4238.7 | 2807.2 | 5.536 | 4.617 | 3.31 | | Clay | 100.0 | | | 9.35 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.100 | 9.780 | 0.355 | 4258.2 | 2816.8 | 5.432 | 4.633 | 3.32 | | Clay | 100.0 | | | 9.24 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.270 | 10.190 | 0.363 | 4278.9 | 2826.9 | 5.696 | 4.510 | 3.30 | | Clay | 100.0 | | | 9.63 | 0.93 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.430 | 10.680 | 0.388 | 4298.5 | 2836.4 | 6.015 | 4.545 | 3.28 | | Clay | 100.0 | | | 10.09 | 0.93 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.600 | 11.180 | 0.407 | 4319.2 | 2846.6 | 6.338 | 4.512 | 3.26 | | Clay | 100.0 | | | 10.57 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.760 | 11.640 | 0.409 | 4338.7 | 2856.1 | 6.632 | 4.318 | 3.23 | | Clay | 100.0 | | | 11.00 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.930 | 12.000 | 0.407 | 4359.5 | 2866.2 | 6.852 | 4.149 | 3.21 | | Clay | 100.0 | | | 11.34 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.090 | 12.320 | 0.393 | 4379.0 | 2875.8 | 7.045 | 3.881 | 3.19 | | Clay | 100.0 | | | 11.64 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.250 | 12.180 | 0.397 | 4398.5 | 2885.3 | 6.918 | 3.973 | 3.20 | | Clay | 100.0 | | | 11.51 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.420 | 11.910 | 0.386 | 4419.2 | 2895.4 | 6.700 | 3.976 | 3.21 | | Clay | 100.0 | | | 11.26 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.580 | 12.200 | 0.388 | 4438.8 | 2905.0 | 6.871 | 3.883 | 3.19 | | Clay | 100.0 | | | 11.53 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.750 | 12.350 | 0.391 | 4459.5 | 2915.1 | 6.943 | 3.866 | 3.19 | | Clay | 100.0 | | | 11.67 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.910 | 12.400 | 0.375 | 4479.0 | 2924.6 | 6.948 | 3.689 | 3.18 | | Clay | 100.0 | | | 11.72 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.070 | 11.880 | 0.362 | 4498.5 | 2934.2 | 6.565 | 3.759 | 3.20 | | Clay | 100.0 | | | 11.23 | 0.92 | n.a. | n.a. | 0.84 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.240 | 11.290 | 0.336 | 4519.3 | 2944.3 | 6.134 | 3.721 | 3.23 | | Clay | 100.0 | | | 10.67 | 0.92 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.400 | 11.080 | 0.346 | 4538.8 | 2953.8 | 5.966 | 3.929 | 3.25 | | Clay | 100.0 | | | 10.47 | 0.92 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.570 | 11.080 | 0.325 | 4559.5 | 2964.0 | 5.938 | 3.696 | 3.24 | | Clay | 100.0 | | | 10.47 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.730 | 11.140 | 0.314 | 4579.1 | 2973.5 | 5.953 | 3.544 | 3.22 | | Clay | 100.0 | | | 10.53 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.890 | 10.620 | 0.285 | 4598.6 | 2983.0 | 5.579 | 3.420 | 3.24 | | Clay | 100.0 | | | 10.04 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.060 | 11.010 | 0.272 | 4619.3 | 2993.2 | 5.813 | 3.125 | 3.20 | | Clay | 100.0 | | | 10.41 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.220 | 11.860 | 0.308 | 4638.8 | 3002.7 | 6.355 | 3.224 | 3.18 | | Clay | 100.0 | | | 11.21 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.390 | 13.250 | 0.440 | 4659.6 | 3012.8 | 7.249 | 4.032 | 3.18 | | Clay | 100.0 | | | 12.52 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.550 | 15.630 | 0.558 | 4679.1 | 3022.4 | 8.795 | 4.195 | 3.13 | | Clay | 100.0 | | | 14.77 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.710 | 18.690 | 0.671 | 4698.6 | 3031.9 | 10.779 | 4.103 | 3.05 | | Clay | 100.0 | | | 17.67 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.880 | 20.940 | 0.783 | 4719.4 | 3042.0 | 12.216 | 4.215 | 3.01 | | Clay | 100.0 | | | 19.79 | 0.91 | n.a. | n.a. | 0.84 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.040 | 20.970 | 0.868 | 4738.9 | 3051.6 | 12.191 | 4.665 | 3.04 | | Clay | 100.0 | | | 19.82 | 0.91 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.210 | 22.440 | 0.800 | 4759.6 | 3061.7 | 13.104 | 3.988 | 2.97 | | Clay | 100.0 | | | 21.21 | 0.91 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.370 | 23.120 | 0.882 | 4779.1 | 3071.3 | 13.500 | 4.254 | 2.98 | | Clay | 100.0 | | | 21.85 | 0.91 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.530 | 20.660 | 0.855 | 4798.7 | 3080.8 | 11.855 | 4.681 | 3.05 | | Clay | 100.0 | | | 19.53 | 0.91 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.700 | 22.210 | 0.642 | 4819.4 | 3090.9 | 12.812 | 3.243 | 2.93 | | Clay | 97.3 | | | 20.99 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.860 | 26.580 | 0.530 | 4838.9 | 3100.5 | 15.585 | 2.193 | 2.76 | | Clay | 83.9 | | | 25.12 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.030 | 21.140 | 0.457 | 4859.7 | 3110.6 | 12.030 | 2.443 | 2.88 | | Clay | 93.4 | | | 19.98 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.190 | 15.650 | 0.388 | 4879.2 | 3120.1 | 8.468 | 2.936 | 3.05 | | Clay | 100.0 | | | 14.79 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.350 | 13.560 | 0.431 | 4898.7 | 3129.7 | 7.100 | 3.881 | 3.18 | | Clay | 100.0 | | | 12.82 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.520 | 12.920 | 0.399 | 4919.4 | 3139.8 | 6.663 | 3.816 | 3.20 | | Clay | 100.0 | | | 12.21 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.680 | 13.230 | 0.374 | 4939.0 | 3149.3 | 6.834 | 3.474 | 3.17 | | Clay | 100.0 | | | 12.50 | 0.90 | n.a. | n.a. | 0.83 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.850 | 12.580 | 0.317 | 4959.7 | 3159.5 | 6.394 | 3.134 | 3.17 | | Clay | 100.0 | | | 11.89 | 0.90 | n.a. | n.a. | 0.82 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.010 | 12.080 | 0.347 | 4979.2 | 3169.0 | 6.053 | 3.614 | 3.22 | | Clay | 100.0 | | | 11.42 | 0.90 | n.a. | n.a. | 0.82 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.170 | 12.400 | 0.326 | 4998.7 | 3178.5 | 6.230 | 3.292 | 3.19 | | Clay | 100.0 | | | 11.72 | 0.90 | n.a. | n.a. | 0.82 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.340 | 13.430 | 0.313 | 5019.5 | 3188.7 | 6.849 | 2.868 | 3.12 | | Clay | 100.0 | | | 12.69 | 0.90 | n.a. | n.a. | 0.82 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.500 | 12.950 | 0.302 | 5039.0 | 3198.2 | 6.523 | 2.892 | 3.14 | | Clay | 100.0 | | | 12.24 | 0.90 | n.a. | n.a. | 0.82 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.670 | 12.780 | 0.312 | 5059.7 | 3208.3 | 6.390 | 3.047 | 3.16 | | Clay | 100.0 | | | 12.08 | 0.90 | n.a. | n.a. | 0.82 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.830 | 13.120 | 0.349 | 5079.3 | 3217.9 | 6.576 | 3.296 | 3.17 | | Clay | 100.0 | | | 12.40 | 0.90 | n.a. | n.a. | 0.82 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.990 | 13.390 | 0.357 | 5098.8 | 3227.4 | 6.718 | 3.289 | 3.16 | | Clay | 100.0 | | | 12.66 | 0.89 | n.a. | n.a. | 0.82 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.160 | 13.490 | 0.391 | 5119.5 | 3237.5 | 6.752 | 3.574 | 3.18 | | Clay | 100.0 | | | 12.75 | 0.89 | n.a. | n.a. | 0.82 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.320 | 13.540 | 0.396 | 5139.0 | 3247.1 | 6.757 | 3.612 | 3.18 | | Clay | 100.0 | | | 12.80 | 0.89 | n.a. | n.a. | 0.82 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.490 | 13.700 | 0.439 | 5159.8 | 3257.2 | 6.828 | 3.946 | 3.20 | | Clay | 100.0 | | | 12.95 | 0.89 | n.a. | n.a. | 0.82 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.650 | 14.350 | 0.477 | 5179.3 | 3266.7 | 7.200 | 4.053 | 3.19 | | Clay | 100.0 | | | 13.56 | 0.89 | n.a. | n.a. | 0.81 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.810 | 15.020 | 0.473 | 5198.8 | 3276.3 | 7.582 | 3.807 | 3.15 | | Clay | 100.0 | | | 14.20 | 0.89 | n.a. | n.a. | 0.81 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.980 | 14.440 | 0.496 | 5219.6 | 3286.4 | 7.199 | 4.190 | 3.20 | | Clay | 100.0 | | | 13.65 | 0.89 | n.a. | n.a. | 0.81 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 43.140 | 14.570 | 0.480 | 5239.1 | 3295.9 | 7.252 | 4.020 | 3.18 | | Clay | 100.0 | | | 13.77 | 0.89 | n.a. | n.a. | 0.81 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 43.310 | 14.790 | 0.445 | 5259.8 | 3306.1 | 7.356 | 3.663 | 3.16 | | Clay | 100.0 | | | 13.98 | 0.89 | n.a. | n.a. | 0.81 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 43.470 | 14.110 | 0.428 | 5279.3 | 3315.6 | 6.919 | 3.730 | 3.18 | | Clay | 100.0 | | | 13.34 | 0.89 | n.a. | n.a. | 0.81 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 43.640 | 13.050 | 0.414 | 5300.1 | 3325.7 | 6.254 | 3.981 | 3.23 | | Clay | 100.0 | | | 12.33 | 0.89 | n.a. | n.a. | 0.81 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 43.800 | 13.230 | 0.459 | 5319.6 | 3335.3 | 6.338 | 4.343 | 3.25 | | Clay | 100.0 | | | 12.50 | 0.89 | n.a. | n.a. | 0.81 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 43.960 | 13.930 | 0.510 | 5339.1 | 3344.8 | 6.733 | 4.529 | 3.24 | | Clay | 100.0 | | | 13.17 | 0.89 | n.a. | n.a. | 0.81 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

| CPT No. | 4 |
|---|---|

| PGA ($A_{max}$) | 0.63 |
|---|---|

| Total Settlement: | 0.12 | (Inches) |
|---|---|---|

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.820 | 5.900 | 0.781 | 98.4 | 98.4 | 118.919 | 13.342 | 2.73 | | Unsaturated | 81.3 | | | 5.58 | 1.70 | 9.48 | 64.50 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 0.980 | 26.780 | 0.937 | 117.6 | 117.6 | 107.133 | 3.507 | 2.28 | | Unsaturated | 45.2 | | | 25.31 | 1.70 | 43.03 | 98.28 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.150 | 24.380 | 0.783 | 138.0 | 138.0 | 89.978 | 3.221 | 2.30 | | Unsaturated | 46.9 | | | 23.04 | 1.70 | 39.17 | 94.23 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.310 | 20.740 | 0.544 | 157.2 | 157.2 | 71.648 | 2.632 | 2.30 | | Unsaturated | 47.1 | | | 19.60 | 1.70 | 33.33 | 86.98 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.480 | 16.690 | 0.391 | 177.6 | 177.6 | 54.161 | 2.357 | 2.36 | | Unsaturated | 51.5 | | | 15.78 | 1.70 | 26.82 | 80.47 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.640 | 13.340 | 0.329 | 196.8 | 196.8 | 41.039 | 2.485 | 2.46 | | Unsaturated | 59.9 | | | 12.61 | 1.70 | 21.43 | 76.13 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.800 | 11.460 | 0.337 | 216.0 | 216.0 | 33.583 | 2.966 | 2.58 | | Unsaturated | 69.2 | | | 10.83 | 1.70 | 18.41 | 74.25 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 1.970 | 10.020 | 0.277 | 236.4 | 236.4 | 43.405 | 2.801 | 2.48 | | Unsaturated | 61.2 | | | 9.47 | 1.70 | 16.10 | 69.61 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.130 | 11.130 | 0.214 | 255.6 | 255.6 | 29.921 | 1.943 | 2.50 | | Unsaturated | 63.0 | | | 10.52 | 1.70 | 17.88 | 72.32 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.300 | 8.540 | 0.180 | 276.0 | 276.0 | 33.046 | 2.145 | 2.49 | | Unsaturated | 62.4 | | | 8.07 | 1.70 | 13.72 | 66.84 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.460 | 6.530 | 0.223 | 295.2 | 295.2 | 23.948 | 3.486 | 2.73 | | Unsaturated | 81.8 | | | 6.17 | 1.70 | 10.49 | 65.87 | 1.00 | 0.410 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.620 | 6.160 | 0.308 | 314.4 | 314.4 | 38.186 | 5.134 | 2.70 | | Unsaturated | 79.0 | | | 5.82 | 1.70 | 9.90 | 64.75 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.790 | 9.970 | 0.334 | 334.8 | 334.8 | 33.680 | 3.402 | 2.62 | | Unsaturated | 72.3 | | | 9.42 | 1.70 | 16.02 | 71.69 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 2.950 | 10.240 | 0.287 | 354.0 | 354.0 | 33.251 | 2.850 | 2.57 | | Unsaturated | 68.5 | | | 9.68 | 1.70 | 16.45 | 71.60 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.120 | 8.020 | 0.197 | 374.4 | 374.4 | 24.886 | 2.519 | 2.63 | | Unsaturated | 73.6 | | | 7.58 | 1.70 | 12.89 | 67.85 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.280 | 6.470 | 0.181 | 393.6 | 393.6 | 19.245 | 2.892 | 2.76 | | Unsaturated | 83.6 | | | 6.12 | 1.70 | 10.40 | 65.97 | 1.00 | 0.409 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.440 | 5.590 | 0.143 | 412.8 | 412.8 | 26.083 | 2.664 | 2.63 | | Unsaturated | 73.5 | | | 5.28 | 1.70 | 8.98 | 62.78 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.610 | 5.150 | 0.124 | 433.2 | 433.2 | 22.777 | 2.503 | 2.66 | | Unsaturated | 75.9 | | | 4.87 | 1.70 | 8.28 | 62.22 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.770 | 3.750 | 0.113 | 452.4 | 452.4 | 15.578 | 3.215 | 2.86 | | Unsaturated | 91.7 | | | 3.54 | 1.70 | 6.03 | 61.12 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 3.940 | 3.840 | 0.114 | 472.8 | 472.8 | 15.244 | 3.166 | 2.86 | | Unsaturated | 91.9 | | | 3.63 | 1.70 | 6.17 | 61.33 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.100 | 3.700 | 0.111 | 492.0 | 492.0 | 14.041 | 3.222 | 2.90 | | Unsaturated | 94.6 | | | 3.50 | 1.70 | 5.95 | 61.28 | 1.00 | 0.408 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.270 | 3.650 | 0.119 | 512.4 | 512.4 | 13.247 | 3.492 | 2.94 | | Unsaturated | 97.9 | | | 3.45 | 1.70 | 5.86 | 61.45 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.430 | 4.140 | 0.143 | 531.6 | 531.6 | 14.576 | 3.681 | 2.92 | | Unsaturated | 96.4 | | | 3.91 | 1.70 | 6.65 | 62.35 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.590 | 3.990 | 0.245 | 550.8 | 550.8 | 13.488 | 6.604 | 3.10 | | Unsaturated | 100.0 | | | 3.77 | 1.70 | 6.41 | 62.33 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.760 | 5.220 | 0.415 | 571.2 | 571.2 | 17.277 | 8.418 | 3.10 | | Unsaturated | 100.0 | | | 4.93 | 1.70 | 8.39 | 64.92 | 0.99 | 0.407 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 4.920 | 9.400 | 0.513 | 590.4 | 590.4 | 30.843 | 5.633 | 2.79 | | Unsaturated | 86.5 | | | 8.88 | 1.70 | 15.10 | 72.44 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.090 | 13.300 | 0.506 | 610.8 | 610.8 | 29.310 | 3.895 | 2.70 | | Unsaturated | 79.0 | | | 12.57 | 1.70 | 21.37 | 79.65 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.250 | 10.610 | 0.531 | 630.0 | 630.0 | 32.683 | 5.160 | 2.75 | | Unsaturated | 83.0 | | | 10.03 | 1.70 | 17.05 | 74.55 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.410 | 10.990 | 0.532 | 649.2 | 649.2 | 32.857 | 4.985 | 2.74 | | Unsaturated | 82.0 | | | 10.39 | 1.70 | 17.66 | 75.22 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.580 | 12.170 | 0.602 | 669.6 | 669.6 | 35.350 | 5.089 | 2.72 | | Unsaturated | 80.7 | | | 11.50 | 1.70 | 19.55 | 77.52 | 0.99 | 0.406 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.740 | 12.660 | 0.672 | 688.8 | 688.8 | 35.760 | 5.454 | 2.74 | | Unsaturated | 82.1 | | | 11.97 | 1.70 | 20.34 | 78.73 | 0.99 | 0.405 | 1.100 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 5.910 | 12.800 | 0.742 | 709.2 | 709.2 | 35.097 | 5.961 | 2.77 | | Unsaturated | 84.8 | | | 12.10 | 1.70 | 20.57 | 79.35 | 0.99 | 0.405 | 1.099 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.070 | 12.210 | 0.762 | 728.4 | 728.4 | 32.526 | 6.434 | 2.82 | | Unsaturated | 88.5 | | | 11.54 | 1.70 | 19.62 | 78.55 | 0.99 | 0.405 | 1.096 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.230 | 12.180 | 0.758 | 747.6 | 747.6 | 31.584 | 6.420 | 2.83 | | Unsaturated | 89.2 | | | 11.51 | 1.70 | 19.57 | 78.55 | 0.99 | 0.405 | 1.093 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.400 | 12.220 | 0.755 | 768.0 | 768.0 | 30.823 | 6.376 | 2.83 | | Unsaturated | 89.6 | | | 11.55 | 1.70 | 19.64 | 78.68 | 0.99 | 0.405 | 1.091 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.560 | 11.940 | 0.700 | 787.2 | 787.2 | 29.335 | 6.062 | 2.83 | | Unsaturated | 89.6 | | | 11.29 | 1.70 | 19.19 | 78.09 | 0.99 | 0.404 | 1.089 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.730 | 11.370 | 0.659 | 807.6 | 807.6 | 27.158 | 6.012 | 2.85 | | Unsaturated | 91.3 | | | 10.75 | 1.70 | 18.27 | 77.07 | 0.99 | 0.404 | 1.086 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 6.890 | 11.920 | 0.649 | 826.8 | 826.8 | 27.834 | 5.639 | 2.83 | | Unsaturated | 89.1 | | | 11.27 | 1.68 | 18.93 | 77.71 | 0.99 | 0.404 | 1.084 | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.050 | 12.260 | 0.652 | 846.0 | 846.0 | 27.983 | 5.511 | 2.82 | | Clay | 88.4 | | | 11.59 | 1.27 | n.a. | n.a. | 0.99 | 0.405 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.220 | 12.480 | 0.672 | 866.4 | 866.4 | 27.809 | 5.578 | 2.82 | | Clay | 88.9 | | | 11.80 | 1.27 | n.a. | n.a. | 0.99 | 0.410 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.380 | 11.910 | 0.656 | 885.6 | 885.6 | 25.897 | 5.724 | 2.85 | | Clay | 91.3 | | | 11.26 | 1.26 | n.a. | n.a. | 0.98 | 0.414 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.550 | 11.650 | 0.637 | 906.0 | 906.0 | 24.717 | 5.688 | 2.87 | | Clay | 92.3 | | | 11.01 | 1.25 | n.a. | n.a. | 0.98 | 0.419 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.710 | 11.290 | 0.582 | 925.2 | 925.2 | 23.406 | 5.377 | 2.87 | | Clay | 92.3 | | | 10.67 | 1.24 | n.a. | n.a. | 0.98 | 0.423 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 7.870 | 10.920 | 0.563 | 944.4 | 944.4 | 22.126 | 5.387 | 2.89 | | Clay | 93.8 | | | 10.32 | 1.24 | n.a. | n.a. | 0.98 | 0.427 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.040 | 10.470 | 0.535 | 964.8 | 964.8 | 20.704 | 5.358 | 2.90 | | Clay | 95.4 | | | 9.90 | 1.23 | n.a. | n.a. | 0.98 | 0.431 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.200 | 10.370 | 0.511 | 984.0 | 984.0 | 20.077 | 5.169 | 2.90 | | Clay | 95.3 | | | 9.80 | 1.22 | n.a. | n.a. | 0.98 | 0.435 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.370 | 10.480 | 0.500 | 1004.4 | 1004.4 | 19.868 | 5.009 | 2.90 | | Clay | 94.9 | | | 9.91 | 1.22 | n.a. | n.a. | 0.98 | 0.439 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.530 | 10.350 | 0.472 | 1023.6 | 1023.6 | 19.223 | 4.800 | 2.90 | | Clay | 94.8 | | | 9.78 | 1.21 | n.a. | n.a. | 0.98 | 0.443 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.690 | 9.930 | 0.404 | 1042.8 | 1042.8 | 18.045 | 4.297 | 2.89 | | Clay | 94.0 | | | 9.39 | 1.21 | n.a. | n.a. | 0.98 | 0.446 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 8.860 | 8.380 | 0.408 | 1063.2 | 1063.2 | 14.764 | 5.199 | 3.01 | | Clay | 100.0 | | | 7.92 | 1.20 | n.a. | n.a. | 0.98 | 0.450 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.020 | 8.640 | 0.417 | 1082.4 | 1082.4 | 14.965 | 5.145 | 3.00 | | Clay | 100.0 | | | 8.17 | 1.19 | n.a. | n.a. | 0.98 | 0.453 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.190 | 9.230 | 0.354 | 1102.8 | 1102.8 | 15.739 | 4.084 | 2.92 | | Clay | 96.5 | | | 8.72 | 1.19 | n.a. | n.a. | 0.98 | 0.457 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.350 | 8.700 | 0.283 | 1122.0 | 1122.0 | 14.508 | 3.473 | 2.90 | | Clay | 95.3 | | | 8.22 | 1.18 | n.a. | n.a. | 0.98 | 0.460 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.510 | 8.130 | 0.252 | 1141.2 | 1141.2 | 13.248 | 3.334 | 2.92 | | Clay | 96.9 | | | 7.68 | 1.18 | n.a. | n.a. | 0.98 | 0.463 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.680 | 7.660 | 0.315 | 1161.6 | 1161.6 | 12.189 | 4.447 | 3.03 | | Clay | 100.0 | | | 7.24 | 1.17 | n.a. | n.a. | 0.98 | 0.467 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 9.840 | 7.640 | 0.316 | 1180.8 | 1180.8 | 11.940 | 4.480 | 3.04 | | Clay | 100.0 | | | 7.22 | 1.17 | n.a. | n.a. | 0.98 | 0.470 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.010 | 9.350 | 0.321 | 1201.2 | 1201.2 | 14.568 | 3.672 | 2.92 | | Clay | 96.3 | | | 8.84 | 1.16 | n.a. | n.a. | 0.97 | 0.473 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.170 | 8.540 | 0.297 | 1220.4 | 1220.4 | 12.995 | 3.747 | 2.96 | | Clay | 99.9 | | | 8.07 | 1.16 | n.a. | n.a. | 0.97 | 0.476 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.330 | 8.450 | 0.277 | 1239.6 | 1239.6 | 12.633 | 3.534 | 2.96 | | Clay | 99.5 | | | 7.99 | 1.15 | n.a. | n.a. | 0.97 | 0.479 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.500 | 8.810 | 0.289 | 1260.0 | 1260.0 | 12.984 | 3.528 | 2.95 | | Clay | 98.7 | | | 8.33 | 1.15 | n.a. | n.a. | 0.97 | 0.481 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.660 | 8.890 | 0.325 | 1279.2 | 1279.2 | 12.899 | 3.933 | 2.98 | | Clay | 100.0 | | | 8.40 | 1.14 | n.a. | n.a. | 0.97 | 0.484 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.830 | 9.040 | 0.393 | 1299.6 | 1299.6 | 12.912 | 4.689 | 3.02 | | Clay | 100.0 | | | 8.54 | 1.14 | n.a. | n.a. | 0.97 | 0.487 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 10.990 | 10.510 | 0.451 | 1318.8 | 1318.8 | 14.939 | 4.579 | 2.97 | | Clay | 100.0 | | | 9.93 | 1.13 | n.a. | n.a. | 0.97 | 0.490 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.150 | 12.260 | 0.374 | 1338.0 | 1338.0 | 17.326 | 3.222 | 2.82 | | Clay | 88.8 | | | 11.59 | 1.13 | n.a. | n.a. | 0.97 | 0.492 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.320 | 13.310 | 0.466 | 1358.4 | 1358.4 | 18.597 | 3.687 | 2.83 | | Clay | 89.8 | | | 12.58 | 1.12 | n.a. | n.a. | 0.97 | 0.495 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.480 | 11.880 | 0.492 | 1377.6 | 1377.6 | 16.247 | 4.393 | 2.93 | | Clay | 97.2 | | | 11.23 | 1.12 | n.a. | n.a. | 0.97 | 0.497 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.650 | 10.920 | 0.464 | 1398.0 | 1398.0 | 14.622 | 4.541 | 2.97 | | Clay | 100.0 | | | 10.32 | 1.12 | n.a. | n.a. | 0.97 | 0.500 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 4

PGA ($A_{max}$) 0.63

Total Settlement: 0.12 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11.810 | 13.020 | 0.454 | 1417.2 | 1417.2 | 17.374 | 3.684 | 2.86 | | Clay | 91.6 | | | 12.31 | 1.11 | n.a. | n.a. | 0.97 | 0.502 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 11.980 | 12.450 | 0.337 | 1437.6 | 1437.6 | 16.321 | 2.872 | 2.81 | | Clay | 88.0 | | | 11.77 | 1.11 | n.a. | n.a. | 0.97 | 0.504 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.140 | 21.830 | 0.390 | 1456.8 | 1456.8 | 24.037 | 1.849 | 2.56 | | Sand | 68.1 | 26.84 | 1.8 | 48.31 | 1.18 | 57.13 | 123.98 | 0.97 | 0.507 | 1.048 | 0.181 | 0.268 | 0.53 | 0.03 | 0.04 |
| 12.300 | 28.400 | 0.481 | 1476.0 | 1476.0 | 31.305 | 1.739 | 2.46 | | Sand | 59.5 | | 1.8 | 48.32 | 1.18 | 56.90 | 121.41 | 0.97 | 0.509 | 1.045 | 0.174 | 0.255 | 0.50 | 0.03 | 0.04 |
| 12.470 | 20.990 | 0.334 | 1496.4 | 1496.4 | 22.751 | 1.648 | 2.56 | | Sand | 67.4 | 26.84 | 1.8 | 48.31 | 1.17 | 56.48 | 122.98 | 0.97 | 0.511 | 1.044 | 0.178 | 0.262 | 0.51 | 0.03 | 0.04 |
| 12.630 | 13.420 | 0.282 | 1515.6 | 1515.6 | 16.709 | 2.227 | 2.74 | | Clay | 82.2 | | | 12.68 | 1.09 | n.a. | n.a. | 0.96 | 0.513 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.800 | 9.470 | 0.364 | 1536.0 | 1536.0 | 11.331 | 4.182 | 3.04 | | Clay | 100.0 | | | 8.95 | 1.09 | n.a. | n.a. | 0.96 | 0.515 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 12.960 | 12.060 | 0.397 | 1555.2 | 1555.2 | 14.509 | 3.519 | 2.91 | | Clay | 95.5 | | | 11.40 | 1.08 | n.a. | n.a. | 0.96 | 0.517 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.120 | 18.500 | 0.452 | 1574.6 | 1567.2 | 22.605 | 2.552 | 2.67 | | Clay | 76.5 | | | 17.49 | 1.08 | n.a. | n.a. | 0.96 | 0.519 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.290 | 21.150 | 0.496 | 1595.4 | 1577.3 | 25.807 | 2.438 | 2.61 | plastic | Clay | 71.9 | | | 19.99 | 1.08 | n.a. | n.a. | 0.96 | 0.521 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.450 | 17.930 | 0.452 | 1614.9 | 1586.8 | 21.581 | 2.641 | 2.69 | | Clay | 78.5 | | | 16.95 | 1.08 | n.a. | n.a. | 0.96 | 0.523 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.620 | 16.550 | 0.448 | 1635.6 | 1597.0 | 19.703 | 2.849 | 2.75 | | Clay | 82.6 | | | 15.64 | 1.08 | n.a. | n.a. | 0.96 | 0.525 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.780 | 13.950 | 0.513 | 1655.2 | 1606.5 | 16.337 | 3.910 | 2.89 | | Clay | 94.5 | | | 13.19 | 1.08 | n.a. | n.a. | 0.96 | 0.527 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 13.940 | 12.130 | 0.573 | 1674.7 | 1616.0 | 13.976 | 5.070 | 3.02 | | Clay | 100.0 | | | 11.47 | 1.07 | n.a. | n.a. | 0.96 | 0.529 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.110 | 12.850 | 0.667 | 1695.4 | 1626.2 | 14.762 | 5.557 | 3.03 | | Clay | 100.0 | | | 12.15 | 1.07 | n.a. | n.a. | 0.96 | 0.530 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.270 | 13.790 | 0.752 | 1714.9 | 1635.7 | 15.813 | 5.817 | 3.02 | | Clay | 100.0 | | | 13.03 | 1.07 | n.a. | n.a. | 0.96 | 0.532 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.440 | 14.410 | 0.920 | 1735.7 | 1645.8 | 16.456 | 6.796 | 3.05 | | Clay | 100.0 | | | 13.62 | 1.07 | n.a. | n.a. | 0.96 | 0.534 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.600 | 15.050 | 1.004 | 1755.2 | 1655.4 | 17.123 | 7.085 | 3.05 | | Clay | 100.0 | | | 14.22 | 1.07 | n.a. | n.a. | 0.96 | 0.535 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.760 | 16.060 | 1.029 | 1774.7 | 1664.9 | 18.227 | 6.780 | 3.01 | | Clay | 100.0 | | | 15.18 | 1.07 | n.a. | n.a. | 0.96 | 0.537 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 14.930 | 16.530 | 1.019 | 1795.5 | 1675.0 | 18.665 | 6.520 | 3.00 | | Clay | 100.0 | | | 15.62 | 1.06 | n.a. | n.a. | 0.96 | 0.539 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.090 | 16.740 | 1.011 | 1815.0 | 1684.6 | 18.797 | 6.382 | 2.99 | | Clay | 100.0 | | | 15.82 | 1.06 | n.a. | n.a. | 0.95 | 0.540 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.260 | 16.340 | 0.964 | 1835.7 | 1694.7 | 18.200 | 6.249 | 2.99 | | Clay | 100.0 | | | 15.44 | 1.06 | n.a. | n.a. | 0.95 | 0.542 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.420 | 16.210 | 0.966 | 1855.2 | 1704.2 | 17.935 | 6.319 | 3.00 | | Clay | 100.0 | | | 15.32 | 1.06 | n.a. | n.a. | 0.95 | 0.543 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.580 | 16.450 | 0.956 | 1874.8 | 1713.8 | 18.104 | 6.162 | 2.99 | | Clay | 100.0 | | | 15.55 | 1.06 | n.a. | n.a. | 0.95 | 0.544 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.750 | 17.010 | 0.988 | 1895.5 | 1723.9 | 18.635 | 6.151 | 2.98 | | Clay | 100.0 | | | 16.08 | 1.06 | n.a. | n.a. | 0.95 | 0.546 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 15.910 | 16.810 | 0.959 | 1915.0 | 1733.4 | 18.290 | 6.050 | 2.98 | | Clay | 100.0 | | | 15.89 | 1.05 | n.a. | n.a. | 0.95 | 0.547 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.080 | 16.330 | 0.925 | 1935.8 | 1743.6 | 17.621 | 6.023 | 2.99 | | Clay | 100.0 | | | 15.43 | 1.05 | n.a. | n.a. | 0.95 | 0.549 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.240 | 16.230 | 0.873 | 1955.3 | 1753.1 | 17.400 | 5.721 | 2.98 | | Clay | 100.0 | | | 15.34 | 1.05 | n.a. | n.a. | 0.95 | 0.550 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.400 | 15.820 | 0.827 | 1974.8 | 1762.6 | 16.830 | 5.578 | 2.98 | | Clay | 100.0 | | | 14.95 | 1.05 | n.a. | n.a. | 0.95 | 0.551 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.570 | 14.360 | 0.813 | 1995.5 | 1772.8 | 15.075 | 6.087 | 3.04 | | Clay | 100.0 | | | 13.57 | 1.05 | n.a. | n.a. | 0.95 | 0.553 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.730 | 12.960 | 0.778 | 2015.1 | 1782.3 | 13.412 | 6.507 | 3.10 | | Clay | 100.0 | | | 12.25 | 1.05 | n.a. | n.a. | 0.95 | 0.554 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 16.900 | 12.130 | 0.710 | 2035.8 | 1792.4 | 12.399 | 6.387 | 3.12 | | Clay | 100.0 | | | 11.47 | 1.04 | n.a. | n.a. | 0.95 | 0.555 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.060 | 11.220 | 0.653 | 2055.3 | 1802.0 | 11.312 | 6.403 | 3.15 | | Clay | 100.0 | | | 10.60 | 1.04 | n.a. | n.a. | 0.95 | 0.556 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.220 | 9.600 | 0.529 | 2074.8 | 1811.5 | 9.454 | 6.183 | 3.20 | | Clay | 100.0 | | | 9.07 | 1.04 | n.a. | n.a. | 0.95 | 0.557 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.390 | 8.000 | 0.495 | 2095.6 | 1821.6 | 7.633 | 7.121 | 3.32 | | Clay | 100.0 | | | 7.56 | 1.04 | n.a. | n.a. | 0.94 | 0.559 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.550 | 5.760 | 0.393 | 2115.1 | 1831.2 | 5.136 | 8.359 | 3.49 | | Clay | 100.0 | | | 5.44 | 1.04 | n.a. | n.a. | 0.94 | 0.560 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.720 | 4.640 | 0.249 | 2135.8 | 1841.3 | 3.880 | 6.960 | 3.54 | | Clay | 100.0 | | | 4.39 | 1.04 | n.a. | n.a. | 0.94 | 0.561 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 17.880 | 3.210 | 0.135 | 2155.4 | 1850.8 | 2.304 | 6.331 | 3.71 | | Clay | 100.0 | | | 3.03 | 1.04 | n.a. | n.a. | 0.94 | 0.562 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.040 | 2.880 | 0.124 | 2174.9 | 1860.4 | 1.927 | 6.934 | 3.79 | | Clay | 100.0 | | | 2.72 | 1.03 | n.a. | n.a. | 0.94 | 0.563 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.210 | 3.110 | 0.132 | 2195.6 | 1870.5 | 2.151 | 6.565 | 3.74 | | Clay | 100.0 | | | 2.94 | 1.03 | n.a. | n.a. | 0.94 | 0.564 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.370 | 3.900 | 0.140 | 2215.1 | 1880.1 | 2.971 | 5.017 | 3.56 | | Clay | 100.0 | | | 3.69 | 1.03 | n.a. | n.a. | 0.94 | 0.565 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.540 | 5.140 | 0.172 | 2235.9 | 1890.2 | 4.256 | 4.284 | 3.39 | | Clay | 100.0 | | | 4.86 | 1.03 | n.a. | n.a. | 0.94 | 0.566 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.700 | 5.880 | 0.245 | 2255.4 | 1899.7 | 5.003 | 5.158 | 3.38 | | Clay | 100.0 | | | 5.56 | 1.03 | n.a. | n.a. | 0.94 | 0.567 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 18.860 | 6.910 | 0.233 | 2274.9 | 1909.3 | 6.047 | 4.031 | 3.25 | | Clay | 100.0 | | | 6.53 | 1.03 | n.a. | n.a. | 0.94 | 0.568 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.030 | 8.550 | 0.266 | 2295.7 | 1919.4 | 7.713 | 3.592 | 3.13 | | Clay | 100.0 | | | 8.08 | 1.03 | n.a. | n.a. | 0.94 | 0.569 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.190 | 8.520 | 0.390 | 2315.2 | 1928.9 | 7.634 | 5.300 | 3.24 | | Clay | 100.0 | | | 8.05 | 1.02 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.360 | 9.780 | 0.500 | 2335.9 | 1939.1 | 8.883 | 5.804 | 3.21 | | Clay | 100.0 | | | 9.24 | 1.02 | n.a. | n.a. | 0.94 | 0.570 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.520 | 11.230 | 0.593 | 2355.4 | 1948.6 | 10.317 | 5.901 | 3.16 | | Clay | 100.0 | | | 10.61 | 1.02 | n.a. | n.a. | 0.93 | 0.571 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.690 | 11.560 | 0.611 | 2376.2 | 1958.7 | 10.590 | 5.890 | 3.15 | | Clay | 100.0 | | | 10.93 | 1.02 | n.a. | n.a. | 0.93 | 0.572 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 19.850 | 11.780 | 0.632 | 2395.7 | 1968.3 | 10.753 | 5.974 | 3.15 | | Clay | 100.0 | | | 11.13 | 1.02 | n.a. | n.a. | 0.93 | 0.573 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.010 | 11.910 | 0.710 | 2415.2 | 1977.8 | 10.823 | 6.636 | 3.18 | | Clay | 100.0 | | | 11.26 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.180 | 12.140 | 0.722 | 2436.0 | 1987.9 | 10.988 | 6.611 | 3.17 | | Clay | 100.0 | | | 11.47 | 1.02 | n.a. | n.a. | 0.93 | 0.574 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.340 | 12.620 | 0.718 | 2455.5 | 1997.5 | 11.407 | 6.306 | 3.15 | | Clay | 100.0 | | | 11.93 | 1.02 | n.a. | n.a. | 0.93 | 0.575 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.510 | 12.800 | 0.776 | 2476.2 | 2007.6 | 11.518 | 6.713 | 3.16 | | Clay | 100.0 | | | 12.10 | 1.01 | n.a. | n.a. | 0.93 | 0.576 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.670 | 13.340 | 0.826 | 2495.7 | 2017.1 | 11.989 | 6.833 | 3.15 | | Clay | 100.0 | | | 12.61 | 1.01 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 20.830 | 14.300 | 0.882 | 2515.3 | 2026.7 | 12.871 | 6.760 | 3.13 | | Clay | 100.0 | | | 13.52 | 1.01 | n.a. | n.a. | 0.93 | 0.577 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.000 | 13.180 | 0.777 | 2536.0 | 2036.8 | 11.697 | 6.519 | 3.15 | | Clay | 100.0 | | | 12.46 | 1.01 | n.a. | n.a. | 0.93 | 0.578 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.160 | 10.720 | 0.672 | 2555.5 | 2046.3 | 9.228 | 7.112 | 3.25 | | Clay | 100.0 | | | 10.13 | 1.01 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.330 | 10.520 | 0.587 | 2576.3 | 2056.5 | 8.978 | 6.355 | 3.23 | | Clay | 100.0 | | | 9.94 | 1.01 | n.a. | n.a. | 0.93 | 0.579 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.490 | 11.480 | 0.657 | 2595.8 | 2066.0 | 9.857 | 6.456 | 3.20 | | Clay | 100.0 | | | 10.85 | 1.01 | n.a. | n.a. | 0.93 | 0.580 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.650 | 12.000 | 0.683 | 2615.3 | 2075.5 | 10.303 | 6.387 | 3.18 | | Clay | 100.0 | | | 11.34 | 1.01 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.820 | 12.770 | 0.687 | 2636.0 | 2085.7 | 10.982 | 5.998 | 3.15 | | Clay | 100.0 | | | 12.07 | 1.00 | n.a. | n.a. | 0.92 | 0.581 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 21.980 | 12.580 | 0.671 | 2655.6 | 2095.2 | 10.741 | 5.962 | 3.15 | | Clay | 100.0 | | | 11.89 | 1.00 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.150 | 12.790 | 0.645 | 2676.3 | 2105.3 | 10.879 | 5.631 | 3.13 | | Clay | 100.0 | | | 12.09 | 1.00 | n.a. | n.a. | 0.92 | 0.582 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.310 | 12.820 | 0.606 | 2695.8 | 2114.9 | 10.849 | 5.280 | 3.11 | | Clay | 100.0 | | | 12.12 | 1.00 | n.a. | n.a. | 0.92 | 0.583 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.470 | 12.600 | 0.600 | 2715.3 | 2124.4 | 10.584 | 5.339 | 3.13 | | Clay | 100.0 | | | 11.91 | 1.00 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.640 | 12.180 | 0.587 | 2736.1 | 2134.5 | 10.130 | 5.425 | 3.15 | | Clay | 100.0 | | | 11.51 | 1.00 | n.a. | n.a. | 0.92 | 0.584 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 4

PGA ($A_{max}$) 0.63

Total Settlement: 0.12 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22.800 | 11.410 | 0.537 | 2755.6 | 2144.1 | 9.358 | 5.348 | 3.17 | | Clay | 100.0 | | | 10.78 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 22.970 | 10.550 | 0.489 | 2776.3 | 2154.2 | 8.506 | 5.337 | 3.20 | | Clay | 100.0 | | | 9.97 | 1.00 | n.a. | n.a. | 0.92 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.130 | 10.200 | 0.447 | 2795.9 | 2163.7 | 8.136 | 5.082 | 3.20 | | Clay | 100.0 | | | 9.64 | 0.99 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.290 | 10.430 | 0.449 | 2815.4 | 2173.3 | 8.303 | 4.973 | 3.19 | | Clay | 100.0 | | | 9.86 | 0.99 | n.a. | n.a. | 0.92 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.460 | 10.540 | 0.494 | 2836.1 | 2183.4 | 8.356 | 5.412 | 3.21 | | Clay | 100.0 | | | 9.96 | 0.99 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.620 | 11.090 | 0.489 | 2855.6 | 2193.0 | 8.812 | 5.058 | 3.17 | | Clay | 100.0 | | | 10.48 | 0.99 | n.a. | n.a. | 0.92 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.790 | 11.360 | 0.519 | 2876.4 | 2203.1 | 9.007 | 5.234 | 3.18 | | Clay | 100.0 | | | 10.74 | 0.99 | n.a. | n.a. | 0.91 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 23.950 | 11.520 | 0.512 | 2895.9 | 2212.6 | 9.104 | 5.081 | 3.16 | | Clay | 100.0 | | | 10.89 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.110 | 11.680 | 0.511 | 2915.4 | 2222.2 | 9.200 | 4.995 | 3.16 | | Clay | 100.0 | | | 11.04 | 0.99 | n.a. | n.a. | 0.91 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.280 | 11.890 | 0.490 | 2936.2 | 2232.3 | 9.337 | 4.697 | 3.13 | | Clay | 100.0 | | | 11.24 | 0.99 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.440 | 12.220 | 0.443 | 2955.7 | 2241.8 | 9.583 | 4.121 | 3.09 | | Clay | 100.0 | | | 11.55 | 0.98 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.610 | 12.160 | 0.412 | 2976.4 | 2252.0 | 9.478 | 3.863 | 3.08 | | Clay | 100.0 | | | 11.49 | 0.98 | n.a. | n.a. | 0.91 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.770 | 10.830 | 0.362 | 2995.9 | 2261.5 | 8.253 | 3.882 | 3.13 | | Clay | 100.0 | | | 10.24 | 0.98 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 24.930 | 11.440 | 0.395 | 3015.5 | 2271.0 | 8.747 | 3.977 | 3.11 | | Clay | 100.0 | | | 10.81 | 0.98 | n.a. | n.a. | 0.91 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.100 | 11.110 | 0.431 | 3036.2 | 2281.2 | 8.410 | 4.495 | 3.16 | | Clay | 100.0 | | | 10.50 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.260 | 11.300 | 0.433 | 3055.7 | 2290.7 | 8.532 | 4.427 | 3.15 | | Clay | 100.0 | | | 10.68 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.430 | 13.250 | 0.438 | 3076.5 | 2300.8 | 10.180 | 3.740 | 3.05 | | Clay | 100.0 | | | 12.52 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.590 | 13.690 | 0.464 | 3096.0 | 2310.4 | 10.511 | 3.820 | 3.04 | | Clay | 100.0 | | | 12.94 | 0.98 | n.a. | n.a. | 0.91 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.750 | 12.000 | 0.447 | 3115.5 | 2319.9 | 9.002 | 4.278 | 3.12 | | Clay | 100.0 | | | 11.34 | 0.98 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 25.920 | 10.950 | 0.400 | 3136.2 | 2330.0 | 8.053 | 4.262 | 3.16 | | Clay | 100.0 | | | 10.35 | 0.97 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.080 | 10.000 | 0.371 | 3155.8 | 2339.6 | 7.200 | 4.400 | 3.21 | | Clay | 100.0 | | | 9.45 | 0.97 | n.a. | n.a. | 0.90 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.250 | 9.240 | 0.357 | 3176.5 | 2349.7 | 6.513 | 4.659 | 3.26 | | Clay | 100.0 | | | 8.73 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.410 | 8.940 | 0.361 | 3196.0 | 2359.2 | 6.224 | 4.914 | 3.29 | | Clay | 100.0 | | | 8.45 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.570 | 8.780 | 0.357 | 3215.5 | 2368.8 | 6.056 | 4.983 | 3.30 | | Clay | 100.0 | | | 8.30 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.740 | 8.720 | 0.358 | 3236.3 | 2378.9 | 5.971 | 5.038 | 3.31 | | Clay | 100.0 | | | 8.24 | 0.97 | n.a. | n.a. | 0.90 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 26.900 | 8.700 | 0.352 | 3255.8 | 2388.4 | 5.922 | 4.976 | 3.31 | | Clay | 100.0 | | | 8.22 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.070 | 8.760 | 0.355 | 3276.5 | 2398.6 | 5.938 | 4.978 | 3.31 | | Clay | 100.0 | | | 8.28 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.230 | 8.870 | 0.370 | 3296.1 | 2408.1 | 5.998 | 5.120 | 3.31 | | Clay | 100.0 | | | 8.38 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.400 | 8.960 | 0.386 | 3316.8 | 2418.2 | 6.039 | 5.291 | 3.32 | | Clay | 100.0 | | | 8.47 | 0.97 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.560 | 9.210 | 0.413 | 3336.3 | 2427.8 | 6.213 | 5.469 | 3.32 | | Clay | 100.0 | | | 8.71 | 0.96 | n.a. | n.a. | 0.90 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.720 | 9.520 | 0.414 | 3355.8 | 2437.3 | 6.435 | 5.277 | 3.29 | | Clay | 100.0 | | | 9.00 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 27.890 | 9.740 | 0.393 | 3376.6 | 2447.4 | 6.580 | 4.877 | 3.27 | | Clay | 100.0 | | | 9.21 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.050 | 10.020 | 0.338 | 3396.1 | 2457.0 | 6.774 | 4.060 | 3.21 | | Clay | 100.0 | | | 9.47 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.220 | 9.780 | 0.296 | 3416.8 | 2467.1 | 6.543 | 3.668 | 3.20 | | Clay | 100.0 | | | 9.24 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.380 | 9.080 | 0.317 | 3436.4 | 2476.6 | 5.945 | 4.305 | 3.27 | | Clay | 100.0 | | | 8.58 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.540 | 9.460 | 0.385 | 3455.9 | 2486.2 | 6.220 | 4.973 | 3.29 | | Clay | 100.0 | | | 8.94 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.710 | 11.080 | 0.416 | 3476.6 | 2496.3 | 7.484 | 4.455 | 3.20 | | Clay | 100.0 | | | 10.47 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 28.870 | 13.180 | 0.376 | 3496.1 | 2505.9 | 9.124 | 3.290 | 3.05 | | Clay | 100.0 | | | 12.46 | 0.96 | n.a. | n.a. | 0.89 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.040 | 13.880 | 0.332 | 3516.9 | 2516.0 | 9.636 | 2.737 | 2.99 | | Clay | 100.0 | | | 13.12 | 0.96 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.200 | 11.810 | 0.299 | 3536.4 | 2525.5 | 7.952 | 2.975 | 3.08 | | Clay | 100.0 | | | 11.16 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.360 | 10.580 | 0.308 | 3555.9 | 2535.1 | 6.944 | 3.495 | 3.17 | | Clay | 100.0 | | | 10.00 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.530 | 10.560 | 0.329 | 3576.7 | 2545.2 | 6.893 | 3.751 | 3.18 | | Clay | 100.0 | | | 9.98 | 0.95 | n.a. | n.a. | 0.89 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.690 | 10.730 | 0.364 | 3596.2 | 2554.7 | 6.992 | 4.070 | 3.20 | | Clay | 100.0 | | | 10.14 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 29.860 | 10.710 | 0.366 | 3616.9 | 2564.9 | 6.941 | 4.108 | 3.20 | | Clay | 100.0 | | | 10.12 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.020 | 11.280 | 0.403 | 3636.4 | 2574.4 | 7.351 | 4.255 | 3.19 | | Clay | 100.0 | | | 10.66 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.180 | 11.720 | 0.420 | 3656.0 | 2583.9 | 7.657 | 4.243 | 3.18 | | Clay | 100.0 | | | 11.08 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.350 | 11.220 | 0.406 | 3676.7 | 2594.1 | 7.233 | 4.324 | 3.20 | | Clay | 100.0 | | | 10.60 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.510 | 10.450 | 0.367 | 3696.2 | 2603.6 | 6.608 | 4.263 | 3.23 | | Clay | 100.0 | | | 9.88 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.680 | 9.760 | 0.346 | 3717.0 | 2613.7 | 6.046 | 4.374 | 3.27 | | Clay | 100.0 | | | 9.22 | 0.95 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 30.840 | 9.180 | 0.308 | 3736.5 | 2623.3 | 5.575 | 4.218 | 3.29 | | Clay | 100.0 | | | 8.68 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.000 | 9.560 | 0.296 | 3756.0 | 2632.8 | 5.836 | 3.857 | 3.25 | | Clay | 100.0 | | | 9.04 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.170 | 8.660 | 0.271 | 3776.7 | 2642.9 | 5.124 | 4.008 | 3.31 | | Clay | 100.0 | | | 8.19 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.330 | 8.680 | 0.271 | 3796.3 | 2652.5 | 5.114 | 3.989 | 3.31 | | Clay | 100.0 | | | 8.20 | 0.94 | n.a. | n.a. | 0.88 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.500 | 8.720 | 0.270 | 3817.0 | 2662.6 | 5.116 | 3.970 | 3.31 | | Clay | 100.0 | | | 8.24 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.660 | 8.570 | 0.262 | 3836.5 | 2672.1 | 4.979 | 3.942 | 3.31 | | Clay | 100.0 | | | 8.10 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.820 | 8.270 | 0.251 | 3856.0 | 2681.7 | 4.730 | 3.958 | 3.33 | | Clay | 100.0 | | | 7.82 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 31.990 | 8.110 | 0.256 | 3876.8 | 2691.8 | 4.585 | 4.146 | 3.36 | | Clay | 100.0 | | | 7.67 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.150 | 8.580 | 0.268 | 3896.3 | 2701.3 | 4.910 | 4.041 | 3.33 | | Clay | 100.0 | | | 8.11 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.320 | 8.910 | 0.276 | 3917.0 | 2711.5 | 5.127 | 3.966 | 3.31 | | Clay | 100.0 | | | 8.42 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.480 | 8.680 | 0.264 | 3936.6 | 2721.0 | 4.933 | 3.932 | 3.32 | | Clay | 100.0 | | | 8.20 | 0.94 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.640 | 8.430 | 0.244 | 3956.1 | 2730.5 | 4.726 | 3.782 | 3.32 | | Clay | 100.0 | | | 7.97 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.810 | 8.430 | 0.247 | 3976.8 | 2740.7 | 4.701 | 3.830 | 3.33 | | Clay | 100.0 | | | 7.97 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 32.970 | 8.940 | 0.247 | 3996.3 | 2750.2 | 5.048 | 3.554 | 3.28 | | Clay | 100.0 | | | 8.45 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.140 | 8.890 | 0.245 | 4017.1 | 2760.3 | 4.986 | 3.557 | 3.29 | | Clay | 100.0 | | | 8.40 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.300 | 8.970 | 0.263 | 4036.6 | 2769.9 | 5.019 | 3.785 | 3.30 | | Clay | 100.0 | | | 8.48 | 0.93 | n.a. | n.a. | 0.87 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.460 | 9.200 | 0.297 | 4056.1 | 2779.4 | 5.161 | 4.140 | 3.31 | | Clay | 100.0 | | | 8.70 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.630 | 9.690 | 0.372 | 4076.9 | 2789.5 | 5.486 | 4.867 | 3.33 | | Clay | 100.0 | | | 9.16 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |

CORNERSTONE EARTH GROUP

CPT No. 4

PGA ($A_{max}$) 0.63

Total Settlement: 0.12 (Inches)

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| Depth (ft) | $q_c$ (tsf) | $f_s$ (tsf) | $\sigma_{vc}$ (psf) | Insitu $\sigma'_{vc}$ (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 | $K_\sigma$ for Sand | $CRR_{M=7.5, \sigma'vc = 1 atm}$ | CRR | Factor of Safety (CRR/CSR) | Vertical Strain $\varepsilon_v$ | Settlement (Inches) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33.790 | 10.200 | 0.409 | 4096.4 | 2799.1 | 5.825 | 5.021 | 3.32 | | Clay | 100.0 | | | 9.64 | 0.93 | n.a. | n.a. | 0.86 | 0.596 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 33.960 | 10.520 | 0.415 | 4117.1 | 2809.2 | 6.024 | 4.903 | 3.30 | | Clay | 100.0 | | | 9.94 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.120 | 10.290 | 0.426 | 4136.6 | 2818.8 | 5.834 | 5.175 | 3.32 | | Clay | 100.0 | | | 9.73 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.280 | 10.550 | 0.479 | 4156.2 | 2828.3 | 5.991 | 5.656 | 3.34 | | Clay | 100.0 | | | 9.97 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.450 | 11.210 | 0.527 | 4176.9 | 2838.4 | 6.427 | 5.773 | 3.32 | | Clay | 100.0 | | | 10.60 | 0.93 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.610 | 11.610 | 0.528 | 4196.4 | 2848.0 | 6.680 | 5.552 | 3.29 | | Clay | 100.0 | | | 10.97 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.780 | 12.470 | 0.484 | 4217.2 | 2858.1 | 7.251 | 4.669 | 3.22 | | Clay | 100.0 | | | 11.79 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 34.940 | 11.890 | 0.456 | 4236.7 | 2867.6 | 6.815 | 4.668 | 3.24 | | Clay | 100.0 | | | 11.24 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.100 | 11.460 | 0.415 | 4256.2 | 2877.2 | 6.487 | 4.451 | 3.25 | | Clay | 100.0 | | | 10.83 | 0.92 | n.a. | n.a. | 0.86 | 0.595 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.270 | 11.770 | 0.424 | 4276.9 | 2887.3 | 6.672 | 4.402 | 3.24 | | Clay | 100.0 | | | 11.12 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.430 | 11.750 | 0.414 | 4296.5 | 2896.8 | 6.629 | 4.314 | 3.23 | | Clay | 100.0 | | | 11.11 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.600 | 11.900 | 0.397 | 4317.2 | 2907.0 | 6.702 | 4.071 | 3.22 | | Clay | 100.0 | | | 11.25 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.760 | 11.700 | 0.382 | 4336.7 | 2916.5 | 6.536 | 4.009 | 3.22 | | Clay | 100.0 | | | 11.06 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 35.930 | 11.320 | 0.354 | 4357.5 | 2926.6 | 6.247 | 3.873 | 3.23 | | Clay | 100.0 | | | 10.70 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.090 | 11.030 | 0.319 | 4377.0 | 2936.2 | 6.022 | 3.609 | 3.22 | | Clay | 100.0 | | | 10.43 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.250 | 10.510 | 0.287 | 4396.5 | 2945.7 | 5.643 | 3.451 | 3.24 | | Clay | 100.0 | | | 9.93 | 0.92 | n.a. | n.a. | 0.85 | 0.594 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.420 | 10.190 | 0.271 | 4417.2 | 2955.8 | 5.400 | 3.395 | 3.25 | | Clay | 100.0 | | | 9.63 | 0.92 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.580 | 10.180 | 0.266 | 4436.8 | 2965.4 | 5.370 | 3.339 | 3.25 | | Clay | 100.0 | | | 9.62 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.750 | 10.690 | 0.278 | 4457.5 | 2975.5 | 5.687 | 3.288 | 3.22 | | Clay | 100.0 | | | 10.10 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 36.910 | 11.640 | 0.307 | 4477.0 | 2985.0 | 6.299 | 3.267 | 3.18 | | Clay | 100.0 | | | 11.00 | 0.91 | n.a. | n.a. | 0.85 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.070 | 11.940 | 0.358 | 4496.5 | 2994.6 | 6.473 | 3.693 | 3.20 | | Clay | 100.0 | | | 11.29 | 0.91 | n.a. | n.a. | 0.84 | 0.593 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.240 | 12.570 | 0.410 | 4517.3 | 3004.7 | 6.863 | 3.978 | 3.20 | | Clay | 100.0 | | | 11.88 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.400 | 13.360 | 0.430 | 4536.8 | 3014.2 | 7.359 | 3.875 | 3.17 | | Clay | 100.0 | | | 12.63 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.570 | 12.950 | 0.464 | 4557.5 | 3024.4 | 7.057 | 4.347 | 3.21 | | Clay | 100.0 | | | 12.24 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.730 | 13.220 | 0.531 | 4577.1 | 3033.9 | 7.206 | 4.858 | 3.23 | | Clay | 100.0 | | | 12.50 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 37.890 | 13.950 | 0.532 | 4596.6 | 3043.4 | 7.657 | 4.568 | 3.20 | | Clay | 100.0 | | | 13.19 | 0.91 | n.a. | n.a. | 0.84 | 0.592 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.060 | 13.830 | 0.487 | 4617.3 | 3053.6 | 7.546 | 4.228 | 3.18 | | Clay | 100.0 | | | 13.07 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.220 | 12.660 | 0.421 | 4636.8 | 3063.1 | 6.752 | 4.069 | 3.21 | | Clay | 100.0 | | | 11.97 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.390 | 12.180 | 0.361 | 4657.6 | 3073.2 | 6.411 | 3.665 | 3.21 | | Clay | 100.0 | | | 11.51 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.550 | 12.010 | 0.447 | 4677.1 | 3082.8 | 6.274 | 4.617 | 3.27 | | Clay | 100.0 | | | 11.35 | 0.91 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.710 | 13.450 | 0.585 | 4696.6 | 3092.3 | 7.180 | 5.269 | 3.26 | | Clay | 100.0 | | | 12.71 | 0.90 | n.a. | n.a. | 0.84 | 0.591 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 38.880 | 16.430 | 0.534 | 4717.4 | 3102.4 | 9.071 | 3.794 | 3.09 | | Clay | 100.0 | | | 15.53 | 0.90 | n.a. | n.a. | 0.84 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.040 | 16.300 | 0.681 | 4736.9 | 3112.0 | 8.953 | 4.887 | 3.16 | | Clay | 100.0 | | | 15.41 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.210 | 17.780 | 0.681 | 4757.6 | 3122.1 | 9.866 | 4.420 | 3.10 | | Clay | 100.0 | | | 16.81 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.370 | 14.420 | 0.673 | 4777.1 | 3131.7 | 7.684 | 5.590 | 3.25 | | Clay | 100.0 | | | 13.63 | 0.90 | n.a. | n.a. | 0.83 | 0.590 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.530 | 18.410 | 0.693 | 4796.7 | 3141.2 | 10.195 | 4.329 | 3.08 | | Clay | 100.0 | | | 17.40 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.700 | 18.210 | 0.743 | 4817.4 | 3151.3 | 10.028 | 4.699 | 3.11 | | Clay | 100.0 | | | 17.21 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 39.860 | 18.970 | 0.897 | 4836.9 | 3160.9 | 10.473 | 5.418 | 3.13 | | Clay | 100.0 | | | 17.93 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.030 | 20.910 | 1.104 | 4857.7 | 3171.0 | 11.656 | 5.972 | 3.12 | | Clay | 100.0 | | | 19.76 | 0.90 | n.a. | n.a. | 0.83 | 0.589 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.190 | 23.610 | 0.997 | 4877.2 | 3180.5 | 13.313 | 4.711 | 3.01 | | Clay | 100.0 | | | 22.32 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.350 | 31.280 | 1.174 | 4896.7 | 3190.1 | 18.076 | 4.071 | 2.87 | | Clay | 92.7 | | | 29.57 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.520 | 38.890 | 0.862 | 4917.4 | 3200.2 | 22.768 | 2.367 | 2.65 | | Clay | 74.7 | | | 36.76 | 0.90 | n.a. | n.a. | 0.83 | 0.588 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.680 | 38.950 | 1.062 | 4937.0 | 3209.7 | 22.732 | 2.910 | 2.70 | | Clay | 79.2 | | | 36.81 | 0.90 | n.a. | n.a. | 0.83 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 40.850 | 42.340 | 1.284 | 4957.7 | 3219.9 | 24.760 | 3.221 | 2.70 | | Clay | 79.1 | | | 40.02 | 0.90 | n.a. | n.a. | 0.82 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.010 | 39.210 | 1.184 | 4977.2 | 3229.4 | 22.742 | 3.225 | 2.73 | | Clay | 81.4 | | | 37.06 | 0.89 | n.a. | n.a. | 0.82 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.170 | 34.560 | 1.117 | 4996.7 | 3238.9 | 19.798 | 3.483 | 2.80 | | Clay | 86.8 | | | 32.67 | 0.89 | n.a. | n.a. | 0.82 | 0.587 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.340 | 37.630 | 1.503 | 5017.5 | 3249.1 | 21.619 | 4.279 | 2.83 | | Clay | 89.1 | | | 35.57 | 0.89 | n.a. | n.a. | 0.82 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.500 | 34.780 | 1.478 | 5037.0 | 3258.6 | 19.801 | 4.580 | 2.87 | | Clay | 92.9 | | | 32.87 | 0.89 | n.a. | n.a. | 0.82 | 0.586 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 41.670 | 47.680 | 0.989 | 5057.7 | 3268.7 | 34.336 | 2.191 | 2.49 | | Sand | 61.8 | 70.33 | 1.8 | 126.59 | 0.86 | 108.98 | 188.89 | 0.82 | 0.586 | 0.899 | 1.067 | 2.110 | 3.60 | 0.00 | 0.00 |
| 41.830 | 74.410 | 1.265 | 5077.3 | 3278.3 | 54.577 | 1.760 | 2.27 | | Sand | 44.6 | | 1.8 | 126.60 | 0.86 | 108.25 | 179.69 | 0.82 | 0.585 | 0.908 | 0.717 | 1.357 | 2.32 | 0.00 | 0.00 |
| 41.990 | 64.290 | 1.485 | 5096.8 | 3287.8 | 46.816 | 2.406 | 2.41 | | Sand | 55.7 | 70.33 | 1.8 | 126.59 | 0.86 | 108.57 | 186.03 | 0.82 | 0.585 | 0.901 | 0.937 | 1.851 | 3.16 | 0.00 | 0.00 |
| 42.160 | 46.620 | 1.402 | 5117.5 | 3297.9 | 26.720 | 3.181 | 2.67 | | Clay | 76.8 | | | 44.06 | 0.89 | n.a. | n.a. | 0.82 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.320 | 45.150 | 1.288 | 5137.0 | 3307.5 | 25.749 | 3.024 | 2.67 | | Clay | 76.7 | | | 42.67 | 0.89 | n.a. | n.a. | 0.82 | 0.585 | n.a. | n.a. | n.a. | n.a. | 0.00 | 0.00 |
| 42.490 | 59.670 | 1.232 | 5157.8 | 3317.6 | 43.095 | 2.158 | 2.41 | | Sand | 55.4 | 151.22 | | 151.22 | 0.87 | 131.55 | 215.19 | 0.82 | 0.584 | 0.865 | 4.983 | 9.484 | 16.23 | 0.00 | 0.00 |
| 42.650 | 72.040 | 1.118 | 5177.3 | 3327.1 | 52.350 | 1.610 | 2.26 | | Sand | 43.7 | 151.22 | | 151.22 | 0.87 | 130.84 | 207.37 | 0.81 | 0.584 | 0.870 | 2.939 | 5.625 | 9.63 | 0.00 | 0.00 |
| 42.810 | 86.230 | 1.705 | 5196.8 | 3336.7 | 62.949 | 2.038 | 2.27 | | Sand | 44.2 | 151.22 | | 151.22 | 0.86 | 130.74 | 207.62 | 0.81 | 0.584 | 0.869 | 2.985 | 5.706 | 9.78 | 0.00 | 0.00 |
| 42.980 | 103.210 | 1.703 | 5217.6 | 3346.8 | 75.607 | 1.693 | 2.15 | | Sand | 35.2 | 151.22 | | 151.22 | 0.86 | 129.88 | 198.27 | 0.81 | 0.583 | 0.882 | 1.716 | 3.329 | 5.71 | 0.00 | 0.00 |
| 43.140 | 97.560 | 1.768 | 5237.1 | 3356.3 | 71.252 | 1.862 | 2.20 | | Sand | 38.9 | 151.22 | | 151.22 | 0.86 | 130.09 | 202.41 | 0.81 | 0.583 | 0.875 | 2.170 | 4.179 | 7.17 | 0.00 | 0.00 |
| 43.310 | 95.570 | 1.537 | 5257.8 | 3366.5 | 69.645 | 1.654 | 2.17 | | Sand | 36.7 | 151.22 | | 151.22 | 0.86 | 129.75 | 199.84 | 0.81 | 0.583 | 0.878 | 1.873 | 3.618 | 6.21 | 0.00 | 0.00 |
| 43.470 | 120.650 | 1.445 | 5277.3 | 3376.0 | 88.307 | 1.225 | 2.01 | | Sand | 23.7 | 151.22 | | 151.22 | 0.84 | 127.76 | 177.45 | 0.81 | 0.582 | 0.904 | 0.657 | 1.216 | 2.09 | 0.00 | 0.00 |
| 43.640 | 159.990 | 1.273 | 5298.1 | 3386.1 | 117.560 | 0.809 | 1.80 | | Sand | 6.8 | | | 151.22 | 0.81 | 122.42 | 123.85 | 0.81 | 0.582 | 0.940 | 0.180 | 0.240 | 0.41 | 0.03 | 0.01 |
| 43.800 | 202.820 | 1.031 | 5317.6 | 3395.7 | 149.344 | 0.515 | 1.60 | | Sand | 0.0 | | | 191.70 | 0.83 | 159.57 | 159.57 | 0.81 | 0.582 | 0.918 | 0.367 | 0.602 | 1.03 | 0.01 | 0.00 |
| 43.960 | 229.970 | 0.871 | 5337.1 | 3405.2 | 169.357 | 0.383 | 1.48 | | Sand | 0.0 | | | 217.36 | 0.85 | 183.88 | 183.88 | 0.81 | 0.581 | 0.895 | 0.853 | 1.645 | 2.83 | 0.00 | 0.00 |
| 44.130 | 271.230 | 1.093 | 5357.9 | 3415.3 | 199.794 | 0.407 | 1.43 | | Sand | 0.0 | | | 256.36 | 0.87 | 221.91 | 221.91 | 0.81 | 0.581 | 0.856 | 8.284 | 15.607 | 26.86 | 0.00 | 0.00 |